

#### **REGISTRATION PURSUANT TO**

#### PART X of THE ENVIRONMENTAL PROTECTION ACT

#### **Environmental Preview Report:**

#### Ming's Bight (Argyle) Gold Mine

Point Rousse Project Baie Verte Peninsula

Newfoundland

ANACONDA MINING INC.

Toronto, Ont.



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## 1. Name of Undertaking

Ming's Bight (Argyle) Gold Mine

- 2. Proponent
  - 2.1.Name of Corporate Body

Anaconda Mining Inc.

2.2.Address

P.O.Box 238 Baie Verte, NL AOK1BO

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#### 2.4. Principle Contact Person

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#### 3. The Undertaking

#### 3.1.Nature of the undertaking

Anaconda Mining Inc. ('Anaconda') has ownership of the Argyle Gold Project (the 'Project'). The Project contains the Argyle deposit, which hosts an indicated resource of 543,000 tonnes ('t') with an average grade of 2.19 grams per tonne of gold ('g/t Au'). In addition to the indicated resource, there is an inferred resource of 517,000 tonnes with an average grade of 1.82 g/t. These values assume a cut-off grade of 0.5 g/t Au. Anaconda intends to develop The Project by means of open pit mining over a two-year period commencing in June 2019. Milling of the Argyle ore is planned to be at Anaconda's Pine Cove Mill on the Ming's Bight Peninsula. Transportation of this ore will be via a network of access roads connecting The Project to the Pine Cove Access road, which leads to the Pine Cove Mill. The haulage route is approximately 6.5 kilometers ('km') long.

## 3.2. Purpose/Rationale/Need for the Undertaking

Prior to 2012, there is no recorded historical exploration related to The Project. A soil survey completed in 2012 by Anaconda represents the first exploration activities in this area. The survey consisted of 228 soil samples and 25 rock samples, collected on 100 metres ('m') spaced lines with sample stations every 25 m. 25 samples of altered/mineralized outcrops were also collected. The samples revealed anomalous gold-in-soil values in the previously unexplored area. Highlights of the soil survey include eight soil samples that assayed greater than 100 ppb (parts per billion) Au, to a maximum of 4880 ppb Au, and float assays of 2180, 9080, and 4880 ppb Au in angular rusty quartz material.

Trenching by Anaconda in 2014 identified gold mineralization associated with quartz veined, pyritized, and strongly altered gabbro. Approximately 750 m of trenching was completed. Channel sampling revealed the presence of gold mineralization associated with the altered gabbro. Four Channel samples were completed in 2015.

An exploration program completed in 2016 by Anaconda was designed to better understand the geology, alteration, and mineralization of the Argyle prospect. The work consisted of diamond drilling, line cutting, ground IP and magnetics, geological mapping, and prospecting. The exploration targeted shallow areas of mineralization outlined in previous trenching, as well as down-dip and along strike of the known areas of mineralization. Approximately 3770 m of drilling was completed over 44 holes. Through drilling and trenching, a zone of hydrothermal alteration and gold mineralization was delineated with a strike length of 600 m and down dip 225 m.

Gold mineralization at The Project is hosted within a 40 m to 50 m thick, gently north dipping east-west striking gabbro sill. The magnetic gabbro contains discreet zones of magnetite destruction associated with zones of hydrothermal alteration and gold mineralization. Gold is intimately associated with pyrite; generally residing on pyrite grain margins and along fractures within pyrite. Fine gold (< 5um) occurs as inclusions within pyrite. Overall the alteration zone is between 5 to 40 m thick. Gold mineralization is associated with 1-5% pyrite.

In 2017, 25 percussion drill holes were completed totalling 491 m to test the near surface mineralogy of The Project. The drilling was conducted with the intention of delineating the geometry and grade of the near surface portion of the deposit, and to provide support for a compliant resource estimate. On January 8, 2018, a Mineral Resource Estimate was announced in accordance with NI 43-101 requirements.

Anaconda's Pine Cove mining operations at the main pit have been completed in March 2018, at which time mining operations began at Stog'er Tight. Stog'er Tight, and two small extensions at Pine Cove Pit operation, will finish in June 2019, at which time the Pine Cove Mill will require additional resources to operate at its existing throughput. Anaconda intends on developing The Project, completing mining activities and processing the material at the Pine Cove Mill to maintain its current throughput.



## 4. Description of the Undertaking

#### 4.1.Geographic Location

Argyle, part of Anaconda's Pointe Rousse Project, is located approximately 500 m southwest of Ming's Bight, on the Baie Verte Peninsula. Ming's Bight is about 26 road kilometres from the town of Baie Verte. The Project can be accessed via a forest access road approximately two kilometers southwest of Ming's Bight, leading from Provincial Route 418. The Baie Verte/Ming's Bight area is serviced by the Deer Lake Airport, located approximately 160 kilometers southwest of Baie Verte. The Baie Verte. The Baie Verte Peninsula is sparsely populated with small towns, the largest of which is the town of Baie Verte, located approximately 26 km from Argyle (by road), with an approximate population of 1400 residents. Predominant industries are small logging and saw mill operations, and mining (including Anaconda's Pine Cove Gold Mine and Rambler Metals and Mining's Ming Copper Mine), with other small commercial and local businesses. The nearest commercial/industrial centers are the Town of Grand Falls-Windsor (200 km) and the City of Corner Brook (230 km).

The location of The Project is shown in Figure 1. See Appendix A for additional drawings outlining the location of The Project relative to the Baie Verte Peninsula.



Figure 1 - Satellite Image of the Argyle Property in Relation to Ming's Bight and Pine Cove



The existing and available information does not indicate that Aboriginal Peoples currently undertake traditional land and resource use activities within or near Argyle. Anaconda is not aware of any traditional Aboriginal fishing or hunting occurring near The Project, as well.

The Qalipu First Nation has no reserve land; it is made up of 66 traditional Mi'kmaq communities, spread out over nine Electoral Wards. The closest Qalipu community to Argyle is Sop's Arm, located approximately 85 kilometers (km) southwest in White Bay, NL. The Miawpukek Band Reserve is located in Conne River (south coast of Newfoundland), 230 km from The Project. Approximately 860 people live on the 36 km<sup>2</sup> reserve. The Miawpukek Band does not currently have established traditional rights outside of the reserve boundaries and Anaconda is not aware of any Aboriginal fishing or hunting occurring near The Project.

The proximity of The Project in relation to various geographical and environmental features is listed in Table 1. Distances are measured from the center of the Argyle East Pit (straight line distance).

Feature Type	Name/Description	Distance from Argyle
Residence	Town of Ming's Bight Resident	480 m
Campground	Flatwater Pond	30 km
Power Line	Utility Power Line	500 m
Provincial Park	Main River Waterway Provincial Park	85 km
Important Bird Area	Bell Island South Coast	85 km
Migratory Bird Sanctuary	Shepherd Island	90 km
National Park	Gros Morne National Park	130 km
Marine Protected Area	Wadham Islands	170 km
Aboriginal Community	Oalinu Mikmag Eirst Nation*	85 km
Federal Reserve Land	Samia lii Miawnukek Reserve	230 km
Provinco		200 km
		100 km
Provincial wilderness Reserve		190 KM
Country	United States of America	1000 km

Table 1 - Proximity of The Project in Relation to Geographical and Environmental Features

Note: Qalipu First Nation is comprised of communities and wards across Newfoundland. The closest community to The Project is Sop's Arm in White Bay, NL.

The Project is located adjacent to the Town of Ming's Bight Water Supply. The water supply consists of three large ponds, which lead to an intake to supply Ming's Bight (the 'Town') with clean, safe drinking water. Adjustments to the boundary of the water supply have been proposed by Water Resources to the Town of Ming's Bight. Anaconda has adjusted several features of The Project to remain outside the existing water supply boundary, as well as the proposed changes. Once the final water supply boundary is determined by Water Resources, any required additional adjustments will be made to ensure that the Project will not impact the water supply. Anaconda has maintained communication with the Town regarding the proposed changes and is committed to ultimately ensuring the availability of clean, safe water for the Town.

The Project is also located within the municipal boundary of the Town, as well as within the municipal planning area for the Town. Anaconda will ensure that all permits are obtained from the Town prior to beginning development and ensure that any development is carried out in accordance with the regulations associated with the "Rural Resource" future land use designation.



The Project is included under Map Staked License Number 025926M (a compilation of two previous map licenses), which includes the Tenacity option (11 claims) and the Froude option (11 claims). The options are shown in Figure 2 and Table 2. The claims are located on NTS map 12H/16 at UTM coordinates 5,537,000N & 568,000E (NAD 1927, Zone 21).



Figure 2 - Mineral Licences for The Project (Point Rousse Project)

Table 2 - Table of Mineral Licences for The Project

License	Holder	No. of Claims	Date Issued	Anniversary Date
025926M	Tenacity Gold Mining Company Ltd.	11	2006/08/24	2021/08/24
025926M	Herb M. Froude	11	2012/04/18	2017/04/18

The Project is located within a small, locally restricted watershed containing several small ponds and streams. The area is relatively high in elevation compared to its surroundings. The proposed ditching network, discussed in Section 4.3.3.1, will prevent surface water from leaving The Project site, and direct it into a series of settlement ponds that



are blasted into the ground. A final settlement pond will discharge water, once it meets required criteria, into a natural channel that drains to the East of the Town of Ming's Bight water supply. The localized watershed drainage map, with regards to the site area, and perimeter ditching network is displayed in Figure 3. The blue arrows represent the drainage paths at various locations around the site.





Figure 3 - Localized Watershed and Drainage Map at The Project



Larger fir and spruce tress cover most of The Project property with outcrop making up <3%. Some of the area has been logged by local residents of the region. Glacial till overburden is generally thin, ranging from 0.1 m to less than five metres thick.

The terrain surrounding the Point Rousse Project site is generally rolling, with gradients over portions of the site ranging up to 22 percent. A steep embankment runs along the eastern edge of the area, with Provincial Route 418 located at the toe of the slope. The surrounding terrain is typical of the Newfoundland upland areas, with relatively dense vegetation and tree cover, interspersed with small ponds and bogs. The bedrock in the area is overlain with a thin layer (0.1 m - 5 m) of unconsolidated material being comprised of peat, loose brown sand and gravel.

At Argyle, moderate to steep slopes rise to a maximum elevation of 165 m, averaging 130 to 150 m above sea level. Ponds and small lakes are present, although sparse. Vegetation consists of mature spruce and fir, largely cutover, with re-growth of alder, birch and young fir. Alders are prevalent in older stripped and wet areas.

The climate of the Baie Verte Peninsula can be described as a northern temperate climate zone. Winter conditions are present from November through late March. This includes sub-zero temperatures and heavy snowfalls. Summer conditions are present from late June through early September. Spring and fall conditions experience both cool temperatures and frequent periods of rain. The average monthly temperatures and precipitation for the area ranging from 1984-2006 can be seen in Figure 4. This data has been collected from the La Scie weather station (Environment Canada, 2018).



Figure 4 - Historical Weather and Climate Data for Baie Verte Peninsula (La Scie Weather Station)

It is Anaconda's understanding that The Project does not require access to, use or occupation of, or the exploration, development, and production of lands and resources currently used for traditional purposes by Aboriginal Peoples.



#### 4.2. Physical Features

#### 4.2.1. Project Site Description

The primary features of The Project will include the open pit mine and stockpile areas for waste rock, ore material, and organics. Other facilities will consist of a temporary office trailer and storage sea-can. All other required facilities are existing and located at the Stog'er Tight and Pine Cove operations, which are also part of the Point Rousse Project. Lighting for the Project will be minimal as operations will not typically be undertaken during night hours (7 p.m. to 6:30 a.m.). Lighting will typically consist of small LED lights restricted to building accesses/egresses. As buildings will be single floor structures, no pilot warning lights will be required. Road access to the site will be by a forest access road off Provincial Route 418, as described in Section 4.1. An upgraded exploration trail (Figure 8) will connect the same forest access road with Stog'er Tight. It is this access (Stog'er Tight to the forest access road) that will be used for transporting ore from The Project to the Pine Cove Mill. It is anticipated approximately 20,000 t of waste rock will be needed for the road access. Waste rock will come from a surface blast at The Project, and work from Argyle towards Stog'er Tight. Figure 5, Figure 6, and Figure 7 show the Argyle area before mining activities (Drone Survey Photograph from 2017), the anticipated site infrastructure layout, and the Argyle Site Plan, respectively. All site infrastructure will be erected and constructed within the boundaries of the Mineral Licences (the buildings shown in Figure 6 are within the boundaries of License #025926M).





Figure 5 - Argyle Area Pre-Mining – Drone Survey Photo (Anaconda 2017)





Figure 6 - Site Infrastructure Layout









## 4.2.2. Existing Biophysical Environment

#### 4.2.2.1 Site Ecology

The Project falls within the Northshore Ecoregion of Newfoundland which characterizes as mostly forest-covered with some barren areas (particularly in coastal localities). In general, black spruce and balsam fir forests are the most prevalent, which form a continuous forest cover except where barrens dominate on the coastal areas. The quality and height of forests in this ecoregion tends to deteriorate towards the coast and with increased wind exposure.

There are several wetlands in the area. However, they are all ground-water fed and are unlikely to support fish habitat, as stated by GEMTEC in the Aquatic Habitat Assessment. Refer to the Wetland and Aquatic Habitat Assessment completed by GEMTEC in Appendix B for a detailed description and mapping of the wetland areas encountered.

