GOLDCORP

BORDEN GOLD

BORDEN GOLD PROJECT

PROJECT DESCRIPTION
FOR MINE DEVELOPMENT

amec foster wheeler

October 2016
TC150506 - Rev

SUMMARY

GENERAL INFORMATION AND CONTACTS

Borden Gold | Goldcorp Borden Limited (Goldcorp) is currently exploring the Borden Gold Project in northeastern Ontario. Goldcorp propose to develop an underground gold mine along with associated surface facilities on the Borden Gold Project site. Extracted ore is proposed to be transported offsite over existing infrastructure to a facility in Timmins, Ontario for processing.

Project Name: Borden Gold Project

Proponent: Goldcorp is a leading gold producer focused on responsible mining practices throughout the Americas. A Canadian company headquartered in Vancouver, British Columbia, Goldcorp employs more than 15,000 people worldwide. Goldcorp operates a number of mines and processing facilities in Ontario, including the Porcupine mine and processing operations in Timmins. The Company is committed to being responsible stewards of the environment and to maintaining the highest health and safety standards possible.

Borden Gold | Goldcorp Borden Limited
David Garofalo
President and Chief Executive Officer
Suite 3400 - 666 Burrard Street
Vancouver, British Columbia, V6C 2X8
T: 604-696-3000

Principal Contacts:

John (JY) Young
Superintendent Safety, Health and Environment
Borden Gold | Goldcorp Borden Limited
217 Martel Road
Chapleau, Ontario, P0M 1K0
T: 705-465-1926
john.young@goldcorp.com

Roger Souckey
Director, CSR and HR, Project Coffee
Goldcorp Canada Ltd.
130 Adelaide Street West, Suite 3201
Toronto, Ontario, M5H 3P5
T: 416-956-0415
roger.souckey@goldcorp.com

Sheila Daniel, P.Geo.
Principal, Mining Environmental
Amec Foster Wheeler Environment & Infrastructure
160 Traders Blvd. East, Suite 110
Mississauga, Ontario, L4Z 3K7
T: 416-524-5928
sheila.daniel@amecfw.com

PROJECT LOCATION INFORMATION

The Borden Gold Project is a proposed underground gold mine with associated facilities at the site and related (limited) new power infrastructure offsite. The Borden Gold Project site is located immediately north and east of Borden Lake, approximately 11 kilometres (km) northeast of Chapleau, Ontario and 160 km southwest of Timmins, Ontario (Figure S-1). Approximate project coordinates are 5304500 N and 330800 E in the UTM NAD83 coordinate system (Zone 17). It is adjacent to, and directly accessible, by Ontario Provincial Highway 101. The new power infrastructure requirements are not fully defined, but may include a distribution line (approximately 25 kilovolts and 6 km length), expected to be routed primarily along existing infrastructure and an associated transformer station near Chapleau.

PROJECT INFORMATION

Overview

Goldcorp is planning to develop, operate and eventually reclaim a new underground gold mine at the Borden Gold Project site, expanding upon and/or modifying facilities that are being developed during the advanced exploration program (Table S-1). Goldcorp has purposefully designed the mine to utilize infrastructure and facilities already in place, in order to minimize environmental disturbance as practical.

The Federal *Regulation Designating Physical Activities* pursuant to the *Canadian Environmental Assessment Act, 2012* identifies the physical activities that constitute designated projects that require submission of a Project Description, as they could require completion of a Federal Environmental Assessment (EA). Section 16 of the Regulation may apply to the Borden Gold Project:

> 16 *The construction, operation, decommissioning and abandonment of a new,*
> *(c) rare earth element mine or gold mine, other than a placer mine, with an ore production capacity of 600 tonnes/day or more*.

The Borden Gold Project underground mine will operate year-round on a continuous (24-hour) basis, at a rate of up to approximately 4,000 tonnes ore per day when averaged over the year. As a result, Goldcorp has submitted this Project Description to the Canadian Environmental Assessment Agency, to inform a decision on whether a Federal EA is required for the Borden

Gold Project. The document has been structured in accordance with the *Federal Guide to Preparing a Description of a Designated Project under the Canadian Environmental Assessment Act, 2012* (March 2015)

Key underground works associated with the Borden Gold Project are proposed to consist of:

- Development of an underground production mine, by expanding deeper and laterally on the advanced exploration underground workings; and
- Establishment of additional ventilation infrastructure and an emergency exit for the mine.

Surface facilities required to support the Borden Gold Project are expected to include:

- Onsite ore handling facilities to manage and place the ore into covered highway trucks for transport offsite;
- A mine backfill plant to produce backfill for use underground to provide additional support to the mine workings;
- Maintenance garage, warehouse, administration, mine dry (showers and change room), security and first aid buildings (new buildings or modification to advanced exploration program buildings);
- Mine rock and low grade ore stockpiles (expanding on stockpiles developed during the advanced exploration program);
- Water management, treatment and discharge facilities (modified from facilities developed for the advanced exploration program);
- Laydown, storage areas and parking (additional to the advanced exploration program areas);
- Potential upgraded road entrance(s) from Highway 101; and
- Potential new transformer station and power distribution line to an existing 115 kilovolt transmission line (25 kilovolt of approximately 6 km length; route to be determined).

A schematic of the proposed Borden Gold Project site based on the engineering trade-off studies and alternative assessments completed to date is provided in Figure S-2. Table S-2 provides a summary of proposed physical works. Project design is ongoing to optimize the mine footprint and reduce the potential for adverse environmental effect.

The Borden Gold Project facilities are proposed to be placed primarily on lands held by Goldcorp pending ongoing land agreements, although there may be some facilities and infrastructure sited

on Provincial Crown land or lands held by others (subject to approvals and land transfers being obtained). The Borden Gold Project is not located in a region that has been subjected to a regional environmental study. New and expanded facilities on the site are expected to result in additional surface disturbance. To reflect the current uncertainties is design, Goldcorp has estimated the additional surface disturbance as four to eight hectares, although an area of only five hectares is anticipated to be needed at this time.

All processing of ore will occur at an existing offsite processing site in Timmins. The Borden Gold Project does not include a new processing facility or tailings management area. Ore will be transported over the existing highway and road network. Workers are expected to stay in local accommodations and Goldcorp does not propose to develop a camp or other accommodations to support the mine.

Schedule

The Borden Gold Project is proposed to commence construction immediately after completion of the advanced exploration program, assuming that the Federal EA (if any) and applicable environmental approvals have been received. Limited construction is required for the Project to start production mining. Construction is currently planned for the third quarter of 2018. Production mining (operations phase) will start in parallel with surface construction and is expected to continue for approximately 7 to 15 years. Reclamation and closure is therefore anticipated to begin in 2026 at the earliest.

Key Activities by Project Phase

Key activities associated with the development and construction phase of the Borden Gold Project consist of:

- Application for applicable environment-related approvals or amendments to existing approvals;
- Procurement of material and equipment;
- Development and implementation of environmental protection and monitoring plan(s) for construction and development (continuing through all project phases);
- Ongoing training of staff and contractors consistent with Goldcorp's corporate requirements (continuing through all project phases; including for health and safety, sustainability, Aboriginal awareness, corporate responsibility and environmental best practices);
- Movement of construction materials to identified laydown areas at the site;

- Establishment of additional underground mine raise(s) and associated structures for ventilation and an emergency exit from underground;

- Construction / upgrading of required buildings and facilities at the Project site;

- Upgrade of access at Highway 101 if needed per Provincial direction (anticipated to include signage, access and turning lanes) and potentially an additional site entrance;

- Potential construction and energizing of an upgraded / new power distribution line, connecting to a 115 kilovolt transmission line with an associated new transformer station at Chapleau, or if economically feasible and within required timelines, an upgrade of the current distribution station in Chapleau to supply the mine operation; and

- Ongoing environmental management, monitoring and reporting, and follow-up environmental studies (continuing through all project phases as applicable).

The Borden Gold Project operations phase will primarily include:

- Underground production mining conducted by extending and developing mine workings off the advanced exploration ramp;

- Transport of ore to an existing processing facility in Timmins, Ontario using covered highway trucks over existing Provincial and Municipal road networks;

- Expansion of temporary low grade and mine rock stockpiles on surface;

- Return of mineral waste from the Borden Gold Project and potentially other operations, underground as backfill to support mine workings; and

- Water management and/or treatment of contact waters prior to discharge by pipeline to the Borden River (continuing through reclamation phase as needed), with such discharge meeting all applicable Federal and Provincial effluent quality and quantity requirements.

Reclamation and final closure of the Borden Gold Project will occur on completion of production mining. These activities will be governed by the Ontario *Mining Act* and its associated Regulations and Codes (and a filed Closure Plan), and are expected to include:

- Openings to underground will be sealed with engineered caps or backfilled with non-potentially acid generating rock, as applicable;

- Underground workings will be allowed to flood naturally over time; no long term water discharge of underground water is expected;

- All potentially acid generating rock stockpiles will be returned underground or transported offsite; no potentially acid generating stockpiles will be left on surface at the Borden Gold Project site on completion of reclamation;

- Site water treatment facilities will be reclaimed in accordance with regulatory requirements at the time, with pond(s) and pipeline(s) suitably decommissioned;

- Any buildings or equipment on surface will be sold or recycled if possible, or otherwise demolition waste will be moved from the site to an appropriate offsite waste management facility; and

- All site areas and roads not required for long term site management will be scarified (broken up), covered with overburden as needed and revegetated.

Site management and environmental monitoring will continue thereafter, as required by regulatory and Goldcorp requirements.

Use of Offsite Existing Infrastructure / Facilities

Goldcorp proposes to use existing infrastructure and facilities as practical to reduce the potential environmental effects from the construction and operation of the mine. Ore will be transported from the mine over existing road infrastructure to an existing ore processing facility operating in the Timmins area (anticipated to be the Goldcorp Porcupine Gold Mines Dome Processing Facility). By using this approach, dedicated processing and mineral waste (tailings) management facilities are not required at or near the Borden Gold Project site.

Ore from mining underground will be loaded into covered highway trucks and transported over the existing Provincial road network (Highway 101), as well as municipal roads within Timmins to the existing Dome Processing Facility. At full production, covered transport trucks will make four return trips per day per truck on average between the Borden Gold Project and the Dome Processing Facility. No new roads outside of the immediate Project site footprint are required.

The Dome Processing Facility is a fully approved, operating processing plant, located within an industrial complex southeast of Timmins which has been in operation for decades. The plant has been designed to process ore from a number of different mines, using conventional gold extraction methods at an overall approved capacity of 13,000 tonnes per day. No material modifications are required to the Dome Processing Facility to receive and process ore from the Borden Gold Project.

KEY ENVIRONMENTAL ASPECTS

Air emissions from the Borden Gold Project will derive primarily from fugitive sources: loading and stockpiling of ore and mine rock; vehicle and heavy equipment travel on gravel roads; and from wind entrainment from stockpiles and other exposed earth materials on the site. Mitigation

measures are expected to include use of water and other Provincially-approved dust suppressants. Paving of select onsite roads and limiting the speed of the vehicles travelling along internal gravel roads will also be considered.

Goldcorp intends to maximize the use of electrically powered equipment on site as feasible to reduce air emissions, including greenhouse gases. Power is proposed to be drawn from the Provincial electrical grid to meet the site power demands, as practical, thereby reducing potential greenhouse gas emissions at the site. Vehicle and heavy equipment use will occur during all project phases, and will release particulates, sulphur dioxide and nitrogen oxides from the combustion of fuel, where electrically powered equipment is not used. Heavy equipment, vehicles and diesel generators will be required to be maintained in good working order and will be equipped with factory-installed emission control devices to minimize emissions.

A preliminary estimate of greenhouse gas emissions from the mine as well as related offsite emissions has be developed as summarized below:

Project Component	Industry Projection [1]		Ontario Targets [2]		Canada Targets [3]		Global Target [4]
	2020	2030	2020	2030	2020	2030	2030
	58 Mt [6]	62 Mt	155 Mt	115 Mt	622 Mt	524 Mt	34 Gt
Mine Site	0.00390 Mt	0.00366 Mt	0.00390 Mt	0.00366 Mt	0.00390 Mt	0.00366 Mt	0.0000037 Gt
	0.007%	0.006%	0.003%	0.003%	0.001%	0.001%	0.00001%
Ore Transport to Existing Plant	0.01735 Mt	0.00160 Mt	0.01735 Mt	0.00160 Mt	0.01735 Mt	0.00160 Mt	0.0000016 Gt
	0.03%	0.003%	0.01%	0.001%	0.003%	0.0003%	0.000005%
Processing at Existing Plant [5]	0.00245 Mt	0.00245 Mt	0.00245 Mt	0.00245 Mt	0.00245 Mt	0.00245 Mt	0.0000025 Gt
	0.004%	0.004%	0.002%	0.002%	0.0004%	0.0005%	0.000007%

(1) Ministry of the Environment and Climate Change. Ontario's Climate Change Update. September 2014.
(2) Environmental Commissioner of Ontario. Feeling the Heat: Greenhouse gas Progress Report 2015. July 2015.
(3) Environment and Climate Change Canada. Canadian Environmental Sustainability Indicators: Progress Toward Canada's Greenhouse Gas Emissions Reduction Target. 2016.
(4) United Nations Framework Convention on Climate Change. Aggregate effect of the intended nationally determined contributions: an update, FCCC/CP/2016/2. May 2016.
(5) This is based on current fuel usage at the plant and will not change by processing Borden Gold Project versus another ore.
(6) Projections are in tonnes (million tonnes; Mt or billion tonnes; Gt) CO_2 equivalent units.

The principal anthropogenic noise sources from the Borden Gold Project are expected to derive from open air, heavy equipment operation, such as that associated with the handling of ore and mine rock from the mine; and from the ventilation from the underground workings required for worker health and safety. Crushing of rock if required, will be conducted underground in order to limit noise on the surface. Noise source modelling is being carried out to ensure that noise and noise-related effects are fully considered during the detailed engineering design of the Project.

Mine water derived from the natural flow of groundwater into the underground mine, and runoff resulting from precipitation that comes into contact with surface mine operations area, will be monitored for quality, managed and treated as needed prior to release to the environment. There

are no other proposed surface or groundwater takings, although a well for domestic water could potentially be developed.

A surface pond water treatment system will be in place from the advanced exploration program. This system will be modified if / as required to collect and treat the mine water and contact surface runoff from the mine. Excess treated waters that meet applicable regulatory requirements, will be pumped by pipeline to the Borden River for release to the environment in accordance with environmental approvals, in the same manner as discharge is handled from the advanced exploration program.

Mine rock resulting from underground mining is the only mineral waste expected to be produced by the Borden Gold Project. There will be no processing plant on the site, and accordingly, no related processing wastes (such as tailings) produced on site. Mine rock will be left underground during mining as much as practical. Any mine rock brought to surface will be temporarily stored in a stockpile area, expanded from the area developed for the advanced exploration program. Mine rock will preferentially be returned underground as backfill to support mine development, potentially mixed with cement to increase its strength. The current mine design suggests that there may be an overall deficit of backfill material which may necessitate the backhauling of mineral wastes from another mine operation. Subject to approval, Goldcorp has committed that any potentially acid generating rock (mine rock, low grade ore or ore) stockpiled on the surface at the Borden Gold Project site at closure of the mine that cannot be reasonably taken back underground will be transported offsite for final storage (such as to a Goldcorp operation located in Timmins, Ontario) once applicable regulatory approvals are obtained.

Other solid and liquid wastes produced during the construction, operations and reclamation phase of the Borden Gold Project will be managed and treated as appropriate, in accordance with all applicable regulatory requirements. Domestic sewage and grey water (from showers and sinks) will be treated at the site with an appropriately-sized septic tank and raised tile field bed (potentially expanded from the advanced exploration program facility) or potentially in a new package sewage treatment plant. Solid, non-mineral wastes will be transported to an appropriate facility offsite for handling, treatment and/or storage.

FEDERAL AND PROVINCIAL INVOLVEMENT

The Borden Golden Project is located within the Province of Ontario and must meet the regulatory requirements of the Federal and Provincial governments.

There is no proposed or anticipated Federal financial support associated with the Borden Gold Project development, operation or closure, and no Federal lands are required or or proposed to be used to carry out the Project.

The only anticipated Federal environmental approval that could potentially be required for the Borden Gold Project is an Authorization(s) for Harmful Alteration, Disruption or Destruction of Fish Habitat under the *Fisheries Act*. Although not currently expected to be required, a harmful effect

on local minor watercourses supporting fish could potentially occur related to mine dewatering and/or disruption of headwater areas.

There is a potential engineering approval requirement related to explosives storage. It is anticipated that the explosives contractor will obtain the necessary approval(s) under the *Explosives Act* for an explosives magazine on the site, if modification is needed to the advanced exploration program magazine. Explosives are anticipated to remain under the care and control of the explosive contractor over the life of the Borden Gold Project.

There are no anticipated Provincial EA requirements under the Ontario *Environmental Assessment Act* based on the current mine design. Depending on the results of the assessment of power alternatives, a Provincial Class EA and environmental approvals could be required for the establishment of additional power infrastructure (upgraded / new power distribution line, connecting to an existing 115 kilovolt transmission line with an associated new transformer station).

Development of the mine is anticipated to require a number of new environmental approvals from the Province of Ontario [new], as well as potentially amendments to advanced exploration program approvals [currently in progress] as summarized below subject to ongoing government consultation:

- Closure Plan [new] - reclamation of the Borden Gold Project mine site and associated infrastructure;
- Forest Resource Licence [new] - cutting of Crown timber to accommodate the new mine facilities on the surface;
- Environmental Compliance Approval [amendment] – modification to the effluent treatment and discharge system developed for the advanced exploration program;
- Work Permit [potential amendment] – for potential expansion of water treatment pond containment facilities;
- Environmental Compliance Approval [amendment] – modification to the air and noise emissions system developed for the advanced exploration program;
- Permit(s) to Take Water [amendment] - modification to the approvals obtained to dewater the underground workings during the advanced exploration program.
- Permit(s) to Take Water [amendment or new] – approval for a new domestic water well or potentially an amendment to allow increased taking for the well that supports the advanced exploration program;

- Highway-related approvals related to Highway 101 improvements at site entrance(s) [potential new or amendments];

There are no other jurisdictions with EA or regulatory / approval requirements.

ENVIRONMENTAL EFFECTS

Physical and Biological Setting

The Borden Gold Project property is located within the Arctic watershed and as such the regional drainage flows northward. The regional ground surface generally undulates between northeast-southwest orientated ridges and shallow troughs, reflecting the glacial history of the area. Natural drainage from the site flows to the Borden River through small tributaries, or into Borden Lake. Borden Lake is a cold water lake which forms the primary headwaters and flows into the Borden River. The Borden River is quite varied in its reaches near the Borden Gold Project site, in terms of both gradient (wide meandering channel to narrow fast-flowing sections) and thermal guild classification (cold to warm water depending on time of year and section).

Goldcorp and its predecessor have conducted extensive baseline environmental investigations associated in the area surrounding the project site. Studies of fisheries and aquatic resources for the Borden Gold Project have focused on the Borden River and its headwaters, including Borden Lake. Surface water sampled near the Project site generally met the Provincial Water Quality Objectives and Canadian Water Quality Guidelines for the protection of aquatic life, with occasional exceptions in the baseline condition, for phosphorus, fluoride, aluminum and iron. Fish community records for Borden Lake indicated a presence of: Walleye, Smallmouth Bass, Northern Pike, Whitefish, Yellow Perch, Iowa Darter, Blacknose Shiner, Lake Trout (previously stocked in the lake) and other fish. There is no recent data confirming the presence of Lake Trout in Borden Lake. Fish species captured in the Borden River during scientific investigations to date include: Common White Sucker, Johnny Darter, Longnose Dace, Northern Pike, Northern Redbelly Dace, Smallmouth Bass, Walleye and Yellow Perch. Northern Pike and Common White Sucker were the most abundant fish species caught in the Borden River.

The area surrounding the site is typical of the mixed-boreal forest region of northern Ontario. Mature upland forests (76.9%) and wetland habitats (20.4%) comprise the majority of the area studied surrounding the Project site. The vegetation structure within parts of the study area reflects a history of forestry and recreation in the area. In addition, the site has been subject to ongoing exploration drilling and portions of the site have been cleared of woody vegetation.

Wildlife and birds present in the area are typical of northeastern Ontario. The following species (and others) have been identified to date in the vicinity or at the Borden Gold Project site:

- American Black Bear, Moose, White-tailed Deer, Snowshoe Hare, Red Squirrel, Beaver, Red Fox, Marten, Mink, River Otter, Porcupine, Canada Lynx and Eastern Coyote;

- Eastern Red Bat, Silver-Haired Bat and Hoary Bat were indicated by acoustic surveys, but no candidate hibernacula or maternity roosting habitat for bats were identified;

- Eighty-four birds were identified including most commonly, Red-eyed Vireo, White-throated, Nashville Warbler, Swainson's Thrush and Magnolia Warbler; and

- Spring Peeper, Green Frog, American Toad and Wood Frog were recorded during the night amphibian calling surveys. Three avian Species at Risk (designated as species of Special Concern by the *Endangered Species Act*), were observed during field surveys in the study area: Bald Eagle, Canada Warbler and Common Nighthawk. There are no active stick nests close to the proposed development.

Proximity to Other Users

There are no planned facilities or activities associated with the Borden Gold Project on:

- Federal lands of any type, including First Nations Reserve lands;
- Provincial Parks or Conservation Reserves;
- Areas of Natural and Scientific Interest;
- Provincially Significant Wetlands;
- Provincial Forest Reserves; or other
- Provincially-protected lands.

Table S-3 provides a summary of the distances of the Borden Gold Project site from environmentally sensitive areas.

There are no residences on the Borden Gold Project site. The closest structures to the site are permanent or seasonal, cottages and trailers (Figure S-3).

The closest First Nation Reserve to the Borden Gold Project site is located approximately 6 km to the southwest (Brunswick House Reserve 76B). They also have reserve land southeast of the Borden Gold Project site. Other Aboriginal Reserves located in the area include: Chapleau Cree First Nation, Chapleau Ojibwe First Nation and Michipicoten First Nation; all with Reserve lands located near Chapleau, Ontario (Figure S-4). The Borden Gold Project has not been provided with maps of the traditional territories for these Aboriginal groups or the Métis.

The Borden Gold Project site, as well as Highway 101 and the Dome Processing Facility, are located within the boundaries of Treaty No. 9. There are no Aboriginal land claims associated with the areas proposed for the development of the Borden Gold Project to knowledge of Goldcorp.

Potential Environmental Effects

A preliminary assessment of the potential environmental effects of the Borden Gold Project operation has been provided in Tables S-4 and S-5 to assist the Canadian Environmental

Assessment Agency in determining the need and scope of the Environmental Impact Statement, if determined to be required. Table S-4 focusses on the potential environmental effects from construction, operation and closure of the Borden Gold Project. Table S-5 provides an overview of potential incremental environmental effects associated with the trucking of Borden Gold Project ore over existing roads for processing at an existing facility. Figure S-5 shows the additional land disturbance anticipated to be required at the Borden Gold Project site required as a result of mine development and operation. There are no other physical activities currently known that have been or will be carried out, that could cause the Borden Gold Project to have a cumulative effect.

Potential Changes Related to Federal Legislation

Mine dewatering required to remove groundwater inflows and provide safe mining work areas underground, may result in a reduction of flows within adjacent watercourses and indirect effects on fish. The rate of flow reduction if any in the Borden River and Unnamed Tributaries 1, 2 and 3 is under investigation. In addition, the management of runoff that comes into contact with the mine operations area may cause a flow reduction in Unnamed Tributaries 1 and 2 due to their small drainage areas and despite the small footprint of the Borden Gold Project. At this time there is not expected to be a harmful effect on local watercourses supporting fish.

A single discharge from the Project site to the Borden River is planned at the same location as currently planned for the Advanced Exploration Project. The effluent pipeline is anticipated to discharge onto a rock pad located below the high water mark of the Borden River. All effluent discharges will be in accordance with regulatory requirements and project-specific environmental approvals. Appropriate measures will be taken to reduce direct and indirect effects to fish and fish habitat from effluent discharges.

All mineral wastes are temporarily stored on land and will not overprint waters frequented by fish.

No direct effect on migratory birds covered by the *Migratory Bird Convention Act* is anticipated other than that associated with localized habitat removal. Clearing of vegetation and other similar work activities in migratory bird habitat are proposed to be completed outside of the active breeding season. When this is not feasible, active nests of species covered by the *Migratory Bird Convention Act* will be identified prior to the work and avoided.

There are no Federal lands in the vicinity of the Borden Gold Project site. No changes to Federal lands inside or outside of Ontario, nor inside or outside of Canada, are expected as a result of the Borden Gold Project, including through use of existing infrastructure and facilities (Highway 101 and Dome Processing Facility).

Potential Effects on Aboriginal Peoples from Changes to the Environment

The closest First Nation Reserve to the Borden Gold Project site is located approximately six kilometres to the southwest (Brunswick House Reserve 76B). They also have reserve land southeast of the Borden Gold Project site. Other Aboriginal Reserves located in the area include:

Chapleau Cree First Nation, Chapleau Ojibwe First Nation and Michipicoten First Nation; all with Reserve lands located near Chapleau, Ontario (Figure S-4). There are no anticipated direct effects from the Borden Gold Project on First Nation Reserve lands.

Brunswick House First Nation, Chapleau Cree First Nation and Chapleau Ojibwe First Nation are signatories to Treaty 9 (James Bay Treaty); and Michipicoten First Nation is a signatory of Crown Treaty Number 60 (Robinson Superior Treaty). The Borden Gold Project site, as well as the existing offsite infrastructure and facility proposed to be utilized (Highway 101 and the Dome Processing Facility), are located within the Treaty No. 9 boundary.

There is the potential that traditional land uses may be affected by the Borden Gold Project. A traditional knowledge / traditional land use study report was prepared on behalf of the: Brunswick House First Nation, Chapleau Cree First Nation and Chapleau Ojibwe First Nation. The study indicated that members of these First Nations have used and continue to use, areas within 25 kilometres of the Borden Gold Project for:

- Fishing (e.g., pickerel, pike and lake trout);
- Hunting and trapping (e.g., moose, partridge and rabbit); and
- Gathering subsistence plants (e.g., blueberries and raspberries) and medicines.

Michipicoten First Nation is in the process of preparing a traditional knowledge / traditional land use study report. There are no known cultural sites, including archaeological sites that will be affected by the Borden Gold Project development, as determined through Stages 1 and 2 archaeological assessments and discussions with engagement with local First Nations.

Local animal and fish populations are not anticipated to be meaningfully affected by Borden Gold Project emissions and discharges that leave the site. As a result, the ability for Aboriginal community members to hunt, trap and fish, and gather subsistence plants and medicines is only expected to be compromised by direct land exclusion to the Goldcorp held claims and leases during the construction and operation phase for safety reasons. Access by the general public and local Aboriginal community members will be considered based on prior arrangements being made with Goldcorp. If requested in advance, Goldcorp will support the ability to access portions of these lands outside of the Project footprint to allow gathering of wild medicines, berries or other vegetation; as well as for Aboriginal cultural and ceremonial purposes. After mining ceases and the site is fully reclaimed to a naturalized state, access to the lands will be safe for traditional land uses and discussions will be held during closure planning to determine how such access would be provided. As all regulatory requirements will be met by the project, and reasonable access will be provided on request to lands outside the Project footprint, any effect is anticipated to be minor.

No material changes to the environment are anticipated through the use of existing infrastructure and facilities by the Borden Gold Project. There are no material changes expected to existing direct or indirect effects on First Nation Reserve lands or traditional lands to result from the trucking of ore over existing infrastructure for processing at an existing plant.

ENGAGEMENT OF ABORIGINAL GROUPS

The Provincial Ministry of Northern Development and Mines has directed that Goldcorp engage the following Aboriginal groups for the advanced exploration program with:

- Brunswick House First Nation;
- Chapleau Cree First Nation;
- Chapleau Ojibwe First Nation;
- Michipicoten First Nation; and
- Métis Nation of Ontario.

Goldcorp anticipates that this same direction will be given by the Province with regard to the proposed mine development.

As part of its ongoing consultation activities, Goldcorp has engaged the Brunswick House, Chapleau Cree and the Chapleau Ojibwe First Nations. Efforts to engage with the Michipicoten First Nation and the Métis Nation of Ontario have also been initiated and are underway.

Key comments about the Borden Gold Project from Aboriginal groups to date have often related to employment, training and contracting opportunities, although a genuine interest in the environment and potential environmental effects has also been expressed. Key environment-related interests and issues expressed to date include:

- Potential effects on water quality, fish and wildlife;
- General concern about potential effects on Borden Lake and the Borden River;
- Potential for effects on the Brunswick House drinking supply (Borden Lake);
- Air quality and sound emissions;
- Management of mine rock and acid rock drainage;
- Ability to continue to practice traditional practices on site; and
- Interest in retention of traditional knowledge / traditional land use information.

Goldcorp plans to continue to have regular meetings with local First Nation representatives; generally every six to eight weeks with the membership and every two months with identified leaders and/or representatives. Future community information events will be discussed in advance with the First Nation involved. Meetings will be established to gather feedback about EA findings and provide feedback about appropriate management of potential environmental effects. Meetings will be ongoing with the Métis Nation of Ontario, including project updates.

CONSULTATION WITH THE PUBLIC AND OTHER PARTIES

Stakeholders involved in the Borden Gold Project to date include those with a direct interest in the Borden Gold Project (including exploration and ongoing advanced exploration programs) as well as those who were able to provide data for baseline environmental reports. Goldcorp has been in ongoing communications with a number of Federal and Provincial government departments and ministries as well as the Township of Chapleau, primarily regarding the ongoing exploration activities and the proposed advanced exploration program. Other stakeholders involved to date include:

- Local cottagers (Borden Lake and Serviss Lake);
- Local campground owners;
- General public; and
- Various Chapleau-area small business owners and community interest groups.

The list of stakeholders is expected to continue to evolve throughout Project development to reflect varying levels of interest and issues over time.

Key comments about the Borden Gold Project to date received from stakeholders to date have often related to potential employment and contracting opportunities. There has also been an interest expressed regarding environmental aspects, including:

- Effects of the Borden Gold Project on water quality, fish and wildlife;
- General concern about potential effects on Borden Lake and Borden River;
- Length of time and process to obtain the environmental approvals needed;
- Emissions (air quality and sound) and effluent quality;
- Potential visual effects;
- Interest in potential economic opportunities including direct employment;
- Management of mine rock and acid rock drainage;
- Clarity regarding open pit versus underground mining; and
- Life of mine and mining process in general.

Goldcorp will continue to inform and involve stakeholders including its nearest neighbours in a variety of ways. Future public meetings or open houses in Chapleau will provide updated information about the Borden Gold Project. Meeting(s) will also support gathering feedback about EA findings and providing feedback to Goldcorp about the appropriate management of potential environmental effects. In addition, Goldcorp intends to hold ongoing discussions with stakeholders (as requested) to assist in the preparation of the Environmental Impact Statement.

Table S-1: Summary of Existing Site Facilities and Infrastructure

Facility / Infrastructure (other minor structures may also be present)	Scale (dimensions where known are approximate)
Underground advanced exploration development, including a portal on surface and ramp to underground Note: underground developments will include: mine workings and bays, water sumps and explosive magazine. Early in the advanced exploration phase (only) there will be a limited temporary surface explosives magazine.	Portal: 5 metres (m) by 5 m Ramp: 60 m length to portal opening Advanced exploration ramp total length: approximately 2,500 m from portal opening
Mine rock stockpile on high density polyethylene liner / bedding sand Mine rock generated during advanced exploration will be present on surface at the start of production mining	250,000 t; 125,000 cubic metres (m^3) 21,000 square metres (m^2) footprint Maximum height of approximately 10 m 3H:1V (horizontal:vertical) slope
Diversion / collection berms to direct contact water from natural surface runoff	Berm height: 1.0 m Berm width: 2.0 m Side slopes: 1.5:1l
Water treatment pond (lined) to collect and treat underground mine water as well as stockpile site runoff	162 m by 113 m Dam heights to 4.4 m
Water treatment infrastructure (potentially for pH adjustment and flocculent addition)	As required
Effluent discharge pipeline to the Borden River and splash pad	200 millimetre diameter, 1 km length
Septic tank and raised tile field bed	Sized for approximately 70 persons using showers per day
Maintenance shop for large haul trucks (non-highway) / warehouse / shop / office	15 m x 42 m footprint
Other temporary (mobile) service buildings / trailers	Two, 4 m x 12 m office and meeting room trailers Two, 11 m x 25 m mine dry trailers One, 4 m x 10 m communications trailer One, 2 m x 10 m mine rescue trailer One, 10 m x 19 m unheated warehouse One 4 m x 10 m security and First Aid trailer
Diesel generators	Up to 4.9 megawatts
Local power distribution line	13 km distribution line (25 kilovolts; kV)
Diesel storage tank with secondary containment	Two, 38,000 litre tanks
Propane storage	One, 10,000 litre tank
Site access roads from Highway 101 (gravel) and internal site roads (gravel)	2 km
Parking areas (bus and light vehicles), and general yard and unloading areas	As required

Note: These facilities are proposed as part of the advanced exploration program that will be initiated in late 2016, assuming environmental approvals are obtained, and will be in place at the start of construction of the Borden Gold Project.

Table S-2: Summary of Borden Gold Project Facilities and Infrastructure

Facility / Infrastructure	Scale (approximate; pending ongoing engineering)
Mine	Production rate of 1,750 to 4,000 tonnes per day ore as annual average Depth of about 800 m below surface Access by ramp from surface, developed off the advanced exploration program ramp Underground developments will include: mine workings and bays, and potential crusher Surface backfill plant to prepare backfill for use underground, approximately 50 m x 50 m
Ventilation and Emergency Egress	One or two (up to) 2.5 m radius ventilation raises to surface One smaller (up to) 1 m radius raise for emergency egress
Stockpiles	Mine Rock: • Additional stockpile volume of approximately 440,000 t (220,000 m^3) • Height increase of approximately 2 m • Increased stockpile footprint of 25,000 m^2 Ore: • Temporary stockpile to allow for shipment: 5,000 t (2,500 m^3) • Ore loading facility may be developed Soil and/or Overburden: • If needed
Water Management	Diversion berms will be extended to capture surface runoff from operating area. No other planned change to advanced exploration water management infrastructure (treatment pond, onsite diversion / collection berms and discharge pipeline). Expansion could be required pending ongoing engineering / hydrogeological modelling, including potentially a new pond (less than two hectares in area).
Onsite Buildings and Infrastructure	A few new structures and more permanent structures may replace some or all of the advanced exploration program buildings / trailers. The new buildings (if any) will be of approximately the same scale (footprint and height) as the exploration phase facilities (Table S-1): • Office, one, 20 m x 25 m • Change rooms, one, 25 m x 25 m; one, 6 m x 15 m • Maintenance shop: 60 m x 40 m • Mine rescue trailer: 4 m x 15 m • Storage dome: 30 m x 10 m • Electrical workshop dome: 20 m x 10 m • Minor buildings: two, 10 m x 10 m • Security and First Aid trailer: 4 m x 12 m A new road will be required to access additional ventilation infrastructure. The onsite road network may be expanded to better accommodate truck traffic but any road expansion outside of the preliminary site plan shown (Figure S-2) is anticipated to be of less than 2 km length. A nominal increase in diesel fuel tankage may be required. An increase in propane storage will be needed to accommodate heating increased air flows in winter required to run the operation.
Offsite Infrastructure	Potential construction and energizing of an upgraded / new power distribution line (anticipated at 25 kV), connecting to a 115 kV transmission line with an associated new transformer station.
Use of Existing Offsite Infrastructure and Facilities	Highway 101: No proposed change to existing highway; except the potential for a turning lane at the Borden Gold Project site. Proposed additional traffic is within the capacity of highway. Dome Processing Plant: No material changes proposed; no material changes to associated emissions, discharges and wastes.

Note:See also Figure S-2.

Table S-3: Relative Locations of Areas of Interest

Closest Areas of Interest	Distance (km) *
Federal Lands (excluding First Nation Reserves)	
Pukaskwa National Park	174
Lake Superior National Marine Conservation Area	270
National Wildlife Areas	
Chapleau Crown Game Preserve	6
Priority Ecosystems (closest only listed)	
Chapleau-Nemegosenda River Provincial Park (Waterway Class)	7
Ivanhoe Lake Provincial Park (Natural Environment Class)	27
Windermere Goldie Lake Complex Conservation Reserve	29
Ivanhoe Lake Wetland, Provincially Significant	61
Migratory Bird Sanctuaries / Important Bird Areas	
On018 - Mary's River Complex, including St. Joseph's Island Migratory Bird Sanctuary; Nationally Significant: Congregatory Species	162
On017 - The Cousinsblind River, Ontario; Globally Significant: Congregatory Species	201
On150 - Manitoulin Island North Shore Gore Bay; Globally Significant: Congregatory Species	205
Boundaries	
Ontario Provincial border, land boundary	117
Ontario Provincial border / United States of America, water boundary	163

Note:
* Approximate distance from Borden Gold Project site centroid (Sources: MNRF 2016c; Bird Studies Canada 2016).

Table S-4: Potential Environmental Effects (Preliminary) from Borden Gold Project

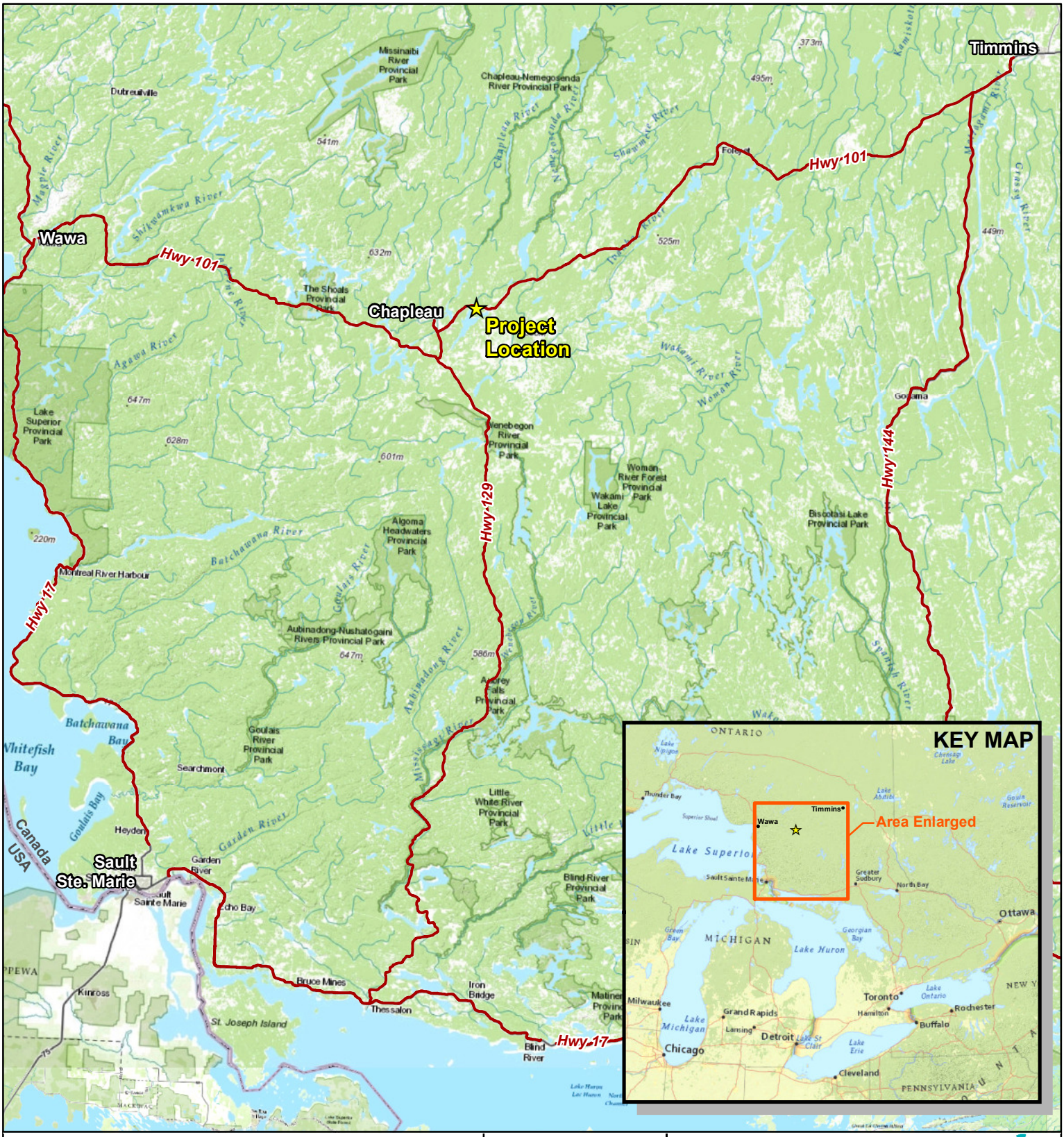
Environmental Component	Potential Effect (Preliminary) [1]
Air quality	Air emissions from the Borden Gold Project site have the potential to generate dust or products of petroleum hydrocarbon combustion that could potentially have a localized effect on plant and animal health. Provincial regulatory requirements will be met for onsite emissions and air quality at the property boundary.
Noise	Noise emissions from the Borden Gold Project site have the potential to disturb other area users. Provincial regulatory criteria will be met for onsite emissions and at surrounding noise sensitive locations (i.e. points of reception such as dwellings and camps).
Greenhouse gases	Greenhouse gases associated with Borden Gold Project construction, operation and closure have a very minor potential to contribute to global carbon dioxide emissions and the associated phenomenon of climate change.
Ambient light	Operation of an industrial facility will of necessity require provision of continuous localized lighting to ensure effective operations and the safety of workers and others. This will result in an increase in the ambient light at the project site and a localized glow offsite.
Watercourses / waterbodies	The Borden River will receive all treated effluent (mine water and contact waters) from the Borden Gold Project site. The discharge will be meet all Federal and Provincial regulatory requirements. There may be a change to the flow (increase or decrease) in the river cause by the dewatering of the underground mine to be assessed further.
Unnamed Tributaries 1, 2 and 3	Borden Gold Project development has the potential to reduce downstream flow in the existing channel (but is returned to the Borden River) and creek flow is highly modified by beaver activity. No overprinting of the active channels are proposed. Quality within the minor watercourses is not expected to be affected.
Aquatic habitat and species	There may however be limited reductions in flow in local watercourses which may result in an indirect limited effect on fish and fish habitat.
Groundwater system	Mine dewatering has the potential to draw down local aquifers. Local watercourses are not anticipated to be affected. Groundwater quality is not expected to be affected.
Terrestrial habitat	Mine site and related infrastructure development will displace limited areas of terrestrial habitat. There are no known terrestrial habitat linkages that will be affected. An area of approximately 4 to 8 hectares may be affected.
Wildlife and migratory birds including Species at Risk	Mine site development will displace existing terrestrial habitat. Limited effect if any due to general lack of presence. An area of approximately 4 to 8 hectares may be affected.
Species at Risk	Mine site development will displace existing terrestrial habitat. No Species at Risk are known to be present.
Hunting, fishing and tourism	Limited effect as the Borden Gold Project is to be located on an active advanced exploration program site where access is controlled / restricted for safety of workers.
Aboriginal / public health and safety (air emissions, water quality, socio-economics)	No negative effect expected on Reserve lands. The Borden Gold Project will provide a positive socio-economic effect, in providing employment and commercial opportunities.
Current traditional use of lands and resources	None to limited effect expected. There will be minor release of air contaminants offsite associated with fuel combustion and fugitive dust; release of contaminants in treated effluent to the Borden River.
Structures, sites or objects [2]	No structures, sites or objects of historical, archaeological or architectural significance are present. No sites of paleontological significance are known to be present and no effect is anticipated.

Notes:
1 Effect described is additional to any effect associated with the existing Advanced Exploration Program.
2 Structures, sites or objects of historical, archaeological, architectural or paleontological significance.

Table S-5: Potential Environmental Effects (Preliminary) from Use of Offsite Existing Infrastructure / Facilities

Environmental Component	Potential Effect (Preliminary) [1]
Air quality	A very minor increase in air emissions is anticipated to result from the transport of Borden Gold Project ore in the immediate vicinity of the road infrastructure (additional approximately 60 to 80 return vehicle trips per day). No changes to processing plant rates of production are proposed, and no change to air emissions are expected as a result of the processing of Borden Gold Project ore.
Noise	A very minor increase in noise emissions is anticipated to result from the transport of Borden Gold Project ore. No changes to processing plant rates of production are proposed and no change to noise emissions are expected as a result of the processing of Borden Gold Project ore.
Greenhouse gases	A very minor increase in greenhouse gases is anticipated to result from the transport of Borden Gold Project ore. No changes to processing plant rates or means of production at the processing plant are proposed, and no change to the existing annual greenhouse gas emissions are expected as a result of the processing of Borden Gold Project ore.
Ambient light	Very minor increase in transitory ambient light associated with the increased vehicle traffic on Highway 101 (additional approximately 60 to 80 return vehicle trips per day).
Watercourses / waterbodies	No effect anticipated. No expansion of existing offsite infrastructure and facilities are proposed. Processing of Borden Gold Project ore will not change effluent quality from the Dome Processing Facility.
Groundwater system	No effect anticipated. No expansion of existing offsite infrastructure and facilities are proposed.
Terrestrial habitat	No effect anticipated. No expansion of existing offsite infrastructure and facilities are proposed.
Wildlife and migratory birds including Species at Risk	Potential very minor increase in wildlife / bird deaths associated with increased vehicle traffic (additional approximately 60 to 80 return vehicle trips per day).
Hunting, fishing and tourism	No effect anticipated. The volume of increase traffic is not expected to be noticeable.
Commercial operations (mining, aggregates and forestry)	No effect anticipated. No expansion of existing offsite infrastructure and facilities are proposed. The Borden Gold Project will provide a positive socio-economic effect, in providing employment and commercial opportunities.
Aboriginal / public health and safety (air emissions, water quality, socio-economics)	No effect anticipated. No expansion of existing offsite infrastructure and facilities are proposed. Processing of Borden Gold Project ore will not change effluent quality from the Dome Processing Facility.
Physical and cultural heritage	No effect expected. No expansion of existing offsite infrastructure and facilities are proposed.
Current traditional use of lands and resources	No effect expected. No expansion of existing offsite infrastructure and facilities are proposed. Processing of Borden Gold Project ore will not change effluent quality from the Dome Processing Facility.
Structures, sites or objects [2]	No effect expected. No expansion of existing offsite infrastructure and facilities are proposed.

Notes:
1 Effect described is additional to any effect associated with the existing traffic on roads / operation of the Dome Processing Facility.
2 Structures, sites or objects of historical, archaeological, architectural or paleontological significance.



P:\2015\Projects\TC150506_Borden_Gold_EnvGIS\Project_Description\MXD\ES_Project_Location_1.mxd

LEGEND

- Project Location
- Regional Highways

NOTES:
- Highway information extracted from National Road Network, Geogratis.ca
- Backgroup topographic map information extracted from ESRI Base Map Services

GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Site Location

Datum: NAD83
Projection: UTM Zone 17N

0 10 20 40 60 80 100 Kilometres

N W E S

PROJECT N°: TC150506 | **FIGURE: S-1**

SCALE: 1:1,340,000 | DATE: September 2016

328000 329000 330000 331000 332000 333000 334000

5305000 5304000 5303000 5302000

Borden River
Unnamed Tributary 3
Unnamed Tributary 2
Unnamed Tributary 1
Highway 101
Emerald Lake
Borden Lake (Grout Bay)
Borden Lake

Access Road
Power Distribution Line
Discharge Water Pipeline (and access road)
Access Road
Truck Loading and Scale Area
Buildings and Yard Areas
Water Collection Pond
Mine Rock Stockpile Area
Generator
Containment
Portal
Access Road (to raise)
500 m

P:\2015\Projects\TC150506_Borden_Gold_Env\GIS\Project_Description\MXD\ES_Mine_SitePlan_Schematic_2.mxd

LEGEND

Potential Surface Facilities

- Power Distribution Line
- Discharge Water Pipeline
- Stockpile Containment Water Diversion Berm
- Site Access Roads
- Ramp and Portal to Underground
- Water Collection Pond
- Emergency Spillway
- Mine Rock Stockpile Area
- Buildings and Yard Areas
- Generator

0 0.5 1 2 3 4 Kilometres

NOTES:
- Orthorectified Geoeye-1 and Worldview-3 Satellite Imagery, August 2015 was provided by Goldcorp.
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.
- NTS watercourse information has been modified to reflect infield investigations.
- Site plan schematic arrangement derived from general arrangement provided by KCB (Site plan date: Jul. 8, 2016)

Datum: NAD83
Projection: UTM Zone 17N

N W E S

GOLDCORP BORDEN GOLD

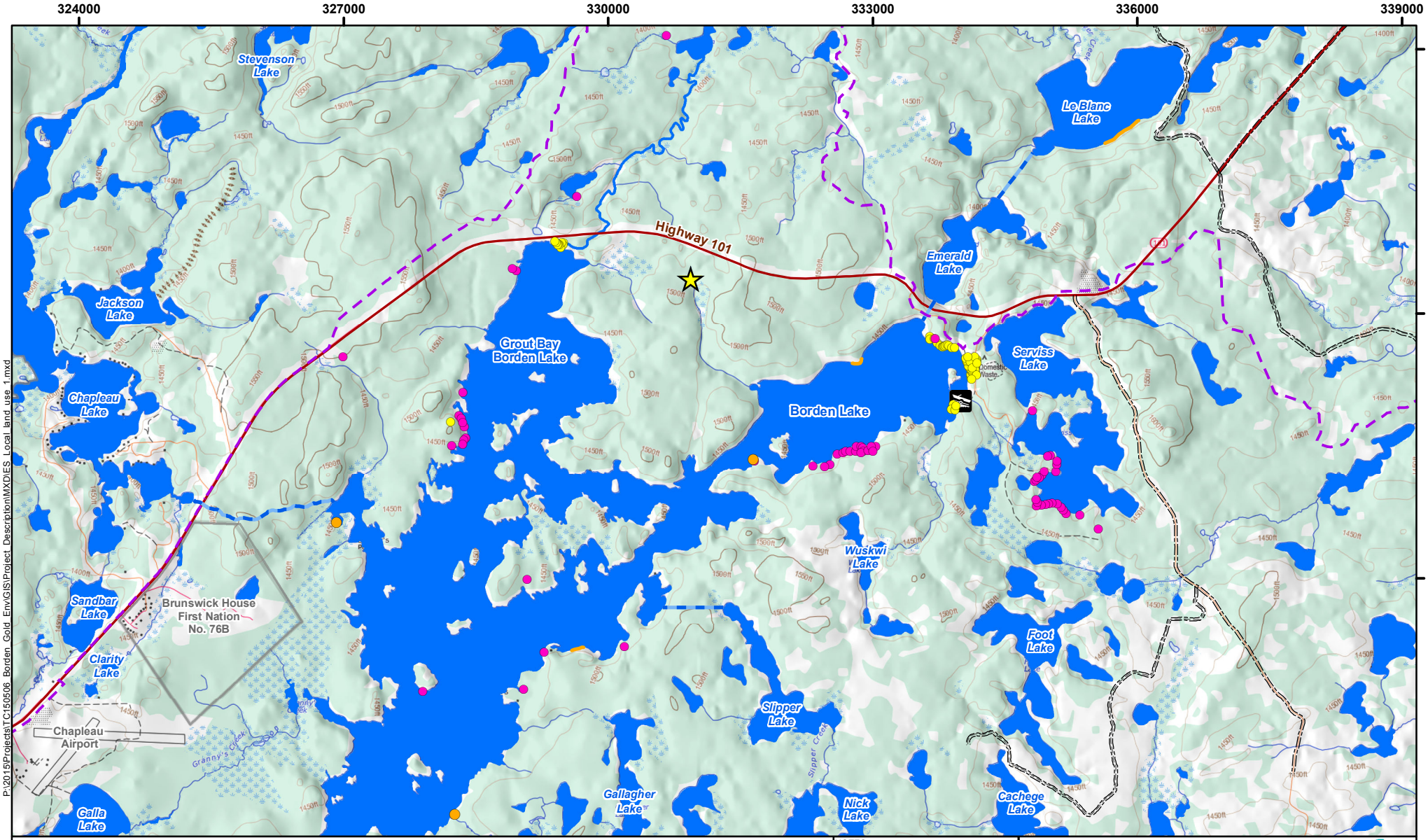
amec foster wheeler

BORDEN GOLD PROJECT

Simplified Mine Site Plan Schematic

PROJECT N°: TC150506 | **FIGURE: S-2**

SCALE: 1:17,000 | DATE: September 2016



LEGEND

- Project Location
- Select Cottages / Residences
- Select Trailers
- First Nations Camp
- Boat Launch
- Portage Trail
- Hunting Corridor
- Highway
- Snowmobile Routes
- Beach
- First Nations
- Waterbody

NOTES:
- Toporama, MNRF
- Topographic data from Land Information of Ontario, MNRF.
- Recreational sites extracted from Forest Management Plan (MNRF) and verified by aerial photograph and Amecfw staff.
- Beaches and First Nations camps digitized from EEM "Non-Traditional Land Use Map"
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.

Datum: NAD83
Projection: UTM Zone 17N

0 0.5 1 2 3 4 5 Kilometres

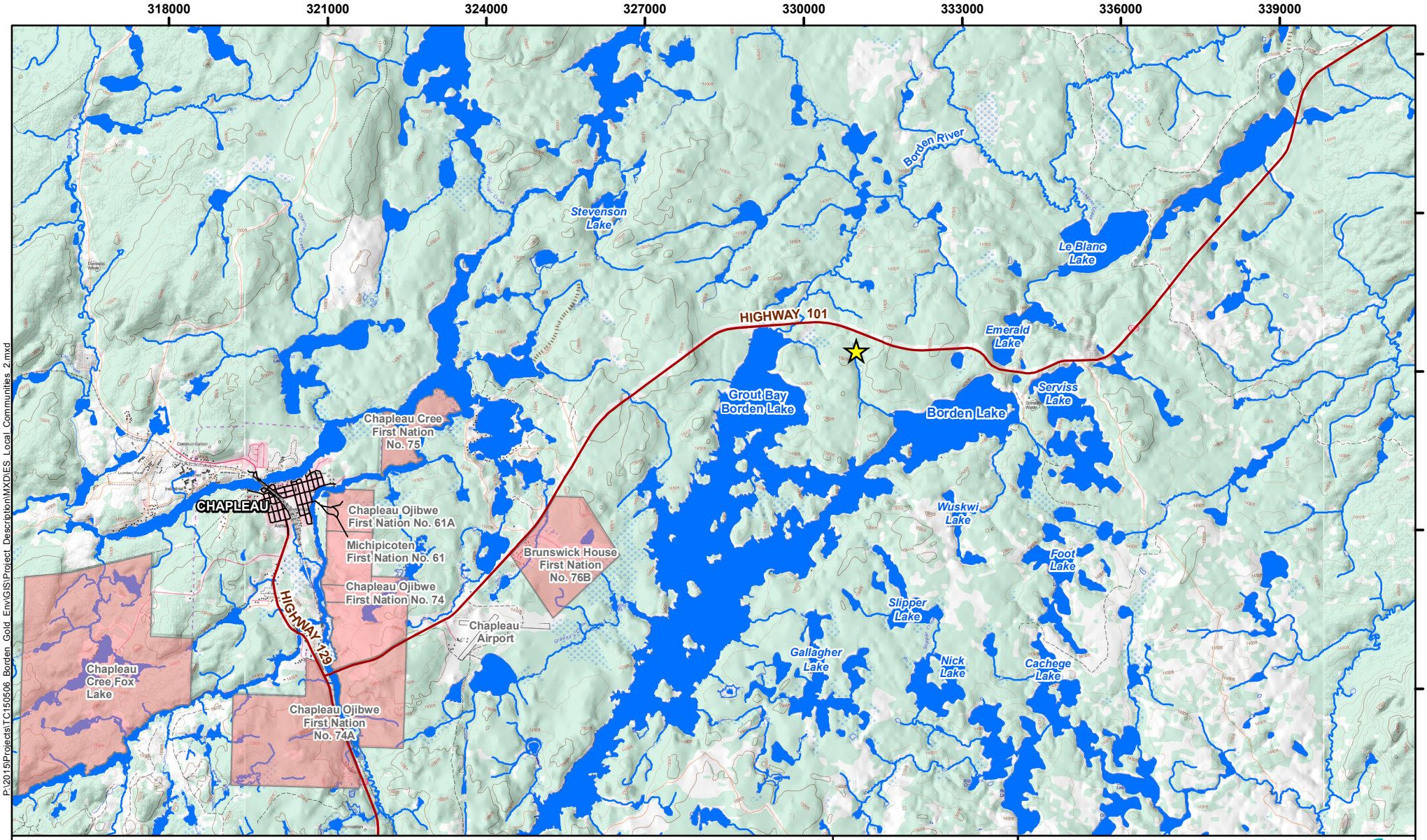
GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Local Land Use

PROJECT N°: TC150506	**FIGURE: S-3**
SCALE: 1:60,000	DATE: September 2016



P:\2015\Projects\TC150506_Borden_Gold_Env\GIS\Project_Description\MXD\ES_Local_Communities_2.mxd

LEGEND

- Project Location
- First Nation
- Waterbody

NOTES:
- Toporama, MNRF
- Topographic data from Land Information of Ontario, MNRF.
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.
- NTS watercourse information has been modified to reflect infield investigations.

