

# Directive No. 1

## Form 1 (Paragraph 8(a))

### Project Proposal

#### PART 1 - PROPONENT CONTACT INFORMATION

1.1 Proponent (Name or Company Name): Ryanwood Exploration Inc.

1.2 Project Title: Antimony Class 3

1.3 Mailing Address:

Street Address or P.O. Box	P.O. Box 70
City/Town/Village	Dawson City
Territory/Province	Yukon
Postal Code	Y0B 1G0
Country	Canada

Street Address (if different from above):

Street Name and Number  
City/Town/Village  
Territory/Province  
Postal Code  
Country

1.4 Contact Person: Allison Feduk

Position: Geologist

Phone: (306) 515-1279

Fax:

Alternate Phone:

Email: [afeduk@groundtruthexploration.com](mailto:afeduk@groundtruthexploration.com)

Contact Method Preference:  e-mail     fax     mail

**PART 2 – REQUIREMENT FOR AN EVALUATION UNDER YESAA**

2.1 Is your proposed project located in the Yukon?

Yes

No

2.2 Specify the Parts and Item numbers from Schedule 1 of the Regulations\* which apply to your proposed project.

√	Part	Item	Proposed Activity(s)
X	1: Mining	1	Mineral Exploration
	2: Industrial Activities		
	3: Oil and Natural Gas		
	4: Energy and Telecommunications		
	5: Wildlife		
	6: Transportation		
	7: Nuclear Facilities and Nuclear Substances		
	8: Contaminants and Waste		
	9: Water		
	10: Fisheries		
	11: Air Emissions		
	12: National Parks, Park Reserves & Historic Sites		
	13: Miscellaneous		

\* Assessable Activities, Exceptions and Executive Committee Projects Regulations

2.3 Specify which of the following circumstances apply to your proposed project. *(Check all applicable)*

Proponent is a federal agency or federal independent regulatory agency.

Name of agency: \_\_\_\_\_

Proponent has submitted an application for financial assistance for the project to a federal agency or federal independent regulatory agency.

Name of agency: \_\_\_\_\_

Proponent is a territorial agency, municipal government, territorial independent regulatory agency or first nation and an authorization or the grant of an interest in land would be required for the project to be undertaken by a private individual.

2.3 cont'd

(X) Proponent requires an authorization or the grant of an interest in land to undertake the project from *(check and list all applicable)*:

<input checked="" type="checkbox"/>		Agency (Department)	Authorization (describe)
<input type="checkbox"/>	a federal government agency		
<input checked="" type="checkbox"/>	a territorial government agency	Energy, Mines and	Mining Land Use
		Resources	Approval
<input type="checkbox"/>	an independent regulatory agency		
<input type="checkbox"/>	a municipal government		
<input checked="" type="checkbox"/>	a first nation	Tr'ondëk Hwëch'in &	
		Na-cho Nyäk Dun	
<input type="checkbox"/>	the Governor in Council		

**PART 3 – PROJECT LOCATION**

3.1 Latitude and Longitude or UTM Coordinates (UTM Zone \_\_\_\_ ) of proposed project

NW Boundary	7138093	(lat\northing)	625171	(long\easting)
NE Boundary	7141868	(lat\northing)	626874	(long\easting)
SW Boundary	7126701	(lat\northing)	635516	(long\easting)
SE Boundary	7131109	(lat\northing)	640688	(long\easting)

Common or Traditional Location Name: North Yukon River

Quad\Block and Lot Number (if surveyed):

NTS Map Sheet #: 116B/08 & 116B/01

3.2 Assessment District(s) that the proposed project will be located in (*check all applicable*):

- Dawson (North)
- Mayo (Central)
- Haines Junction (Southwest)
- Watson Lake (Southeast)
- Whitehorse
- Teslin (South-central)

3.3 First Nation territory(s) that the proposed project will be located in or in which it might have significant environmental or socio-economic effects (*check all applicable*):

<input type="checkbox"/> Carcross/Tagish	<input type="checkbox"/> Champagne & Aishihik	<input type="checkbox"/> Kluane
<input type="checkbox"/> Kwanlin Dun	<input type="checkbox"/> Liard	<input type="checkbox"/> Little Salmon/Carmacks
<input checked="" type="checkbox"/> Nacho Nyak Dun	<input type="checkbox"/> Ross River Dena	<input type="checkbox"/> Selkirk
<input type="checkbox"/> Ta'an Kwach'an	<input type="checkbox"/> Teslin Tlingit	<input checked="" type="checkbox"/> Trondek Hwech'in
<input type="checkbox"/> Vuntut Gwitchin	<input type="checkbox"/> White River	<input type="checkbox"/> Tetlit Gwich'in

3.4 The proposed project will be located on:

- settlement land
- non-settlement land
- both settlement and non-settlement land

Will the proposed project be located within the boundaries of a Yukon community?

- Yes
- No

3.5 Will the proposed project be located on the Yukon North Slope?

- Yes
- No

3.6 Is there a regional land use plan in effect at the location of your proposed project?

- Yes
- No

3.7 Identify the nearest community(s) to the proposed project location.

Name: Rock Creek	Distance from Project	45	km
Name: Bear Creek	Distance from Project	53	km
Name: Dawson City	Distance from Project	60	km

3.8 Identify the watershed(s) and drainage region(s) your proposed project will be located in: The property is located entirely in the Klondike Watershed. Several tributaries of the North Klondike River flow north-west into the North Klondike River. Antimony Creek flows south and west south-west into the North Klondike River.

Identify any watercourse(s) or waterbody(s) nearby to your proposed project (if any):  
The property is bordered to the west by the North Klondike River, five of its' tributaries are located on the property. Tributaries of Brewery Creek are located on the south portion of the claim block and tributaries of Antimony Creek are located in the south and central portions of the claim block.

#### **PART 4 – PROJECT PURPOSE**

Describe the purpose of the proposed project and any alternatives considered.