The Common Wintergreen, an S2 plant species as per the Atlantic Canada Conservation Data Centre, was identified during field studies. Approximately 5650 Common Wintergreen plants were identified within 100 different patches around the Project during the initial Baseline Studies. As well, a control area was established approximately 900m from the Project that was considered to have a suitable habitat. In this control area, approximately 200 individual plants were identified in several patches. It was recommended by the Wildlife Division that additional botanical surveys be conducted in the area to ensure that the plant was, in fact, regionally abundant and that the development of the Argyle Project would not have significant impacts on the Common Wintergreen population.

GEMTEC conducted the additional botanical surveys to target the Common Wintergreen in July 2018 according to guidelines supplied by the Wildlife Division. GEMTEC noted that after accessing the planning sites for survey, it generally did not take more than a few minutes to locate significant patches containing more than 100 plants in each. These frequent occurrences demonstrate that the Common Wintergreen plant is very common throughout the area. For detailed results on the additional botanical surveys, refer to Appendix C.

The Floating Burred, an S2S3 ranked plant species, was also found during field studies in Wetland 6 (See Environmental Baseline Studies report). A 30 m buffer will be maintained around the wetland to prevent any adverse effects on the species from the Project.

## 4.2.2.2 Wildlife Species & Fish

Big game, furbearers, and a wide range of birds occur in the area and have generally adapted to human activities in the Point Rousse Project area. The principle large mammal species in the area is moose (Alces alces), which is found within Moose Management Area 14 – Baie Verte. Moose densities are reported to be low and harvesting of moose has, at times, been reported to be quite heavy.

Caribou (Rangifer tarandus) are not hunted at present on the Baie Verte Peninsula. The nearest concentration of this species, the Hampden, the Humber, and the Gaff Topsails herds, occur well to the south of this region. Black bears are known to occur in the region. Other mammals such as furbearers and small mammals occur, but there is generally little information available on these species. Beaver (Castor Canadensis) are common in the ponds and streams in the area, although none have been observed at Argyle and there is little evidence to support their presence.

A total of 20 bird species, including 89 individual records, were documented in a Breeding Bird survey conducted by GEMTEC. These species are characteristic of the forest and wetland habitats found within The Project area. No species at risk were recording during the surveys. The detailed results of the Breeding Bird Survey can be found in Appendix B. The abundance of high profile raptor species such as Bald Eagle (Haliaetus leucocephalus) and Osprey



(Pandion haliaetus) is low in the area with insufficient cliff-nesting habitat available; the local forest is unsuitable for nest sites. Management of the Argyle site will include monitoring for migratory birds and will include preventative measures to eliminate the potential for impacts to any potential migratory birds.

As outlined in the Environmental Baseline Studies report completed by GEMTEC, there is little or no viable fish habitat in the Mine Development Area (MDA), therefore the potential for fish to be present is very low.



#### 4.3.Construction

The construction phase of the site development is broken up into the following areas:

- Access road development;
- Site development

All activities with construction and operation will be conducted in compliance with the Occupational Health and Safety Act and its Regulations. All applicable Standard Operating Procedures, protection plans, and plans developed for safe work practices and compliance with the OH&S Act that have been developed at other Point Rousse sites and operations will be used at Argyle. This includes a Respiratory Protection Program and Silica Management Program. The OH&S committee at the Pine Cove site will be used for all of the Point Rousse Projects, and at least one employee and employer representative will be stationed at the Argyle Site.

Construction activities will be coordinated with seasonal constraints in an attempt to avoid periods of heavy precipitation, avoid sensitive periods for wildlife, and stabilize the work site in advance of winter months. Exposed soil areas will be minimized, and the revegetation of disturbed areas, once applicable, will be undertaken to prevent erosion. Exposed areas will be stabilized with riprap, rock, filter fabrics, etc. Additionally, a vegetated buffer zone will be maintained, where appropriate, to protect surface waters. Erosion prevention measures will be implemented prior to disturbance.

Construction activities are anticipated to begin as soon as all permits are obtained from the required governing agencies and divisions. This is expected to be in January 2019. Refer to the Table 12 for the Project Schedule.

#### 4.3.1. Access Road Development

Access to the site will utilize an upgraded exploration road connecting Stog'er Tight to the forest access road that connects to HWY 418. This additional road upgrade will be used for equipment and ore transportation for Argyle, as well as employee access from other Point Rousse sites. Construction of this upgrade is expected to take approximately six weeks and will utilize approximately 20,000 t of waste rock (supplied from Stog'er Tight). Typical construction equipment will consist of excavators, loaders, dozers and rock trucks. The additional access road can be seen in Figure 8. The brown line between Argyle and Stog'er Tight represents the section of the access road that requires construction. This activity is anticipated to begin in January 2019.





Figure 8 - Map Showing the Location of the Proposed Access Road from Stog'er Tight to The Project



## 4.3.2. Site Development

The current proposed Project site area is approximately 500 m wide by 750 m long for a total area of approximately 37.5 hectares (ha). Site preparation will be limited to a minimal amount of cutting, grubbing and leveling, primarily within the boundaries of the open pit and stockpiles. This is anticipated to be an area of approximately 20 hectares. No clearing or tree-cutting will occur during the regional nesting season for migratory birds in the Project area, which occurs between April 15<sup>th</sup> and August 15<sup>th</sup>. The timber in this area consists of mature spruce and fir, largely cutover, with re-growth of alder, birch and young fir. Any mature timbers that are encountered and are salvageable will be salvaged by the contractor whilst cutting is taking place. Waste rock from the mine operation will be suitable for leveling, based on previous mining and blasting experience in the area and use of rock for other site development at Pine Cove and Stog'er Tight. The site development is anticipated to take approximately ten weeks. Upon the completion of site preparation/development, a temporary office trailer and storage sea-can will be brought to the site.

A power supply will be established for The Project. A three-phase power supply for submersible pumps and the office infrastructure will be installed. Submersible pumps will be required for general de-watering and water management. Anaconda is currently in discussion with NL Hydro for developing this service connection plan.

A ditching system will be developed around the Project to collect surface water that is draining away from the area. This ditching system will lead to a series of collection and settlement ponds, where it can be tested before being released to the environment. This is further discussed in Section 4.3.3.1. Any release of water from the site will be in compliance with Mining Metals Effluent Regulations (MMER) guidelines. The water being discharged from The Project will be towards the northeast of the site and will not enter the Town of Ming's Bight's water supply. The discharge of this water to the environment will occur at least 150 m away from the boundary of the Town's water supply. Refer to Section 4.3.3.1 for a detailed description of water management at the Project.

Site Development is anticipated to begin in early 2019 after the road construction is complete from Stog'er Tight to Argyle.

## 4.3.3 Potential Sources of Pollution during Construction

Potential Sources of pollution during the construction stage are outlined in the following sections. Additionally, Anaconda has developed the internal documents *Environmental Protection Plan* and *Emergency Response Plan*. These plans have been generally developed based on the Pine Cove Site, as that has been the only active operational site for Anaconda. These documents will be updated to address any specific construction components involving the Project.

#### 4.3.3.1 Water

During construction and site development at the Project, dust and fine material may have the potential to mobilize into ponds and streams near the road. To mitigate this, sediment-trapping material such as approved filtration fabrics will be used in areas subject to siltation and erosion. Water trucks will be used for dust suppression on the roads and stockpiles. Water for dust suppression on haul roads has proven to be sufficient at other Point Rousse operations.

All mechanical equipment will be inspected regularly to ensure leakage of fuel, hydraulics, oils or other hazardous products does not occur. Spill kits will be on site and available in the case of an emergency.



As required, standard mitigation methods, such as on-site drainage ditch channels, collection sumps and settlement ponds, will be used to control silt and sediment and prevent the release of potential contaminants from The Project site. Any low areas in the ditching system, or collection points, will be equipped with small submersible pumps to ensure that all water is transported to the settlement pond. A 1.0 m deep drainage ditch and collection system is planned for the site that will channel water into a series of collection ponds around site. The collection and settlement ponds will be in-ground facilities (blasted into ground) and will not contain any dam works. It is expected that the collection and settlement ponds will be developed for the submission of the Development Plan but will abide by all sloping and construction requirements to ensure it is a safely operated facility. The channels will be graded and lined with drainage stone/rip rap material to prevent erosion and will prevent surface water leaving the Project site. Additionally, in areas where grading for gravity flow is unachievable, small submersible pump will be installed to transfer water throughout the network to the settlement pond.

Table 3 shows the MMER Final Discharge Point (FDP) requirements for various parameters that are tested in water quality samples. Testing will be conducted until these criteria are met, at which time water may be released into the environment at the approved discharge point (these tests are completed by a third party and will abide by the Accredited Laboratory Policy). Treatment options will be evaluated, if required, depending on the parameters that are not meeting the standards. All water discharged will be in compliance with the Environmental Control Water and Sewage Regulations.

Parameter	Maximum Authorized Monthly Mean	Maximum Authorized Concentration in a Composite Sample	Maximum Authorized Concentration in a Grab Sample
	Concentration		
Arsenic	0.50 mg/L	0.75 mg/L	1.00 mg/L
Copper	0.30 mg/L	0.45 mg/L	0.60 mg/L
Cyanide	1.00 mg/L	1.50 mg/L	2.00 mg/L
Lead	0.20 mg/L	0.30 mg/L	0.40 mg/L
Nickel	0.50 mg/L	0.75 mg/L	1.00 mg/L
Zine	0.50 mg/L	0.75 mg/L	1.00 mg/L
TSS	15.00 mg/L	22.50 mg/L	30.00 mg/L
Radium 226	0.37 Bq/L	0.74 Bq/L	1.11 Bq/L
pH	Allowable Range	5.5 – 9.0 units	
ALT	Toxic pass		

#### Table 3 - FDP Requirement for Discharging Water into the Environment

See Figure 7 and Figure 9 for the proposed location and cross section of the ditching system at the Project. The ditch will be 1 m deep, sloped at 1.5:1, and lined with rock to prevent erosion of the bedding material. The ditch will be dug into competent till prior to lining and graded to drain towards the nearest collection pond. Small submersible pumps will pump the water from the collection ponds to a main collection pond, at which point the water will be tested. Water testing will take place regularly to ensure discharged water is of, at a minimum, sufficient quality. The ditch will run along the perimeter of the site to prevent any surface water from leaving the site uncontrollably.





Figure 9 - Cross Section of Typical Proposed Drainage Ditch

Two options were considered for releasing water into the environment:

- Discharging to the North This option would include a pump and piping network that would transfer water from a large settlement pond north of the Argyle East Pit to the natural overflow stream of Bear Pond (a pond within the Town of Ming's Bight Water Supply). The piping network (approximately 533m of 6" HDPE pipe) would remain on Anaconda's Mineral License, and no released water would enter the Town of Ming's Bight Water Supply. The discharge of the piping system would be at least 150 m from the Water Supply boundary.
- 2. Discharging to the South This option would include a pump and piping network that would transfer water from a large settlement pond located at the south of the Argyle site to a natural stream that runs west to east, south of the Argyle site.

The two options considered for discharging are displayed in Figure 10. The red lines represent the anticipated location of the piping system for each option, and the fuscia line represents a possible adjustment to the Town of Ming's Bight Water Supply boundary, proposed by Water Resources. The blue lines represent the natural stream channels currently existing. The shaded area represents the Town of Ming's Bight Water Supply reservoir. Arrows have been added to display the direction of flow.

Option #1 was chosen based on the level of risk involved in potentially affecting the Town of Ming's Bight. Option #1 involves discharging water into a natural stream channel that will eventually lead into the ocean. Water quality is not anticipated to be an issue as testing must occur and water meet certain guidelines prior to being discharged. The piping network will lead to the outflow of Bear Pond, part of the Ming's Bight water supply. However, as water will be discharged into the outflow stream approximately 50 m from the boundary, no water will enter the Town of



Ming's Bight Water Supply. The water will then follow the outflow path until connecting with the ocean north of Ming's Bight.

Option #2 involved discharging water over a shorter piping network into another natural stream channel. However, the discharged water would have to travel through three road crossings: two of HWY 418 and one service road in the Town of Ming's Bight. The increased water flow may have the potential to affect the crossings, as they would have been designed based on a flow that does not take into account the discharge rate from The Project. As well, the natural stream for Option #2 would travel directly through the Town of Ming's Bight before discharging into the ocean. Although the water would be of suitable quality to be discharged into the environment, it was determined that avoiding the road crossings and not going through the Town is the best course of action. Therefore, the option of discharging to the north of The Project to avoid these potential issues was chosen.





*Figure 10 - Options for Discharging Water into the Environment* 



Initial desktop studies indicate that the latter portion of the natural stream draining from the Bear Pond/Water Supply to the ocean consists of a steep gradient (50%-60%). This occurs over the last 60 m of channel prior to entering the ocean along the shoreline. This gradient over this distance is unsuitable for fish passage, indicating that no fish are likely entering the stream from the ocean. Additionally, visual inspection by Anaconda indicates that there are no fish present. However, further studies will be carried out to conclude that this natural stream is not a fish habitat when completing the Permit to Alter a Body of Water (to discharge water into the stream) and establishing the Final Discharge Point location for discharging water from The Project. If fish habitat is discovered, action will be taken to redirect the discharged water, or provide an alternate habitat.

The release of water will consist of a pump and pipe system that will discharge water onto a boulder/cobble splashpad to reduce the kinetic force of the discharged water and prevent erosion. The discharge point will be at least 150 m away from the Town's water supply boundary. The water will then follow a natural drainage channel into the environment, ultimately reaching the ocean. The natural drainage channel does not enter the Town of Ming's Bight water supply, but rather leads away from the boundary. Discharging of water will be monitored to ensure that the drainage channel is not over-loaded with flow, and to ensure no erosion occurs downstream of the discharge point. If erosion is detected, the discharge will be stopped, and measures will be taken to mitigate the erosion. This may include the placement of rip-rap, reinforcing eroded areas, or re-evaluating the discharge location options.