0 0.5 1 2 3 4 5 Kilometres

Datum: NAD83
Projection: UTM Zone 17N

N W E S

GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Local Communities and First Nation Lands

PROJECT N°: TC150506	**FIGURE: S-4**
SCALE: 1:100,000	DATE: September 2016

P:\2015\Projects\TC150506_Borden_Gold_EnvGIS\Project_Description\MXD\ES_Mine_SitePlan_Schematic_advance_exploration_site_paln_2.mxd

LEGEND

- BGP Mine Site Plan Schematic [1]
- Advanced Exploration Program Site Plan [2]

NOTES:
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.
- NTS watercourse information has been modified to reflect infield investigations.

[1] Site plan general arrangement provided by Goldcorp(site plan date: February 1, 2016).

[2] Site plan schematic arrangement derived from general arrangement provided by KCB (site plan date July 8, 2016).

Datum: NAD83
Projection: UTM Zone 17N

0 0.2 0.4 0.6 0.8 1 Kilometres

N W E S

GOLDCORP BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Comparison of Site Plan Footprints

PROJECT N°: TC150506	**FIGURE: S-5**
SCALE: 1:13,000	DATE: September 2016

GOLDCORP

BORDEN GOLD

PROJET DE MINE AURIFÈRE BORDEN

DESCRIPTION DU PROJET
D'AMÉNAGEMENT DE LA MINE

Octobre 2016
TC150506 - rev

amec foster wheeler

RÉSUMÉ

RENSEIGNEMENTS GÉNÉRAUX ET PERSONNES-RESSOURCES

Borden Gold | Goldcorp Borden Limited (Goldcorp) étudie actuellement le projet de mine aurifère Borden dans le nord-est de l'Ontario. Goldcorp propose d'exploiter une mine d'or souterraine, ainsi que les installations de surface associées sur le site du projet de mine aurifère Borden. Le minerai extrait sera transporté au moyen des structures existantes en vue de son traitement dans une installation à Timmins, en Ontario.

Nom du projet : Projet de Mine Aurifère Borden

Promoteur : Goldcorp est un important producteur d'or soucieux d'utiliser des pratiques minières responsables dans différents pays des Amériques. Goldcorp, société canadienne dont le siège social est à Vancouver, en Colombie-Britannique, emploie plus de 15 000 personnes dans le monde entier. Goldcorp exploite un certain nombre de mines et d'installations de traitement en Ontario, dont la mine Porcupine et les exploitations de traitement à Timmins. La société est résolue à être un gestionnaire responsable de l'environnement et à maintenir les normes de santé et de sécurité les plus rigoureuses possible.

Borden Gold | Goldcorp Borden Limited
David Garofalo
Président et directeur général
666, rue Burrard, bureau 3400
Vancouver (Colombie-Britannique) V6C 2X8
Tél. : 604-696-3000

Principales personnes-ressources :

John (JY) Young
Surintendant sécurité, santé et environnement
Borden Gold | Goldcorp Borden Limited
217, chemin Martel
Chapleau (Ontario) P0M 1K0
Tél. : 705-465-1926
john.young@goldcorp.com

Roger Souckey
Directeur, RSE et RH, projet Coffee
Goldcorp Canada Ltd.
130, rue Adelaide ouest, bureau 3201
Toronto (Ontario) M5H 3P5
Tél. : 416-956-0435
roger.souckey@goldcorp.com

Sheila Daniel, géo.
Directrice, Environnement minier
Amec Foster Wheeler Environnement & Infrastructure
160, boul. Traders est, bureau 110
Mississauga (Ontario) L4Z 3K7
Tél. : 416-524-5928
sheila.daniel@amecfw.com

RENSEIGNEMENTS SUR L'EMPLACEMENT DU PROJET

Le projet de mine aurifère Borden concerne une mine d'or souterraine et les installations connexes sur place, ainsi que de nouvelles infrastructures électriques (limitées) à l'extérieur du site. Le projet de mine aurifère Borden est situé directement au nord et à l'est du lac Borden, à environ 11 kilomètres (km) au nord-est de Chapleau, en Ontario, et à 160 km au sud-est de Timmins, Ontario (figure S-1). Les coordonnées approximatives du projet sont les suivantes : 5304500 N et 330800 E dans le système des coordonnées UTM NAD83 (Zone 17). Il longe la route provinciale 101 de l'Ontario et en est directement accessible. Les nouveaux besoins en matière d'infrastructures électriques ne sont pas entièrement définis, mais pourraient comprendre une nouvelle ligne de transport (environ 25 kilovolts sur 6 km), dont la plus grande partie devrait longer l'infrastructure existante, et un poste de transformation connexe près de Chapleau.

RENSEIGNEMENTS SUR LE PROJET

Aperçu

Goldcorp propose de construire, d'exploiter et de remettre en état une nouvelle mine d'or souterraine sur le site du projet de la mine aurifère Borden, et d'agrandir et/ou de modifier les installations qui auront été construites pendant le programme d'exploration avancée (le tableau S-1). Goldcorp a délibérément conçu la mine de façon à utiliser les infrastructures et les installations déjà existantes afin de perturber au minimum l'environnement.

Le *Règlement désignant les activités concrètes* pris en vertu de la *Loi canadienne sur l'évaluation environnementale* (2012) détermine les activités concrètes qui constituent des projets désignés pour lesquels il faut présenter une description de projet, puisqu'ils pourraient nécessiter la réalisation d'une évaluation environnementale (EE) fédérale. L'article 16 du Règlement pourrait s'appliquer au projet de mine aurifère Borden :

> *16 La construction, l'exploitation, la désaffectation et la fermeture c) d'une nouvelle mine d'éléments des terres rares ou d'une nouvelle mine d'or, autre qu'un placer, d'une capacité de production de minerai de 600 t/jour ou plus.*

La mine souterraine du projet de mine aurifère Borden sera en activité en permanence (24 heures) toute l'année et extraira environ 4 000 tonnes de minerai par jour d'après une moyenne annuelle. Par conséquent, Goldcorp a soumis cette description de projet à l'Agence canadienne d'évaluation environnementale afin d'éclairer la décision sur l'opportunité d'une

évaluation environnementale fédérale pour le projet de mine aurifère Borden. Le document a été structuré conformément au Guide fédéral de préparation d'une description d'un projet désigné en vertu de la *Loi canadienne sur l'évaluation environnementale, 2012* (mars 2015).

Les principaux travaux souterrains proposés pour le projet de mine aurifère Borden sont les suivants :

- construction d'une mine de production souterraine en agrandissant en profondeur et en largeur les ouvrages souterrains de la phase d'exploration avancée;
- installation d'une infrastructure supplémentaire de ventilation et d'une sortie d'urgence pour la mine.

Les installations de surface nécessaires au projet de mine aurifère Borden devraient comprendre les éléments suivants :

- des installations de manutention du minerai pour gérer et placer le minerai dans des camions couverts et le transporter hors du site;
- une usine de remblai minier pour produire du remblai qui servira à soutenir les ouvrages souterrains;
- un garage d'entretien, un entrepôt, un bâtiment administratif, des douches et un vestiaire, des bâtiments de sécurité et de premiers soins (nouveaux bâtiments ou modifications aux bâtiments du programme d'exploration avancée);
- des haldes de stériles et de minerai à faible teneur (élargissement des haldes établies pendant le programme d'exploration avancée);
- des installations de gestion, de traitement et d'évacuation de l'eau (modifications des installations créées pour le programme d'exploration avancée);
- des aires de dépôt, d'entreposage et de stationnement (en plus des aires prévues dans le programme d'exploration avancée);
- possibilité de voies d'accès améliorées en provenance de la route 101;
- possibilité d'un nouveau poste de transformation et d'une nouvelle ligne de distribution d'énergie vers une ligne de transport existante de 115 kilovolts (25 kilovolts sur environ 6 km; tracé à déterminer).

Un schéma du projet de mine aurifère Borden fondé sur les études techniques comparatives et les évaluations des solutions de rechange réalisées jusqu'à présent est présenté à la figure S-2. Le tableau S-2 contient un sommaire des ouvrages proposés. La conception du projet est toujours

en cours afin d'optimiser l'empreinte de la mine et de réduire le risque d'effets négatifs sur l'environnement.

Les installations du projet devraient être principalement situées sur des terres détenues par Goldcorp, en attente des accords sur les terres en cours, mais certaines installations et infrastructures pourraient se trouver sur des terres publiques provinciales ou des terres détenues par des tiers (sous réserve des approbations et des accords obtenus). Le projet de mine aurifère Borden ne se trouve pas dans une région ayant fait l'objet d'une étude environnementale régionale. Les nouvelles installations et les agrandissements sur le site devraient se traduire par des perturbations additionnelles à la surface. Pour tenir compte des incertitudes actuelles relatives à la conception, Goldcorp a estimé que les perturbations additionnelles en surface toucheraient entre quatre et huit hectares, même si on ne prévoit utiliser que cinq hectares pour le moment.

Le minerai sera traité dans une usine existante à Timmins. Le projet de mine aurifère Borden ne prévoit pas de nouvelle usine de traitement ni d'aire de gestion des résidus. Le minerai sera transporté sur le réseau autoroutier et routier existant. Les travailleurs devraient être logés dans des logements locaux et Goldcorp ne propose pas de construire un camp ni d'autres logements.

Calendrier

La construction devrait commencer immédiatement après l'achèvement du programme d'exploration avancée, en supposant que l'évaluation environnementale fédérale (le cas échéant) et les approbations environnementales applicables aient été reçues. Des travaux de construction limités sont nécessaires pour commencer la production. La construction est actuellement prévue pour le troisième trimestre de 2018. La production minière (phase d'exploitation) commencera en même temps que la construction en surface et devrait se poursuivre pendant environ 7 à 15 ans. Il est donc prévu que la remise en état et la fermeture commencent vers 2026 au plus tôt.

Activités principales par phase du projet

Les activités principales associées à la phase de développement et de construction du projet de mine aurifère Borden sont les suivantes :

- demande des approbations environnementales applicables ou modifications aux approbations existantes;
- acquisition du matériel et de l'équipement;
- élaboration et mise en œuvre de plans de protection et de surveillance de l'environnement pour la construction et l'aménagement (pendant toutes les phases du projet);
- formation continue du personnel et des entrepreneurs conformément aux exigences de la direction de Goldcorp (pendant toutes les phases du projet, notamment sur la santé et la

sécurité, la durabilité, la sensibilisation des Autochtones, la responsabilité des entreprises et les meilleures pratiques environnementales);

- transport des matériaux de construction vers les aires de dépôt déterminés sur le site;
- mise en place de nouvelles monteries dans la mine souterraine et des structures connexes pour la ventilation et d'une sortie de secours souterraine;
- construction / modernisation des bâtiments et des installations nécessaires sur le site du projet;
- amélioration des accès de la route 101, au besoin, selon les directives provinciales (qui devraient comprendre la signalisation, l'accès et les voies de virage) et ajout possible d'une entrée supplémentaire;
- construction et mise sous tension potentielle d'une ligne de distribution améliorée ou nouvelle raccordée à un nouveau poste de transformation à Chapleau ou, si cela est rentable dans les limites de temps exigées, à l'actuel poste de distribution de Chapleau amélioré, pour alimenter la mine;
- gestion et surveillance continues de l'environnement et rapports, et études environnementales de suivi (pendant toutes les phases du projet selon le cas).

La phase d'exploitation du projet de mine aurifère Borden comprendra essentiellement les éléments suivants :

- production minière souterraine, en agrandissant et en développant les ouvrages miniers au-delà de la rampe d'exploration avancée;
- transport du minerai vers une usine de traitement existante à Timmins, Ontario, au moyen de camions couverts sur les réseaux routiers provinciaux et municipaux;
- agrandissement des haldes temporaires de minerai à basse teneur et de stériles e surface;
- retour des déchets miniers du projet de mine aurifère Borden, et possiblement d'autres travaux, sous terre comme remblai pour soutenir les ouvrages de la mine;
- gestion de l'eau et/ou traitement des eaux de contact avant de les déverser dans la rivière Borden (se poursuivra durant la phase de remise en état au besoin), ce déversement respectant toutes les exigences fédérales et provinciales applicables à la qualité et à la quantité des effluents.

La remise en état et la fermeture définitive du projet de mine aurifère Borden se dérouleront à la fin de la production minière et devraient comprendre les activités suivantes, régies par la *Loi sur les mines* de l'Ontario et ses règlements et codes associés (et un plan de fermeture déposé) :

- les ouvertures souterraines seront scellées avec des recouvrements artificiels ou remblayées avec des roches non potentiellement acidogènes, selon le cas;
- les ouvrages souterrains seront inondés naturellement au fil du temps; on ne prévoit pas de rejet d'eau souterraine à long terme;
- les haldes potentiellement acidogènes seront remises sous terre ou transportées hors du site; aucune halde potentiellement acidogène ne sera laissée en surface à la fin de la remise en état du projet;
- les installations de traitement de l'eau seront remises en état conformément aux exigences réglementaires en vigueur et les bassins et les canalisations seront dûment déclassés;
- les bâtiments ou le matériel de surface seront vendus ou recyclés si possible, sinon, les déchets de démolition seront retirés du site et envoyés vers une installation de gestion des déchets appropriée;
- les zones et les routes du site qui ne sont pas nécessaires à sa gestion à long terme seront scarifiées et recouvertes de morts-terrains selon les besoins et végétalisées.

La gestion du site et la surveillance environnementale se poursuivront par la suite selon les exigences réglementaires et de Goldcorp.

Utilisation des infrastructures et des installations existantes hors du site

Goldcorp propose d'utiliser dans la mesure du possible les infrastructures et les installations existantes pour réduire les effets environnementaux potentiels de la construction et de l'exploitation de la mine. Le minerai sera transporté de la mine sur les réseaux routiers actuels vers une usine de traitement déjà existante dans la région de Timmins (qui devrait être l'usine de traitement Dome de Goldcorp Porcupine Gold Mines). Compte tenu de cette méthode, il sera inutile d'avoir des installations de traitement et de gestion des déchets miniers (résidus) dédiées sur ou près du site du projet de mine aurifère Borden.

Le minerai provenant de la mine souterraine sera chargé sur des camions couverts et transporté sur le réseau routier provincial existant (route 101), ainsi que sur les routes municipales dans la région de Timmins vers l'usine de traitement Dome. Lorsque la pleine capacité de production sera atteinte, les camions couverts feront quatre allers-retours par jour en moyenne entre le projet de mine aurifère Borden et l'usine de traitement Dome. Aucune nouvelle route n'est nécessaire à l'extérieur de l'empreinte immédiate du site du projet.

L'usine Dome est une usine de traitement entièrement approuvée située dans un complexe industriel au sud-est de Timmins et qui est en service depuis des décennies. L'usine a été conçue pour traiter le minerai provenant d'un certain nombre de mines utilisant des méthodes traditionnelles d'extraction d'or à une capacité totale approuvée de 13 000 tonnes par jour. Aucune modification importante n'est nécessaire pour que l'usine de traitement Dome puisse recevoir et traiter le minerai du projet de mine aurifère Borden.

PRINCIPAUX ASPECTS ENVIRONNEMENTAUX

Les émissions atmosphériques du projet de mine aurifère Borden proviendront principalement de sources fugitives : chargement et stockage du minerai et des stériles, déplacement des véhicules et de l'équipement lourd sur les routes de gravier et effets d'entraînement du vent sur les haldes et autres matériaux terreux exposés sur le site. Les mesures d'atténuation devraient comprendre l'utilisation d'eau et d'autres abat-poussières approuvés par la province. L'asphaltage de certaines routes sur le site et la limitation de la vitesse des véhicules circulant sur les routes de gravier sur le site seront également envisagés.

Goldcorp entend utiliser au maximum l'équipement électrique sur place dans la mesure du possible pour réduire les émissions atmosphériques, y compris les gaz à effet de serre. L'électricité devrait provenir du réseau électrique provincial pour répondre aux besoins du site, si possible, ce qui permettra ainsi de réduire les émissions de gaz à effet de serre éventuelles sur le site. Des véhicules et de l'équipement lourd seront utilisés tout au long du projet et libéreront des particules, du dioxyde de soufre et des oxydes d'azote provenant de la combustion du carburant lorsque l'équipement alimenté à l'électricité ne sera pas utilisé. L'équipement lourd, les véhicules et les génératrices au diésel devront être bien entretenus et en bon état de fonctionnement et seront munis de dispositifs de contrôle des émissions installés en usine pour réduire les émissions.

Une estimation préliminaire des émissions de gaz à effet de serre de la mine, ainsi que des émissions connexes en dehors du site est résumée ci-dessous :

Élément du projet	Projection de l'industrie [1]		Cibles de l'Ontario [2]		Cibles du Canada [3]		Cible globale [4]
	2020	2030	2020	2030	2020	2030	2030
	58 Mt	62 Mt	155 Mt	115 Mt	622 Mt	524 Mt	34 Gt
Site de la mine	0.00390 Mt	0.00366 Mt	0.00390 Mt	0.00366 Mt	0.00390 Mt	0.00366 Mt	0.0000037 Gt
	0,007 %	0,006 %	0,003 %	0,004 %	0,001 %	0,001 %	0,00002 %
Transport du minerai vers l'usine existante	0.01735 Mt	0.00160 Mt	0.01735 Mt	0.00160 Mt	0.01735 Mt	0.00160 Mt	0.0000016 Gt
	0,03 %	0,003 %	0,01 %	0,001 %	0,003 %	0,0003 %	0,000005 %
Traitement à l'usine existante	0.00245 Mt	0.00245 Mt	0.00245 Mt	0.00245 Mt	0.00245 Mt	0.00245 Mt	0.0000025 Gt
	0,004 %	0,004 %	0.002 %	0.002 %	0.0004 %	0.0005 %	0.000007 %

1. Ministère de l'Environment et de l'Action en matière de changement climatique. *Tour d'horizon de la Stratégie du gouvernement de l'Ontario en matière de changement climatiqu*e. Septembre 2014.

2. Commissaire à l'environnement de l'Ontario. *La pression monte : progrès des activités pour réduire les émissions des gaz à effet de serre 2015.* Juillet 2015.
3. Environnement et Changement climatique Canada. *Indicateurs canadiens de durabilité de l'environnement : progrès vers la cible de réduction des émissions de gaz à effet de serre du Canada*. 2016.
4. Convention-cadre des Nations Unies sur les changements climatiques. *Rapport de synthèse sur l'effet global des contributions prévues déterminées au niveau national : une mise à jour*, FCCC/CP/ 2016/2. Mai 2016.
5. Cette estimation repose sur l'utilisation actuelle de combustible à l'usine et ne changera pas si c'est de l'or ou un autre minerai qui est traité.
6. Projections en tonnes (million de tonnes; Mt ou milliards de tonnes; Gt) unités équivalentes de CO_2.

Les principales sources de bruit anthropique du projet de mine aurifère Borden devraient provenir de l'utilisation de l'équipement lourd en plein air, notamment pour la manipulation du minerai et des stériles, et de la ventilation des ouvrages souterrains requises pour la santé et la sécurité des travailleurs. Le broyage de la roche sera effectué sous terre, au besoin, afin de limiter le bruit en surface. La modélisation des sources de bruit est en cours pour faire en sorte que le bruit et les effets liés au bruit soient pleinement pris en compte lors de la conception technique détaillée du projet.

L'eau de mine provenant du suintement des eaux souterraines dans la mine et le ruissellement résultant des précipitations qui entre en contact avec la zone d'exploitation de la mine en surface seront surveillés pour en assurer la qualité et seront gérés et traités selon les besoins avant d'être rejetés dans l'environnement. Aucune autre prise d'eau souterraine et de surface n'est prévue, bien qu'un puits pour l'eau sanitaire puisse éventuellement être construit.

Un bassin de traitement de l'eau en surface sera déjà en place à la suite du programme d'exploration avancée. Ce système sera modifié au besoin pour recueillir et traiter l'eau de la mine et l'eau de ruissellement de surface de la mine. Les eaux excédentaires traitées qui respectent les exigences réglementaires applicables seront pompées dans une canalisation qui se jette dans la rivière Borden, conformément aux approbations environnementales, tout comme sont gérés les rejets selon le programme d'exploration avancée.

Les stériles provenant de la mine souterraine sont les seuls déchets miniers qui devraient être produits par le projet de mine aurifère Borden. Il n'y aura pas d'usine de traitement sur le site et donc aucun déchet de traitement connexes (tels que les résidus) produits sur place. Les stériles seront, dans la mesure du possible, laissés sous terre pendant l'exploitation. Les stériles ramenés en surface seront temporairement entreposés dans une aire de stockage, agrandie à partir de l'aire créée pour le programme d'exploration avancée. Les stériles seront de préférence retournés sous terre comme remblai utilisé dans la mine, et possiblement mélangés avec du ciment pour en augmenter la résistance. La conception de la mine actuelle indique qu'il pourrait y avoir un déficit global de matériau de remblai qui pourrait nécessiter la récupération des déchets miniers d'une autre mine. Sous réserve d'une approbation, Goldcorp s'est engagé à ce que les roches potentiellement acidogènes (stériles, minerai à basse teneur ou minerai) stockées en surface sur le site à la fermeture de la mine et qui ne peuvent pas raisonnablement être ramenées sous terre soient transportées hors du site en vue de leur stockage définitif (par exemple, vers un complexe de Goldcorp situé à Timmins, en Ontario), une fois que les approbations applicables seront obtenues.

D'autres déchets solides et liquides produits pendant la construction et l'exploitation du projet de mine aurifère Borden seront manipulés et traités comme il convient, en conformité avec toutes les exigences réglementaires applicables. Les eaux usées domestiques et les eaux grises (des douches et des lavabos) seront traitées sur place au moyen d'une fosse septique de taille appropriée et d'un champ d'épuration surélevé (qui sera possiblement un agrandissement des installations du programme d'exploration avancée) ou éventuellement dans une installation neuve ou compacte de traitement des eaux usées. Les déchets non miniers solides seront transportés hors du site vers des installations appropriées pour être manipulés, traités et stockés.

PARTICIPATION FÉDÉRALE ET PROVINCIALE

Le projet de mine aurifère Borden est situé dans la province de l'Ontario et doit répondre aux exigences réglementaires des gouvernements fédéral et provincial.

Aucun soutien financier fédéral n'est proposé ou prévu pour la construction, l'exploitation et la fermeture du projet de mine aurifère Borden et aucune terre fédérale n'est nécessaire ou proposée pour mener à bien le projet.

La seule approbation environnementale fédérale susceptible d'être exigée est une Autorisation de détérioration, de perturbation ou de destruction de l'habitat du poisson émise en vertu de la *Loi sur les pêches*. Même s'il n'est pas prévu qu'elle soit exigée, il pourrait y avoir un effet négatif mineur sur les cours d'eau locaux que fréquentent les poissons en rapport avec l'assèchement de la mine et/ou la perturbation des eaux d'amont.

Une approbation technique relative au stockage des explosifs pourrait être requise. Il est prévu que l'entrepreneur chargé des explosifs obtienne l'approbation nécessaire en vertu de la *Loi sur les explosifs* pour installer un dépôt d'explosifs sur le site si une modification au programme d'exploration avancée était nécessaire. Les explosifs devraient rester sous la garde et le contrôle de l'entrepreneur chargé des explosifs pour la durée du projet.

Selon la conception actuelle de la mine, une évaluation environnementale provinciale en vertu de la *Loi sur les évaluations environnementales* de l'Ontario ne devrait pas être nécessaire. En fonction des résultats de l'évaluation des solutions de rechange en matière d'alimentation électrique, une évaluation de portée générale provinciale et des approbations environnementales pourraient être exigées pour ajouter de nouvelles infrastructures électriques (ligne de distribution électrique nouvelle ou modernisée, connexion à une ligne existante de transport de 115 kV avec un nouveau poste de transformation).

Il est prévu que le développement de la mine nécessite un certain nombre de nouvelles approbations environnementales de la province de l'Ontario [nouveau], ainsi que des modifications aux approbations du programme d'exploration avancée [actuellement en cours] et résumées ci-dessous, sous réserve des consultations gouvernementales en cours :

- Plan de fermeture [nouveau] – remise en état du site de la mine et des infrastructures connexes du projet de mine aurifère Borden.

- Permis d'exploitation forestière [nouveau] – coupe du bois de la Couronne pour aménager les nouvelles installations de la mine en surface.

- Approbation environnementale [modification] – modification du système de traitement et de rejet des effluents mis au point pour le programme d'exploration avancée.

- Permis de construction [modification éventuelle] – pour l'expansion possible des installations de retenue du bassin d'épuration.

- Approbation environnementale [modification] – modification du système des émissions atmosphériques et sonores mis au point pour le programme d'exploration avancée.

- Permis de prélèvement d'eau [modification] – modification aux approbations obtenues pour assécher les ouvrages souterrains pendant le programme d'exploration avancée.

- Permis de prélèvement d'eau [modification ou nouveau] – approbation d'un nouveau puits d'eau sanitaire ou modification possible pour permettre une augmentation du prélèvement dans le puits créé à l'appui du programme d'exploration avancée.

- Approbations liées aux améliorations de la route 101 (entrée(s) du site) [possiblement nouvelles ou modifications].

Il n'existe pas d'autre instance ayant des exigences réglementaires ou des approbations à donner en matière d'EE.

EFFETS ENVIRONNEMENTAUX

Milieu physique et biologique

Le terrain du projet de mine aurifère Borden est situé dans le bassin versant de l'Arctique et l'écoulement régional se dirige donc vers le nord. La topographie se caractérise par une ondulation entre des crêtes orientées nord-est/sud-ouest et des creux peu profonds, ce qui rend compte de l'histoire glaciaire de la région. Les voies d'écoulement naturel du site se dirigent vers la rivière Borden par de petits affluents ou dans le lac Borden. Le lac Borden est un lac d'eau froide qui constitue les eaux d'amont de la rivière Borden. Les cours de la rivière Borden sont assez variés à proximité du site du projet de mine aurifère Borden, tant sur le plan du gradient (larges méandres qui aboutissent à des sections plus étroites à débit rapide) que de la classification thermique (eau froide à chaude en fonction de la saison et de la section).

Goldcorp et son prédécesseur ont effectué des enquêtes environnementales préliminaires approfondies dans la zone entourant le site du projet. Les études sur les ressources halieutiques

et aquatiques pour le projet de mine aurifère Borden étaient axées sur la rivière Borden et ses eaux d'amont, dont le lac Borden. L'eau de surface échantillonnée à proximité du site du projet respecte généralement les objectifs provinciaux de qualité de l'eau et les recommandations canadiennes pour la qualité de l'eau pour la protection de la vie aquatique, à quelques exceptions près dans les conditions de références pour le phosphore, le fluorure, l'aluminium et le fer.

Les relevés des communautés de poissons du lac Borden montrent la présence de doré jaune, d'achigan à petite bouche, de grand brochet, de corégone, de perchaude, de dard à ventre jaune, méné à de museau noir, de touladi (précédemment ensemencés dans le lac) et d'autres poissons. Il n'existe pas de données récentes confirmant la présence de touladis dans le lac Borden. Les espèces de poissons capturées dans la rivière Borden au cours des relevés scientifiques jusqu'à présent comprennent, notamment : le meunier noir, le raseux-de-terre noir, le naseux des rapides, le grand brochet, le méné ventre-rouge, l'achigan à petite bouche, le doré jaune et la perchaude. Le grand brochet et le meunier noir étaient les espèces de poissons les plus abondantes à être capturées dans la rivière Borden.

La zone entourant le site est typique de la région de forêt mixte boréale du nord de l'Ontario. Les forêts matures en milieu sec (76,9 %) et les habitats humides (20,4 %) constituent la majorité de la zone étudiée entourant le site du projet. La structure de la végétation dans certaines parties de la zone d'étude rend compte d'anciennes activités de foresterie et récréatives dans la région. Le site a également fait l'objet de forages d'exploration et certaines parties ont été déboisées.

La faune et les oiseaux présents dans la région sont typiques du nord-est de l'Ontario. Les espèces suivantes (entre autres) ont été identifiées jusqu'à présent sur le site du projet ou à proximité :

- Ours noir, orignal, cerf de Virginie, lièvre d'Amérique, écureuil roux, castor, renard roux, martre, vison, loutre de rivière, porc-épic, lynx du Canada et coyote de l'Est.

- Les relevés acoustiques ont révélé la présence de trois espèces de chauves-souris : la chauve-souris rousse, la chauve-souris argentée et la chauve-souris cendrée, mais aucun hibernacle ou gîte de maternité de chauves-souris n'a été trouvé.

- Quatre-vingt-quatre oiseaux, dont les plus courants sont le viréo aux yeux rouges, le bruant à gorge blanche, la paruline à joues grises, la grive à dos olive et la paruline à tête cendrée.

- La rainette crucifère, la grenouille verte, le crapaud d'Amérique et la grenouille des bois ont été repérés au cours des relevés nocturnes d'amphibiens. Trois espèces aviaires en péril (désignées comme espèces préoccupantes par la *Loi sur les espèces en voie de disparition)* ont été observées au cours des enquêtes de terrain dans la zone à l'étude : le pygargue à tête blanche, la paruline du Canada et l'engoulevent d'Amérique. Il n'y a pas de nids de brindilles actifs à proximité de l'aménagement proposé.

Proximité avec d'autres usagers

Il n'y a pas d'installations ou d'activités prévues associées au projet de mine aurifère Borden sur :

- des terres fédérales, y compris des réserves de Premières Nations;
- des parcs provinciaux ou aires de conservation;
- des aires d'intérêt naturel ou scientifique;
- des terres humides d'importance provinciale;
- des réserves forestières provinciales; ou autre
- des terres protégées au niveau provincial.

Le tableau S-3 présente un sommaire des distances entre le site du projet de mine aurifère Borden et les aires écologiquement sensibles.

Il n'y a pas de résidences sur le site du projet de mine aurifère Borden. Les structures les plus proches sont des chalets et des roulottes permanents ou saisonniers (figure S-3).

La réserve de Première Nation la plus proche du site du projet de mine aurifère Borden est située à environ 6 km au sud-ouest (réserve de Brunswick House 76B). Elle a également une réserve au sud-est du site. Les autres réserves autochtones situées dans la région comprennent la Première Nation crie de Chapleau, de la Première Nation Ojibway de Chapleau et la Première Nation Michipicoten, toutes situées près de Chapleau, en Ontario (figure S-4). Le projet de mine aurifère Borden n'a pas reçu de cartes des territoires traditionnels de ces groupes autochtones ou des Métis.

Le site du projet de mine aurifère Borden, ainsi que la route 101 et l'usine de traitement Dome, sont situés dans les limites définies dans le Traité No. 9. À la connaissance de Goldcorp, il n'y a pas de revendications territoriales autochtones associées aux terres proposées pour le développement du projet de mine aurifère Borden.

Effets potentiels sur l'environnement

Une évaluation préliminaire des effets environnementaux potentiels de l'exploitation du projet de mine aurifère Borden est présentée aux tableaux S-4 et S-5 pour aider l'Agence canadienne d'évaluation environnementale à déterminer la nécessité et la portée de l'étude d'impact environnemental, si elle est jugée nécessaire. Le tableau S-4 porte sur les effets environnementaux potentiels de la construction, de l'exploitation et de la fermeture du projet de mine aurifère Borden. Le tableau S-5 donne un aperçu des autres effets environnementaux potentiels attribuables au transport par camion du minerai sur les routes existantes en vue de son traitement dans une installation existante. La figure S-5 montre la perturbation supplémentaire du sol prévue sur le site en raison de la construction et de l'exploitation de la mine. On ne connaît pas actuellement d'autres activités concrètes susceptibles de produire un effet cumulatif qui ont été ou seront menées.

Modifications possibles liées à la législation fédérale

L'assèchement de la mine nécessaire pour éliminer le suintement des eaux souterraines et assurer un environnement sécuritaire pour l'exploitation minière souterraine risque de réduire les débits des cours d'eau adjacents et provoquer des effets indirects sur les poissons. Le taux de réduction du débit dans la rivière Borden et les affluents sans nom 1, 2 et 3 est toujours à l'étude. En outre, la gestion du ruissellement qui entre en contact avec les installations de la mine risque d'entraîner une diminution du débit dans les affluents sans nom 1 et 2, en raison de leurs petites zones de drainage et malgré la très faible empreinte du projet de mine aurifère Borden. On ne s'attend pas pour le moment à des effets négatifs sur les cours d'eau locaux où vivent des poissons.

Un seul rejet à partir du site du projet dans la rivière Borden est prévu au même endroit que celui actuellement prévu pour le projet d'exploration avancée. La canalisation d'effluents devrait se déverser sur une plateforme rocheuse située en dessous de la ligne de hautes eaux de la rivière Borden. Tous les rejets d'effluents seront conformes aux exigences réglementaires et aux approbations environnementales propres au projet. Des mesures seront prises pour réduire les effets directs et indirects des rejets d'effluents sur les poissons et l'habitat du poisson.

Tous les déchets miniers seront stockés en surface et ne laisseront aucune trace sur les eaux fréquentées par les poissons.

On ne prévoit aucun effet direct sur les oiseaux migrateurs visés par la *Loi sur la Convention concernant les oiseaux migrateurs* autre que celui associé à l'élimination de l'habitat local. Le défrichage et les autres travaux proposés dans l'habitat des oiseaux migrateurs seront effectués en dehors de la saison de reproduction active. Sinon, les nids actifs d'espèces visées par la *Loi sur la Convention concernant les oiseaux migrateurs* seront recensés avant le travail et évités.

Il n'y a pas de terres fédérales dans les environs du site du projet de mine aurifère Borden et on ne prévoit pas de changements sur les terres fédérales en Ontario ou à l'extérieur, ni au Canada ou à l'extérieur en raison du projet, notamment par l'utilisation d'infrastructures et d'installations existantes (route 101 et usine de traitement Dome).

Effets potentiels sur les groupes autochtones des changements à l'environnement

La réserve des Premières Nations la plus proche du site du projet de mine aurifère Borden est située à environ 6 km au sud-ouest (réserve de Brunswick House 76B). La Première Nation a également des terres au sud-est du site du projet. D'autres collectivités autochtones situées dans la zone du projet comprennent : la Première Nation Crie de Chapleau, la Première Nation Ojibway de Chapleau et la Première Nation de Michipicoten, qui ont toutes des terres de réserve situées près de Chapleau, en Ontario (figure S-4). Le projet de mine aurifère Borden ne devrait pas avoir d'effets directs sur les réserves des Premières Nations.

La Première Nation de Brunswick House, la Première Nation Crie de Chapleau et la Première Nation Ojibway de Chapleau sont signataires du Traité nº 9 (Traité de la baie James) et la Première Nation de Michipicoten est signataire du Traité nº 60 conclu par la Couronne (Traité Robinson-Supérieur). Le site du projet de mine aurifère Borden, ainsi que les infrastructures et les installations hors site existantes dont l'utilisation est proposée (route 101 et usine de traitement Dome), sont situés dans les limites du Traité nº 9.

Il est possible que le projet de mine aurifère Borden ait des effets sur les utilisations traditionnelles des terres. Un rapport d'étude sur le savoir traditionnel et l'utilisation traditionnelle des terres a été préparé au nom de la Première Nation de Brunswick House, de la Première Nation Crie de Chapleau et de la Première Nation Ojibway de Chapleau. L'étude a indiqué que les membres de ces Premières Nations ont déjà utilisé et continuent d'utiliser les zones à moins de 25 km du projet de mine aurifère Borden pour les activités suivantes :

- la pêche (p. ex., doré, brochet et touladi);
- la chasse et le piégeage (p. ex., orignal, perdrix et lapin);
- la cueillette de plantes de subsistance (p. ex., bleuets et framboises) et de plantes médicinales.

La Première Nation de Michipicoten prépare actuellement un rapport d'étude sur le savoir traditionnel/l'utilisation traditionnelle des terres. Il n'existe pas de sites culturels connus, y compris des sites archéologiques, susceptibles d'être touchés par le développement du projet de mine aurifère Borden, comme il a été déterminé à l'étape 1 et 2 des évaluations archéologiques et des discussions avec les Premières Nations locales.

Les émissions et les rejets du projet de mine aurifère Borden ne devraient pas sensiblement toucher les populations animales et de poissons locaux. Par conséquent, la capacité de chasse, de piégeage, de pêche et de cueillette des plantes de subsistance et médicinales ne serait compromise que par l'exclusion directe des terres. Les peuples autochtones continueront de pouvoir accéder à la majorité des terres du projet situées à l'extérieur de l'empreinte du site de la mine pour des fins traditionnelles, avec une escorte de Goldcorp, après en avoir fait une demande raisonnable au préalable pendant la construction et l'exploitation pour des raisons de sécurité. L'accès du public et des communautés autochtones locales sera étudié en fonction des dispositions déjà prises avec Goldcorp. Si la demande est faite à l'avance, Goldcorp permettra l'accès aux parties des terres extérieures au site du projet pour cueillir des plantes médicinales, des baies ou autres plantes, ainsi que pour des fins culturelles et cérémonielles. Une fois que l'exploitation minière sera terminée et que le site sera remis en état, il sera possible d'accéder aux terres en toute sécurité à des fins traditionnelles, et des discussions auront lieu au moment de la planification de la fermeture pour déterminer comment cet accès sera autorisé. Le projet respectera également les exigences réglementaires, et un accès raisonnable sera assuré sur demande aux terres extérieures au projet, l'effet devrait être limité.

Aucun changement important dans l'environnement n'est prévu en raison de l'utilisation des infrastructures et des installations existantes par le projet de mine aurifère Borden. On ne prévoit pas de changements importants aux effets directs ou indirects existants sur les terres des réserves des Premières Nations ou sur les terres traditionnelles résultant du transport par camion du minerai sur les infrastructures existantes en vue de son traitement dans une usine existante.

PARTICIPATION DES GROUPES AUTOCHTONES

Le ministère provincial du Développement du Nord et des Mines a prescrit que Goldcorp fasse participer les groupes autochtones suivants au programme d'exploration avancée :

- Première Nation de Brunswick House;
- Première Nation Crie de Chapleau;
- Première Nation Ojibway de Chapleau;
- Première Nation de Michipicoten;
- Métis Nation of Ontario.

Goldcorp prévoit que la Province émettra la même directive concernant le développement de la mine proposée.

Dans le cadre de ses activités de consultation, Goldcorp a fait participer les Premières Nations de Brunswick House, des Cris de Chapleau et des Ojibway de Chapleau et des efforts sont déployés pour faire participer la Première Nation de Michipicoten et la Métis Nation of Ontario.

Les principaux commentaires émis par les groupes autochtones sur le projet de mine aurifère Borden ont souvent trait à l'emploi, à la formation et aux possibilités de sous-traitance, bien qu'un véritable intérêt pour l'environnement et les effets potentiels sur l'environnement ait également été exprimé. Les intérêts et les questions liés à l'environnement portent notamment sur les points suivants :

- les effets potentiels sur la qualité de l'eau, les poissons et la faune;
- des préoccupations générales sur les effets potentiels sur le lac Borden et la rivière Borden;
- les effets potentiels sur l'approvisionnement en eau de la Première Nation de Brunswick House (lac Borden);
- la qualité de l'air et les émissions sonores;
- la gestion des stériles et le drainage rocheux acide;
- la capacité de poursuivre les pratiques traditionnelles sur le site;

- l'intérêt pour la préservation du savoir traditionnel et de l'information sur les utilisations traditionnelles des terres.

Goldcorp prévoit continuer à tenir régulièrement des réunions avec les représentants des Premières Nations locales, en général toutes les six à huit semaines avec les membres et tous les deux mois avec les dirigeants et les représentants désignés. Les futures réunions d'information communautaires feront l'objet de discussions préalables avec la Première Nation en cause. D'autres réunions seront organisées pour recueillir des commentaires sur les résultats de l'EE et donner un suivi sur la gestion des effets environnementaux potentiels. Des réunions en personne auront lieu de façon continue avec la Métis Nation of Ontario, y compris mises à jour sur le projet.

CONSULTATION DU PUBLIC ET D'AUTRES PARTIES

Les intervenants participant au projet de mine aurifère Borden jusqu'à présent sont ceux qui ont un intérêt direct dans le projet (y compris dans les programmes précédents et en cours d'exploration avancée) ou ceux qui ont pu fournir des données pour les rapports environnementaux de référence. Goldcorp communique régulièrement avec un certain nombre de ministères fédéraux et provinciaux, ainsi qu'avec le Canton de Chapleau, en particulier concernant les activités d'exploration en cours et le programme proposé d'exploration avancée. Les autres intervenants à ce jour sont les suivants :

- les propriétaires de chalets locaux (lac Borden et lac Serviss);
- les propriétaires de terrains de camping locaux;
- le grand public;
- divers petits entrepreneurs et groupes d'intérêts communautaires de Chapleau.

La liste des intervenants devrait continuer d'évoluer tout au long du développement du projet pour tenir compte des différents niveaux d'intérêt et des questions au fil du temps.

Les principaux commentaires sur le projet de mine aurifère Borden émis par les intervenants jusqu'à présent ont souvent trait aux possibilités d'emploi et de contrats. Un intérêt a également été exprimé au sujet des aspects environnementaux, notamment :

- les effets du projet de mine aurifère Borden sur la qualité de l'eau, les poissons et la faune;
- des préoccupations générales sur les effets potentiels sur le lac Borden et la rivière Borden;
- le temps et le processus nécessaires pour obtenir les approbations environnementales;
- les émissions (atmosphériques et sonores) et la qualité des effluents;
- les effets visuels potentiels;
- l'intérêt pour les possibilités économiques, y compris les emplois directs;
- la gestion des stériles et le drainage rocheux acide;
- des précisions sur la différence entre une mine à ciel ouvert et une mine souterraine;
- la durée de vie de la mine et l'exploitation minière en général.

Goldcorp continuera d’informer et de faire participer de diverses façons les intervenants, y compris ses voisins les plus proches. De futures réunions publiques ou journées portes ouvertes à Chapleau permettront de faire le point sur le projet de mine aurifère Borden. Des réunions permettront également de recueillir des commentaires sur les résultats de l'EE et sur la gestion des effets environnementaux potentiels par Goldcorp. Goldcorp a également l'intention de tenir régulièrement des discussions avec les intervenants (comme il a été demandé) pour la préparation de l’Énoncé des incidences environnementales.

Tableau S-1 : Sommaire des installations et des infrastructures déjà existantes

Installation / Infrastructure (d'autres petites structures peuvent être également présentes)	Échelle (les dimensions sont approximatives)
Structure d'exploration avancée souterraine, y compris un portail et une rampe vers le sous-sol Nota : les structures souterraines comprendront les ouvrages et les baies de la mine, les puisards et les dépôts d'explosifs. Au début de la phase d'exploration avancée (seulement), il y aura un dépôt d'explosifs temporaire en surface.	Portail : 5 mètres (m) par 5 m Rampe : 60 m de longueur jusqu'à l'ouverture du portail Longueur totale de la rampe de l'exploration avancée : environ 2 500 m à partir de l'ouverture du portail
Haldes de stériles sur revêtement en polyéthylène à forte densité/sable d'assise Des stériles produits pendant l'exploration avancée seront présents en surface au début de la phase de production	250 000 t; 125 000 mètres cubes (m^3) 21 000 mètres carrés (m^2) Hauteur maximale d'environ 10 m Pente de 3H:1V (horizontale:verticale)
Bermes de diversion/collecte pour réorienter l'eau de contact provenant du ruissellement de surface naturel	Hauteur de la berme : 1 m Largeur de la berme : 2 m Pentes latérales : 1,5H:1V
Bassin de traitement de l'eau (avec revêtement) pour collecter et traiter l'eau de mine souterraine ainsi que le ruissellement des haldes	162 m par 113 m Hauteurs des barrages à 4,4 m
Infrastructure de traitement de l'eau (éventuellement pour un réglage du pH et l'ajout de floculant)	Selon les besoins
Pipeline de rejet des effluents vers la rivière Borden et jets douchant	Diamètre de 200 millimètres, 1 km de longueur
Fosse septique et champ d'épandage surélevé	Pour environ 70 personnes utilisant les douches tous les jours
Atelier d'entretien pour les gros camions (non routiers)/entrepôt/ atelier/bureau	Superficie de 15 m x 42 m
Autres bâtiments/roulottes de services temporaires (mobiles)	Deux roulottes de 4 m x 12 m (bureau et salle de réunion) Deux roulottes de 11 m x 25 m (vestiaires) Une roulotte de 4 m x 10 m (communications) Une roulotte de 2 m x 10 m (sauvetage minier) Un entrepôt de 10 m x 19 m non chauffé Une roulotte de 4 m x 10 m (sécurité et premiers soins)
Génératrices au diésel	Jusqu'à 4,9 megawatts
Ligne de distribution d'énergie locale	Ligne de distribution de 13 km (25 kilovolts; kV)
Réservoir d'entreposage de diesel avec confinement secondaire	Deux réservoirs de 38 000 litres
Entreposage de propane	Un réservoir de 10 000 litres
Voies d'accès au site à partir de la route 101 (gravier) et routes intérieures au site (gravier)	2 km
Aires de stationnement (autobus et véhicules légers) et terrain général et aires de déchargement	Selon les besoins

Remarques : Ces installations sont proposées dans le cadre du programme d'exploration avancée qui débutera à la fin de 2016, sous réserve de l'obtention des approbations environnementales, et seront en place au début de la construction du projet de la mine aurifère Borden.

Tableau S-2 : Sommaire des installations et des infrastructures de la mine aurifère Borden

Installation/ Infrastructure	Échelle (approximative; en attendant les études techniques en cours)
Mine	Taux de production de 1 750 à 4 000 tonnes par jour de minerai comme moyenne annuelle Profondeur d'environ 800 m sous la surface Accès par une rampe construite à partir de la rampe du programme d'exploration avancée. Structures souterraines : ouvrages miniers et baies et possiblement un broyeur Usine de remblai de surface pour préparer le remblai qui sera utilisé dans la mine souterraine, environ 50 m x 50 m
Ventilation et issue de secours	Une ou deux ventilations (jusqu'à) 2,5 m de rayon vers la surface Une plus petite (jusqu'à) 1 m de rayon pour l'issue de secours
Haldes	Stériles : • Volume des haldes supplémentaires d'environ 440 000 t (220 000 m^3) • Augmentation de la hauteur d'environ 2 m • Augmentation de la superficie des haldes de 25 000 m^2 Minerai : • Halde temporaire pour l'expédition : 5 000 t (2 500 m^3) • Une installation de chargement du minerai pourrait être construite Sol et /ou morts-terrains • Au besoin
Gestion de l'eau	Des bermes de diversion seront prolongées pour capter le ruissellement de surface de la zone d'exploitation. Pas de changement prévu aux infrastructures de gestion de l'eau depuis le programme d'exploration avancée (bassin de traitement, diversion sur place/bermes de collecte et pipeline de rejet). Une expansion pourrait être nécessaire en fonction des études techniques en cours, de la modélisation hydrogéologique, dont un nouveau bassin (moins de deux hectares).
Bâtiments et infrastructure sur le site	Quelques nouvelles structures et des structures plus permanentes pourraient remplacer une partie ou la totalité des bâtiments/roulottes du programme d'exploration avancée. Les nouveaux bâtiments (le cas échéant) seront de la même taille environ (superficie et hauteur) que ceux de la phase d'exploration (tableau S-1) : • Bureau, un, 20 m x 25 m • Vestiaires, un, 25 m x 25 m; un, 6 m x 15 m • Atelier d'entretien : 60 m x 40 m • Sauvetage minier : 4 m x 15 m • Dôme entreposage : 30 m x 10 m • Dôme atelier électrique : 20 m x 10 m • Petits bâtiments : deux, 10 m x 10 m • Sécurité et premiers soins : 4 m x 12 m Il faudra une nouvelle route pour accéder aux nouvelles infrastructures de ventilation. Le réseau routier intérieur sera prolongé pour faciliter la circulation des camions, mais la prolongation de la route en dehors du plan du site préliminaire indiqué (figure S-2) devrait être inférieure à 2 km. Une légère augmentation de la capacité des réservoirs de carburant diésel pourrait être nécessaire. Il faudra un plus grand entreposage du propane pour tenir compte du chauffage accru en hiver pour exploiter la mine.
Infrastructures extérieures au site	Possibilité de construction et de mise sous tension d'une ligne de distribution électrique améliorée ou nouvelle (prévue à 25 kV), reliant une ligne de transport de 115 kV à la nouvelle station de transformation connexe.
Utilisation des Infrastructures et installations existantes hors du site	Route 101 : Pas de changement proposé à la route existante sauf une voie de virage sur le site du projet de mine aurifère Borden. La capacité de la route permet la circulation supplémentaire prévue. Usine de traitement Dome : pas de changement important proposé; pas de changement important aux émissions, rejets et déchets associés.

Remarques : Voir aussi la figure S-2.

Tableau S-3 : Emplacement relatif des secteurs d'intérêt

Secteurs d'intérêt les plus proches	Distance (km) *
Terres fédérales (sauf les réserves de Premières nations)	
Parc national Pukaskwa	174
Aire marine nationale de conservation du lac Supérieur	270
Réserves nationales de faune	
Réserve de chasse de la Couronne	6
Écosystèmes prioritaires (seulement les plus proches)	
Parc provincial de la rivière Chapleau-Nemegosenda (parc aquatique)	7
Parc provincial du lac Ivanhoe (environnement naturel)	27
Aire de conservation du complexe du lac Windermere Goldie	29
Zone humide du lac Ivanhoe, d'importance provinciale	61
Sanctuaires d'oiseaux migrateurs/zones importantes pour la conservation des oiseaux	
On018 – Complexe de la rivière Mary River, dont le sanctuaire d'oiseaux migrateurs de l'île St. Joseph; d'importance nationale: espèces grégaires	162
On017 – la rivière Cousinsblind, Ontario; d'importance internationale : espèces grégaires	201
On150 - Gore Bay, rive nord de l'île Manitoulin; d'importance internationale : espèces grégaires	205
Limites	
Frontières de l'Ontario, frontière terrestre	117
Frontière de l'Ontario/États-Unis, eaux limitrophes	163

Remarques : * Distance approximative du centre du site du projet de mine aurifère Borden (Sources : MRNF 2016c; Études d'oiseaux Canada, 2016).

Tableau S-4 : Effets environnementaux potentiels (préliminaires) du projet de mine aurifère Borden

Composante environnementale	Effet potentiel (préliminaire) [1]
Qualité de l'air	Le projet de mine aurifère Borden pourrait produire des émissions atmosphériques liées à la poussière ou aux produits de la combustion d'hydrocarbures pétroliers qui pourraient avoir un effet localisé sur les plantes et la santé des animaux. Les exigences réglementaires provinciales seront respectées pour les émissions sur le site et pour la qualité de l'air aux limites du terrain.
Bruit	Les émissions de bruit provenant du site du projet de mine aurifère Borden pourraient déranger les autres utilisateurs de cette zone. Les critères réglementaires provinciaux seront respectés pour le bruit provenant du site et à des endroits sensibles au bruit (à savoir les points de réception tels que les habitations et les camps).
Gaz à effet de serre	Les gaz à effet de serre associés à la construction, à l'exploitation et à la fermeture du projet de mine aurifère Borden pourraient contribuer de façon très limitée aux émissions mondiales de dioxyde de carbone et au changement climatique.
Lumière ambiante	L'exploitation d'une installation industrielle exigera nécessairement un éclairage continu local pour assurer l'efficacité des activités et la sécurité des travailleurs et d'autres personnes. Cela se traduira par une augmentation de la lumière ambiante sur le site et à l'extérieur et par une lueur localisée à l'extérieur.
Cours d'eau/plans d'eau	La rivière Borden recevra tous les effluents traités (eaux de mine et eaux de contact) en provenance du site du projet de mine aurifère Borden. Les rejets respecteront toutes les exigences réglementaires fédérales et provinciales. Le débit de la rivière pourrait être modifié (augmentation ou diminution) en raison de l'assèchement de la mine souterraine, ce qui devra être évalué plus tard.
Affluents sans nom 1, 2 et 3	L'aménagement du projet de mine aurifère Borden pourrait réduire le débit en aval dans les chenaux existant (mais qui est retourné dans la rivière Borden) et le débit du ruisseau est fortement modifié par l'activité des castors. Aucune modification des chenaux actifs n'est proposée. La qualité de l'eau des petits cours d'eau ne devrait pas être touchée.
Habitat et espèces aquatiques	Il pourrait y avoir cependant une réduction limitée du débit des cours d'eau locaux pouvant avoir un effet indirect limité sur les poisons et leur habitat
Réseau des eaux souterraines	L'assèchement de la mine pourrait abaisser le niveau des aquifères locaux. Les cours d'eau ne devraient pas être touchés. La qualité des eaux souterraines ne devrait pas être touchée.
Habitat terrestre	L'aménagement du site de la mine et des infrastructures connexes déplacera des zones limitées d'habitat terrestre. Il n'existe pas de liens avec les habitats terrestres connus qui seront touchés. Une superficie d'environ 4 et 8 hectares pourrait être touchée.
Faune et oiseaux migrateurs, y compris les espèces en péril	L'aménagement du site de la mine déplacera l'habitat terrestre existant. L'effet sera limité, voire nul, en raison de la faible présence en général. Une superficie d'environ 4 et 8 hectares pourrait être touchée.
Espèces en péril	L'aménagement du site de la mine déplacera l'habitat terrestre existant. Aucune espèce en péril connue n'est présente.
Chasse, pêche et tourisme	Effet limité, car le projet de mine aurifère Borden sera situé sur un site actif du programme d'exploration avancée où l'accès est contrôlé et restreint pour assurer la sécurité des travailleurs.
Santé et sécurité des Autochtones/du public (émissions atmosphériques, qualité de l'eau, effets socioéconomiques)	Aucun effet n'est prévu sur les terres des réserves. Le projet de mine aurifère Borden aura un effet socioéconomique positif, en fournissant des emplois et des opportunités commerciales.
Utilisation traditionnelle actuelle des terres et des ressources	Un effet nul à limité est prévu. Il y aura des rejets mineurs de contaminants atmosphériques hors site en lien avec la combustion de carburant et les poussières diffuses et des contaminants seront rejetés par les effluents traités dans la rivière Borden.
Constructions, emplacements ou objets [2]	Absence de construction, d'emplacement ou d'objet d'importance sur le plan historique, archéologique, paléontologique ou architectural. Aucun emplacement d'importance paléontologique connu n'est présent et on ne prévoit pas d'effet.

Remarques :

1. L'effet décrit s'ajoute aux effets associés au programme d'exploration avancée existant.
2. Une construction, un emplacement ou un objet d'importance sur le plan historique, archéologique, paléontologique ou architectural.

Tableau S-5 : Effets environnementaux probables (préliminaires) de l'utilisation des infrastructures et des installations hors site existantes

Composante environnementale	Effet potentiel (préliminaire) [1]
Qualité de l'air	Le transport du minerai du projet de mine aurifère Borden à proximité immédiate de la route (environ 60 à 80 allers-retours par jour de plus) devrait entraîner une très légère augmentation des émissions atmosphériques. Aucun changement au taux de production de l'usine de traitement n'est proposé et le traitement du minerai ne devrait pas modifier les émissions atmosphériques.
Bruit	Le transport du minerai du projet de mine aurifère Borden devrait entraîner une très légère augmentation des émissions sonores. Aucun changement au taux de production de l'usine de traitement n'est proposé et le traitement du minerai ne devrait pas modifier les émissions sonores.
Gaz à effet de serre	Le transport du minerai du projet de mine aurifère Borden devrait entraîner une très légère augmentation des émissions de gaz à effet de serre. Aucun changement au taux de production ni aux moyens de production de l'usine de traitement du minerai n'est prévu, et le traitement ne devrait pas modifier les émissions existantes annuelles de gaz à effet de serre.
Lumière ambiante	L'augmentation de la circulation des véhicules sur la route 101 (environ 60 à 80 allers-retours par jour de plus) devrait entraîner une très légère hausse de la lumière ambiante transitoire.
Cours d'eau/plans d'eau	Aucun effet n'est prévu. Aucun agrandissement des infrastructures et des installations hors site existantes n'est proposé. Le traitement du minerai du projet de mine aurifère Borden ne modifiera pas la qualité des effluents provenant de l'usine de traitement Dome.
Réseau des eaux souterraines	Aucun effet n'est prévu. Aucun agrandissement des infrastructures et des installations existantes hors site n'est proposé.
Habitat terrestre	Aucun effet n'est prévu. Aucun agrandissement des infrastructures et des installations existantes hors site n'est proposé.
Faune et oiseaux migrateurs, y compris espèces en péril	Augmentation potentielle très faible de mortalité de la faune et des oiseaux associée à la circulation accrue de véhicules (environ 60 à 80 allers-retours par jour de plus).
Chasse, pêche et tourisme	Aucun effet n'est prévu. L'augmentation de la circulation ne devrait pas être perceptible.
Activités commerciales (mines, agrégats et foresterie)	Aucun effet n'est prévu. Aucun agrandissement des infrastructures et des installations hors site n'est proposé. Le projet de mine aurifère Borden aura un effet socioéconomique positif, en fournissant des emplois et des opportunités commerciales.
Santé et sécurité des Autochtones/ du public (émissions atmosphériques, qualité de l'eau, effets socioéconomiques)	Aucun effet n'est prévu. Aucun agrandissement des infrastructures et des installations hors site existantes n'est proposé. Le traitement du minerai du projet de mine aurifère Borden ne modifiera pas la qualité des effluents de l'usine de traitement Dome.
Patrimoine physique et culturel	Aucun effet n'est prévu. Aucun agrandissement des infrastructures et des installations hors site existantes n'est proposé.
Utilisation traditionnelle actuelle des terres et des ressources	Aucun effet n'est prévu. Aucun agrandissement des infrastructures et des installations hors site existantes n'est proposé. Le traitement du minerai du projet de mine aurifère Borden ne modifiera pas la qualité des effluents de l'usine de traitement Dome.
Constructions, sites ou objets [2]	Aucun effet n'est prévu. Aucun agrandissement des infrastructures et des installations hors site existantes n'est proposé.

