Ambershaw Metallics, Inc.

Ambershaw Metallics Inc.
Bending Lake Iron Project
Project Description Summary
July 2019

Prepared for:
Canadian Environmental Assessment Agency

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EXECUTIVE SUMMARY

Ambershaw Metallics Inc. (AMI) owns the surface and mining rights to property on the west side of Bending Lake, approximately 49 kilometres south-west of Ignace, Ontario and 285 kilometres north-west of Thunder Bay (Figure 1). The property is located in an area with no municipal organization. AMI acquired the property from the receiver for the Bending Lake Iron Group in 2016. After acquiring the property from the receiver, AMI staked mining claims to an infrastructure corridor from the property heading in a north-east direction to Highway 17.

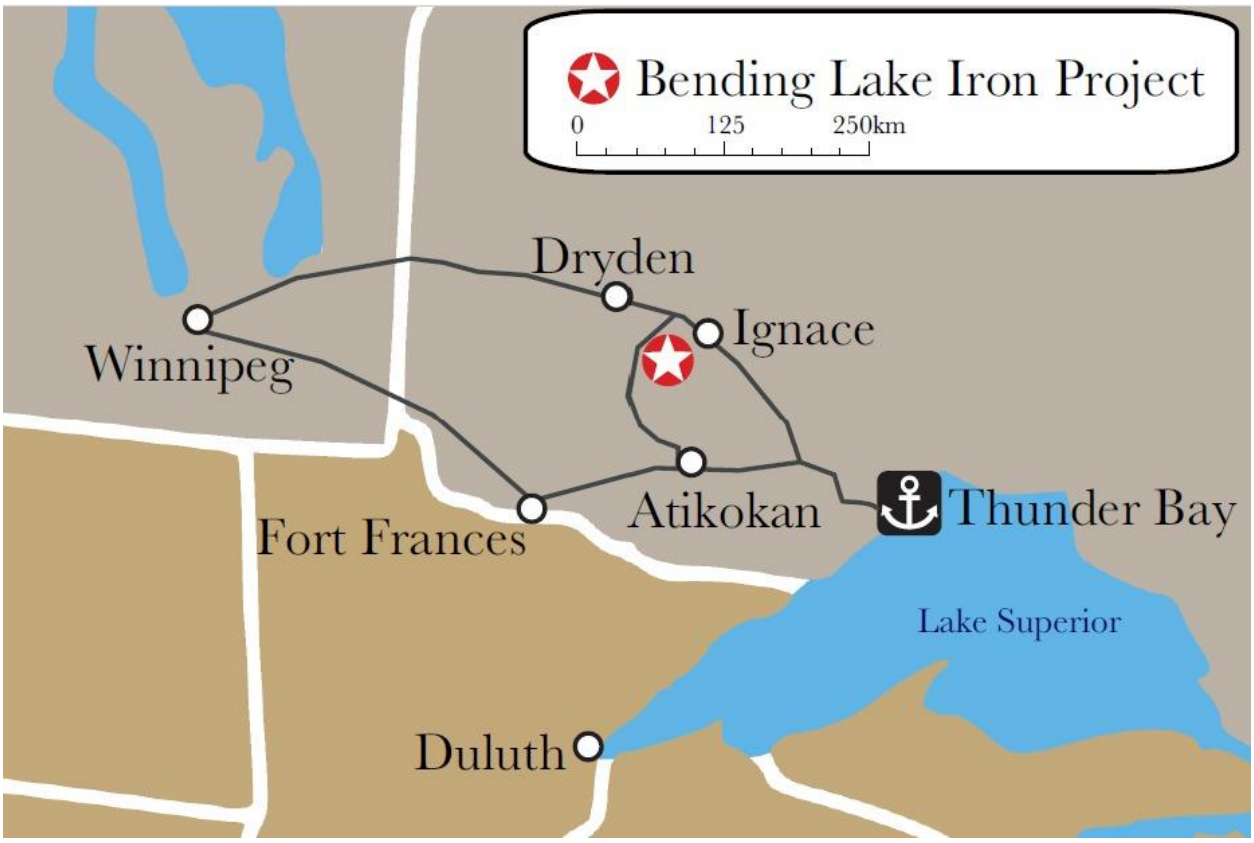


Figure 1: Location of the Bending Lake Iron Project

The property is a greenfield location which contains a deposit of iron ore that has been studied for many years, most recently (prior to AMI) by the Bending Lake Iron Group who undertook drilling and environmental baseline studies on the property from 2010 through 2012. AMI has undertaken or commissioned environmental and engineering studies and public, agency and Indigenous

consultation in 2017 and 2018 to support the Project. They will continue this approach as the Project goes through all stages of the mining cycle

The name of the Project is the Bending Lake Iron Project.

1. Project Information

AMI proposes to construct, operate and ultimately close and rehabilitate an open pit iron ore mine from a deposit located on the west side of Bending Lake. The objective of the Project is to produce commercial grade pellets or briquettes for the North American steel manufacturing industry. A processing plant and ancillary facilities will be located close to the mine site. An infrastructure corridor containing an all-season road, a railway spur or conveyor line, and a high voltage transmission line are proposed to connect the Project with existing rail, electric transmission and highway infrastructure. This infrastructure corridor would travel in an easterly direction from the mine and then head to the north-east towards Highway #17.

The maximum daily input capacity of the processing plant is 25,000 metric tonnes per day. The maximum ore production capacity of the open pit mine will be 23,000 tonnes per day of ore and the plant will produce a maximum of 5,600 tonnes per day of pellets or briquettes. In order to achieve this capacity, 50,000 tonnes of ore and waste rock will be mined daily.

The centre of the Project has approximate geographic coordinates of 49°19’26.4688” N and 92°10’47.3335” W, Universal Transverse Mercator (UTM) North American Datum 83, Zone 15 N 5463800 m, E 559600 m.

In addition to the open pit, the major components of the Project include:

- A tailings management area, containment structures and associated material stockpiles;
- A waste rock disposal area;
- An overburden storage area;
- Ore processing facilities and ore stockpiles;
- Pelletizing or briquetting plant using “cold bonding” technology, finished products storage and load out facilities;

- Support facilities and infrastructure, including but not limited to water supply and treatment, waste management and storage facilities and stormwater management facilities;
- Damming and dewatering natural waterbodies to accommodate mine infrastructure;
  - An administration complex, warehouse, maintenance garage, accommodations complex, aggregate plant, and fuel storage facilities;
  - Related on-site access roads, pipelines and low voltage electrical power facilities;
  - An explosives storage facility;
  - A high voltage electric transmission line from the Hydro One network to the mine site; and
  - A 25-kilometre-long infrastructure corridor from the mine site to a site adjacent to the Canadian Pacific Railway, located west of Ignace. This corridor would be suitable for conveyor, rail or truck transport and would also contain the high voltage electric transmission line.

The layout of the components will be refined through further studies and consultation with public, agency and indigenous groups during the Environmental Assessment.

The Project is to be completed on patented claims where AMI controls the surface and mineral rights. Access will cross Crown land with the existing road network to Hwy 622 and the infrastructure corridor will be located on staked mining claims that will be brought to patent. A list of the claims is found below.

Item	Property Description including Parcel No and Claim No	PIN
1	PCL 6308 SEC DKF: Mining Claim K183 Unsurveyed Territory, District of Kenora	42184-0048 (LT)
2	PCL 6309 SEC DKF: Mining Claim K184 Unsurveyed Territory, District of Kenora	42184-0044 (LT)
3	PCL 6310 SEC DKF: Mining Claim K185 Unsurveyed Territory, District of Kenora	42184-0045 (LT)
4	PCL 6311 SEC DKF: Mining Claim K186 Unsurveyed Territory Being Land and Land Covered with the Water of Self Lake; District of Kenora	42184-0046 (LT)

5	PCL 21091 SEC DKF: Pt Mining Claim K17531 Unsurveyed Territory Not Covered by the Waters of Bending Lake as in PA14705. District of Kenora	42184-0058 (LT)
6	PCL 21092 SEC DKF: Pt Mining Claim K17532 Unsurveyed Territory Not Covered by the Waters of Page Lake as in PA14706; District of Kenora	42184-0057 (LT)
7	PCL 21093 SEC DKF: Mining Claim K17533 Unsurveyed Territory Not Covered by the Waters of Page Lake as in PA14707; District of Kenora	42184-0056 (LT)
8	PCL 21094 SEC DKF: Pt Mining Claim K17534 Unsurveyed Territory Not Covered by the Waters of Page Lake as in PA14708. District of Kenora	42184-0060 (LT)
9	PCL 21095 SEC DKF: Pt Mining Claim K17535 Unsurveyed Territory Not Covered by the Waters of Bending Lake as in PA14709; District of Kenora	42184-0061 (LT)
10	PCL 21096 SEC DKF: Pt Mining Claim K17536 Unsurveyed Territory Not Covered by the Waters of Bending Lake as in PA14710; District of Kenora	42184-0062 (LT)
11	PCL 21068 SEC DKF: Mining Claim K17537 Unsurveyed Territory Being Land and Land under the Water of Part of Self Lake within the Limits of this Mining Claim; District of Kenora	42184-0043 (LT)
12	PCL 21087 SEC DKF: Mining Claim K17538 Unsurveyed Territory; District of Kenora	42184-0042 (LT)
13	PCL 21077 SEC DKF: Mining Claim K17539 Unsurveyed Territory; District of Kenora	42184-0041 (LT)
14	PCL 21078 SEC DKF: Mining Claim K17540 Unsurveyed Territory; District of Kenora	42184-0039 (LT)
15	PCL 21079 SEC DKF: Mining Claim K17541 Unsurveyed Territory; District of Kenora	42184-0038 (LT)
16	PCL 21080 SEC DKF: Mining Claim K17542 Unsurveyed Territory Excepting the SRO On and Over a Strip of Land Along the Shores of an Unnamed lake	42184-0036 (LT)