#### 4.3.3.2 Noise and Vibrations

During the construction phase of the Project, noise will consist of the following activities:

- Overburden removal activities
- Tree Cutting (chainsaw)
- Excavating and Blasting
- Equipment mobilization and road construction
- Transportation

The Project is approximately 500 m from the nearest town (Ming's Bight). A detailed blasting procedure and Best Management Plan (BMP) has been developed for the Project and is attached in Appendix D. This procedure will be made available to residents of the Town. Goldcorp's document titled Hollinger Project: Best Management Plan outlines various protective measures and procedures established for blasting at Goldcorp's Hollinger Mine, an open pit mine immediately adjacent to the downtown core of Timmons, ON. This document was used as a reference to develop the Best Management Plan for blasting at the Project, addressing concerns related to noise and vibrations, dust generation, and flyrock. Consultation with the Town of Ming's Bight will be conducted to ensure there are no issues with the Best Management Plan for construction and operational activities at Argyle prior to activities commencing.

Table 4 shows the anticipated noise levels expected from the anticipated construction and operational activities at a 500 m distance (using the inverse square law for determining noise at various distances). (https://www.fhwa.dot.gov/environment/noise/construction\_noise/handbook/handbook09.cfm)



Equipment/Activity	Noise Levels at source (dBA)	Estimated Noise Levels at 500m (dBA)		
Blasting	94	64		
Chainsaw	84	54		
Dozer	82	52		
Dump Truck	76	46		
Excavator	81	51		
Front End Loader	79	49		
Generator	82	52		
Grader	85	55		
Pickup Truck	75	45		
Pneumatic Tools	85	55		

Table 4 -	Tvpical	Construction	and Operational	Equipment/Activity	Noise Levels
rubic 4	rypicai	construction	una operacionar	Equiprilency (cuvicy	

Blasting activity will result in the highest levels of noise, but for short durations. The blasting perimeter, used as a safe distance perimeter from the location of the blast for personnel at Point Rousse operations, is 500 m from the blast. The perimeter from the location of the blast for equipment at Point Rousse operations is 300 m.

The Construction Noise Handbook (US Department of Transportation) states that at 15 m, blasting will result in a noise generation of 94 dBA. At 500 m, this will result in a noise generation of 64 dBA, using the inverse square law for determining noise levels at various distances. According to the Model Noise Control By-Law guidance document, developed by the Newfoundland and Labrador Department of Environment and Labor in 1997, the maximum noise generation in a rural area between the hours of 7:00 a.m. and 7:00 p.m. is 65 dBA. Therefore, the blasting activities should result in lower noise generation than the maximum levels. All operations at The Project will be between the hours of 6:30 a.m. and 7:00 p.m., with equipment checks and warm up at 6:30 a.m.), meaning no activity should exceed the maximum noise generation levels. Blasting plans and procedures will be created with the aid of the local blasting contractor and will include means to reduce the potential adverse effects of both noise and vibrations. These include proper burden and spacing in blasting designs and the use of an acceptable stemming material. Newfoundland Hard-Rok (blasting contractor) has extensive experience blasting near roads and municipalities. Smaller blasts will be planned early in the Project construction activities to build experience and determine what blasting parameters enable operations without exceeding the noise thresholds.

A portable noise detector (PCE Model MSM 4) was acquired to establish baseline noise data at the Project and in the Town of Ming's Bight. Noise will be recorded at various locations around the perimeter of Argyle, and in the Town of Ming's Bight during operations, as well. These areas will be monitored for noise as construction activities progress (on a monthly basis, as a new construction or operation activities commence, and during blasts) to gather and record information. This will enable Anaconda to track any trending noise data and react to any activities that generate noise approaching the threshold limits. If the threshold limits are exceeded, methods to mitigate the noise will be implemented as per the BMP. This may include altering the operation to direct equipment to a different area



of the site, addressing any equipment maintenance issues, or constructing a sound dampening barrier to deflect the noise. Monitoring will continue until the mitigation methods are successful.

It is anticipated that a pre-blast survey will be completed on all buildings and dwellings within 550 m of the Argyle site (50 m outside of the 500 m blast radius). However, this is subject to change based on recommendations from the blasting contractor and third-party consultants. A portable seismograph (belonging to NFLD Hard-Rok) has been utilized to determine blasting vibrations created by blasting at Stog'er Tight activities. This was done to develop a safe blast design that will limit vibrations to a peak particle velocity of 12.5 mm/s at 500 m. This threshold limit has been obtained from the BMP used at the Hollinger Open Pit in Timmins, Ont. This blast design will be used at the Project as an initial design. A seismograph will also be used for every blast at the Project to determine the vibrations at 500 m near the Town of Ming's Bight. The design will be adjusted until the vibration level threshold is achieved. Blast designs can be adjusted by hole diameter, depth, spacing, stemming material and stemming depth.

Notices regarding safety and contact information will be provided to the residents of Ming's Bight prior to construction and operation activities commencing. Residents can contact Anaconda with any feedback or comments via email, phone, or in a scheduled meeting. For further details regarding the blasting procedures, mitigation methods, and feedback protocols, please refer to the BMP in Appendix D.

#### 4.3.3.3 Air Emissions

All company and contractor vehicles and equipment are required to be in good and safe operating conditions, with vehicle emissions within limits established in Schedule F of the NL Air Pollution Control Regulations, 2004. All diesel heavy equipment will be Tier 4 approved engines.

Air quality tests for metals content are being conducted at the Project and at the Town of Ming's Bight to establish baseline data regarding air quality in these areas prior to construction activities beginning. Anaconda has been in contact with an external consultant to determine appropriate methods of sample collection and data analysis. Sample collection will be based on ASTM D1739-98 (2017) – Standard Test Method for Collection and Measurement of Dustfall. Although the test is based on dustfall, the sample collection method is sufficient for gathering a sample for determining metals content. These samples will be collected at four (4) locations around The Project site (north, east, south, and west). Sampling four locations around the perimeter will provide information on where any particulates are falling outside of the site area, particularly with regards to The Town of Ming's Bight and the Town's Water Supply. As well, samples will be collected in the Town of Ming's Bight. Sample collection will continue on a quarterly basis to capture seasonal changes in weather and environmental conditions, or as a new construction activity commences, to determine if dust is being generated and leaving the site perimeter. Testing of the samples will be completed by a third party (laboratory).

If levels of a particular contaminant are trending towards the maximum allowable limit, methods to mitigate the issue will be implemented. This may include assessing an operating procedure for a particular activity, testing to determine the source of the metals content, or constructing a berm to prevent particulates in the lower levels of the air from leaving the site. Mitigation methods will be implemented until the issue is resolved.

Greenhouse Gases (GHG) may be generated by diesel fuel combustion from heavy equipment (and possible diesel power generation if an emergency arises – power outage), gasoline consumption from light-duty vehicles, and blasting activities utilizing diesel-based blasting agents. These GHG include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O). Using The Climate Registry (TCR) 2016 Default Emission Factors, the total carbon emissions during peak construction and operating conditions at the Project were determined. This was completed using average fuel consumption for heavy equipment and light duty vehicles at Pine Cove operations over the past calendar year. As well, fuel consumption in the form of bulk emulsion for blasting was obtained from the blasting



contractor for Anaconda in 2017 (NFLD Hard-Rok, 2017). Table 5 displays the fuel consumption assumptions for equipment at The Project. Table 6 displays the GHG emissions for The Project.

l able 5 - Anticipated	i Fuel Consur	nption by Equi	pment Type at	t The Project

	Fuel Consu	mption, per day		Total Annual
			Quantity of	Consumption (252
Equipment Type	Diesel (L) Gasoline (L)		Equipment	operating days/year)
Light Duty Vehicle	-	20.6	5	25956
460E JD Haul Truck (ADT)	450	-	5	567000
470GLC JD Excavator	450	-	1	113400
Diesel Generator	-	-	1	500

#### Table 6 - Anticipated GHG Emissions for The Project

		Emissions Factors			Emissions		CO2e Emission		IS		
	Quantity of Fuel	CO2	CH4	N2O	CO2	CH4	N2O	CO2	CH4	N2O	Total
	L	kg/L	g/L	g/L	tonnes	tonnes	tonnes	CO2e tonnes	CO2e tonnes	CO2e tonnes	CO2e tonnes
		Station	nary Comb	ustion (i.e	., boilers, f	urnaces, et	:c.)				
Diesel	0	2.663	0.133	0.400	0	0	0	0	0	0	0
Propane	0	1.510	0.024	0.108	0	0	0	0	0	0	0
			Su	ıbtotal							0
		Elec	tricity Ger	neration (i	.e., diesel g	generators)					
Diesel	500	2.690	0.150	1.100	1.350	0.000	0.001	1.350	0.002	0.164	1.52
			Su	ıbtotal							1.52
	C	n-Site Mol	oile Equip	ment (i.e.,	heavy equ	ıip & light v	ehicles)				
Diesel	680,400	2.690	0.150	0.110	1,830	0.102	0.750	1,830	2.552	223.500	2,056
Gasoline	25,956	2.316	2.700	0.050	60	0.070	0.001	60	1.752	0.387	62
Jet A1		2.342	2.200	0.230	-	-	-	-	-	-	-
			Su	ıbtotal							2,119
			Min	ing Explos	ives/Agent	s					
Mining Explosives	-	-	-	-	-	-	-	-	-	-	-
Fuel for Fossil Based Explosives	9,353	-	-	-	19.97	-	-	19.97	-	-	19.97
			Su	ibtotal							19.97
	716,209								Total Tonnes	of C02e>	2,140

The total annual attributable tonnes of CO<sub>2</sub>e produced for the Project is anticipated to be approximately 2140. GHG emissions attributable to The Project are below the reporting thresholds prescribed by the Environment and Climate Change Canada (ECCC) GHG Emissions Reporting Program (GHGRP) and the NL Management of Greenhouse Act, which are 50,000 and 15,000 annual metric tonnes, respectively. Anaconda is dedicated on minimizing the carbon emissions not only at the Project, but at all sites within the Point Rousse Project. These values will be re-assessed on an annual basis, or if there is a drastic change to construction or operation activities, to ensure there is a constant awareness of the carbon emissions.

#### 4.3.3.4 Dust

Construction activities may generate dust on the roads. If needed, water trucks will be used to mitigate and eliminate any dust situations. Water trucks have proven to be sufficient for dust suppression at the other Point Rousse operations. Fugitive dust generation is also included within the BMP. Please refer to the BMP document for testing and monitoring procedures, mitigation methods and feedback protocols.

Blasting activities have the potential to create airborne dust particulates. Based on experience with blasting at Pine Cove and Stog'er Tight, blast-generated dust is typically localized directly over the open pit/blasting area. However, mitigation methods will be implemented if dust becomes an issue from blasting (see final paragraph in this section).



Prior to construction activities commencing, samples will be collected to determine the dustfall around the Project site, and within the Town of Ming's Bight, to develop baseline information for future comparison regarding dust particulates leaving the Project. Testing is also occurring at Stog'er Tight operations to determine the existing dust generation from mining activities. This will provide information on what to expect for Argyle operations, and if improvements or adjustments are required prior to development commencing at the Project. Anaconda has been in contact with an external consultant to determine appropriate methods of sample collection and data analysis. Sample collection will be based on ASTM D1739-98 (2017) – Standard Test Method for Collection and Measurement of Dustfall. These samples will be collected at four (4) locations around The Project site (north, east, south, and west). Sampling four locations around the perimeter will provide information on where any particulates are falling outside of the site area, particularly with regards to The Town of Ming's Bight and the Town's Water Supply. As well, samples will be collected in the Town of Ming's Bight. Sample collection activity commences, to determine if dust is being generated and leaving the site perimeter. Testing will be completed by a third party (laboratory).

If it is found that dust is leaving Argyle, measures will be taken to either eliminate or reduce the generation of the dust, or to suppress it in a matter that will prevent it from leaving the site. This may be through the use of water cover, water curtains, environmental protection berms, or changing of an operating procedure for a particular activity.

#### 4.3.3.5 Fuel and Lubricants

Construction activity poses a risk for the release of diesel fuel and lubricants from construction equipment. Anaconda will ensure that all contractor's and company equipment are inspected daily to ensure no hydrocarbon leaks occur.

During the construction stage, equipment will be fueled by a service vehicle, owned by a contractor. This vehicle will get fuel from the approved storage tanks at Pine Cove and will carry spill kits in the case of an emergency. Spill kits will also be available on site in the case of an emergency. No fueling will occur within 30 m of a wetland, water body, or environmentally sensitive area.

Used oils and lubricants will be contained in proper bins at Pine Cove and disposed of with a local waste oil handler, as is done at the existing Point Rousse operations. No used oils or lubricants will be stored at The Project.

Anaconda has also developed the internal documents *Emergency Response Plan (ERP)*, *Environmental Protection Plan (EPP)*, and *Contingency Plan* for reference in the case of an emergency regarding fuel or oil spills, among other environmental concerns. These documents are available upon request or can be found in the appendices of the original Environmental Assessment registration document.

#### 4.3.3.6 Sewage

Sewage will be contained by an approved septic system near the office and infrastructure area on site, in accordance with NL's Environmental Control Water and Sewage Regulations. The septic system will be removed after operations cease.