The exploration will continue with GroundTruth Exploration Drones to Drills model which is a systematic, low environmental impact resource identification and assessment system. The purpose of this project is to further the exploration and understanding of gold occurrences and deposits on the property. The primary focus will be on expanding anomalies already discovered, with some effort put into locating new areas of interest.

## **PART 5 – PROJECT DESCRIPTION**

Describe in sufficient detail all applicable aspects of the planning, construction, operation, ongoing restoration activities, decommissioning and reclamation phases of the proposed project. Attach a Sketch Plan or Site Diagram if appropriate.

This specific work plan for 2020 will be 10,000m of diamond drilling planned to target the areas identified in Figure 2. Specifically, this work will include but is not limited to, drill pad construction, corridor and trail construction to support drill sites, helipad construction and sump pad construction.

Work will consist of:

- Drill Pad construction. This involves clearing an area approximately 100m<sup>2</sup> and construction of a temporary pad that is approximately 25m<sup>2</sup>. Some, but not all, of the vegetative mat is removed to be replaced after the pad is disassembled and the timbers are reused on the next drill pad. If the pad location is on a steep slope, some digging will also be necessary to set the base.
- Helipad construction. These are larger pads to accommodate rotor blades of the machine but involve the same work. Trees are cleared to about 175m<sup>2</sup> and a wooden platform (25m<sup>2</sup>) is constructed. Sometimes the pad may be kept standing to be used in following years.
- Trail and corridor construction. ATV trails will be used to support any drill holes in proximity to roads and trails may also be constructed for track-mounted equipment. Trails will have trees and shrubs cleared but vegetative mat will not be removed. Trails are cleared approximately 2m in width.
- Pump pad construction. Small area (25 m<sup>2</sup>) will be cleared beside water source to accommodate the water pump needed to feed the drill rig. All diamond drilling will occur at least 30 meters away from any water body. Biodegradable synthetic lubricants will be used, and catchment sumps will be established near the drill equipment to catch drilling effluent and will be allowed to dry before being covered once the drill is moved. It is unlikely that erosion and sedimentation will occur as the volume of water used to service any given drill is relatively small. Drill sites will be decommissioned throughout the exploration season. Sumps created to collect drilling wastewater will be covered with the source material that was removed to build the sump.

Ryanwood Exploration Inc. is applying for a 10-year mining land use permit and the scope of work may change as the sample results are received and the project develops. Other work included on the property may include:

- **10,000 soil samples** to expand known targets and generate new targets.
- **100-Man Days Prospecting/Geological Mapping** to understand the geological controls on mineralization and start developing a geological deposit model.
- **100 square km Aerial Photogrammetry** to identify areas of previous disturbances, to act as a blueprint for planning and 3D modeling, and to use as a baseline to measure work progress and ecological impacts on the project.
- **500 Line-km Airborne Geophysics** to develop a geophysical model of the property and incorporate this into the geological deposit model on known mineralization. Extrapolating from here may lead to new discoveries.
- **15-20 Resistivity/IP Profiles** to groundtruth the airborne geophysics and interrogate the geological structure of known mineralization.
- **1000 GT Probe samples** to test surface trace of gold mineralization and further refine the deposit model.
- **100 GT RAB Drill Holes** to determine the three-dimensional size and grade of the gold mineralization, and further refine the deposit model.

In addition, Aerial photos will be taken with a UAV Drone, the duration of the flights can be from 30 to 60 minutes before the batteries require recharging. The maximum amount of time a drone will be used daily is 8 hours, from 9:00 to 17:00, taking into consideration drill crew shift changes when other aircrafts will be operating in the area. The droning operation is likely to occur up to four times per year, dependent on areas Ryanwood Exploration intends to target. If sensitive wildlife habitat is identified the drone will not be flown over that area. The drone operators will be aware of the areas where raptors and migratory birds have been observed and will not fly drones in these areas.

Also, Airborne geophysics will employ the use of a helicopter and/or fixed wing, dependent on the type of geophysical survey. When either aircraft is used for the survey it will operate for a maximum of four hours prior to landing. These surveys will operate between drill rig shift change hours and will only take place during an 8-hour time frame from 9:00 to 17:00. Again, dependent on target areas, these surveys may take place up to four times per year. Ryanwood Exploration will identify wildlife sensitive areas prior to the surveys and will ensure no flights occur over these areas.

It is unlikely that any activity will occur between December 1<sup>st</sup> to March 15<sup>th</sup>. During late winter and early spring, it is possible probing may begin, the anticipated start date would be mid to late March. The sites will be accessed by helicopter to the nearby gravel pit on the Dempster highway. Helicopter support will be required weekly during this time, approximately 12 roundtrip flights from March 15<sup>th</sup> to May 1<sup>st</sup>. No water crossings will be used during this time. All other activities listed in the MLUP will occur between May 1<sup>st</sup> to November 31<sup>st</sup> annually.

Additional work may be done in 2020, and/or the current work plan may be modified to accommodate live results from the exploration program or logistical challenges. Each year, the scope of work will be clearly defined in a preseason report and results will be summarized in a postseason report.

## **Acid Rock Drainage and Metal Leaching**

Ryanwood Exploration is aware that certain exploration activities may cause Acid Rock Drainage and Metal Leaching. Currently there are no models and testing reports for the area. The following prediction, prevention, reduction and controls are in place in regards to effects on soil, vegetation and aquatic resources.

### Prediction

All geologic materials obtained during exploration will be analyzed and described by an onsite geologist. The geologist will record the structure, mineralization and alteration of the lithological units ensuring all possible sources of ARD/ML are identified. The lithological units will be evaluated for acid generation, neutralization potential and exposure time to weathering. It will be noted which sulphide bearing rocks have the potential to cause ARD/ML and which rocks have enough neutralization potential to eliminate ARD/ML. Pre-existing studies from mapping and drill logs in surrounding areas will be referenced.