	and Which Said Strip of Land is Bounded by the High Water Mark of an Unnamed Lake and by a Line, Every Point of which is Distant 400 Ft from the Nearest Point in the Said High Water Mark; District of Kenora	
17	PCL 21081 SEC DKF: Mining Claim K17543 Unsurveyed Territory Excepting the SRO On and Over a Strip of Land Along the Shores of an Unnamed lake and Which Said Strip of Land is Bounded by the High Water Mark of an Unnamed Lake and by a Line, Every Point of which is Distant 400 Ft from the Nearest Point in the Said High Water Mark; District of Kenora	42184-0035 (LT)
18	PCL 21097 SEC DKF: PT Mining Claim K17544 Unsurveyed Territory Not Covered by the Waters of an Unnamed lake as in PA14711; District of Kenora	42184-0033 (LT)
19	PCL 21098 SEC DKF: PT Mining Claim K17545 Unsurveyed Territory Not Covered by the Waters of Bending Lake as in PA14712; District of Kenora	42184-0063 (LT)
20	PCL 21099 SEC DKF: PT Mining Claim K17546 Unsurveyed Territory Not Covered by the Waters of Bending Lake as in PA14713; District of Kenora	42184-0065 (LT)
21	PCL 21100 SEC DKF: PT Mining Claim K17547 Unsurveyed Territory Not Covered by the Waters of Bending Lake as in PA14714; District of Kenora	42184-0066 (LT)
22	PCL 21101 SEC DKF: PT Mining Claim K17548 Unsurveyed Territory Not Covered by the Waters of Bending Lake as in PA14715; District of Kenora	42184-0068 (LT)
23	PCL 21102 SEC DKF: PT Mining Claim K17549 Unsurveyed Territory Not Covered by the Waters of Bending Lake as in PA14716; District of Kenora	42184-0069 (LT)
24	PCL 21069 SEC DKF: Mining Claim K17550 Unsurveyed Territory Being Land and Land Under the Water of part of a Small Pond within the Limits of this Mining Claim; District Kenora	42184-0067 (LT)
25	PCL 21070 SEC DKF: Mining Claim K17551 Unsurveyed Territory Excepting the SRO On and Over a Strip of Land Along the Shores of Bending Lake and	42184-0071 (LT)

	Which Said Strip of Land is Bounded by the High Water Mark of Bending Lake and by a Line, Every Point of which is Distant 400 Ft from the Nearest Point in the Said High Water Mark; District of Kenora	
26	PCL 21082 SEC DKF: PT Mining Claim K17552 Unsurveyed Territory Not Covered by the Waters of Bending Lake as in PA14691; District of Kenora	42184-0072 (LT)
27	PCL 21071 SEC DKF: Mining Claim K17553 Unsurveyed Territory Being Land and Land Under the Water of a Small Pond within the Limits of this Mining Claim; Excepting the SRO On and Over a Strip of Land Along the Shores of Bending Lake and Which Said Strip of Land is Bounded by the High Water Mark of Bending Lake and by a Line, Every Point of which is Distant 400 Ft from the Nearest Point in the Said High Water Mark; District of Kenora	42184-0064 (LT)
28	PCL 21103 SEC DKF: Mining Claim K17555 Unsurveyed Territory Being Land and Land Under the Water of Part of Self Lake within the Limits of this Mining Claim; District of Kenora	42184-0047 (LT)
29	PCL 21104 SEC DKF: Mining Claim K17556 Unsurveyed Territory, District of Kenora	42184-0050 (LT)
30	PCL 21105 SEC DKF: PT Mining Claim K17557 Unsurveyed Territory Not Covered by the Waters of Bending Lake as in PA14719, District of Kenora	42184-0051 (LT)
31	PCL 21106 SEC DKF: Mining Claim K17558 Unsurveyed Territory, District of Kenora	42184-0049 (LT)
32	PCL 21107 SEC DKF: PT Mining Claim K17559 Unsurveyed Territory Not Covered by the Waters of Page Lake as in PA14721, District of Kenora	42184-0052 (LT)
33	PCL 21072 SEC DKF: Mining Claim K17560 Unsurveyed Territory, Excepting the SRO On and Over a Strip of Land Along the Shores of Page Lake and Which Said Strip of Land is Bounded by the High Water Mark of Page Lake and by a Line, Every Point of which is Distant 400 Ft from the Nearest Point in the Said High Water Mark; District of Kenora	42184-0053 (LT)

34	PCL 21073 SEC DKF: PT Mining Claim K17561 Unsurveyed Territory Not Covered by the Waters of Bending Lake as in PA14677. District of Kenora	42184-0054 (LT)
35	PCL 21074 SEC DKF: PT Mining Claim K17562 Unsurveyed Territory Not Covered by the Waters of Bending Lake as in PA14678. District of Kenora	42184-0055 (LT)
36	PCL 21075 SEC DKF: PT Mining Claim K17563 Unsurveyed Territory Not Covered by the Waters of Bending Lake as in PA14679. District of Kenora	42184-0059 (LT)
37	PCL 21108 SEC DKF: PT Mining Claim K17878 Unsurveyed Territory Not Covered by the Waters of Turtle River as in PA14722. District of Kenora	42184-0075 (LT)
38	PCL 21109 SEC DKF: PT Mining Claim K17879 Unsurveyed Territory Not Covered by the Waters of the Turtle River as in PA14723. District of Kenora	42184-0076 (LT)
39	PCL 21110 SEC DKF: PT Mining Claim K17880 Unsurveyed Territory Not Covered by the Waters of the Turtle River as in PA14724. District of Kenora	42184-0077 (LT)
40	PCL 21112 SEC DKF: Mining Claim K17882 Unsurveyed Territory Situate in the Bending Lake Area Excepting the SRO On and Over a Strip of Land Along the Shores of Turtle River and Which Said Strip of Land is Bounded by the High Water Mark of the Turtle River and by a Line, Every Point of which is Distant 400 Ft from the Nearest Point in the Said High Water Mark; District of Kenora	42184-0078 (LT)
41	PCL 21076 SEC DKF: Mining Claim K17883 Unsurveyed Territory Being Land and Land under the Water of part of a small Pond within the Limits of this Mining Claim; Excepting the SRO On and Over a Strip of Land Along the Shores of the Turtle River and Which Said Strip of Land is Bounded by the High Water Mark of Turtle River and by a Line, Every Point of which is Distant 400 Ft from the Nearest Point in the Said High Water Mark; District of Kenora	42184-0074 (LT)
42	PCL 21113 SEC DKF: Mining Claim K17884	42184-0073 (LT)

	Unsurveyed Territory Being Land and Land Under the Water of a small Pond within the Limits of this Mining Claim; District of Kenora	
43	PCL 21114 SEC DKF: Mining Claim K17885 Unsurveyed Territory; District of Kenora	42184-0070 (LT)
44	PCL 21089 SEC DKF: PT Mining Claim K17887 Unsurveyed Territory Not Covered by the Waters of an Unnamed Lake as in PA14698, District of Kenora	42184-0029 (LT)
45	PCL 21090 SEC DKF: PT Mining Claim K17888 Unsurveyed Territory Not Covered by the Waters of an Unnamed Lake as in PA14699, Except PT1.23R10164; District of Kenora	42184-0028 (LT)
46	PCL 21083 SEC DKF: PT Mining Claim K17889 Unsurveyed Territory Not Covered by the Water of an Unnamed Lake as in PA14692; District of Kenora	42184-0032 (LT)
47	PCL 21084 SEC DKF: Mining Claim K17890 Unsurveyed Territory; District of Kenora	42184-0037 (LT)
48	PCL 21085 SEC DKF: Mining Claim K17891 Unsurveyed Territory Excepting the SRO On and Over a Strip of Land Along the Shores of an Unnamed Lake and Which Said Strip of Land is Bounded by the High Water Mark of an Unnamed Lake and by a Line, Every Point of which is Distant 400 Ft from the Nearest Point in the Said High Water Mark; District of Kenora	42184-0034 (LT)
49	PCL 21086 SEC DKF: Mining Claim K17892 Unsurveyed Territory; District of Kenora	42184-0040 (LT)

The Project and the region surrounding it has not been the subject of an environmental study.

The Ministry of Natural Resources and Forestry (MNRF) has developed a Crown Land Use Atlas which identifies existing land uses and features and provides general management prescriptions for the Crown land units identified in the Atlas. In addition, the area is part of the Sustainable Forest Management Licence held by

Domtar and administered by the MNRF. A ten-year forest management plan is being developed for the licence area.

The Project is described as the location of the Project components. The boundaries of this area will be further defined as the Project goes through the EA process. The infrastructure corridor is described as the connection between the mine site and the existing infrastructure paralleling Highway 17 and running in an east-west direction. The general Project Area will be defined through the EA process. It is expected to reflect a larger area which may experience indirect effects of the project.

2. Major Components of the Project

The major components of the Project are outlined in figures 2 and 3. They consist of the open pit, waste rock and tailings areas and the processing facilities.

Open Pit

The preliminary design for the open pit has a maximum width of one kilometer, a maximum length of 3.2 kilometres and a maximum depth of 300 metres. In order for the deposit to be economically viable, a shallow bay in the West Arm of Bending Lake will be dammed and dewatered. Approximately 50,000 tons of ore and waste rock will be mined daily. With ore reserves estimated at 335 million tonnes, the mine is estimated to have a life of between 30 and 40 years. Excess water from the open pit will be removed on a daily basis by pumping systems, treated and used as process makeup water.

Coffer Dams

Since the ore body runs under a part of Bending Lake, two dams will be constructed to connect with an island in the middle of the West Arm. This will allow that portion of the West Arm to be drained and have the bottom sediments removed in order that it can form part of the open pit. The dams will be engineered and constructed using best management practices and the open pit will be set back from the dams to ensure that no infiltration from Bending Lake into the mine occurs.

Overburden and Waste Rock Storage

During construction, overburden (soil cover) will be removed and stored in a location adjacent to the mine pit and waste rock stockpile area. It will be used as

final surface during mine closure. The dimensions of the overburden storage area are anticipated to be less than two km2 in surface area. It will be determined through the EA process when more details are known regarding the soils depths of the areas to be cleared.