## 4.3.3.7 Waste and Garbage

All solid waste (wood, steel, etc.) and small garbage will be collected and hauled to an existing local municipal landfill facility, with permission of the operator, on a regular basis. Any food or organic garbage onsite will be held in animalproof containers to prevent attracting wildlife. All such foods and scraps will be removed daily. Waste receptacles will be installed at all active areas for use by workers on the site, and Anaconda will ensure that all waste is recovered and disposed of appropriately. Anaconda will also ensure that prior to disposal, materials will be considered for reuse, resale, or recycling. No materials will be burned on site. Anaconda has developed and implemented a Waste Management Plan (available upon request or can be found in the appendices of the original Environmental Assessment registration document) for the Point Rousse Operations that will be followed for The Project. Part IV of the Environmental Protection Act will also be abided by when removing debris and waste materials from The Project.

## 4.3.3.8 Potential Resource Conflicts

As per the Environmental Baseline Studies Report (Appendix B), The Project is considered to be situated in an area of low archaeological potential, and as such there are no concerns with potential historical resource conflict. If, however, historic resources are encountered, operations in the area of the discovery will stop and the proper authorities will be notified in accordance with the Historic Resources Act (1985).

#### 4.4.Operation

The operation of the Project has been broken down into mining, transporting ore, and milling. Operation activities are anticipated to begin in July 2019.

All activities with construction and operation will be conducted in compliance with the Occupational Health and Safety Act and its Regulations. All applicable Standard Operating Procedures, protection plans, and plans developed for safe work practices and compliance with the OH&S Act that have been developed at other Point Rousse sites and operations will be used at Argyle. The OH&S committee at the Pine Cove site will be used for all of the Point Rousse Projects, and at least one employee and employer representative will be stations at the Argyle Site.

Anaconda is committed to complying with the Mining Act and will submit a Development Plan and Rehabilitation and Closure Plan for approval from the Department of Natural Resources prior to construction activities beginning. As well, financial assurance for closure will be provided prior to construction activities beginning. Prudent resource management will be demonstrated in the Development Plan.

#### 4.4.1.1 Proposed Mining

The Project is being developed as a combination of open pits and stockpiles with a cumulative total area, at surface, of approximately 37.5 ha. when production is complete. The combination of open pits includes the Argyle West Pit and Argyle East Pit. It is anticipated that approximately 107,051 t of ore at 1.57 g/t Au and 315,746 t of waste rock will be removed from the Argyle West Pit. It is anticipated that approximately 217,433 t of ore at 2.13 g/t Au and 1,853,690 t of waste rock will be removed from the Argyle East Pit. These quantities assume a cut-off grade of 0.8 g/t Au (determined using costs from previous mining activities in the Point Rousse Project) and a dilution factor of 20%. See Figure 7 for the location of the open pits and stockpiles at the Project.

Mining operations are anticipated to include 530 tonnes per day (tpd) of ore material, and an average of 3550 tpd of waste material. The Project ore material will be combined and blended with marginal ore that has been mined and stockpiled from Pine Cove pit operations (Marginal ore grade at Pine Cove was approximately 0.5 g/t Au). This will be done to achieve the required throughput for milling operations at Pine Cove. The Pine Cove marginal ore (low grade ore) has been tested and is not found to be acid-generating (Pine Cove ARD Report available upon request or can be found in the appendices of the original Environmental Assessment registration document). The milling



throughput will be blended to achieve 1280 tpd throughput, which is the total that the Pine Cove Mill is permitted for. Detailed mining plans will be finalized for the Development Plan submission.

The design/selection process for pit optimization was based on five-meter contour intervals. The benches were quadrupled to a final height of 20 m with berm widths of 8 meters and a batter (bench face) angle of 75 degrees. The ramp style is designed as a switchback type ramp system along the south wall of the East and West Pits. This configuration results in an overall inter ramp pit slope of approximately 60 degrees on the north face and 35 degrees on the south face, which was ascertained to fit all slope requirements for design. A switchback ramp was chosen to keep the access/egress on the footwall of the deposit. This enables possible expansion of the pit without loss of the ultimate ramp, as the deposit is open at depth. Additionally, with the West Pit, the ramp on the footwall will enable pit development without crossing into the Town of Ming's Bight water supply boundary. Some bench heights were reduced to 5 and 10 meters to accommodate localized pit bottom access as well as for minimizing incurred waste tonnage while accessing shallower dipping ore zones. The general design characteristics of the pits at The Project are based on previous experience using similar parameters at Pine Cove and Stog'er Tight operations.

The main access ramps are designed at a -10% gradient to accommodate articulated haul trucks. The width of these ramps is designed at 15 meters to facilitate two-way truck traffic at all points, assuming that the production haulage truck would be a 460E John Deere ADT unit with a 44-tonne capacity. Final pit bottom access ramps (final 40m of depth) are designed at a gradient of -10% and a width of 10 meters to accommodate one-way traffic. This method was used at Pine Cove operations and proved to be effective.



Table 7 and Table 8 summarize the parameters used for the preliminary East and West pit designs, respectively.Tonnages are based on a cut-off grade of 0.8 g/t Au and a dilution factor of 20%.



Table 7 - Design Parameters for Preliminary East Pit Design

Parameter	Quantity/Value
Pit Wall Slope Angle	75
Slope Angle, Overall North Face	60
Slope Angle, Overall South Face	30
Depth, Max [m]	74
Depth, Min [m]	59
Lowest Elevation in Pit [m]	76
Bench Height, Each [m]	5
Bench Height, Total [m]	20
Catchment Berm Width [m]	8
Ramp Width, Upper [m]	15
Ramp Slope, Upper [%]	10
Ramp Width, Lower [m]	10
Ramp Slope, Lower [%]	10
Ore [t]	217,433
Grade [g/t]	2.13
Waste [t]	1,853,690
Footprint Area, Max [m <sup>2</sup> ]	32,500

Table 8 - Design Parameters for Preliminary West Pit Design

Parameter	Quantity/Value
Pit Wall Slope Angle	75
Slope Angle, Overall North Face	60
Slope Angle, Overall South Face	30
Depth, Max [m]	35
Depth, Min [m]	25
Lowest Elevation in Pit [m]	126
Bench Height, Each [m]	5
Bench Height, Total [m]	20
Catchment Berm Width [m]	8
Ramp Width, Upper [m]	15
Ramp Slope, Upper [%]	10
Ramp Width, Lower [m]	10
Ramp Slope, Lower [%]	10
Ore [t]	107,051
Grade [g/t]	1.57
Waste [t]	315,746
Footprint Area, Max [m <sup>2</sup> ]	17,000

The waste stockpile at the Project is located to the south of the open pits and will be constructed as an Environmental Control Berm ('ECB') The ECB will be constructed to provide a protective barrier between the Town and the Project. Refer to Section 6.2 for additional details on the ECB. The ECB was designed using an embankment slope of 1.5:1, 3 m catchment berm widths, and 6 m bench heights (overall slope of 2:1). The total capacity of the planned berm is approximately 2,325,900 t. For the proposed mining activities, the ECB will suffice for storage of all Argyle waste



rock (total waste quantity of approximately 2,169,436 t, storage capacity of 2,325,900 t) However, waste rock is anticipated to also be used in backfilling the West Pit and for road development. The location of the waste dump was determined based on the nature of the deposit. Drilling to the south of the deposit resulted in no intersections with mineralized material resulting in ore. As well, it is known (from drilling results) that the deposit is open to the east and west, and at depth dipping towards the north. Therefore, all infrastructure was located to the south of the pits (ore, waste, organics, roads, etc.). The ECB was also offset 15 m - 30 m from the crest of the steep embankment between the Argyle site and Highway 418 (Ming's Bight Road). Sections of the ECB are displayed in Appendix E. Waste stockpile (ECB) inspections will take place on an annual basis to ensure safety and stability, as is done at Pine Cove operations. These inspections will be completed by a third party geotechnical consultant. As well, the ECB design will be submitted for stability approval from a third-party consultant prior to construction. The organics stockpile is subject to change based on the total quantity of organics found on site when stripping/grubbing activities are ongoing. Table 9 summarizes the parameters used for the preliminary ECB design.

Parameter	Quantity/Value
Footprint Area [m <sup>2</sup> ]	81,000
Elevation, max [m]	161
Elevation, min [m]	115
Slope, Bench	1.5:1
Slope, Overall	2.0:1
Bench Height [m]	6
Bench Width [m]	3
Ramp Slope [%]	10
Ramp Width [m]	15
Capacity [t]	2,325,900

Table 9 - Summary of Waste Stockpile/ECB Design Parameters

The pit planning will sequence the west pit be mined first, followed by the east pit. Once the west pit is mined out, it will be backfilled with waste rock from the east pit, and then capped with organics and seeded for reclamation. Once the east pit is completely mined out and operations cease, it will be allowed to naturally flood to the pit rim. The pit will then overflow naturally into the environment.

Blasting activities at the Project will be carried out using conventional mining explosives. Emulsion products will be pumping into drilled holes and detonated using electronic detonators to ensure safe and controlled blasts, as is done at the Pine Cove and Stog'er Tight operations. Blasting activities will take place between the hours of 07:00 - 19:00 on weekdays, and 12:00 - 19:00 on the weekend. Generally, blasting activities will take place during the week (Monday to Friday). Blasting windows, or periods in which a blast can take place, are outlined in the BMP. Blasting at the Project will begin with smaller blasts to develop experience and determine what parameters will work in terms of limiting noise, vibrations, and dust (as discussed in previous sections). There are no available municipal by-laws for the Town of Ming's Bight, so industry best practices will be used to limit noise, dust, and vibrations in the vicinity of the town. It is anticipated that noise and vibrations will be experienced in the Town of Ming's Bight, but will be below the allowable limits (as discussed in previous sections). Hole spacing, hole diameter, and stemming can be altered to develop a blast design that will not exceed any threshold limits for these parameters.

As previously mentioned, a safe blasting radius of 500 m has been established from previous mining experience. This radius of 500 m is the minimum distance required for personnel around a blast. A component of the blast procedure will include a blasting horn/siren at various intervals (i.e. 30 mins to blast = 5 long horn blows, 15 mins to blast = 3


long horn blows, 30 s to blast = 1 long horn blow) to warn the public of the blast. There is one (1) dwelling located within the 500 m blast radius. Mitigation methods will be implemented to limit blasting noise, vibrations and flyrock (i.e. potential for usage of blast mats) when blasting to prevent any damage to this dwelling. As well, weather conditions will be monitored to prevent blasting when the wind direction is to the east and the wind gusts are stronger than 50 km/hr (toward the Town of Ming's Bight/dwelling). This will be done to prevent fly-rock from approaching the 500 m blast radius. At Pine Cove and Stog'er Tight operations, there has not been a blasting incident regarding fly-rock landing outside the 500 m blast radius.

A section of HWY 418 is within the 500 m blast radius. Traffic control will be established (signage, flagging personnel with portable radios, barricades) to prevent any pedestrian/vehicular traffic from entering the blast radius during blasting activities. As per Section 435.6(b) of the NL Occupational Health and Safety Regulations, 2009, warning signage will be posted 300m before entering the blast radius, at which point pedestrian and vehicle traffic will be stopped, when required. On the section of road near the Town of Ming's Bight, sufficient signage will be installed along the road to notify residents of blasting operations (as the town is within 300m of the blast radius). This will include signage near the town reading **'Blasting Operations: Be Prepared to Stop'**. All residents near the blast radius will be notified of the Blast 24 hours in advance. An electronic sign will be installed in the Town to notify residents of upcoming and ongoing blasts. The sign will include the date, time, and name of the blast. The blast alarm will also provide advanced warning to others in the area. Further details and additional procedures for blasting activities are outlined in the BMP.

There will also be measures in place to stop the blast prior to detonation to allow for emergency vehicles to enter the blast radius, if required, along HWY 418. A detailed blasting procedure and *Best Management Plan* has been developed and will be made available to residents of Ming's Bight. Goldcorp's document titled *Hollinger Project: Best Management Plan* outlines various protective measures and procedures established for blasting at Goldcorp's Hollinger Mine, an open pit mine immediately adjacent to the downtown core of Timmons, ON. This document will be used as a reference to establish the Best Management Plan for operations at the Project. Consultation with the Town of Ming's Bight will be conducted to ensure there are no issues with the Best Management Plan for operations at Argyle prior to development commencing.

The 500 m blast radius is shown in Figure 11. Also shown are the potential locations for seismic and noise testing. Traffic will be stopped at Station 3 and Station 5 shown in the figure.





Figure 11 - 500 m Blast radius for Blasting Activities at The Project



Consideration was given throughout the design process to issues regarding existing topography, haulage roads, waste dump locations and drainage areas/ditches. During the design process, consideration was also given to providing adequate operational space requirements for equipment in areas approaching final design pit walls. The open pit has a buffer of approximately 30 m along the perimeter of the pit rim from any geographical feature (i.e. ponds/lakes). See Figure 7 for the conceptual design for the open pit and waste rock storage areas.

As mentioned in Section 4.1, the design of several features associated with the Project, including the design of the West Pit, have been adjusted to remain outside of both the existing and proposed water supply boundaries.

### 4.4.1.2 Trucking of Ore

Ore from The Project will be briefly stockpiled on site prior to trucking to the Pine Cove Mill. The distance from The Project to the Pine Cove Mill facility is approximately 6.5 km. This trucking operation will utilize the additional access road connecting the forest access road (off HWY 418) and the Stog'er Tight property, the road network on the Stog'er Tight property, and the Pine Cove Mine access road. This transportation route can be seen in Figure 12. The yellow line represents the road network at Argyle and from Argyle to Stog'er Tight, the red line represents the road network at Stog'er Tight, and the blue line represents the Pine Cove access road. For reference, the location of the ore stockpile can be seen in Figure 7. The trucking operation will utilize rock trucks similar to those that will be used in the Mining operation.