### Prevention, Reduction and Controls

All exploration activities will be at minimum, greater than 30 meters from any waterway. If acid rock drainage or metal leaching does occur, it is unlikely that it will contaminate water due to the minimum buffer zone in place and additional measures taken to prevent ARD/ML.

The exposure time to weathering of the mineralized rock will be considered, in the case of trenching and sump building, the rock will be immediately reintroduced into its initial environment and topsoil replaced, once the exploration activity is complete. This step will eliminate the time sulphide bearing mineralized rock is exposed to oxygen and weathering processes. An additional measure will be to cover the exposed sulphide bearing mineralized stockpiles with a tarp to limit exposure to environmental conditions and prevent runoff from contaminating surrounding soil, vegetation and waterways.

All drilling core will be stored in a core box and RC/RAB drill cuttings stored in a plastic bag. The core will be stored on racks and the cuttings wooden pallets greater than 30 meters from any waterway. There will be a wooden shelter surrounding the core and cuttings which will prevent exposure to environmental conditions. Any core or cuttings known to contain acid generating properties will be removed from site or have additional protection from weathering.

Prior to road building, all materials will be analyzed and the best path, where minimal amounts of sulphide minerals exist that can cause ARD/ML. Where it allows, most of the roads will be built on the existing vegetative mat, and where possible the ditches will not be excavated down to where sulphide bearing mineralized rock exists, eliminating exposure.

With Ryanwood Exploration's ongoing reclamation and final site decommissioning plans it is expected that little to no ARD/ML will occur from the planned exploration activities. If ARD/ML is encountered there are guidelines in place to limit the damage to the surrounding environment.

In the areas that rainwater and runoff has collected during exploration activities, i.e. road

ditches or trench bases, the pH of the collected water will be tested. If the collected water has dropped below a pH of 6, treatment to the gathered water will ensue. The main form of contaminated water treatment will be the addition of soda ash to raise the pH back to that of the surrounding environment.

If mineralized rock will be exposed for long time periods, i.e. roads during the length of the Mining Land Use Permit, oxidization of material will be continuously monitored and any pooling of water will be tested for pH levels. If ARD/ML is encountered, materials with acid neutralizing capability will be added to the stockpiles.

## **Access**

The Antimony property is located approximately 60 km north-east of Dawson City, Yukon, Canada (Figure 1). The property is contained within map sheets (1:50,000 scale) 116B/08 and 116B/01.

Access to the property is good with the TransNorth Helicopter base located 60 kilometers to the south-west. The road network from Dawson City, including the Klondike and Dempster highways will be used to transport equipment, supplies and personnel to the gravel pit staging area on the Dempster Highway. The 96 kilometers of roads are maintained by the Yukon Government, and can be used year-round. All equipment transported on these highways will be within the design limits.

A helicopter will be based out of the main camp on the property and will transport crews to the drilling location at shift change, which will occur at 7:00 & 19:00 daily. The helicopter will also be utilized during drill mobilization and demobilization or if fuel or supplies are required at the drill. It is anticipated a maximum of four and a minimum of two helicopter flights will be required per day, this will likely result in a minimum of 430 and maximum of 700 round trip flights per year. The helicopter will also be used to transport crews and supplies from the Gravel pit staging area to the property which will approximately add up to 180 flights annually.

The helicopter pilot will follow a direct path to each site unless the flight path is intersected by important wildlife habitat or over First Nation settlement land, in this case the pilot will modify the flight paths.

RyanWood Exploration is aware of the settlement land parcels in the Antimony area. Special consideration will be given to TH 13R-41B, TH S-144 B1, TH S-207 B1/D, TH S-25B1, and TH S-143B1 as this settlement land is within the vicinity of the proposed project. There will be minimum buffer zones, 30 m, enforced near settlement land where only low impact exploration activity will occur, this will include soil sampling, geophysical surveys, geological mapping, and prospecting. This type of exploration will not contribute noise, dust, odors or changes to the landscape. A 200 m buffer zone will be set up by settlement land for higher impact exploration methods such as drilling, trenching, airborne geophysical surveys, and road building. With this set-back distance noise, dust and odors will not affect the surrounding First Nation communities.

Flying will be restricted over all settlement land, there will only be flights over the land if there is an emergency or to avoid areas where important wildlife has been discovered.

Ryanwood Exploration understands the importance of all lands and water to First Nation communities. We are aware that higher impact exploration activities may have negative effects on wildlife and the land. Ryanwood Exploration has implemented a Wildlife Management Plan and Reclamation Plan to reduce and/or eliminate harm to wildlife and their habitats.

If roads and trails are used and/or developed no new fords will be established on the property. Currently there are four naturally occurring fords on the property and seven fords just outside the claim block that may be used during exploration (Figure 6). If new fords will be constructed an amendment will be made and Ryanwood Exploration will apply for a water license. No alteration to the bed or banks will occur and no structures will be built to cross the creeks. All fords used will be in the narrowest part of the creek with no steep slopes encountered. Additional prevention includes limiting the use to only twice per field season. Prior to the use of a ford the DFO will be contacted to ensure no sensitive fish habitat is present, if there is sensitive habitat the crossing will not be used. In the area of the ford crossing all vegetation will remain in-tact, this will prevent creek bank erosion. One control will be the use of geotextile fabric, added to the crossing to prevent additional sedimentation. Other steps taken to reduce sedimentation will include determining the grain size of the crossing, crossings will not be used if the majority of the area has finer grained sediments, areas will only be used if boulders and cobbles exist. All employees will be instructed to cross all creeks at right angles. The area will be monitored for bank erosion, if erosion is observed the crossing will no longer be used and the site will be reclaimed.

## VEHICLES AND EQUIPMENT

There will be a variety of different vehicles and equipment in use throughout the project. There will be standard ¼ ton to 1-ton pick-up trucks used to transport people, equipment and supplies to and from Dawson City on the pre-existing highways. The supplies or people will then be flown in to the targets from the staging area located in a gravel pit on the Dempster Highway.