Waste rock (non-iron ore bearing rock) will also be produced during the construction phase and stored adjacent to the open pit area. This will come from boulders forming part of the overburden and stripping the surface rock layers covering the iron ore deposit.

Once mining commences, non-ore bearing rock will be separated from the iron ore deposit. As a result, approximately one ton of waste rock will be produced for every ton of iron ore. Based on the current resource estimates, approximately 500 million tons of waste rock will be produced during the life of the mine. The primary contributor of waste rock will be rock produced from stripping activities, but the initial magnetic separation process (dry cobbing) will also yield substantial quantities of waste rock. The majority of the waste rock produced is expected to be chemically inert so much of the waste rock produced by dry cobbing will be used in maintaining and expanding the tailings management area, road and plant maintenance projects and mine reclamation projects. Geochemical testing will be done to properly characterize all the mine wastes.

The waste rock stockpile area will be located in an area adjacent to the western edge of the mine opening and will cover an area of less than 10 km2. Waste rock will be removed from the mine by the same methods used in the removal of iron ore. Haul trucks will deliver material to the waste rock stockpile area and develop the area according to a detailed waste rock management plan that will consider development including the final closure of the facility.

Additional studies and investigations will be required to determine the optimal waste rock storage design and possible alternatives. The development of the mining plan will identify potential opportunities to improve the waste rock stockpile area through better estimates of waste rock production as mining operations progress.

Much of the waste rock produced during the initial stages of the Project will be used in the construction of the dams on the west arm of Bending Lake, construction of a containment embarkment for the tailings area and for aggregate production. Based upon preliminary tests, most of the waste rock has been

determined to be non-acid generating. Any rock that is determined to be acid generating will be segregated and stored in a separate, contained area of the waste rock stockpile area in order to control any acid rock drainage. The size and exact location of such an area will be determined as part of the EA.

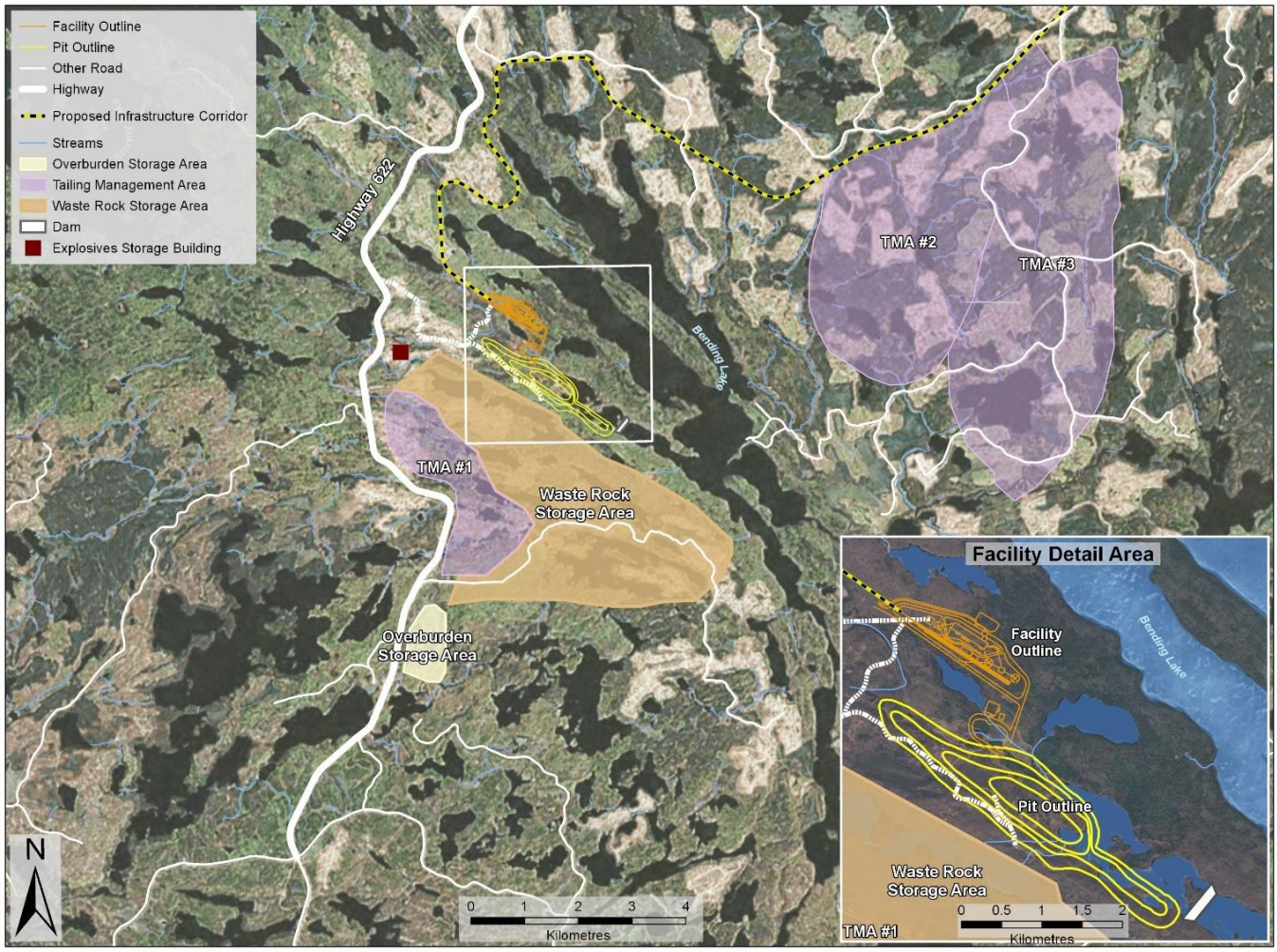


Figure 2: Major Components of the Mine

Tailings Management Areas (TMAs)

Three alternative TMAs have been identified on the site plan (Figure 2). An assessment of alternative TMAs will be undertaken during the EA and a preferred TMA will be selected.

Process tailings will be pumped to one of these TMAs. The TMA will be located in an area that will minimize the impact on area resources including water and

fisheries. TMA option 1 will have surface expression of approximately 5 km^2 and will incorporate systems to re-use runoff water in the design. TMA option 2 will have a surface expression of approximately 10 km^2 and will follow the same design criteria as option 1. TMA Option #3 will also have surface expressions of no more than 10 km^2 as topography of the area is yet to be determined for best design criteria.

The TMA selected will be constructed in a series of cells which will allow for expansion over time. The outline of the TMA represents the maximum extent of the TMA. The TMA alternatives have different sizes, however the volume able to be contained in each TMA will be the same due to different heights of the tailings.

Process tailings will be pumped via slurry pipeline running from the mine site to the selected TMA development site. The pipeline to TMAs 2 and 3 will follow the infrastructure corridor while the pipeline to TMA 1 will follow the main road from the plant and south on Highway #622 to the TMA. The preferred site will be developed to maximize the reclaim of process water and run off from rain and snow melt. Water will be collected in a settling area and pumped back to the mine site through a return water line that will be constructed in the same corridor as the tailings pipeline.

Runoff and Seepage Collection System

As per the requirements of the Metal and Diamond Mining Effluent Regulations, a runoff and seepage collection system will be designed to collect and manage any storm water and seepage discharges from the Project.

Wastewater Treatment Facility

Water from the open pit, stormwater and the TMA will be collected, treated and used as process water. Treatment may include settling ponds, filtration or other methods to be determined after more detailed study during the EA. Surplus water will be discharged to the natural environment. Treatment of human wastes will be either by a package sewage treatment plant or traditional septic tanks and tile fields.

Ore Processing

Ore from the mine will be processed in multiple operations located at a single plant site adjacent to the mining operations. Primary, secondary and possibly tertiary

crushers, followed by two stage grinding, will reduce the ore to a sufficient size for magnetic separating. Concentrate will be combined with other raw materials in a cold bonding process to create pellets or briquettes. The cold bonding process is environmentally friendly as it does not require an induration furnace with the associated air emissions including greenhouse gasses. The finished product will travel by rail, road or conveyor from the mine site to the rail mainline for shipment to market.

The mining operation will require the construction of several buildings which will be required for processing facilities, maintenance facilities, storage facilities, administrative facilities and infrastructure. The site layout was developed to minimize land disturbance and to take advantage of geographic features in order to maximize operational efficiency.

All buildings at the plant site, with the exception of the explosives storage building and crusher building, will be located an average distance of 850 metres from the northwest edge of the proposed open pit. The explosives storage building will be licensed under the Explosives Act. The processing plant site will cover an area of 450,000 square metres with an approximate dimension of 450 m x 1000 m and will include the following major structures: Administrative building; Maintenance & warehouse building; Electrical substation; Mill feed bins/silos; Rail loading building or conveyor; Processing plant; Coarse tailings loading building; Bins/silos for storing additives; Finished product bins/silos; Process water building; Tailings pumping building; Clarifier; and Mill water reservoir.

The crushing complex will include the following major structures:

- Crushing and Dry Cobbing Building;
- Ore stockpile adjacent to crushing building; and
- Cobbed rock stockpile adjacent to crushing building.

Crushing will be performed in a crushing and cobbing building, which is located close to the open pit. There the ore will be crushed followed by first stage magnetic separation (cobbing). The preconcentrate will be conveyed via a conveyor belt system to the processing plant, while the reject material will be transported to the waste rock storage.

A system of access roads and parking areas will link the buildings together. During construction of the buildings, a temporary construction camp will be

established. During operation, a much smaller area may be required for accommodations since many workers will reside in the Town of Ignace. A package sewage treatment plant will service the accommodation area and some of the operations buildings while temporary sewage facilities will service the construction camp which will consist of portable trailers. A water distribution system will provide fire water and service water to the buildings at the Project.