Figure 12 - Haulage outline from The Project to Pine Cove Mill



Precautions will be taken during ore transportation activities from The Project to the Pine Cove Mill to ensure the safety of the general public. Ore haulage will only occur on particular days in which weather conditions permit safe driving conditions on all roads. As well, ore haulage will occur only when ore is needed at the Pine Cove Mill, or when the stockpile at The Project has exceeded 20,000 t (maximum storage capacity to limit and minimize ore storage at The Project site). Precautions will include posted signage, road closures, and flagging personnel with radio communication. Procedures will be established to stop haulage activities in the case of an emergency.

#### 4.4.1.3 Milling of Ore

Anaconda currently operates the already-permitted Pine Cove mill, which is located on Anaconda's Pine Cove property. The milling operation is currently processing material from the Pine Cove mine which is expected to be exhausted in 2018. Anaconda is planning to utilize the existing mill and permitted tailings facilities once the Pine Cove mine has ceased operation. Through testing at RPC (completed with the ARD testing), it was determined that no changes will be required to the mill circuit in order to effectively process the Argyle ore. A flotation recovery of 97.3% and a leach recovery of 94.5% were achieved, for a total recovery of 91.9%. These tests were conducted to determine the metallurgical characteristics and verify its compatibility with the existing circuits at the Pine Cove Mill. The metallurgical testing results completed by RPC are available upon request or can be found in the appendices of the original Environmental Assessment registration document.

The mill process at the Pine Cove site consists of six major systems: crushing, grinding, flotation, leaching, drum filtration, and Merrill Crowe. Ore is fed to the crushing plant via front end loader, where it first enters a jaw crusher. After the jaw, a conveyor takes the ore to a screen deck, where fine material will pass through to the crushed ore stockpile, while oversize ore will be recirculated through a cone crusher until it reaches the desired top size of 3/8".

Ore from the crushed stockpile is then fed to the primary ball mill via conveyor belt, and typically ranges from 1.0 - 2.0 g/t Au. The ball mill is charged with 2" and 3" steel balls, and grinds material to a P<sub>80</sub> of 150 microns. Material from the ball mill is pumped through a cyclone, where the liberated material is fed to the flotation circuit via the overflow, while the coarse material is recirculated to the ball mill.

The flotation circuit at Pine Cove utilizes three rougher columns, one cleaner column, and one scavenger cell. PAX and MAXGOLD are introduced as collectors here, and MIBC as a frothing agent. Overflow material is sent to a thickener tank, typically at concentrations of 75-100 g/t Au. Tailings from the flotation circuit is pumped to the tailings facility via the final tailings pump. Flocculent is added to the thickener tank to increase the density of the slurry from 1300 kg/m3 to 1600 kg/m3.

The underflow from the thickener tank is pumped to a regrind mill, to further liberate the gold particles in preparation for the leaching process. The regrind mill is filled with  $\frac{1}{2}$ " balls, and grinds material to a P<sub>80</sub> of less than 20 microns. The discharge of the regrind mill is fed to the leaching circuit, which consists of four large tanks, where cyanide solution, lime, and lead nitrate are added to the cyanidation process. The leaching takes 48 hours, on average, and yields upwards of 97% recovery of gold. Solution from the leach circuit is pumped to a series of rotary drum filters, which separate the high-grade gold containing solution from the solid tailings that will not leach any additional gold.

The solution from the drums is sent to a series of holding tanks, before finally entering the Merrill Crowe tower to complete the process. In the Merrill Crowe tower, zinc dust is added to precipitate the gold from the solution, back into a solid form where it will be collected in a filter press. Tailings from the press are sent to the final tailings pump. Once a week, the press is opened to remove the solid gold so that it can be refined into a dore bar. Figure 13 and Figure 14 show the Mill Recovery Flow Sheet and Process Diagram, respectively.





Figure 13 - Mill Recovery Flow Sheet





PRODUCTION



#### 4.4.2 Potential Sources of Pollution during Operation

Potential Sources of pollution during the Operations stage are outlined in the following sections. Generally, potential sources of pollution for operation activities are similar to those outlined in the construction activities. Refer to Section 4.3.3 for additional details regarding all potential sources of pollution. Additionally, Anaconda has developed the internal documents *Environmental Protection Plan* and *Emergency Response Plan*. These plans have been generally developed based on the Pine Cove Site, as that has been the only active operational site for Anaconda. These documents will be updated to address any specific operational components involving The Project.

#### 4.4.2.1 Water

Potential sources of pollution regarding water are similar in the operations phase as in the construction phase. Refer to Section 4.3.3.1 for additional information regarding the ditching/collection system, water management, and discharging to the environment.

During the operations stage, dust and fine material will have the potential to mobilize into ponds and streams around the site. To mitigate this, sediment-trapping material such as approved filtration fabrics will be used in areas subject to siltation and erosion. Water trucks will be used for dust suppression on the roads and stockpiles.

As required, standard mitigation methods such as on-site drainage ditch channels, collection sumps and settlement ponds will be used to control silt and sediment and prevent the introduction of contaminants into the Ming's Bight Water Reservoir, and from leaving the Project site in general. The water will be contained in a series of settlement ponds and tested until it meets all Final Discharge Point Requirements. See Figure 7 and Figure 9 in Section 4.3.3.1 for the proposed location and cross section of the ditching system at the Project. All water discharged will be in compliance with the Environmental Control Water and Sewage Regulations. Water testing will take place regularly to ensure the water being released is of sufficient quality (third party testing abiding by the Accredited Laboratory Policy). Water that is released into the environment from the Project site will follow a natural drainage channel that does not enter the Town of Ming's Bight water supply. The discharge will be monitored to ensure no downstream erosion occurs.

Blast residues have the potential to be contaminants through ammonia by-products, which can be toxic to aquatic fauna. All such contaminants will pool in the deepest level of the pit where it will be captured and pumped to a series of settling sumps. The discharge of all water exiting the settlement pond/ditching system will be done in accordance with applicable regulations. Through previous experience at the Pine Cove Operations, while the ammonia is detectable in the pit water, it is below toxic levels and does not contain contaminants that are above the threshold limits for discharging into the environment.

All ground and surface water entering the open pit will be pumped to the surface into a settlement pond where suspended solids will settle out prior to being re-introduced to the environment. It is anticipated that the collection and settlement ponds will be between 5000 m<sup>3</sup> and 15000 m<sup>3</sup> to have capacity for a minimum of 24 hours of maximum pumping. As mentioned in Section 4.3.3.1, the MMER FDP criteria for various parameters of water quality will be tested for prior to discharging any water into the environment. These tests are completed by a third party.

#### 4.4.2.2 Noise and Vibrations

Potential sources of pollution regarding noise and vibrations are similar for operational activities as they were for construction activities. Due to this, please refer to Section 4.3.3.2 for additional details regarding issues involving noise and vibrations. During the operations phase of the Project, noise will consist of the following activities:

- Excavating and Blasting
- Equipment mobilization
- Transportation



A detailed blasting procedure and Best Management Plan has been developed for the Project. This procedure will be made available to residents of Ming's Bight. Goldcorp's document titled Hollinger Project: Best Management Plan outlines various protective measures and procedures established for blasting at Goldcorp's Hollinger Mine, an open pit mine immediately adjacent to the downtown core of Timmons, ON. This document was used as a reference to establish the Best Management Plan for operations at the Project, addressing concerns related to noise and vibrations, dust generation, and flyrock. Consultation with the Town of Ming's Bight will be conducted to ensure there are no issues with the Best Management Plan for operations at Argyle prior to development commencing.

#### 4.4.2.3 Air Emissions

Potential sources of pollution regarding air emissions are similar for operational activities as they were for construction activities. Please refer to Section 4.3.3.3 for additional information regarding air emissions and mitigation methods.

All company and contractor vehicles and equipment are required to be in good and safe operating conditions, with vehicle emissions within limits established in Schedule F of the NL Air Pollution Control Regulations, 2004. All diesel heavy equipment will be Tier 4 approved engines.

As discussed in Section 4.3.3.3 regarding construction activities, air quality tests for metals content will be conducted at the Project and at the Town of Ming's Bight during the operational phases of The Project. Sample collection will be based on ASTM D1739-98 (2017) – Standard Test Method for Collection and Measurement of Dustfall. Although the test is based on dustfall, the sample collection method is sufficient for gathering a sample for determining metals content.

Sample collection will continue on a quarterly basis to capture seasonal changes in weather and environmental conditions, or as a new operational activity commences, to determine if dust is being generated and leaving the site perimeter. If levels of a particular contaminant are trending towards the maximum allowable limit, methods to mitigate the issue will be implemented. This may include preventing equipment idling, assessing potential equipment maintenance issues, or constructing a berm to prevent particulates in the lower levels of the air from leaving the site. Mitigation methods will be tried until the issue is resolved.

Greenhouse Gases (GHG) may be generated by diesel fuel combustion from heavy equipment (and possible diesel power generation if an emergency arises – power outage) and gasoline consumption from light-duty vehicles. These GHG include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O). The equipment usage during construction activities and operational activities are expected to be the same. Using *The Climate Registry* (TCR) 2016 Default Emission Factors, the total carbon emissions during peak construction and operating conditions at the Project were estimated. This was completed using average fuel consumption for heavy equipment and light duty vehicles at Pine Cove operations over the past calendar year. Refer to Table 5 for the fuel consumption assumptions for equipment at the Project and Table 6 displays the GHG emissions for The Project (in Section 4.3.3.3).

The total annual attributable tonnes of CO<sub>2</sub>e produced at the Project will be approximately 2140. GHG emissions attributable to the Project are below the reporting thresholds prescribed by the Environment and Climate Change Canada (ECCC) GHG Emissions Reporting Program (GHGRP) and the NL Management of Greenhouse Act, which are 50,000 and 15,000 annual metric tonnes, respectively. Anaconda is dedicated on minimizing the carbon emissions not only at the Project, but at all sites within the Point Rousse Project. These values will be re-assessed on an annual basis, or if there is a drastic change to operational activities, to ensure there is a constant awareness of the carbon emissions.



#### 4.4.2.4 Dust

Potential sources of pollution regarding dust are similar for operational activities as they are for construction activities. Refer to Section 4.3.3.4 for additional information regarding dust pollution and mitigation methods.

Operation activities may generate dust on the roads at the Project. If needed, water trucks will be used to mitigate and eliminate any dust situations. Water trucks have proven to be sufficient for dust suppression at the other Point Rousse operations. Calcium chloride application may also be considered for dust suppression.

Blasting activities are capable of creating airborne dust particulates. However, based on experience with blasting at Pine Cove and Stog'er Tight, blast-generated dust is typically localized directly over the open pit/blasting area.

As discussed in Section 4.3.3.4, samples will be collected to gather baseline information regarding dustfall prior to any activities beginning at Argyle. As will be done with construction activities, sample collection will continue throughout the operational phases of Argyle to monitor dustfall around the perimeter of the site, and within the Town of Ming's Bight. Anaconda has been in contact with an external consultant to determine appropriate methods of sample collection and data analysis. Sample collection will be based on ASTM D1739-98 (2017) – Standard Test Method for Collection and Measurement of Dustfall. These samples will be collected at four (4) locations around The Project site (north, east, south, and west). Sample collection will continue on a quarterly basis to capture seasonal changes in weather and environmental conditions, or as a new operational activity commences, to determine if dust is being generated and leaving the site perimeter.

If it is found that dust is leaving the Project, measures will be taken to either eliminate or reduce the generation of the dust, or to suppress it in a matter that will prevent it from leaving the site. This may be through the use of water cover, environmental protection berms, or changing an operating procedure for a particular activity. Dust generation is included in the BMP. Please refer to this document for monitoring guidelines, mitigation methods, and feedback protocols regarding fugitive dust at the Project.

#### 4.4.2.5 Fuel and Lubricants

Operations activities pose a risk for the release of diesel fuel and lubricants from construction equipment. Anaconda will ensure that all contractor's and company equipment are inspected daily to ensure no hydrocarbon leaks occur.

During the Operations stage, equipment will be fueled by a service vehicle, owned by a contractor. This vehicle will get fuel from an approved storage tanks at Argyle and will carry spill kits in the case of an emergency. Spill kits will also be available on site in the case of an emergency. The required permits will be obtained from Service NL for fuel storage prior to installation, and fuel storage will abide by all applicable regulations. The size and exact location will be determined for the Development Plan submission and for the permit application. The fuel tank will be stored on an impervious pad (compacted stone and till layers with a leveled stone/rock cap) to minimize the risk associated with the fuel/waste oil storage. No fueling will occur within 30 m of a wetland, water body, or environmentally sensitive area.

Used oils and lubricants will be contained in proper bins at Argyle temporarily, and disposed of with a local waste oil handler, as is done at the existing Point Rousse operations. The storage of the waste oil and lubricants will abide by all required regulations, and all permits will be obtaining prior to beginning these practices. The waste oil will be stored on an impervious pad (compacted stone and till layers with a leveled stone/rock cap) to minimize the risk associated with the fuel/waste oil storage.

Anaconda has also developed the internal documents *Contingency Plan* and *Emergency Response Plan* for reference in the case of an emergency regarding fuel or oil spills, among other environmental concerns. Mitigation measures for the protection of migratory birds and wildlife response will be incorporated into the documents prior to development activities beginning at Argyle.