Remarques :

1. L'effet décrit s'ajoute aux effets associés à la circulation actuelle sur les routes et à l'exploitation de l'usine de traitement Dome.
2. Une construction, un emplacement ou un objet d'importance sur le plan historique, archéologique, paléontologique ou architectural.

P:\2015\Projects\TC150506_Borden_Gold_EnvGIS\Project_DescriptionMXD\ES_Project_Location_FR_1.mxd

Légende

- Emplacement du Projet
- Routes régionales
- Parc provincial

NOTA :
- Les renseignements sur les routes sont extraits du réseau routier national, Geograris.ca.
- Les données topographiques de base sont extraites des Services de cartes de base de l'ESRI.

GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Emplacement du site

Datum: NAD83
Projection: UTM Zone 17N

0 10 20 40 60 80 100 Kilometres

N W E S

PROJECT N°: TC150506 | **FIGURE: S-1**

SCALE: 1:1,340,000 | DATE: Septembre 2016

328000 329000 330000 331000 332000 333000 334000

5305000 5304000 5303000 5302000

Tributaire sans nom 3
Rivière Borden
Tributaire sans nom 2
Route 101
Lac Emerald
Lac Borden (Baie Grout)
Tributaire sans nom 1
Lac Borden

Route d'accès
Ligne de distribution (transport) d'électricité
Canalisation d'évacuation d'eau (et route d'accès)
Route d'accès
Zone de chargement et de pesage des camions
Zone des bâtiments et cour
Bassin de collecte d'eau
Pile de stockage des stériles
Générateur
Confinement
Portail vers le sous-sol
Route d'accès (à soulever)
500 m

P:\2015\Projects\TC150506_Borden_Gold_Env\GIS\Project_Description\MXD\ES_Mine_SitePlan_Schematic_FR_2.mxd

Légende

Installations potentielles en surface

- Ligne de distribution (transport) d'électricité
- Canalisation d'évacuation d'eau (et route d'accès)
- Talus de confinement de l'eau des piles de stockage
- Routes d'accès au site
- Rampe et portail vers le sous-sol
- Bassin de collecte d'eau
- Déversoir d'urgence
- Pile de stockage des stériles
- Zone des bâtiments et cour
- Générateur

0 0.5 1 2 3 4 Kilometres

NOTA :
- Images Satellite 3 -orthorectifiées Geoeye-1 et Worldview, août 2015, fournies par GoldCorp.
- L'emplacement de la Baie Grout est compatible avec les connaissances locales et du personnel du MRNF du district, mais les cartes officielles du SNRC et de l'OBM situent la Baie Grout au nord-est du lac Borden.
- Les données sur les cours d'eau du SNRC ont été modifiées pour tenir compte des enquêtes sur le terrain.
- La disposition du plan du site provient de la disposition générale fournie par KCB (date du plan : 8 juillet 2016.)

Datum: NAD83
Projection: UTM Zone 17N

N W E S

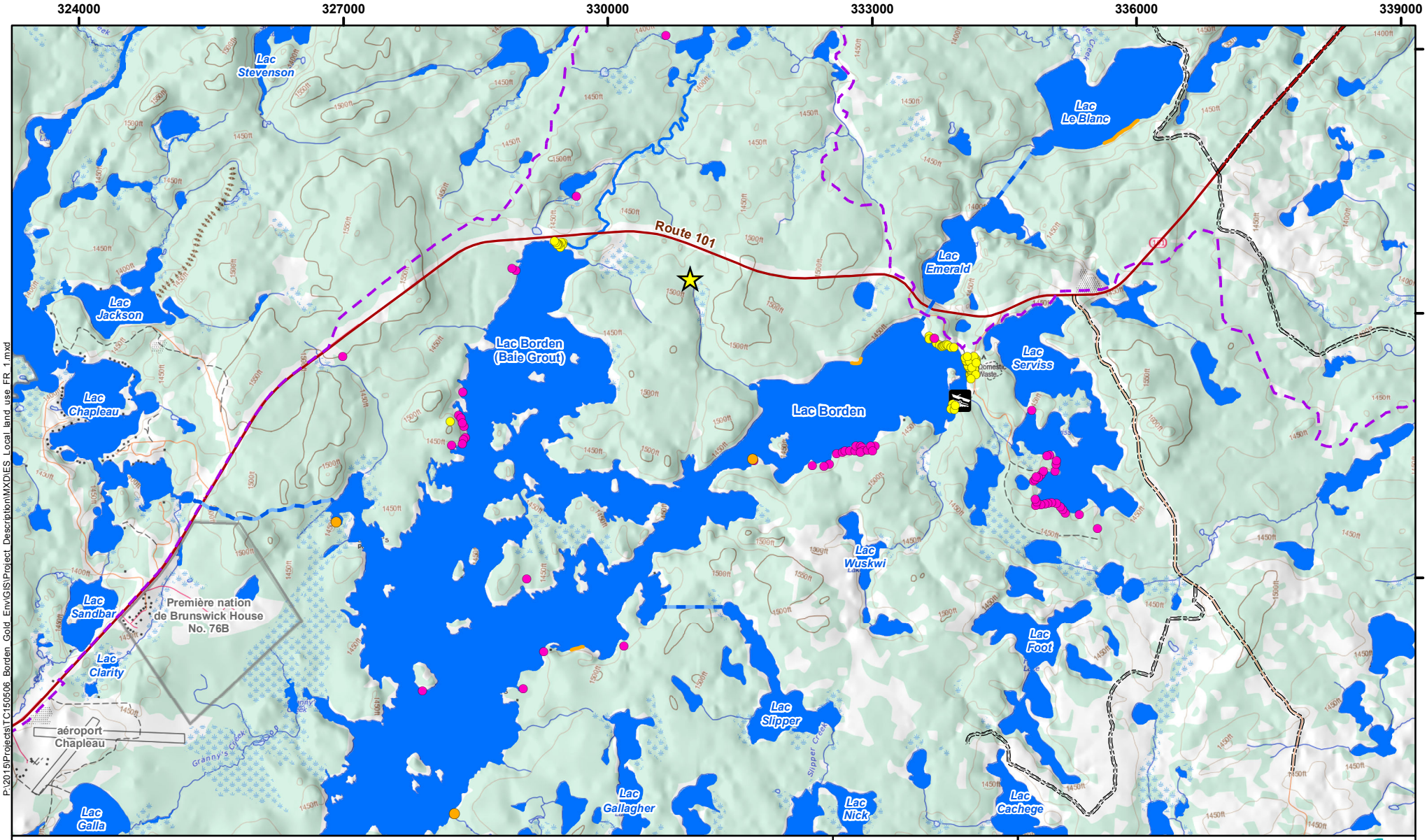
GOLDCORP BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Schéma simplifié du site de la mine

PROJECT N°: TC150506	FIGURE: S-2
SCALE: 1:17,000	DATE: Septembre 2016



Légende

- Emplacement du Projet
- Chalets / Résidences sélectionnés
- Roulottes sélectionnées
- Camp des Premières Nations
- Rampe de mise à l'eau
- Sentier de portage
- Corridor de chasse
- Routes régionales
- Parcours de motoneige
- Plage
- Première nation
- Plan d'eau

NOTA :
- Toporama, MNRF
- Données topographiques d'Information sur les terres de l'Ontario, MRNF.
- Sites récréatifs tirés du Plan de gestion forestière (MRNF) et vérifiés par des photographies aériennes et le personnel de AmecFW.
- Plages et camps des Premières Nations numérisés à partir de l' EEM " Carte de l'utilisation non-traditionnelle des terres "
- L'emplacement de la Baie Grout est compatible avec les connaissances locales et du personnel du MRNF du district, mais les cartes officielles du SNRC et de l'OBM situent la Baie Grout au nord-est du lac Borden.

Datum: NAD83
Projection: UTM Zone 17N

0 0.5 1 2 3 4 5 Kilometres

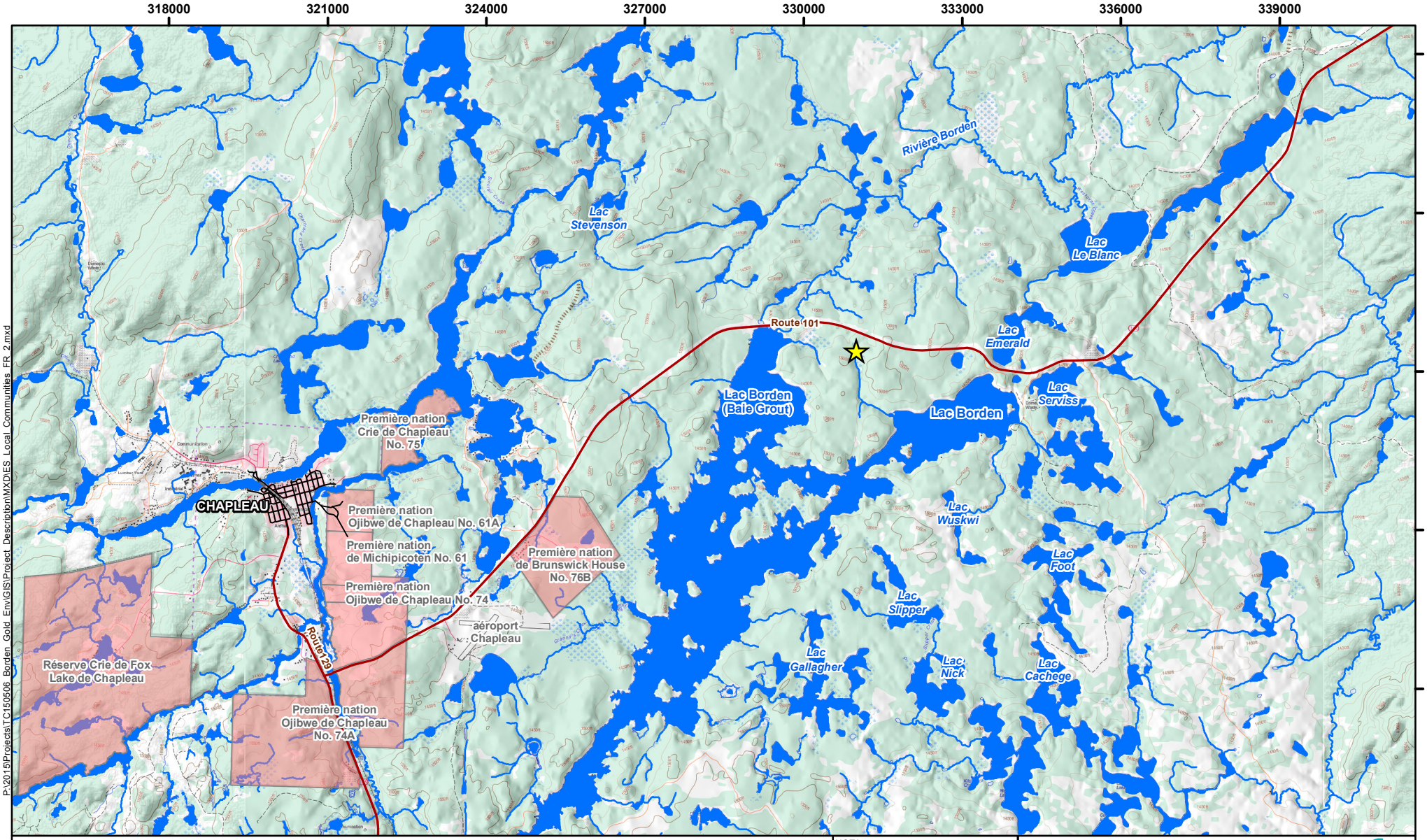
GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Utilisation des terres locales

PROJECT N°: TC150506	**FIGURE: S-3**
SCALE: 1:60,000	DATE: Septembre 2016



Légende

- Emplacement du Projet
- Première nation
- Plan d'eau

NOTA :
- Toporama, MNRF
- Données topographiques d'Information sur les terres de l'Ontario, MRNF.
- L'emplacement de la Baie Grout est compatible avec les connaissances locales et du personnel du MRNF du district, mais les cartes officielles du SNRC et de l'OBM situent la Baie Grout au nord-est du lac Borden.
- Les données sur les cours d'eau du SNRC ont été modifiées pour tenir compte des enquêtes sur le terrain.

Datum: NAD83
Projection: UTM Zone 17N

0 0.5 1 2 3 4 5 Kilometres

GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Collectivités locales et terres des Premières nations

PROJECT N°: TC150506	**FIGURE: S-4**
SCALE: 1:100,000	DATE: Septembre 2016

P:\2015\Projects\TC150506_Borden_Gold_Env\GIS\Project_Description\MXD\ES_Mine_SitePlan_Schematic_advance_exploration_site_pain_FR_2.mxd

Légende

- Plan schématique du site de la mine du PBG[1]
- Plan du site du programme d'exploration avancée[2]

NOTA :
- L'emplacement de la Baie Grout est compatible avec les connaissances locales et du personnel du MRNF du district, mais les cartes officielles du SNRC et de l'OBM situent la Baie Grout au nord-est du lac Borden.
- Les données sur les cours d'eau du SNRC ont été modifiées pour tenir compte

[1] Disposition générale du plan du site fournie par Goldcorp (date du plan du site : 1 février 2016).

[2] La disposition du plan du site provient de la disposition générale fournie par KCB (date du plan : 8 juillet 2016.)

GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Comparaison des empreintes du plan du site

Datum: NAD83
Projection: UTM Zone 17N

0 0.2 0.4 0.6 0.8 1 Kilometres

N W E S

PROJECT N°: TC150506	**FIGURE: S-5**
SCALE: 1:13,000	DATE: Septembre 2016

LIST OF ABBREVIATIONS

AANDC	Aboriginal Affairs and Northern Development Canada
AAQC	Ambient Air Quality Criteria (Ontario)
Amec Foster Wheeler	Amec Foster Wheeler Environment & Infrastructure
asl	above sea level
BGP	Borden Gold Project
CCME	Canadian Council of Ministers of the Environment
CEA Agency	Canadian Environmental Assessment Agency
CEAA, 2012	*Canadian Environmental Assessment Act, 2012*
CWQG	Canadian Water Quality Guidelines
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CWCS	Canadian Wetland Classification System
EA	environmental assessment
ECCC	Environment and Climate Change Canada
EIS	Environmental Impact Statement
FEC	Forest Ecosystem Classification
MNDM	Ontario Ministry of Northern Development and Mines
MNR	Ontario Ministry of Natural Resources
MNRF	Ontario Ministry of Natural Resources Forestry
MOE	Ontario Ministry of the Environment
MOL	Ministry of Labour
MOECC	Ontario Ministry of the Environment and Climate Change
MTO	Ontario Ministry of Transportation
NO	mono-nitrogen oxide
NO_2	nitrogen dioxide
NO_x	nitrogen oxide
NPC-300	MOECC Environmental Noise Guideline
NRCan	Natural Resources Canada
OWES	Ontario Wetland Evaluation System
PM	particulate material
PWQO	Provincial Water Quality Objectives for the protection of aquatic life
SAR	Species at Risk
SO_2	sulphur dioxide
TK	Traditional Knowledge
TLU	Traditional Land Use
UTM	Universal Transverse Mercator
WSC	Water Survey of Canada

LIST OF UNITS

µg/g	Micrograms (one-millionth of a gram) per gram
µg/m^3	Micrograms (one-millionth of a gram) per cubic metre
cm	Centimetres
dBA	A-weighted decibels
Gt	billion tonnes
ha	hectare
hr	hours
km	kilometre
km/h	kilometres per hour
kV	kilovolt
L	litre
L_{eq} levels	loudness equivalent
m	metre
m^2	metres squared
m^3	cubic metres
m^3/a	cubic metres per year
m^3/d	cubic metres per day
m/sec	metres per second
m^3/s	cubic metres per second
MW	megawatts
mm	millimetre
Mm^3	million cubic metres
Mt	million tonnes
^oC	degrees Celsius
$PM_{2.5/10}$	particles less than 2.5 or 10 micrometers in diameter
t	tonnes
tpd or t/d	tonnes per day

TABLE OF CONTENTS

PAGE

TABLE OF CONTENTS (Cont'd)

PAGE

TABLE OF CONTENTS (Cont'd)

PAGE

LIST OF APPENDICES

LIST OF TABLES

PAGE

LIST OF FIGURES

1.0 GENERAL INFORMATION AND CONTACTS

1.1 Background

Borden Gold | Goldcorp Borden Limited (Goldcorp) is currently exploring the Borden Gold Project (BGP) in northeastern Ontario. The Borden Gold Project site is located approximately 160 kilometres (km) southwest of Timmins and 11 km northeast of Chapleau, Ontario (Figure 1-1). It is readily accessible by Ontario Provincial Highway 101.

Goldcorp propose to develop an underground gold mine along with associated surface facilities on the BGP site. An advanced exploration program is proposed for the same site, and as practical facilities developed during that program will be used for the mine, with modification if needed. Extracted ore will be transported offsite over existing infrastructure for processing at another existing Goldcorp facility in Timmins.

1.2 General Information and Contacts

Project Name: Borden Gold Project (BGP)

Proponent: Borden Gold | Goldcorp Borden Limited
303 Martel Road
Chapleau, Ontario, P0M 1K0

Goldcorp is a leading gold producer focused on responsible mining practices throughout the Americas. A Canadian company headquartered in Vancouver, British Columbia, Goldcorp employs more than 15,000 people worldwide. Goldcorp operates a number of mines and processing facilities in Ontario, including the Porcupine mine and processing operations in Timmins. The Company is committed to being responsible stewards of the environment and to maintaining the highest health and safety standards possible.

Property Location: The BGP site is located approximately 160 km southwest of Timmins and 11 km northeast of Chapleau, Ontario, in Cochrane Township (Figure 1-1). It is directly accessible by Ontario Provincial Highway 101. Approximate project coordinates are 5304500 N and 330800 E in the UTM NAD83 coordinate system (Zone 17).

Proponent: David Garofalo
President and Chief Executive Officer
Goldcorp Inc.
Suite 3400 - 666 Burrard Street
Vancouver, British Columbia, V6C 2X8
T: 604-696-3000

Principal Contacts: John (JY) Young
Superintendent Safety, Health and Environment
Borden Gold | Goldcorp Borden Limited
217 Martel Road
Chapleau, Ontario, P0M 1K0
T: 705-465-1926
john.young@goldcorp.com

Roger Souckey
Director, CSR and HR, Project Coffee
Goldcorp Canada Ltd.
130 Adelaide Street West, Suite 3201
Toronto, Ontario, M5H 3P5
T: 416-956-0415
roger.souckey@goldcorp.com

Sheila Daniel, P.Geo.
Principal, Mining Environmental
Amec Foster Wheeler Environment & Infrastructure
160 Traders Blvd. East, Suite 110
Mississauga, Ontario, L4Z 3K7
T: 416-524-5928
sheila.daniel@amecfw.com

1.3 Overview of Consultation and Engagement to Date

Goldcorp and the company that previously controlled the project, Probe Mines Limited (Probe), have been actively consulting and engaging, local communities and Aboriginal groups, regarding ongoing exploration and potentially developing a gold mine on the BGP site since 2014. Community meetings to discuss the ongoing exploration activities and BGP have been held regularly to help people understand the various stages of exploration as the project moves forward towards a positive production decision. Goldcorp strives to ensure engagement with members of the local communities through meetings, site tours and regular communications.

Key stakeholders and Aboriginal groups who are expected to have an interest in the BGP going forward, were identified during earlier consultation efforts. Goldcorp anticipates that this list may evolve throughout the various project stages to reflect varying levels of interest and issues over time. Parties consulted or engaged to date are listed below.

Federal Government Agencies:

- Canadian Environmental Assessment Agency (CEA Agency); and
- Environment and Climate Change Canada (ECCC).

Provincial Government Ministries:

- Ministry of Northern Development and Mines (MNDM);
- Ministry of Natural Resources and Forestry (MNRF);
- Ministry of Environment and Climate Change (MOECC);
- Ministry of Labour (MOL); and
- Ministry of Transportation (MTO).

Municipal Government:

- Township of Chapleau.

Public and Other Stakeholders:

- Local Borden Lake cottagers;
- General public;
- Chapleau services organizations; and
- Hydro One.

Aboriginal Groups:

- Brunswick House First Nation;
- Chapleau Cree First Nation;
- Chapleau Ojibwe First Nation;
- Michipicoten First Nation; and
- Métis Nation of Ontario.

In addition to the general consultation and engagement noted above, a draft version of this Project Description was provided to the above-listed First Nations and the Métis Nation of Ontario to allow for preliminary commentary. Comments received by September 30, 2016 that were consistent with the Project Description requirements, were incorporated into this document. A subsequent draft was also provided to the CEA Agency in order that they could provide guidance to the Proponent. Further information is provided in Section 6.

1.4 Environmental Assessment and Approvals

The Borden Golden Project is located within the Province of Ontario and must meet the regulatory requirements of the Federal and Provincial governments.

The proposed BGP as currently understood, is anticipated to require completion of a Federal Environmental Assessment (EA), pursuant to the *Canadian Environmental Assessment Act, 2012* (CEAA, 2012). The associated Federal *Regulation Designating Physical Activities* identifies the physical activities that constitute projects that could require a Federal EA. Section 16(c) of the Regulation identifies one of the designated physical activities as:

(c) rare earth element mine or gold mine, other than a placer mine, with an ore production capacity of 600 tonnes/day or more.

The BGP underground mine will operate year-round on a continuous (24-hour) basis, at a rate of up to approximately 4,000 tonnes ore per day when averaged over the year. As a result, Goldcorp has submitted this Project Description to the CEA Agency, to inform a decision on whether a Federal EA is required for the BGP. If the CEA Agency determines that a Federal EA is required, this Project Description is intended to assist them in the development of the Environmental Impact Statement (EIS) Guidelines, which will identify the scope of the Federal EA required.

Goldcorp proposes to work closely with the Federal and Provincial governments to meet the needs of both CEAA, 2012 and the Ontario *Environmental Assessment Act*, if any. Depending on the results of the assessment of power alternatives, a Provincial Class EA could be required for the establishment of additional power infrastructure (upgraded / new power distribution line, connecting to an existing 115 kilovolt (kV) transmission line with an associated new transformer station). Goldcorp will attempt to coordinate public consultation activities associated with any EA requirements in order to minimize the effort required by stakeholders and Aboriginal groups to be effectively engaged.

Development of the mine (the BGP) is anticipated to require a number of new environmental approvals from the Province of Ontario [new], as well as potentially amendments to advanced exploration program approvals [currently in progress] as summarized below subject to ongoing government consultation:

- Closure Plan [new] - reclamation of the BGP mine site and associated infrastructure;
- Forest Resource Licence [new] - cutting of Crown timber to accommodate the new mine facilities on surface;
- Environmental Compliance Approval [amendment] – modification to the effluent treatment and discharge system developed for the advanced exploration program;
- Work Permit [potential amendment] – for potential expansion of water treatment pond containment facilities;
- Environmental Compliance Approval [amendment] – modification to the air and noise emissions system developed for the advanced exploration program;
- Permit(s) to Take Water [amendment] - modification to the approvals obtained to dewater the underground workings during the advanced exploration program;
- Permit(s) to Take Water [amendment or new] – approval for a new domestic water well or potentially an amendment to allow increased taking for the well that supports the advanced exploration program; and

- Highway-related approvals related to Highway 101 improvements at site entrance(s) [potential new or amendments].

The only anticipated Federal environmental approval that could potentially be required for the BGP is an Authorization(s) for Harmful Alteration, Disruption or Destruction of Fish Habitat under the *Fisheries Act*. Although not currently expected to be required, a harmful effect on local minor watercourses supporting fish could potentially occur related to mine dewatering and/or disruption of headwater areas.

Note that there is a potential engineering approval requirement related to explosives storage. It is anticipated that the explosives contractor will obtain the necessary approval(s) under the *Explosives Act* for an explosives magazine on the site, if modification is needed to the advanced exploration program magazine. Explosives are anticipated to remain under the care and control of the explosive contractor over the life of the BGP.

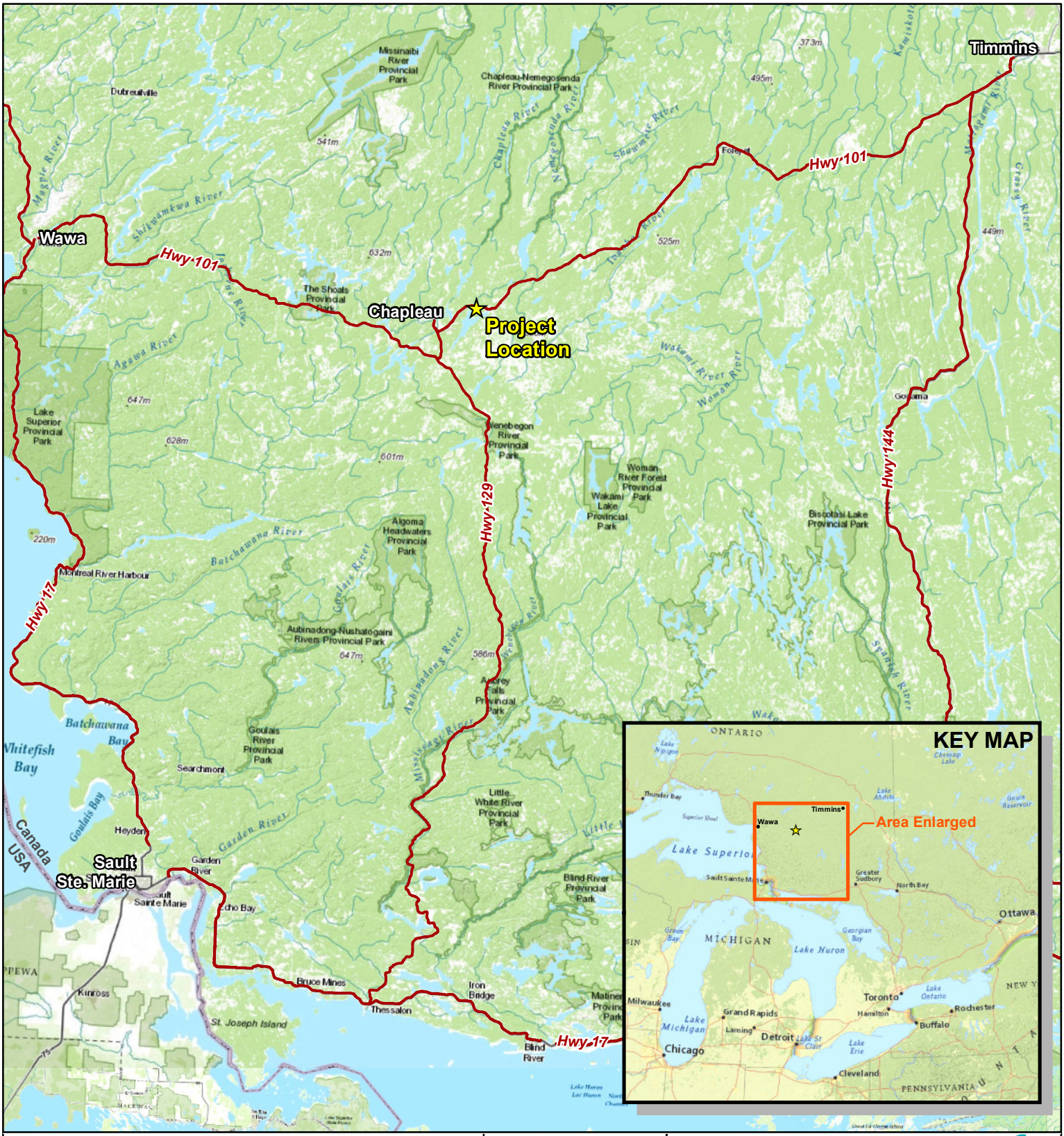
1.5 Regional Study

The BGP is not located in a region that has been subjected to a regional environmental study.

Goldcorp and Probe have conducted extensive baseline environmental investigations associated in the area surrounding the project site. The natural environment study area utilized by Goldcorp is shown in Figure 1-2.

1.6 Project Description Organization and Content

This document has been prepared in order to provide Federal authorities with information regarding the proposed BGP, to assist their decision making in regards to the applicability of the *Canadian Environmental Assessment Act, 2012*. It has purposefully been organized consistent in order and content as suggested in the *Guide to Preparing a Description of a Designated Project under the Canadian Environmental Assessment Act, 2012* (CEA Agency 2015).



P:\2015\Projects\TC150506_Borden_Gold_EnvGIS\Project_Description\MXD\Project_Location_1.mxd

LEGEND

- Project Location
- Regional Highways

NOTES:
- Highway information extracted from National Road Network, Geogratis.ca
- Backgroup topographic map information extracted from ESRI Base Map Services

GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Site Location

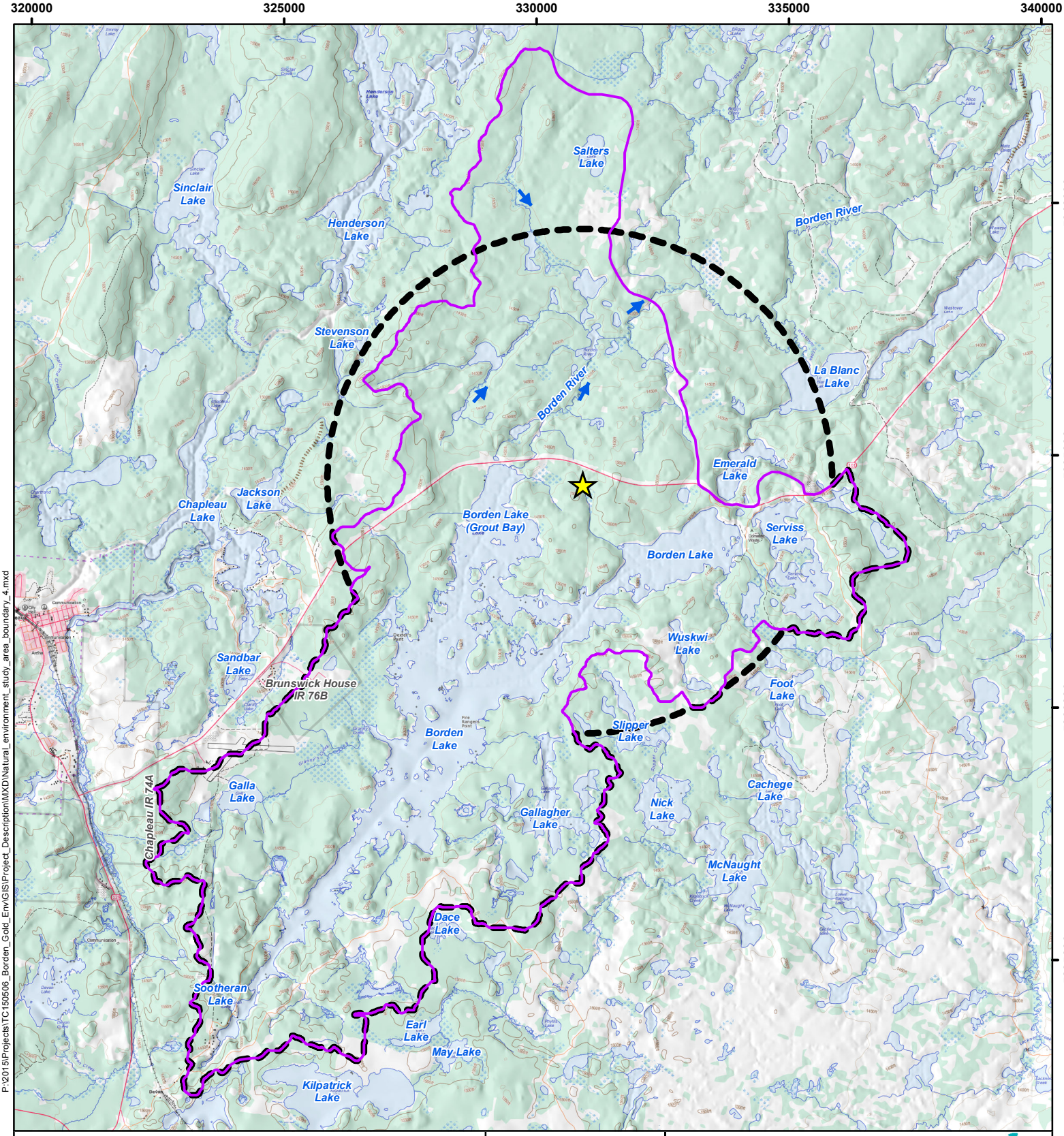
Datum: NAD83
Projection: UTM Zone 17N

0 10 20 40 60 80 100 Kilometres

N W E S

PROJECT N°: TC150506 | **FIGURE: 1-1**

SCALE: 1:1,340,000 | DATE: September 2016



P:\2015\Projects\TC150506_Borden_Gold_EnvGIS\Project_Description\MXD\Natural_environment_study_area_boundary_4.mxd

LEGEND

- Project Location
- Natural Environment Study Area
- Borden Watershed (approx. to proposed final downstream sampling point)
- Surface Water Flow Direction

NOTES:
- Topographic map information extracted from NRCan Toporama 1:50k NTS DRG sheets.
- Waterbody information extracted from MNRF Land Information Ontario
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.

GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Natural Environment Study Area Boundary

Datum: NAD83
Projection: UTM Zone 17N

N W E S

0 0.5 1 2 3 4 5 Kilometres

PROJECT N°: TC150506 | **FIGURE: 1-2**

SCALE: 1:102,000 | DATE: September 2016

2.0 PROJECT INFORMATION

2.1 Project Summary

Goldcorp is planning to develop, operate and eventually reclaim a new underground gold mine at the BGP site. The mine will expand upon and/or modify facilities being developed as part of the proposed advanced exploration program where practical, in order to reduce environmental impacts. The BGP is not a component of a larger project that is not listed on the Federal *Regulation Designating Physical Activities*.

The underground mine will operate year-round on a continuous (24-hour) basis, at a rate of approximately 1,750 to 3,000 tonnes ore per day (tpd) when averaged over the year. The mining rate will be confirmed through ongoing engineering and design activities. For contingency purposes, a nominal 50% additional ore throughput has been considered above the planned output (i.e. maximum ore production of approximately 4,000 tpd averaged over the year).

The BGP facilities are proposed to be placed primarily on lands held by Goldcorp pending ongoing land agreements, although there may be some facilities and infrastructure sited on Provincial Crown land or lands held by others (subject to approvals and land transfers being obtained).

Extracted ore from the mine will be transported offsite over existing infrastructure to a processing facility located in the Timmins area (anticipated to be the Goldcorp Porcupine Gold Mines Dome Processing Facility), in order to produce gold for sale and provide a return on investment for Goldcorp investors. Development of a processing plant / mill and associated tailings impoundment area at the BGP site or other location, solely for the processing of BGP ore is not proposed. The existing Dome Processing Facility has been designed to receive ore from multiple Goldcorp mines in the Timmins region.

2.2 Designated Activities

The Federal *Regulation Designating Physical Activities* identifies the physical activities that constitute the designated projects that could require completion of a Federal EA. The following section may apply to the BGP:

> 16 *The construction, operation, decommissioning and abandonment of a new (c) rare earth element mine or gold mine, other than a placer mine, with an ore production capacity of 600 tonnes/day or more*.

2.3 Components and Activities

2.3.1 Physical Works

General Approach

Goldcorp proposes to develop, operate and eventually reclaim a new underground gold mine on the BGP site, building on and extending the advanced exploration program currently in progress. The BGP is designed to:

- Respect the interests of other area land uses and land users;
- Minimize the overall project footprint and impacts; and
- Fully consider final reclamation of the site, rendering the site suitable for other compatible land uses and functions following mine closure.

The BGP is fully under the control and care of Goldcorp. Direct benefits will accrue to Goldcorp from product (gold and/or doré bars) from processing the BGP ore at an offsite processing plant. Some activities associated with the project may not be fully under the control and care of Goldcorp, including explosive storage and handling. This work may be completed by a specialized contractor.

The BGP layout has been designed to minimize sighting from the lake and surrounding area, and potential noise effects to neighbours. The proposed site layout places the surface facilities required by the mine in close proximity to the underground portal and ramp, generally on lands over which Goldcorp currently has direct control through Provincial surface and mining leases. These approaches will continue to be used as the site plan is refined further, as a result of ongoing consultation activities and engineering studies. Figure 2-1 provides a preliminary site plan schematic showing the approximate scale of the BGP and proposed facilities as currently understood. Goldcorp has estimated the additional surface disturbance required as five hectares (ha).

In addition, Goldcorp wishes to make a concerted effort to limit the requirements for diesel-fired equipment underground as possible, recognizing that this commitment can only be made firmly on completion of additional engineering design and confirmation of equipment availability / feasibility.

Existing and Proposed Exploration-Related Facilities and Infrastructure

The BGP site has been subject to extensive mineral exploration drilling by previous mineral rights holders, as well as by Goldcorp. Accordingly, the site is currently crossed with a number of trails and there are presently two accesses to the site from Highway 101 (Figure 2-2). In addition, there are clearings associated with past drilling locations. There are no permanent structures or

infrastructure at the site currently, although there are periodically several mobile trailers and drill rigs to support the ongoing exploration drilling program.

Goldcorp has submitted environmental approval applications to initiate an underground advanced exploration program to extract a bulk sample of approximately 30,000 tonnes (t). The advanced exploration program is proposed to begin in late 2016 or once environmental approvals are obtained, and will continue for up to approximately two years. This work will be completed prior to development of the BGP (the mine) proposed by this Project Description. The goal of the advanced exploration program and ongoing exploration drilling from surface and underground, is to collect additional information to support a decision on whether to proceed to develop a mine (the BGP) and to provide greater detail for design of the operation if the decision is positive. The advanced exploration bulk ore sample will be trucked offsite over the existing Provincial road network to a mine processing plant in Timmins, Ontario (Goldcorp Porcupine Gold Mines Dome processing facility) or other mineral testing facility.

The major surface features associated with the ongoing exploration / advanced exploration site are described in Table 2-1 and shown on the advanced exploration program site plan (Figure 2-3).

Proposed Mine-Related Facilities and Infrastructure

Goldcorp is planning to develop, operate and eventually reclaim a new underground gold mine at the BGP site. The mine will operate year-round on a continuous (24-hour) basis. Extracted ore from the mine will be transported offsite over existing infrastructure to an existing processing facility, in order to produce gold for sale and provide a return on investment for Goldcorp investors.

The underground mine and associated surface facilities are proposed to be placed primarily on lands held by Goldcorp, utilizing and/or expanding on the advanced exploration program facilities as practical to minimize environmental effects. New and expanded facilities on the site are expected to result in less than eight hectares of additional surface disturbance (Figure 2-4).

The underground mine will be based on the advanced exploration portal (opening to underground) and ramp, expanding deeper and laterally, and will consist of:

- Extended ramp to the underground mine working area(s);
- Underground bays as needed for support functions;
- Working areas; and
- Raise(s) to surface for ventilation and emergency egress (exit).

Mining is proposed to occur as a combination of longitudinal retreat and/or transverse open stoping (long hole) mining, although other methods such as cut and fill may be utilized. These mining methods require ongoing backfilling to support the continual mining process. Mineral waste associated with the mine development will be re-used to backfill the mine as practical. Excess mineral waste (mine rock) that cannot be re-used underground immediately but cannot be

retained underground, will be stored on surface in a stockpile close to the portal and returned underground as needed for support.

Underground mining operations will occur at a rate of approximately 1,750 to 3,000 tpd of ore as an annual average. For contingency purposes, a nominal 50% additional ore throughput has been considered above the planned output (i.e. maximum ore production of approximately 4,000 tpd as an annual average). The mining rate will be confirmed through ongoing engineering and design activities. Mining operations will be supported by necessary ventilation-related infrastructure and an underground explosives storage facility.

Ore will be extracted from stopes (rooms) underground by conventional drilling and blasting. Any oversized rocks will be managed through secondary blasting, use of a rock breaker and/or at an underground crushing facility, if developed. All ore will be trucked to the surface via the ramp, for temporary storage in an ore stockpile or direct loading into highway trucks. There is the potential that a covered ore handling facility may be developed at the BGP site to ease year-round handling of the ore. Ore will not be milled on the site and no tailings impoundment area will be developed at the BGP site.

The highway trucks will be covered, and will transport the ore over the existing Provincial and Municipal road networks to a processing facility in Timmins, currently anticipated to be the Goldcorp Porcupine Gold Mines Dome processing facility. No new roads (or other transportation routes, such as railroads) are proposed to be developed to support the trucking of BGP ore.

Water that seeps into the mine from the surrounding rock (mine water) that cannot be re-used underground, will be pumped to surface and managed utilizing the pond system being developed for the advanced exploration program (approvals in progress), modified as necessary for the more extensive mine development. Groundwater inflow into the mine will be limited where practical through pressure grouting programs.

After treatment, mine water and precipitation that comes into contact with the mine operational area including surface stockpile(s), will be discharged by pipeline to the Borden River, potentially using the same infrastructure developed for the advanced exploration program. Such discharge will meet all applicable Federal and Provincial effluent discharge requirements, and will be protective of receiving water aquatic life.

A schematic of the proposed BGP site based on the engineering trade-off studies and alternatives assessments completed to date is provided in Figure 2-1.

Surface facilities required on the BGP site are expected to include:

- Onsite ore handling facilities to manage and place the ore into covered highway trucks for transport offsite;

- A mine backfill plant to produce backfill for use underground to provide additional support to the mine workings;

- Maintenance garage, warehouse, administration, mine dry (showers and change room), security and first aid buildings (new buildings or modification to advanced exploration program buildings);

- Mine rock and low grade ore stockpiles (expanding on stockpiles developed during the advanced exploration program);

- Water management, treatment and discharge facilities (modified from facilities developed for the advanced exploration program);

- Laydown, storage areas and parking (additional to the advanced exploration program areas); and

- Potential upgraded road entrance(s) from Highway 101.

Project design is ongoing to optimize the mine footprint and reduce the potential for adverse environmental effect. The majority of these facilities are anticipated to be developed as part of the advanced exploration program, but may be modified to support the longer term BGP. The need for modifications to these minor facilities will be determined during the detailed design stage of the BGP or potentially earlier. Goldcorp does not propose to construct dedicated accommodations for the BGP either onsite or offsite. It is anticipated that contractors and personnel will utilize existing accommodations; or accommodations developed by others (and will not be under the care and control of Goldcorp).

All non-hazardous and hazardous wastes produced at the BGP will be hauled to appropriate waste management storage facilities in accordance with applicable regulations. Domestic sewage will be either treated on the site (such as using a septic tank and raised tile field bed or a package sewage treatment plant); or may be temporarily stored on site for periodic disposal by a contractor in accordance with regulatory requirements.

Construction and energizing of an upgraded or new power distribution line (25 kV anticipated) may be developed, connecting the site to an existing 115 kV transmission line. Chapleau is the nearest and most likely potential 115 kV transmission line connection location. Connection may also require an upgraded or new transformer station near the connection location. These power-related aspects will be investigated further during the preparation of the EIS (if applicable). Power alternatives will be assess in EIS, including routing options, should ongoing engineering identify additional power is required.

2.3.2 Anticipated Size or Production Capacity

The anticipated size or production capacity of the designated project, with reference specifically to the thresholds set out in the *Regulations Designating Physical Activities*, is as follows:

- Gold mining is planned at a nominal rate of approximately 1,750 to 3,000 tpd as averaged annually, and on a continuous (24-hour day) basis. A contingency (up to approximately 4,000 tpd maximum ore production, averaged annually) is being proposed to allow for flexibility in response to further data acquisition and engineering analysis. The mining rate will be confirmed through ongoing engineering and design activities.

Table 2-2 provides a summary of the size and capacity aspects of the BGP as currently known, subject to ongoing engineering design. To reflect the current uncertainties is design, Goldcorp has estimated the additional surface disturbance as 4 to 8 ha, although an area of only 5 ha is anticipated to be needed at this time.

2.3.3 Percent Increase in Capacity

The BGP is a new underground mine and as such, no increase in capacity is proposed.

2.3.4 Use of Offsite Existing Infrastructure / Facilities

Highway 101

Goldcorp proposes to use existing infrastructures and facilities as practical to reduce the potential environmental effects from the construction and operation of the mine. As indicated in Sections 2.1 and 2.3.1, Goldcorp propose to transport ore to an existing ore processing facility located in the Timmins area (anticipated to be the Goldcorp Porcupine Gold Mines Dome processing facility). By using this approach, dedicated processing and mineral waste (tailing) management facilities are not required at or near the BGP site. No new roads (or other transportation routes, such as railroads) outside the BGP site footprint are proposed to be developed for the BGP, or as a result of the BGP.

Extracted ore from production mining will be loaded onto highway trucks at the BGP site. Covered highway trucks will transport the ore over the existing Provincial road network (Highway 101), as well as Municipal roads Bruce Avenue and Goldmine Road within Timmins, to the existing Dome Processing Facility.

Highway 101 is a two-lane, paved Provincial highway that acts as a major highway connection between northern Ontario communities and was designed and is operated accordingly. The published 2010 daily traffic information for Highway 101 between the BGP site and Dome Processing Facility indicate that annual average daily traffic ranges between 580 and 9,000 vehicles per day. At full production, covered transport trucks will make 60 to 80 return trips

between the BGP site and the Dome Processing Facility. The BGP ore transport will occur in full compliance with any regulatory requirements, including seasonal load restrictions.

Modifications required: At the BGP entrance(s), Highway 101 may be improved for safety reasons, such as installation of turning lane(s) following Provincial discussions and approvals requirements. No upgrading or modification to the remainder of the transport route is proposed, pending direction of the Ontario Ministry of Transportation and/or City of Timmins.

Dome Processing Facility

The Dome Processing Facility is a fully approved, operating processing plant, located within an industrial complex southeast of Timmins which has been in operation for decades. The plant has been designed to process ore from a number of different mines, using conventional gold extraction methods at an overall approved capacity of 13,000 tpd. The plant uses a combination of gravity and cyanidation techniques including: crushing, grinding, oxygen pre-treatment, cyanide leaching, carbon-in-pulp gold recovery and cyanide destruction, followed by electrowinning and refining to prepare a doré bar product. Associated waste and emissions are managed in accordance with existing environmental approvals. As practical, water and carbon are re-used in the circuits. As the Dome Processing Facility is rated at a maximum throughput of 13,000 tpd. Ore from the BGP (at up to approximately 3,000 tpd ore) will typically be combined with ore from other sources to allow for consistent plant production. Processing of ore from the Borden Gold Project will not materially alter the emissions, effluent or wastes produced by the facility.

Modifications required: No material modifications are required to the Dome Processing Facility to accept and treat BGP ore. Ore by its nature is not consistent and the processing plant was designed to accommodate ore with a range of qualities (including different hardness and content).

2.3.5 Description of Related Activities

Primary activities related to the BGP not otherwise described in Sections 2.3.1 and 2.5.2 include:

- Confirmation on power requirements and related infrastructure needs;
- Planning of logistics related to ore haulage to Timmins;
- Completion of detailed engineering studies and potentially associated field investigations;
- Completion of legal / business / land agreements, if any;
- Corporate (internal) decision to proceed to mining based on results of advanced exploration program;
- Hiring of individuals and contractors;

- Gaining environmental approvals for BGP-related works; and
- Development of project management and environmental management plans.

As indicated in Section 2.3.1, the BGP site has been subject to mineral exploration drilling by previous mineral rights holders, as well as by Goldcorp. Goldcorp is pursuing environmental approvals to conduct an underground advanced exploration program prior to initiation of the BGP. The results of this program will assist Goldcorp on deciding whether or not BGP is financially viable, and whether to proceed with the BGP.

2.4 Emissions, Discharges and Wastes

2.4.1 Atmospheric Emissions

Air Emissions

Air emissions from the BGP will derive primarily from fugitive sources. Crushing if required will be conducted underground to reduce the quantity of dust released into the environment.

Fugitive dust is anticipated to be released from: loading and off-loading of mine rock and ore; vehicle and heavy equipment travel on gravel roads; and from wind entrainment from stockpiles and other exposed earth materials on the BGP site. Mitigation measures are expected to include use of water and other Provincially-approved dust suppressants. Paving of select onsite roads and limiting the speed of the vehicles travelling along internal gravel roads will also be considered.

Goldcorp intends to maximize the use of electrically-powered equipment on the site as feasible to reduce air emissions, including greenhouse gases. Power is proposed to be drawn from the Provincial electrical grid to meet the site power demands, thereby reducing potential greenhouse gas emissions at the site. Vehicle and heavy equipment use during all project phases, will release particulates, sulphur dioxide and nitrogen oxides from the combustion of fuel, where electrically powered equipment is not used. Depending on the final decision regarding power supply, these emissions may also result from onsite diesel power generation. Heavy equipment, vehicles and diesel generators will be required to be maintained in good working order and equipped with factory-installed emission control devices to minimize emissions.

Nitrogen gases, carbon dioxide and other trace gases will also be released from explosives usage underground, which will be released to the environment through the portal as well as ventilation raises.

Air quality modelling will be carried out to ensure that effects on air quality are fully considered during engineering design.

Greenhouse Gas Emissions

Greenhouse gas emissions associated with the BGP will derive principally from diesel fuel combustion during heavy equipment operation, and with diesel-fired power generation if employed. Greenhouse gas emissions will also be emitted related to propane usage (heating of underground mine air).

It is preferred that power will be drawn from the Provincial electrical grid to meet the BGP power demands, thereby reducing potential greenhouse gas emissions at the site, although there is the potential that ongoing diesel generation of power could be required. Power alternatives are proposed to be assessed as part of the Federal EA process.

The use of electrically-powered underground mine equipment is being proposed in an effort to reduce the production of greenhouse gases, to be confirmed when investigations are complete.

Noise Emissions

The principal anthropogenic noise sources from the BGP are expected to derive from open air, heavy equipment operation, such as that associated with the handling of ore and mine rock; and from venting of the underground workings required for worker health and safety. Crushing of rock will be conducted underground if required, in order to limit noise on surface.

Noise source modelling is being carried out to ensure that noise and noise-related effects are fully considered during engineering design.

2.4.2 Liquid Discharges

Mine Water

Mine water will derive from the underground mining operation, primarily from groundwater seepage into the mine workings. Detailed groundwater modelling will be conducted to define groundwater inflow rates and to determine mine water removal rates for all phases of mine operations as engineering designs progress.

Mine water is proposed to be collected at designated low points within the mine (sumps) during operations and will be pumped to a pond on surface for treatment. Mine water will contain: suspended solids from general mining activities; ammonia residuals from ammonia-based explosives; and residual hydrocarbons from heavy equipment operation. Leaching of the exposed bedrock within the underground mine may also potentially contribute minor quantities of metals to the mine water. The sump(s) or other means such as Geotubes, will provide for preliminary, physical suspended solids removal and for the removal of residual hydrocarbons. Ammonia residuals will be managed at source through best management practices for explosives handling, and through the aging of the mine water in the surface pond prior to any discharge to the

environment. Options for additional ammonia treatment are available if determined to be needed in the future.

Stockpile Runoff

Runoff from the mine rock stockpile on surface will contain suspended solids, and potentially metals and residual ammonia. Stockpiles will be placed on top of impermeable liners, with a suitable bedding between the rock and liner, to protect the liner from puncture. The BGP site has been designed in order to ensure the runoff from the stockpiles is collected and diverted into the water treatment pond system, to allow for treatment and monitoring during operations and after operations cease if needed. Runoff from the mine rock and ore stockpiles (if any) will be directed to the water treatment pond system. Excess waters after treatment will be pumped by pipeline to the Borden River, the proposed receiving water.

It is anticipated that an emergency spillway and ditch system will be required per Canadian Dam Association safety guidelines, to handle extreme storm events, which will be designed to overflow in extreme events to Unnamed Tributary 3, rather than directly into Borden Lake.

Site Runoff

General site runoff resulting from precipitation that falls on the BGP site within the mine operations area will also be captured and diverted into the treatment pond.

Non-contact runoff from other areas onsite outside the mine operational area, will be allowed to follow natural drainage patterns. This general site runoff will be released directly to the environment to reduce potential flow effects to downstream watercourses / waterbodies through watershed capture.

Domestic Sewage

Domestic sewage and grey water (from showers and sinks) during the construction and operations phase will be treated by an appropriately-sized septic tank and raised tile field bed or potentially a package sewage treatment plant (e.g., sequencing bioreactor, rotating biological contactor, membrane bioreactor, or equivalent). Alternatively, given the relatively low volumes, domestic sewage may be temporarily stored on the site in a designed tank(s) for periodic disposal by a contractor in accordance with regulatory requirements.

2.4.3 Solid Wastes

Mineral Waste

The only mineral waste expected to be produced by the BGP is mine rock resulting from underground development. As much as practical, mine rock will be left underground and not be brought to surface during the BGP operations. Any mine rock that remains on surface from the

advanced exploration program, or that is brought to surface during BGP operations, will be re-used during the BGP as practical and reasonable for:

- Surface construction purposes (if meeting required physical and geochemical criteria);
- Backfill in the underground mine (potentially with cement to increase strength); and/or
- Used in final site reclamation (if meeting required physical and geochemical criteria).

Geochemistry studies are currently underway to better assess the mine rock and related environmental aspects, including acid generation potential.

Goldcorp has made the commitment that after the end of the BGP mine life and completion of final reclamation of the site, there will be no surface stockpiles of potentially acid generating mine rock (or ore) on the site. If for whatever reason this material cannot be taken back underground as currently planned, Goldcorp has committed that potentially acid generating rock (mine rock, low grade ore and ore) stockpiles on surface at closure that cannot be taken back underground will be transported offsite for final storage, such as to a Goldcorp operation located in Timmins, Ontario (subject to obtaining all necessary environmental approvals).

Domestic Wastes

Limited quantities of solid wastes are anticipated to be produced at the BGP. Domestic wastes produced at the site are likely to be relatively limited, but may include: wood, paper, scrap metal, glass, plastic, food scraps and general refuse.

Special management wastes produced at the site are expected to include: waste petroleum products and packaging, waste glycol, waste explosives and potentially petroleum contaminated soil. Special management wastes will be stored in sealed containers in lined, bermed areas (or other means of secondary containment as appropriate). The quantities of used lubricating oils and other lubricants created on site will be minimized to the extent practical. Used glycol, lubricants and other similar materials will be stored in tanks with secondary containment and shipped to appropriate waste management facilities in accordance with regulatory requirements.

Although every reasonable effort will be made to reduce the potential for spills to the environment, it is recognized that minor spills associated with heavy equipment usage (dominantly petroleum hydrocarbons and glycol) may occur occasionally. Contaminated materials, associated with any such spills, will be excavated and handled in accordance with best management practices and regulatory requirements. These materials are expected to be transported off site to an approved facility for disposal.

Explosive wastes will be destroyed according to an approved methodology by the explosives contractor or otherwise-approved personnel.

All non-hazardous and hazardous wastes produced at the BGP will be transported to appropriate waste management facilities offsite, such as the local Municipal landfill, for handling or storage. No permanent storage of solid (non-mineral) wastes on the site is proposed.

2.4.4 Use of Existing Offsite Facilities

The transporting of ore from the BGP site to the Dome Processing Facility will result in the additional emissions and waste associated with operating and maintaining highway vehicles, including greenhouse gas emissions (Section 5.2; Tables 5-10 and 5-11).

Processing of ore from the Borden Gold Project will not materially alter the emissions, effluent or wastes that are currently produced by the facility, or have been produced in the past. The Dome Processing Facility is an approved facility, and all emissions, discharges and waste will need to comply with environmental approvals (Section 5.2).

2.5 Project Phases and Scheduling

2.5.1 Development Timeframes and Main Activities

The proposed BGP schedule has been design to start at the completion of the advanced exploration program if possible, and assuming that there is an alignment with obtaining the necessary environmental approvals and consultation aspects. A preliminary schedule for the development, operation and closure of the BGP is attached as Figure 2-5.