Construction Camp and Accommodations

During construction, a portable camp will be established to accommodate the approximately 450 persons involved. The camp will include kitchen, bedrooms and self-contained washroom facilities that will be pumped out on a regular basis. Once the Project enters the operations phase, the smaller number of people required will primarily live in Ignace, which is a short commute away. Ignace has the capacity to accommodate all mine staff. The Town provides community facilities and is more able to accommodate families.

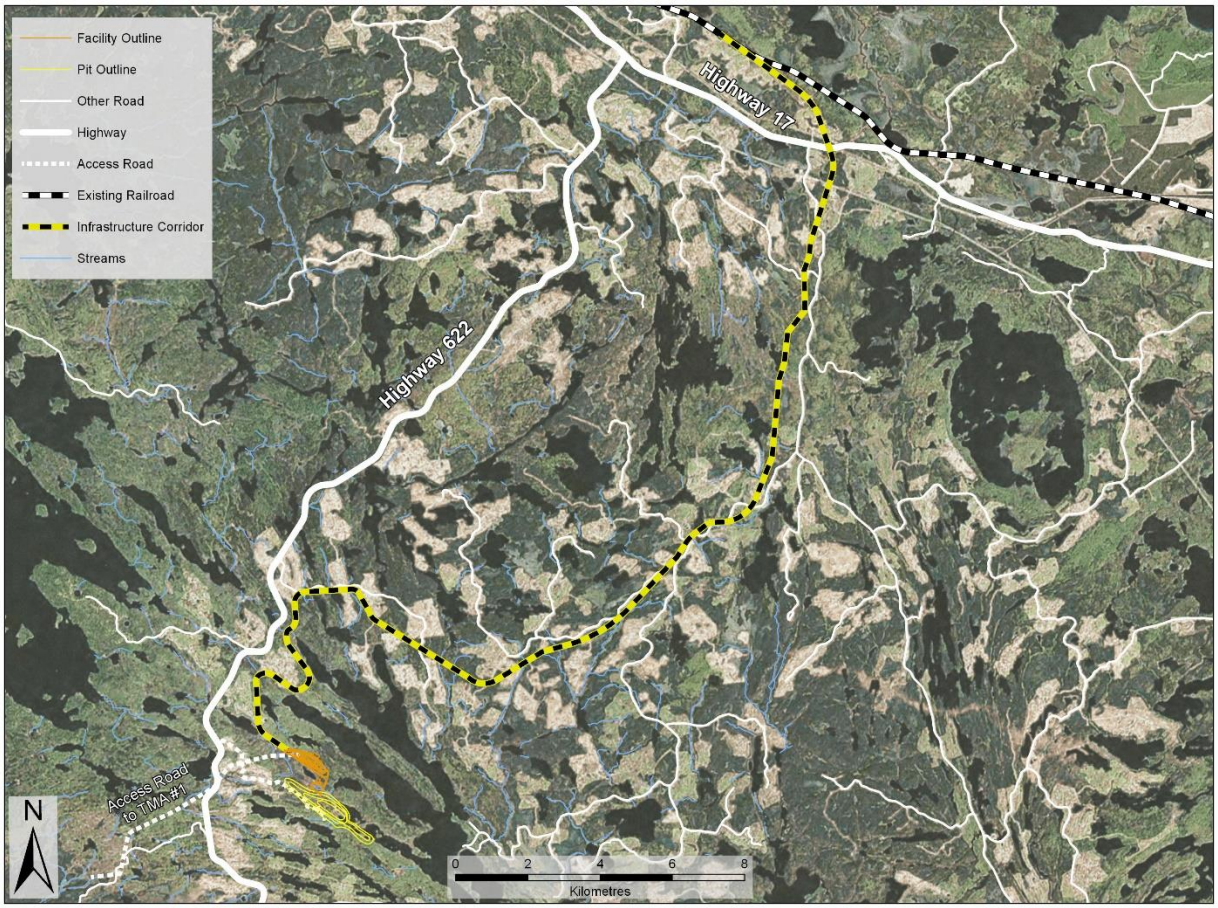


Figure 3: Infrastructure Corridor

Infrastructure Corridor

Other significant infrastructure associated with the mine includes an infrastructure corridor of approximately 25 kilometres in length from the mine heading in a north-easterly direction. A railway line or ore conveyor and a high voltage electric transmission line would be located within the corridor to take advantage of existing forestry roads and cut-over areas.

Electrical Transmission Line

The mine's requirement for power is assumed to be approximately 10 megawatts (MW) and includes supplying mining and crushing operations with power. The concentrator and pellet processing operations require an additional 15 MW of power. Both of these loads will be supplied by either the existing M2D 115kV

transmission line or the D26A 230kV transmission line. One primary substation will be required to supply the mine. This primary transformer or transformers will step down the incoming voltage to a usable voltage (approximately 5kv) to be distributed through the mine and processing facility.

An EA for the transmission line route will be undertaken by AMI as part of the approvals process using Hydro One's Class EA for Minor Transmission facilities. The EA will identify the environmental effects of the transmission line on the natural, physical and social environment and will provide detailed mitigation measures to avoid or minimize these effects. These mitigation measures will form part of an environmental management plan that is part of the Class EA.

The line will be constructed to Hydro One specification by a private powerline constructor that has experience in this work. The transmission line will be for the sole use of the mine. As a result, AMI will pay for the construction of the powerline and all necessary infrastructure, after which Hydro One will assume the operation of the line during mine operations. Once the mine is decommissioned, the powerline will also be decommissioned at AMI's cost as per agreement between AMI and Hydro One, unless Hydro One has another use that it could be put to.

Sequence of Events

There are five general Phases related to the development of the mine at Bending Lake.

(1) Project Definition Phase – Gathering Baseline Environmental Data, Conceptual, Feasibility and Detailed Engineering, Continued Exploration Drilling, Terms of Reference preparation along with Indigenous and Public Consultation. The work commenced in 2011 and continued in 2016 with AMI becoming the project owner. It is anticipated to be complete by the end of 2021.

(2) Environmental Assessment Phase – Gathering Baseline Environmental Data, Feasibility and Detailed Engineering, Continued Exploration Drilling, Field studies, and Identification of Long Lead items along with Indigenous and Public Consultation. A Project Description will be submitted for review by the Agency in summer, 2019. An extensive amount of field studies to support the EIS have already been undertaken. A gap analysis

will be conducted in 2019 and the remaining field studies required to support the EIS will be undertaken during 2019 and 2020. Agency/public and Indigenous consultation will continue throughout the process, with the goal of producing a draft EIS around early to mid-2021 and approval of the E.I.S. by the end of 2021. Acquisition of permits will begin by mid-2021 and completed in early 2022.

(3) Construction Phase – land clearing, pit development grading, foundation placement, equipment placement. Clearing of the site is expected to commence during Winter 2021-2022. Much of the site has been heavily logged already. Construction start-up of buildings and facilities is planned for spring of 2022.

(4) Start up and Production Phase – equipment commissioning, mining, product shipping. This is planned for late 2024 – 2025 and production is expected to last for about 30 to 40 years or until 2055 - 2065.

(5) Closure and Abandonment Phase - Mine Closure and abandonment will likely take 3 to 5 years at which time the project will be fully decommissioned in compliance with all regulatory requirements and the Mine Closure Plan. This Phase is expected to occur between 2055 and 2065. While some decommissioning of localized areas will occur throughout the Production Phase, the mine will be fully decommissioned over a period of five years and the end of production and then abandoned. The open pit will be allowed to fill naturally. The dams on the West Arm of Bending Lake will be removed to allow fish passage once the pit water level is the same as the rest of the lake, the TMA and waste rock storage area will be contoured to allow for natural drainage. They will be covered with overburden from the overburden stockpile and revegetated. All infrastructure will be removed and or decommissioned. A monitoring program will be established and carried out through this phase to ensure that there will be no long-term detrimental effects on the natural environment.

More detail is provided below relating to construction, operation, closure and abandonment of the mine.

<u>Site Preparation and Construction</u>

Site preparation will include any necessary clearing to remove vegetation to allow for the construction of surface facilities and the pit. All areas proposed for buildings, the waste rock storage area, the TMA and the infrastructure corridor and a surrounding buffer area will be cleared of vegetation. Usable timber resources will be harvested prior to development and either utilized in construction activities or shipped offsite for processing. With respect to the infrastructure corridor, should the rail or conveyor alternative be chosen, then the corridor will be cleared similar to the other facility areas on site, however overburden and low growing vegetation would not be removed. The high voltage transmission line would take advantage of cleared right-of-way in the Infrastructure corridor or along forest roads. This will be determined in the provincial Class EA that is required for approval of the line. The trucking of product to rail alternative would make use of the existing forest main haul road and secondary roads. In addition, levelling of the areas proposed for facilities will be required and establishment of site drainage will be undertaken. Soils and vegetative matter from these areas will be removed and stored together in a location for re-use during mine closure. Waste rock from clearing and site preparation (including blast rock from site levelling, waste rock overburden from the pit and loose rock in the overburden) will be separated, crushed and used for road building, TMA perimeter construction and wherever else aggregate is required for.

During the construction phase, overburden and waste rock will also be removed at the pit to expose the ore body. This material will be moved to the designated stockpile areas for storage or use in the construction project. One of the more significant facilities that would use this waste rock would be the dams across the West Arm of Bending Lake. It is anticipated that very little of the waste rock generated during the construction phase will go to a storage area but rather be used during construction.

Once the clearing, grading and roadbuilding is complete, construction of various components of the mine will be undertaken relatively simultaneously, although the longer lead time components will be started first. A temporary construction camp, consisting of office, accommodations, washroom and kitchen trailers will be established on site. The facilities will be used first by the clearing contractor as clearing is expected to start in the late fall. The camp will grow in the spring to accommodate private construction contractors working on various components of the Project. Labour (specialty skills) will be brought in from the outside, however it is anticipated that a large amount of the labour will be sourced locally and from Indigenous communities.