#### 4.4.2.6 Sewage

Sewage will be contained by an approved septic system near the office and infrastructure area on site, in accordance with NL's Environmental Control Water and Sewage Regulations. The septic system will be removed after operations cease.

#### 4.4.2.7 Waste and Garbage

All solid waste (wood, steel, etc.) and small garbage will be collected and hauled to an existing local municipal landfill facility, with permission of the operator, on a regular basis. Any food or organic garbage onsite will be held in animalproof containers to prevent attracting wildlife. All such foods and scraps will be removed daily. Waste receptacles will be installed at all active areas for use by workers on the site, and Anaconda will ensure that all waste is recovered and disposed of appropriately. Anaconda will also ensure that prior to disposal, materials will be considered for reuse, resale, or recycling. No materials will be burned on site. Anaconda has developed and implemented a Waste Management Plan (available upon request and can be found in the appendices of the original Environmental Assessment registration document) for the Point Rousse Operations that will be followed for Argyle. Part IV of the Environmental Protection Act will also be abided by when removing debris and waste materials from Argyle.

#### 4.4.3 Potential Resource Conflicts

As per the Environmental Baseline Studies Report (Appendix B), The Project is considered to be situated in an area of low archaeological potential, and as such there are no concerns with potential historical resource conflict. If, however, historic resources are encountered, operations in the area of the discovery will stop and the proper authorities will be notified in accordance with the Historic Resources Act (1985).

#### 4.4.4 Water Testing

Water quality testing was carried out in 2017 to determine baseline conditions at the Project site. Field tests were collected at four locations, which will be used as water quality sampling stations in the future to maintain consistency. Samples were also submitted for chemical analysis and total metals.

Generally, the field parameters of the water samples were within the following results:

- Water temperatures were between 18.7 to 19.9 C
- Field pH ranged between 7.09 to 7.67
- Dissolved Oxygen ranged between 8.18 mg/L and 9.25 mg/L
- Conductivity ranged from 51.6 to 80.2 µS/cm

One sample that was collected during the baseline studies had a slightly higher concentration of aluminum (102  $\mu$ g/L) than guidelines permit in the Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the Protection of Freshwater Aquatic Life (FWAL) (<100  $\mu$ g/L). No other collected water samples had similar levels of aluminum. The sample collection area (WL3 in the Environmental Baseline Studies - Appendix B) was found to be groundwater fed and did not have an inlet or outlet. This area will continue to be monitored closely going forward to determine if the conditions return to below the allowable standards. Refer to Appendix B for the detailed Water Quality Testing results as outlined by GEMTEC.

Water samples will be collected at the same sample locations used by GEMTEC on a monthly basis, or as requested, to ensure there are no water quality issues developing. Anaconda is committed to water testing at the Project to ensure the safety and water quality of any water that leaves the Project area. Anaconda has been in contact with the Town of Ming's Bight regarding this. Water quality testing results will be made available to the Town of Ming's Bight, upon request.



Additionally, when water is being discharged from the Argyle area, water samples will be collected for third-party testing to ensure the quality is sufficient and meets requirements established by MMER.

Refer to Section 6.3 for details on the Water Management Plan that has been developed regarding water quality at the Project. The Water Quality Management Plan is attached in Appendix F.

### 4.4.5 Potential Acid Rock Drainage (ARD) Testing

Anaconda has collected 20 specimens from The Project core samples taken throughout the deposit drilling program for Acid Rock Drainage (ARD) test work. These specimens were submitted to RPC Science and Engineering for analysis. The results of the ARD test work are listed in Table 10. The grade and ore/waste designation of each sample can be found in Table 11.

Client ID	Paste pH	Total Sulfur	Acid Production Potential	Neutralizing Potential pH 8.3	Net NP pH 8.3	NP/AP
		%		Kg CaCO <sub>3</sub> /tonne		
AE-ARD-001	9.3	0.007	0.2	75.0	74.8	343
AE-ARD-002	8.9	0.151	4.7	71.0	66.3	15.0
AE-ARD-003	9.0	0.352	11.0	83.9	72.9	7.6
AE-ARD-004	9.2	0.077	2.4	17.0	14.6	7.1
AE-ARD-005	8.9	6.800	213	71.8	-141	0.3
AE-ARD-006	9.4	0.023	0.7	76.8	76.1	107
AE-ARD-007	9.3	0.075	2.3	91.4	89.1	39.0
AE-ARD-008	9.2	0.018	0.6	47.0	46.4	83.6
AE-ARD-009	9.0	1.610	50.3	74.7	24.4	1.5
AE-ARD-010	8.8	0.064	2.0	79.1	77.1	39.5
AE-ARD-011	9.3	0.085	2.7	94.7	92.0	35.6
AE-ARD-012	9.3	0.060	1.9	96.8	95.0	51.6
AE-ARD-013	9.2	0.158	4.9	10.7	5.8	2.2
AE-ARD-014	9.4	0.011	0.3	104	103	301
AE-ARD-015	9.0	0.229	7.2	42.2	35.0	5.9
AE-ARD-016	9.7	0.035	1.1	37.6	36.5	34.4
AE-ARD-017	8.9	0.134	4.2	77.2	73.0	18.4
AE-ARD-018	9.2	0.072	2.3	75.8	73.6	33.7
AE-ARD-019	9.1	0.021	0.7	16.2	15.5	24.6
AE-ARD-020	9.0	0.077	2.4	55.6	53.2	23.1

Table 10 – The Project Acid Rock Drainage Test Results



Table 11 - Grade	Values and W	'aste/Ore De	esignation for	The Project ARD	Samples
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		Waste/Ore (Cut-Off
Sample	Grade [g/t Au]	Grade of 0.8 g/t Au)
AE-ARD-001	0.008	Waste
AE-ARD-002	0.141	Waste
AE-ARD-003	0.213	Waste
AE-ARD-004	0.026	Waste
AE-ARD-005	5.617	Ore
AE-ARD-006	<0.005	Waste
AE-ARD-007	0.006	Waste
AE-ARD-008	<0.005	Waste
AE-ARD-009	3.990	Ore
AE-ARD-010	0.055	Waste
AE-ARD-011	0.123	Waste
AE-ARD-012	0.012	Waste
AE-ARD-013	<0.005	Waste
AE-ARD-014	0.029	Waste
AE-ARD-015	0.816	Ore
AE-ARD-016	0.010	Waste
AE-ARD-017	0.018	Waste
AE-ARD-018	0.266	Waste
AE-ARD-019	<0.005	Waste
AE-ARD-020	0.017	Waste

Of the 20 samples, 18 were found to have a positive Net Neutralizing Potential value, indicating that they are not acid producing samples. Of the submitted samples, three were found to be ore material, and 17 were found to be waste material.

One of the samples had a negative Net Neutralizing Potential value (AE-ARD-005), indicating that the sample was potentially acid producing, and one of the samples (Ae-ARD-009) resulted in a classification of 'uncertain'. These two samples (potentially acid producing and 'uncertain') were both determined to be ore samples, as they returned Fire Assay grade results of 5.617 mg/kg Au and 3.990 mg/kg Au, respectively. The cut-off grade for The Project is to be 0.8 g/t Au (mg/kg Au), much lower than 3.990 mg/kg Au which returned an ARD test result of 'uncertain'. As well, an ore sample (AE-ARD-015) that had a grade of 0.816 g/t Au was determined to be not acid generating. It is expected that all material remaining on the Argyle site (waste material and lost ore) will be non-acid generating. Based on the test results, the waste material has, on average, a much higher neutralizing potential than acid producing potential. The amount of ore loss is expected to be minimal as Anaconda has implemented numerous technological advancements in ore monitoring, including GPS systems on the mucking equipment and blast movement monitoring technology.

Operations at The Project will minimize the stockpiling of ore materials on site before they are transported to the ore pad at the Pine Cove Mill (maximum storage capacity of 20,000 t). Although it is not anticipated that the ore from The Project is acid generating, the material will be stockpiled on an impervious pad until it is transported to Pine Cove for processing. A ditch will surround the impervious pad to direct and control surface run-off from the stockpile into the ditching network, and subsequently into a collection or settlement pond. As described in Section 4.3.3.1, the ditching network and collection ponds will prevent any run-off from leaving the site. Samples from this



collection ditch (and subsequent settlement pond) will be collected and tested weekly, or as required, to ensure that the water quality at Argyle remains within the regulatory guidelines.

The resulting tailings material produced from mill processing will be deposited in the already-permitted Pine Cove In-Pit Tailings Facility, using a sub-aqueous disposal method. The approved In-Pit Tailings Facility has a tailings capacity of 14 years, and creates no additional surface disturbance or footprint, as opposed to an earthen facility at surface. The sub-aqueous disposal process will mitigate any adverse affects from any potential acid producing material that may be found at The Project. The water quality and environmental conditions surrounding the in-pit tailings facility will be monitored regularly to ensure no variance in conditions occur when depositing the Argyle tailings material. Additionally, regular inspections of the facility will include monitoring for migratory birds in the tailings facilities (this will also be incorporated into Argyle site inspections). To date, there has been no evidence of Migratory Birds using the tailings ponds at the Point Rousse Project.

Once mining activities are completed, the pits will be allowed to flood, submerging the walls in groundwater. Although the west pit will be backfilled with waste material (as outlined in Section 4.4.1.1), it is assumed that the ground water will fill the empty voids in the backfill material, submerging the waste rock and pit walls in water.

GEMTEC has completed a third-party study on the ARD testing results to further understand the geochemistry of the material at the Project. The report and recommendations are included in Appendix G. Additional ARD and metal leaching studies testing will be undertaken during the Development Plan process.



#### 4.5 Schedule

Table 12, below, illustrates the anticipated project schedule. This schedule was developed based on the requirement of throughput for the Pine Cove Mill. As Pine Cove and Stog'er Tight operations finish, a need for ore throughput at Pine Cove Mill will arise. The Project is within 6.5 km of the Pine Cove Mill and has an NI 43-101 compliant resource, making it Anaconda's next viable resource for operation.



#### Table 12 - Project Schedule

Task Name	Q2 2017	Q	3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021
Environmental Approvals																		
Baseline Studies			_															
Data Collections			÷.															
Document Preparation																		
Local Consultations (two town hall meetings done)																		
Submission and Review of the Environmental Registration Document							<b>,</b>											
EPR - Guidelines Development (60 days total)																		
EPR - Document Preparation and Submission							±.,											
EPR - Review and Public Consultation							1											
Development Rehabilitation and Closure Plans					F													
Preparation of the Development Plan Document																		
Development Plans Permitting, Incl. addressing comments																		
Preparation of Rehab and Closure Plan																		
Rehabilitation and Closure Plans Permitting, Incl. addressing comments								-	-									
Mining Lease - surveying, application																		
Certificate of Approval																		
Drilling to expand and infill resource																		
Data Management and Block Modeling																		
Logging & sampling																		
Assays																		
Data base update																		
Solids Update								L .										
Internal Block Model update								L 1										
Block model - Optimization								1 I										
Construction																		
Road Construction																		
Site Condemnation										5								
Tree cutting																		
Overburden Stripping										1		7						
West Pit																		
East Pit											1							
Haulage												±						
Processing												1						

# smartsheet



#### 4.6 Funding

The total capital costs for the Argyle Project are estimated at \$1.55M. The development costs associated with the Project will be financed from other Point Rousse Project operations. The Project will generate a positive cash flow for sustaining operational costs.



#### 4.7 Occupations

The Project is scheduled to commence as operations at Stog'er Tight and Pine Cove come to an end. It is expected that there will be a transfer of existing personnel, specifically in technical and mining related fields, for Anaconda. It is also anticipated that the contractors (Guy J. Bailey and NFLD Hard-Rok) transfer the existing personnel they have on the other projects to The Argyle Project. In addition, all current employees working at the Pine Cove Milling facility and administration would continue their employment to support the Project. This would include approximately 40 employees.

The anticipated occupations and personnel requirements directly related to the Project are listed in Table 13.

Construction and Operations Phases						
Occupation	Quantity	National Occupational Classification				
Health & Safety Supervisor	1	2263				
Mine Superintendent	1	0811				
Site Supervisor	1	7205				
Geologist	2	2113				
Planner/Engineer	1	2143				
Surveyor	1	2154				
Heavy Equipment Operators	3	7521				
Truck Drivers	5	7521				
Heavy Equipment Mechanics	4	7312				
Pit Operations Foreman	1	7302				
Labourer/Workers	2	7611				
Driller	2	7372				
Blaster	1	7372				
Total	25					

 Table 13 - List of Direct Occupations and Quantity for the Construction and Operation Phases

It is anticipated that all occupations be filled with employees already employed by either Anaconda, Guy J. Bailey, or NFLD Hard-Rok.

As the mining operation approaches and achieves full production, the Project will continue to employ approximately 65 employees (25 directly and 40 indirectly).

Anaconda has recently developed a Women's Employment Plan (WEP) for the Argyle Prpoject. This WEP will continue to be used for Anaconda's future mines and projects. Based on the planned sequence of operations between Pine Cove Mine, Stog'er Tight, and Argyle, it is anticipated that the same workforce will be used for each operation, indicating that there will not likely be any required hiring processes. However, if the need of additional employees arises, the WEP will be referenced and implemented. The WEP for Argyle is attached in Appendix H.



#### 5 Alternatives

Consideration has been given to alternative options regarding the proposed project. This has included various stockpile locations, design parameters, orientations, Final Discharge Point location, as well as various open pit designs. These locations and designs have been generally accepted based on the topography in the area in addition to water body locations and existing accesses. The interest of the public (Town of Ming's Bight and area residents) has also been taken into consideration when determining mitigation methods for noise, vibrations, dust, air quality, and water management, which has impacted the location of the ECB to its planned location.