ATVs and 4x4 side-by-sides are used mainly to transport people to and from work-sites, and to do chores around camp. If trails are built into some worksites or a second camp, these would be used on the trails as well. There may be up to 5 of these based on the property. They will be transported to the claims on trailers along the access roads from Dawson City, then flown in from the staging area.

This project will be air supported by helicopters. This is contracted out to aviation companies, so the exact model of helicopter may vary. Typically, we use ASTAR and Bell 206 Jet Ranger helicopters. Helicopters will be used to transport drills, survey equipment, supplies, fuel, and crews from camps and worksites as needed. The helicopter may be based either in the main camp or Dawson City. Helicopters will be used to transport crews, equipment, supplies and waste between the staging area and Dawson City.

The GT Probe is a low impact track mounted bedrock interface sampler designed to replace intrusive trenching methods typically practiced in the region. The spec for the GT Probe are located in Figure 7.

The GT RAB and RC drills are both mounted on low impact rubber tracks. The advantage of these drills are many: they do not require water so can work year round with fewer resources and disturbances, they are maneuverable so can travel from drill hole to drill hole on small trails without needing additional helicopter support, and they do not require drill pads as they are already mounted. The specs for the RAB drill are in Figure 8, and the RC drill has the same specs as the only difference is the hammer and the drill rods. RC and RAB drilling do not require water. Rock fragments and dust particles are forced from the drill hole using compressed air. Depending on the quantity of sample required, the sampler will collect as much material as needed and the remainder will be spread out in a thin layer on the ground where it will break down to soil over time and promote revegetation.

The heli-portable diamond drill will be contracted to define mineralized zones if initial exploration results are favorable. The drill will be typical for the region, weighing approximately 3000kg when fully assembled. Most support for the diamond drilling is expected to be done by helicopter, but if a large discovery is found, and road and trail building is warranted, this may be done with ATVs using newly built trails.

### **Water Use and Sump Construction/Decommissioning for Exploration**

Diamond drilling is the only exploration activity requiring water use, the volume of water required is estimated to be 50 m<sup>3</sup> per hole, these holes are usually completed in a 12-hour shift. If two drills are running concurrently on the property, the total daily amount of water used would be ~200 m<sup>3</sup>. The source of water will be a nearby creek close to the targets with suction hoses running along cut lines to support the drill.

All water intakes will be fitted with appropriate fish screens with openings no greater than 2.54 mm, as required by the DFO. Water intake is estimated to be less than 125 liters/second. The water intakes will be 30 cm above the bottom of the watercourse to prevent entrainment of sediment, juvenile fish and eggs, and other organisms. These intakes will be monitored regularly to ensure functionality and that no fish have become entrapped in the mechanism. Water banks will also be monitored to ensure no bank slumping or changes to the stream channel have occurred. Erosion control measures will be implemented such as covering stockpiles and revegetation plans completed as soon as the exploration is complete. No alteration of the creek banks will occur and any sediment laden runoff will be diverted away from the natural watercourse. Invasive aquatic or terrestrial plants will not be introduced into any waterway or land, this will be done through thorough cleaning of machinery.

The drilling operation will only use water-based environmentally friendly drilling fluid. With the use water-based drilling fluid there is little to no toxicity. The drilling operation will employ two sumps, the first sump is where the drill cuttings will settle out from the drilling fluid and the second sump will contain the drilling fluid that will be recirculated back to the drill. After the drilling is complete and no additional circulation is required, the pH of fluids in the sumps will be tested, as well with the pH of the water source. Drilling fluid is considered to be acidic, the form of treatment for the fluid will include the use of

soda ash, an alkalinity agent, which will raise the pH of the fluid in the sumps. Once the pH is the same as the original water source the sumps will be backfilled with the overburden pile from the initial digging of the sumps.

Sumps will be dug downhill from the drill pads to collect cuttings. The soil in the walls of the sump will act as a natural filter to impound the cuttings while allowing water to drain away. Care will be taken to ensure that water does not erode channels into the sump walls.

The sumps will be fenced off with galvanized steel woven wire and wooden posts (bucked fallen trees) spaced at 5 meters to prevent wildlife entry. There will be access and egress gates placed at either end of the fence. In the event wildlife does enter the area, there will be a one-way exit gate for escape. Regular maintenance and monitoring of the fenced sumps will occur up until the decommissioning of the sump.

Please see the attached Reclamation Plan for further information regarding reclamation measures for all areas disturbed during exploration.

## **Camp Facilities**

Number of camps: Up to two camps may be used.

Max number of persons in camp at a time: Up to 30.

Number of person-days/camp (persons x days): Up to 4,500 annually.

An Environmental Health Services Work Camp Assessment has been submitted and provided, please see attachment.

The camps will be located near the exploration targets (Figure 2). The seasonal field camps could consist of up to 15 wall tents and two larger Weather Haven type kitchen/office tents. Some or all tents will have frames and floors. Wooden outhouses and possibly a 2 m by 2 m wooden shed for an electrical generator. Use of camps would be seasonal (May 1 to November 30). The duration of the camps would depend upon exploration results, but most materials will be removed at the end of each exploration season. Any durable camp equipment that is to winter on site will be dis-assembled and stored in neat piles on or under the wooden platforms. All materials (including wood) will be removed before the land use approval expires. Figures 9 and 10 show the camp set up and kitchen set-up, respectively.

Water for camp consumption will come from a tributary of the North Klondike River or a tributary of Antimony Creek and will be treated using a commercially manufactured system integrating particle filters and ultraviolet exposure. Since the camps will remain 30 meters from any water course the water will be transported to the camp via ATV. If water cannot be sourced on site, Dawson City municipal water will be shipped to camp. The water will be stored in a wall tent behind the Weather Haven Kitchen tent and will remain 55 m from all sumps. Please see attached camp set up drawing.