Since the construction phase will require the transport of heavy equipment to the Project site, the existing roads may require repair/redevelopment and new roads will be constructed to standard specifications for mining equipment. Where roads do not already exist, the locations will be further studied and engineered for optimum location during the EA. Roads associated with the infrastructure corridor will either be existing main haul roads or will be constructed to all-weather road standards used by Domtar in the Wabigoon Forest as per MNRF/MTO standards.

Preparation of the land for buildings and construction of the railway and tailings and return water pipelines may require grading, excavation, blasting, earth moving and bridging or culverts over watercourses. All infrastructure will be located adjacent to roads to facilitate construction and maintenance. The mine processing facility is to be located as close to the open pit as is practical. It will include buildings and road infrastructure as previously mentioned and a road system to link the buildings and facilities together. The explosives storage building will be located as close to the open pit and other infrastructure as is allowed by the regulator. A tailings pipeline will link the facilities with the TMA and a new rail line or conveyor will be constructed at the site and extend to the north-east. The tailings pipeline will be located within the infrastructure corridor or adjacent to the main access road and south parallel to Highway 622, dependent upon which TMA is selected. A new high voltage electric transmission line will be constructed from a transformer station at the processing site and proceeding to the north to connect with Hydro One.

As previously mentioned, the ore body runs under the West Arm of Bending Lake. In order for the mine to be economically viable over 30 to 40 years, part of this arm has to be dammed and dewatered to access the ore body. This will be done where the water narrows around an island located in the middle of the West Arm (figure 2). Two dams will be constructed on the West Arm of Bending Lake to connect with an island in the middle of the West Arm. The dams will have an approximate 12 metre crest and the sides of the dams will slope at a gentle angle to be determined through an engineering study. The dams will be approximately three metres above the normal lake level. Construction of the dams will be a priority in the Project Schedule and would probably be done under wet conditions using silt curtains to minimize sediment transport. Waste rock would form the majority of the dam material used. It would be placed once the bottom sediments in the area were removed to provide a firm foundation. A low permeability wall would be constructed through the completed dam and extend into the bedrock to prevent seepage. Once construction is complete, fish salvage and dewatering would commence.

The TMA will be constructed to manage the tailings associated with the mining process. The tailings embankment surrounding the TMA will be constructed of a combination of waste rock, naturally occurring earthen materials and the coarser fraction of the tailings themselves. The TMA will be constructed in a series of cells in order to allow for expansion to the approximate boundaries of the alternative selected in the EA. The height of the TMA will be determined by the particular site selected of the three alternatives. Given that the local topography is classified as being relatively flat, there are few areas that could provide natural topographic containment. A perimeter runoff and seepage collection system will collect storm water and seeping discharges which will, if necessary, be treated in a treatment plant at the project site and used as make-up water for the slurry pipeline.

With TMA expansion, it will be necessary to construct berms and other material retention areas in order to effectively manage return water and material storage. Whenever possible, waste rock from mining or cobbing operations will be utilized in the development of the TMA. Construction activities are expected to take approximately 2 to 3 years to complete.

Operations

The mining operation will consist of blasting rock in the pit, initial separation into ore bearing and non-ore bearing rock with the ore bearing rock being transported by truck to the processing plant and the non-ore bearing rock being transported to the waste rock storage area. The main equipment used in the open pit includes drills to allow for blasting of the rock, loading equipment with a capacity of 15 to 20 cubic metres, and mine trucks with a capacity of up to 250 tonnes. Other equipment found at the Project will include track dozers, motor graders, excavators, backhoes, front end loaders, lift trucks, water trucks, personnel vehicles, fuel/lube trucks, mobile lighting equipment, fork-lifts, pickup trucks and tractor trailers.

Once the ore bearing rock is at the plant, it will be processed. Tailings, which are the waste product from the refining process, will be transported to the TMA via a slurry pipeline. A return water pipeline, located in the same right-of-way, will bring water back to be re-used in the process. The initial water for the slurry pipeline will be sourced from the West Arm of Bending Lake which will be dewatered in order to accommodate the open pit. Other water sources during operations will be from the TMA and if required from wells or from another local waterbody like Bending Lake. This will be determined during the EA.

Concentrate will be stored on site, as well as the finished product in order that shipping can continue for a short time in the case that operations at the mine were temporarily shut down. The finished product (pellets or briquettes) will be shipped via truck, rail or enclosed conveyor to a siding area off the CP Rail mainline. If rail is the chosen method of shipping from the processing plant, no re-handling of the product will be required. Should the conveyor or truck be the preferred method of transport, then storage and handling facilities will be located at the rail siding to facilitate loading the finished product into rail cars. This will be determined through the EA.

Most of the labour during the operations phase is expected to be accommodated in Ignace as it has the capacity to accommodate families and single persons. This may also help to mitigate some of the negative social aspects of a large influx of mostly male workers in the area. There will also be a small camp at site to accommodate temporary staff. This will be serviced by a well and a septic tank and tile field or a package sewage treatment system.

During operations it is expected that labour will be sourced from local Indigenous communities and from Ignace, which is within commuting distance.

Closure and Rehabilitation (Abandonment)

The Closure Plan will be prepared based on the specific requirements outlined in *Ontario Regulation 240/00* and will include a description of the method, schedule, cost and financial assurance of all rehabilitation to be conducted on the site once closure commences. The proposed closure is anticipated to include natural flooding of the pit and rehabilitation of the disturbed areas including watercourses and land. These disturbed areas will be restored to pre-development conditions, to the extent practical.

Upon closure, all building and supporting infrastructure will be decommissioned in accordance with the certified Closure Plan that will be submitted for the Project (per Part VII of the *Mining Act (1990 as amended 2009*). All mobile equipment and structures will be transported off site and either sold or disposed of in an approved facility. Hazardous and non-hazardous waste will be transported to approved disposal facilities.

Mine reclamation will be ongoing where possible throughout the mine operations phase. Upon closure, waste rock piles will be contoured in order to minimize erosion and stormwater damage. Overburden from the overburden stockpile will be used for topping the waste rock and TMA to provide a medium for vegetative growth and the area will be revegetated, as will the overburden storage area. The

perimeter dam surrounding the TMA would be flattened in order to provide for natural drainage. The open pit will be allowed to fill with water naturally. An estimate of the time required for filling will be provided through detailed hydrogeologic studies undertaken during the EA. Once the dammed area has reached the natural lake level, the dams will be breached and lowered to allow fish passage. The extent of lake trout habitat will be increased from pre-development conditions once this occurs.

Access to mine roads will be blocked with boulders to prevent vehicle access to the pit.

3. Proponent Contact Information

Name of Proponent:	Ambershaw Metallics Inc.
Mailing Address of Proponent:	1184 Roland Street West, Suite 500 Thunder Bay ON P7B 5M4
Chief Executive Officer:	D. Saradhi Rajan, Chairman and Director
Environmental Assessment Contact Person:	Franz-Georg Ostrop, Chief Operating Officer
Telephone Number of Contact Person:	(807) 707-9959
E-Mail of Contact Person:	gostrop@ambershaw.ca
Website:	https://www.ambershaw.ca

4. Significant Environmental Aspects

Atmospheric Contaminant Emissions

For the construction phase, the atmospheric emissions are associated with typical construction activities, including surface preparation (e.g., scraping, grading, road constructions), wind erosion, material transfer, mobile equipment and stationary combustion sources. For the operations phase, the Project activities that are associated with atmospheric emissions include drilling, blasting, material handling,

transportation, crushing, screening, pelletizing or briquetting, mobile equipment and stationary combustion sources. Many of the atmospheric emissions during the decommissioning phase of the Project are associated with activities that are similar to the construction phase. The use of "cold bonding" to process the iron ore into pellets or briquettes means that there are no atmospheric emissions similar to those found from an induction furnace. This also minimizes greenhouse gas emissions.

Greenhouse Gas (GHG) Emissions

In terms of greenhouse gases (GHGs), the Bending Lake Iron Project has many advantages when compared with a typical iron ore mine.

- There is no induration furnace and thus no fossil fuels are used in the pelletizing/briquetting process, which would be a major source of GHGs;
- Electricity will be provided by Hydro One's electrical grid in northwestern Ontario which is almost exclusively dependent upon renewable (waterpower, wind and solar power) sources;
- Since this will be a new facility, the support vehicles used for the Project are expected to be new Class 2B and Class 3 heavy-duty vehicles with emission limit regulations for CO2, NOx and methane;
- Process equipment will be new and will incorporate recent advances in GHG reduction technology;
- An energy management and GHG emissions management plan will be developed with the support of management; and
- GHG saving techniques such as reducing equipment idling time during loading and dumping will be employed.

The project will generate and emit Greenhouse Gases (GHGs) during its construction, operation, decommissioning and reclamation phases, with the operation phase having the highest contribution. The construction phase of the project will be for a limited time period, and the GHG emission sources will be primarily associated with fossil-fuel combustion for operation of equipment, including mobile equipment (e.g., dozers, excavators, loaders, haul trucks) and stationary equipment (e.g., temporary power generators, heating units). A conservative high-level estimate of GHG emissions associated with the construction phase, calculated as CO2 – equivalent per annum is approximately 35,000 tonnes. This is merely a 0.06% of the Ontario's 2030 GHG target of 62 Mt and 0.02% of Canada's 2020 GHG target of 155 Mt. More accurate analysis of the

GHG emissions during the construction phase will be undertaken during the EA, and when more detailed information regarding the construction phase becomes available.