As the Project is based on an in-ground mineral resource, location and development of the Project are limited in terms of alternatives. However, as mentioned, aspects associated with the Project and applicable alternatives have been assessed, with the preferred options being proposed throughout this document.

The waste stockpile location was determined by the potential for additional resource (cannot be condemned for waste rock storage), open pit location, the Town's water supply boundary, topography along the area approaching the highway, and various water bodies in the area. Additionally, the development of the waste rock into a protective berm between the Town and the Project was evaluated and incorporated into the designs.

Various parameters for the pit and stockpiles were evaluated to determine the most economical solutions while maintaining the safety and structural integrity. These included bench heights, ramp grades, ramp locations, and other mining parameters.

The FDP evaluations were listed in Section 4.3.3.1.

No previous studies or evaluations have been conducted on this Project to date.



#### 6 Potential Environmental Effects and Mitigation

#### 6.1 Impacts to Rare Plants

As previously mentioned, the presence a S2 ranked plant species and an S2S3 ranked plant species were uncovered during the Environmental Baseline Studies process. These plants, the Common Wintergreen and Floating Burred (ranked S2 and S2S3, respectively), are within or around the area of influence of the Project. The Common Wintergreen was found within the area of influence, in several patches (for additional details, refer to the Environmental Baseline Studies report in Appendix B), while the Floating Burred was found in a wetland immediately adjacent to the Project, and next to the perimeter of the West Pit.

It was recommended by the Wildlife Division that additional botanical surveys be conducted to ensure that the development of the Project would not have a significant impact on the population of the Common Wintergreen in the area/region, and that the plant was, in fact, regionally abundant. Guidelines for the surveys were provided by the Wildlife Division. The surveys were conducted by GEMTEC in July 2018, with the results revealing that the plant was regionally abundant. In all, 21 patches of common wintergreen were located with nine (9) individual patches or aggregated patches meeting the separation guideline provided by the Wildlife Division. Approximately 4,100 plants were found within the 21 patches, with patch size ranging from 1-100 m<sup>2</sup>. The results and supporting documentation were provided to the Wildlife Division for review. Following the submission of the results, it was immediately recommended that ongoing exploration be mindful of the additional survey locations in which the plants were found so as not to disturb these areas. Figure 15 shows the original and additional survey locations in which the Common Wintergreen was found in the region.

In discussion with the Wildlife Division, a buffer zone of 10 m - 15 m around the wetland complex to the immediate north of the East Pit will be implemented for operations to protect the Floating Burred. This buffer zone will be sufficient, as long as the proposed pit wall crest and ditches do not interfere with the function of the wetland and as long as the water level and wetland are not impacted. With this, Anaconda will monitor the wetland throughout operations to ensure no adverse effects are sustained by the wetland, and a third-party inspection will be undertaken when the Floating Burred is in bloom to ensure the species is not being impacted. This discussion is attached in Appendix K.

Based on the additional botanical surveys and the implementation of the buffer and monitoring around the wetland immediately adjacent to the East Pit (north of the East Pit), it is believed that the construction and operation of the Argyle Project will not create an inhabitable environment for these plants to thrive.



Figure 15 - Botanical Survey Locations of the Common Wintergreen near Argyle



#### 6.2 Impacts of Dust and Noise on the Town of Ming's Bight

As previously mentioned in Sections 4.3.3.1-4.3.3.7 and 4.4.2.1-4.4.2.7, Anaconda has identified several potential areas for pollution generation from the Project, targeting areas including, but not limited to, water, noise, dust, vibrations, waste disposal, and fuels. Mitigating factors for many of these areas have been identified in the mentioned sections. However, this section focuses on noise and dust concerns, as well as vibrations, regarding the Project.

The Best Management Plan has been developed to address noise, dust, vibration and airblast concerns. The intention of this document is to provide guidelines and procedures for monitoring and mitigating areas of concern regarding blasting, noise, dust generation, and other operational aspects of the Project, as well as outline reporting procedures regarding these areas of concern. As well, the document details Anaconda's approach to creating an effective and efficient forum for communicating with the community regarding the Project.

The primary mitigating method for noise, dust, and blasting overpressure generated from the Project will be the Environmental Control Berm ('ECB'), which is a protective berm between the Project and the Town that will be constructed parallel to HWY 418. The berm will be constructed progressively using waste rock from the mining operation at Argyle. The north-easternmost section of the berm will be constructed first, as that area of the berm will have the largest effect on mitigating noise, dust, and overpressure vibrations between the Project and the Town. Due to the large quantity of waste near surface, it is anticipated that this portion of the berm will be completed in late 2019. After this portion is completed, the berm construction will progress southwest. The berm is designed similar to a waste stockpile at the Pine Cove site, in that it has 6m bench heights with a 3m catch berm, designed at an overall slope of 2:1. The berm will deflect noise and overpressure that is directed towards the Town. It will also act as a barrier for dust control and mitigation. The ECB is similar to what is used at Goldcorp's Hollinger Open Pit in Timmins, Ont., and has proven to be very effective in the mitigation of these areas of concern.

Other mitigating factors for dust generation will be the application of water for dust suppression, as well as calcium chloride in liquid concentrate and solid form. Calcium chloride, if required, will be used in moderation. The constant application of water on the haul roads during periods of dry weather conditions, as well as the periodic application of calcium chloride, has proved sufficient at the Hollinger Open Pit for dust suppression on the site roads.

Mitigating factors for noise generation will be activity dependent. It is anticipated that noise generated from the Project will be audible within the Town but will be below the threshold limits and will only be during the day, as is the situation for the Timmins site. If it is found that a particular activity is generating excessive noise (above the threshold limits), then the protocols outlined in the BMP will be undertaken to investigate and address the concern.

The BMP is attached in Appendix D. This document is intended to be a working document throughout the life of the Project and may required updating and amendments as the Project progresses. Updated versions will be made available to the public.

Baseline studies have also been carried out for blasting activities at Stog'er Tight operations, in an effort to develop a plan to implement at Argyle with vibrations and airblast levels below the threshold limits. This baseline vibration data can be found in Appendix J. Generally, the average vibration at 500 m from a Stog'er Tight blast was found to be 0.9 mm/s, much less than the threshold for possible damage (50 mm/s - US Department of Interior Bureau of Mines). The average airblast readings for blasting at Stog'er Tight at 500 m have been found to be 115 dB, much less than the threshold for structural damage (182 dB - Goldcorp, 2012).

Baseline studies have also been undertaken for ambient noise. The baseline data can be found in Appendix J. Generally, the average baseline noise data obtained at the Project (43.5 dB – near the planned offices) was slightly lower than that obtained in the Town of Ming's Bight (48.1 dB – at the playground). This is to be expected as there is more activity in the Town at this point in time.



#### 6.3 Impacts on the Water Supply for the Town of Ming's Bight

The Town's Protected Public Water Supply Area ('PPWSA') is located to the north-west of the Project. The PPWSA consists of three (3) large water bodies. These water bodies, and their respective sizes, are shown in Table 14. No bathymetry information is readily available for these water bodies. The total area encompassed by the newly delineated PPWSA is over 191 ha.

Water Body	Surface Area (ha)
Gillard Pond	19.3
Mud Pond	2.1
Bear Pond	19.4
Total	40.8

Table 14 - Water Bodies and Respective Surface Areas in the Town's PPWSA

The proposed and preferable plans for the Project do not involve any alterations to the PPWSA. Anaconda, as previously mentioned, has adjusted various aspects of the Project to remain outside the boundary of the PPWSA, and is ultimately committed to ensuring that the Town maintains a safe and clean water supply.

As previously mentioned in this document, the Blast Radius for this Project is planned to be 500 m. As shown in Figure 11, only the northern-most portion of the blast radius encompasses a water body in the PPWSA (approximately 50 m – 60 m into the lower part of Bear Pond). The blast radius does not encroach on Gillard Pond or Mud Pond and does not reach the component of Bear Pond in which the intake for the Town's water supply is located. As the PPWSA is at or outside the furthest extent of the blast radius, fly rock is not anticipated to be an issue (Anaconda also implements a 300 m blast radius as a safe distance for equipment). Additionally, Anaconda is presently undertaking seismic and overpressure monitoring for blasting activities at the Stog'er Tight operation. This is being done to develop safe blasting practices and designs so that when operations transition to Argyle, they are more likely to be within the threshold limits (continuous monitoring and adjustments will be completed when operations are at Argyle to ensure activities remain below these limits). Based on the seismic testing to date, the ground vibrations from blasting activities at a distance of 500 m from the blast have resulted in low readings (often not registering ground vibrations at all), with the maximum recorded peak particle velocity of 2.3 mm/s. The threshold limit for ground vibrations, as described in the BMP, is 12.5 mm/s. Based on the low readings that have registered to date for blasting activities at 500 m, it is not anticipated that the blasting will have an adverse effect on the pond substrate and create suspended solids. Anaconda will monitor suspended solids in Bear Pond to determine if blasting activities are generating suspended solids (both at the portion of the pond in the blast radius and at the intake) and will inform the Town of the results. If blasting activities are found to have an adverse effect on the PPWSA, Anaconda will undertake procedures outlined in the BMP to investigate the issue and develop mitigation methods to ensure the issue is eliminated. If it is determined that the PPWSA has been affected from activities at the Project, Anaconda will provide the Town with clean water (bottled water) until the issue is rectified at no cost to the Town. This is deemed to be the 'worst-case' scenario, and Anaconda is committed to operating at the Project in a manner as to minimize this risk. As mentioned, the proposed operating plan does not include any alterations to the PPWSA. If modifications to the PPWSA are warranted or required, Anaconda will consult with the Town and Water Resources Division to develop a design and plan that is sufficient for all parties.

The blast overpressure generated from blasting activities is typically what is perceived as ground vibrations, which is not the case. Blast overpressure is currently being monitored simultaneously as the seismic testing to ensure that when operations transition to Argyle the threshold limits are not exceeded. The limit for blast overpressure, as



described in the BMP, is 128 dB. Typical monitoring at Stog'er Tight operations at a distance of 500 m from the blast result in readings of 90 dB – 125 dB.

Based on the results for seismic and overpressure monitoring, it is not anticipated that activities at the Project will affect the groundwater wells within the Town. The United States Department of Interior Bureau of Mines conducted a study to investigate alleged water well damage from blasting ground vibrations. Baseline data was recorded at four test sites (groundwater wells). Blast induced ground vibrations were then generated and recorded at up to 138 mm/s at the top of the four test sites. No direct evidence of change in water quality or well performance was produced in comparison with baseline data (US Department of Interior Bureau of Mines, 1980). As the threshold limit for ground vibrations at the Project is 12.5 mm/s, it is anticipated that activities at the Project will not have an effect on groundwater wells within the Town.

Anaconda will develop a sound water quality monitoring plan that involves testing and reporting procedures for water quality tests at the Project. Testing sites will include the PPWSA, the FDP of the Project, and on-site locations (open pit discharge water, settlement pond water quality, etc.). Testing will include the required test for discharging water to the environment from the FDP, as well as in-house tests for ammonia, copper, suspended solids, pH, and temperature. Testing of the PPWSA will include metals testing on a monthly basis, and testing for ammonia, copper, suspended solids, pH, and temperature on a weekly basis or a post-blast day basis, whichever occurs first. In-house testing of pit discharge water and settlement pond water will occur on a daily basis to ensure any issues are detected early and mitigation methods can be implemented prior to discharging water to the environment. As the Project is relatively high in terms of elevation and topography compared to the surrounding areas, it is not anticipated that there will be extreme water inflows into the boundary of the Project, and therefore discharging water to the environment will be minimal, except in high flow periods (i.e. snow melt, spring, etc.). Water quality results for the FDP and PPWSA will be made available upon request, with weekly, monthly, and quarterly reports being generated for internal review and monitoring.

Additionally, as shown in Figure 10, the FDP for discharging to the environment will be at least 150 m downstream of the PPWSA (from the northeast corner of the PPWSA boundary).

As mentioned in Section 4.3.3.1, all collection and settlement ponds will be in-ground facilities, either being dug or blasted depending on the size of the containment area. No embankments or dams for water/material containment are to be utilized at the Project.

#### 6.4 Impacts of the Environmental Control Berm on Highway 418

As previously mentioned, the ditching network at the Project will be constructed around the perimeter of the site and will collect all surface water run-off prior to leaving the site. The ditching network will direct water to a series of collection sumps/ponds which will ultimately lead to a main settlement pond. Transfer of water will typically be of gravity flow throughout the ditching network. However, it is anticipated that low points in the local topography will be encountered, as well as having to transfer from collection sumps/ponds to the main settlement pond. When these areas are encountered, small submersible pumps will be installed to transfer the water from one location to the next. These pumps will be installed with a float switch that will enable the pump to transfer water once a predefined water level is reached. As the relief in the area is relatively low, the use of these pumps is anticipated to be sufficient for transferring water in high-flow storm events. If it is found that the pumps are unable to maintain sufficient water levels, or if a pump fails, Anaconda will have two (2) portable 'trash' pumps (gas/diesel powered pumps) that will be available for install to transfer water. As Anaconda is regulated by governing agencies to control all discharge from site, it is unacceptable for any discharge, including surface water run-off, to leave site unless it is directed through the FDP.