The schedule aims for gold ore production starting in fourth quarter 2018 in parallel with construction. The uncertainty in timing of environmental process and approvals is understood; and it is recognized that approvals may constrain the timing of some of the activities that have been scheduled. The actual timeline for project development will therefore depend in part, on the timing of the assumed Federal EA process and subsequent environmental approvals.

The approximate duration of the key project phases are as follows:

- Construction: 0.5 years;
- Operation: 7 to 15 years;
- Active reclamation: 1 year; and
- Follow-up Monitoring: as required.

2.5.2 Main Activities by Project Phase

Construction Phase

The necessary engineering studies and environmental approvals needed to support approval to proceed to mining are proposed to be conducted in parallel with the Federal EA process, in order that production mining can commence as soon as possible after the end of advanced exploration

program. As the BGP will initially utilize the infrastructure and facilities associated with the advanced exploration program as much as practical, the construction and development phase of the BGP will be relatively short compared to most new mines.

Primary construction phase activities associated with the BGP will include:

- Application for applicable environment-related approvals or amendments to existing approvals;
- Procurement of material and equipment;
- Development and implementation of environmental protection and monitoring plan(s) for construction (continuing through all project phases);
- Ongoing training of staff and contractors consistent with Goldcorp's corporate requirements through all project phases (continuing through all project phases; including for health and safety, sustainability, Aboriginal awareness, corporate responsibility and environmental best practices);
- Movement of construction materials to identified laydown areas at site;
- Establishment of additional underground mine raise(s) and associated structures for ventilation and an emergency exit from underground;
- Construction / upgrading of required buildings and facilities at the BGP site;
- Upgrade of access at Highway 101 if needed per Provincial direction (anticipated to include signage, access and turning lanes) and potentially an additional access;
- Potential construction and energizing of an upgraded / new approximately 25 kV power kV distribution line, connecting to an existing 115 kV transmission line; potentially with an associated new transformer station at Chapleau or if economically feasible within required timelines, an upgrade of the current distribution station in Chapleau to supply the mine operation; and
- Ongoing environmental management, monitoring and reporting, and follow-up environmental studies (continuing through all project phases as applicable).

Construction activities will be sequenced according to manpower and equipment availability and site conditions. Certain activities, such as those involving working in wet or poorly accessible terrain, are best carried out under frozen ground conditions. Sequencing will also consider environmental aspects, such as fish spawning and bird nesting seasons.

Operations Phase

During the project operations phase, ore and mine rock will be extracted from the underground mine, for transport over existing roads to an existing processing facility in Timmins, or stockpiling on surface at the BGP site. If necessary, a crusher will be established underground to size material for shipment ease.

As the operations phase continues, the underground mine will become progressively expand laterally and deeper to extract ore. Mine development will include backfilling of workings in whole or part depending on the mining method, to maintain underground stability. A backfill plant may be developed on surface, if cemented or paste backfill is required.

The mine rock stockpile at the BGP site may have an initial increase in size at the start of mining from additional underground development associated with production mining, and the requirement to establish an additional access to underground (ventilation raise(s) and/or emergency egress, to be determined). Thereafter, the mine rock stockpile on surface will be gradually be depleted as the mine rock is taken underground for use in backfilling mined stopes. There is the potential that additional backfill may need to be brought to site (back-hauled quarried rock, mine rock or tailings) to support the underground mine, subject to obtaining the necessary environmental approvals.

Solid and liquid wastes / effluent will be managed on an ongoing basis during mine operations, to ensure regulatory compliance. Contact waters will be managed and/or treated as needed prior to discharge by pipeline to the Borden River (continuing through reclamation phase as needed), with such discharge meeting all applicable Federal and Provincial effluent quality and quantity requirements.

Environment-related activities that will be carried out during the operations phase are anticipated to include:

- Air quality and noise management;
- Effluent and runoff management;
- Ongoing management of wastes;
- Environmental monitoring and reporting; and
- Follow up environmental studies, if any.

Reclamation / Closure Phase

Closure of the BGP site will be governed by the Ontario *Mining Act* and its associated Regulations and Codes. The *Act* requires that a closure plan be filed for any mining project before the project is undertaken, and that financial assurance be provided prior to substantive development to ensure that funds are in place to carry out the closure plan.

The objective of closure of the BGP site is to reclaim the mine site area to a naturalized and productive condition on completion of mining. The terms naturalized and productive are interpreted to mean a reclaimed site that while different from the existing environment, is capable of supporting plant, wildlife and fish communities.

As the footprint of the BGP is very small, it is expected that the active phase of reclamation of the project will be completed in less than one year after operations cease, although there will be environmental monitoring thereafter. A preliminary description of the proposed reclamation measures, subject to consultation, additional engineering and regulatory review is provided in the text that follows.

Underground Mine

Any underground equipment (heavy equipment, pumps, pipelines, ductwork etc.) remaining at the time of closure will be purged of any hazardous fluids and materials and left in an inert state underground; or removed and managed according to regulations at the time, which may require shipment to an offsite landfill or recycling centre. Development of an onsite demolition landfill is not proposed.

The mine portal will be backfilled with mine rock in accordance with the Mine Rehabilitation Code of Ontario (as amended / updated). Backfilling of the ramp will occur over a distance of approximately 30 metres (m) inward from the portal entrance, thereby partially or completely filling the ramp access to the portal.

The vent raises / emergency egress openings at surface will be capped with reinforced concrete caps anchored to bedrock in accordance with the Mine Rehabilitation Code of Ontario, once access they are no longer required and after mine heaters and ventilation fans are removed.

Underground workings will be allowed to flood naturally through gradual groundwater seepage. As a result of the local topography (the portal is situated on an elevated area) and natural groundwater levels, the workings are expected to flood to below the final ground surface and no long term discharge from the workings is expected from any location (backfilled portal or capped raises).

Mine Rock Stockpiles

The primary long term closure concern with respect to the mine rock stockpile on surface (if any) is acid rock drainage and metals leaching. Preliminary geochemical investigations suggest that a majority of the mine rock could be potentially acid generating.

It is fully expected that the underground workings will have the capacity to backfill all of the potentially acid generating mine rock produced, and potentially all of the mine rock produced at the site (subject to ongoing engineering studies). Goldcorp has committed that all potentially acid generating mine rock (and ore) stockpiled on surface at the BGP site will either be used in the

BGP underground mine as backfill preferentially, or will be transported offsite to another mine site at Timmins for appropriate disposal and runoff management (subject to regulatory approval). Should a non-potentially acid generating rock stockpile remain on surface, the rock will be used as needed for site reclamation and/or reclaimed in place in accordance with the requirements of the *Mining Act*. The liner under the stockpile area will be punctured at appropriate intervals to allow for natural drainage. The area will then be covered with overburden and revegetated.

Water Management Facilities

Once dewatering of the underground workings ceases and potentially acid generating mine rock is removed underground (or from site), there is no further need for the on surface water pond treatment system and the system will be decommissioned. The pond will be sampled to ensure acceptable water quality and will then be drained. Bottom settled solids in the pond will be tested, and if acceptable, will remain in place. If the solids are found to exceed acceptable criteria, they will be dredged and removed for disposal in the underground workings (to be undertake prior to filling the portal), or will be hauled off the site for appropriate disposal. The pond liner will be punctured to allow for natural drainage. The surrounding dams will be breached and recontoured over the liner to allow natural drainage to the environment. Additional overburden will be placed if needed to support revegetation.

Berms and ditches used on site will also be breached or regraded as needed to allow for natural drainage to the environment.

The water discharge structure at the Borden River will be reclaimed by removing the pipeline on surface and reclaiming the discharge pad area (or by allowing passive regrowth).

General Site Area

There will be limited buildings at the BGP site and those present will be amenable to closure. It is anticipated that much of the equipment, tankage, machinery, pipelines, building and infrastructure waste materials generated through demolition, can be sold for reuse, or recycled as scrap metal. Concerted efforts will be made to sell and/or recycle as much metal as possible. Goldcorp does not propose to develop a demolition landfill at the BGP site although inert materials (such as concrete) may be buried on site as allowed by regulations at the time. Any building demolition wastes and equipment wastes that cannot be sold for reuse, or scrap, will handled according to environmental regulations at that time and transported to an offsite waste management facility.

Concrete building foundation(s) will be broken up and reduced to within 0.5 m of grade to allow drainage, and will be covered with overburden, graded and seeded. Wherever practical, clean demolition concrete will be used as a filling resource or will be recycled as crushed aggregate.

All general site access and haul roads, which will not be required for long term will be scarified (broken up), covered with overburden as needed, and seeded when no longer needed to support final reclamation, long term site management and environmental monitoring. Any culverts will be

removed and sold for reuse or scrap, or will be hauled to an appropriate waste facility offsite. Onsite roads will be breached at culvert locations to allow for natural drainage.

Offsite Facilities

The distribution power line developed for the mine if applicable, may or may not be left in place at closure, depending on discussions with the various regulatory authorities, including Hydro One Networks. Should reclamation be required, electrical equipment will be removed and recycled / reused or disposed of. Poles will be removed or cut at grade, and transferred to an appropriate facility for recycling or disposal.

Alterations to Highway 101 (if any, such as the addition of turn lanes at site access) are anticipated to remain in place, subject to discussions with MTO.

Table 2-1: Summary of Existing Site Facilities and Infrastructure

Facility / Infrastructure (other minor structures may also be present)	Scale (dimensions where known are approximate)
Underground advanced exploration development, including a portal on surface and ramp to underground Note: underground developments will include: mine workings and various underground bays, water sumps and explosive magazine. Early in the advanced exploration phase (only) there will be a limited temporary surface explosives magazine(s).	Portal[1]: 5 m by 5 m Ramp: 60 m length to portal opening Advanced exploration ramp total length: approximately 2,500 m from portal opening
Mine rock stockpile on high density polyethylene liner / bedding sand Mine rock generated during advanced exploration will be present on surface at the start of production mining	250,000 t; 125,000 cubic metres (m^3) 21,000 m^2 footprint Maximum height of approximately 10 m 3H:1V (horizontal:vertical) slope
Diversion / collection berms to direct contact water from natural surface runoff	Berm height: 1.0 m Berm width: 2.0 m Side slopes: 1.5H:1V
Water Treatment Pond (lined) to collect and treat underground mine water as well as stockpile site runoff	162 m by 113 m Dam heights to 4.4 m
Water treatment infrastructure (potentially for pH adjustment and flocculent addition)	As required
Effluent discharge pipeline to the Borden River and splash pad	200 millimetre (mm) diameter, 1 km length
Septic tank and raised tile field bed	Sized for approximately 70 persons using showers per day
Maintenance shop for large haul trucks (non-highway) / warehouse / shop / office	15 m x 42 m footprint
Other temporary (mobile) service buildings / trailers	Two, 4 m x 12 m office and meeting room trailers Two, 11 m x 25 m mine dry trailers One, 4 m x 10 m communications trailer One, 2 m x 10 m mine rescue trailer One, 10 m x 19 m unheated warehouse One 4 m x 10 m security and First Aid trailer
Diesel generators	Up to 4.9 megawatts (MW)
Local power distribution line	13 km distribution line (25 kV)
Diesel storage tank with secondary containment	Two, 38,000 litre (L) tank
Propane storage	One, 10,000 L tank
Site access roads from Highway 101 (gravel) and internal site roads (gravel)	2 km
Parking areas (bus and light vehicles), and general yard and unloading areas	As required

Note: These facilities are proposed as part of the advanced exploration program that will be initiated in late 2016, assuming environmental approvals are obtained, and will be in place at the start of construction of the BGP.

[1] Portal, opening to underground on angle to surface (as compared to a shaft which is near vertical)

Table 2-2: Summary of BGP Facilities and Infrastructure

Facility / Infrastructure	Scale (approximate; pending ongoing engineering)
Mine	Production rate of 1,750 to 4,000 tpd ore as annual average; to be developed to a depth of about 800 m below surface and accessed by ramp from surface, developed off the advanced exploration program ramp. Underground developments will include: mine workings and various underground bays, potential for an underground crusher. A backfill plant may be developed on surface, to slurry cement or paste backfill for receiving underground. The plant will have a footprint of approximately the following dimensions: 50 m x 50 m footprint.
Ventilation and Emergency Egress	One or two (up to) 2.5 m radius raises to surface for ventilation and one smaller (up to) 1 m radius raise as an emergency egress.
Stockpiles	Mine Rock: • Additional volume beyond advanced exploration program stockpile: approximately 440,000 t (220,000 m^3); to be determined during ongoing engineering • Height increase of approximately 2 m • Increased stockpile footprint of 25,000 m^2 Ore: • Temporary stockpile to allow for shipment: 5,000 t; 2,500 m^3 • Ore loading facility may be developed • No planned increase to advanced exploration program footprint Soil and/or Overburden: • If needed • Direct placement on site for progressive reclamation of existing disturbances preferred
Water Management	The diversion berms from the advanced exploration program will be extended in accordance with the revised stockpile footprint to capture surface runoff from operating area. No other planned change to advanced exploration water management infrastructure (treatment pond, onsite diversion / collection berms and discharge pipeline). There is potential that expansion to the system could be required pending ongoing engineering and hydrogeological modelling results, including potentially development of an additional pond. Should an additional pond be required, it is anticipated to be less than 2 ha in area.
Onsite Buildings	A few new structures and more permanent structures may replace some or all of the advanced exploration program buildings / trailers. The new buildings (if any) will be of approximately the same scale (footprint and height) as the exploration phase facilities (Table 2-1): • Office, one, 20 m x 25 m • Change rooms, one, 25 m x 25 m; one, 6 m x 15 m • Maintenance shop: 60 m x 40 m • Mine rescue trailer: 4 m x 15 m • Storage dome: 30 m x 10 m • Electrical workshop dome: 20 m x 10 m • Minor buildings: two, 10 m x 10 m • Security and First Aid trailer: 4 m x 12 m

Facility / Infrastructure	Scale (approximate; pending ongoing engineering)
Onsite Infrastructure	A new road may be required to access additional ventilation infrastructure as shown on Figure 2-1. In addition, some of the onsite road network may be expanded upon to better and more safely accommodate truck traffic; and/or may be paved in locations where application of water and dust suppressants are proven less effective to reduce dust. Due to the small site footprint, any road expansion outside of the preliminary site plan shown in Figure 2-1 is anticipated to be of less than 2 km length. A nominal increase in diesel fuel tankage may be required to accommodate additional equipment / more extensive underground workings. An increase in propane storage will be required to accommodate heating increased air flows in winter required to run the operation.
Offsite Infrastructure	Potential construction and energizing of an upgraded / new power distribution line (anticipated at 25 kV), connecting to a 115 kV transmission line with an associated new transformer station.
Use of Existing Offsite Infrastructure and Facilities	Highway 101: No proposed change to existing highway; except the potential for a turning lane at the BGP site. Proposed additional traffic is within the capacity of highway. Dome Processing Plant: No material changes proposed; no material changes to associated emissions, discharges and wastes.
Notes	No processing plant, tailings impoundment area, accommodations, or additional bridges, significant culverts or dams, marine transport facilities, power plants or railways are proposed.

328000 329000 330000 331000 332000 333000 334000

5305000 5304000 5303000 5302000

Unnamed Tributary 3
Borden River
Unnamed Tributary 2
Highway 101
Emerald Lake
Borden Lake (Grout Bay)
Unnamed Tributary 1
Borden Lake

Access Road
Power Distribution Line
Discharge Water Pipeline (and access road)
Access Road
Truck Loading and Scale Area
Buildings and Yard Areas
Water Collection Pond
Mine Rock Stockpile Area
Generator
Containment
Portal
Access Road (to raise)
500 m

P:\2015\Projects\TC150506_Borden_Gold_Env\GIS\Project_Description\MXD\Mine_SitePlan_Schematic_9.mxd

LEGEND

Potential Surface Facilities

- Power Distribution Line
- Discharge Water Pipeline
- Stockpile Containment Water Diversion Berm
- Site Access Roads
- Ramp and Portal to Underground
- Water Collection Pond
- Emergency Spillway
- Mine Rock Stockpile Area
- Buildings and Yard Areas
- Generator

0 0.5 1 2 3 4 Kilometres

NOTES:
- Orthorectified Geoeye-1 and Worldview-3 Satellite Imagery, August 2015 was provided by Goldcorp.
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.
- NTS watercourse information has been modified to reflect infield investigations.
- Site plan schematic arrangement derived from general arrangement provided by KCB (Site plan date: Jul. 8, 2016)

Datum: NAD83
Projection: UTM Zone 17N

N W E S

GOLDCORP BORDEN GOLD

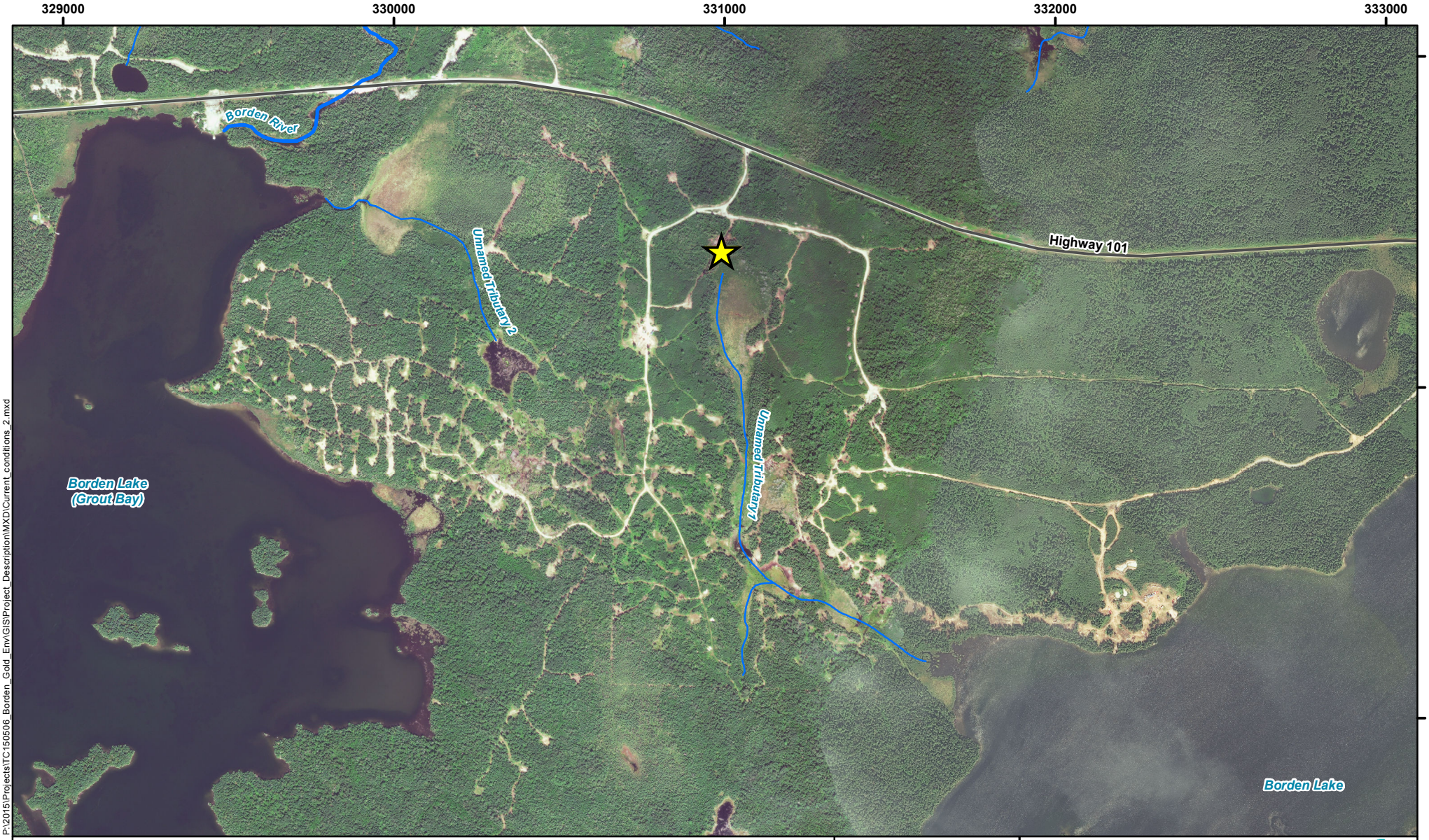
amec foster wheeler

BORDEN GOLD PROJECT

Simplified Mine Site Plan Schematic

PROJECT N°: TC150506 | **FIGURE: 2-1**

SCALE: 1:17,000 | DATE: September 2016



P:\2015\Projects\TC150506_Borden_Gold_Env\GIS\Project_Description\MXD\Current_conditions_2.mxd

LEGEND

★ Project Location

NOTES:
- Orthorectified Geoeye-1 and Worldview-3 Satellite Imagery, August 2015 was provided by Goldcorp.
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.
- NTS watercourse information has been modified to reflect infield investigations.

GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Current Conditions

Datum: NAD83
Projection: UTM Zone 17N

N
W E
S

0 0.25 0.5 1 1.5 2 Kilometres

PROJECT N°: TC150506	**FIGURE: 2-2**
SCALE: 1:16,000	DATE: September 2016

LEGEND

- Power Distribution Line
- Discharge Water Pipeline
- Stockpile Containment Water Diversion Berm
- Facilities
- Site Access Roads
- Ramp and Portal to Underground
- Dam and Emergency Spillway
- Water Collection Pond
- Mine Rock Stockpile (MRS)
- Existing Watercourse

NOTES:
- Orthorectified Geoeye-1 and Worldview-3 Satellite Imagery, August 2015 was provided by Goldcorp.
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.
- NTS watercourse information has been modified to reflect infield investigations.
- Site plan general arrangement provided by Goldcorp (Site plan date: Feb. 1, 2016)

Datum: NAD83
Projection: UTM Zone 17N

0 0.25 0.5 1 1.5 2 Kilometres

GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Advanced Exploration Program
Site Plan

PROJECT N°: TC150506	**FIGURE: 2-3**
SCALE: 1:16,000	DATE: September 2016

P:\2015\Projects\TC150506_Borden_Gold_EnvGIS\Project_Description\MXD\Mine_SitePlan_Schematic_advance_exploration_site_paln_3.mxd

LEGEND

- BGP Mine Site Plan Schematic [1]
- Advanced Exploration Program Site Plan [2]

NOTES:
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.
- NTS watercourse information has been modified to reflect infield investigations.

[1] Site plan general arrangement provided by Goldcorp(site plan date: February 1, 2016).

[2] Site plan schematic arrangement derived from general arrangement provided by KCB (site plan date July 8, 2016).

GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Comparison of Site Plan Footprints

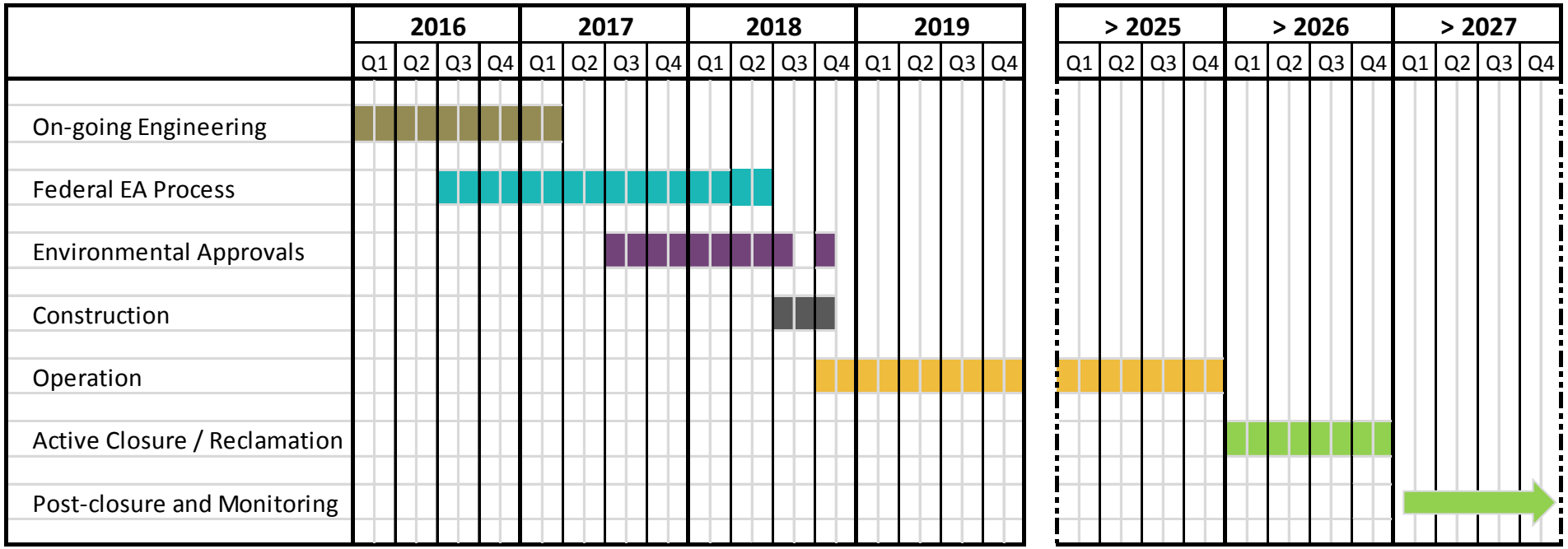
Datum: NAD83
Projection: UTM Zone 17N

0 0.2 0.4 0.6 0.8 1 Kilometres

N W E S

PROJECT N°: TC150506 | FIGURE: 2-4

SCALE: 1:13,000 | DATE: September 2016



NOTES:

GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Preliminary Project Schedule

PROJECT N°: TC150506

FIGURE: 2-5

DATE: September 2016

3.0 PROJECT LOCATION

3.1 BGP Location

3.1.1 Co-ordinates

The approximate centroid of the BGP is located at coordinates are 5304500 N and 330800 E in the UTM NAD83 coordinate system (Zone 17); or 83° 15’ 45.65” W and 47° 52’ 17.51” N.

Further details regarding the BGP land package are provided in Figure 3-1.

3.1.2 Site Plan

A site plan schematic of the proposed BGP, pending further design and the results of ongoing consultation and engagement is provided in Figure 2-1.

3.1.3 Other Maps

The following additional figures are provided for reference with primary content shown in brackets:

- Figure 3-2: Watercourses and Waterbodies (local watercourses and waterbodies);
- Figure 3-3: Local Land Use (local roads, airport, residences and First Nation Reserve);
- Figure 3-4: Local Baitfish Harvest Areas (fisheries area of approval);
- Figure 3-5: Local Communities and First Nation Lands (Chapleau and local First Nation Reserves);
- Figure 3-6: Traditional Lands Study Area (local First Nations traditional lands investigation study areas);
- Figure 3-7: Regional Protected Lands (Provincial parks and reserves);
- Figure 3-8: Preliminary Ore Transport Route (regional infrastructure and waterbodies); and
- Figure 3-9: Land Use along Preliminary Transport Route (land use in vicinity of proposed transport route and processing facility).

Note that there are no archaeological sites, commercial development, houses, industrial facilities, residential areas or waterborne structures at the BGP site or in close proximity to the BGP site (Woodland Heritage 2015). The closest structures are permanent or seasonal, cottages and trailers as shown on Figure 3-3.

Borden Lake and associated watercourses are utilized locally for recreational and Aboriginal fishing. There are three individual licenses associated with the local Baitfish Harvest Areas which are allocated by township (Cochrane, Borden, McNaught and Gallagher townships; Figure 3-4). The licensed bait harvesters may harvest bait from any waterbody within the respective Baitfish Harvest Area. There are no other local commercial fisheries (pers. comm., MNRF 2016a). The northwest area of Borden Lake, known locally as Grout Bay, contains spawning shoals for Walleye and Smallmouth Bass, and is a designated MNRF fish sanctuary.

First Nations with Reserves in the vicinity of the BGP include Brunswick House First Nation, Chapleau Cree First Nation and Chapleau Ojibwe First Nation which are signatories to Treaty 9 (James Bay Treaty); and Michipicoten First Nation which is a signatory of Crown Treaty Number 60 (Robinson Superior Treaty). A First Nations and Treaties Map of Ontario published by the Government of Ontario which shows Reserves and approximate extent of treaties for context has been included as Appendix B. Inset C of this map shows the Chapleau area in greater detail.

3.1.4 Photographs

A collection of photographs relevant to the BGP are provided in Appendix A.

3.1.5 Proximity to Other Land Uses

Figure 3-3 provides and overview of the land uses in proximity to the BGP site. Goldcorp has commissioned an ongoing study of non-traditional land use in the vicinity of the BGP site which remains in progress (EEM 2015).

There are no planned facilities or activities associated with the BGP on:

- Federal lands of any type, including First Nations Reserve lands;
- Provincial Parks or Conservation Reserves;
- Areas of Natural and Scientific Interest;
- Provincially Significant Wetlands;
- Provincial Forest Reserves; or other
- Provincially-protected lands.

There are no residences on the BGP site. The closest structures to the site are permanent or seasonal, cottages and trailers (Figure 3-3).

Table 3-1 provides a summary of the distances of the BGP site from: environmentally sensitive areas (such as migratory bird sanctuaries, National Wildlife area, priority ecosystems), and Provincial and international boundaries. Figure 3-9 shows such features relative to Highway 101 and the Dome Processing Facility.

There are no Aboriginal land claims associated with the areas proposed for the development of the BGP to knowledge of Goldcorp. The closest First Nation Reserve to the site is Brunswick House First Nation (approximately 6 km southwest of the site; Figure 3-5). They also have Reserve lands approximately 17 km southeast of the BGP site. Other Aboriginal Reserves located in the general project area include the: Chapleau Cree First Nation, Chapleau Ojibwe First Nation and Michipicoten First Nation. As part of the its ongoing engagement plan, Goldcorp is engaging with the Brunswick House, Chapleau Cree, Chapleau Ojibwe, Michipicoten First Nations as well as the Métis Nation of Ontario. The BGP has not been provided with maps of the traditional territories of any of these Aboriginal groups. Traditional land use studies have been supported and have been completed or are underway (Section 3.2.4).

The BGP site, as well as Highway 101 and the Dome Processing Facility, are located within the boundaries of Treaty No. 9 (Figure 3-9). Treaty No. 9, also known as the James Bay Treaty, was an agreement established in July 1905 between the Governments of Canada and Ontario, and Cree and Ojibwa First Nation communities in what is now northern Ontario. The boundary of Treaty No. 9 was expanded through adhesions in 1930. Locations of First Nation Reserves proximal to these existing facilities are shown on Figures 3-5 and 3-9. There are no proposed physical expansions to either Highway 101 or the Dome Processing Facility related to the BGP.

Goldcorp Porcupine Gold Mines which operate the Dome Processing Facility, have an agreement in place with the four First Nations that are local to the facility, all of whom are members of the Wabun Tribal Council:

- Flying Post First Nation;
- Matachewan First Nation;
- Mattagami First Nation; and
- Wahgoshig First Nation.

There is ongoing consultation on any changes to the Dome Processing Facility, including the potential to process ore from the BGP, amongst these groups based on the agreement in place, through the Consultation Committee.

The boundaries of the treaty areas adjacent to Treaty No. 9 (Robinson-Superior Treaty, 1850; Robinson-Huron Treaty, 1850), are also shown on Figure 3-9. The majority of the potential environmental effects related with the BGP will be confined to the BGP site itself and very local environs. These other treaty lands are very distant from any potential environmental effect from the BGP.

3.2 Land and Water Use

3.2.1 Zoning Designations

The BGP is located east of the boundaries of the Township of Chapleau, in the Township of Cochrane, District of Sudbury. There are no municipal land use planning and policies that overlap with the BGP footprint.

As shown by Figure 3-1, the BGP is situated primarily on private lands held as patent mining claims although there are land agreements in progress. The unpatented mining claims surrounding the site remain Provincial Crown land, although Goldcorp is pursuing mineral land tenure (leases) for a number of the claim. Accordingly, planning of these lands is governed by the Provincial land use policies, as documented in the Crown Land Use Policy Atlas (MNRF 2016b). The Crown lands surrounding the BGP site are designated as General Mixed Use Area, G1770. Mineral exploration and development is allowed, with mineral exploration to be encouraged in the area given minimum shoreline disturbance.

3.2.2 Legal Description of Lands

The BGP site is located immediately north and east of Borden Lake, approximately 11 km northeast of Chapleau, Ontario, in Unorganized North Sudbury District, in Cochrane Township. Land tenure is shown on Figure 3-1.

3.2.3 Land Use, Water Use, Resource Management or Conservation Plans

The BGP site is situated within the boundaries of the Forest Management Plan for the Martel Forest, Management Unit #509 (Tembec 2011). No forestry is currently planned to occur near the BGP site. Should merchantable timber require removal as part of the BGP development (under appropriate approvals), the timber will be offered to the sustainable forest licence holder, and if not accepted, offered to First Nation communities and the public.

There are no other management or conservation plans relevant to the BGP site.

3.2.4 Traditional Knowledge and Traditional Land Use

A traditional knowledge / traditional land use (TK / TLU) study was conducted for members of Brunswick House First Nation, Chapleau Cree First Nation and Chapleau Ojibwe First Nation over late 2015 and early 2016. Local and regional study areas defined for the study are shown on Figure 3-6. The goal of the study was to document baseline and anticipated project interactions on valued components, based on community knowledge and use at the project study area (Olson et al. 2016). Study data was collected from two sources; mapping interviews with 76 members of the three First Nation groups conducted in October 2015, and existing data from Wabun Tribal Council pertaining to the Energy East Pipeline Project (Olson et al. 2015).

Community mapping training was conducted to assist with mapping interviews. The interviews were recorded, and activity in various study areas was documented. The study documented 141 reported activities / values near the BGP footprint (Olson et al. 2016). Activities / values related to all five valued components were represented near and potentially overlapping the BGP footprint, with the majority of activities / values related to fishing, and cultural continuity / ceremonial values. Accordingly, the BGP requires access to, use and occupation of lands used for traditional purposes by Aboriginal peoples.

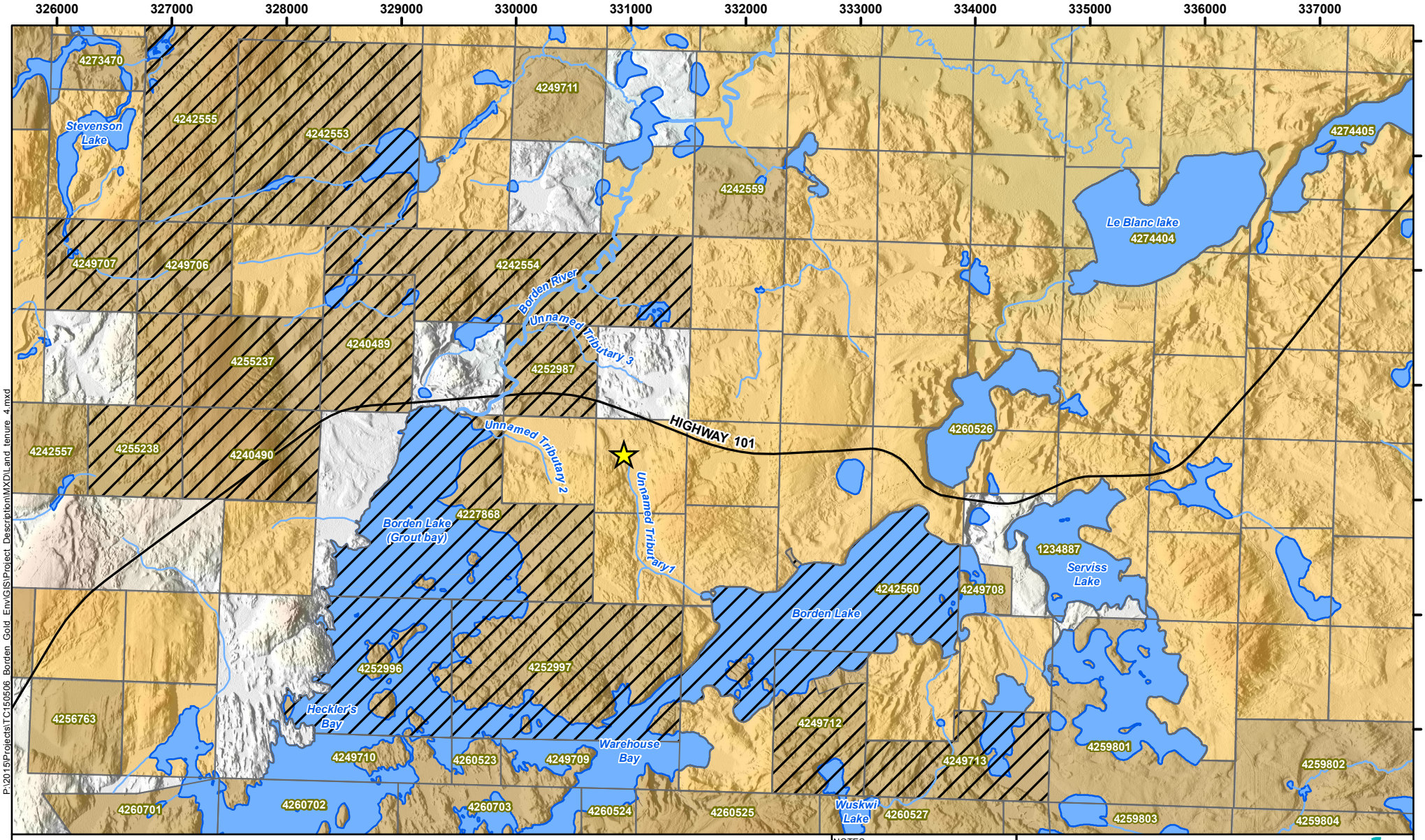
Michipicoten First Nation is in the process of preparing a TK / TLU study report.

Goldcorp has not been provided with maps of the Traditional Lands to date from any of the First Nations that it has engaged to date.

Table 3-1: Relative Locations of Areas of Interest

Closest Areas of Interest	Distance (km) *
Federal Lands (excluding First Nation Reserves)	
Pukaskwa National Park	174
Lake Superior National Marine Conservation Area	270
National Wildlife Areas	
Chapleau Crown Game Preserve	6
Priority Ecosystems	
Chapleau-Nemegosenda River Provincial Park (Waterway Class)	7
Wenebegon River Provincial Park (Waterway Class)	25
Ivanhoe Lake Provincial Park (Natural Environment Class)	27
Windermere Goldie Lake Complex Conservation Reserve	29
Five Mile Lake Provincial Park	32
The Shoals Provincial Park	37
Missinaibi Provincial Park (Waterway Class)	40
Wakami Lake Provincial Park	44
Wakami Lake Provincial Park Addition (Nature Reserve Class)	52
Woman River Forest Provincial Park (Natural Environment Class)	55
Alm Lake Forest Conservation Reserve	57
Ivanhoe Lake Wetland, Provincially Significant	61
Ivanhoe River Clay Plain Conservation Reserve	63
South Greenhill Lake Sand Delta Conservation Reserve	79
Vimy Lake Uplands Conservation Reserve	82
Groundhog River Waterway Provincial Park (Waterway Class)	82
Nova Township Clay Plain Peatlands Conservation Reserve	97
Akonesi Chain of Lakes Complex Conservation Reserve	106
Northern Claybelt Forest Complex Conservation Reserve	106
Dana-Jowsey Lakes Provincial Park (Natural Environment Class)	109
La Motte Provincial Park	120
Tatachikapika River Plain Conservation Reserve	128
Grassy River-Mond Lake Lowlands and Ferris Lake Uplands Provincial Park (Nature Reserve Class)	153
Grassy River Halliday Lake Forests and Lowlands Conservation Reserve	154
Macmurchy Township End Moraine Provincial Park (Nature Reserve Class)	161
West Montreal River Provincial Park (Waterway Class)	174
Mistinikon Lake Uplands Conservation Reserve	180
Whitefish River Sandy Till Conservation Reserve	174
Wapus Creek Conservation Reserve	177
Night Hawk Lake Shoreline Bluffs Conservation Reserve	186
Frederick House Lake Provincial Nature Reserve	192
Kettle Lakes Provincial Park	192
Migratory Bird Sanctuaries / Important Bird Areas	
On018 - Mary's River Complex, including St. Joseph's Island Migratory Bird Sanctuary; Nationally Significant: Congregatory Species	162
On017 - The Cousinsblind River, Ontario; Globally Significant: Congregatory Species	201
On150 - Manitoulin Island North Shore Gore Bay; Globally Significant: Congregatory Species	205
Boundaries	
Ontario Provincial border, land boundary	117
Ontario Provincial border / United States of America, water boundary	163

Note:
* Approximate distance from BGP site centroid (Sources: MNRF 2016c; Bird Studies Canada 2016).



LEGEND

- Project Location
- Goldcorp Unpatented Claim (Applied to bring to Lease)
- Goldcorp Unpatented Claims (Mineral Rights) Labelled with Claim Number
- Goldcorp Patent Goldcorp (Surface and Mineral Rights)

NOTES:
- Orthorectified Geoeye-1 and Worldview-3 Satellite Imagery, August 2015 was provided by Goldcorp.
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.
- Site plan general arrangement provided by GoldCorp (Site plan date: Feb. 1, 2016)
- NTS watercourse information has been modified to reflect infield investigations.
- Land tenure information and parcels provided by Goldcorp, June 2015.

GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

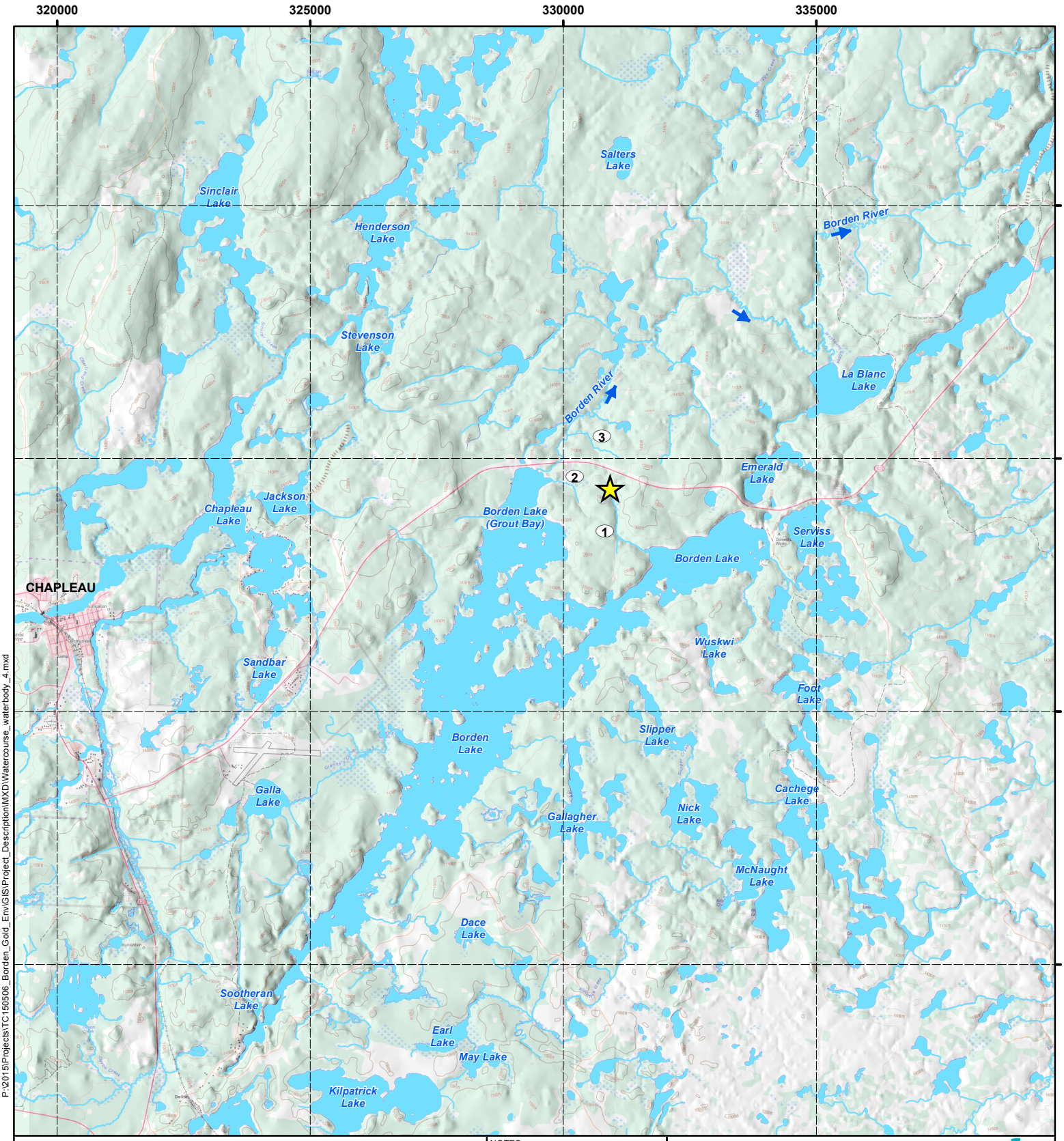
Land Tenure

Datum: NAD83
Projection: UTM Zone 17N

0 0.5 1 2 3 4 5 Kilometres

N W E S

PROJECT N°: TC150506	**FIGURE: 3-1**
SCALE: 1:46,000	DATE: September 2016



P:\2015\Projects\TC150506_Borden_Gold_EnvGIS\Project_Description\MXD\Watercourse_waterbody_4.mxd

LEGEND

- Project Location
- Watercourse
- (1) Unnamed Tributary 1
- (2) Unnamed Tributary 2
- (3) Unnamed Tributary 3
- Waterbodies

NOTES:
- Topographic map information extracted from NRCan Toporama 1:50k NTS DRG sheets.
- Waterbody information extracted from MNRF Land Information Ontario
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.
- NTS watercourse information has been modified to reflect infield investigations.

0 1 2 3 4 5 Kilometres

Datum: NAD83
Projection: UTM Zone 17N

N W E S

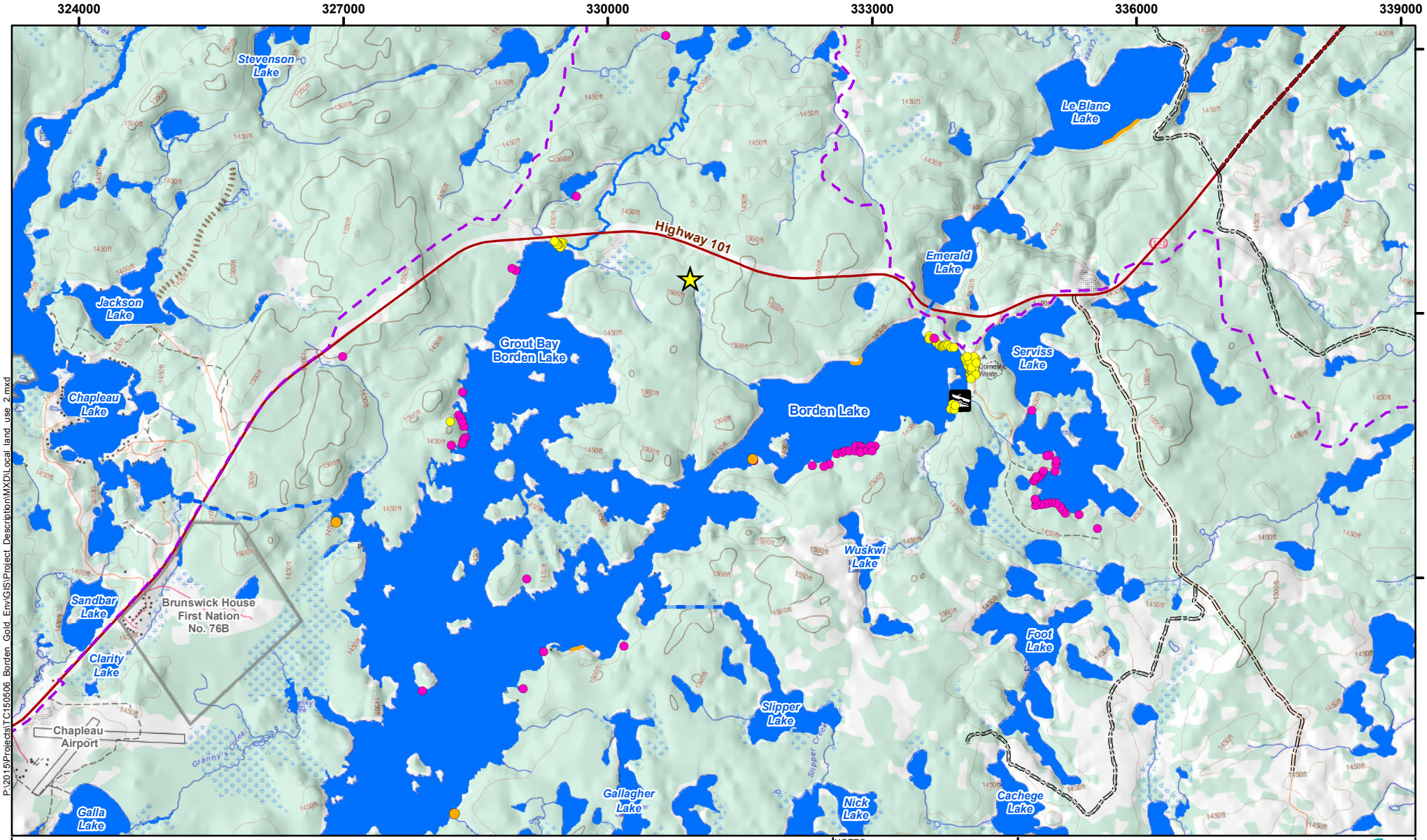
GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Watercourses and Waterbodies

PROJECT N°: TC150506	**FIGURE: 3-2**
SCALE: 1:102,000	DATE: September 2016



LEGEND

- Project Location
- Select Cottages / Residences
- Select Trailers
- First Nations Camp
- Boat Launch
- Portage Trail
- Hunting Corridor
- Highway
- Snowmobile Routes
- Beach
- First Nations
- Waterbody

NOTES:
- Toporama, MNRF
- Topographic data from Land Information of Ontario, MNRF.
- Recreational sites extracted from Forest Management Plan (MNRF) and verified by aerial photograph and Amecfw staff.
- Beaches and First Nations camps digitized from EEM "Non-Traditional Land Use Map"
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.

Datum: NAD83
Projection: UTM Zone 17N

0 0.5 1 2 3 4 5 Kilometres

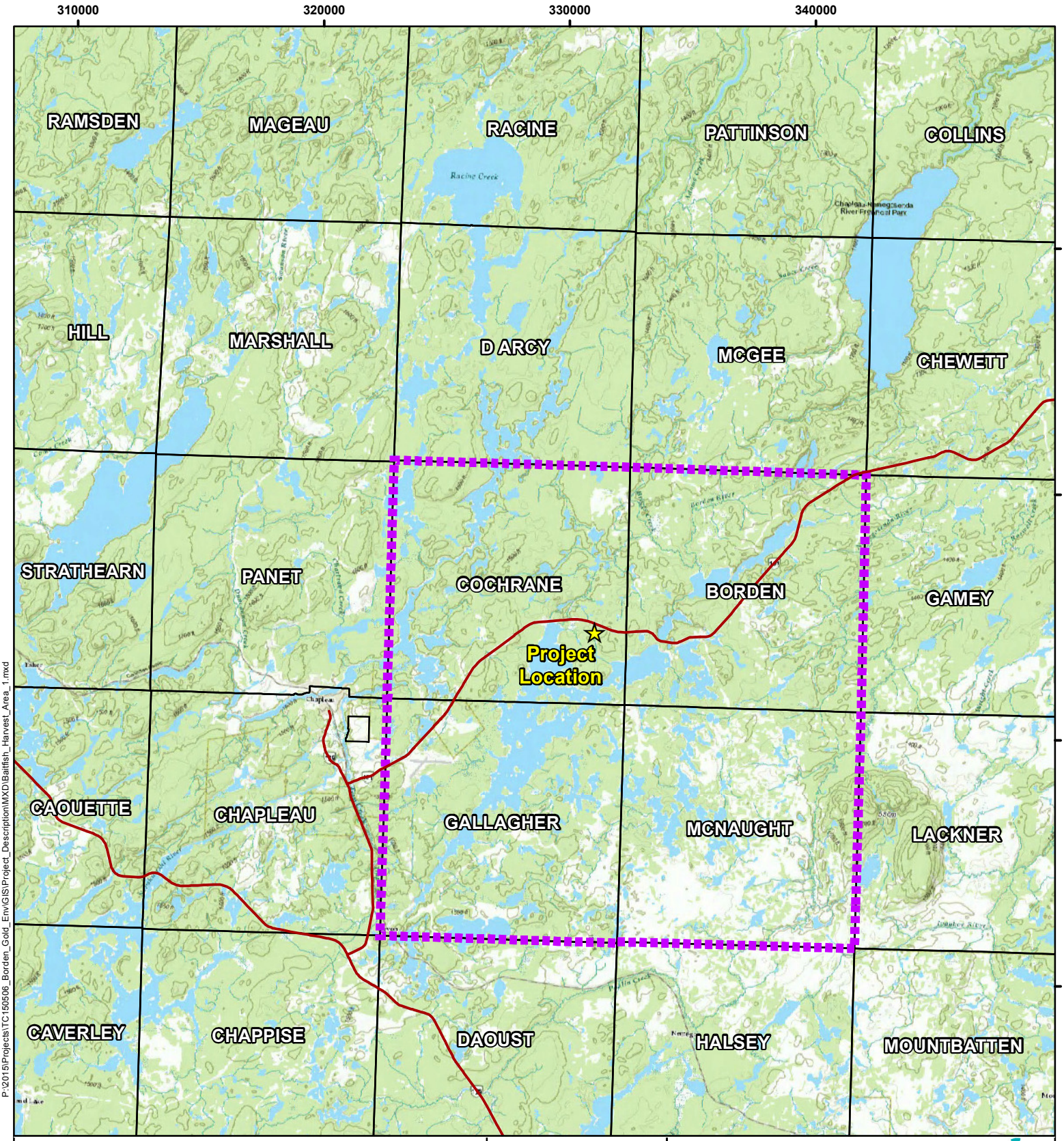
GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Local Land Use

PROJECT N°: TC150506	**FIGURE: 3-3**
SCALE: 1:60,000	DATE: September 2016



P:\2015\Projects\TC150506_Borden_Gold_EnvGIS\Project_Description\MXD\Baitfish_Harvest_Area_1.mxd

LEGEND

- Project Location
- Regional Highways
- Township
- Local Baitfish Harvest Areas

NOTES:
- Highway information extracted from National Road Network, Geogratis.ca
- Backgroup topographic map information extracted from ESRI Base Map Services

Datum: NAD83
Projection: UTM Zone 17N

0 2 4 8 12 16 20 Kilometres

N W E S

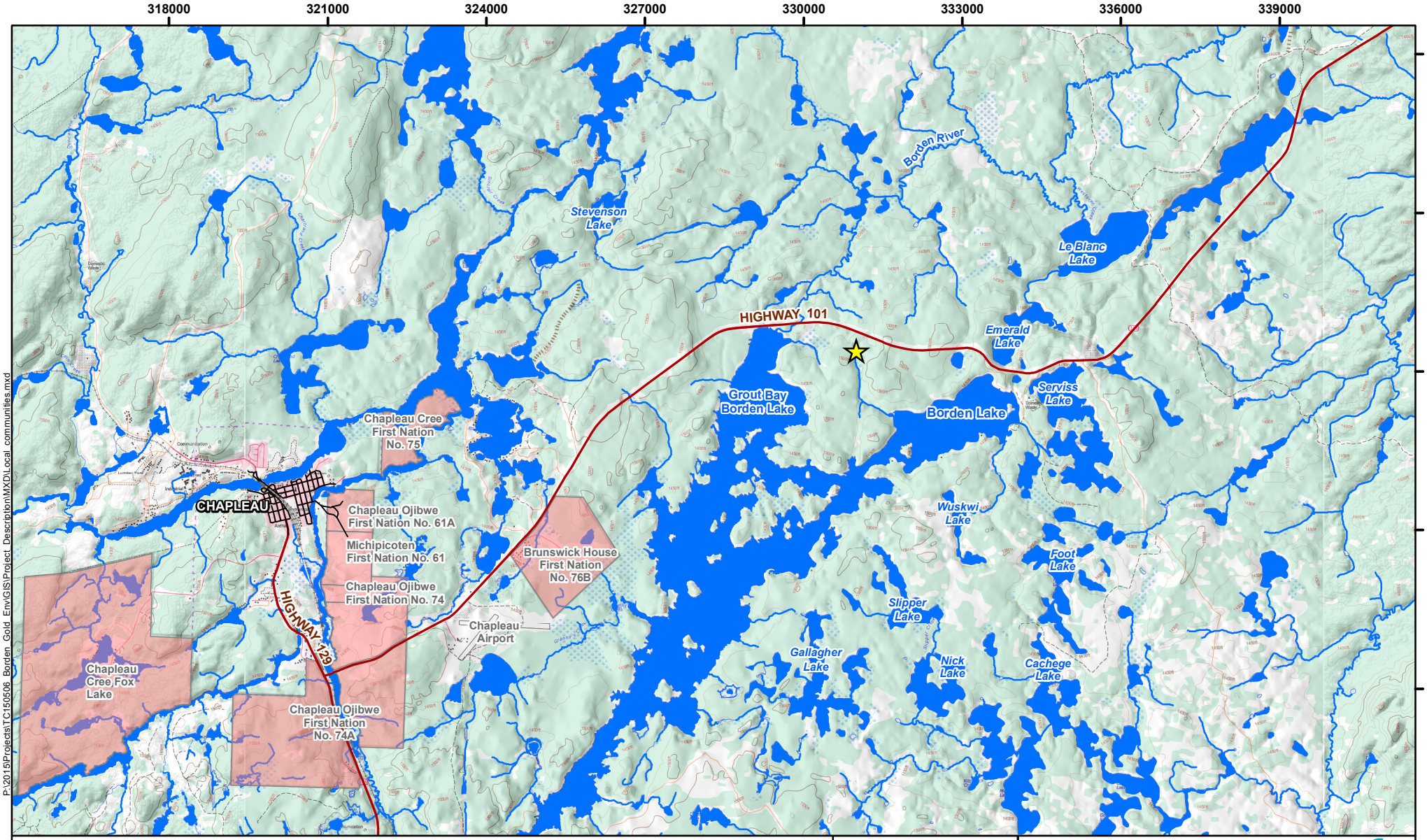
GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Local Baitfish Harvest Areas

PROJECT N°: TC150506	**FIGURE: 3-4**
SCALE: 1:210,000	DATE: September 2016



P:\2015\Projects\TC150506_Borden_Gold_Env\GIS\Project_Description\MXD\Local_communities.mxd

LEGEND

- Project Location
- First Nation
- Waterbody

NOTES:
- Toporama, MNRF
- Topographic data from Land Information of Ontario, MNRF.
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.
- NTS watercourse information has been modified to reflect infield investigations.