The GHG emissions during the operations phase are mainly associated with the extraction and transportation of iron ore from the mine site to the processing facility and transport of pellets from the processing facility to the CP Rail's mainline. The processing of iron ore at the facility occurs based on chemical reactions (i.e., cold-bonding) and does not utilize furnaces. Combustion of fossil-fuel for ore processing / heat is expected to be minimal with negligible GHG emissions, when compared against other operation-related sources. Key sources of GHG emissions during the extraction process include blasting and transportation of iron ore. During blasting, Ammonium Nitrate Fuel Oil (ANFO) detonation results in GHG emissions. Use of diesel-powered mobile equipment such as front-end loaders and rock trucks for handling and transporting the iron ore to the processing plan also generates GHG emissions. After the processing and conversion to iron pellets, the product (iron pellets) is transported via rail to the CP mainline, approximately 25 km from the processing facility. The facility is expected to generate approximately 5,600 tonnes of product per day and there will be one round- trip via rail (50 km) from the processing plant to the CP mainline per day. GHG emissions are expected during the product handling, through operation of diesel-powered mobile equipment. GHG emissions are also generated by the diesel-powered locomotive. The annual GHG emissions during decommissioning and reclamation are expected to be significantly less than the operation phase and are estimated at 20,000 tonnes of CO2-equivalent per year. The maximum annual GHG emissions for the operation phase of the project, assuming a 365-day operation per year is estimated at approximately 110,000 tonnes CO2-Equivalent. This would be less than 0.2% of Ontario's 2030 target and 0.07% of Canada's 2020 target. It is unlikely that the plant will operate for this number of days per year, however, this is the most GHG emissions that could be produced. More accurate analysis of the GHG emissions during the operation, decommissioning and reclamation phases will be undertaken for the EA, and when more detailed information regarding the operation, decommissioning and reclamation phases becomes available.

Transboundary Effects

There are no federal lands on or adjacent to the area of the proposed undertaking. As such, no federal lands will be directly impacted by the Project. The Project is approximately 100 kilometres from the Ontario - U. S. border and a much greater distance to the border between Ontario and Manitoba. Air emissions modeling will be undertaken as part of the EA and meet the Ontario regulatory requirements. The 100-kilometer distance is generally used as a determinant of no transboundary effects related to Project air emissions. This is according to Article V of the Canada/US Air Quality Agreement, which requires significant new emission sources of certain contaminants within 100 km of the international border to be reported. The project will not produce significant amounts of reportable emissions and is outside the 100 km limit. The project is within the Winnipeg River sub-basin and drains to Hudson Bay. As such, there will be no transboundary effects from water transport, however unlikely they might be. The low contribution of the Project to potential greenhouse gas emissions is predicted to result in a minimal transboundary effect.

Solid Wastes

Non-hazardous waste will be stored in dedicated bins and transported to a MOECP approved waste disposal facility. Food wastes will be stored in animal proof containers. Hazardous wastes will be collected by a MOECP approved waste hauler and disposed of at a MOECP approved site. AMI may determine, through the Environmental Assessment process, if a permanent landfill area for non-hazardous waste could be located at the project.

Liquid Discharges

During construction there will be greywater and blackwater wastes associated with the temporary construction camp. These wastes will be trucked out by a licenced waste hauler that will dispose of the wastes in an approved, MOECP disposal site. During the operations stage of the project, blackwater and greywater wastes will be disposed of in an on-site sewage treatment system, approved by the MOECP. Wastewater from the vehicle wash facility will be contained and disposed of in a leaching pit. Stormwater runoff from hard surfaces will be collected and channeled to settling areas (stormwater management ponds) where a combination of evaporation and leaching into the ground will take place. Process water from the plant will be treated and the treated water will be used as make-up water. Hazardous liquid waste which can include used equipment oil, paints and other

chemicals from the plant site will be transported via a MOECP approved waste hauler for disposal at a licenced facility.

5. Existing Environment

Climate, Air Quality and Noise

Based on regional and on-site weather stations the climate in the study area is moderate continental, which is characterized by long, cold winters and relatively short, cool summers. Since this is a greenfield site, remote from settlements and other economic activity, concentrations of air contaminants are expected to be minimal. The primary sources of noise include blasting, equipment operations and processing equipment. They will evaluated in the Environmental Assessment against the baseline conditions determined in a noise study conducted in the area in 2017 that showed background sound levels ranged from about 25 to 40 dBA.

Topography and Soils

The Project is in an area of rugged, rolling terrain of moderate relief with shallow to moderate slopes. Ground elevations range from a high of approximately 406masl on the northwest trending ridge where the bulk sample site is located down to 392masl at Bending Lake. Surficial soils are generally glaciofluvial or glaciolacustrine sand, clay and gravels, intermixed with organics and bedrock exposure is common. The glaciofluvial sediments are expected to have a high hydraulic conductivity, and act as an unconfirmed aquifer at the site permitting groundwater recharge to the underlying fractured bedrock aquifer. This unconfirmed aquifer likely has the capacity to support groundwater discharge to wetlands, streams and lakes. It is expected that this aquifer has limited extent and thickness, therefore limiting its potential to be affected by the Project. Glaciolacustrine clay sediments are expected to have a low hydraulic conductivity and act as a surficial confining layer (aquitard) restricting groundwater recharge and discharge to the underlying bedrock aquifer. It is expected that these soils coincide with perched wetlands at the Project. Deep groundwater is contained within discrete bedding plane fractures within the more competent bedrock.

Vegetation

The Project lies within the Boreal Forest Region, although a small portion in the south is in a transition zone between the Boreal Forest and the Great Lakes-St.

Lawrence Forest Regions. Jack pine and spruce are typical coniferous trees while trembling aspen and white birch are found in association with these trees. Black spruce stands are common, as is typical bog vegetation such as sphagnum moss, Labrador tea, herbaceous species, grasses and sedges. Additional studies will be undertaken during the EA. No vegetation species at risk have been identified in the area of the main facilities to date. Surveys have identified 157 different vegetative species with six of these regionally rare in Thunder Bay District.

The Project and surrounding areas have been heavily disturbed by logging with an extensive network of primary and secondary haul roads and extensive cut-over areas.

Wildlife

Wildlife found in the Project area are typical of those found in the Boreal forest. Ungulates predominantly consist of moose and white-tailed deer. Other common species include black bear, wolf, porcupine, marten, chipmunk, red squirrel, muskrat, beaver, mink, otter, martin and fisher. Lynx is less common.

The results from the 2012 and 2017 breeding amphibian surveys have confirmed that there is an abundance of amphibian breeding habitat within the study area and habitat opportunities are well represented. A total of five frog species were heard calling throughout the study area, including wetland breeding species (i.e. American Toad, Spring Peeper, Gray Treefrog, Boreal Chorus Frog and woodland breeding species (i.e. American Toad and Wood Frog). Spring Peeper was the most abundant species. All species recorded are considered provincially common and widespread in Ontario. All species are considered within their species range.

In the summer and fall of 2017, the following species were observed: Bald Eagle, Eastern Whip-poor-will, Common Loon, Moose, American Toad, Gray Treefrog, and Northern Green Frog. All of these species are considered common (S-rank S5) or uncommon but secure (S-rank of S4) within the province, with the exception of Bald Eagle.

In the summer of 2018 the observation of Beaver, River Otter, Black Bear, Eastern Chipmunk, Bald Eagle, Ruffed Grouse, Western Painted Turtles, Gray Treefrog, Wood Frog, Northern Green Frog, Mink Frog, and Boreal Chorus Frog were noted. All of these species are considered common (S-rank S5) or uncommon but secure

(S-rank of S4) within the province, with the exception of Bald Eagle which was seen at two locations in 2018.

A total of 138 species of birds were recorded during breeding bird surveys between 2017 and 2018. All species recoded breeding are ranked S5 (common) or S4 (uncommon but not rare). 14 Species of At Risk birds were observed during the breeding surveys: Eastern Meadowlark, Bobolink, Grasshopper Sparrow, Canada Warbler, Golden-winged Warbler, Wood Thrush, Barn Swallow, Bank Swallow, Olive-sided Warbler, Eastern Wood Pe-wee, Chimney Swift, Common Nighthawk, Eastern Whip-poor-will and Bald Eagle. While species at risk birds have been identified in the Project area, they could be transient to the area. Further studies during the EA will determine if they have habitat in the Project area, the locations of that habitat and management requirements.

Hydrology and Surface Water

The Project is situated near a height of land divided between the Wabigoon Lake Sub-watershed and the Bending Lake Sub-watershed, with extraction activities focused in the Bending Lake Sub-watershed. The hydrological regime in the area surrounding the Project is snow-melt dominated and is characterized by high flows in the late spring and low flows during the winter months. Flows decrease through the drier summer months and water levels begin to rebound in autumn with the onset of increased precipitation from fall storms.

Fish Community and Habitat

Waterbodies and watercourses in the Project area fall into one of three classes: Large waterbodies like Bending Lake which are cold water lakes; small unnamed lakes, which average less than 20 ha in surface area, supporting primarily baitfish populations; and small tributary watercourses, many of which are ephemeral. These tributaries generally support baitfish. Paige Lake doesn't fall into any of these categories as it is a named lake larger than 20 ha. Paige Lake, however, is also generally shallow and supports baitfish.