The site grading plan involves constructing the ditching network to provide slow gravity flow where possible. In areas where this is not possible, a collection sump/pond will be developed to collect water in a low point for water transfer using the previously mentioned submersible pumps. A detailed, as-built grading plan will be developed as the Project construction stage is being undertaken, as it is currently unknown as to how much grading can be performed based on till depth and bedrock levels in the areas where the ditching network will be installed. If bedrock is encountered prior to achieving a full depth for the ditch, the installation of nearby collection sump/pond will be assessed, or the bedrock will be removed with a rock breaker.

The location of the proposed ditching network is shown in Figure 3. Cross sections of the proposed ECB, ditching network, and topography are attached in Appendix E.

#### 6.5 Impacts on Viewscapes from the Environmental Control Berm

Anaconda does not anticipate any adverse effects on Highway 418 due to the waste rock stockpile (ECB) at the Project. The design of the ECB is typical of the waste rock stockpiles that have been constructed elsewhere within the Point Rousse project, and have proved to be stable through annual geotechnical inspections completed by a third-party consultant. Additionally, a 15 m - 30 m buffer from the crest of the steep embankment that is parallel to Highway 418 has been implemented into the design. The design of the waste rock stockpile/ECB will be approved by a third-party consultant prior to construction. Minimal tree cutting will be undertaken within this buffer to ensure there is tree cover within the buffer zone prior to reaching the crest of this embankment.

As the stockpile/ECB is constructed (from north to south), it will be progressively rehabilitated with organics and seed. This will aid in the aesthetics of the ECB in terms of the material blending with the surrounding topography. It is anticipated that the ECB will be visible from parts of the Town, and from Highway 418 as it approaches the Town. However, the construction of the ECB is imperative to the mitigation of noise, sound, and overpressure. With the progressive rehabilitation efforts, Anaconda intends on creating a 'green wall' on the slope of the ECB. As mentioned, this will aid in the ECB blending with the surrounding area, improving the aesthetics of the Project while maintaining the purpose of the berm.

#### 6.6 Stakeholder Interests

As mentioned throughout this document, Anaconda is committed to ensuring all the needs of the Town are met prior to construction and operations at the Project, and to ensuring the safe operation of the Project. As mentioned in the ECB, Anaconda is recommending the formation of a Community Liaison Advisory Committee to bring forward concerns, community needs and suggestions, and community investment proposals for Anaconda. Additionally, Anaconda will continue to partake in Town Council meetings, when requested or scheduled, and Town Hall meetings to address the community as a whole when Project milestones are achieved, or major operational concerns are revealed.

As described in the BMP, a forum for communication between residents/stakeholders will be developed so that each stakeholder has the option to voice concerns, suggestions, or ask questions regarding the Project.



### 7 Decommissioning and Rehabilitation

The development of The Project will include two open pits, as shown in Figure 7. For final rehabilitation and closure, the West Pit will be backfilled with waste material from the East Pit mining operation, and the east pit will be allowed to flood, subsequently draining into the natural environment. The haul road/ramp in the pit will be left in place, barricaded by a 1 m safety berm blocking the ramp entrance into the pit, to allow egress for persons or animals that may fall into flooded open pit. It is anticipated that the East Pit will overflow at 135 m elevation. It is assumed that the West Pit, although backfilled, will also flood with water filling the voids between the backfilled waste rock.

During mining operations, large rocks (waste rock in the magnitude of 1m-2m) excavated from the pit and dumps will be collected and hauled to the perimeter of the open pit above the final flooded pit water surface. The rocks will then be placed along the top of these sections to form a protective barrier to prevent people and vehicles from travelling directly over the top of the slope. The minimum distance from the berm to the pit rim is 6 m, which is in line with Occupation Health and Safety's expectations. Signs warning people of the steep slopes will also be erected at intervals ranging from 15 m to 25 m along the berm. Each sign will state; "CAUTION – OPEN HOLE – ABRUPT DROP AHEAD". The locations of the signage will be finalized for the Closure Plan submission. See Figure 16 for the berm locations relative to the pit. The red line represents the location of the closure berm around the Argyle East Pit, and the brown hatched area represents the backfilled West Pit.

Signage will also be posted around the site so that if someone inadvertently enters the site, signs will be visible to alert that person that there are hazards presents. Wording on the signage will be approved by Department of Natural Resources (DNR) but is expected to say 'Danger – No Trespassing: Argyle Mine Closed'. Signage will be sized to be visible and meet all posted signage requirements. Detailed drawings showing the location of the posted signage will be included with the Closure Plan submission to DNR.

The primary objective of the rehabilitation planning and implementation is to leave the mine site as ecologicallyfriendly as possible, while maintaining long-term physical and chemical stability. Anaconda's approach to rehabilitation at The Project will be to employ advanced progressive and closure rehabilitation techniques through integrated development, operational, and closure technology and design.

All aspects of mine development including mine design, infrastructure location and design, and operations planning will be conducted with full consideration of available progressive rehabilitation opportunities and closure rehabilitation requirements. Baseline environmental studies conducted prior to site construction and operation will be compared to studies continued through the mine development and operations stages. The Project will use practices and procedures which have also been implemented into the Point Rousse Project. The mining activity will be planned and designed to minimize the amount of post-production disturbance to the area of the site, and to minimize the environmental impact prior, during, and post-mine operations. Progressive rehabilitation will be conducted where possible. Organic material will be stockpiled and used for the reclamation of site and dump surfaces.

All rehabilitation and closure work will be described in the Rehabilitation and Closure plan, which will be submitted to the Department of Natural Resources. This plan will be completed based on the guidelines set out by the Department and will be subject to an official review and approval process from the Department prior to development commencing. Closure rehabilitation will generally include the following:

- Dismantling and removal/disposal of all buildings and surface infrastructure. The rehabilitation and closure plans assume that all surface buildings and infrastructure to be demolished or removed have been cleaned of process materials and that all potentially-hazardous materials have been removed;
- Material and equipment will be removed from site. Equipment and demolition debris with no marketable value will be disposed of in a manner consistent with the disposal of other building demolisher waste, and according to Part IV of the Environmental Protection Act regarding waste disposal;



- Rehabilitation and stabilization of the remaining waste rock areas by grading and contouring to a stable slope angle to reduce erosion and sedimentation. The waste rock will subsequently be covered with a soil cap and revegetated;
- The Argyle West Pit will be backfilled with waste rock from the east pit during operations, at which point it will be covered with a soil cap and revegetated;
- The Argyle East Pit will be allowed to flood, creating a small lake with a final water surface at 132m elevation;
- In general, site drainage patterns will be re-established, as near as is practical, to natural, pre-development conditions;
- Grading and/or scarification of disturbed areas to promote natural revegetation, or the placement and grading of overburden for revegetation in areas where natural revegetation is not sufficiently rapid to control erosion and sedimentation;
- Safety berms (a minimum of 1 m in height) will be constructed at all areas with a slope greater than 30 degrees, or to prevent access to an area greater than 30 degrees, including the mined open pits;
- Attending to any special rehabilitation requirements associated with the site, such as removal of any culverts and power lines, and the infilling of any drainage or diversion ditches which are no longer required; and
- Anaconda will incorporate environmental measures in all contract work agreements and ensure all contractors abide by these rules and all environmental regulations set by Anaconda and all government regulatory agencies.

A post-closure monitoring program will continue from the operational monitoring program incorporating appropriate changes to the program. This monitoring program will be developed with the Closure Plan, to be completed in 2018. The post-closure monitoring program will remain in place for a minimum of five (5) years, or until Anaconda and the appropriate regulatory bodies are satisfied that all physical and chemical characteristics are stable. When the site is considered physically and chemically stable, the land will be relinquished to the Crown.





Figure 16 - Argyle Closure Measures



#### 8 Project-Related Documents

Anaconda has participated in two Ming's Bight Town Council meetings over the past year to provide updates and information regarding Anaconda's activity and operations in the area. This provided a forum for two-way communication about The Project, both to provide information and solicit any comments or concerns from the public and stakeholders.

Anaconda maintains regular communication with the Town of Ming's Bight through telephone and in-person conversations, sharing information via e-mail and verbally. Anaconda has consulted with the Town of Ming's Bight (meeting notes are available upon request or can be found in the appendices sections of the original Environmental Assessment registration document), and with provincial government agencies, as well. All consultations are summarized in Table 15.

Regulatory Body	Date	Consultation Details
Town of Ming's Bight	Nov 28, 2016	Discussed exploration activities at Argyle, working near the Ming's Bight water supply and the onus being on Anaconda to ensure environmental compliance
Town of Ming's Bight	Dec 4, 2017	Discussed Stog'er Tight operations, Argyle Exploration and EA registration, water testing results being made available to the Town of Ming's Bight, safety at Stog'er Tight and Argyle, and future mining operations in the area
DNR, EA, Water Resources, Pollution Prevention	Feb 16, 2018	Brief overview presentation of Argyle with the agencies and discussed potential concerns regarding the Project. These concerns will be addressed and implemented within the EA document submission.
Town of Ming's Bight	June 14, 2018	Town Hall Meeting that included a Point Rousse Project update, updates regarding Argyle permitting, planning, and exploration, and discussions regarding blasting noise, vibrations, and overpressure (educational video, blasting contractor present)
EPR Committee	July 12, 2018	Provided a project overview of Argyle and reviewed the primary areas of concern raised in the EA registration process
Public Information Session	September 6, 2018	Public Information Session with the Town of Ming's Bight, as per the EPR Guidelines

Table 15 - Summary of Regulatory Body Consultations Regarding the Project

All other relevant documents to The Project are attached as Appendices to this report. These include, but are not limited to, the following:

- Environmental Baseline Studies
- Acid Rock Drainage Testing and Analysis
- Metallurgical Testing and Analysis
- Women's Employment Plan
- Best Management Plan (BMP)
- Water Quality Management Plan



#### 9 Public Information Meeting

An Open House Public Information Session was held at the Ming's Bight Town Hall on September 6<sup>th</sup>, 2018, regarding the Argyle Project to:

- provide information concerning the Project to the people whose environment may be affected by the undertaking (residents, stakeholders, etc.);
- record and respond to the concerns of the local community regarding the environmental effects of the undertaking; and
- present the information gathered to fulfill the requirements of Section 5 of these guidelines.

Protocol for this public session complied with Section 10 of the Environmental Assessment Regulations, 2003. Meeting minutes and the public sign-in sheet are attached in Appendix I.



## 10 Approval of the Undertaking

The following is a list of permits, licences and approvals which are required for this Project.

Table 16 - Permits, Authorizations and Approvals for The Project

Permit, Authorization or Approval	Activity Requiring Compliance	Government Agency	Status							
Department of Natural Resources										
Mining Lease	Mining	Mineral Lands Division	Planned							
Surface Lease	Mining	Mineral Lands Division	Planned							
Application for Exploration Approval	Drilling and Trenching	Mineral Lands Division	Issued							
Notice for Planned Mine	Mining	Mineral Development Division	Planned							
Development and Operational Plan	General	Mineral Development Division	Planned							
Reclamation and Closure Plan	General	Mineral Development Division	Planned							
Depar	tment of Municipal Affairs and	d Environment								
Release from Environmental Registration	General	Environmental Assessment Division	Planned							
Environmental Approval of Culverts	Road Construction	Water Resource Management Division	Planned							
Permit to Alter a Body of Water	Water Discharging	Water Resource Management Division	Planned							
Certificate of Approval for Site Drainage	Water Run-off from Site	Water Resource Management Division	Planned							
Water Use Authorization	General Water Use	Water Resource Management Division	Planned							
Development and Operational Plan	General	Mineral Development Division	Planned							
Reclamation and Closure Plan	General	Mineral Development Division	Planned							
Environmental Protection Plan	General	Pollution Prevention Division	In-House Document							
Emergency Response Plan	General	Pollution Prevention Division	In-House Document							
Environmental Effects Monitoring Plan	Effluent Discharge	Pollution Prevention Division	In-House Document							
Certificate of Approval (New or Amendment to Existing)	Operations	Pollution Prevention Division (Industrial Compliance)	Planned							
De	Department of Fisheries and Land Resources									
Cutting Permit	Tree Cutting	Forestry Services Branch	Planned							
Operating Permit	General	Forestry Services Branch	Planned							
Town of Ming's Bight										
Development Permit	Development	Town of Ming's Bight	Planned							

Anaconda is also aware that the Project lies within the Rural Planning Area for the Town, specifically in an area zoned as 'Rural'. Development, building, and building permits will be required from the Town in accordance with the Town's Development Regulations (Regulation 7 & 8), prior to any development or construction beginning at the Argyle Project. Anaconda is committed to working with the Town as a major stakeholder in the Project and will ensure all parties are satisfied prior to proceeding with the Project.

Anaconda is committed to ensuring that all permits and approvals are received, as required.



11 Submission

Date

Name



References

Goldcorp: Porcupine Gold Mines. (2012). *Hollinger Project Best Management Plan*. Timmins, Ont.

US Department of Interior Bureau of Mines. (1980). *Survey of Blasting Effects on Ground Water Supplies in Appalachia*.



## Appendix A – Argyle Relative to Regional Features



## Appendix B – Environmental Baseline Studies



## Appendix C – GEMTEC Botanical Survey Report


# Appendix D – Argyle Best Management Plan



## Appendix E – Environmental Control Berm Cross Sections



# Appendix F – Water Quality Management Plan



## Appendix G – GEMTEC Acid Rock Drainage (ARD) Review



# Appendix H – Women's Employment Plan



## Appendix I – Public Information Session Documents



### Appendix J – Vibration and Overpressure Baseline Data



### Appendix K – Wildlife Discussion Regarding Buffer Zone for Floating Burred