0 0.5 1 2 3 4 5 Kilometres

Datum: NAD83
Projection: UTM Zone 17N

N W E S

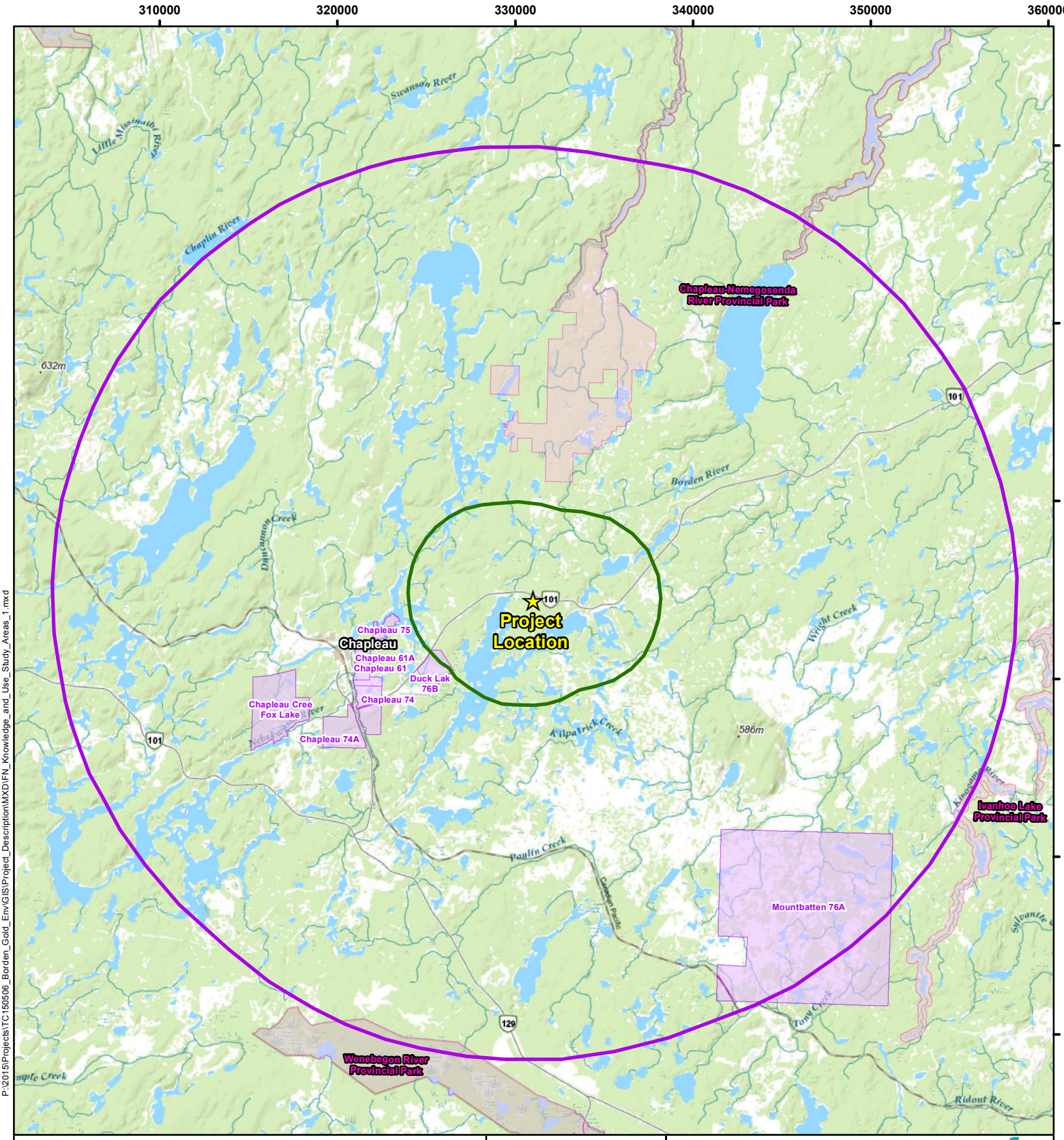
GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Local Communities and First Nation Lands

PROJECT N°: TC150506	**FIGURE: 3-5**
SCALE: 1:100,000	DATE: September 2016



P:\2015\Projects\TC150506_Borden_Gold_EnvGIS\Project_Description\MXD\FN_Knowledge_and_Use_Study_Areas_1.mxd

LEGEND

- Project Location
- Traditional Land Local Study Area
- Traditional Land Regional Study Area
- First Nation Land
- Provincial Park

NOTES:
- Highway information extracted from National Road Network, Geogratis.ca
- Backgroup topographic map information extracted from ESRI Base Map Services

Datum: NAD83
Projection: UTM Zone 17N

0 2 4 8 12 16 20 Kilometres

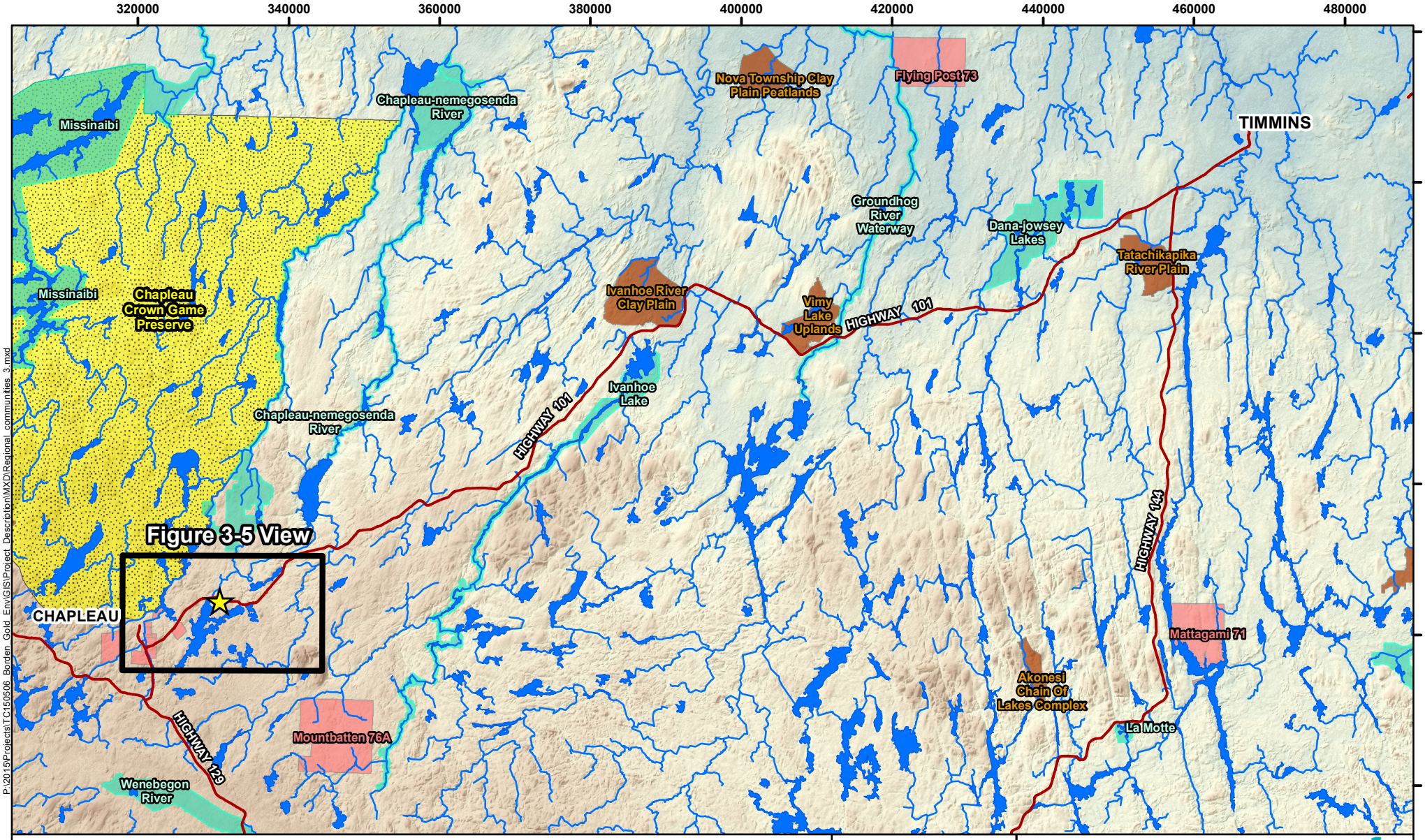
GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Traditional Lands Study Areas

PROJECT N°: TC150506	**FIGURE: 3-6**
SCALE: 1:290,000	DATE: September 2016



LEGEND

- Project Location
- Highway
- Watercourse
- Waterbody
- CG Chapleau Crown Game Preserve
- PP Provincial Park Regulated
- CR Conservation Reserve
- FNR First Nation Reserve

Elevation Colour Ramp
- High ground
- Low ground

NOTES:
- Topographic data extracted from Land Information Ontario (LIO), MNRF
- Background topographic and elevation data extracted from MNRF Land Information of Ontario (LIO).

Datum: NAD83
Projection: UTM Zone 17N

0 10 20 40 60 80 100 Kilometres

GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Regional Protected Lands

PROJECT N°: TC150506	**FIGURE: 3-7**
SCALE: 1:700,000	DATE: September 2016

320000 340000 360000 380000 400000 420000 440000 460000 480000

5380000 5360000 5340000 5320000 5300000

INSET 1

Highway 101

Borden Gold Project

Borden Lake (Grout Bay)

Borden Lake

1,000 m

INSET 2

Highway 101

Ivanhoe River

FOLEYET

1,000 m

See Inset 2

See Inset 3

TIMMINS

PORCUPINE

Dome Processing Facility

City of Timmins

Kenogamissi Lake

City of Timmins

FOLEYET

Carty Lake

Ivanhoe Lake

Highway 101

Nemegosenda Lake

Hellyer Lake

See Inset 1

CHAPLEAU

Borden Gold Project

Borden Lake

INSET 3

TIMMINS

Mattagami River

Dome Processing Facility

2,000 m

P:\2015\Projects\TC150506_Borden_Gold_Env\GIS\Project_Description\MXD\Ore_Haul_Route_3.mxd

LEGEND

- End Points of Preliminary Ore Transport Route
- Town / City
- Proposed Ore Transport Route
- Major Road/Highway
- Other Roads (local and resource)
- Railway
- City of Timmins Boundary
- Watercourses / Waterbodies

0 12.5 25 50 75 100 Kilometres

NOTES:
- Background imagery for small scale map extracted from ESRI basemap service - Imagery.
- Background imagery for inset 1 provided by Goldcorp scene date is August 2015.
- Background imagery for inset 2 extracted from Google Earth Pro
- All other GIS vector reference data extracted from Land Information Ontario (MNRF, 2014-2016)
- Background imagery for inset 3 provided by Goldcorp scene date is July 2015.
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.

Datum: NAD83
Projection: UTM Zone 17N

N W E S

GOLDCORP BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Preliminary Ore Transport Route

PROJECT N°: TC150506	**FIGURE: 3-8**
SCALE: 1:425,000	DATE: September 2016

320000 340000 360000 380000 400000 420000 440000 460000 480000

5380000 5360000 5340000 5320000 5300000

Chapleau-Nemegosenda River
Flying Post 73
Kamiskotia Lake
Mattagami River
PORCUPINE
TIMMINS
Porcupine Lake
Dome Processing Facility
Bromley Lake
Waterhen Lake
Bristol Lake
Treaty 9, 1905
Dana Lake
Dana-Jowsey Lakes
Kenogamissi Lake
Groundhog River
Scorch Lake
Keefar Lake
Opishing Lake
Ivanhoe River Clay Plain
FOLEYET
Vimy Lake Uplands
Sewell Lake
Highway 144
Carty Lake
Ivanhoe Lake
Renee Lake
Murdock Lake
Groundhog Lake
Chapleau-Nemegosenda River
Nemegosenda Lake
Highway 101
Hellyer Lake
Robinson-Superior Treaty, 1850
CHAPLEAU
Borden Gold Project
Borden Lake
Mattagami 71
Robinson Huron Treaty, 1850
Mountbatten 76A

Highway 101
Borden Gold Project
Borden Lake (Grout Bay)
Borden Lake
1,000 m

Dome Processing Facility

Highway 101
Ivanhoe River
FOLEYET
1,000 m

P:\2015\Projects\TC150506_Borden_Gold_Env\GIS\Project_Description\MXD\Land_Use_Preliminary_Transport_2.mxd

LEGEND

- End Points of Preliminary Ore Transport Route
- Town / City
- Proposed Ore Transport Route
- Major Road / Highway
- Other Roads (local and resource)
- Railway
- Recreation Camp
- Recreational Boat Launch
- Industrial Access Location Along Route
- Snowmobile Access Location Along Route

General Recreation Locations

- Access Point
- Clubhouse
- Picnic Site
- Cottage Residential Sites

Known Trails by Type

- ATV Trail
- Hiking Trail
- Snowmobile Trail
- Unknown Trail Type

- First Nation Treaty Boundary
- Provincial Park
- Conservation Reserve
- First Nation Land (see figure 3-5 for Chapleau Area)
- Watercourses / Waterbodies

0 12.5 25 50 75 100 Kilometres

NOTES:
- Background imagery for small scale map extracted from ESRI basemap service - Imagery.
- Background imagery for inset 1 provided by Goldcorp scene date is August 2015.
- Background imagery for inset 2 extracted from Google Earth Pro.
- All other GIS vector reference data extracted from Land Information Ontario (MNRF, 2014-2016).
- Background imagery for inset 3 provided by Goldcorp scene date is July 2015.
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.

Datum: NAD83
Projection: UTM Zone 17N

N W E S

GOLDCORP BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Land Use Along Preliminary Transport Route

PROJECT N°: TC150506	**FIGURE: 3-9**
SCALE: 1:430,000	DATE: September 2016

4.0 FEDERAL INVOLVEMENT

4.1 Financial Support

There is no proposed or anticipated Federal financial support associated with the BGP development, operation or reclamation and closure.

4.2 Use of Federal Lands

There is no Federal land required or proposed to be used to carry out the BGP.

4.3 Federal Permits, Licences or Authorizations Required

The only anticipated Federal environmental approval that could potentially be required for the BGP is:

- Authorization(s) for Harmful Alteration, Disruption or Destruction of Fish Habitat, *Fisheries Act*: related to the potential for groundwater effects from mine dewatering and/or disruption of headwater areas that could affect local watercourses supporting fish.

Note that there is a potential engineering approval requirement related to explosives storage:

- Magazine Licence, *Explosives Act*: related to the storage of explosives materials on surface and/or underground.

It is anticipated that the explosives contractor will obtain the necessary approval(s) under the *Explosives Act* for an explosives magazine on the site, if modification is needed to the advanced exploration program magazine. Explosives transport, storage and use are anticipated to remain under the care and control of the explosive contractor over the life of the BGP.

A number of Provincial environmental approvals or amendments to advanced exploration program environmental approvals are also expected to be required to develop, operate and close the BGP per Section 2.3.4.

5.0 ENVIRONMENTAL EFFECTS

5.1 Physical and Biological Setting

The study area for the BGP based on the current project definition, includes the natural watershed upstream of the BGP site (inclusive of Borden Lake) together with a circle of 5 km radius approximately centred on the BGP site. The watershed boundary was selected as the primary means of definition, as it is inclusive of all proposed development and drainage associated with the BGP and is inclusive of areas of potential direct effects as currently understood. While Borden Lake is not anticipated to be directly affected by the BGP, it has been included, as it is adjacent to the site, and the topic of community interest and concern.

The BGP property is located north of the Arctic watershed and St. Lawrence watershed divide, and as such the regional drainage flows northward. Previous investigations conducted for Probe also collected information from other areas.

The information presented herein is derived from the environmental baseline studies issued to date or progress, including:

- Amec Foster Wheeler. 2016a. Borden Gold Project 2015 Aquatic Resources Baseline Report.
- Amec Foster Wheeler. 2016b. Borden Gold Project 2015 Hydrology Baseline Study.
- Amec Foster Wheeler. 2016c. Borden Gold Project 2015 Terrestrial Biology Baseline Report.
- Amec Foster Wheeler. 2016d. Borden Gold Project Baseline Sound Monitoring Report (In progress).
- Amec Foster Wheeler. 2016e. Borden Gold Project Climate Baseline Study.
- Amec Foster Wheeler. 2016f. Borden Gold Project Hydrogeological Factual Baseline Report.
- Amec Foster Wheeler. 2016g. Borden Gold Project Ambient Air Quality Baseline Report (In progress).
- Amec Foster Wheeler. 2016h. Borden Gold Project Summary of March and May 2015 Water Quality Sampling Memo.
- Amec Foster Wheeler. 2016i. Borden Gold Project Summary of October 2015 Water Quality Sampling Memo.

- AECOM. 2014a. Borden Gold Project Environmental Baseline Report, Natural Environment.
- AECOM. 2014b. Borden Gold Project Environmental Baseline Report, Physical Environment.
- EEM. 2015. Borden Gold Non-Traditional Land Use Study.
- EEM. 2015. Borden Gold Social Baseline Assessment, Township of Chapleau.
- Olson, R. et al. 2016. Brunswick House First Nation, Chapleau Cree First Nation and Chapleau Ojibwe First Nation, Knowledge and Use Study.
- Woodland Heritage. 2015. Stage 1 and 2 Archaeological Assessment of Borden Lake Gold Project.

5.1.1 Climate and Meteorology

The nearest ECCC meteorological station to the BGP is located at the Chapleau Airport (Climate ID 6061361), approximately 9 km southwest of the site. ECCC has developed Canadian Climate Normals from 1981 to 2010 for this station. A meteorological station has also been established at the BGP site to collect baseline data; however, at the time of document preparation, insufficient data was available to characterize the site. As such, the summary of baseline climatic conditions provided herein, is based on the available literature and data provided by government sources, primarily ECCC, Natural Resources Canada (NRCan) and the MTO (Amec Foster Wheeler 2016e). Other climate stations with normals data located within 200 km of the site (Wawa, Sault Ste. Marie or Timmins) are included for comparison purposes; however, the Chapleau A meteorological station is the primary focus due to its proximity.

The mean annual temperature at Chapleau Airport is 2.0°C. Mean monthly temperatures for nearby climate stations are provided in Table 5-1. The warmest month is July (mean temperature of 17.2°C) and the coldest month is January (mean monthly temperature of -5.6°C; ECCC 2015).

Mean annual precipitation for the BGP is 809 mm, with 545 mm of this total falling as rain (ECCC 2015). Mean monthly precipitation values are provided in Table 5-2. Most precipitation occurs in the summer and fall months. The 1981 to 2010 Canadian Climate Normals show an extreme precipitation event of 83 mm of daily rainfall occurring June 27, 1991 (Amec Foster Wheeler 2016e).

Based on data published by the Hydrological Atlas of Canada (NRCan 1978) the BGP region experiences 450 to 550 mm/year of lake evaporation and 400 to 500 mm/year of evapotranspiration. The nearest evaporation data for the Borden Gold site is available from the Moosonee Climate Station (Station 6075425) located approximately 422 km northeast of the BGP

site. Data from the Moosonee station for the most recent period (1981 to 2010) is summarized in Table 5-3 (Amec Foster Wheeler 2016e).

The Chapleau Airport meteorological station stopped collecting 24-hour wind data in 2009 (daytime wind readings only); and there are a notable number of missing hours in the wind data set. Typical wind directions during winter months at Chapleau tend to be from the northwest; spring winds from the west / north; summer winds from the southwest; and autumn winds from the southwest. Maximum gusts from the 1981 to 2010 climate normal range from 63 to 89 kilometres per hour (km/hour), generally from a southwest direction (ECCC 2015). The Canadian Wind Energy Atlas predicts an average annual wind speed of 4.01 metres per second (m/sec; 14.4 km/hour) at 30 m above the BGP; ground level winds are expected to be less.

5.1.2 Air Quality

The BGP is located in a rural area, approximately 6 km from the nearest community (Brunswick House First Nation). Ambient air quality is expected to be influenced by both natural and anthropogenic sources, such as pollen, forest fires, traffic along Highway 101 and dust from industry in Chapleau. Long range transport would be expected on the smaller particulate size fractions, nitrogen dioxide (NO_2) and sulphur dioxide (SO_2).

Goldcorp established an air quality monitoring station at the BGP site during 2016. Equipment at this site is constrained to solar powered equipment as no Provincial electrical connection is available at site. A second air quality monitoring station was established at Brunswick House First Nation, the nearest location for connection to the electrical grid (Amec Foster Wheeler 2016g).

The air quality monitoring station at the Project site includes the following equipment:

- PQ200 ambient air quality sampler (calibrated for $PM_{2.5}$);
- Dustfall jar (dustfall);
- Passive sampler (SO_2 and NO_2); and
- A meteorological station (no precipitation data).

The air quality monitoring station at Brunswick House First Nation includes:

- High volume air sampler (total suspended particulate and metals);
- PQ200 ambient air quality sampler (calibrated for $PM_{2.5}$);
- Dustfall jar (dustfall);
- Passive sampler (SO_2 and NO_2); and
- A meteorological station (including precipitation data).

The air quality monitoring stations began collecting data in February 2016; however, at the time of report preparation, analyzed data from the air quality monitoring stations was not available.

Estimates of background concentrations for other commonly assessed air quality parameters (ozone; nitrogen oxides: NO, NO_2 and NO_x), as well as for $PM_{2.5}$, can be determined from Provincial air quality measurements from the nearest Provincial ambient air quality station in Sault Ste. Marie (Table 5-4). Lower 10th to 30th percentile air quality values are generally considered to represent background air quality values, not influenced by anthropogenic activities.

Air quality concentrations for key metals and metalloids (arsenic, cadmium, lead and mercury) are not measured at the Sault Ste. Marie station. Background concentrations of these parameters are generally assumed to be nil.

5.1.3 Sound

The area surrounding the BGP site is characterized by natural wilderness areas, lakes, seasonal cottages, permanent homes and trailer parks. The closest community is approximately 6 km to the southwest of the site (Brunswick House First Nation).

The area surrounding the BGP can be considered as Class 3 (a rural area with an acoustical environment that is dominated by natural sounds having little or no road traffic) based on the MOECC Environmental Noise Guideline (NPC-300), *Noise Assessment Criteria for Stationary Sources and for Land Use Planning.*

Five representative locations were selected for baseline sound measurements (Figure 5-1). The locations were chosen to reflect cottages and a trailer park located near the BGP. The data collection is ongoing throughout 2016, with the baseline sound data referenced herein was collected in January, 2016. Based on information available to date from ongoing baseline investigations, average winter daytime sound levels at the trailer park were 51 A-weighted decibels (dBA), and 25 to 31 dBA at the cottages (Amec Foster Wheeler 2016d). Average winter night-time sound levels were 50 dBA at the trailer park and 23 to 29 dBA at the cottages.

It is anticipated that background sound levels may vary throughout the calendar year. Variations in sound levels within the environment are expected due to intermittent events and seasonal trends relating to natural environmental effects (weather), wildlife activity and local anthropogenic activity (summer recreational activity).

5.1.4 Ambient Light

Ambient light levels vary with time of day, season, degree of cloud cover and forest canopy. Goldcorp has initiated a field program to measure nighttime light levels at the BGP site and select offsite locations, under a variety of atmospheric conditions. There are currently minimal anthropogenic (human-influenced) light sources in the immediate site area, although headlights from vehicles travelling on Highway 101 are noticeable at night.

5.1.5 Terrain and Geology

The ground surface generally undulates between northeast-southwest orientated ridges and shallow troughs on a regional scale, reflecting the glacial history of the area. The typical difference in elevation between the ridges and valleys is on the order of 30 to 40 m. Overall, the surface slopes gently towards the northeast in the region. Site topography varies from 427.7 meters above sea level (masl) at Borden Lake to more than 460 masl in the northeast part of the BGP site (Figure 5-2).

The BGP site is situated within the Kapuskasing Structural Zone of the Precambrian Shield within the northeastern region of Ontario. The Kapuskasing Structural Zone is a narrow, 500 km length feature that extends from James Bay to the eastern shore of Lake Superior, between the more extensive Wawa and Abitibi subprovinces to the north and south, respectively. The site is on the south side of an east-west orientated synform structure of strongly metamorphosed volcanic, sedimentary and supracrustal rocks. The local bedrock is predominantly amphibolite or mafic to felsic gneiss that has been intersected by a large number of intrusive units. The intruding rock includes: diorite, diabase, ultramafic and pegmatite dikes.

Overburden is thin to absent in a large area in the north part of the Project site; but the thickness is quite variable even over short distances, reflecting undulations in the underlying bedrock surface. Bedrock outcrops along several locations of the shoreline of Borden Lake and in the upper portion of Borden River just downstream of Borden Lake. Outcrops have also been mapped adjacent to minor creeks in the area (Amec Foster Wheeler 2016f).

Overburden mapping indicates that local overburden where present, is mostly composed of one of three overburden units:

- Coarse sandy till found on top of bedrock and frequently beneath other overburden units;
- Glaciofluvial sand and gravel, typically forming ridges; or
- Glaciolacustrine sand frequently found under peat units (Amec Foster Wheeler 2016f).

5.1.6 Hydrology

The BGP site is located within the Borden Lake / Borden River watersheds (Figure 5-3). Borden Lake has a surface area of approximately 1,641 ha, and a watershed area of approximately 8,280 ha. Water from Borden Lake flows in a northerly direction to the Borden River through a small dam located at the northwest corner of the lake. The dam is constructed of log crib and wooden decking and is maintained by the MNRF. It is approximately 1.3 m in height and 4.5 m wide (AECOM 2014). The dam height is essentially fixed and not actively raised or lowered (pers. comm., MNRF 2015).

Borden River drains under Highway 101 and flows in a northeasterly direction before flowing into the Nemegosenda River at Lake Nemegosenda. The Nemegosenda River continues on in a northeastern direction eventually draining into (in order), the Kapuskasing River, Mattagami River, Moose River, before reporting ultimately to James Bay (Amec Foster Wheeler 2016b). The watershed area of the Borden River at the Highway 101 crossing approximately 500 m downstream of the Borden Lake outlet is approximately 8,432 hectares (ha), inclusive of Borden Lake. A local road / snowmobile trail crosses the Borden River approximately 5 km downstream of Highway 101, at which point the Borden River has a watershed area of approximately 11,457 ha. Project hydrometric stations have been established at these locations (Figure 5-3).

The majority of the surface water from the BGP site drains by gravity into Borden Lake through Unnamed Tributary 1 (into eastern arm of Borden Lake) or Unnamed Tributary 2 (into Grout Bay of Borden Lake). Additional areas drain directly to Borden Lake via sheet flow; north of Highway 101 drains through Unnamed Tributary 3 into Borden River. The drainage area to Unnamed Tributaries 1 and 2 are provided in Figure 5-3. During summer and early fall periods, spot flow measurements showed that these tributaries can go to near zero flow conditions (Amec Foster Wheeler 2016b). It has not been possible to establish ongoing monitoring stations on these tributaries due to the complications of low gradient, small systems and frequent beaver impoundment.

Since there are no long term flow records for the Borden River, streamflow records for nearby WSC stations were reviewed (Amec Foster Wheeler 2016b). Based on the review, the Nemegosenda River has been used as the basis to determine the average flows in Borden River by prorating. The average flow rate for the WSC Nemegosenda River station (04LE002) based on available data from 2006 to 2014 is 4.12 m^3/s (356,000 m^3/day). The Nemegosenda River flow statistics are provided in Table 5-5. An estimate of runoff conditions for the tributaries in the site area has been developed by directly prorating the data developed in Table 5-5 for the Nemegosenda River. Annualized, prorated flows for the smaller site area tributaries are provided in Table 5-6 (Amec Foster Wheeler 2016b).

The greatest monthly average flow rates occur in the spring, in April and May, coinciding with the snow melt period. Lowest flows recorded are shown to occur during the mid-winter months (January through March), when precipitation is accumulated and held as snow and ice, and in mid to late summer (Amec Foster Wheeler 2016b).

5.1.7 Surface Water Quality

Baseline water quality sampling has been conducted periodically since 2011. The program was more formalized as staffing became available. Monthly sampling is now ongoing locations around the BGP site, excluding when conditions are unsafe (Figure 5.4).

Water samples were collected in March, May and October 2015 to support the ongoing baseline conditions assessment for the BGP site, including from the following waterbodies / watercourses:

- Unnamed Tributary 1 (Trib-1);
- Unnamed Tributary 2 (Trib-2);
- Borden River (BR-1 and BR-2); and
- Borden Lake (BL-4, BL-9 and BL-11).

Surface water sampled near the BGP site generally met the Provincial Water Quality Objectives and Canadian Water Quality Guidelines for the protection of aquatic life, with a few occasional exceptions for phosphorus, fluoride, aluminum and iron. Tables 5-7a,b and c provide a summary of some of the surface water quality information collected previously.

5.1.8 Hydrogeology

Groundwater flow regionally is expected to be from the small higher elevation lakes that surround Borden Lake on the east and west sides, towards Borden Lake, particularly through areas with thicker sandy overburden sediments. There will also be groundwater flow north from Borden Lake towards the Borden River and its tributaries, including Emerald Lake which is located within 300 m of the northeast arm of Borden Lake, but an elevation that is 14 m lower than Lake Borden. As Borden Lake is situated near the divide between rivers draining towards Lake Superior and James Bay, deeper regional groundwater flow is expected to be away from the lake in either direction, with groundwater flow originating in the northern part of the lake, flowing towards the north.

The hydrogeologic system at the BGP site consists of bedrock with various degrees of fracturing or faulting, overlain by a relatively thin veneer of primarily sandy sediments. Groundwater flow is expected to occur mostly in the sands which will also serve as a reservoir of groundwater, with only relatively limited flow through fractures in the bedrock. Measured groundwater levels suggests that the groundwater flow occurs radially outwards from two higher topography areas located near the centroid of the BGP site on either side of Unnamed Tributary 1, towards either Borden Lake or the Borden River.

While the bulk of the bedrock at the site is expected to have a relatively low hydraulic conductivity and therefore expected to transmit groundwater at relatively limited rates, much of the overburden at the site is sandy and capable of transmitting and storing significant quantities of water. Data to date suggests that there is a lack of large seasonal variation in the groundwater levels in the western part of the site, likely reflects a good hydraulic connection between the lake and the shallow groundwater flow system in this area, which rapidly dampens any groundwater level rises associated with recharge events. Conversely the large seasonal variations in the drill holes in the central and eastern parts of the site likely reflect a much poorer hydraulic connection to the lake.

5.1.9 Aquatic Environment

There have been a number of aquatic field programs that have characterized the aquatic environment around and near the BGP site that are continuing during 2016. The 2015 Aquatic Environment Baseline Program focused on portions of the Borden River, a number of unnamed lakes / ponds as well as unnamed tributaries that report to Borden River or Borden Lake (Amec

Foster Wheeler 2016a). The aquatic habitat in the BGP study area was categorized into nine habitat types (Figures 5-4 and 5-5). The fish species and habitat types are typical of the cool to cold water aquatic environments common in the boreal forest region of northern Ontario. None of the fish species encountered during sampling of the waters of the BGP constitute Species at Risk (SAR) as defined by the Committee on the Status of Endangered Wildlife in Canada, the Species at Risk Act, or by the Committee of the Status of Species at Risk in Ontario (Amec Foster Wheeler 2016a).

Unnamed Tributary 1

Unnamed Tributary 1 has headwaters approximately 500 m south of Highway 101, and flows south through a series of beaver dams. The length of Unnamed Tributary 1 from the headwaters to its confluence with Borden Lake is approximately 1,863 m, with a total drainage area of approximately 1.3 km^2. The largest proportion of defined channel length of Unnamed Tributary 1 is characterized by low gradient sections. The remainder of the tributary included small reaches of narrow rocky channel, small ponded areas created by beaver dam activity, and large ponded areas created by beaver dam activity. Based on thermal guild classifications, the tributary is dominantly cold water in the spring and fall, while a mix of cold water (55%), cool water (39%), and warm water (6%) in the summer.

Seven fish species were captured in Unnamed Tributary 1 during the 2015 field studies including: Brook Stickleback (*Culaea inconstans)*, Common White Sucker (*Catostomus commersonii*), Fathead Minnow (*Pimephales promelas)*, Finescale Dace (*Phoxinus neogaeus*), Northern Pike (*Esox lucius)*, Northern Redbelly Dace (*Chrosomus* eos) and Pearl Dace (*Margariscus margarita)*. Two different fish species were captured at the mouth of Unnamed Tributary 1 to Borden Lake: Walleye (*Sander vitreus*) and Yellow Perch (*Perca flavescens)*. Brook Stickleback were the most abundant fish species captured in Unnamed Tributary 1 during the 2015 studies. Large bodied fish were captured more successfully in the lower reaches of the tributary.

Sediment particle size was variable among Unnamed Tributary 1 sample locations. Benthic communities were dominated by Chironomid taxa, which may suggest poor quality habitats. Ephemeroptera, Plecoptera and Trichoptera taxa had a low percent community composition at all sampling stations. These taxa are pollution sensitive and sometimes used as an indicator of good water quality (Amec Foster Wheeler 2016a).

Unnamed Tributary 2

Unnamed Tributary 2 has a drainage area of approximately 0.40 km^2, and the headwaters consist of several intermittent channels draining into a large forested bog. The length of the main channel from the headwaters to its confluence with Borden Lake is approximately 680 m. The water from the headwater ponded area is contained by a large beaver dam (approximately 30 m in length and 0.75 m in height), situated at the northern extent where water seeps into a narrow channel.

The largest proportion of defined channel length of Unnamed Tributary 2 is characterized by low gradient sections. The remainder of the tributary included small reaches of narrow rocky channel, as well as small ponded areas and large waterbodies resulting from beaver activity. Based on thermal guild classifications, the tributary is dominantly cold water in the spring, summer and fall.

Four fish species were captured in Unnamed Tributary 2 during the 2015 field studies: Brook Stickleback, Common White Sucker, Finescale Dace and Northern Redbelly Dace. Seven fish species were captured at the mouth of Unnamed Tributary 2 to Borden Lake including Blacknose Shiner (*Notropis heterolepis*), Brook Stickleback, Burbot (*Lota lota*), Common White Sucker, Iowa Darter (*Etheostoma exile*), Walleye and Yellow Perch. Brook Stickleback was the most abundant species captured in Unnamed Tributary 2 during the 2015 studies. Large bodied fish species were captured successfully in the lower reaches of the tributary and at the tributary mouth.

Sediment particle size was variable among Unnamed Tributary 1 sample locations. Benthic communities were dominated by Chironomid taxa, which may suggest poor quality habitats. In addition, other Unnamed Tributary 2 taxa listed in order of high relative abundance include Sphaeriidae, Tabanidae and Chaoboridae (Amec Foster Wheeler 2016a).

Unnamed Tributary 3

A portion runoff from the BGP drains northward through an existing culvert under Highway 101, eventually forming the headwaters of Unnamed Tributary 3. The length of the Unnamed Tributary 3 channel is 1,402 m, with a drainage area of approximately 1.4 km^2. The largest proportion of defined channel length of Unnamed Tributary 3 is characterized by low gradient sections. The remainder of the tributary included small reaches of narrow rocky channel, small ponded areas created by beaver dam activity, and large ponded areas created by beaver dam activity.

Five fish species were captured in Unnamed Tributary 3 during the 2015 field studies: Brook Stickleback, Common White Sucker, Finescale Dace, Northern Pike and Northern Redbelly Dace.

Sediment particle size was variable among Unnamed Tributary 3 sample locations, depending on habitat type. Benthic communities were dominated by Chironomid taxa, which may suggest poor quality habitats. Ephemeroptera, Plecoptera and Trichoptera taxa had a low percent community composition at all sampling stations. These taxa are pollution sensitive and sometimes used as an indicator of good water quality. Other Unnamed Tributary 3 taxa present in high abundance, listed in order of relative abundance included Sphaeriidae, Leptophlebiidae, Elmidae and Planorbidae (Amec Foster Wheeler 2016a).

Borden Lake

Borden Lake is a cold water lake which forms the primary headwaters of the Borden River. The lake is located within MNRF Fisheries Management Zone 8 and supports recreational use by Aboriginal groups, local cottage owners, tourists and anglers.

Fish community records from the MNRF for Borden Lake show the presence of many fish species including: Walleye, Smallmouth Bass (*Micropterus dolomieu)*, Northern Pike, Whitefish, Yellow Perch, Iowa Darter (*Etheostoma exile)*, Blacknose Shiner (*Notropis heterolepis),* and Lake Trout (*Salvelinus namaycush)*. In addition, there are historical reports of stocked Lake Trout populations from 2007 and 2008, as well as catch records of Brook Trout (*Salvelinus fontinalis*) in the tributaries to Borden Lake. There is however, no recent data confirming the presence of Lake Trout or Brook Trout in Borden Lake (Amec Foster Wheeler 2016a).

The northwest area of Borden Lake, known locally as Grout Bay, contains spawning shoals for Walleye and Smallmouth Bass, and is a designated MNRF fish sanctuary. The northeast section of the lake contains Walleye and Whitefish (*Coregonus clupeaformis*) spawning habitat.

Borden River

The headwaters of Borden River near Borden Lake (Grout Bay) meanders northeast for approximately 900 m through a series of varied reaches: wide channels containing depositional fines; gravel and cobble reaches; and reaches exhibiting narrow channel widths and fast moving water. This length of the river has multiple large gradient changes of up to 20% as well as containing the twin box culverts beneath Highway 101. Thereafter, the Borden River gradient flattens out as a wide channel with depositional fines for approximately 3 km, ultimately reporting to Unnamed Lake 4.

The Borden River from the outflow of Borden Lake to the northeastern extent of the BGP study area is approximately 7,336 m in length (Figure 5-3). The largest proportion of defined channel length is typical of low gradient sections. Based on thermal guild classifications, the river is dominantly cold water (100%) in the spring, while a mix of cold water (32 to 40%), cool water (56 to 67%), and warm water (1 to 4%) is present in the summer and a mix of cold water (74 to 76%) and cool water (24 to 26%) is present in the fall.

Eight fish species were captured in the Borden River during the 2015 field studies including, Common White Sucker, Johnny Darter (*Etheostoma nigrum*), Longnose Dace (*Rhinichthys cataractae*), Northern Pike, Northern Redbelly Dace*,* Smallmouth Bass, Walleye and Yellow Perch. Northern Pike and Common White Sucker were the most abundant fish species caught in the Borden River in 2015.

Sediment particle size was variable among Borden River sample locations. Benthic communities were dominated by Chironomid taxa, which may suggest poor quality habitats. In addition, other Borden River taxa listed in order of high relative abundance include Hyalellidae, Sphaeriidae and Leptoceridae (Amec Foster Wheeler 2016a).

5.1.10 Vegetation

The BGP is located within the northeastern region of Ontario in Ecoregion 3E and the Missinaibi-Cabonga Forest Sections of the Boreal Forest Region. In 2015, Amec Foster Wheeler conducted

comprehensive vegetation surveys. The vegetation and wildlife communities identified during field programs are typical of those inhabiting the mixed-boreal forest region of northern Ontario. The BGP study area is comprised of 13 distinct plant communities as summarized in Table 5-8 and illustrated on Figure 5-7. Mature upland forests (76.9%) and wetland habitats (20.4%) comprise the majority of the BGP study area, with the remainder unclassified due to disturbance (1.5%) and inaccessibility (1.2%).

The terrestrial environment is largely composed of upland communities comprised of Trembling Aspen (*Populus tremuloides*), Balsam Poplar (*Populus balsamifera*), White Birch (*Betula papyrifera*), Balsam Fir (*Abies balsamea*), Black Spruce (*Picea mariana*) and White Spruce (*Picea glauca*) and low-lying areas overlain by organic deposits. Areas of organic deposits with Black Spruce and Eastern White Cedar (*Thuja occidentalis*) communities occur on the poorly drained areas. Larch (*Larix laricina*) is present largely in fen areas and wet habitats with flowing surface water. 189 species of vascular and non-vascular plant species were recorded within the BGP study area (Amec Foster Wheeler 2016c).

Approximately 158 ha (1.5% cover) was unclassified and typically describes areas disturbed by some sort of development. There is a history of forestry and recreation in the area which is reflected by the vegetation structure within parts of the study area. Vegetation communities include young and mature stands of trembling aspen, white birch and to a lesser extent balsam fir and white spruce, all of which are considered pioneer species, colonize recently disturbed areas.

5.1.11 Wildlife

Birds

Data from the Atlas of Breeding Birds in Ontario (Cadman et al. 2007) describes 96 species as possible, probable or confirmed breeders in the vicinity of the BGP study area. Amec Foster Wheeler conducted two rounds of breeding bird surveys at 128 stations at the BGP site and environs during the 2015 breeding bird season. During the program, a total of 84 bird species were recorded during standardized point counts surveys. The five most common birds, recorded an average of at least once at each station, include the: Red-eyed Vireo (*Vireo olivaceus*), White-throated Sparrow (*Zonotrichia albicollis*), Nashville Warbler (*Oreothlypis ruficapilla*), Swainson's Thrush (*Catharus ustulatus*) and Magnolia Warbler (*Setophaga magnolia*).

Three avian SAR, all designated as species of Special Concern by the *Endangered Species Act*, were observed during field surveys: Bald Eagle (*Haliaeetus leucocephalus*), Canada Warbler (*Cardellina canadensis*) and Common Nighthawk (*Chordeiles minor*). Habitat for six additional SAR was also documented within the study area but birds were not encountered (Eastern Wood-pewee (*Contopus virens*), Golden Eagle (*Aquila chrysaetos*), Golden-winged Warbler (*Vermivora chrysoptera*), Olive-sided Flycatcher (*Contopus cooperi*), Rusty Blackbird (*Euphagus carolinus*) and Wood Thrush (*Hylocichla mustelina*)). Of these species only the Golden Eagle is afforded protection under Sections 9 and 10 of the *Endangered Species Act*; however, the Golden Eagle

does not breed this far south in Ontario, although it may be seen in the area during their spring and fall migration.

During the 2015 spring aerial survey, eight stick nests were observed across the study area, but only four of these nests were considered active at the time of observation: two Bald Eagle nests and two Osprey (*Pandion haliaetus*) nests (Amec Foster Wheeler 2016c). None are close to the proposed project development.

Mammals

The Atlas of the Mammals of Ontario indicates that 35 mammalian species may occur in the general vicinity of the study area (Dobbyn 1994). The majority of the other species listed in the Atlas of the Mammals of Ontario as potentially occurring within the study area are small and difficult to detect using standard, non-invasive methods; nonetheless, many of these species may occur within the Study Area.

Visual sightings, evidence (e.g., scat, tracks and vocalizations) revealed evidence of the following mammal species within the study area during field programs to date: Snowshoe Hare (*Lepus americanus*), Red Squirrel (*Tamiasciurus hudsonicus*), Beaver (*Castor canadensis*), American Marten (*Martes americana*), Mink (*Neovision vision*), River Otter (*Lontra canadensis*), Porcupine (*Erethizon dorsatum*), Canada Lynx (*Lynx canadensis*), American Black Bear (*Ursus american*), Gray Wolf (*Canis lupus*), Red Fox (*Vulpes vulpes*), Eastern Coyote (*Canis latrans*), White-tailed Deer (*Odocoileus virginianus*) and Moose (*Alces*; Amec Foster Wheeler 2016c; AECOM 2014a). Very few sightings or tracks were found in the direct footprint of the mine. Acoustic surveys during summer 2015, indicated the presence of three bat species: Eastern Red Bat (*Lasiurus borealis*), Silver-Haired Bat (*Lasionycteris noctivagans*) and Hoary Bat (*Lasiurus cinereus*). No candidate hibernacula or maternity roosting habitat for bats was identified and the relatively low bat activity (e.g. low number of passes recorded) within the study area indicates that bat numbers are likely low in the area.

Several candidate significant wildlife habitats were also identified within the BGP study area although not at the BGP site: Bald Eagle and Osprey Nesting Habitat, Amphibian Breeding Habitat and Movement Corridors, Woodland Raptor Nesting Habitat, Aquatic Feeding Areas, Waterfowl Nesting Areas Mast Producing Areas and others.

Amphibians and Reptiles

Ten amphibian species were identified based on a review of the Ontario Herpetofaunal Atlas (Oldham and Weller 2000) as occurring in the vicinity of the study area (Table 3-8). Spring Peeper (*Pseudacris crucifer*), Green Frog (*Lithobates clamitans*), American Toad (*Anaxyrus americanus*) and Wood Frog (*Lithobates sylvatica*) were recorded during the night amphibian calling surveys at the BGP site. These species are generally associated with wetlands and vernal pools during the breeding season; and aside from the Green Frog, are largely terrestrial outside the breeding season in the summer months.

Two reptile species were identified in the review of the Ontario Herpetofaunal Atlas (Oldham and Weller 2000) as occurring within the vicinity of the study area: Eastern Gartersnake (*Thamnophis sirtalis*) and Midland Painted Turtle (*Chrysemys picta marginata*). No reptiles were observed during the 2015 field surveys.

5.1.12 Setting of Offsite Existing Infrastructure / Facilities

Highway 101

Highway 101 is a Provincially maintained, paved two-lane highway that connects Wawa in the west to the Ontario – Quebec border in the east. Between the BGP and Timmins, the road traverses rolling terrain with a variety of topographic relief. Closer to Timmins the highway passes through somewhat flatter terrain.

Air quality and noise along the road and within a short distance adjacent to the road, is somewhat impaired as compared to northern Ontario wilderness areas, due to the regular traffic on the highway and existing industrial operations. Traffic on Highway 101 varies by time of day and season. The average daily traffic volume along the proposed BGP ore transport route (Highway 101 and Municipal roads) ranged from 580 to 9,000 vehicles per day in 2010 as reported by the Ministry of Transportation, with daily traffic volumes between the BGP site and Highway 144 (the less developed section) averaging 580 to 1,000 vehicles per day (MTO 2016).

Highway 101 crosses a region of relatively frequent lakes, rivers, ponds and creeks. There are numerous water bodies and watercourses of various scales adjacent to or crossed over by Highway 101. This includes the: Nemegosenda River, Groundhog River, Mattagami River, Crawford River, Ivanhoe River and Kamiskotia River.

The highway will passes through a mixed-boreal forest. Wildlife and birds present in the area are typical of northeastern Ontario, and include Black Bear and Moose. There is a history of forestry in the area which is reflected in the vegetation communities immediately adjacent to the highway and as readily apparent from satellite imagery for the region. Closer to Timmins, the vegetation structure reflect additional industrial and urban development. Figure 3-9 provides an overview of land use along Highway 101. Timmins is a city with a population of approximately 43,000 people. Highway 101 through Timmins reflects an urban setting with associated land uses.

The majority of the route east of the BGP passes through natural, undeveloped lands, although there are some localized developments periodically along the route including forestry operations (Figure 3-9). As shown on the figure, there are no First Nation Reserves adjacent or proximal to the Highway 101 between the BGP site and the Dome Processing Facility. This section of Highway 101 is located within the boundaries of Treaty No. 9.

Dome Processing Facility

The Dome Processing Facility is located within the historic Dome Mine site, southeast of Timmins (Figure 3-9). It is situated in an industrial area with no proximal natural lands. There are no environmentally sensitive areas proximal to the plant.

5.2 Key Environmental Aspects

A preliminary assessment of the potential environmental effects of the BGP operation is provided in Tables 5-9 and 5-10 to assist the CEA Agency in determining the need for an EIS and the scope of the EIS if determined to be required. Table 5-9 focusses on the potential environmental effects from construction, operation and closure of the BGP. Table 5-10 provides an overview of potential incremental environmental effects associated with the shipment and processing of BGP ore over existing infrastructure and at an existing facility offsite (Highway 101 and the Dome Processing Facility). A comprehensive assessment of environmental effects along proposed mitigation measures to reduce potential impacts will be provided in the EIS.

The Province of Ontario has stringent regulatory requirements for emissions, discharges and waste management. The BGP will comply with all regulatory requirements, as well as approvals obtained from the Federal and Provincial governments specific to the BGP.

Direct environmental effects from the BGP are anticipated to be limited primarily to the BGP site, and the immediate downstream area in the Borden River, the receiving waterbody of site effluent. No effects on Borden Lake are expected. While meeting regulatory requirements, there is the potential for noise and light emissions from the BGP site activities to disturb or bother others in the immediate area. This effect will be assessed as part of the EIS but is not expected to extend more than a few kilometres from the source location.

5.3 Potential Changes Related to Select Federal Legislation

5.3.1 Fisheries Act

Fish and Fish Habitat

A variety of fish species and fish habitat are present within the local watercourses and waterbodies within and downstream of the BGP site. Section 5.1.8 of this report provides further information.

No components of the BGP anticipated to be required to be placed within waterbodies or watercourses. All mineral wastes will be stored on land and will not overprint waters frequented by fish.

Natural drainage from the BGP site that does not contact the mine operational area will continue to flow by gravity either directly in Borden Lake or the Borden River, in order to maintain flows downstream and reduce effects. Unnamed Tributary 1 will continue to receive the majority of the

natural runoff from the BGP site, with a lesser portion of non-contact runoff flowing directly into the Borden Lake, or through Unnamed Tributary 2 to the Borden River.

All treated, contact water from BGP site including treated stockpile runoff and mine water, will be discharged to the Borden River which meanders northeast from Borden Lake. The BGP effluent pipeline is proposed to discharge onto a rock pad located above the high water mark of the Borden River, and flow by gravity into the river. No in-water work is proposed. As all contact water from the BGP site will be treated as necessary to meet regulatory requirements and to be fully protective of aquatic life, and no in-water work is proposed; direct and indirect effects to fish and fish habitat from effluent discharges are not expected.

BGP does not require any direct water takings from local waterbodies or watercourses and none are proposed. There may however be limited reductions in flow in local watercourses (potentially Unnamed Tributaries 1, 2 and 3) associated with the BGP which may result in an indirect limited effect on fish and fish habitat:

- Despite the very small footprint of the BGP site, the capture and management of site runoff from the operational area (i.e., collection of waters that comes into contact with operations) may reduce the flow in Unnamed Tributaries 1, 2 and 3, as the site is located in the headwaters of the very small drainage areas of the tributaries; and

- Dewatering associated with providing a safe mining environment underground may result in some reduction of flows within the watercourses immediately adjacent to the BGP site and may results in indirect effects if hydrogeological connections are present.

The rate of flow reduction to Unnamed Tributaries 1, 2 and 3, and the Borden River is under investigation. No effect on Borden Lake, including water levels, is expected.

There are no known Federal SAR fish species in the vicinity of the BGP.

No modification to Highway 101 is required to support transport of ore to the existing Dome Processing Plant, including modification to existing water crossings. Accordingly, no effects to fish or fish habitat are anticipated due to the shipment of BGP ore.

The BGP ore is proposed to be processed at the Dome Processing Plant. No material changes are required to the Dome Processing Plant to be able to process BGP ore, and no material changes are expected to result including to existing emissions, effluent and wastes from the plant, that are not already accommodated by existing approvals. As a result, no effects to fish or fish habitat are anticipated due to the processing of BGP ore.

Marine Plants

There are no marine environments close to the BGP site (or existing infrastructure / facilities to be used) and no effects to marine plants are possible.

5.3.2 Migratory Birds Convention Act

No direct effect on migratory birds is anticipated other than that associated with localized habitat removal. Clearing of vegetation and other similar work activities in migratory bird habitat are proposed to be completed outside of the active breeding season, generally avoiding the period of mid-April to the end of August. When this is not feasible, a nest survey will be conducted by a qualified avian biologist immediately prior to commencement of the work to identify and locate active nests of species covered by the *Migratory Bird Convention Act* for avoidance.

There is no additional habitat removal required for the transport or processing of BGP ore offsite, and no additional effects on migratory birds are anticipated apart from the potential for infrequent collisions with highway trucks.

5.4 Potential Changes Related to Federal Lands

There are no Federal lands in the vicinity of the BGP site, and no changes to Federal lands inside or outside of Ontario, nor inside or outside of Canada, are expected as a result of the BGP.

There are no changes to Federal lands associated with the transport and processing of ore from the BGP associated with existing offsite facilities.

5.5 Potential Effects on Aboriginal Peoples from the BGP

There are no anticipated direct effects from the BGP on First Nation Reserve lands. The closest First Nation Reserve to the BGP site is located approximately 6 km to the southwest (Brunswick House Reserve 76B; Figure 3-4). Neither the transport route (Highway 101 and Municipal roads), or the Dome Processing Facility are located on or near to Reserve lands (greater than 25 km distant; Figure 3-8). No effects on First Nation Reserve lands are expected by the use of existing offsite infrastructure / facilities.

The BGP site, as well as Highway 101 and the Dome Processing Facility, are located within the boundaries of Treaty No. 9 (Figure 3-9). The majority of the potential environmental effects related with the BGP will be confined to the BGP site itself and very local environs (all within Treaty No. 9 lands). There are no environmental effects expected from the BGP on other treaty lands (such as Robinson-Superior Treaty and Robinson-Huron Treaty lands; Figure 3-9) which are distant from the BGP site and existing infrastructures / facilities that will be used.

There is the potential that Aboriginal Traditional lands may be affected by the development and operation of the BGP. The BGP may overprint Traditional land, or may indirectly affect Traditional land through offsite air / sound emissions and effluent discharge. During the construction and operation phase to ensure, access by the general public and local Aboriginal community members to the Goldcorp held claims and leases will be considered based on prior arrangements being made with Goldcorp, in order to ensure the safety of these individuals as well as Goldcorp workers and contractors. If requested in advance, Goldcorp will support the ability to access portions of

these lands outside of the Project footprint to allow gathering of wild medicines, berries or other vegetation; as well as for Aboriginal cultural and ceremonial purposes, so that local Aboriginal people can undertake ceremonies at different times of the year to show respect for the land and its spiritual aspects.

After mining ceases and the site is fully reclaimed to a naturalized state, access to the lands will be safe for traditional land uses. Discussions will be held during closure planning to determine how such access would be provided. As all regulatory requirements will be met by the project, and reasonable access will be provided on request to lands outside the Project footprint, any effect is anticipated to be minor.

As indicated in Section 3.2.4, a TK / TLU study report was prepared by Olson et al. (2016) on behalf of the:

- Brunswick House First Nation;
- Chapleau Cree First Nation; and
- Chapleau Ojibwe First Nation.

Although their Traditional lands were not defined, the study indicates that members of these First Nations have used and continue to use the study areas defined in their report (within 250 m, 5 km and 25 km of the BGP footprint as then defined) for:

- Fishing (e.g., pickerel, pike and lake trout);
- Hunting and trapping (e.g., moose, partridge and rabbit); and
- Gathering subsistence plants (e.g., blueberries and raspberries) and medicines.

There are no known cultural sites, including archaeological sites that will be affected by the BGP based on Stage 1 and Stage 2 investigations (WHS 2015).

The BGP is not expected to have a negative effect on Aboriginal peoples related to such aspects as: Aboriginal fisheries, outfitting, guiding, cultural tourism or other Aboriginal businesses. Negative effects associated with the BGP are anticipated to be local to the site.

Animal and fish populations are not anticipated to be affected by project emissions and discharges that leave the BGP site. As a result, the ability to hunt, trap and fish, and gather subsistence plants and medicines is only expected to be compromised by direct land exclusion. For safety reasons, a somewhat larger area than the direct project footprint to be determined, will be excluded from public access, but Aboriginal people will continue to be able to access the majority of the BGP lands outside of the developed mine site footprint for traditional purposes, with Goldcorp escort on reasonable, advanced request.