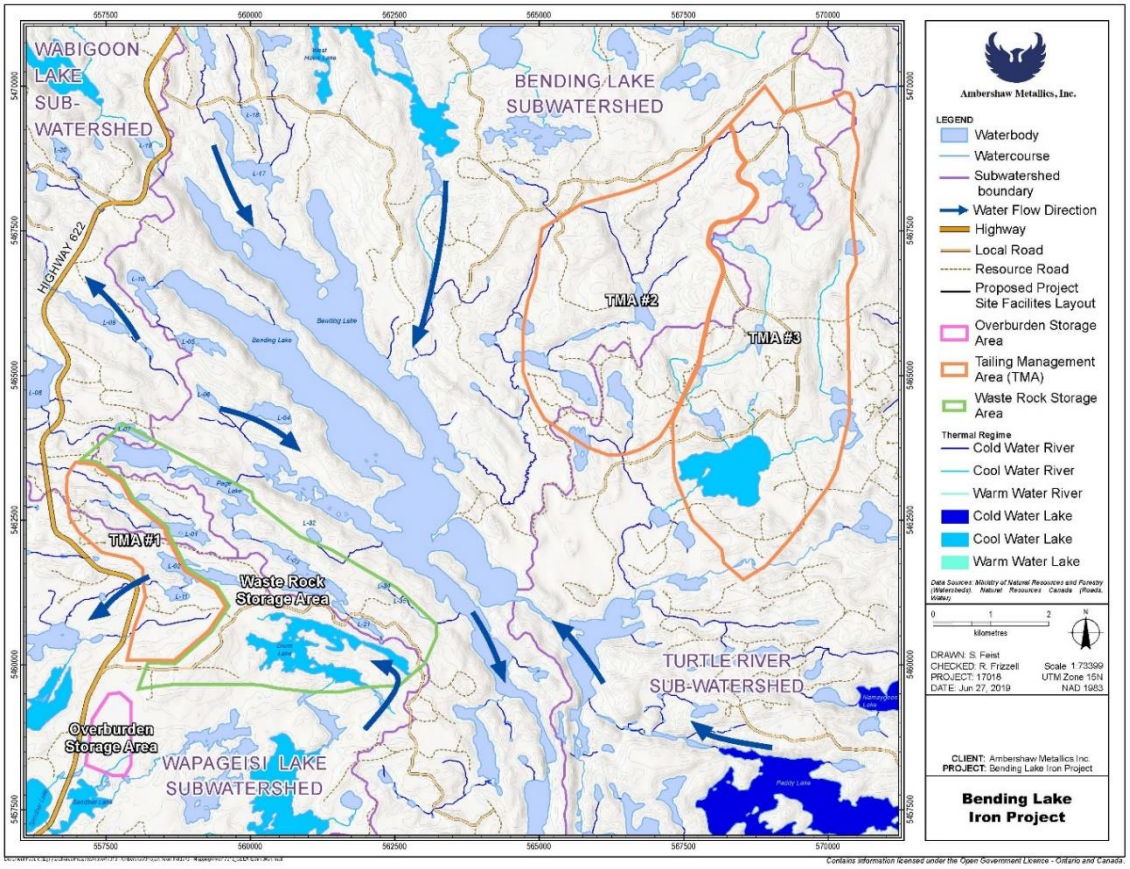
All of the alternative TMAs and the waste rock stockpile area have one or more small unnamed waterbodies located within their boundaries. Dependent upon which one of the four TMAs is selected these waterbodies will be filled, as will the small waterbodies in the waste rock stockpile area. As part of the "alternatives assessment" for the TMAs, the effect on the aquatic resources of the waterbodies

will be considered during the EA. Figure 4 illustrates the outline of the TMAs, Waste Rock and Overburden Storage Areas and affected waterbodies.

The Infrastructure Corridor used for transport of product from the mine to the CP rail mainline will cross 21 creeks and one waterbody. All of the creeks are less than two metres wide and less than 25 centimetres in depth. It is proposed to cross each of them using a culvert. The waterbody crossing is 15 metres in width and has an unknown depth. It is proposed to be crossed using a bridge. In-water work during the prescribed timing windows will be approved by the MNRF. Detailed fisheries assessment work will be undertaken during the Environmental Assessment.

Bending Lake is a large, oligotrophic lake managed for lake trout by the MNRF. The fish community is diverse with large sportfish species that includes:

- lake trout (*Salvelinus namaycush)*
- northern pike (*Esox lucius*)
- walleye (*Sander vitreus*)
- yellow perch (*Perca flavescens*)
- lake whitefish *(Coregonus clupeaformis*)
- smallmouth bass (*Micropterus dolomieu*)
- burbot (*Lota lota)*



Various forage fish, such as pearl dace (*Margariscus maragarita*), various dace species (*Phoxinus spp.)*, and stickleback species (brook and ninespine) are to be anticipated. No aquatic species at risk have been identified within Bending Lake. The Province of Ontario has existing fish advisories in effect for Bending Lake for lake trout, northern pike, walleye, smallmouth bass, and burbot, with respect to mercury.

Human Environment

The general area is part of the Wabigoon Forest and has been heavily logged by Domtar. There are no permanent, seasonal or temporary residences located in the area of the mining claims or in proximity. There is one seasonal residence on the east side of Bending Lake. The mine operations should have minimal or no effect on this residence. There are three registered traplines near the Project, but none are located on the private lands that comprise the mine site and adjacent facilities. The

closest settlement area is the Town of Ignace, located within commuting distance to the mine (approximately 50 km.). Ignace has a population of around 1,200 persons and is resource dependent (mining and forestry). There is adequate municipal servicing capacity to accommodate mine workers as the Town had over 2,000 people in the 2006 census. Atikokan and Dryden are located at significantly greater distances from the mine.

The MNRF maintains a confidential inventory of areas and sites which are known to be of cultural or heritage significance within the Wabigoon Sustainable Forest Licence area. These sites are held in confidence by the MNRF. AMI will consult with the MNRF, indigenous communities and persons and the Metis Nation of Ontario to understand the location, nature and potential to impact areas of cultural and heritage significance in the EA consultation process.

There is a canoe route located near the eastern shore of Bending Lake that is part of the Maukinak Trail, a 212 km. long trail segment of the Path of the Paddle that follows ancient indigenous canoe routes known as the "onigum" to the Anishnabek People. The canoe route enters the north end of Bending Lake via a Portage from Three Mile Lake and exits Bending Lake at the south end via a portage to Smirch Lake. It is on the other side of the lake from the Project. The proposed mine site will not be visible from the Canoe route and is not expected to have any impact on canoe route users.

Other users of the Crown lands surrounding the project include trappers (seven traplines), hunters (eight bear management areas) and general recreation uses. There are hunt camps, boat cache areas, trails, trapper cabins, picnicking and Crown land camping sites.

Heritage Resources

A Stage I Archaeological Assessment of the Project area was undertaken in 2011. While no artefacts were recorded in the area of the Project, evidence of archaeological resources is present in the Ignace area and the Turtle River is considered a significant historical waterway. A more detailed Stage II assessment of the Project area will be undertaken during the Environmental Assessment and incorporated with Indigenous traditional knowledge. The Stage II will focus on those areas exhibiting potential, which includes areas within prescribed distances from large and small waterbodies and significant topographic features.

6. Federal Involvement and Potential Project Changes Related to Federal Legislation

Federal Financial Support and Federal Lands

There is no existing or proposed federal financial support associated with the project, nor are any federal lands close to or involved with the project. The Wabigoon First Nation, at 80 km. from the Project, is the closest.

Fisheries Act

Development of the mine and associated facilities will require the damming of a shallow bay of Bending Lake and overprinting a few small, shallow waterbodies/watercourses in the area for a Tailings Management Area and a Waste Rock Storage Facility. This will be determined after further study and assessment of alternatives during the development of the environmental assessment. It is anticipated that the Project could result in Serious Harm to fish as defined by the Fisheries Act. Once the harm has been identified, an Offset Plan will be developed in support of an application for authorization under Section 35(2) of the Fisheries Act. The Offset Plan will identify how to improve the productivity of fisheries in the Project Area and will follow Fisheries and Oceans Guide titled "Fisheries Productivity Investment Policy: A Proponent's Guide to Offsetting."

No aquatic species at risk have been identified in the project area. Further studies during the environmental assessment will be undertaken.

Migratory Birds Convention Act

The project area has been extensively cleared of trees by Domtar who holds the sustainable forest licence in the area. No habitat used by migratory birds has been identified in the Project area to date, however further studies will be undertaken during the Environmental Assessment to determine if habitat exists and how it can be managed during mine development. Clearing and any other activities associated with the development of the mine will be avoided to the extent possible in migratory bird habitat during the breeding season.

Navigation Protection Act

A determination will need to be made by Transport Canada with respect to damming part of the West Arm of Bending Lake and dewatering it in order to fully develop the open pit. In addition, filling in a number of waterbodies for waste rock and tailings may require consideration under this Act.

7. Potential Effects on Indigenous Communities

While not directly affecting any First Nation Reserve lands, the Project is located within the traditional territories of a number of First Nations. In addition, the Metis have hunting and fishing rights in the area. While the main Project components are located on patented mining claims, there are a number of traplines in the area, the rights of which are owned by indigenous peoples. In addition, there are 8 bear management areas, a number of hunt camps and trapline cabins, boat caches, Crown land camping sites, trails and other Crown land recreation uses.

AMI has undertaken a comprehensive Indigenous contact program related to the Advanced Exploration program and will continue to actively engage potentially affected Indigenous groups as identified in this Project Description. The purpose of this consultation is to determine the potential impact of the Project on Aboriginal communities, including:

- Health and Socio-economic Conditions: AMI is also actively engaging with these groups to determine local employment opportunities both in construction and operation phases.
- Physical and Cultural Heritage Features: Archaeological assessments of the study area have already been undertaken. Future archaeological work will consider opportunities for Indigenous participation.

- The use of lands and resources for traditional purposes.
- The determination of significant structures, sites, or items from of historical, archaeological, paleontological or architectural significance.

Although details related to traditional use have not been identified through Indigenous consultation to date, potential effects on Indigenous Peoples include:

- Potential effects on aquatic populations and habitat;

- Potential effects on traditional harvesting area;
- Potential effects on archaeological resources;
- Potential presence of native medicines;
- Potential effects on traditional canoe/portage routes; and
- Potential socio-economic effects (i.e. employment opportunities)

AMI will engage with Indigenous communities throughout the Environmental Assessment consultation and mine development process to fully understand and mitigate any potential impacts on indigenous values and traditional uses of the surrounding area. These discussions will inform all aspects of development activities and mine closure outcomes. The engagement process will provide the conduit for all interested members of the general public, first nations and metis communities to express concerns, requests or suggestions on the ways and means to mitigate any perceived and expressed concerns. The project consultation process will include opportunities for individuals to both receive project development plans and information and communicate any concerns with the same. AMI will aggregate and utilize feedback received to inform and enhance project development plans and activities.

Table 1 provides a summary of possible effects of the project on the environment. Through engagement with Indigenous groups during the EA process, AMI will confirm the completeness of the table and determine the specific effects to Indigenous peoples, the significance of the effects and what can be done to mitigate the negative ones.