The volume of water to support the camps is estimated to be 3.6 m<sup>3</sup> per camp per day, which includes drinking water, showers, cooking and dishes. Water intake is estimated to be less than 125 liters/second. All water intakes will be fitted with appropriate fish screens with openings no greater than 2.54 mm, as required by the DFO. The water intakes will be 30 cm above the bottom of the watercourse to prevent entrainment of

sediment, juvenile fish and eggs, and other organisms. These intakes will be monitored regularly to ensure functionality and that no fish have become entrapped in the mechanism. Water banks will also be monitored to ensure no bank slumping or changes to the stream channel have occurred. Erosion control measures will be implemented such as covering stockpiles and revegetation plans completed as soon as the exploration is complete. No alteration of the creek banks will occur and any sediment laden runoff will be diverted away from the natural watercourse. Invasive aquatic or terrestrial plants will not be introduced into any waterway or land, this will be done through thorough cleaning of machinery.

## **Waste Management**

All liquid kitchen waste will be deposited in a sump/greywater barrel system at least 30 m from any waterway. All solid camp waste will be stored in an animal-proof container and will be incinerated to ash daily. Non-flammable residue will be compacted and taken out for disposal at the municipal dump in Dawson City. Liquid waste will be piped into a covered sump which will be backfilled at the end of each exploration season. Electrified fences will be installed around the kitchen sump and incineration site. Air horns and bear spray will also be at hand as further bear deterrents. Human waste will be handled with privies dug at least 30 m from any waterway.

Kitchen waste and flammable non-special wastes are expected to total about 200 kg/week but, through incineration on-site this will be reduced to about 50 kg/week. Liquid special waste (waste oil and antifreeze) will average less than 10 liters/week. Lead-acid batteries and other solid special waste should only be generated infrequently and in small quantities (0-20 kg/week). Industrial waste (such as worn drill rods and broken metal parts from equipment) could range from a few kilograms to a few hundred kilograms per week. A permit will be obtained from Environment Yukon in regard to disposal of special waste products. All special waste and solid waste items will be shipped to Dawson City's Quigley landfill or appropriately regulated processing facility.

The greywater barrel system will be utilized to dispose of all greywater. A 205 L barrel with a tight-fitting lid will be used to filter the greywater. At the top of the barrel a non-woven geotextile fabric will be used to trap particles > 1 mm in size. The filtering units, from top to bottom, will consist of layers of 450 mm of coarse gravel, 300 mm of sand and gravel and 300 mm of sand followed by non-woven geotextile fabric and lastly 300 mm of sand and gravel. At the bottom of the barrel there will be six to ten 25 mm holes.

The greywater disposal area will be a minimum of 30 meters from any surface water. Thawed soils will be located beneath the barrel systems, thus the soil will be able to accept the effluent. There may be up to four barrels in a camp and a structure with a roof will be built around the barrel systems in order to protect from rain and snow. An electrified fence will be located around the barrels to deter wildlife. The top filter will be cleaned regularly, and all solids will be incinerated. As an added measure, low-phosphate dish detergents will be used in camps.

The specifications of our on-site incinerator are as follows:

- ¼" Plate Steel Construction
- Stainless Steel Grate Construction
- 2 ¼" Fire Brick Lining

- 8" Chimney Opening - 48" High Stack – supplied
- Beckett Industrial Burner - requires 7.1 amps maximum power draw
- Forced Air Injection System – for burn efficiency & temperature
- Top Chamber – door measures 24' x 24" for loading
- Bottom Chamber – door measures 16" x 26" for combustion & clean out
- Upper Burn Chamber – 30" diameter
- reinforced Upper & Lower Chamber Doors
- Height – 96"
- Footprint - 36" x 36" / Model With skid & tank – 36" x 6 ½ ft
- Weight - 880 lb / Model with skid & tank -1000 lb
- Screen Safety - guards top of unit
- Fuel Type: Diesel -- No. 1 Stove Oil, No. 2 oil or Furnace Oil
- Max/Min Fuel Consumption – 1 ¼ to 1 ½ US Gal/Hr
- Burn temperature - 175,000 to 420,000 BTU & up to 1800 degree F
- High temperature black paint
- Auto fuel shut off after one hour
- 75 lb waste can be burned in less than 10 minutes

### **Fuel Storage and Handling**

All petroleum products will be stored at least 50 m from any watercourse. The quantity of fuel provided in Part G of the MLU Application is the maximum amount of fuel anticipated to be at the project site at one time. As fuel is used, it may be replenished to the stated quantities as required. The total quantities to be used over the duration of the ten-year period are dependent upon each year's exploration success and continuing level of activity. The proposed main camp has a bermed and lined fuel storage site (Figure 10). Additional lined berms will be built, if more than 15 drums are stored elsewhere on the property. All full or partial drums of fuel that are cached on site between exploration seasons will be stored in lined and bermed storage sites. Those sites will be covered in winter months. Empty drums will be removed from site on an ongoing basis to ensure no backlog of drums accumulate.

### **Site Decommissioning**

All related worksites on the property will be decommissioned upon completion of work or expiry of the Mining Land Use Plan.

### **FINAL RECLAMATION MEASURES**

Where organic matter and vegetative mat have been disturbed during construction of a camp site or drill site, the organic material will be set aside and later spread across the site when it is decommissioned. If a drill site is built on a slope, its upper wall will be collapsed to bring the slope close to its original grade once the drill site is no longer needed. Only locally derived rock and soil will be used to build drill sites. Any brush that was cut will be scattered atop the drill site to promote revegetation and minimize potential for erosion. All solid waste, drums of fuel, equipment and camp gear will be removed from the project area when it is no longer needed, and all materials will be removed before expiry of the land use approval. Wood used for camp construction will either be burned in an open area, when it is safe to do so, or will be removed from the project area. Please see the attached detailed Reclamation Plan.

Access roads will have trenches dug across the road at strategic locations to block future traffic and allow nature to reclaim the roadways.