All First Nations communities that have been approached with respect to the BGP have expressed a strong interest in employment and business opportunities with the proposed mine. Goldcorp intends to employ local, qualified workers to the greatest extent practical through all stages of the

development, operation and closure of the mine. A number of employment and economic opportunities for local First Nation members to date are discussed in Section 6.3. Employment and contracting opportunities have been and will continue to be raised with local First Nation communities to facilitate community access to employment and contracting opportunities.

The use of existing infrastructure and facilities (Highway 101 and the Dome Processing Facility) is not anticipated to affect ongoing Traditional land use by Aboriginal groups. There will be no change in footprint of either facility; and no changes to emissions, effluent and wastes are expected. There will be an increase in vehicle traffic on Highway 101 related to transport of ore is. Shipments associated with forestry and mining operations currently occur on the highway, and have occurred in the past. Highway 101 is a major, regional highway that connects northern Ontario and as a result has a considerable amount of vehicle traffic, including both passenger and recreational vehicles, as well as commercial vehicles such as: logging trucks, tankers, open bulk transports and tractor trailer trucks.

5.6 Cumulative Effects

The *Canadian Environmental Assessment Act, 2012* requires that the environmental assessment of a designated project take into account cumulative environmental effects that are likely to result from the designated project in combination with the environmental effects of other physical activities that have been or will be carried out.

For the BGP, it is anticipated this would include cumulative effects associated with the exploration program and advanced exploration program at the BGP site (Section 2.3.1). Goldcorp is purposefully developing the BGP (the mine), to expand and/or modifying facilities that are being developed during the advanced exploration program in order to minimize environmental disturbance as practical.

As part of the environmental assessment, a review will be completed to determine if there are other physical activities that will overlap with the residual environmental effects of the BGP. Goldcorp is unaware of any other projects, apart from the Borden advanced exploration program that could cause the BGP to have a cumulative effect on the environment.

Table 5-1: Mean Monthly Temperature

Climate Station	Distance to Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Chapleau A	10 km west	-15.6	-13.2	-7.1	1.7	9.5	14.8	17.2	15.9	11.2	4.2	-3.2	-11.2	2.0
Wawa A	130 km west	-14.0	-11.9	-6.5	1.6	8.1	12.6	15.1	15.3	11.4	5.0	-1.8	-9.5	2.1
Sault Ste. Marie 2	170 km southwest	-9.5	-7.8	-3.1	3.9	11.8	15.8	18.6	18.2	13.4	7.3	0.6	-5.9	5.3
Timmins Victor Power A	170 km northeast	-16.8	-14.0	-7.4	1.8	9.6	14.9	17.5	16.0	11.1	4.4	-3.4	-11.9	1.8
Porcupine Ont. Hydro	180 km northeast	-16.7	-13.7	-7.1	1.9	10.3	15.7	18.6	16.9	11.8	4.9	-3.2	-12.1	2.3
Kapuskasing CDA	180 km northeast	-18.6	-15.1	-8.5	0.8	9.1	14.5	17.2	16.1	10.9	4.2	-4.2	-13.2	1.1
Kapuskasing A	180 km northeast	-17.9	-15.0	-8.1	1.2	9.1	14.6	17.4	16.0	11.1	4.0	-4.1	-13.1	1.3
Sault Ste. Marie A	180 km southwest	-9.9	-9.0	-4.2	3.6	10.0	15.0	17.9	17.5	13.5	7.1	1.0	-5.7	4.7

Source: ECCC (2015) In degrees Celsius (°C)

Table 5-2: Mean Monthly Precipitation

Station	Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Chapleau A	Rainfall (mm)	2.0	1.8	12.7	28.7	66.0	80.3	82.2	76.0	94.7	71.0	24.0	5.9	545.1
	Precipitation (mm)	51.9	42.9	46.9	52.7	69.9	80.3	82.2	76.0	95.1	83.1	64.4	63.7	809.0
	Snowfall (cm)	55.6	45.6	36.6	23.4	3.8	0.0	0.0	0.0	0.3	11.5	42.2	62.7	281.5
Wawa A	Rainfall (mm)	2.3	5.3	18.8	47.0	74.6	82.2	96.1	92.5	121.8	107.0	48.3	12.0	707.8
	Precipitation (mm)	55.7	46.9	54.1	66.9	77.5	82.2	96.1	92.5	122.0	117.5	85.7	72.5	969.7
	Snowfall (cm)	72.1	55.8	40.1	18.4	2.8	0.0	0.0	0.0	0.2	9.7	40.5	79.8	319.4
Sault Ste. Marie 2	Rainfall (mm)	7.1	7.5	26.0	52.8	72.8	77.1	74.0	90.0	107.8	103.1	58.1	16.3	692.5
	Precipitation (mm)	97.7	52.3	66.8	71.9	73.0	77.1	74.0	90.0	107.8	112.3	101.9	115.7	1040.5
	Snowfall (cm)	90.6	44.8	40.9	19.1	0.3	0.0	0.0	0.0	0.0	9.2	43.9	99.4	348.0
Timmins Victor Power A	Rainfall (mm)	3.2	1.7	14.1	30.1	62.3	83.2	90.9	81.6	83.7	68.1	30.9	8.5	558.3
	Precipitation (mm)	51.8	41.3	54.5	56.2	67.4	83.4	90.9	81.6	84.7	82.5	75.9	64.5	834.6
	Snowfall (cm)	57.8	45.9	44.8	27.2	5.0	0.2	0.0	0.0	1.0	15.1	49.0	65.2	311.3

Source: ECCC (2015)

Table 5-3: Mean Daily Lake Evaporation

Station	Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Moosonee Climate Station	Lake evaporation (mm)	0	0	0	0	0	3.5	3.5	2.8	1.8	0.9	0	0	0

Source: ECCC (2015)

Table 5-4: Mean Annual Regional Background Air Quality Data

		Sault Ste Marie, Ontario (NAPS Station 60709, AQI Station 71078)					Toronto, Ontario (NAPS Station 64101, AQI Station 35125)					Sudbury, Ontario (NAPS Station 60610, AQI Station 77233)
Parameter	**AAQC**	**2010**	**2011**	**2012**	**2013**	**2014**	**2010**	**2011**	**2012**	**2013**	**2014**	**2014 (no previous recent data)**
NO_2 (ppb)	100 (24 hr) 200 (1 hr)	5 (3) * 5 (5)	5 (3) 5 (5)	5 (2) 5 (4)	5 (3) 5 (5)	5 (3) 5 (5)	-	-	-	-	-	-
NO (ppb)	9,000 ($\mu g/m^3$)	2 (1)	2 (3)	2 (2)	1 (3)	2 (3)	-	-	-	-	-	-
O_3 (ppb)	80	28 (11)	28 (11)	29 (12)	29 (11)	28 (11)	-	-	-	-	-	-
$PM_{2.5}$ Mean ($\mu g/m^3$)	30 -	4 (3)	4 (3)	4 (4)	6 (3)	6 (3)	-	-	-	-	-	-
$PM_{2.5}$ 98^{th} percentile ($\mu g/m^3$)	-	13	15	14	15	15	-	-	-	-	-	-
PM_{10} ($\mu g/m^3$)	50	-	-	-	-	-	-	-	-	-	-	7 (5)
CO (ppm)	13 (8 hr) 30 (1 hr)	-	-	-	-	-	0.2	0.2	0.3	0.3	0.3	-
SO_2 (ppb)	100 (24 hr) 250 (1 hr) 20 (annual)	1 (1) 1 (3) -	1 (2) 1 (3) -	1 (1) 1 (3) -	1 (1) 1(3) -	1 (1) 1 (3) -	-	-	-	-	-	-

Sources: ECCC (2016a); MOECC (2012)
Notes: AAQC: MOECC Ambient Air Quality Criteria
* Standard deviations (+ / -) given in brackets
These measurements reflect impacted locations.

Table 5-5: Nemegosenda River Flows

Year	Jan (m^3/s)	Feb (m^3/s)	Mar (m^3/s)	Apr (m^3/s)	May (m^3/s)	Jun (m^3/s)	Jul (m^3/s)	Aug (m^3/s)	Sep (m^3/s)	Oct (m^3/s)	Nov (m^3/s)	Dec (m^3/s)	Mean (m^3/s)	Mean Annual Runoff (mm)
Nemegosenda River Flows - WSC Station 04LE002 (Watershed Area 432 km^2)														
Mean	2.61	2.17	2.86	5.85	9.96	5.88	3.55	2.55	2.90	4.19	4.98	3.64	4.26	311.1
5th Percentile [1]	1.575	1.310	1.725	3.526	6.005	3.544	2.141	1.539	1.747	2.523	3.002	2.191	2.569	187.5
95th Percentile [2]	3.888	3.234	4.258	8.702	14.820	8.747	5.283	3.797	4.311	6.227	7.408	5.407	6.340	462.8
Mean Runoff (mm)	16.2	12.2	17.7	35.1	61.8	35.3	22.0	15.8	17.4	26.0	29.9	22.5		
Nemegosenda River Prorated to Borden River (CF 3) watershed area = 84.32 km^2														
Mean	0.510	0.424	0.559	1.142	1.945	1.148	0.693	0.498	0.566	0.817	0.972	0.709	0.83	311.1
5th Percentile [1]	0.308	0.256	0.337	0.688	1.172	0.692	0.418	0.300	0.341	0.493	0.586	0.428	0.50	187.5
95th Percentile [2]	0.759	0.631	0.831	1.699	2.893	1.707	1.031	0.741	0.841	1.215	1.446	1.055	1.24	462.8
Nemegosenda River Prorated to Borden River (CF 4) watershed area = 114.57 km^2														
Mean	0.693	0.576	0.759	1.551	2.642	1.559	0.942	0.677	0.769	1.110	1.321	0.964	1.13	422.8
5th Percentile [1]	0.418	0.347	0.458	0.935	1.593	0.940	0.568	0.408	0.463	0.669	0.796	0.581	0.68	254.8
95th Percentile [2]	1.031	0.858	1.129	2.308	3.930	2.320	1.401	1.007	1.143	1.652	1.965	1.434	1.68	628.9

Notes:

1 Calculated as mean monthly flow x (2.569/4.262) (i.e., the monthly values are annualized)
2 Calculated as mean monthly flow x (6.340/4.262) (i.e., the monthly values are annualized)

Table 5-6: Flow Estimates for Site Tributaries

Creek / Condition	Watershed Area (km^2)	Calculated Flow (m^3/s)													Mean Annual Runoff (mm)
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean	
Unnamed Tributary 1															
Mean [1]	1.30	0.008	0.007	0.009	0.018	0.030	0.018	0.011	0.008	0.009	0.013	0.015	0.011	0.013	311.1
5th Percentile [2]		0.005	0.004	0.005	0.011	0.018	0.011	0.006	0.005	0.005	0.008	0.009	0.007	0.008	187.5
95th Percentile [3]		0.012	0.010	0.013	0.026	0.045	0.026	0.016	0.011	0.013	0.019	0.022	0.016	0.019	462.8
Unnamed Tributary 2															
Mean [1]	0.85	0.005	0.004	0.006	0.012	0.020	0.012	0.007	0.005	0.006	0.008	0.010	0.007	0.008	311.1
5th Percentile [2]		0.003	0.003	0.003	0.007	0.012	0.007	0.004	0.003	0.003	0.005	0.006	0.004	0.005	187.5
95th Percentile [3]		0.008	0.006	0.008	0.017	0.029	0.017	0.010	0.007	0.008	0.012	0.015	0.011	0.012	462.8
Unnamed Tributary 3															
Mean [1]	1.34	0.008	0.007	0.009	0.018	0.031	0.018	0.011	0.008	0.009	0.013	0.015	0.011	0.013	311.1
5th Percentile [2]		0.005	0.004	0.005	0.011	0.019	0.011	0.007	0.005	0.005	0.008	0.009	0.007	0.008	187.5
95th Percentile [3]		0.012	0.010	0.013	0.027	0.046	0.027	0.016	0.012	0.013	0.019	0.023	0.017	0.020	462.8

Notes:

1 Prorated directly from Nemegosenda River flow derivations (from Table 5-5) on the basis of watershed areas
2 Annualized values prorated by a factor of 2.569/4.262 derived from Pinewood River flow statistics (as per Table 5-5)
3 Annualized values prorated by a factor of 6.340/4.262 derived from Pinewood River flow statistics (as per Table 5-5)

GOLDCORP
BORDEN GOLD

amec foster wheeler

Table 5-7a: Surface Water Quality Results - Upstream (Stations BL-4 and BR-1)

Parameters	PWQO	CWQG	Units	Raw Data															Statistics			
				Sep-11		Oct-12	Jan-13	Jun-13		Aug-13		Jun-14	May-15		Oct-15							
				BL-4 Borden Lake	BR-1 Borden River	BL-4 Borden Lake	BL-4 Borden Lake	BR-1 Borden River	BL-4 Borden Lake	BR-1 Borden River	BL-4 Borden Lake	BR-1 Borden River	BL-4 Borden River	BR-1 Borden River	BL-4 Borden River	BR-1 Borden River	No.	Min	Max	Mean	75th Percentile
Physical Tests																						
Conductivity	NA	NA	umhos/cm	127	130	111		122	119	121	124	113	113	115	118	123	12	111	130	120	123
Hardness (as $CaCO_3$)	NA	NA	mg/L	52	55	57		58	56	59	58	57	55	52	56	56	12	52	59	56	57
pH	6.5 - 8.5	6.5-9.0	pH units	7.7	7.8	8.0		8.0	8.1	8.1	8.1	8.2	7.96	7.97	7.88	7.98	12	7.7	8.2	8.0	8.1
TSS	NA	NA	mg/L			<0.50	<0.50	1.4	1.0	1.7	1.5	1.8	<2.0	<2.0	<2.0	<2.0	11	<0.50	2.0	<1.5	2.0
TDS	NA	NA	mg/L	86	78	84		62	58	74	70	76	67	70	69	72	12	58	86	72	77
Turbidity	NA	NA	NTU	0.76	0.36	0.20		0.49	0.54	0.46	0.47	0.92	1.22	0.79	0.3	0.72	12	0.20	1.22	0.60	0.77
Anions and Nutrients																						
Alkalinity, Total (as $CaCO_3$)	NA	NA	mg/L	53	54	55		56	55	58	57	46	50	44	53	54	12	44	58	53	55
Ammonia as N	NA	NA	mg/L	<0.050	<0.050	0.102		<0.050	<0.050	<0.050	<0.050	0.05	0.068	0.491	0.247	0.040	12	<0.040	0.49	<0.108	0.077
Ammonia (un-ionized as N)*	0.020	0.019	mg/L	<0.0010	<0.0012	0.0038		<0.0019	<0.0023	<0.0023	<0.0023	0.0029	0.002	0.0175	0.0072	0.0015	12	<0.0010	0.0175	<0.0038	0.0031
Chloride	NA	120	mg/L	7.4	<2.0	<2.0		2.2	<2.0	<2.0	<2.0	<2.0	1.59	3.04	1.53	2.76	12	<1.5	7.4	2.5	2.3
Fluoride	NA	0.12	mg/L	<0.10	<0.10	<0.10		<0.10	<0.10	<0.10	<0.10	<0.10	0.027	0.029	0.024	0.025	12	<0.02	<0.10	<0.08	<0.10
Nitrate-N	NA	13	mg/L	<0.10	<0.10	<0.10		<0.10	<0.10	<0.10	0.13	<0.10	0.03	<0.02	0.026	0.023	12	<0.02	0.13	<0.08	0.10
Nitrite-N	NA	NA	mg/L	<0.10	<0.10	<0.10		<0.10	<0.10	<0.10	<0.10	<0.10	<0.01	<0.01	<0.01	<0.01	12	<0.01	<0.10	<0.07	<0.10
TKN	NA	NA	mg/L			0.45	0.21	0.35	0.36	0.32	0.30	0.25					7	0.21	0.45	0.32	0.355
Phosphate-P (ortho)	0.02	NA	mg/L	<0.0030	<0.0030	<0.0030		<0.0030	<0.0030	na	na	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	10	<0.0030	<0.0030	<0.0030	<0.0030
Total Phosphorus	0.03 / 0.02 (h)	NA	mg/L			0.0090	0.0050	0.010	0.0045	0.0058	0.0043	0.0082	0.0065	0.0068	0.0074	0.0061	11	0.0043	0.010	0.0067	0.0078
Sulphate	NA	NA	mg/L	<2.0	2.9	2.5		2.4	2.3	2.6	2.5	2.7	2.5	2.7	2.6	2.7	12	<2.0	2.9	<2.5	2.7
Bromide	NA	NA	mg/L	na	na	na	na	na	na	<0.10	<0.10						2	<0.10	<0.10	<0.10	<0.10
Cyanides																						
Cyanide, Total	0.005	0.005	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	13	<0.0020	<0.0020	<0.0020	<0.0020
Organic / Inorganic Carbon																						
Dissolved Organic Carbon	NA	NA	mg/L			5.1	6.2	8.6	7.2	6.5	6.0	6.4	5.6	6.4	4.9	5.3	11	4.92	8.6	6.2	6.5
Total Metals																						
Aluminum	0.075	NA	mg/L	0.026	0.012	<0.010	0.011	0.015	0.012	0.015	0.015	0.016	0.012	0.013	0.006	0.008	13	<0.006	0.026	<0.013	0.015
Antimony	0.02	NA	mg/L	<0.0050	<0.0050	<0.0050	<0.00050			<0.00050	<0.00050	<0.00050	0.00002	0.00002	0.00002	0.00003	11	0.00002	0.0050	0.0016	0.0028
Arsenic	0.1 / 0.005 (a)	0.005	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0002	0.0002	0.0002	0.0003	13	0.0002	0.0010	0.0008	0.0010
Barium	NA	NA	mg/L	0.017	0.020	0.018	0.025			0.020	0.019	0.018	0.0185	0.0186	0.0189	0.0192	11	0.0170	0.0252	0.0193	0.0195
Beryllium	hardness dependent (j)	NA	mg/L	<0.0010	<0.0010	<0.0010	<0.00050			<0.00050	<0.00050	<0.0010	<0.00001	<0.00001	<0.00050	<0.00050	11	<0.00001	0.0010	<0.0006	0.0010
Bismuth	NA	NA	mg/L	<0.0010	<0.0010	<0.0010	<0.0010			<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	11	0.0010	0.0010	0.0010	0.0010
Boron	0.2 (a)	1.5	mg/L	<0.050	<0.050	<0.050	<0.010			<0.010	<0.010	<0.050	<0.005	<0.005	<0.010	<0.010	11	0.0050	0.0500	0.0236	0.0500
Cadmium	0.00002	0.00009 (d)	mg/L	<0.00010	<0.00010	<0.00009	<0.00009	<0.00009	<0.00009	<0.00009	<0.00009	<0.00009	<0.00009	<0.00009	<0.00009	<0.00009	13	0.0001	0.0001	0.0001	0.0001
Calcium	NA	NA	mg/L	17	18	18	26	18	18	19	18	17	17	16	18	18	13	16.1000	25.7000	18.2077	18.3000
Chromium	0.0089 (i)	0.0089 (i)	mg/L	<0.0010	<0.0010	<0.00050	<0.00050			<0.00050	<0.00050	<0.00050	0.00016	0.00015	0.00030	0.00050	11	0.0002	0.0010	0.0005	0.0005
Cobalt	0.0009	NA	mg/L	<0.00050	<0.00050	<0.00050	<0.00050			<0.00050	<0.00050	<0.00050	0.00002	0.00002	0.00001	0.00002	11	0.00001	0.0005	0.0003	0.0005
Copper	0.005	0.002 (c)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.00021	0.00023	0.00021	0.00026	13	0.0002	0.0010	0.0008	0.0010
Iron	0.3	0.3	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.0205	0.0197	0.0196	0.0265	13	<0.020	0.0500	<0.041	0.0500
Lead	hardness dependent (af)	hardness dependent (e)	mg/L	<0.0010	<0.0010	<0.0010	<0.0005	<0.0010	<0.0010	<0.0005	<0.0005	<0.0010	0.0000231	0.0000261	0.0000118	1.84E-05	13	0.00001	0.0010	0.00058	0.0010
Lithium	NA	NA	mg/L				<0.10			<0.10	<0.10		<0.0005	<0.0005	<0.10	<0.10	7	<0.00	0.1000	<0.07	0.1000
Magnesium	NA	NA	mg/L	2.2	2.5	2.9	4.1	2.9	2.7	3.2	2.9	2.7	2.95	2.81	2.87	2.89	13	2.2	4.1300	2.9	2.9000
Manganese	NA	NA	mg/L	0.0062	0.0097	0.0070	0.0013			0.0073	0.0070	0.0062	0.00774	0.00648	0.0054	0.00459	11	0.0013	0.0097	0.0063	0.0072
Mercury	0.0002	0.000026	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	13	<0.00010	0.0001	<0.00010	0.0001
Molybdenum	0.04 (a)	0.073	mg/L	<0.0010	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0010	0.00009	0.00009	0.00011	0.00011	13	<0.0001	0.0010	<0.0006	0.0010
Nickel	0.025	hardness dependent (g)	mg/L	<0.0020	<0.0020	<0.0020	<0.0010	<0.0020	<0.0020	<0.0010	<0.0010	<0.0020	0.000166	0.000159	0.000142	0.000155	13	0.0001	0.0020	0.0012	0.0020
Potassium	NA	NA	mg/L	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	0.897	0.877	0.920	0.932	13	<0.9	1.3	1.0	1.0000
Selenium	0.1	0.001	mg/L	<0.0050	<0.0050	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.000043	0.000049	0.000046	0.000060	13	<0.00004	<0.0050	<0.0010	0.0004
Silicon	NA	NA	mg/L	<1.0	<1.0	1.1	<1.0			<1.0	<1.0	<1.0	1.03	0.89	1.15	1.15	11	<0.9	1.15	1.0	1.0650
Silver	0.0001	0.0001	mg/L	<0.00010	<0.00010	<0.00010	<0.00010			<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	11	<0.00010	<0.00010	<0.00010	0.0001
Sodium	NA	NA	mg/L	2.2	2.4	1.4	1.9	2.0	1.6	1.7	1.6	1.5	1.6	2.3	1.5	2.3	13	1.4	2.4	1.8	2.1800
Strontium	NA	NA	mg/L	0.035	0.037	0.043	0.054			0.040	0.040	0.038	0.0361	0.0352	0.0382	0.0383	11	0.035	0.054	0.039	0.0400
Thallium	0.0003 (a)	0.0008	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	13	<0.00030	<0.00030	<0.00030	0.0003
Tin	NA	NA	mg/L	<0.0010	<0.0010	<0.0010	<0.0010			<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	11	<0.0010	<0.0010	<0.0010	0.0010
Titanium	NA	NA	mg/L	<0.0020	<0.0020	<0.0020	<0.0020			<0.0020	<0.0020	<0.0020	<0.0005	<0.0005	<0.0020	<0.0020	11	<0.0005	<0.0020	<0.0017	0.0020
Tungsten	0.03 (a)	NA	mg/L	<0.010	<0.010	<0.010	<0.010			<0.010	<0.010	<0.010					7	<0.010	<0.010	<0.010	0.0100
Uranium	0.005 (a)	0.015	mg/L	<0.0050	<0.0050	<0.0050	<0.0010	<0.0050	<0.0050	<0.0010	<0.0010	<0.0050	0.000027	0.000022	0.000023	0.000027	13	<0.0000	<0.0050	<0.0025	0.0050
Vanadium	0.006 (a)	NA	mg/L	<0.0010	<0.0010	<0.0010	<0.00050			<0.00050	<0.00050	<0.0010	0.000100	0.000116	0.000099	0.000106	11	<0.0001	<0.0010	<0.00054	0.0010
Zinc	0.02 (a)	0.03	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0033	<0.0030	0.00180	0.00082	0.0006	0.00063	13	0.0006	0.0033	0.0024	0.0030
Zirconium	0.004 (a)	NA	mg/L	<0.0040	<0.0040	<0.0040	<0.0040			<0.0040	<0.0040	<0.0040	<0.0001	<0.0001	<0.0040	<0.0040	11	<0.0001	<0.0040	<0.0033	<0.0040
Dissolved Metals																						
Aluminum	NA	NA	mg/L			<0.010	<0.010	na	na	na	na	0.012	0.0092	0.00799	0.00435	0.00559	7	0.0044	0.012	0.0084	0.01
Aggregate Organics																						
BOD	NA	NA	mg/L			<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	11	<2.0	<2.0	<2.0	<2.0
Oil & Grease																						
Oil & Grease	NA	NA	mg/L					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	9	<2.0	<2.0	<2.0	<2.0

* - un-ionized ammonia concentration based on a temperature of 20 °C
NA - denotes Not Applicable
a- Interim PWQO guideline
b - Aluminum guideline = 5 ug/L at pH <6.5; = 100 ug/L at pH > 6.5
c -Copper guideline = 2ug/L at a water hardness of 0 - 120 mg/L as CaCO3
d - CCME guideline used to calculate cadmium guideline based on site-specific hardness
e - Lead guideline = 1 ug/L at water hardness of 0 - 60 mg/L; 2 ug/L at water hardness of 60-120 mg/L
f - Lead guideline = 1 ug/L at hardness of <30 mg/L; 3 ug/L at hardness of 30 to 80 mg/L; 5 ug/L at hardness of >80 mg/L
g - Nickel guideline = 25 ug/L at a water hardness of 0-60 mg/L ; 65 ug/L at a water hardness of 60-120 mg/L
h - Total phosphorus in lakes should be below 20 ug/L, and below 30 ug/L in rivers and streams
i - Value for trivalent chromium
j - Beryllium guideline = 11 ug/L at hardness of <75 mg/L; 1100 ug/L at hardness of >75 mg/L

GOLDCORP
BORDEN GOLD

amec foster wheeler

Table 5-7b: Local Surface Water Quality Results - Unnamed Tributaries

Parameters	PWQO	CWQG	Units	Raw Data						Statistics			
				10-Mar-15	25-May-15	26-Oct-15	25-May-15	26-Oct-15	No.	Min	Max	Mean	75th Percentile
				Unnamed Tributary 1			Unnamed Tributary 2						
Physical Tests													
Conductivity	NA	NA	umhos/cm	375	153	149	37.9	42.2	5	38	375	151	153
Hardness (as $CaCO_3$)	NA	NA	mg/L	127	53	59	19	21	5	19	127	56	59
pH	6.5 - 8.5	6.5-9.0	pH units	7.26	7.23	7.27	6.66	6.55	5	6.6	7.3	7.0	7.3
TSS	NA	NA	mg/L	<2.0	8.4	2.5	<2.0	<2.0	5	<2.0	8.4	<3.4	2.5
TDS	NA	NA	mg/L	249	112	124	62	59	5	59	249	121	124
Turbidity	NA	NA	NTU	1.78	7.27	1.07	0.38	0.84	5	0.38	7.27	2.27	1.78
Anions and Nutrients													
Alkalinity, Total (as $CaCO_3$)	NA	NA	mg/L	52	21	27	13	<10	5	10	52	25	27
Ammonia as N	NA	NA	mg/L	0.60	4.20	0.499	<1.47	0.55	5	0.499	4.20	<1.464	1.47
Ammonia (un-ionized as N)*	0.020	0.019	mg/L	<0.010	0.014	<0.010	<0.010	<0.010	5	<0.010	0.0140	<0.0108	0.010
Chloride	NA	120	mg/L	36.3	12.8	12.3	0.51	0.87	5	0.51	36.3	12.6	12.8
Fluoride	NA	0.12	mg/L	0.125	0.051	0.031	0.034	0.020	5	0.02	0.125	0.052	0.051
Nitrate-N	NA	13	mg/L	0.089	0.046	0.024	<0.020	0.075	5	<0.02	0.089	<0.05	0.08
Nitrite-N	NA	NA	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	5	<0.01	<0.01	<0.01	<0.01
Phosphate-P (ortho)	0.02	NA	mg/L	0.0074	<0.0030	<0.0030	<0.0030	<0.0030	5	<0.0030	0.0074	<0.0039	0.0030
Total Phosphorus	0.03 / 0.02 (h)	NA	mg/L	0.0249	0.0392	0.0109	0.0093	0.0091	5	0.0091	0.0392	0.0187	0.0249
Sulphate	NA	NA	mg/L	69.2	25.8	22.6	2.8	3.5	5	2.8	69.2	24.8	25.8
Cyanides													
Cyanide, Total	0.005	0.005	mg/L	<0.002	<0.0020	<0.0020	<0.002	<0.0020	5	<0.0020	<0.002	<0.0020	<0.0020
Organic / Inorganic Carbon													
Dissolved Organic Carbon	NA	NA	mg/L	7.0	13.9	21.3	22.1	28.3	5	7.0	28.3	18.5	22.1
Total Metals													
Aluminum	0.075	NA	mg/L	0.082	0.157	0.147	0.155	0.157	5	0.082	0.157	0.140	0.157
Antimony	0.02	NA	mg/L	<0.00050	<0.00050	<0.00010	<0.00050	<0.00010	5	<0.00010	<0.00050	<0.00034	0.0005
Arsenic	0.1 / 0.005 (a)	0.005	mg/L	<0.0010	<0.0010	0.00034	<0.0010	0.00051	5	0.00034	<0.0010	<0.0008	0.0010
Barium	NA	NA	mg/L	0.0532	0.0371	0.4020	0.0171	0.0169	5	0.0169	0.4020	0.1053	0.0532
Beryllium	hardness dependent (j)	NA	mg/L	<0.00050	<0.00050	<0.00010	<0.00050	<0.00010	5	<0.00010	<0.00050	<0.00034	0.00050
Bismuth	NA	NA	mg/L	<0.0010	<0.0010	<0.00050	<0.0010	<0.00050	5	<0.00050	<0.00100	<0.00080	0.00100
Boron	0.2 (a)	1.5	mg/L	0.014	<0.010	<0.010	<0.010	<0.010	5	<0.0100	0.0140	<0.0108	0.0100
Cadmium	0.0002	0.00009 (d)	mg/L	<0.000090	<0.000090	0.000016	<0.000090	0.000015	5	0.000015	<0.000090	<0.000060	0.000090
Calcium	NA	NA	mg/L	39.50	16.4	19.40	5.46	6.80	5	5.46	39.50	17.51	19.40
Chromium	0.0089 (i)	0.0089 (i)	mg/L	<0.00050	0.00067	0.00090	0.00061	0.00096	5	<0.00050	0.0010	0.0007	0.0009
Cobalt	0.0009	NA	mg/L	0.00055	<0.00050	0.00022	<0.00050	0.00021	5	0.00021	<0.00055	<0.00040	0.0005
Copper	0.005	0.002 (c)	mg/L	0.0014	0.0033	0.0025	0.0017	0.0011	5	0.0011	0.0033	0.0020	0.0025
Iron	0.3	0.3	mg/L	0.742	0.414	0.342	0.245	0.352	5	0.245	0.7420	<0.419	0.4140
Lead	hardness dependent (af)	hardness dependent (e)	mg/L	<0.00050	<0.00050	<0.00010	<0.00050	0.00023	5	<0.00010	0.00050	<0.00037	0.0005
Lithium	NA	NA	mg/L	<0.10	<0.10	<0.0010	<0.10	<0.0010	5	<0.0010	<0.10	<0.06	0.100
Magnesium	NA	NA	mg/L	6.86	3.02	3.83	1.23	1.55	5	1.2	6.86	3.3	3.83
Manganese	NA	NA	mg/L	0.168	0.0546	0.0426	0.0323	0.0394	5	0.0323	0.168	0.0674	0.0546
Mercury	0.0002	0.000026	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	<0.000010	<0.000010	0.0000
Molybdenum	0.04 (a)	0.073	mg/L	<0.00050	<0.00050	0.000173	<0.00050	0.000057	5	<0.0001	<0.0005	<0.0003	0.0005
Nickel	0.025	hardness dependent (g)	mg/L	<0.0010	0.001	0.00097	0.0014	0.00113	5	0.0010	0.0014	0.0011	0.0011
Potassium	NA	NA	mg/L	1.2	1.1	0.584	<1.0	0.425	5	<0.425	1.2	<0.86	1.10
Selenium	0.1	0.001	mg/L	<0.00040	<0.00040	0.000074	<0.00040	0.000103	5	<0.000074	<0.00040	<0.00028	0.0004
Silicon	NA	NA	mg/L	6.6	2.1	4.43	<1.0	3.8	5	<1.0	6.6	<3.6	4.4300
Silver	0.0001	0.0001	mg/L	<0.00010	<0.00010	<0.000050	<0.00010	<0.000050	5	<0.00005	<0.00010	<0.00008	0.0001
Sodium	NA	NA	mg/L	21.10	7.31	6.22	1.01	0.96	5	0.96	21.1	7.3	7.31
Strontium	NA	NA	mg/L	0.7180	0.191	0.1490	0.0278	0.0309	5	0.028	0.718	0.223	0.1910
Thallium	0.0003 (a)	0.0008	mg/L	<0.00030	<0.00030	<0.000010	<0.00030	<0.000010	5	<0.00001	<0.00030	<0.00018	0.0003
Tin	NA	NA	mg/L	<0.0010	<0.0010	<0.00010	<0.0010	<0.00010	5	<0.0001	<0.0010	<0.0006	0.0010
Titanium	NA	NA	mg/L	<0.0020	0.0035	0.00217	<0.0020	0.00153	5	<0.0015	<0.0035	<0.0022	0.0022
Tungsten	0.03 (a)	NA	mg/L	<0.010	<0.010	0.00031	<0.010	<0.00010	5	<0.00010	<0.010	<0.006	0.0100
Uranium	0.005 (a)	0.015	mg/L	<0.0010	<0.0010	0.000032	<0.0010	0.000015	5	0.000015	<0.0010	<0.0006	0.0010
Vanadium	0.006 (a)	NA	mg/L	<0.00050	0.00061	<0.00050	<0.00050	<0.00050	5	<0.0005	0.00061	<0.00052	0.0005
Zinc	0.02 (a)	0.03	mg/L	0.0046	0.0041	0.0046	0.0044	0.0040	5	0.0040	0.0046	0.0043	0.0046
Zirconium	0.004 (a)	NA	mg/L	<0.0040	<0.0040	<0.00030	<0.0040	<0.00030	5	<0.00030	<0.0040	<0.0025	<0.0040
Dissolved Metals													
Aluminum	NA	NA	mg/L	0.051	0.0983	0.118	0.146	0.138	5	0.0510	0.146	0.1103	0.138
Aggregate Organics													
BOD	NA	NA	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	5	<2.0	<2.0	<2.0	<2.0
Oil & Grease													
Oil & Grease	NA	NA	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	5	<2.0	<2.0	<2.0	<2.0

* - un-ionized ammonia concentration based on a temperature of 20 °C
NA - denotes Not Applicable
a- Interim PWQO guideline
b - Aluminum guideline = 5 ug/L at pH <6.5; = 100 ug/L at pH > 6.5
c -Copper guideline = 2ug/L at a water hardness of 0 - 120 mg/L as CaCO3
d - CCME guideline used to calculate cadmium guideline based on site-specific hardness
e - Lead guideline = 1 ug/L at water hardness of 0 - 60 mg/L; 2 ug/L at water hardness of 60-120 mg
f - Lead guideline = 1 ug/L at hardness of <30 mg/L; 3 ug/L at hardness of 30 to 80 mg/L; 5 ug/L at h
g - Nickel guideline = 25 ug/L at a water hardnes of 0-60 mg/L ; 65 ug/L at a water hardness of 60-1
h - Total phosphorus in lakes should be below 20 ug/L, and below 30 ug/L in rivers and streams
i - Value for trivalent chromium
j - Beryllium guideline = 11 ug/L at hardness of <75 mg/L; 1100 ug/L at hardness of >75 mg/L

GOLDCORP
BORDEN GOLD

amec foster wheeler

Table 5-7c: Surface Water Quality Results - Downstream (Station BR-2)

Parameters	PWQO	CWQG	Units	Raw Data						Statistics			
				01-Oct-12	12-Jun-13	18-Aug-13	28-May-15	26-Oct-15	No.	Min	Max	Mean	75th Percentile
				Borden River									
				BR-2									
Physical Tests													
Conductivity	NA	NA	umhos/cm	102	105	115	94.6	109	5	94.6	115	105	109
Hardness (as $CaCO_3$)	NA	NA	mg/L	52	53	55	44	51	5	44	55	51	53
pH	6.5 - 8.5	6.5-9.0	pH units	7.9	8.0	8.1	7.8	7.9	5	7.8	8.1	7.9	8.0
TSS	NA	NA	mg/L	<0.50	0.93	2.2	<2.0	<2.0	5	<0.50	2.2	1.5	2.0
TDS	NA	NA	mg/L	72	64	76	67	73	5	64	76	70	73
Turbidity	NA	NA	NTU	0.27	0.53	0.45	0.72	2.24	5	0.27	2.24	0.8	0.7
Anions and Nutrients													
Alkalinity, Total (as $CaCO_3$)	NA	NA	mg/L	54	48	51	36	49	5	36	54	48	51
Ammonia as N	NA	NA	mg/L	<0.050	<0.050	<0.050	0.214	0.041	5	<0.041	0.214	<0.081	<0.050
Ammonia (un-ionized as N)	0.020	0.019	mg/L				<0.010	<0.010	2	<0.010	<0.010	<0.010	<0.010
Chloride	NA	120	mg/L	2.2	<2.0	2.4	2.01	2.25	5	<2.0	2.4	2.2	2.3
Fluoride	NA	0.12	mg/L	<0.10	<0.10	<0.10	0.026	0.026	5	<0.03	0.1	<0.07	<0.10
Nitrate-N	NA	13	mg/L	<0.10	<0.10	<0.10	<0.02	0.033	5	<0.02	0.1	<0.07	<0.10
Nitrite-N	NA	NA	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	5	<0.10	<0.10	<0.10	<0.10
TKN	NA	NA	mg/L	0.54	1.1	0.34			3	0.34	1.1	0.67	0.84
Phosphate-P (ortho)	0.02	NA	mg/L	<0.0030	<0.0030	na	<0.0030	<0.0030	4	<0.0030	<0.0030	<0.0030	<0.0030
Total Phosphorus	0.03 / 0.02 (h)	NA	mg/L	0.0083	0.0079	0.0058	0.0083	0.0097	5	0.0058	0.0097	0.0080	0.0083
Sulphate	NA	NA	mg/L	<2.0	2.2	2.5	2.0	2.4	5	<2.0	2.5	2.2	2.4
Bromide	NA	NA	mg/L	na	na	<0.10			1	<0.10	<0.10	<0.10	<0.10
Cyanides													
Cyanide, Total	0.005	0.005	mg/L	<0.0020	<0.0020	<0.0020			3	<0.0020	<0.0020	<0.0020	<0.0020
Organic / Inorganic Carbon													
Dissolved Organic Carbon	NA	NA	mg/L	9.3	11	8.6	10.2	8.28	5	8.28	11	9.5	10
Total Metals													
Aluminum	0.075	NA	mg/L	<0.010	0.023	0.015	0.0326	0.028	5	<0.010	0.0326	0.022	0.028
Antimony	0.02	NA	mg/L	<0.00500		<0.00050	<0.00002	<0.00002	4	<0.00002	<0.00500	0.0014	0.0016
Arsenic	0.1 / 0.005 (a)	0.005	mg/L	<0.0010	<0.0010	<0.0010	0.00023	0.00026	5	<0.0002	<0.0010	<0.0007	<0.0010
Barium	NA	NA	mg/L	0.018		0.018	0.0165	0.015	4	0.0154	0.018	0.017	0.018
Beryllium	hardness dependent (j)	NA	mg/L	<0.0010		<0.00050	<0.00001	<0.00001	4	<0.00001	<0.0010	<0.0004	0.00063
Bismuth	NA	NA	mg/L	<0.0010		<0.0010	<0.0010	<0.0010	4	<0.0010	<0.0010	<0.0010	<0.0010
Boron	0.2 (a)	1.5	mg/L	<0.050		<0.010	<0.010	<0.010	4	<0.010	<0.050	<0.020	0.020
Cadmium	0.0002	0.00009 (d)	mg/L	<0.00009	<0.00009	<0.00009	<0.00009	<0.00009	5	<0.00009	<0.00009	<0.00009	<0.00009
Calcium	NA	NA	mg/L	16	17	17	13	17	5	13.3	17	16	17
Chromium	0.0089 (i)	0.0089 (i)	mg/L	<0.00050		<0.00050	0.00023	0.00056	4	<0.00023	0.00056	<0.00045	<0.00052
Cobalt	0.0009	NA	mg/L	<0.00050		<0.00050	<0.00050	<0.00050	4	<0.00050	<0.00050	<0.00050	<0.00050
Copper	0.005	0.002 (c)	mg/L	<0.0010	<0.0010	<0.0010	0.00027	<0.0010	5	<0.0003	0.00100	<0.0009	<0.0010
Iron	0.3	0.3	mg/L	0.076	0.097	0.059	0.0674	0.149	5	0.059	0.149	0.090	0.097
Lead	hardness dependent (af)	hardness dependent (e)	mg/L	<0.0010	<0.0010	<0.00050	0.0000281	<0.00050	5	<0.00003	0.00100	0.0006	0.0010
Lithium	NA	NA	mg/L			<0.10	<0.10	<0.10	3	<0.10	<0.10	<0.10	<0.10
Magnesium	NA	NA	mg/L	3.0	2.8	2.9	2.40	3.1	5	2.4	3.1	2.8	3.0
Manganese	NA	NA	mg/L	0.014		0.010	0.000971	0.012	4	0.001	0.014	0.009	0.013
Mercury	0.0002	0.000026	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	4	<0.00010	<0.00010	<0.00010	<0.00010
Molybdenum	0.04 (a)	0.073	mg/L	<0.0010	<0.0010	<0.00050	0.00007	0.00010	5	<0.00007	<0.0010	<0.0005	0.0010
Nickel	0.025	hardness dependent (g)	mg/L	<0.0020	<0.0020	<0.0010	0.000223	<0.0010	5	<0.0002	<0.0020	0.0012	0.0020
Potassium	NA	NA	mg/L	<1.0	<1.0	<1.0	0.756	0.888	5	<0.8	<1.0	<0.9	<1.0
Selenium	0.1	0.001	mg/L	<0.00040	<0.00040	<0.00040	0.000057	0.000065	5	<0.00006	<0.00040	<0.00026	<0.00040
Silicon	NA	NA	mg/L	1.6		<1.0	1.18	<1.9	4	<1.0	1.91	1.4	1.7
Silver	0.0001	0.0001	mg/L	<0.00010		<0.00010	<0.00010	<0.00010	4	<0.00010	<0.00010	<0.00010	<0.00010
Sodium	NA	NA	mg/L	1.9	1.8	1.9	1.8	2.0	5	1.8	2.0	1.9	1.9
Strontium	NA	NA	mg/L	0.039		0.038	0.0289	0.0364	4	0.029	0.039	0.036	0.038
Thallium	0.0003 (a)	0.0008	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	5	<0.00030	<0.00030	<0.00030	<0.00030
Tin	NA	NA	mg/L	<0.0010		<0.0010	<0.0010	<0.0010	4	<0.0010	<0.0010	<0.0010	<0.0010
Titanium	NA	NA	mg/L	<0.0020		<0.0020	0.00050	0.00060	4	<0.0005	<0.0020	<0.0013	<0.0020
Tungsten	0.03 (a)	NA	mg/L	<0.010		<0.010		<0.0003	3	<0.000	<0.010	<0.007	<0.010
Uranium	0.005 (a)	0.015	mg/L	<0.0050	<0.0050	<0.0010	0.000015	0.000029	5	<0.0000	<0.0050	0.0022	0.0050
Vanadium	0.006 (a)	NA	mg/L	<0.0010		<0.00050	0.000172	<0.00050	4	<0.00017	<0.0010	0.00054	0.00063
Zinc	0.02 (a)	0.03	mg/L	<0.0030	<0.0030	0.0062	0.00156	<0.0030	5	<0.0016	0.0062	0.0034	0.0030
Zirconium	0.004 (a)	NA	mg/L	<0.0040		<0.0040	<0.0001	<0.0001	4	<0.0001	<0.0040	<0.0021	<0.0040
Dissolved Metals													
Aluminum	NA	NA	mg/L	<0.010	na	na	0.0248	0.014	3	<0.010	<0.025	<0.016	<0.019
Aggregate Organics													
BOD	NA	NA	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	5	<2.0	<2.0	<2.0	<2.0
Oil & Grease													
Oil & Grease	NA	NA	mg/L		na		<2.0	<2.0	2	2	2	2.0	2.0

* - un-ionized ammonia concentration based on a temperature of 20 °C
NA - denotes Not Applicable
a- Interim PWQO guideline
b - Aluminum guideline = 5 ug/L at pH <6.5; = 100 ug/L at pH > 6.5
c -Copper guideline = 2ug/L at a water hardness of 0 - 120 mg/L as CaCO3
d - CCME guideline used to calculate cadmium guideline based on site-specific hardness
e - Lead guideline = 1 ug/L at water hardness of 0 - 60 mg/L; 2 ug/L at water hardness of 60-120 mg
f - Lead guideline = 1 ug/L at hardness of <30 mg/L; 3 ug/L at hardness of 30 to 80 mg/L; 5 ug/L at h
g - Nickel guideline = 25 ug/L at a water hardnes of 0-60 mg/L ; 65 ug/L at a water hardness of 60-1
h - Total phosphorus in lakes should be below 20 ug/L, and below 30 ug/L in rivers and streams.
i - Value for trivalent chromium.
j - Beryllium guideline = 11 ug/L at hardness of <75 mg/L; 1100 ug/L at hardness of >75 mg/L.

Table 5-8: Local Vegetation Communities

Vegetation Community Type [1]	Community Characterization [2]	Vegetation Description [3]
Upland Communities		
Boreal Ecosite: B054 Dry to Fresh, Coarse: Red Pine - White Pine Mixedwood Forest Ecosystem Classification (FEC): ES21 White Pine – Coniferous Mixedwood V4 Trembling Aspen – Beaked Hazel	• Coniferous canopy consisting of eastern white pine and red pine (≥20% absolute cover). Substantial components of trembling aspen and white birch (>50% cover) may occur. • Tall treed (>10 m) canopy closure variable. Low treed (≤10 m) canopy closed with dense, younger trees and abundant feathermoss. • Shrub and herb moderately poor. Common understory vegetation includes mountain maple, beaked hazel, low sweet blueberry, large-leaved aster, wild sarsaparilla, eastern bracken-fern and feathermoss • Ground surface mostly broadleaf litter with conifer litter and moss. • Substrate sandy to coarse loamy. Mostly >15 cm deep and dry to fresh (MR = 2 or 3, if sandy; MR ≤3, if coarse loamy).	Ecosite identified through FRI mapping; however, ground surveys were not undertaken in this ecosite due to access restrictions. FEC ES-type and V-type estimated based on Boreal Ecosite description.
Boreal Ecosite: B055 Dry to Fresh, Coarse: Aspen - Birch Hardwood FEC: ES3 White Birch – Trembling Aspen – Black Spruce – Coarse Soil V8 Trembling Aspen – Black Spruce – Herb Poor	• Hardwood canopy consisting of trembling aspen and/or white birch (>50% cover of hardwood species). May be a near pure stand of trembling aspen or white birch. Often mixed with balsam fir, black spruce and white spruce. • Understory tree species consisting of balsam fir, trembling aspen, white birch and black spruce. • Shrub rich. Herb poor, increasing richness on loamy substrates. Common understory vegetation includes bush honeysuckle, mountain maple, dwarf raspberry, wild lily-of-the-valley, wild sarsaparilla, blue-bead-lily, round-branched tree-clubmoss and feathermoss. • Ground surface mostly broadleaf litter with moss, woody debris and conifer litter. • Substrate sandy to coarse-loamy. • Soil mostly >15 cm deep and dry to fresh (moisture regime = 2 or 3, if sandy; moisture regime ≤3, if coarse loamy).	• The canopy is comprised of trembling aspen, white birch with balsam fir, black spruce and white spruce. Eastern white cedar is very rare, occurring in some lower lying pockets. • The tall shrub layer also includes mountain maple, serviceberry, alder species, beaked hazel, mountain-ash and common elderberry. • Shrub species in the groundcover layer include bush honeysuckle, dwarf raspberry, prickly rose, currant species, twinflower, American-fly honeysuckle, bunchberry and late lowbush blueberry. • Herbaceous species wild lily-of-the-valley, wild sarsaparilla, rose twisted-stalk, northern starflower, red baneberry and spinulose shield fern are present. • Feathermosses are present. Round-branched tree-clubmoss is present.

Vegetation Community Type [1]	Community Characterization [2]	Vegetation Description [3]
Boreal Ecosite: B083 Fresh, Clayey: Black Spruce - Pine Conifer FEC: ES6f Black Spruce – Trembling Aspen – Fine Soil V15 Black Spruce – Herb Rich	• Conifer canopy consisting mostly of black spruce and/or jack pine (>50% cover of the conifer species). Often mixed with trembling aspen and balsam fir. • Tall treed (>10 m) and low treed (<10 m) canopy closure variable. Low treed (≤10 m) indicative of younger trees. • Understory tree species consisting of balsam fir, black spruce and trembling aspen. • Shrub and herb poor. Common understory vegetation includes dwarf raspberry, twinflower, prickly rose, bunchberry, wild lily-of-the-valley, blue bead-lily and feathermoss. • Ground surface mostly moss with woody debris, conifer litter and broadleaf litter. • Substrate clayey. Mostly >15 cm deep and dry to fresh (MR = 3, 2 or occasionally 1, 0 on shallow substrates).	• The canopy is comprised of black spruce with jack pine, balsam fir, white birch and white spruce. • The tall shrub layer also includes serviceberry and mountain-ash. • Shrub species in the groundcover layer include dwarf raspberry, blueberry species, creeping snowberry, twinflower, bunchberry, trailing arbutus, prickly rose and common Labrador tea. • Herbaceous species wild lily-of-the-valley, blue bead-lily, goldthread, northern starflower and bracken fern are present. • Feathermosses are abundant.
Boreal Ecosite: B088 Fresh, Clayey: Aspen - Birch Hardwood FEC: ES7f Trembling Aspen – White Spruce – White Birch – Fine Soil V10 Trembling Aspen – Balsam Poplar – Speckled Alder	• Hardwood canopy consisting of trembling aspen and/or birch species (>50% cover of hardwood species). Often mixed with balsam fir, black spruce, white birch and white spruce. • Understory tree species consisting of balsam fir, trembling aspen, white birch, white spruce and black spruce. • Shrub and herb rich. Common understory vegetation includes dwarf raspberry, bush honeysuckle, prickly rose, wild sarsaparilla, wild lily-of-the-valley and bunchberry. • Ground surface mostly broadleaf litter with woody debris, moss and conifer litter. • Substrate clayey. • Soil mostly >15 cm deep and dry to fresh (moisture regime = 2, 3 or occasionally 1, 0 on shallow substrates).	• The canopy is comprised of trembling aspen, white birch with balsam fir, black spruce and white spruce. Yellow birch is rare. Jack pine is rare. • The tall shrub layer also includes beaked hazelnut, mountain-ash, mountain maple, alder species and serviceberry. • Shrub species in the groundcover layer include bush honeysuckle, prickly rose, dwarf raspberry, currant species, bunchberry, American-fly honeysuckle and late lowbush blueberry. • Herbaceous species wild lily-of-the-valley, wild sarsaparilla, wood anemone, goldthread, blue bead-lily, twinflower, Indian-pipe, fern species and large-leaf wood aster. • Several polygons undergoing regeneration following forest harvest activities. • Some mosses present. Running clubmoss rare.

Vegetation Community Type [1]	Community Characterization [2]	Vegetation Description [3]
Boreal Ecosite: B104 Fresh, Silty to Fine Loamy: Aspen - Birch Hardwood FEC: ES7m Trembling Aspen – White Birch – Medium Soil V5 Trembling Aspen – Bush Honeysuckle – Large-leaved Aster	• Hardwood canopy consisting mostly of aspen and/or birch (>50% cover of hardwood species). Often mixed with balsam fir, white spruce and black spruce. • Understory tree species consisting of balsam fir, trembling aspen, black spruce, white birch and white spruce. • Shrub and herb rich. Common understory vegetation includes dwarf raspberry, bush honeysuckle, beaked hazel, wild sarsaparilla, bunchberry, wild lily-of-the-valley and feathermoss. • Ground surface mostly broadleaf litter with woody debris, moss and conifer litter. • Substrate silty to fine loamy. • Mostly >15 cm deep and dry to fresh (MR = 3, 2 or occasionally 1 on shallow substrates).	• The canopy is comprised of trembling aspen, white birch, black spruce and white spruce with balsam fir. Jack pine, white pine and eastern white cedar are rare. • The tall shrub layer also includes beaked hazel, serviceberry and mountain-ash. • Shrub species in the groundcover layer include dwarf raspberry, bush honeysuckle, bunchberry and late lowbush blueberry. Creeping snowberry and trailing arbutus are rare. • Herbaceous species wild sarsaparilla, wild lily-of-the-valley, blue bead-lily, fern species, twinflower and rose twisted-stalk are present. • Several polygons undergoing regeneration following forest harvest activities. • Feathermosses are present. Round-branched tree-clubmoss is rare.
Wetland Communities		
Boreal Ecosite: B128 Organic Intermediate Conifer Swamp FEC: ES12 Black Spruce – Larch – Labrador-tea – Organic Soil V24 Black Spruce – Speckled Alder – Labrador-tea – Sphagnum Ontario Wetland Evaluation System (OWES): coniferous Swamp (cS): coniferous trees (c)*, tall shrub (ts), low shrub (ls), herb (gc), narrow-leaved emergents (ne), moss (m) Canadian Wetland Classification System (CWCS): Flat Swamp (subform: Unconfined Flat Swamp)	• Conifer canopy consisting of black spruce and presence of American larch, speckled alder and/or intermediate and rich swamp indicators. May be mixed with balsam fir. • Canopy closure variable, not sparse (>25% cover). Canopy height variable. • Understory tree species consisting of black spruce and balsam fir. • Shrub, herb and moss moderately rich. Abundant alder. Common understory vegetation includes Labrador-tea, creeping snowberry, velvet-leaf blueberry, bunchberry, three-leaved Solomon's seal, goldthread, sphagnum and feathermoss. Rich and intermediate swamp indicator species, such as twinflower, dwarf raspberry, sheathed sedge, blue-bead-lily, wild lily-of-the-valley, naked mitrewort, palmate coltsfoot and Wulf's peat moss, will be present. • Ground surface mostly moss with woody debris and conifer litter. • Substrate organic, mostly deep and hydric (MR = 7, 8 or s).	• The canopy is comprised of black spruce, with balsam fir. • The tall shrub layer also includes speckled alder, red-osier dogwood, roundleaf dogwood and choke cherry. White birch is rare. • Shrub species in the groundcover layer include common Labrador tea, creeping snowberry, blueberry species, bunchberry, dwarf raspberry and currant species. • Herbaceous species wild lily-of-the-valley, three-leaved Solomon's seal, twinflower, dwarf raspberry, blue bead-lily, fern species and goldthread are present. • Feathermosses and sphagnum mosses are present. Stiff clubmoss is rare.