Table 1: Possible Effects of the Project on the Environment

Project Component	Possible Effects of Development
Open Pit	• Potential for changes to surface and groundwater quality and flow associated with deepening of the north pit. • Potential impacts to the atmospheric environment including noise, dust, and GHG emissions. • Potential impacts to the fish and benthic community in the west arm of Bending Lake to be dewatered. • Potential impacts of navigation as a result of damming.

Project Component	Possible Effects of Development
Waste Rock Stockpile Area and Overburden Stockpile Area	• Potential loss or fragmentation of terrestrial habitat through site preparation. • Potential for changes to surface and groundwater quality as a result of ARD/ML (potential expected to be low). • Potential aquatic impacts to the small unnamed lakes and Paige Lake that may be overprinted. • Potential navigation impacts to the waterbodies that may be overprinted.
Processing Plant	• Potential for impacts to the atmospheric environment including noise, dust, and GHG emissions. • Potential loss or fragmentation of terrestrial habitat through site preparation. • Potential disturbance to terrestrial and avian species associated with operational noise.
Storage and Loading Facilities (i.e. warehouse and inventory, ore storage, fuel storage, chemical storage, explosives storage, truck storage)	• Potential loss or fragmentation of terrestrial habitat through site preparation. • Potential for changes to surface and groundwater through accidental spills.
Buildings (e.g. administration and temporary accommodations)	• Potential loss or fragmentation of terrestrial habitat through site preparation.
Tailings Management Areas	• Potential loss or fragmentation of terrestrial, wetland, and aquatic habitat associated with tailings disposal. • Potential for changes to surface and groundwater quality as a result of ARD/ML (potential expected to be low). • Potential for direct discharge of stormwater to the environment if not properly managed.
Construction Workforce	• Increase in indirect spending and jobs in the area. • Economic benefit to the Town of Ignace through new housing and associated facilities for operations workforce.
Electrical Power Supply and Infrastructure	• Potential loss or fragmentation of terrestrial habitat through site preparation.

Project Component	Possible Effects of Development
	• Potential for impacts to the atmospheric environment including noise and emissions during construction. • Potential fisheries values for proposed location of this project component are not known, however, in-water work associated with culvert crossings could harm fish or fish habitat. • Potential for aesthetic impacts.
Community	• Social issues, increased demands for community-based services associated with the construction and operations workforce.
Water Management Facilities (i.e. vehicle washing and stormwater)	• Potential loss or fragmentation of terrestrial habitat through site preparation. • Potential for changes to surface and groundwater quality associated with stormwater discharge.
Waste Management Facilities	• Potential loss or fragmentation of terrestrial habitat through site preparation. • Potential for changes to surface and groundwater through accidental spills or seepage of wastewater.
Roads, Railways and Covered Conveyor	• Potential for impacts to the atmospheric environment associated with construction, noise and dust. • Potential fisheries values for proposed location of this project component are not known. Fish community and fish habitat assessments to identify potential changes and support future mine permitting and design of potential mitigation measures. • Potential loss or fragmentation of vegetation in the infrastructure corridor.
Process Water Pipeline and Pumphouse	• Potential loss or fragmentation of terrestrial and aquatic habitat through site preparation. • All potential fisheries values for proposed location of this project component are not known. Fish community, population, fish tissue and fish habitat assessments to identify potential changes and support future mine permitting and/or design of potential mitigation measures will be undertaken.

8. Engagement with Indigenous Communities

The development of the mine at Bending lake has a long history with indigenous peoples in the area. Around 2010 the Bending Lake Iron Group, an Indigenous-owned company, commenced background work related to developing the mine. People from the Wabigoon Lake First Nation were actively engaged in this process and many remember working on the project. AMI has engaged many Indigenous communities as part of their Advanced Exploration Permit requirements.

The following communities, councils and groups have expressed an interest in being kept informed as to the nature, scope, timing, methodology of completing the Advanced Exploration Program, and following this, the environmental assessment for mine development. These engagements occur via community meetings, formal written correspondence, informally via email and telephone per the wishes and direction of each individual party. Active engagement has been requested and is ongoing for the following communities:

Treaty 3 First Nation Communities: Grand Council Treaty 3; Wabigoon Lake Ojibway Nation; Eagle Lake First Nation; Lac des Mille Lacs First Nation; Seine River First Nation; Nigigoonsiminikaaning First Nation; Couchiching First Nation; Treaty 3 - Metis Nation of Ontario; Region One; Provincial Office.

Lac Seul First Nation and Whitefish Bay First Nation request passive engagement only, which involves being copied on Project information.

A summary of the preliminary comments and concerns from community meetings can be grouped into a number of categories: (1) Status of baseline studies; (2) Acid rock drainage; (3) Significant natural and social features; (4) Financial Benefits; and Operational issues.

There were questions raised about re-use of information from old environmental studies. It was explained that new environmental baseline studies were commissioned as part of the Advanced Exploration permit and additional studies would be commissioned as part of the EIS.

The issue of acid rock drainage came up on a number of occasions and AMI responded that testing has been done and more tests will be done to determine if

Acid Rock Drainage (ARD) will be an issue and, if necessary, to determine an ARD Management Plan.

There was concern about the impacts on four trapline holders in the area. AMI committed to contacting them to determine how significant their concerns are.

A number of significant wildlife areas and species were identified, as well as pictograph sites. These, if not already documented in the environmental baseline studies undertaken will be recorded and confirmed during the EIS. The issue of a commercial fishery on Bending Lake was mentioned and the concern about damming and diking an arm of Bending Lake. AMI indicated that these issues would be addressed during the Environmental Assessment.

All parties expressed an interest in seeing preferential hiring and treatment for Indigenous-owned businesses and also whether Indigenous groups could have an equity position in the Project. These discussions are ongoing.

There were a few operational issues around dust when the ground is frozen. AMI indicated that a Dust Management Plan would be prepared to manage this issue. There was a question about whether there could be a use for low grade crushed ore tailings, and this would be looked into.

9. Consultation with the Public and Other Parties

AMI made a brief public presentation to Ignace Town Council, members of the Town of Ignace Senior Administration and the general public in attendance on December 4, 2018.

- Council, Administration and the general public where generally aware of the extensive project development of previous owners and developers.
- Council, Administration and the general public expressed significant support for the project, and AMI's intent to resume development activity, and AMI's intent to flow extracted ore from the mine site northwards to Ignace.
- No concerns were expressed by Council administration or the general public

AMI will begin formal EA Community consultations with the broader public beginning after submission of this project description to the Canadian Environmental Assessment Agency. This engagement process will include public

meetings in Ignace with advance notice provided via print, radio and where appropriate, direct mailings.

As a major user of the surrounding area, AMI will engage Domtar and attempt to ensure that the parties involved in the review of their new Forest Management Plan are also engaged in the environmental assessment for the Bending Lake Iron Project.

The MNRF will provide assistance with respect to informing and engaging nearby Resource Based interests such as Trap Line permit holders, Bait Fish operators, harvesting licensees, Land Use Permit holders and Commercial Tourism operators regulated and monitored by the province of Ontario. Appendix I provides an outline of future engagement activities planned during the completion of the EIS. AMI is committed to respectful and meaningful community engagement as demonstrated during the Advanced Exploration permit process.

The ENDM hosted an intra-agency meeting with all provincial; and federal regulatory bodies which has the potential to require declarations, attestations, applications for permit of any kind relating to the scope of the proposed Advanced Exploration bulk sampling program. Attendees included and permitting direction was received from:

- Ministry of Energy, Northern Development and Mines;
- Ministry of Natural Resources and Forests;
- Ministry of Transportation;
- Ministry of Environment Conservation and Parks;
- Ministry of Labour;
- Kenora Resident Geologist; and,
- Department of Fisheries and Oceans.

All direction received at this meeting and summarized in writing thereafter have been actioned and completed.

10. Regulatory Approvals

Most of the major elements of the Project have not changed since the Agency, in a previous approval of the Project Description, determined that a federal EA is required. This determination was made in *Environmental Impact Statement (EIS) Guidelines* (June 2012) and expected to be reconfirmed by the Agency in a new

EIS Guidelines document issued upon approval of this Project Description since it is a Designated Project included in the *Regulations Designating Physical Activities*. Specifically, section 16 states that an EA may be required when an undertaking involves "*the construction, operation, decommissioning and abandonment of:*

(a) a metal mine, other than a gold mine, with an ore production capacity of 3,000 tpd or more; and

(b) a metal mill with an ore input capacity of 4,000 tpd or more…"

The potential federal permits and approvals required for the project include: Authorizations under the Fisheries Act, Approvals under the Navigation Protection Act, listing on Schedule 2 of the Metal and Diamond Mining Effluent Regulations and licences/certificates under the Explosives Act and Transportation of Dangerous Goods Act.

In Ontario, private sector mining projects are not subject to provincial Individual EA requirements. Some components of the undertaking, however, may be subject to one or more prescribed Class EA processes. The three most likely provincial Class EA processes that have been identified include:

- the Ministry of Natural Resources and Forestry Class Environmental Assessment for Resource Stewardship and Facility Development for various undertakings, including tree clearing, aggregate production and occupancy of Crown lands;
- Hydro One's Class EA for Minor Transmission Facilities for a high voltage connection (approximately 17 km.) between the existing powerline and the mine site; and
- The Ministry of Transportation Class EA for Provincial Transportation Facilities for entry to the Project from Highway 622 and a bridge crossing of Highway 17.

These Class EAs will be undertaken independently from the federal EA, however, in order to avoid possible public and Indigenous people's confusion with separate EA processes, consultation and notification activities will be coordinated jointly. In addition, background data on the physical, natural and human environments of the study area will be common.

Some of the more significant provincial permits that may be required include: a Mine Closure Plan under the Mining Act; Permits to Take Water under the Ontario Water Resources Act; Environmental Compliance Approvals under the Environmental Protection Act and Ontario Water Resources Act; Species at Risk Screenings under the Endangered Species Act; Work Permits under the Public Lands Act and Lakes and Rivers Improvement Act; Land Use Permits under the Public Lands Act; and Archaeological Clearances under the Ontario Heritage Act.