## FUEL AND WASTE MANAGEMENT

All full, partial and empty drums will be removed prior to expiry of the land use approval. Storage sites will be thoroughly cleaned and if any minor spillage has occurred, high nitrogen fertilizer or some other product recommended by Yukon Environmental Programs Branch will be mixed with the soil to promote fuel breakdown. Waste oil will be removed from the site in specially marked drums and taken to an approved disposal site. An application will be filed with Yukon Environmental Programs Branch regarding special wastes.

Other waste materials will be taken out or burned depending on the nature of the material. Ashy residue and non-combustible material will be taken to the municipal dump in Dawson City or recycling center, as appropriate. Sewage sumps and privy pits will be back filled. Special wastes, such as batteries, will be segregated and taken to an approved disposal site, as specified by environmental regulations.

## Community Well Being

Ryanwood Exploration is aware that the presence of 60 people during rotation changes may result in social impacts to the community. Listed are factors that may assist in determining the socio-economic effects of the project:

- The anticipated ratio of male to female employees is expected to be 1:5. Women constitute a small portion of students and graduates in the science, technology, engineering and mathematics programs, approximately 25%, which are the types of employees that are targeted for hiring. Drilling encompasses a majority of the employment opportunities, worldwide this profession is male dominated, with little to no applications coming from women. GroundTruth Exploration Inc. is an equal opportunity employer and most, if not all of the women that apply are hired.
- The anticipated ratio of First Nation to Non-First Nation hires is expected to be 1:5, as well. GroundTruth Exploration Inc. is an equal opportunity employer and most, if not all First Nations that apply are hired.
- The work time off ratio is 14:5, meaning all employees work 28 consecutive days with 10 days off.
- GroundTruth attempts to hire locally, most of the residents in Dawson have full time employment. The majority of the exploration work is seasonal, thus the ratio of Dawson employees to those coming from other communities and areas outside the territory and country is 1:10. Employees come from all over the country including British Columbia, Manitoba, Saskatchewan, Ontario, New Brunswick, Nova Scotia, Quebec, North West Territories, and Nunavut. People are also employed from other countries, currently GroundTruth has employees from Germany, New Zealand and Lithuania. People are hired from all surrounding communities, including, but not limited to Old Crow, Mayo, Whitehorse, Haines Junction, Watson Lake, and Carmacks. All employees will have paid flights from their place of residence to Dawson City.
- Most of the staff will not be expected to remain in Dawson during their days off, they will have paid flights to their original place of residence. The employees working on the Shanghai project will be transported back to Dawson City to catch their commercial

flights by helicopter to the Mayo Airport, then fixed-wing flights or by the road network to Dawson City. The employees will likely overnight in Dawson City in GroundTruth's accommodations or one of the hotels in Dawson City prior to catching their commercial flights.

- Some employees choose to stay in Dawson City during their days off to see the various tourist attractions available. Other employees enjoy camping, hunting, fishing and sightseeing that the Yukon has to offer and choose to stay in the surrounding area on their days off.

### **Workplace Health and Safety**

Policies are in place to support employees to reduce, control and/or eliminate effects to worker health and safety. Please see the attached Health, Safety and Environmental Policy, Personal Protective Equipment Policy, Respectful Workplace Policy, Investigation Policy, Inspection Policy, Drug & Alcohol Policy and Ground Transportation Safety Standard Work Procedure.

Another factor that is considered is that men and women do not share the same accommodations. There will be separate sleeping tents for women and separate sleeping tents for men.

## PART 6 – DESCRIPTION OF EXISTING ENVIRONMENTAL AND SOCIO-ECONOMIC CONDITIONS

Describe the environmental conditions in and around the project area including land, water, air, vegetation, wildlife, fish etc.

### **Climate**

The Yukon territory has a sub-arctic continental climate with a summer mean of 10°C and a winter mean of -23°C with temperatures reaching as high as 35°C in the summer and as low as minus 55°C in the winter. Dawson City, the nearest access point, has a daily average above 0°C for 180 days per year. Mean annual precipitation ranges from 250 to 500 mm, varying with elevation. From Mid-July to the beginning of August it was light for much of the day with a couple hours of dark in the early morning.

### **Watershed**

The property is located entirely in the Klondike Watershed. Several tributaries of the North Klondike River flow north-west into the North Klondike River. Antimony Creek flows south and west south-west into the North Klondike River.

### **Vegetation**

The area is well forested with areas of Poplar and White Spruce. Vegetative cover consists of poplar, white spruce, willow and alder, and shrubs of blueberry, Labrador tea and willow. Moss and other plants form a thick carpet.

### **Wildlife**

Wildlife in the area, which is typical of the Boreal Forest includes moose, caribou, lynx, wolves, black bears, fox, martens and other small mammals and birds. The wildlife in this region supports many activities such as hunting, trapping and viewing. Wildlife Key Areas overlapping the property include Moose, Beaver, Golden Eagle, and Woodland Caribou. Thinhorn Sheep have a WKA west of the property. Northern Mountain Woodland Caribou have been listed as a species of special concern by COSEWIC. Please see the attached Wildlife Management Plan for information regarding practices to sustain wildlife and their habitat.

Describe the socio-economic conditions in the region and communities surrounding the proposed project and the extent to which people use, work, recreate or travel through the project area.

## **Background**

The Antimony Project is located in a very important region for mineral exploration. This results in the development of jobs and positions in the industry, and a number of people directly employed from the Pelly, Dawson and Mayo areas. In addition to direct jobs generated as a result of increased activity, there are a number of businesses that support the mining and exploration industry in the region that have benefited. In addition to mineral exploration, the project area is used extensively by trappers, hunters, outfitters and outdoor enthusiasts. All major river systems are used by First Nations and local residents for subsistence, hunting and fishing purposes.

## **Local First Nations and Community**

The Antimony property falls within the Traditional Territory of the Na-cho Nyäk Dun First Nation (NNDFN) and the Tr'ondëk Hwëch'in (THFN). In addition to the NNDFN and THFN, the greater community of Dawson City has the most potential to be influenced directly from the activities related to the exploration program. Having been formerly affected by development in their respective areas, the NNDFN, THFN and Dawson communities have become acutely aware of short and long-term environmental effects associated with mining activities. Ryanwood Exploration intends to continue this consultation philosophy with further discussions, which will occur frequently throughout the process to ensure that this project does not adversely affect surrounding local and First Nation lands, culture and people.