Vegetation Community Type [1]	Community Characterization [2]	Vegetation Description [3]
Boreal Ecosite: B223 Mineral Intermediate Conifer Swamp FEC: ES9p Black Spruce – Larch – Moist Soil – Species Poor V23 Black Spruce – Labrador -tea – Speckled Alder – Stair-step Moss OWES: coniferous Swamp (cS): coniferous trees (c)*, tall shrub (ts), low shrub (ls), herb (gc), narrow-leaved emergents (ne), moss (m) CWCS: Flat Swamp (subform: Unconfined Flat Swamp)	• Conifer canopy consisting of black spruce and presence of American larch, speckled alder and/or intermediate and rich indicator species. • Canopy closure variable, not sparse (>25% cover). Canopy height variable. • Understory tree species consisting of black spruce and balsam fir. • Shrub, herb and moss moderately rich. Abundant alder. Common understory vegetation includes velvet-leaf blueberry, Labrador-tea, creeping snowberry, bunchberry, wood horsetail, wild lily-of-the-valley, feathermoss and sphagnum. Rich and intermediate swamp indicator species, such as twinflower, mountain-ash, goldthread, blue bead-lily, sheathed sedge, palmate coltsfoot, starflower and Wulf's peat moss, will be present. • Ground surface mostly moss with woody debris, conifer litter and broadleaf litter. • Substrate mineral or peaty phase. • Mostly moderately deep to deep and hydric (MR = 6 or s).	• The canopy is comprised of black spruce with eastern white cedar, balsam fir and paper birch. • The tall shrub layer also includes speckled alder, mountain-ash, willow species and red-osier dogwood. • Shrub species in the groundcover layer include common Labrador tea, creeping snowberry, bunchberry, pale laurel, northern bog rosemary, leatherleaf, currant species and small cranberry. • Herbaceous species woodland horsetail, wild lily-of-the-valley, twinflower, goldthread, blue bead-lily, sedge species and three-leaf Solomon's-seal are present. Northern pitcher-plant and swamp aster are rare. • Feathermosses and sphagnum mosses are present.
Boreal Ecosite: B224 Mineral Rich Conifer Swamp FEC: ES9r White Spruce – Balsam Fir – White Cedar – Moist Soil – Species Rich V16 White Cedar – Spruce – Balsam Fir – Ferns OWES: coniferous Swamp (cS): coniferous trees (c)*, tall shrub (ts), low shrub (ls), herb (gc), narrow-leaved emergents (ne), moss (m) CWCS: Flat Swamp subform: Unconfined Flat Swamp	• Conifer canopy consisting of eastern white cedar and/or presence of rich swamp indicators. Often mixed with black spruce, balsam fir, white spruce, trembling aspen with occurrences of black ash and balsam poplar. Canopy closure variable, not sparse (>25% cover). Canopy height variable. • Understory tree species consisting of balsam fir, black spruce and white birch. • Sparse shrubs. Herb and moss moderately rich. Common understory vegetation includes dwarf raspberry, twinflower, creeping snowberry, bunchberry, wild lily-of-the-valley, goldthread, feathermoss and sphagnum. Rich swamp indicator species, such as mountain-ash, prickly rose, red-osier dogwood, current/ gooseberry, mountain maple, wild red raspberry, sweet-scented bedstraw and wood anemone, will be present. • Ground surface mostly moss with woody debris, conifer litter and broadleaf litter. • Substrate mineral or peaty phase. • Mostly moderately deep to deep and hydric (MR = 6 or s).	• The canopy is comprised of black spruce, eastern white cedar, balsam fir and white birch. American larch is rare. • The tall shrub layer also includes mountain-ash, red-osier dogwood, mountain maple, squashberry, speckled alder, alderleaf buckthorn and willow species. • Shrub species in the groundcover layer include dwarf raspberry, creeping snowberry, bunchberry, prickly rose, current species, blueberry species, common Labrador tea, twinflower and wild red raspberry. • Herbaceous species twinflower, wild lily-of-the-valley, goldthread, bedstraw species, graminoid species (sedges and grasses), woodland horsetail, violet, naked mitrewort and palmate coltsfoot are present. • Feathermosses and sphagnum mosses are present.

Vegetation Community Type [1]	Community Characterization [2]	Vegetation Description [3]
Boreal Ecosite: B134 Mineral Thicket Swamp OWES: tall shrub Swamp (tsS): tall shrub (ts)*, coniferous trees (c), narrow-leaved emergents (ne), robust emergents (re), herbs (gc), moss (m) CWCS: Riparian Swamp subform: Riverine Swamp	• Tall shrub community. Tree poor. Herb moderately rich. • Tall deciduous shrub >25%, tree cover ≤10%. Canopy closure variable. When present, trees may include white spruce and white birch. • Shrubs include speckled alder, red-osier dogwood, willows and sweet gale. Herbaceous plants may include bedstraws, Canada blue-joint, horsetails and sedges. *Sphagnum* and *Mnium* are the dominant mosses. • Ground surface mostly broadleaf litter, dead wood and mineral material. Evidence of vernal pools or presence of standing water common. Substrate mineral or peaty phase. • Mineral material moderately deep to deep and very moist (MR = 6).	• This community is dominated by tall shrubs which include speckled alder with red-osier dogwood, sweet gale and willow species. Swamp birch, mountain fly honeysuckle and narrow-leaved meadow-sweet are also present. • Trees are uncommon but include black spruce and American larch. • Shrub species in the groundcover layer include creeping snowberry, common Labrador tea and leatherleaf. • Herbaceous species Canada blue-joint, rough bedstraw, woodland horsetail, water sedge, reed canary grass, swamp loosestrife and broadleaf arrowhead are present. • Mosses are occasional. Standing water is common.
Boreal Ecosite: B138 Open Bog OWES: low shrub Bog (lsB): low shrub (ls)*, narrow-leaf emergent (ne), moss (m), herb (gc), coniferous trees (c) CWCS: Riparian Bog subform: Shore Bog	• Low shrub, bryophyte, or graminoid communities. Tree poor. • Tree cover ≤10% and tall shrub cover ≤25%. Trees if present include stunted black spruce and American larch. • Shrubs when present are ericaceous. Herb poor. Fen indicators present, species poor. Common shrubs include leatherleaf, bog rosemary, pale laurel and small cranberry. Herbaceous plants include slender sedge, pitcher-plant and few-seeded sedge. Bryophytes include midway peat moss, common green peat moss and poor-fen peat moss. • Ground surface mostly sphagnum and deciduous litter. • Substrate mostly deep organic and wet (MR = 7, 8, or 9).	• Tree species black spruce and American larch are rare and stunted. • Tall shrub species are absent. • Shrub species present in the groundcover layer include common Labrador tea, leatherleaf, northern bog rosemary, pale laurel and small cranberry. • Herbaceous species include sedge species, tussock cottongrass, rufous bulrush and roundleaf sundew. • Sphagnum mosses are abundant.
Boreal Ecosite: B136 Sparse Treed Fen OWES: low shrub Fen (lsF): low shrub (ls)*, coniferous tree (c), tall shrub (ts), narrow-leaf emergent (ne), herb (gc), moss (m) CWCS: Horizontal Fen subform: none	• Conifer canopy consisting mostly of black spruce (>50% cover of conifer species) with American larch (≤10% cover of conifer species) and/or presence of fen indicators. • Canopy sparse (>10% and ≤25%). Canopy height variable, mostly low treed (≤10 m). • Understory tree species consisting of black spruce and American larch. • Shrub, herb and moss moderately rich. Common understory vegetation includes Labrador-tea, creeping snowberry, speckled alder, three-leaved Solomon's seal, bunchberry, naked mitrewort, graminoids, sphagnum and feathermoss. Fen indicator species, such as swamp birch, alder-leaved buckthorn, marsh-marigold, blue-joint grass, violets, marsh cinquefoil and three-leaved buckbean, may also be present. • Ground surface mostly moss with standing water and conifer litter. • Substrate organic, rarely mineral, mostly deep and hydric (MR = 6, 7, 8, 9 or s).	• Canopy sparse, consisting mainly of black spruce with American larch. • The tall shrub layer consists of speckled alder. Smooth witherod is rare. • Common Labrador tea and leatherleaf are abundant in the groundcover layer. Other shrub species in the groundcover layer include northern bog rosemary, creeping snowberry, pale laurel, dwarf raspberry, currant species and blueberry species. • Herbaceous species Canada blue-joint, three-leaved Solomon's-seal, naked miterwort, marsh-marigold, woodland horsetail as well and several sedge species are present. • Feathermosses and sphagnum mosses are present.

Vegetation Community Type [1]	Community Characterization [2]	Vegetation Description [3]
Boreal Ecosite: B140 Open Moderately Rich Fen OWES: narrow-leaved emergent Fen (gcF): narrow-leaf emergent (ne)*, low shrub (ls), tall shrub (ts), herb (gc), coniferous tree (c), moss (m) CWCS: Riparian Fen subform: Stream Fen	• Graminoid or low shrub communities. Tree cover ≤10% and tall shrub cover ≤25%. • Tree poor. Shrubs when present typically ericaceous. Herb moderately poor. • Trees if present include stunted black spruce and American larch. Shrubs commonly found include bog rosemary, leatherleaf and dwarf birch. Herbaceous plants include white beakrush, slender sedge and buckbean. Bryophytes include peat mosses and scorpion's tail. • Ground surface mostly sedge and deciduous litter and sphagnum. • Substrate usually deep, either mineral or organic and very moist to wet (moisture regime = 6, 7, 8, or 9) or saturated.	• Tree species black spruce and American larch are rare and stunted. • The tall shrub layer is variable and may be up to 25% cover. Species include sweet gale, willow species, red-osier dogwood, speckled alder, narrow-leaved meadow-sweet and alderleaf buckthorn. • Shrub species present in the groundcover layer include leatherleaf, northern bog rosemary and small cranberry. • Herbaceous species white beakrush, water horsetail, sedge species, roundleaf sundew, tussock cottongrass, rush species and bladderwort species are present. • Sphagnum mosses are abundant. • This community typically occurs as a complex with B149 (Organic Shallow Marsh).
Boreal Ecosite: B149 Organic Shallow Marsh OWES: robust emergents Marsh (reM): robust emergents (re)*, narrow-leaved emergents (ne), tall shrub (ts), broad-leaved emergents (be), floating plants (f) CWCS: Riparian Marsh subform: Riparian Stream Marsh	• Herbaceous vegetation community typically composed of emergent grasses, rushes, sedges, forbs (occasionally), or horsetails. Floating-leaved herbaceous species may also be present. • Emergents include broadleaf cattail, sedges, broadleaf arrowhead, water horsetail, sweetflag and creeping spike-rush. Submergent and floating-leaved species include bullhead pond-lily, white water-lily and bladderworts. • Water normally above the substrate surface (less than 2 m deep). • Substrate organic, mostly deep and saturated.	• Community comprised of herbaceous vegetation, most commonly broadleaf cattail. • Other herbaceous species include sedge species, wild calla, three-way sedge, marsh cinquefoil, Canada blue-joint and manna grass species. • Submergent and floating-leaved species include yellow cowlily, floating burreed, water smartweed, pondweed species and lesser duckweed. • This community typically occurs as a complex with B140 (Open Moderately Rich Fen).

Notes:
1 Community type based on the Ecosites of Ontario Field Manual (Boreal Ecosites; MNR 2009), the Field Guide to Forest Ecosystems of Northeastern Ontario (Taylor et al. 2000), the Ontario Wetland Evaluation System (MNR 1993) and/or the Canadian Wetland Classification System (National Wetland Working Group 1997)
2 Based on community characteristics as described in the Ecosites of Ontario Field Manual (Boreal Ecosites; MNR 2009)
3 Vegetation communities and stand description / disturbance are based on field observations.

Table 5-9: Potential Environmental Effects (Preliminary) from BGP

Environmental Component	Potential Effect (Preliminary) [1]
Air quality	Air emissions from the Borden Gold Project site have the potential to generate dust or products of petroleum hydrocarbon combustion that could potentially have a localized effect on plant and animal health. Provincial regulatory requirements will be met for emissions on site and air quality at the property boundary.
Noise	Noise emissions from the Borden Gold Project site have the potential to disturb other area users. Provincial regulatory criteria will be met for emissions on site and at surrounding noise sensitive locations (i.e. points of reception such as dwellings and camps).
Greenhouse gases	Greenhouse gases associated with Borden Gold Project construction and operation have a very minor potential to contribute to global carbon dioxide emissions and the associated phenomenon of climate change.
Ambient light	Operation of an industrial facility will of necessity require provision of continuous localized lighting to ensure effective operations and the safety of workers and others. This will result in an increase in the ambient light at the project site and a localized glow offsite.
Watercourses / waterbodies	The Borden River will receive all treated effluent (mine water and contact waters) from the Borden Gold Project site. The discharge will be meet all Federal and Provincial regulatory requirements. There may be a change to the flow (increase or decrease) in the river cause by the dewatering of the underground mine to be assessed further.
Unnamed Tributaries 1, 2 and 3	Borden Gold Project development has the potential to reduce downstream flow in the existing channel (but is returned to the Borden River) and creek flow is highly modified by beaver activity. No overprinting of the active channels are proposed. Quality within the minor watercourses is not expected to be affected.
Aquatic habitat and species	There may however be limited reductions in flow in local watercourses which may result in an indirect limited effect on fish and fish habitat.
Groundwater system	Mine dewatering has the potential to draw down local aquifers. Local watercourses are not anticipated to be affected. Groundwater quality is not expected to be affected.
Terrestrial habitat	Mine site and related infrastructure development will displace limited areas of terrestrial habitat. There are no known terrestrial habitat linkages that will be affected. An area of approximately 4 to 8 hectares may be affected.
Wildlife and migratory birds including Species at Risk	Mine site development will displace existing terrestrial habitat. Limited effect if any due to general lack of presence. An area of approximately 4 to 8 hectares may be affected.
Species at Risk	Mine site development will displace existing terrestrial habitat. No Species at Risk are known to be present.
Hunting, fishing and tourism	Limited effect as the Borden Gold Project is to be located on an active advanced exploration program site where access is controlled / restricted for safety of workers.
Aboriginal / public health and safety (air emissions, water quality, socio-economics)	No negative effect expected on Reserve lands. The Borden Gold Project will provide a positive socio-economic effect, in providing employment and commercial opportunities.
Current traditional use of lands and resources	None to limited effect expected. There will be minor release of air contaminants offsite associated with fuel combustion and fugitive dust; release of contaminants in treated effluent to the Borden River.
Structures, sites or objects [2]	No structures, sites or objects of historical, archaeological or architectural significance are present. No sites of paleontological significance are known to be present and no effect is anticipated.

Notes:
1 Effect described is additional to any effect associated with the existing Advanced Exploration Program.
2 Structures, sites or objects of historical, archaeological, architectural or paleontological significance.

Table 5-10: Potential Environmental Effects (Preliminary) from Use of Offsite Existing Infrastructure / Facilities

Environmental Component	Potential Effect (Preliminary) [1]
Air quality	A very minor increase in air emissions is anticipated to result from the transport of Borden Gold Project ore in the immediate vicinity of the road infrastructure (additional approximately 60 to 80 return vehicle trips per day). No changes to processing plant rates of production are proposed, and no change to air emissions are expected as a result of the processing of Borden Gold Project ore.
Noise	A very minor increase in noise emissions is anticipated to result from the transport of Borden Gold Project ore. No changes to processing plant rates of production are proposed and no change to noise emissions are expected as a result of the processing of Borden Gold Project ore.
Greenhouse gases	A very minor increase in greenhouse gases is anticipated to result from the transport of Borden Gold Project ore. No changes to processing plant rates or means of production at the processing plant are proposed, and no change to the existing annual greenhouse gas emissions are expected as a result of the processing of Borden Gold Project ore.
Ambient light	Very minor increase in transitory ambient light associated with the increased vehicle traffic on Highway 101 (additional approximately 60 to 80 return vehicle trips per day).
Watercourses / waterbodies	No effect anticipated. No expansion of existing offsite infrastructure and facilities are proposed. Processing of Borden Gold Project ore will not change effluent quality from the Dome Processing Facility.
Groundwater system	No effect anticipated. No expansion of existing offsite infrastructure and facilities are proposed.
Terrestrial habitat	No effect anticipated. No expansion of existing offsite infrastructure and facilities are proposed.
Wildlife and migratory birds including Species at Risk	Potential very minor increase in wildlife / bird deaths associated with increased vehicle traffic (additional approximately 60 to 80 return vehicle trips per day).
Hunting, fishing and tourism	No effect anticipated. The volume of increase traffic is not expected to be noticeable.
Commercial operations (mining, aggregates and forestry)	No effect anticipated. No expansion of existing offsite infrastructure and facilities are proposed. The Borden Gold Project will provide a positive socio-economic effect, in providing employment and commercial opportunities.
Aboriginal / public health and safety (air emissions, water quality, socio-economics)	No effect anticipated. No expansion of existing offsite infrastructure and facilities are proposed. Processing of Borden Gold Project ore will not change effluent quality from the Dome Processing Facility.
Physical and cultural heritage	No effect expected. No expansion of existing offsite infrastructure and facilities are proposed.
Current traditional use of lands and resources	No effect expected. No expansion of existing offsite infrastructure and facilities are proposed. Processing of Borden Gold Project ore will not change effluent quality from the Dome Processing Facility.
Structures, sites or objects [2]	No effect expected. No expansion of existing offsite infrastructure and facilities are proposed.

Notes:

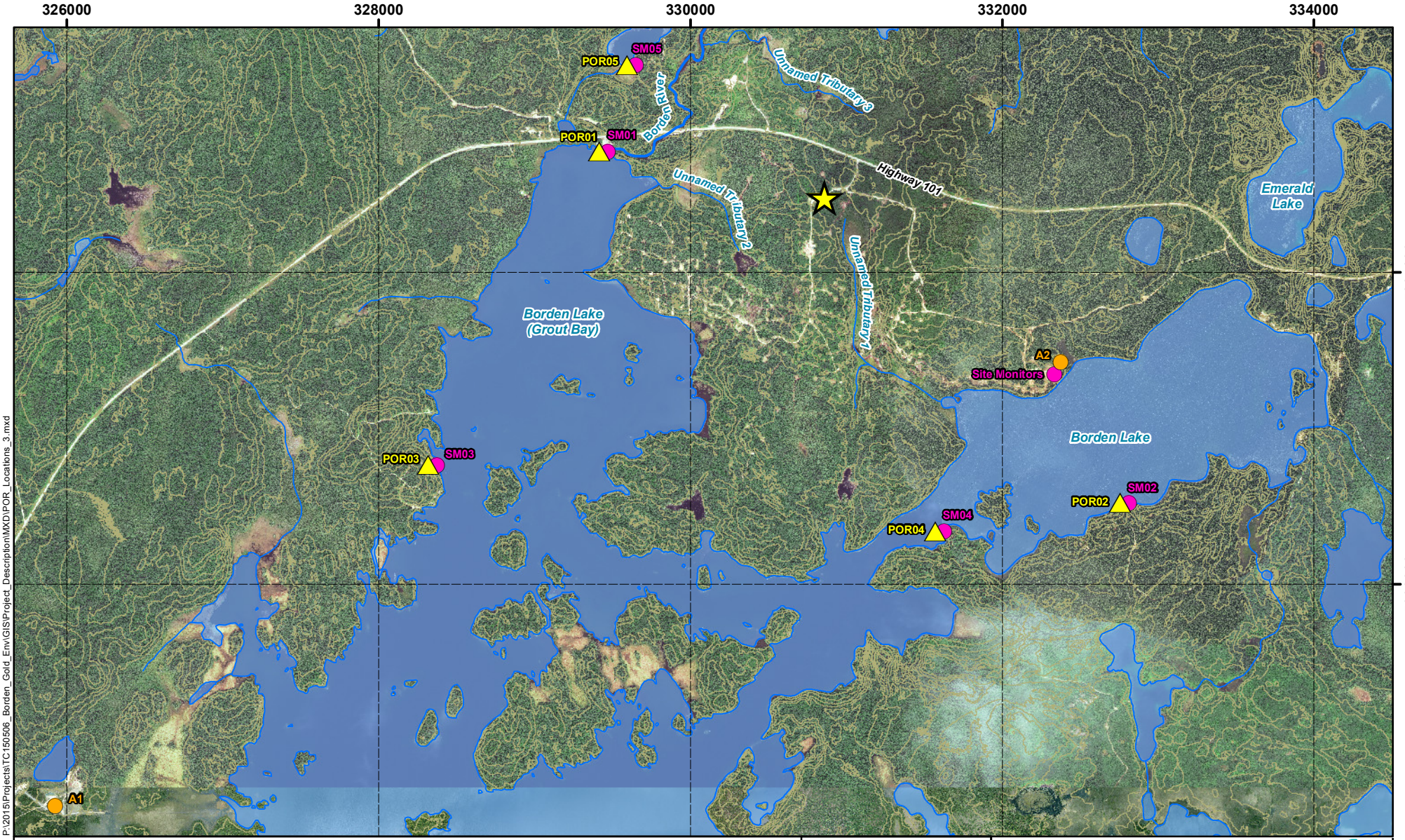
1 Effect described is additional to any effect associated with the existing traffic on roads / operation of the Dome Processing Facility.

2 Structures, sites or objects of historical, archaeological, architectural or paleontological significance.

Table 5-11: Potential GHG Production (Preliminary)

Project Component	Industry Projection [1]		Ontario Targets [2]		Canada Targets [3]		Global Target [4]
	2020	2030	2020	2030	2020	2030	2030
	58 Mt [6]	62 Mt	155 Mt	115 Mt	622 Mt	524 Mt	34 Gt
Mine Site	0.00390 Mt	0.00366 Mt	0.00390 Mt	0.00366 Mt	0.00390 Mt	0.00366 Mt	0.0000037 Gt
	0.007%	0.006%	0.003%	0.003%	0.001%	0.001%	0.00001%
Ore Transport to Existing Plant	0.01735 Mt	0.00160 Mt	0.01735 Mt	0.00160 Mt	0.01735 Mt	0.00160 Mt	0.0000016 Gt
	0.03%	0.003%	0.01%	0.001%	0.003%	0.0003%	0.000005%
Processing at Existing Plant [5]	0.00245 Mt	0.00245 Mt	0.00245 Mt	0.00245 Mt	0.00245 Mt	0.00245 Mt	0.0000025 Gt
	0.004%	0.004%	0.002%	0.002%	0.0004%	0.0005%	0.000007%

Notes:
1 MOECC (2014).
2 Environmental Commissioner of Ontario (2015).
3 ECCC (2016b).
4 United Nations Framework Convention on Climate Change (2016).
5 This is based on current fuel usage and will not change by processing BGP versus another ore.
6 Projections are in tonnes (million tonnes; Mt or billion tonnes; Gt) CO_2 equivalent units.



P:\2015\Projects\TC150506_Borden_Gold_Env\GIS\Project_Description\MXD\POR_Locations_3.mxd

LEGEND

- Project Location
- Points of Reception
- Sound Monitor Location
- Air Quality Monitor
- Contours (5 m interval)
- Watercourse
- Waterbody

0 500 1,000 2,000 3,000 4,000 5,000 Metres

NOTES:
- Imagery scene from 13 August 2015
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.

Datum: NAD83
Projection: UTM Zone 17N

N W E S

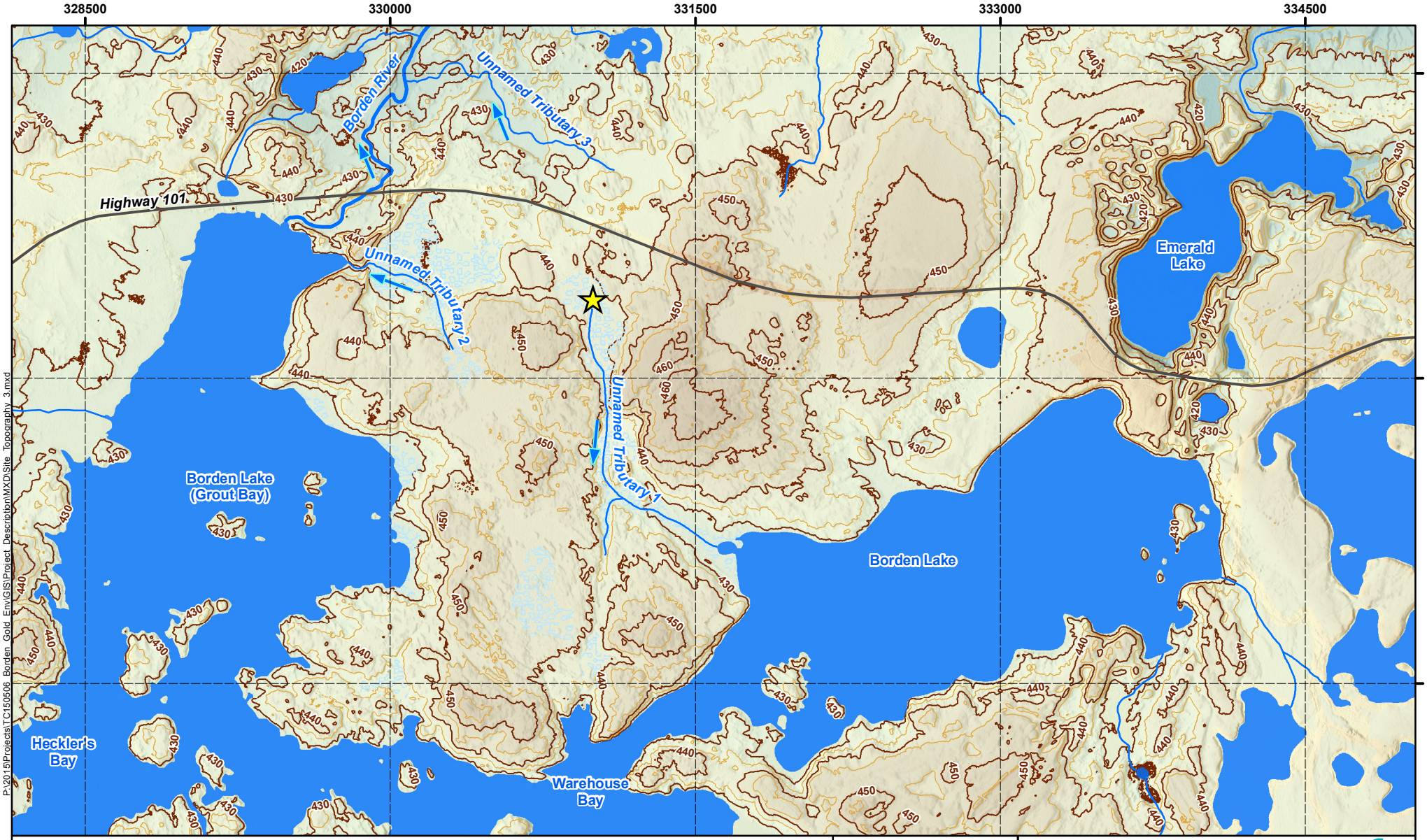
GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Baseline Air Quality and Sound Monitoring Locations

PROJECT N°: TC150506	**FIGURE: 5-1**
SCALE: 1:34,000	DATE: September 2016



P:\2015\Projects\TC150506_Borden_Gold_Env\GIS\Project_Description\MXD\Site_Topography_3.mxd

LEGEND

- Project Location
- Flow Direction
- Watercourse
- Low-lying Area
- Waterbodies
- 425 Contour (5 m Interval)
- 420 Contour (10 m Interval)

Elevation Colour Ramp

High ground

Low ground

NOTES:
- Ortho-mosaicked color digital imagery, 10 cm pixel resolution, May 2013 was provided by Borden Gold.
- Contours were derived from Lidar.
- NTS watercourse information has been modified to reflect infield investigations.
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.

Datum: NAD83
Projection: UTM Zone 17N

0 0.5 1 2 3 4 Km

N W E S

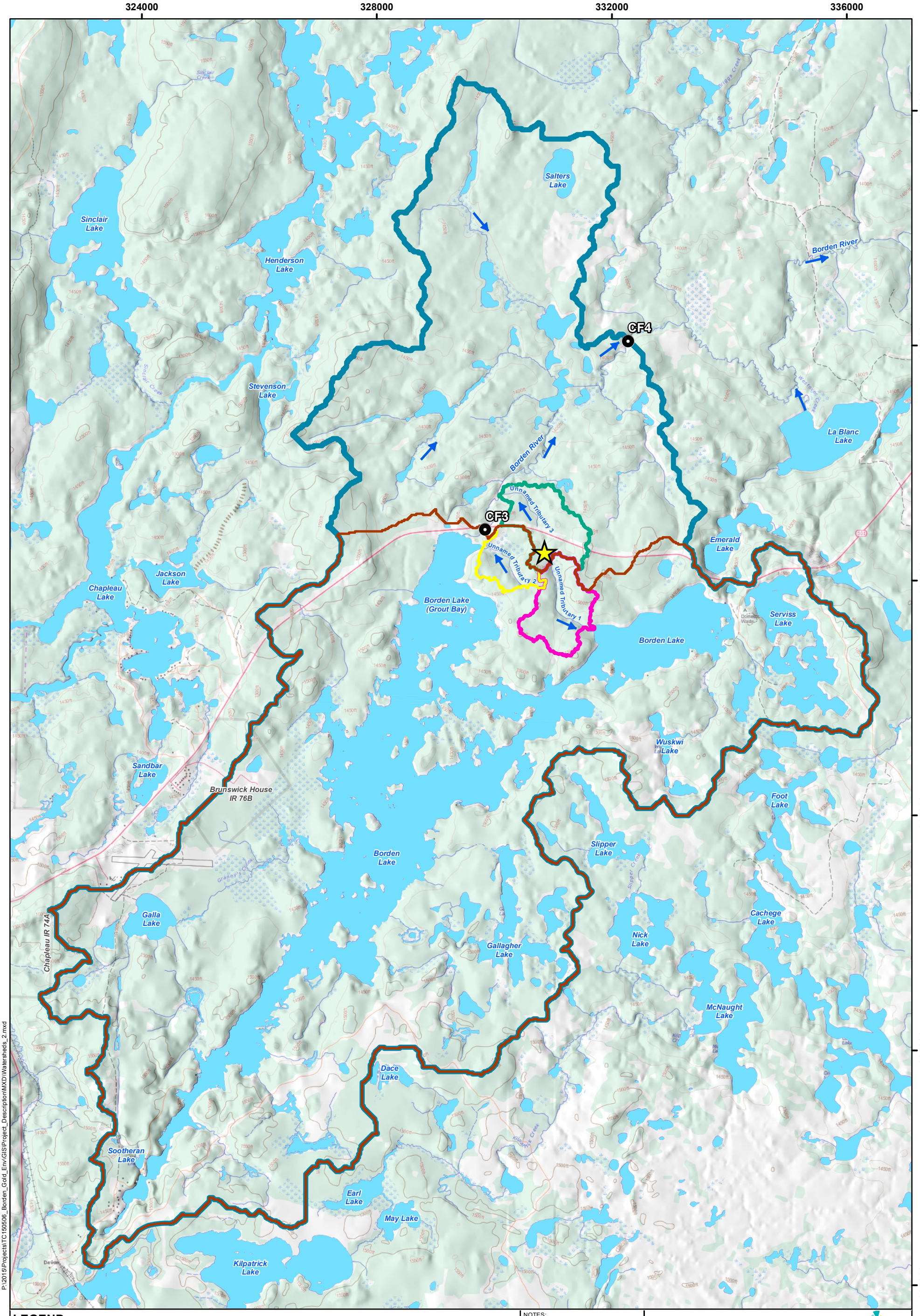
GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Local Topography

PROJECT N°: TC150506	**FIGURE: 5-2**
SCALE: 1:26,000	DATE: September 2016



P:\2015\Projects\TC150506_Borden_Gold_Env\GIS\Project_Description\MXD\Watersheds_2.mxd

LEGEND

- Project Location
- Hydrological Station (Labelled with ID)
- CF3 Catchment Area (8,402 ha)
- CF4 Catchment Area (11,457 ha)
- Tributary 1 Catchment Area (130 ha)
- Tributary 2 Catchment Area (85 ha)
- Tributary 3 Catchment Area (134 ha)
- Waterbodies

0 1 2 4 6 8 Kilometres

NOTES:
- Topographic map information extracted from NRCan Toporama 1:50k NTS DRG sheets.
- Waterbody information extracted from MNRF Land Information Ontario
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.

Datum & Projection: NAD 1983 UTM Zone 17N

GOLDCORP

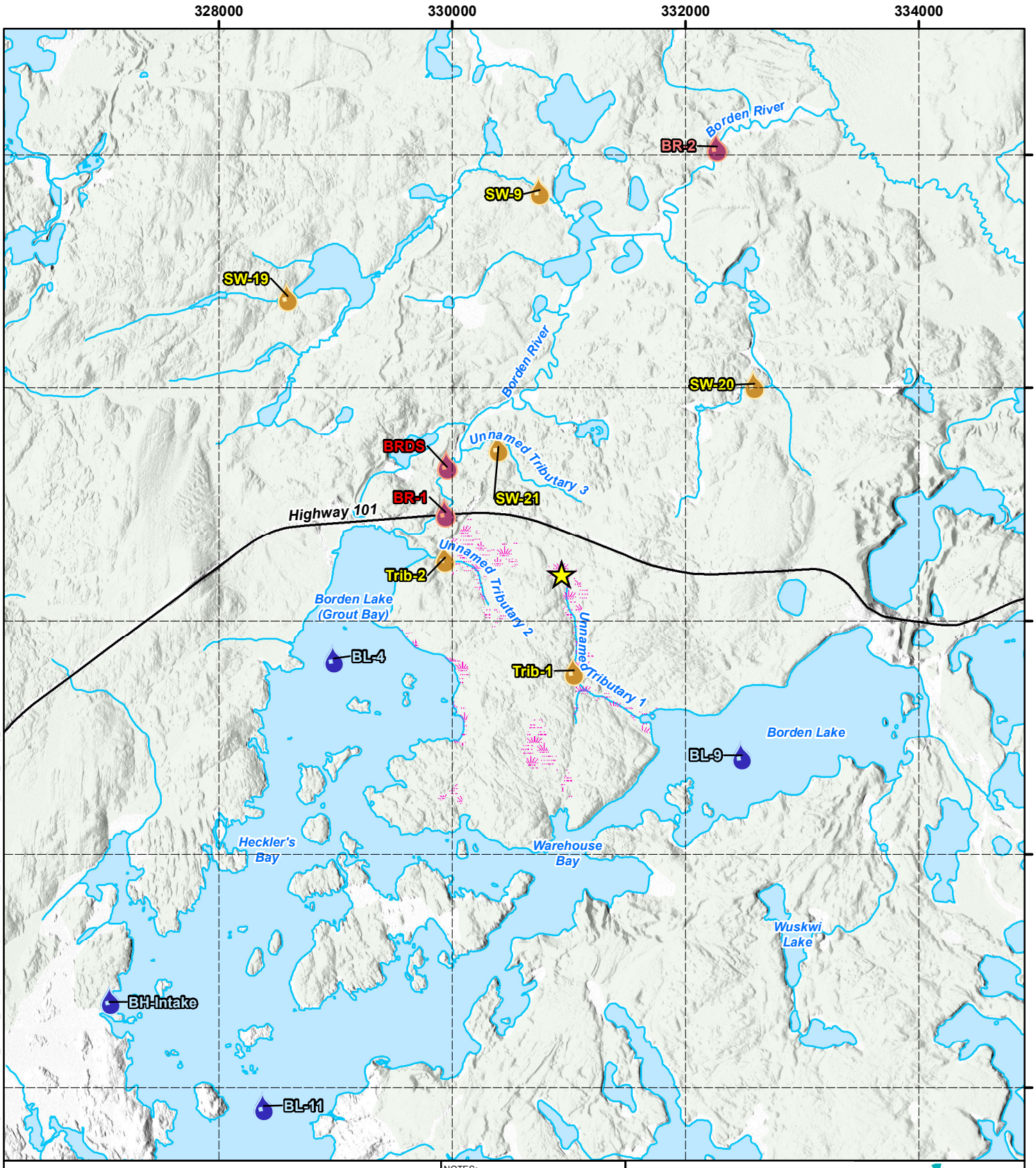
amec foster wheeler

BORDEN GOLD PROJECT

Hydrologic Monitoring Stations and Local Watersheds

PROJECT N°: TC150506 | **FIGURE: 5-3**

SCALE: 1:60,000 | DATE: September 2016



P:\2015\Projects\TC150506_Borden_Gold_Env\GIS\Aquatics\Water_quality\MXD\Surface_Water_Quality_2.mxd

LEGEND

- Project Location
- Watercourse
- Waterbody
- Low-lying Area

Sampling Locations

- Lake
- River
- Tributaries

NOTES:
- NTS watercourse information has been modified to reflect infield investigations.
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.

GOLDCORP

amec foster wheeler

BORDEN GOLD

Surface Water Quality Sampling Locations

Datum & Projection: NAD 1983 UTM Zone 17N

0 500 1,000 1,500 2,000 Metres

PROJECT N°: TC150506

FIGURE: 5-4

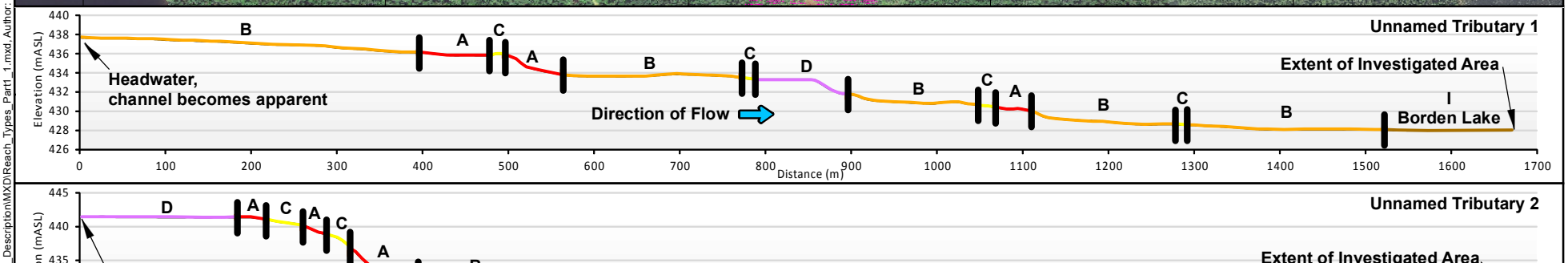
SCALE: 1:45,000

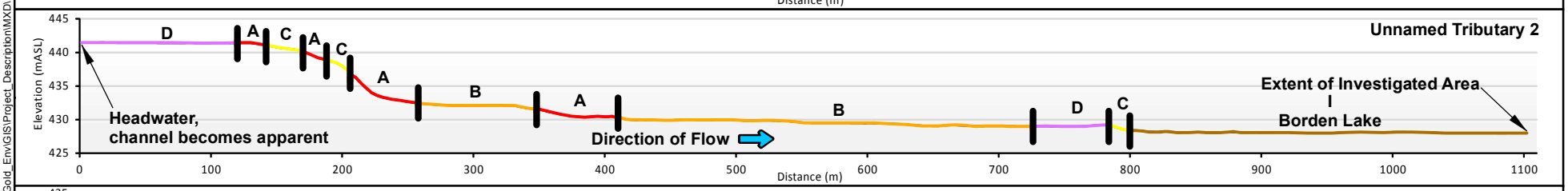
DATE: September 2016

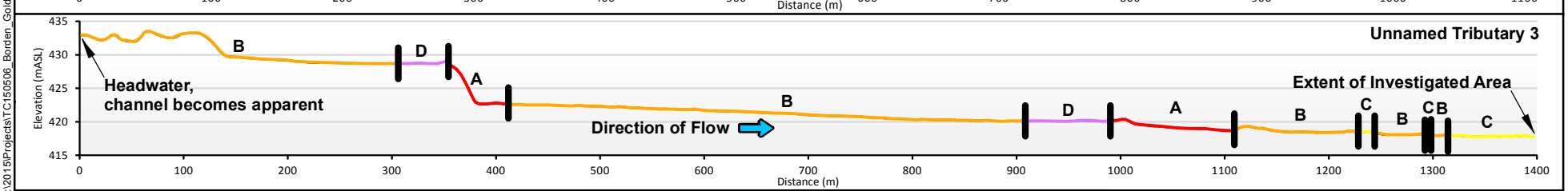
329500 330000 330500 331000 331500

5305500 5305000 5304500 5304000 5303500 5303000

Trib3-B5
Trib3-D3
Trib3-C3
Borden River
Unnamed Tributary 3
Trib3-D4
Highway 101
Trib2-MOUTH
Trib2-B3
Unnamed Tributary 2
Trib2-A2
Trib2-D2
Unnamed Tributary 1
Trib1-A1
Trib1-C2
Trib1-D1
Trib1-A3
Trib1-B2
Trib1-C1
Trib1-B1
Trib1-MOUTH
Borden Lake



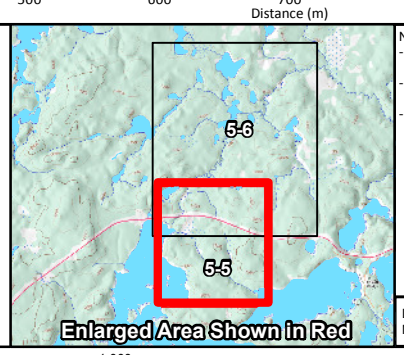




LEGEND

- Habitat Type Sampling Locations
- Beaver Dams
- Watercourse
- Low-lying Area

Habitat Types: A, B, C, D, I



NOTES:
- Background imagery collected on August 13, 2015
- NTS watercourse information has been modified to reflect infield investigations.
- Elevation data shown in graphs was extracted from a LiDAR surface and graphed using Microsoft Excel.

Datum & Projection: NAD 1983 UTM Zone 17N

0 200 400 600 800 1,000 Metres

GOLDCORP

amec foster wheeler

BORDEN GOLD PROJECT

Unnamed Tributary Habitat Types

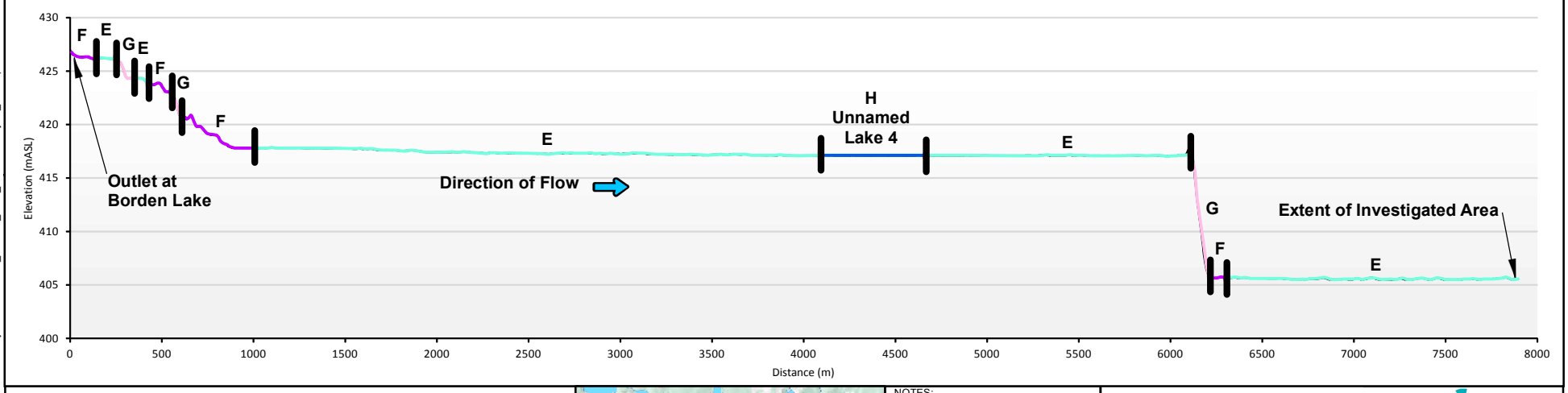
PROJECT N°: TC150506 | **FIGURE: 5-5**

SCALE: 1:10,000 | DATE: September 2016

P:\2015\Projects\TC150506_Borden_Gold_EnvGIS\Project_Description\MXD\Reach_Types_Part1_1.mxd, Author: SM, modified by sandra.marquez, 09 September 2016

330000
331000
332000
333000
5308000
5307000
5306000
5305000

BR-400mUS-02
BR-400mUS-01
BR-400mUS-03
Borden River
Unnamed Tributary 8
Lake4
Unnamed Lake 4
BR-Mid1-01
BR-Mid2-01
BR-Mid2-02
Unnamed Tributary 3
BR-90mDS-01
BR-90mDS-02
BR-90mDS-03
BR-US-01
BR-US-02
Borden Lake (Grout Bay)
Highway 101

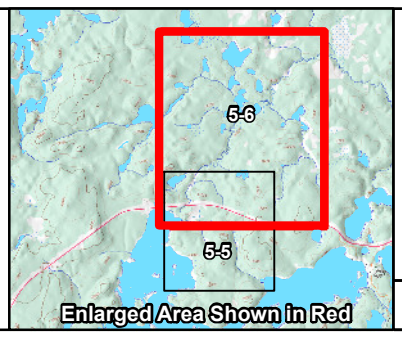


LEGEND

- Habitat Type Sampling Locations
- Beaver Dams
- Watercourse
- Low-lying Area

Habitat Types

- E
- F
- G
- H



NOTES:
- Background imagery collected on August 13, 2015
- NTS watercourse information has been modified to reflect infield investigations.
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.
- Elevation data shown in graphs was extracted from a LiDAR surface and graphed using Microsoft Excel.

0 200 400 600 800 1,000 Metres

Datum & Projection: NAD 1983 UTM Zone 17N

N W E S

GOLDCORP

amec foster wheeler

BORDEN GOLD PROJECT

Borden River Habitat Types

PROJECT N°: TC150506 | **FIGURE: 5-6**

SCALE: 1:15,000 | DATE: September 2016

P:\2015\Projects\TC150506_Borden_Gold_Env\GIS\Project_Description\MXD\Reach_Types_Part2_1.mxd, Author: SM, modified by sandra.marquez, 09 September 2016

328000 330000 332000 334000

5306000

5304000

Overview

Enlarged Area

2 Km

Borden River

Highway 101

Borden Lake (Grout Bay)

Borden Lake

Emerald Lake

P:\2015\Projects\TC150506_Borden_Gold_Env\GIS\Project_Description\MXD\Veg_Zoomed_To_Site_1.mxd

LEGEND

- Project Location
- Natural Environment Study Area
- Vegetation Ecosites
- Watercourse
- Waterbody

Wetland:
B128 - Organic Intermediate Conifer Swamp
B223 - Mineral Intermediate Conifer Swamp
B224 - Mineral Rich Conifer Swamp
B134 - Mineral Swamp Thicket
B138 - Open Bog
B136 - Sparse Treed Fen
B140 - Open Moderately Rich Fen
B149 - Organic Shallow Marsh

Upland:
B054 - Dry to Fresh, Coarse: Red Pine - White Pine Mixedwood
B055 - Dry to Fresh, Coarse: Aspen – Birchwood
B088 - Fresh, Clayey: Aspen – Birch Hardwood
B104 - Fresh, Silty to Fine Loamy: Aspen - Birch Hardwood
B083 - Fresh, Clayey: Black Spruce - Pine Conifer

NOTES:
- Imagery scene from 13 August 2015
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.

0 0.5 1 2 3 4 5 Kilometres

Datum: NAD83
Projection: UTM Zone 17N

N W E S

GOLDCORP BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Local Vegetation Ecosites

PROJECT Nº: TC150506 | **FIGURE: 5-7**

SCALE: 1:20,000 | DATE: September 2016

6.0 PROPONENT ENGAGEMENT AND CONSULTATION WITH ABORIGINAL GROUPS

6.1 Potentially Affected and Interested Aboriginal Groups

The closest First Nation Reserve to the site is Brunswick House First Nation (Table 6-1; Figure 3-4). Other Aboriginal Reserves located in the general project area include: the Chapleau Cree First Nation, the Chapleau Ojibwe First Nation and the Michipicoten First Nation, all with Reserve lands located near Chapleau, Ontario.

The Provincial MNDM has directed that Goldcorp engage with these First Nations and the Métis Nation of Ontario in regards to the advanced exploration program. Goldcorp anticipates the MNDM will provide the same direction with regard to the proposed mine development.

6.2 Overview of Aboriginal Engagement Activities to Date

Aboriginal consultation on the BGP began under Probe. On January 21, 2015, Probe met with the Chapleau Cree First Nation and Brunswick House First Nation leadership to introduce and discuss the exploration, advanced exploration program and future mine. When Goldcorp acquired the property, Aboriginal consultation was expanded to include the Michipicoten First Nation. Regular meetings have been held with the community leadership, technical representatives and the community. The Métis Nation of Ontario are informed of the project on a quarterly basis and met with Goldcorp on June 10, 2016 to set the foundation for future engagement.

A summary of meetings with Aboriginal groups is provided in Table 6-2 with further detail provided in Appendix C-1 and C-2.

As part of its ongoing consultation activities, Goldcorp has engaged the Brunswick House, Chapleau Cree and the Chapleau Ojibwe First Nations communities in a confidential and meaningful way regarding the collection and documentation of TK / TLU surrounding the BGP area. The goal is to ensure that any traditional land uses are properly documented and respectfully taken into account.

In addition to the general consultation and engagement noted above, a draft version of this Project Description was provided to the Brunswick House First Nation, Chapleau Cree First Nation, Chapleau Ojibwe First Nation, Michipicoten First Nation and the Métis Nation of Ontario to allow for preliminary commentary. The consultants to the Brunswick House, Chapleau Cree and Chapleau Ojibwe First Nations provided preliminary review comments which were considered and addressed in this document as practical. Comments were also provided by the Métis Nation of Ontario. Copies of these comments and the responses made by Goldcorp are provided in Appendix C-3. Comments were not received from the Michipicoten First Nation on the draft of this document prior to issuance of this document to the CEA Agency.

6.3 Key Comments and Concerns by Aboriginal Groups

Key comments about the BGP from Aboriginal groups during earlier discussions with Probe as well as subsequently with Goldcorp, have often be related to employment, training and contracting opportunities, although a genuine interest in the environment and potential environmental effects has also be expressed.

In recognition of comments regarding Aboriginal employment and business opportunities, Goldcorp has:

- Hired community members at the BGP office (First Nation Coordinator) and exploration core handling facility in Chapleau (core technicians and core cutters). These individuals received on the job training, as well as the suite of requirements, including for health and safety aspects, required for Goldcorp employees.

- Employed three environmental monitors from local First Nation communities, providing formal environmental monitor training for these individuals as well as two Brunswick House technical support staff. The environmental monitors also received training for Goldcorp employee requirements and on the job training.

- Goldcorp has encouraged contracts to hire local First Nations members. The primary exploration drilling contractor (Major Drilling Ltd.) has entered into a joint venture relationship with the three local First Nations, not just for the BGP, which provides the communities and members with economic benefits including employment opportunities.

Job advertisements for the exploration work to date have been issued first to local Aboriginal communities for posting in the band office or other means, to facilitate community access to employment opportunities in advance of being posted publically. The jobs are subsequently posted in the local newspaper (Chapleau Express).

Potential contracting opportunities for Aboriginal businesses has also been raised in community and leadership discussions. In relation to the BGP, Goldcorp intends provide list(s) of potential economic opportunities to individual First Nations as they arise. Goldcorp is committed to an open bidding process for services and equipment that would allow Aboriginal contractors to equally participate in potential project development opportunities.

Additional environment-related issues and interests raised by local Aboriginal communities by topic to date, generally in relation to the advanced exploration program but also relevant to the BGP, include the following aspects.

Fisheries and Wildlife:

- Potential effects of the BGP on water quality, fish and wildlife.

Water Resources:

- General concern about potential effects on Borden Lake and Borden River; and
- Potential for effects on the Brunswick House drinking supply (Borden Lake).

Environmental Management:

- Emission (air quality and sound) and effluent quality; and
- Length of time and process to obtain environmental approvals to proceed to mining.

Employment and Benefits:

- Interest in training, employment and contracting opportunities.

Project Components and Mining:

- Management of mine rock and acid rock drainage; and
- Life of mine, mining process generally.

Traditional Land Use and Culture:

- Ability to continue to practice traditional practices on BGP site; and
- Interest in retention of TK / TLU information.

In addition, a community led study of potential socio-economic effects associated with the advanced exploration program provided the following summary of potential project concerns, under four themes (Olson et al. 2016):

Economic:

- Lack of access to meaningful, secure, quality, long term jobs;
- Lack of access to training or investing without job success;
- Lack of opportunity to take advantage of business opportunities;
- Lack of access to jobs due to lack of housing; and
- Increased cost of living.

Social and Health:

- Impacts to health – physical, mental, health and addictions;
- Safety, including for youth and women;
- Decreased community cohesion due to unequal advantage;
- Higher income leading to social problems; and
- High expectations / disappointment and impact of boom / bust cycles.

Cultural:

- Reduced ability to practice treaty rights;
- Reduced ability for quiet enjoyment of the land and to practice and teach culture;
- Reduced harvest quantity and quality;
- Increased noise, recreational users and traffic; and
- Impacts on lake used for swimming.

Environmental:

- Impacts on water quality, quantity and access;
- Impacts on air quality;
- Contamination and fear of contamination;
- Health of wildlife and habitats; and
- Downstream impacts from water discharges.

It is reasonable to expect that these same concerns could apply to the proposed mine development (as well as potentially other concerns not identified in that study).

6.4 Overview of Ongoing and Proposed Aboriginal Engagement

Goldcorp plans to continue to have regular meetings with local First Nation representatives; generally every six to eight weeks with the membership and every two months with identified leaders and/or representatives. Future meetings will be established to gather feedback about EA findings and provide feedback about appropriate management of potential environmental effects. Future community information events will be discussed in advance with the First Nation involved. The Métis Nation of Ontario has been provided quarterly updates and face to face meetings will be ongoing.

On completion of the EIS, hard copies will be made available at convenient and strategic public locations such as public libraries in local communities, the Goldcorp and government office(s) for a 30-day review. A copy will also be provided to the local First Nation band offices. The EIS will also be available for downloading from the Goldcorp website.

Table 6-1: Aboriginal Groups which Goldcorp has Engaged

Local First Nation or Métis Group	Total Population [1]	Physical Address [2]	Mailing Address	Postal Code	Phone	Fax
Brunswick House First Nation (Chapleau 76B) Chief Kevin Tangie	802 members: 205 on-reserve 597 off-reserve [3]	Highway 101 East, 6 km southwest of BGP site	P.O. Box 1178 Chapleau, Ontario	P0M 1K0	705-864-0174	705-864-1960
Chapleau Cree First Nation (Chapleau 75 and Fox Lake) Chief Keith Corston	466 members: 59 on-reserve 407 off-reserve [3]	Chapleau; 7.5 and 16 km southwest of BGP site	P.O. Box 400 Chapleau, Ontario	P0M 1K0	705-864-0784	705-864-1760
Chapleau Ojibwe First Nation (Chapleau 61A, 74, 74A) Chief Anita Stephens	40 members: 30 on-reserve 10 off-reserve [3]	Chapleau; 522 Highway 129, 10 to 12 km southwest of BGP site	P.O. Box 279 Chapleau, Ontario	P0M 1K0	705-864-2910	705-864-2911
Michipicoten First Nation (Chapleau 61) Chief Joe Buckell	775 members: 54 on-reserve 721 off-reserve	Chapleau; 11 km southwest of BGP site	P.O. Box 1, RR 1 Wawa, Ontario	P0S 1K0	705-856-1993	705-856-1642
Métis Nation of Ontario Andy Lefebvre	-	-	347 Spruce Street South Timmins Ontario	P4N 3WS	705-264-3939	705-264-5468

Notes:
1 Olson et al. (2016); AANDC (2016).
2 See Figure 3-4 for location; approximate centroid distances.
3 Off-reserve or on other Reserve / on Crown land.
All distances approximate.

Table 6-2: Related Meetings with Aboriginal Communities

Date	Purpose of Meeting	Meeting Participants
January 21, 2015	Aboriginal engagement	Chapleau Cree First Nation (Chief and Councilors), Brunswick House First Nation (Chief)
March 13, 2015	Aboriginal engagement	Chiefs of Chapleau Cree First Nation and Brunswick House First Nation
March 17, 2015	Aboriginal engagement	Chiefs of Chapleau Cree First Nation and Brunswick House First Nation
April 28, 2015	Aboriginal engagement	Chapleau Cree First Nation, Brunswick House First Nation and Wabun Tribal Council representatives
May 13, 2015	Aboriginal engagement	Chapleau Cree First Nation, Brunswick House First Nation and Wabun Tribal Council representatives
May 19, 2015	Aboriginal engagement	Métis Nation of Ontario
June 22, 2015	Aboriginal engagement	Chapleau Cree First Nation, Brunswick House First Nation and Wabun Tribal Council representatives
August 5, 2015	Aboriginal engagement	Bell and Bernard Ltd (on behalf of Michipicoten First Nation)
September 14, 2015	Aboriginal engagement	Brunswick House First Nation (community)
September 15, 2015	Aboriginal engagement	Chapleau Cree First Nation (community)
September 24, 2015	Aboriginal engagement	Michipicoten First Nation representative
November 3, 2015	Aboriginal engagement	Michipicoten First Nation (Chief and others), Bell and Bernard Ltd.
December 3, 2015	Site tour	Chapleau Cree First Nation, Brunswick House First Nation
December 3, 2015	Aboriginal engagement / meeting information session	Chapleau Cree First Nation, Brunswick House First Nation (attended), Chapleau Ojibwe First Nation invited
January 5, 2016	Aboriginal engagement	Michipicoten First Nation (Chief and others), Bell and Bernard Ltd.
January 26, 2016	Aboriginal engagement	Chapleau Cree First Nation
February 22, 2016	Aboriginal engagement	Chapleau Ojibwe First Nation
February 26, 2016	Aboriginal engagement	Brunswick House First Nation, Chapleau Ojibwe First Nation, Cross Consultancy
April 28, 2016	Aboriginal engagement	Brunswick House First Nation, Chapleau Ojibwe First Nation, Cross Consultancy
April 29, 2016	Aboriginal engagement	Métis Nation of Ontario
May 24, 2016	Aboriginal engagement	Brunswick House First Nation, Chapleau Ojibwe First Nation, Cross Consultancy
June 10, 2016	Aboriginal engagement	Métis Nation of Ontario
June 23, 2016	Aboriginal engagement	Brunswick House First Nation, Chapleau Ojibwe First Nation, Cross Consultancy
August 10, 2016	Aboriginal engagement	Michipicoten First Nation (Chief and others), Bell and Bernard Ltd.
August 16, 2016	Aboriginal engagement	Chapleau Cree First Nation, Brunswick House First Nation and Wabun Tribal Council representatives
September 13, 2016	Aboriginal engagement	Métis Nation of Ontario

7.0 PROPONENT CONSULTATION WITH STAKEHOLDERS

7.1 Consultation with Stakeholders

7.1.1 Potentially Affected and Interested Stakeholders

Stakeholders involved in the BGP to date include those with a direct interest in the BGP (or previous exploration and ongoing advanced exploration programs), or those who were able to provide data for baseline environmental reports such as Municipal and Provincial government department representatives, community–based service providers, economic development agencies and similar.