## **Tourism / Aesthetics**

The immediate project area is not of particular interest to tourists and is not likely to be frequented except by those exploring the Dempster Highway or the north Klondike River. The Exploration activities will not take place in sight of any tourists.

## **Outfitting Concessions**

Outfitting concessions have legal boundaries within which the owner has the right to provide hunting benefits to non-residents exclusively. Twenty outfitting concessions are held within the Yukon, and outfitting concession 3 overlaps with the proposed project.

## **Trapping Concessions**

The Yukon Territory contains 333 registered trapping concessions and 18 group trapping concessions, most of which are held either by a collective group of family or First Nation members. These concessions are formed through legal boundaries which provide the holder with exclusives rights to the trapping of furbearing animals. The proposed project is located within the defined boundaries of Trapping Concessions 0, 20, 21 and three partial claims located in 29. All exploration activities (May 1 – November 30) will occur outside of typical trapping season (See Figure 4 for location of Trapping and Outfitting Concessions in the area).

**PART 7 – IDENTIFICATION OF POTENTIAL ENVIRONMENTAL AND SOCIO-ECONOMIC EFFECTS AND PROPOSED MITIGATION MEASURES**

This is a key section in which potential positive and adverse environmental and socio-economic effects of the project are identified and discussed. For each potential adverse effect list any proposed mitigation measures to minimize or avoid that effect as well as the significance of any residual effects. Add sections as required.

Effect: Drilling activities

Mitigation: Drilling activities have the potential to release contaminants in the way of drilling wastes and bio-degradable synthetic lubricants. To prevent this, all diamond drilling will occur at least 30 meters away from any water body. Bio-degradable synthetic lubricants will be used, and sumps will be established near the drill equipment to catch drilling effluent and will be allowed to dry before being covered once the drill is moved.

Significance: Minimal – mitigation measures will prevent the discharge of wastes into the receiving environment.

Effect: Potential fuel spills from transportation, storage and handling

Mitigation: Fuel will be transported in company vehicles or helicopter as needed to the camp property. Fuel will be transported in bulk along already existing access routes as described above. All diesel, Jet B and gasoline will be in 45 gallon drums, propane will be in 20 or 100 lb bottles, and oil will be in 20 L plastic pails. Wobble pumps and/or small electric pumps will be used to transfer fuel and spill kits will be located at each fueling station at all times. All personnel tasked with transportation of fuels will be TDG and WHIMS certified. All fuel transfer will occur in a safe manner, at least 30 meters from any water course or body. Any contamination from fuel will be cleaned up according to the spill response plan. Spill kits will be located on vehicles transporting fuels, at drill sites, in the camp area, and at each fueling station at all times. Camp managers will also be aware of and knowledgeable of the spill response plan and procedures contained therein.

Significance: Minimal – mitigation measures will help prevent significant adverse effects to the environment. Shawn Ryan will be prepared to respond appropriately to any spill event, following the Fuel Spill Contingency Plan.

**Effect:** Potential disturbance to trapping and hunting activities.

**Mitigation:** Exploration activities have the potential to affect hunting and trapping activities in the area. It is the intent of Ryanwood Exploration to ensure all activities do not interfere with local trapping or hunting activities by ensuring open and transparent dialogue is maintained between Ryanwood Exploration and local users, and adequate mitigative measures are in place to prevent disturbance during exploration activities, typically between May 1 and November 30 of any given year. This falls outside of the normal trapping season. Informal discussions have occurred with those area trappers expressing interest in the Project activities in the past and no concerns were identified. Pro-active engagement by Ryanwood Exploration will occur as project activities increase in scope, ensuring all trappers with overlapping interests are kept apprised of planned project activities and have opportunity for input and early identification of issues of concern. Ryanwood Exploration will ensure that structures that may be established in the area to support trapping activities (eg. cabins, trap-line routes) are not disturbed. Exploration in the area will occur during the snow-free months outside of the trapping season.

**Significance:** Mitigation measures and timing of activities will prevent significant adverse effects to trapping activities and the environment.

**Effect:** Potential disturbance to heritage resources / archaeological sites

**Mitigation:** All areas of resource potential will be identified prior to any exploration activities. All designated sites that have been previously identified and considered a heritage resource or archaeological site will be left undisturbed by exploration activities. Upon discovery of unknown heritage resources, Ryanwood Exploration shall contact the NNDFN and THFN Heritage Departments, as well as the Yukon Government – Department of Tourism (Heritage) – and shall establish a 30-meter buffer around the resource. Work shall be stopped and not permitted within that established 30-meter buffer, until NNDFN, THFN and/or YTG have provided clearance to proceed. Regardless, any heritage / archaeological sites encountered will not be disturbed by construction activities. Discussion with First Nations will be of paramount importance during the operations of the exploration program. This will help to identify important or critical heritage and/or cultural resources. Ryanwood Exploration will then discuss management strategies with First Nations to deal with these resources.

**Significance:** Minimal - Mitigation measures will prevent significant adverse effects to heritage and archaeological sites.

**Effect:** Potential to affect exploration activities in the area, with respect to avoidance of air traffic conflicts and/or disturbance to wildlife.

**Mitigation:** Ryanwood Exploration will contact other holders of Land Use Permits in the vicinity of the camp to discuss frequency of flights and activities that can be expected in the area over the exploration season. Much of the air traffic in the area will consist of helicopter support to and from drill sites. The company will ensure that flight operators in the area are aware of operations and that a helicopter will be operating in the area on a regular basis. Operation of aircraft is expensive and all flights will be well-planned in order to minimize the amount of flights required to support drilling activities. This in turn will minimize disturbance to wildlife. Helicopter pilots will be expected to watch for wildlife and adjust their flight path in order to minimize disturbance to them. Areas noted to be attractive to wildlife will be avoided to the extent possible through adjustment of flight paths. A wildlife biologist/technician will be deployed to the site early in the season to conduct a reconnaissance survey to determine where, if any, sensitive wildlife habitat exists in the project areas. If sensitive wildlife habitat is identified in the area a strategy to avoid disturbance to the habitat and its wildlife inhabitants will be developed and implemented expeditiously. Additionally, all pilots will be asked to adhere to the Yukon Government guideline, "Flying in Sheep Country" and "Flying in Caribou Country" to prevent any potential disturbance to sheep and caribou and their habitat. All exploration activities will occur during spring, summer and early fall. No winter activities are planned for the area. To adequately determine habitat quality and wildlife distribution, Ryanwood Exploration will undertake a wildlife study in the areas proposed for drilling activity. This will ensure empirical data is available upon which management decisions can be made to ensure habitat and wildlife protection. That being said, the camp site and drilling locations are generally well away from the cliffs where Golden Eagles and Peregrine Falcons have been observed. We will ensure that all pilots operating in the area are aware that these raptors may be nesting on the cliffs and will make efforts to minimize aircraft flights over these areas. Any drilling in these areas will be deferred until late summer/early fall when it is certain that any potential eaglets have fledged.

**Significance:** Minimal – mitigation measures will help prevent significant adverse effects to wildlife resources in the area.

**Effect:** Potential to affect placer claim holders in the area.

**Mitigation:** The planned drilling activity will occur on higher ground and at a considerable distance from any placer operation. However, should any work be planned for an area where a conflict might arise, Ryanwood Exploration will contact the placer miner to discuss, and if necessary, resolve any potential conflicts.

**Significance:** Minimal – mitigation measures will help prevent significant adverse effects to local placer operators.

**Effect:** It is anticipated that this project will not have any additional impact on wildlife and wildlife habitat as it currently exists. However, some minimal effects could come from direct contact with wildlife. The following mitigations will be taken to prevent this.

**Mitigation:** Ryanwood Exploration will enforce the following measures to all employees:

1. a wildlife resistant metal containment system for petroleum and kitchen wastes;
2. a “no hunting” policy. The policy will be strictly enforced for company and contractors' employees while working within the project area;
3. a “no firearms” policy. Firearms will be banned from company and contractor controlled operations except as authorized for protection of employee’s safety while in the field;
4. a “no wildlife harassment” policy. This policy will encompass no wildlife feeding, employee wildlife education, and wildlife avoidance. The policy will be strictly enforced for company and contractors' employees while working within the project area, and include provisions for:
  - prohibiting the personal use by employees of non-company or contractor all terrain vehicles (snowmobiles) and the after-hour use of company or contractor recreational vehicles for non-company activity within the project area;
  - ensuring that employees comply with Government of Yukon policy with respect to bear management and bear education programs; and
  - enforcing proper waste management at camp and work sites; and
5. the camp and refuse holding containers will be contained within the boundaries of an electric fence to prevent bears from accessing food and/or garbage.

If wildlife becomes a nuisance to the daily activities during the operation of camp or during exploration, or if wildlife exhibits curious or aggressive behavior towards personnel, camp management will immediately contact the Dawson District Conservation Officer (CO) immediately. Decisions regarding the appropriate action should be left up to the CO. Options include deterrence, removal of attractants, and/or relocation or destruction of curious or aggressive wildlife, depending on the circumstances. Additionally, Ryanwood Exploration will notify all trappers and NNDFN of proposed activities and their timing. A detailed wildlife log will be maintained by managers of the exploration activities. Ryanwood Exploration will consult with Land and Resources Department of the THFN and NNDFN prior to accessing a new area for exploration purposes. Any concerns with respect to wildlife or habitat in addition to the ones already identified will be addressed.

**Significance:** Minimal – mitigation measures will help prevent significant adverse effects to wildlife resources in the area. Please see Wildlife Management Plan.

**Effect:** Potential to open up new wilderness areas to vehicular traffic.

**Mitigation:** To mitigate any additional impacts on wildlife, Ryanwood Exploration will fall trees and disperse logs along the length of any new trails and roads after they are used. This practice will not be conducted on already existing trail or road systems, as they are likely deemed public roads.

**Significance:** Minimal - mitigation measures will help prevent significant adverse effects.

**Effect:** Clearings and cut lines

**Mitigation:** Up to a maximum of 25 clearings per claim will be established over the course of the project. Clearings will be kept to a minimum size 175 m<sup>2</sup> where trees and brush will only be removed, and 100 m<sup>2</sup> for areas where vegetative mat will be removed. All timber will be cut and stockpiled. Vegetative mat will be removed only where necessary, and if it is removed it will be stockpiled and used for reclamation purposes. Cut lines will be 2 meters in width and occur over length of approximately 10,000 m over the length of the project.

**Significance:** None – Natural revegetation of disturbed areas is anticipated to be rapid. Also see detailed Reclamation Plan for additional measures.

## **PART 8 – ADDITIONAL INFORMATION**

Provide information respecting any matter a decision body has asked the Designated Office to take into consideration under paragraph 42(1)(i) of the Act.

Additional information or documentation specific to the activity being proposed can also be included in this section as it may assist in evaluating your project proposal.

Information could include:

- Applications for authorizations or permits required to undertake the project.
- Record of any public participation and comment. Include details on people and organizations involved, comments and issues raised and any subsequent changes to project planning.

Please see attached accompanying documents and map package.

The information submitted in this Project Proposal is required for the purpose of conducting an evaluation under the *Yukon Environmental and Socio-economic Assessment Act* (YESAA). We are collecting, using and disclosing your personal information under the authority of YESAA for the purpose of conducting assessments. The Yukon Environmental and Socio-economic Assessment Board (the Board) is subject to the federal [Privacy Act](#), under which you have the right to access your personal information and request changes if the information is incorrect.