Goldcorp has been in ongoing communications with a number of Federal and Provincial government departments and ministries identified in Section 1.3, primarily regarding the ongoing exploration activities and proposed advanced exploration program.

Other stakeholders involved to date include:

- Local cottagers;
- Local campground owners;
- General public;
- Various Chapleau-area small business owners; and
- Business and Community Interests, including: Chapleau Economic Development Corporation; Chapleau Health Services; and Chapleau and District Family Health Team.

The list of stakeholders is expected to continue to evolve throughout BGP development to reflect varying levels of interest and issues over time.

7.1.2 Overview of Stakeholder Consultation Activities to Date

The public consultation program is designed to involve stakeholders early in the design of the BGP, to identify concerns and to provide opportunities for input regarding the proposed alternatives for both the advanced exploration program and proposed mine. Consultation methods include meetings, telephone conversations, e-mails, mailed information, public notices and open houses. These approach have afforded local residents and other interested parties the opportunity to review planning and project information.

Initial public consultation for the BGP began under Probe. Goldcorp acquired the property in February 2015 and has continued with public consultation during ongoing planning for the BGP.

Goldcorp has held two public open houses in Chapleau since acquiring the project. Notices for both open houses were published in the local newspaper (Chapleau Express):

- The first open house was held at the Royal Canadian Legion on December 1, 2015. Goldcorp had 10 representatives present to describe the project and answer questions. The open house was attended by thirteen members of the public.

- The second open house was also held on January 27, 2016 in Chapleau at the Royal Canadian Legion. Goldcorp had five representatives in attendance, and approximately 30 members of the public attended.

Presentations regarding the project were provided at both open houses. Although comment forms were provided at both open houses none have been returned to date to Goldcorp.

Goldcorp has held ongoing several meetings with the Borden Lake cottagers.

7.1.3 Key Comments and Concerns by Stakeholders

Key comments about the BGP during early discussions with Probe, as well as subsequently with Goldcorp, have often related to potential employment and contracting opportunities. There has also been an interest expressed regarding environmental aspects, as briefly described below.

Fisheries and Wildlife:

- Effects of the BGP on water quality, fish and wildlife.

Water Resources:

- General concern about potential effects of the BGP on Borden Lake and Borden River.

Environmental Management:

- Length of time and process to obtain environmental approvals to proceed to mining;
- Emission (air quality and sound) and effluent quality; and
- Visual effects.

Employment and Benefits:

- Interest in economic opportunities.

Project Components and Mining:

- Management of mine rock and acid rock drainage;
- Clarity regarding open pit versus underground mining; and
- Life of mine, mining process generally.

7.2 Overview of Ongoing and Proposed Stakeholder Consultation Activities

Goldcorp will continue to inform and involve stakeholders including its nearest neighbours in a variety of ways. Future public meetings or open houses in Chapleau will provide updated information about the BGP. Meeting(s) will also support gathering feedback about EA findings and providing feedback to Goldcorp about the appropriate management of potential environmental effects. In addition, Goldcorp intends to hold ongoing discussions with stakeholders (as requested) to assist in the preparation of the EIS. Future community information events will be posted in the local newspaper (Chapleau Express) and/or distributed by other means.

On completion of the EIS, hard copies will be made available at convenient and strategic public locations such as public libraries in local communities, the Goldcorp and government office(s) for a 30-day review. The EIS will also be available for downloading from the Goldcorp website.

7.3 Other Jurisdictions

The BGP is located within the Province of Ontario and must meet the regulatory requirements of the Provincial and Federal governments.

Based on the current BGP design, there are no anticipated Provincial EA requirements (Ontario *Environmental Assessment Act*). Should a requirement be identified through the Provincial government review of this Project Description or by other means, it is anticipated that such a Provincial EA process could be coordinated with a Federal EA process.

Development of the BGP is anticipated to require amendment(s) to advanced exploration program approvals (currently in progress) and potentially a number of new environmental approvals from the Province. Provincial regulatory requirements are described in Section 2.3.4 subject to the results of ongoing government consultation.

There are no other jurisdictions with EA or regulatory requirements that have not already been identified in previous sections.

Table 7-1: Related Meetings with Government Agencies and other Stakeholders

Date	Purpose of Meeting	Meeting Participants
December 3, 2014	Inter-ministry meeting	MNDM, MOECC, MNRF, MOL, MOT and ECCC
March 17, 2015	Consultation with local cottagers	Borden Lake cottagers
July 6, 2015	Public information session	General public
July 6, 2015	Consultation with local cottagers	Borden Lake cottagers
August 12, 2015	Site tour with local cottagers	Borden Lake cottagers
October 5, 2015	Consultation with local cottagers	Borden Lake cottagers
October 26 to 29, 2015	Mining Matters session with local schools and public	Borden Lake cottagers
October 29, 2015	Mining Matters session with local cottagers	Borden Lake cottagers
November 30, 2015	Inter-ministry meeting	MNDM, MOECC, MNRF, MOL, MOT and CEA Agency
November 30, 2015	Consultation with Township of Chapleau	Chapleau Mayor and Council
November 30, 2015	Consultation with local cottagers	Borden Lake cottagers
December 1, 2015	Public information session	General public
January 12, 2016	Public information session	General public
January 27, 2016	Public information session	General public
January 28, 2016	Consultation with local cottagers	Borden Lake cottagers
February 22, 2016	Consultation with Borden Lake Campground Association	Borden Lake campground
March 8, 2015	Consultation with local cottagers	Borden Lake cottagers
April 26, 2016	Consultation with local cottagers	Borden Lake cottagers
April 27, 2016	Consultation with local cottagers	Serviss Lake cottagers
April 28, 2016	Consultation with Borden Lake Campground Association	Borden Lake campground
May 11, 2016	Inter-ministry meeting	MNDM, MOECC, MNRF, MOL and CEA Agency
May 31, 2016	Project update	Township of Chapleau
June 27, 2016	Project update	Township of Chapleau
June 29, 2016	Consultation with local Cottagers	Borden Lake Cottagers
July 13, 2016	Pipeline discharge location discussion	Local property owner adjacent to pipeline discharge location
July 18, 2016	Site visit - Pipeline discharge	Local property owner adjacent to pipeline discharge location
August 23, 2016	Discussion on draft Project Description	CEA Agency
September 13, 2016	Mining readiness workshop	Chapleau Business Owners, Chapleau Council, Chapleau Economic Development Corporation
September 19, 2016	Project update, including mine and potential Federal process and Project Description	MNDM, MNRF, MOECC, CEA Agency

8.0 REFERENCES

Aboriginal Affairs and Northern Development Canada (AANDC). 2016. First Nation Profiles. http://fnp-ppn.aandc-aadnc.gc.ca/fnp/Main/Index.aspx?lang=eng. Accessed May 2016.

AECOM. 2014a. Borden Gold Project Environmental Baseline Report, Natural Environment.

AECOM. 2014b. Borden Gold Project Environmental Baseline Report, Physical Environment.

Amec Foster Wheeler. 2016a. Borden Gold Project 2015 Aquatic Resources Baseline Report.

Amec Foster Wheeler. 2016b. Borden Gold Project 2015 Hydrology Baseline Study.

Amec Foster Wheeler. 2016c. Borden Gold Project 2015 Terrestrial Biology Baseline Report.

Amec Foster Wheeler. 2016d. Borden Gold Project Baseline Sound Monitoring Report (In progress).

Amec Foster Wheeler. 2016e. Borden Gold Project Climate Baseline Study.

Amec Foster Wheeler. 2016f. Borden Gold Project Hydrogeological Factual Baseline Report.

Amec Foster Wheeler. 2016g. Borden Gold Project Ambient Air Quality Baseline Report (In progress).

Amec Foster Wheeler. 2016h. Borden Gold Project Summary of March and May 2015 Water Quality Sampling Memo.

Amec Foster Wheeler. 2016i. Borden Gold Project Summary of October 2015 Water Quality Sampling Memo.

Bird Studies Canada and Nature Canada. 2016. Canadian Important Bird Areas (IBA). Available: http://www.ibacanada.ca/.

Cadman, M.D., Sutherland. D.A., Beck, G.G., Lepage D. and A.R. Couturier. 2007. Atlas of the Breeding Birds of Ontario. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, Ontario Nature.

EEM Sustainable Management. 2015. Borden Lake Non-Traditional Land Use Study – Preliminary Report.

Environment Canada and Climate Change (ECCC). 2015. Canadian Wind Energy Atlas. http://www.windatlas.ca/en/index.php. Accessed November 2015.

Environment Canada and Climate Change (ECCC). 2016a. NAPS Data Products. Available: http://maps-cartes.ec.gc.ca/rnspa-naps/data.aspx?lang=en. Accessed June 2016.

Environment Canada and Climate Change (ECCC). 2016b. Canadian Environmental Sustainability Indicators: Progress Toward Canada's Greenhouse Gas Emissions Reduction Target.

Environmental Commissioner of Ontario. 2015. Feeling the Heat: Greenhouse Gas Progress Report 2015. July 2015.

Ministry of the Environment and Climate Change (MOECC). 2012. Ontario's Ambient Air Quality Criteria, PIBS#6570e01. Prepared by Standards Development Branch.

Ministry of the Environment and Climate Change (MOECC). 2014. Ontario's Climate Change Update. September 2014.

Ministry of Natural Resources (MNR). 1999. Ontario's Living Legacy Land Use Strategy (policies for pre-existing Provincial Parks and Conservation Reserves.

Ministry of Natural Resources and Forestry (MNRF). 2015. Tim Mutter. Personal Communication. May 12, 2015.

Ministry of Natural Resources and Forestry (MNRF). 2016a. Nick Orton. Personal Communication. June 20, 2016.

Ministry of Natural Resources and Forestry (MNRF). 2016b. Crown Land Use Policy Atlas. Available: https://www.ontario.ca/page/crown-land-use-policy-atlas. Accessed September 2016.

Ministry of Natural Resources and Forestry (MNRF). 2016c. Land information of Ontario (LIO) Metadata Database.

Ministry of Transportation (MTO). 2010. Provincial Highways Traffic Volumes 1988 – 2010 v2. January 2016.

Natural Resources Canada (NRCan). 1978. Hydrological Atlas of Canada Plate 17. Mean Annual Lake Evaporation, Plate 25. Water Balance, Derived Precipitation and Evapotranspiration.

Ministry of Natural Resources (MNR). 2012. Draft Significant Wildlife Habitat Ecoregion 3E Criteria Schedules. Addendum to Significant Wildlife Habitat Technical Guide, Ontario Ministry of Natural Resources. Working Draft, February 2012.

Oldham, M.J. and W.F. Weller. 2000. Ontario Herpetofaunal Atlas. Natural Heritage Information Centre, Ontario Ministry of Natural Resources.

Olson, R., Tam, J. and The Firelight Group. 2015. Wabun Tribal Council Traditional Use Study and Assessment Final Report for TransCanada Pipelines Limited's Proposed Energy East Pipeline Project. On behalf of the Wabun Tribal Council.

Olson, R., Malone E. and The Firelight Group. 2016. Brunswick House First Nation, Chapleau Cree First Nation and Chapleau Ojibwe First Nation, Knowledge and Use Study Final Report. With Brunswick House First Nation, Chapleau Cree First Nation and Chapleau Ojibwe First Nation.

Tembec. 2011. Forest Management Plan for the Martel Forest. Chapleau District, Northeast Region, for the 10-year period from April 1, 2011 to March 31, 2021.

United Nations Framework Convention on Climate Change. 2016. Aggregate effect of the intended nationally determined contributions: an update, FCCC/CP/2016/2. May 2016

Woodland Heritage Services. 2015. Stage 1 and Stage 2 Archaeological Assessment of Borden.

APPENDIX A

PHOTOGRAPHIC RECORD

P:\2015\Projects\TC150506_Borden_Gold_Env\GIS\Project_Description\MXD\Photo_Appendix_2.mxd

LEGEND

☆ Project Location

NOTES:
- Orthorectified Geoeye-1 and Worldview-3 Satellite Imagery, August 2015 was provided by Goldcorp.
- Grout Bay location is consistent with local knowledge and district MNRF staff, however official NTS and OBM maps locate Grout Bay as being the northeast bay of Borden Lake.
- NTS watercourse information has been modified to reflect infield investigations.

GOLDCORP
BORDEN GOLD

amec foster wheeler

BORDEN GOLD PROJECT

Appendix A: Photo Key

Datum: NAD83
Projection: UTM Zone 17N

0 0.25 0.5 1 1.5 2 Kilometres

N W E S

PROJECT N°: TC150506 | **FIGURE: App A-1**

SCALE: 1:32,000 | DATE: September 2016

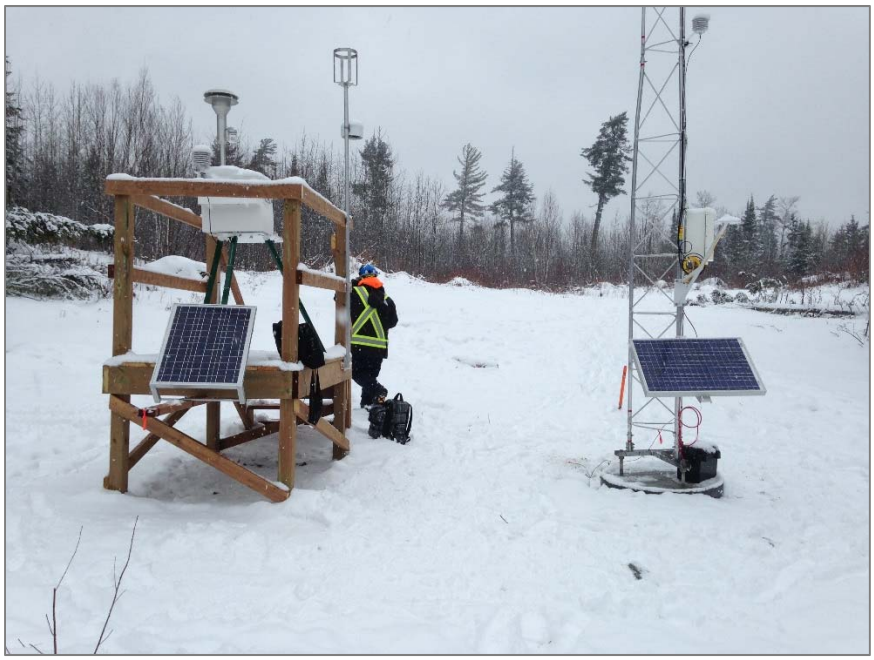


Plate 1: Air quality monitoring station at BGP site (January 2016)

Plate 2: Sound monitoring temporary setup (June 2016)

Plate 3: Borden Lake (Grout Bay) near Unnamed Tributary 2 discharge (July 2015)

Plate 4: Unnamed Tributary 1 at BGP site (May 2015)

Plate 5: Beaver dam on Unnamed Tributary 2 (Summer 2015)

Plate 6: Borden Lake outfall / Borden River (January 2016)

Plate 7: Beaver dam on Borden River upstream of Highway 101 culverts (October 2015)

Plate 8: Borden River downstream of culverts on Highway 101 (October 2015)

Plate 9: Borden River at downstream hydrology station (July 2015)

Plate 10: Typical vegetation on the BGP site (July 2015)

Plate 11: Moose viewed during 2015 aerial surveys (February 2015)

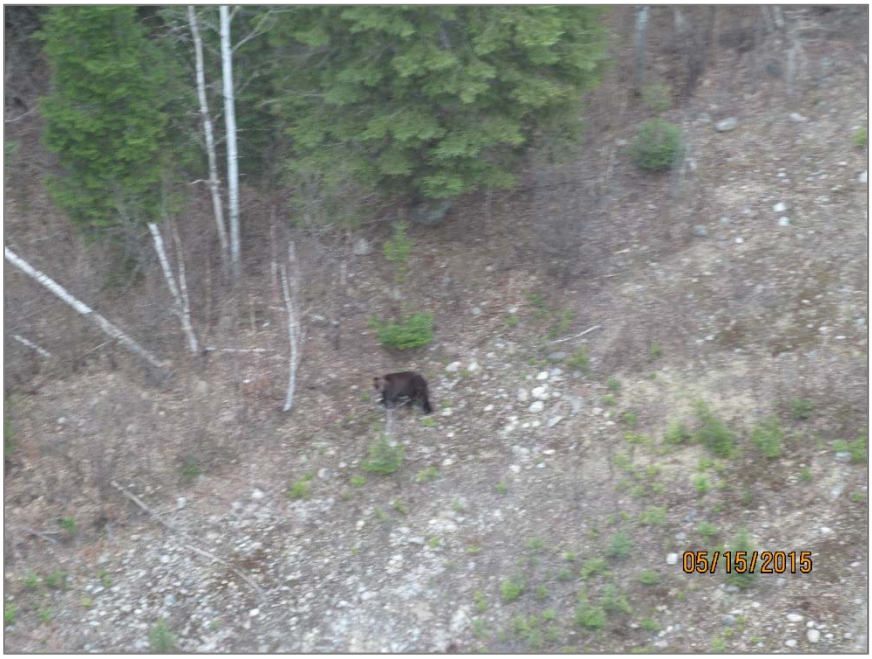


Plate 12: Bear viewed during 2015 aerial surveys (May 2015)

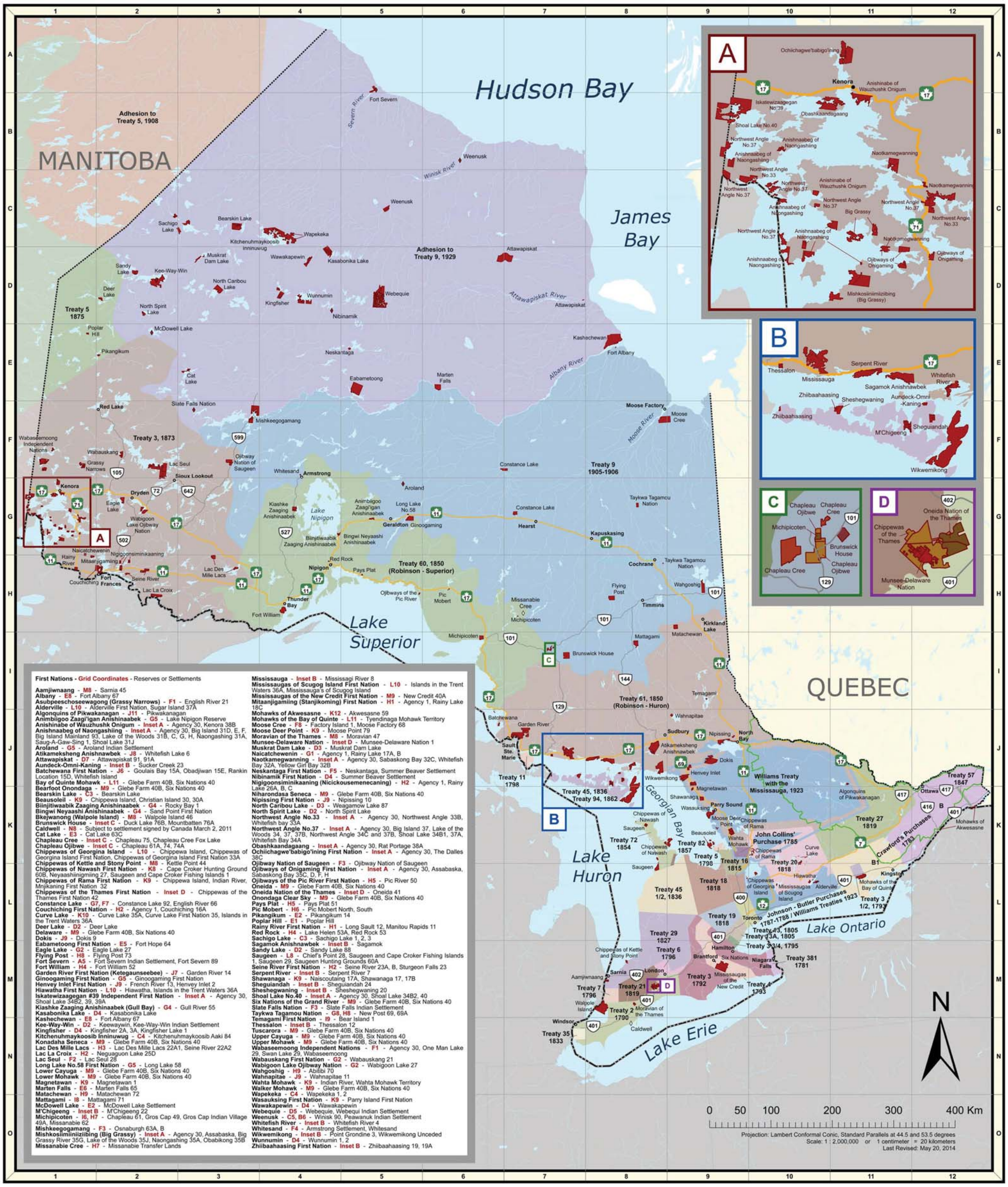
Plate 13: Chapleau Cree First Nation engagement (2015)

Plate 14: Brunswick House First Nation drummers during ceremony (2015)

APPENDIX B

ONTARIO FIRST NATIONS AND TREATIES MAP

FIRST NATIONS AND TREATIES



First Nations - Grid Coordinates - Reserves or Settlements

Aamjiwnaang - M8 - Sarnia 45
Albany - E8 - Fort Albany 67
Asubpeeschoseewagong (Grassy Narrows) - F1 - English River 21
Alderville - L10 - Alderville First Nation, Sugar Island 37A
Algonquins of Pikwakanagan - J11 - Pikwakanagan
Animbiigoo Zaagi'igan Anishinaabek - G5 - Lake Nipigon Reserve
Anishinabe of Wauzhushk Onigum - Inset A - Agency 30, Kenora 38B
Anishnaabeg of Naongashiing - Inset A - Agency 30, Big Island 31D, E, F, Big Island Mainland 93, Lake of the Woods 31B, C, G, H, Naongashing 31A, Saug-A-Gaw-Sing 1, Shoal Lake 31J
Aroland - G5 - Aroland Indian Settlement
Atikameksheng Anishnawbek - J8 - Whitefish Lake 6
Attawapiskat - D7 - Attawapiskat 91, 91A
Aundeck-Omni-Kaning - Inset B - Sucker Creek 23
Batchewana First Nation - J6 - Goulais Bay 15A, Obadjiwan 15E, Rankin Location 15D, Whitefish Island
Bay of Quinte Mohawk - L11 - Glebe Farm 40B, Six Nations 40
Bearfoot Onondaga - M9 - Glebe Farm 40B, Six Nations 40
Bearskin Lake - C3 - Bearskin Lake
Beausoleil - K9 - Chippewa Island, Christian Island 30, 30A
Biinjitiwaabik Zaaging Anishinaabek - G4 - Rocky Bay 1
Bingwi Neyaashi Anishinaabek - G4 - Sand Point First Nation
Bkejwanong (Walpole Island) - M8 - Walpole Island 46
Brunswick House - Inset C - Duck Lake 76B, Mountbatten 76A
Caldwell - N8 - Subject to settlement signed by Canada March 2, 2011
Cat Lake - E3 - Cat Lake 63C
Chapleau Cree - Inset C - Chapleau 75, Chapleau Cree Fox Lake
Chapleau Ojibwe - Inset C - Chapleau 61A, 74, 74A
Chippewas of Georgina Island - L10 - Chippewa Island, Chippewas of Georgina Island First Nation, Chippewas of Georgina Island First Nation 33A
Chippewas of Kettle and Stony Point - M8 - Kettle Point 44
Chippewas of Nawash First Nation - K8 - Cape Croker Hunting Ground 60B, Neyaashiinigmiing 27, Saugeen and Cape Croker Fishing Islands 1
Chippewas of Rama First Nation - K9 - Chippewa Island, Indian River, Mnjikaning First Nation 32
Chippewas of the Thames First Nation - Inset D - Chippewas of the Thames First Nation 42
Constance Lake - G7, F7 - Constance Lake 92, English River 66
Couchiching First Nation - H2 - Agency 1, Couchiching 16A
Curve Lake - K10 - Curve Lake 35A, Curve Lake First Nation 35, Islands in the Trent Waters 36A
Deer Lake - D2 - Deer Lake
Delaware - M9 - Glebe Farm 40B, Six Nations 40
Dokis - J9 - Dokis 9
Eabametoong First Nation - E5 - Fort Hope 64
Eagle Lake - G2 - Eagle Lake 27
Flying Post - H8 - Flying Post 73
Fort Severn - A5 - Fort Severn Indian Settlement, Fort Severn 89
Fort William - H4 - Fort William 52
Garden River First Nation (Ketegaunseebee) - J7 - Garden River 14
Ginoogaming First Nation - G5 - Ginoogaming First Nation
Henvey Inlet First Nation - J9 - French River 13, Henvey Inlet 2
Hiawatha First Nation - L10 - Hiawatha, Islands in the Trent Waters 36A
Iskatewizaagegan #39 Independent First Nation - Inset A - Agency 30, Shoal Lake 34B2, 39, 39A
Kiashke Zaaging Anishinaabek (Gull Bay) - G4 - Gull River 55
Kasabonika Lake - D4 - Kasabonika Lake
Kashechewan - E8 - Fort Albany 67
Kee-Way-Win - D2 - Keewaywin, Kee-Way-Win Indian Settlement
Kingfisher - D4 - Kingfisher 2A, 3A, Kingfisher Lake 1
Kitchenuhmaykoosib Inninuwug - C4 - Kitchenuhmaykoosib Aaki 84
Konadaha Seneca - M9 - Glebe Farm 40B, Six Nations 40
Lac Des Mille Lacs - H3 - Lac Des Mille Lacs 22A1, Seine River 22A2
Lac La Croix - H2 - Neguaguon Lake 25D
Lac Seul - F2 - Lac Seul 28
Long Lake No.58 First Nation - G5 - Long Lake 58
Lower Cayuga - M9 - Glebe Farm 40B, Six Nations 40
Lower Mohawk - M9 - Glebe Farm 40B, Six Nations 40
Magnetawan - K9 - Magnetawan 1
Marten Falls - E6 - Marten Falls 65
Matachewan - H9 - Matachewan 72
Mattagami - I8 - Mattagami 71
McDowell Lake - E2 - McDowell Lake Settlement
M'Chigeeng - Inset B - M'Chigeeng 22
Michipicoten - I6, H7 - Chapleau 61, Gros Cap 49, Gros Cap Indian Village 49A, Missanabie 62
Mishkeegogamang - F3 - Osnaburgh 63A, B
Mishkosiiminiziibing (Big Grassy) - Inset A - Agency 30, Assabaska, Big Grassy River 35G, Lake of the Woods 35J, Naongashing 35A, Obabikong 35B
Missanabie Cree - H7 - Missanabie Transfer Lands
Mississauga - Inset B - Mississagi River 8
Mississaugas of Scugog Island First Nation - L10 - Islands in the Trent Waters 36A, Mississauga's of Scugog Island
Mississaugas of the New Credit First Nation - M9 - New Credit 40A
Mitaanjigamiing (Stanjikoming) First Nation - H1 - Agency 1, Rainy Lake 18C
Mohawks of Akwesasne - K12 - Akwesasne 59
Mohawks of the Bay of Quinte - L11 - Tyendinaga Mohawk Territory
Moose Cree - F8 - Factory Island 1, Moose Factory 68
Moose Deer Point - K9 - Moose Point 79
Moravian of the Thames - M8 - Moravian 47
Munsee-Delaware Nation - Inset D - Munsee-Delaware Nation 1
Muskrat Dam Lake - D3 - Muskrat Dam Lake
Naicatchewenin - G1 - Agency 1, Rainy Lake 17A, B
Naotkamegwanning - Inset A - Agency 30, Sabaskong Bay 32C, Whitefish Bay 32A, Yellow Girl Bay 32B
Neskantaga First Nation - F5 - Neskantaga, Summer Beaver Settlement
Nibinamik First Nation - D4 - Summer Beaver Settlement
Nigigoonsiminikaaning (Nicickousemenecaning) - H2 - Agency 1, Rainy Lake 26A, B, C
Niharondasa Seneca - M9 - Glebe Farm 40B, Six Nations 40
Nipissing First Nation - J9 - Nipissing 10
North Caribou Lake - D3 - Weagamow Lake 87
North Spirit Lake - D2 - North Spirit Lake
Northwest Angle No.33 - Inset A - Agency 30, Northwest Angle 33B, Whitefish bay 33A
Northwest Angle No.37 - Inset A - Agency 30, Big Island 37, Lake of the Woods 34, 37, 37B, Northwest Angle 34C and 37B, Shoal Lake 34B1, 37A, Whitefish Bay 34A
Obashkaandagaang - Inset A - Agency 30, Rat Portage 38A
Ochiichagwe'babigo'ining First Nation - Inset A - Agency 30, The Dalles 38C
Ojibway Nation of Saugeen - F3 - Ojibway Nation of Saugeen
Ojibways of Onigaming First Nation - Inset A - Agency 30, Assabaska, Sabaskong Bay 35C, D, F, H
Ojibways of the Pic River First Nation - H5 - Pic River 50
Oneida - M9 - Glebe Farm 40B, Six Nations 40
Oneida Nation of the Thames - Inset D - Oneida 41
Onondaga Clear Sky - M9 - Glebe Farm 40B, Six Nations 40
Pays Plat - H5 - Pays Plat 51
Pic Mobert - H6 - Pic Mobert North, South
Pikangikum - E2 - Pikangikum 14
Poplar Hill - E1 - Poplar Hill
Rainy River First Nation - H1 - Long Sault 12, Manitou Rapids 11
Red Rock - H4 - Lake Helen 53A, Red Rock 53
Sachigo Lake - C3 - Sachigo Lake 1, 2, 3
Sagamok Anishnawbek - Inset B - Sagamok
Sandy Lake - D2 - Sandy Lake 88
Saugeen - L8 - Chief's Point 28, Saugeen and Cape Croker Fishing Islands 1, Saugeen 29, Saugeen Hunting Grounds 60A
Seine River First Nation - H2 - Seine River 23A, B, Sturgeon Falls 23
Serpent River - Inset B - Serpent River 7
Shawanaga - K9 - Naiscoutaing 17A, Shawanaga 17, 17B
Sheguiandah - Inset B - Sheguiandah 24
Sheshegwaning - Inset B - Sheshegwaning 20
Shoal Lake No.40 - Inset A - Agency 30, Shoal Lake 34B2, 40
Six Nations of the Grand River - M9 - Glebe Farm 40B, Six Nations 40
Slate Falls Nation - F3 - Slate Falls Indian Settlement
Taykwa Tagamou Nation - G8, H8 - New Post 69, 69A
Temagami First Nation - I9 - Bear Island 1
Thessalon - Inset B - Thessalon 12
Tuscarora - M9 - Glebe Farm 40B, Six Nations 40
Upper Cayuga - M9 - Glebe Farm 40B, Six Nations 40
Upper Mohawk - M9 - Glebe Farm 40B, Six Nations 40
Wabaseemoong Independent Nations - F1 - Agency 30, One Man Lake 29, Swan Lake 29, Wabaseemoong
Wabauskang First Nation - G2 - Wabauskang 21
Wabigoon Lake Ojibway Nation - G2 - Wabigoon Lake 27
Wahgoshig - H9 - Abitibi 70
Wahnapitae - J9 - Wahnapitae 11
Wahta Mohawk - K9 - Indian River, Wahta Mohawk Territory
Walker Mohawk - M9 - Glebe Farm 40B, Six Nations 40
Wapekeka - C4 - Wapekeka 1, 2
Wasauksing First Nation - K9 - Parry Island First Nation
Wawakapewin - D4 - Wawakapewin
Webequie - D5 - Webequie, Webequi Indian Settlement
Weenusk - C5, B6 - Winisk 90, Peawanuk Indian Settlement
Whitefish River - Inset B - Whitefish River 4
Whitesand - F4 - Armstrong Settlement, Whitesand
Wikwemikong - Inset B - Point Grondine 3, Wikwemikong Unceded
Wunnumin - D4 - Wunnumin 1, 2
Zhiibaahaasing First Nation - Inset B - Zhiibaahaasing 19, 19A

Projection: Lambert Conformal Conic, Standard Parallels at 44.5 and 53.5 degrees
Scale: 1 : 2,000,000 or 1 centimeter = 20 kilometers
Last Revised: May 20, 2014

DISCLAIMER / INFORMATION NOTE

These maps are provided for illustrative purposes only. They are not intended to reflect the position of Ontario nor to constitute any admission or limit Ontario's rights in any way. These maps are created with data used under license from Geobase, Geogratis, the Ontario Realty Corporation, Aboriginal Affairs and Northern Development Canada, and Members of the Ontario Geospatial Data exchange and data held by the Ministry of Aboriginal Affairs. The treaty boundaries illustrated for Treaty 3, 1873, Treaty 5, 1875 and Treaty 94, 1862 are those shown on the Ontario First Nations Map produced by the Province of Ontario and the Government of Canada (see: ontario.ca/aboriginal/ontario-first-nations-map). The treaty boundaries illustrated for areas outside of Ontario are those shown on the Pre-1975 Treaties of Canada map produced by the Government of Canada (see: aadnc-aandc.gc.ca/eng/1100100032297/1100100032309). The remaining treaty boundaries illustrated are taken from James L. Morris, Indians of Ontario (Toronto: Dept. of Lands and Forests, 1943). For the Provincial Algonquin Settlement Area see: ontario.ca/aboriginal/algonquins-ontario-settlement-area-boundary. The Government of Ontario and its ministers, agents and employees disclaim all responsibility for any errors, omissions and inaccuracies in any of these maps.

ISBN 978-1-4606-3021-1

To order, contact Service Ontario Publications: publications.serviceontario.ca
Toll free: 1-800-668-9938 TTY: 1-800-268-7095
Ministry of Aboriginal Affairs: Ontario.ca/Aboriginal
Follow us on Twitter: @ONAboriginal

Learn more about Treaties: Ontario.ca/Treaties

Legend

- Settlements
- See First Nations List
- Provisional Algonquin Settlement Area
- First Nations Reserves
- Trans Canada
- Other Highway
- Canada - USA Border
- Provincial Border

Ontario

APPENDIX C

CONSULTATION AND ENGAGEMENT

C-1: Summary of Engagement and Consultation to Date
C-2: Engagement and Consultation Schedule
C-3: Aboriginal Comments on Draft Project Description

C-1: Summary of Engagement and Consultation to Date

GOLDCORP
BORDEN GOLD

THREE NATIONS (CHAPLEAU CREE, BRUNSWICK HOUSE AND CHAPLEAU CREE FIRST NATIONS)

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
03/13/15 17:00	Meeting	Goldcorp SVP and VP Meet and Greet with Chief Corston and Chief Tangie	Goldcorp SVP and VP Meet and Greet with Chief Corston and Chief Tangie	Marc Lauzier, Chris Woodall, Donna Byce	CCFN: Chief Keith Corston BHFN: Chief Kevin Tangie
03/17/15 14:00	Meeting	Goldcorp CSR and Operations Manager Meet and Greet with Chief Corston	Goldcorp CSR and Operations Manager Meet and Greet with Chief Corston	Roger Souckey, Steve Price, Donna Byce	CCFN: Chief Keith Corston
04/28/15 13:00	Meeting	April 28th Meeting- Overview and Project Status Update	Meeting with FN's to get an overview of agreements and provide project status since acquisition.	Bronwyn Gorsline, Roger Souckey, Chantal Clement, Steve Price, Donna Byce	CCFN: Chief Keith Corston Stephanie Scott Norma Caldwell Brian Ritchie BHFN: Chief Kevin Tangie Wabun Tribal Council: Shawn Batise OKT LLP: Bryce Edwards - Legal Counsel
05/04/15	Email	Aboriginal Monitoring Workshop	Provided Chiefs with information on Aboriginal Workshop being held in Timmins on June 8, 2015.	Donna Byce	CCFN: Chief Keith Corston BHFN: Chief Kevin Tangie COFN: Chief Anita Stephens

GOLDCORP
BORDEN GOLD

THREE NATIONS (CHAPLEAU CREE, BRUNSWICK HOUSE AND CHAPLEAU CREE FIRST NATIONS)

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
05/13/15 16:00	Meeting	AEP Permitting and Baseline Studies Review Meeting (Goldcorp, FN's AMEC and Hutchinson Consulting)	AEP Permitting and Baseline Studies Review Meeting	Roger Souckey, Steve Price, Donna Byce	CCFN: Chief Keith Corston BHFN: Chief Kevin Tangie Wabun Tribal Council: Shawn Batise AMEC Foster Wheeler: Debbie Dyck Camerado Energy Consulting: Rick Hendriks Hutchinson Consulting: Neil Hutchinson
05/19/15	Email	Surveyor	Request sent to local First Nations for surveyor to survey drill hole collars.	Donna Byce	CCFN: Chief Keith Corston Stephanie Scott COFN: Chief Anita Stephens Josh Memegos BHFN: Chief Kevin Tangie
06/08/15 16:00	Meeting	June 8th Negotiation Session with First Nations	IBA Negotiation Session - content confidential	Roger Souckey, Steve Price, Donna Byce	CCFN: Chief Keith Corston COFN: Chief Anita Stephens Joanne Wesley Josh Memegos Manon Memegos BHFN: Chief Kevin Tangie Wabun Tribal Council: Shawn Batise OKT LLP: Bryce Edwards -Legal Counsel

GOLDCORP
BORDEN GOLD

THREE NATIONS (CHAPLEAU CREE, BRUNSWICK HOUSE AND CHAPLEAU CREE FIRST NATIONS)

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
06/09/15 12:00	Meeting	Cross Consultancy Meeting	Met with consultants to discuss Baseline and AEP and review overlaps and gaps.	Steve Price Donna Byce Roger Souckey Maarten Van Koppen Yannik Barbaux Chantal Clement	AMEC Foster Wheeler: Debbie Dyck Sheila Daniel EEM: Rob Cole Catherine Lussier Jean-Philippe Roux-Groleau Klohn Crippen Berger: Lindsey Robertson Robert Cross OKT LLP: Bryce Edwards -Legal Counsel
06/10/15 13:00	Meeting	Social Baseline Studies-Introduction and Presentation	Provided CCFN, Legal Counsel and Consultant with an introduction to EEM and a presentation and scope for social baseline studies.	Donna Byce	EEM: Rob Cole Catherine Lussier Jean-Philippe Roux-Groleau CCFN: Chief Keith Corston OKT LLP: Bryce Edwards (conference call) Firelight Consulting: Steve DeRoy (conference call)
06/10/15	Public Notice	Employment Opportunity	Employment Opportunity for FN stakeholders for positions in core cutting and core technician posted in the 3 local FN Communities.	Donna Byce	CCFN COFN BHFN
06/15/15	Document/Presentation	EEM's TORs for studies	Provided First Nations with a copy of EEM's scope for Land Use and TK Studies for First Nation Involvement.	Donna Byce	CCFN COFN BHFN
06/19/15 17:00	Meeting	Business opportunity discussion with First Nation partners	Conference call to provide First Nations involved in business development with an understanding of priority areas to avoid missed opportunities.	Steve Price, Donna Byce	Chapleau Cree: Brian Ritchie Wabun Tribal Council: Jason Batise

GOLDCORP
BORDEN GOLD

THREE NATIONS (CHAPLEAU CREE, BRUNSWICK HOUSE AND CHAPLEAU CREE FIRST NATIONS)

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
06/22/15 17:30	Meeting	Discussion - Draft Noise and Visual Impact Guidelines	Conference call to discuss noise and visual guidelines to aid in guiding project development for advanced exploration. Focus was on what can be done to reduce and or eliminate impacts.	Maarten Van Koppen, Steve Price	Camerado Energy Consulting: Rick Hendriks AMEC Foster Wheeler: Sheila Daniel Debbie Dyck Klohn Crippen Berger: Robert Cross Lindsay Robertson EEM: Rob Cole Jean-Philippe Roux-Groleau Catherine Lussier
06/25/15	Email	TOR for Visual and Archeological Studies	Terms of Reference for Visual and Archeological studies shared with the 3 Nations.	Donna Byce	OKT LLP: Bryce Edwards -Legal Counsel
06/30/15	Email	First Nations Consultation Plan	Provided First Nation Communities with a copy of the Advanced Exploration consultation plan for review before submitting to MNDM.	Donna Byce	CCFN COFN BHFN
07/07/15 12:00	Meeting	July 07, Negotiation Session with First Nations	IBA Negotiation Session - content confidential	Amy Hu, Roger Souckey, Steve Price, Donna Byce	CCFN: Chief Keith Corston Brian Ritchie BHFN: Chief Kevin Tangie Wabun Tribal Council: Shawn Batise OKT LLP: Bryce Edwards -Legal Counsel
07/08/15 13:00	Meeting	Ambient Air Monitoring Station Presentation to BHFN	Ambient Air Monitoring Station Presentation to BHFN	Steve Price, JY Young, Chantal Clement, Donna Byce	BHFN: Chief Kevin Tangie Irene Redbreast-Councillor Irene Wesley-Councillor AMEC: Sheila Daniel (teleconference)
07/13/15	Public Notice	First Nation Coordinator Posting	Goldcorp committed to providing First Nations with funding to hire a First Nation Implementation Officer.	Donna Byce	CCFN COFN BHFN Wabun Tribal Council: Shawn Batise

GOLDCORP
BORDEN GOLD

THREE NATIONS (CHAPLEAU CREE, BRUNSWICK HOUSE AND CHAPLEAU CREE FIRST NATIONS)

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
07/22/15 13:00	Meeting	Archaeological Studies Update	Luke provided an update on his findings during the Stage I and Stage II Archaeology Study and provided pictures.	Donna Byce	Woodland Heritage: Luke Dalla Bona CCFN: Stephanie Scott Mike Cachagee - CCFN FN Monitor Chief Keith Corston
08/14/15	Public Notice	Logistics Coordinator Posting	Logistic Coordinator Position provided to First Nations to post within communities.	Donna Byce	CCFN COFN BHFN Workforce North
08/17/15	Email	Business Opportunity for First Nations - Fencing	Provided Jason Batise with an opportunity for First Nations to participate in providing a quote for fencing.	Donna Byce	Wabun Tribal Council: Jason Batise
08/20/15	Email	Archaeology Report Stage 1 and 2	Copy of the Borden Gold Archaeology Report shared with 3 Nations for review and comment.	Donna Byce, Roger Souckey	Camerado Energy Consulting: Rick Hendriks OKT LLP: Bryce Edwards -Legal Counsel EEM: Jean-Philippe Roux-Groleau Rob Cole Andrew Sanford
08/21/15	Email	First Nation Environmental Monitor Training	Provided Chiefs via email with information regarding environmental monitor training, as well as a commitment for financial support to participate.	Donna Byce	CCFN: Chief Keith Corston Stephanie Scott COFN: Chief Anita Stephens BHFN: Chief Kevin Tangie Lorraine Tangie
08/25/15	Email	Business Opportunity for First Nations - Signage Required	Request sent to Jason Batise to inquire if FNs are interested in participating in bid for signage.	Donna Byce	Wabun Tribal Council: Jason Batise
08/31/15 19:00	Meeting	Brunswick House Economic Development Opportunities	The development of a Tim Horton's franchise in Chapleau by Brunswick House and/or a partnership of the local First Nations.	Roger Souckey, Donna Byce	BHFN: Chief Tangie Possibilities Group: Norm Jaehrling

GOLDCORP
BORDEN GOLD

THREE NATIONS (CHAPLEAU CREE, BRUNSWICK HOUSE AND CHAPLEAU CREE FIRST NATIONS)

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
09/01/15 12:00	Meeting	September 01, Negotiation Session with First Nations	IBA Negotiation Session - content confidential	Amy Hu, Roger Souckey, Donna Byce	CCFN: Chief Keith Corston Brian Ritchie BHFN: Chief Kevin Tangie Wabun Tribal Council: Shawn Batise OKT LLP: Bryce Edwards -Legal Counsel
09/02/15	Email	Traditional Land Use Study and Funding Letter	Funding letter signed by Marc Lauzier committing Borden to pay for the First Nation's Traditional Land Use study, to be conducted by Firelight Group.	Marc Lauzier	CCFN: Chief Keith Corston BHFN: Chief Kevin Tangie COFN: Chief Anita Stephens Wabun Tribal Council: Shawn Batise OKT LLP: Bryce Edwards -Legal Counsel
09/08/15	Email	Business Opportunity for First Nations - Dispose of septic waste and rock cuttings	Contacted Jason Batise to provide First Nations with an opportunity to provide a quote for removal of septic waste and rock cuttings at the core shack.	Donna Byce	CCFN: Chief Keith Corston Brian Ritchie COFN: Chief Anita Stephens BHFN: Chief Kevin Tangie Wabun Tribal Council: Jason Batise
09/10/15	Email	Business Opportunity for First Nations - Air Monitor Station Platform	Provided Jason Batise with information regarding air monitor station platform.	Donna Byce	Wabun Tribal Council: Jason Batise

GOLDCORP
BORDEN GOLD

THREE NATIONS (CHAPLEAU CREE, BRUNSWICK HOUSE AND CHAPLEAU CREE FIRST NATIONS)

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
09/14/15 08:00	Meeting	Brunswick House First Nation Community Information Session	Brunswick House First Nation Community Information Session and presentation. Topics of discussion/concerns included: - timeline for Advanced Exploration and potential production scenario - air monitoring station at Brunswick House - storage pond distance from Borden Lake?	Roger Souckey, Chantal Clement, John Young, Donna Byce, Yannick Barbaux	AMEC Foster Wheeler: Sheila Daniel EEM: Andrew Sanford Catherine Lussier Klohn Crippen Berger: Robert Cross MNDM: Jason Postma
09/14/15		Payment to Wabun for FN Coordinator Position	As per amendment to MOU, Goldcorp provided payment to First Nations to hire a First Nation Coordinator to implement the MOU.	Donna Byce	Wabun Tribal Council
09/15/15 08:00	Meeting	Chapleau Cree First Nation Community Information Session	Chapleau Cree First Nation Community Information Session and presentation. Topics of discussion/concerns included: - sharing of noise monitoring results - ponds linings - culverts changed on Highway 101	Roger Souckey, Chantal Clement, John Young, Donna Byce, Yannick Barbaux	AMEC Foster Wheeler: Sheila Daniel EEM: Andrew Sanford Catherine Lussier Klohn Crippen Berger: Robert Cross
09/16/15	Email	Archaeology Report Comments	EEM provided the revised copy of the archaeology report, including Luke's response to Dr. Hamilton about the revisions that he has made.	Roger Souckey	Camerado Energy Consulting: Rick Hendriks EEM: Rob Cole Andrew Sanford
09/22/15 15:00	Meeting	TLU and SIA Kick Off Meeting	A kick off call between Firelight, EEM, FNs and Goldcorp for the two Firelight studies to ensure all is good to move forward.	Donna Byce, Roger Souckey, Chantal Clement	Firelight Group: Steve Deroy Jeffrey Hackett Camerado Energy Consulting: Rick Hendriks EEM: Robert Cole Andrew Sanford
09/25/15 05:30	Meeting	Aerial Surveys - Lidar	Discussions regarding aerial surveys/current LiDAR surveys any type of mineral surveying we would conduct in the future.	Donna Byce, Maarten Van Koppen	Wabun Tribal Council: Brian Ritchie

GOLDCORP
BORDEN GOLD

THREE NATIONS (CHAPLEAU CREE, BRUNSWICK HOUSE AND CHAPLEAU CREE FIRST NATIONS)

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
10/06/15 12:00	Meeting	October 5th, 2015 First Nation Negotiation Session	IBA Negotiation Session - content confidential	Mark Lauzier, Amy Hu, Donna Byce, Roger Souckey, Pablo Castanos	CCFN: Chief Keith Corston Brian Ritchie BHFN: Chief Kevin Tangie Wabun Tribal Council: Shawn Batise OKT LLP: Bryce Edwards -Legal Counsel Camerado Energy Consulting: Rick Hendriks
10/09/15 17:00	Meeting	TLU and SIA Bi-weekly update Meeting-October 9,2015	Update on the current First Nations TLU and Social Baseline studies.	Donna Byce, Roger Souckey, Chantal Clement	Firelight Group: Steve Deroy Jeffery Hackett Diana Gibson Camerado Energy Consulting: Rick Hendriks
10/13/15	Email	Proposed Drill Road and Target Area- First Nations	Email sent to First Nations to inform them of proposed drill road and target area. Copy of email and map attached	Donna Byce	CCFN: Chief Keith Corston BHFN: Chief Kevin Tangie COFN: Chief Anita Stephens Wabun Tribal Council: Shawn Batise FN Coordinator: Cheryl Naveau
10/15/15	Email	Built Heritage and Visual Impact Study provided to Rick Hendriks for review and Feedback	Provided 3 Nations environmental consultant with a copy of the Built Heritage and Visual Impact Study for review and comment.	Donna Byce	Camerado Energy Consulting: Rick Hendriks Klohn Crippen Berger: Robert Cross
10/22/15	Email	Goldcorp to provide additional fencing to scope of work	Goldcorp reached an agreement with BHFN to install an air monitor station at their water treatment plant to collect baseline data.	Donna Byce, Roger Souckey, Chantal Clement, Stephen Price, Sophie Bergeron, Lynn DeGeit	BHFN: Chief Kevin Tangie

GOLDCORP
BORDEN GOLD

THREE NATIONS (CHAPLEAU CREE, BRUNSWICK HOUSE AND CHAPLEAU CREE FIRST NATIONS)

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
10/23/15 17:00	Meeting	TLU and SIA Bi-weekly update Meeting-October 23,2015	Update on the current First Nations TLU and Social Baseline studies.	Donna Byce, Chantal Clement	Firelight Group: Jeff Hackett Camerado Energy Consulting: Rick Hendriks EEM: Andrew Sanford
10/28/15	Email	CCFN - New Environmental Monitor	Goldcorp worked with Workforce North and Chief Corston to fill the role of an environmental monitor to represent Chapleau Cree First Nation.	Donna Byce	CCFN: Chief Keith Corston Workforce North
11/02/15	Letter	3 Nations response to MOECC PTTW Letter	Rick Hendriks reviewed the application for Goldcorp's PTTW renewal and prepared a letter for MOECC with their response.	Chantal Clement, John Young	MOECC: Brooke Campbell-Paterson CCFN: Chief Keith Corston BHFN: Chief Kevin Tangie COFN: Chief Anita Stephens Wabun Tribal Council: Shawn Batise Hutchinson Environmental Sciences Ltd: Dennis Gregor Camerado Energy Consulting: Rick Hendriks
11/06/15 17:00	Meeting	TLU and SIA Bi-weekly update Meeting-November 06,2015	Update on the current First Nations TLU and Social Baseline studies.	Donna Byce, Roger Souckey	Firelight Group: Jeff Hackett Steve DeRoy Camerado Energy Consulting: Rick Hendriks EEM: Andrew Sanford
11/09/15	Email	September 2015 First Nation Business Opportunities	List of business opportunities Goldcorp provided to First Nation in September 2015.	Donna Byce, Roger Souckey	Brian Ritchie Jason Batise

GOLDCORP
BORDEN GOLD

THREE NATIONS (CHAPLEAU CREE, BRUNSWICK HOUSE AND CHAPLEAU CREE FIRST NATIONS)

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
11/09/15	Email	October 2015 First Nation Business Opportunities	List of Business Opportunities Goldcorp provided to First Nations in October 2015.	Donna Byce	Brian Ritchie Jason Batise Cheryl Naveau
11/12/15	Email	Communication of COFN participation in consultation	Community Relation Coordinator had a concern on the participation of past and future consultation involvement of Chapleau Ojibwe First Nation Chief. The FN Coordinator was contacted and asked that she reach out to Shawn Batise at Wabun to express concerns.	Donna Byce, Roger Souckey	CCFN: Chief Keith Corston Stephanie Scott Brian Ritchie BHFN: Chief Kevin Tangie Lorraine Tangie COFN: Chief Anita Stephens Joshua Memegos Wabun Tribal Council: Shawn Batise OKT LLP: Bryce Edwards -Legal Counsel
11/12/15	Email	Advertisement for First Nation Closure Plan Consultation	Advertisement provided to local First Nations for Closure Plan Consultation.	Donna Byce	CCFN: Chief Keith Corston Stephanie Scott Brian Ritchie BHFN: Chief Kevin Tangie Lorraine Tangie COFN: Chief Anita Stephens Joshua Memegos Wabun Tribal Council: Shawn Batise OKT LLP: Bryce Edwards -Legal Counsel Camerado Energy Consulting: Rick Hendriks FN Coordinator: Cheryl Naveau
11/16/15	Email	Non-Traditional Land Use Study	Copy of the Non-Traditional Land Use Study provided to the 3 Nations Environmental consultant for review and feedback.	Donna Byce	Camerado Energy Consulting: Rick Hendriks

GOLDCORP
BORDEN GOLD

THREE NATIONS (CHAPLEAU CREE, BRUNSWICK HOUSE AND CHAPLEAU CREE FIRST NATIONS)

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
11/18/15	Email	Borden PTTW - 3 Nations Concerns	Goldcorp provided clarification on application for PTTW notification Letter.	Chantal Clement, Lynn DeGeit, Roger Souckey	Camerado Energy Consulting: Rick Hendriks
11/20/15 17:00	Meeting	TLU and SIA Bi-weekly update Meeting-November 20,2015	Update on the current First Nations TLU and Social Baseline studies.	Donna Byce	Firelight Group: Jeff Hackett Diana Gibson EEM: Andrew Sanford
11/20/15	Email	MOECC response to 3 Nations Letter	MOECC (Carrie Hutchinson) provided a written response to the 3 Nations in regards to their concerns with the Goldcorp Borden Gold PTTW name change/renewal.	Chantal Clement, Lynn DeGeit, Roger Souckey, Donna Byce, John Young	MOECC: Brooke Campbell-Paterson CCFN: Chief Keith Corston Stephanie Scott BHFN: Chief Kevin Tangie COFN: Chief Anita Stephens Wabun Tribal Council: Shawn Batise Hutchinson Environmental Sciences Ltd: Dennis Gregor Camerado Energy Consulting: Rick Hendriks MNDM: Jason Postma
11/20/15	Email	Draft Closure Plan shared with 3 Nations Environmental Consultant	Goldcorp shared the draft Closure Plan with 3 Nations Environmental consultant.	Chantal Clement, Roger Souckey, Donna Byce	Camerado Energy Consulting: Rick Hendriks

GOLDCORP
BORDEN GOLD

THREE NATIONS (CHAPLEAU CREE, BRUNSWICK HOUSE AND CHAPLEAU CREE FIRST NATIONS)

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
11/27/15 12:00	Meeting	November 27th, 2015 First Nation Negotiation Session	IBA Negotiation Session - content confidential	Mark Lauzier, Amy Hu, Donna Byce, Roger Souckey	CCFN: Chief Keith Corston Brian Ritchie BHFN: Chief Kevin Tangie Wabun Tribal Council: Shawn Batise OKT LLP: Bryce Edwards -Legal Counsel Camerado Energy Consulting: Rick Hendriks FN Liaison: Cheryl Naveau
12/01/15	Email	Goldcorp feedback for FN Concerns on Impacts	Feedback to First Nations about visual and archeology impacts.	Roger Souckey, Sophie Bergeron, Donna Byce, Chantal Clement	Camerado Energy Consulting: Rick Hendriks EEM: Andrew Sanford
12/01/15	Email	GC response to FNs for Geochem and AEP Closure Plan comments	GC provided feedback to First Nations concerns regarding geochem and AEP closure plan.	Chantal Clement, Sophie Bergeron, John Young"	Camerado Energy Consulting: Rick Hendriks
12/02/15 16:00	Meeting	Socio -Ec update Meeting-December 02,2015	Update on the current First Nations Social Baseline study.	Roger Souckey, Donna Byce	Firelight Group: Diana Gibson EEM: Andrew Sanford
12/02/15	Email	Firelight (CCFN, COFN, BHFN) TLU Redflag Interim Report	Firelight Group provided its “Red Flag” Interim Report for the Traditional Knowledge and Land Use Study.	Donna Byce, Roger Souckey	Firelight Group: Jeffrey Hackett Camerado Energy Consulting: Rick Hendriks
12/02/15	Public Notice	Goldcorp Sponsors 3 Nations Kids X-Mas Party	Goldcorp sponsored a kids Christmas party for the 3 local First Nations Communities (CCFN, BHFN, COFN) at the Brunswick House Community Hall.	Donna Byce	CCFN COFN BHFN

GOLDCORP
BORDEN GOLD

THREE NATIONS (CHAPLEAU CREE, BRUNSWICK HOUSE AND CHAPLEAU CREE FIRST NATIONS)

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
12/03/15 16:30	Meeting	Borden Gold Site Tour	GC provided a site tour for Chief Tangie, Chief Corston, Rick Hendriks, Denis Gregor and Cheryl Naveau.	Donna Byce Lynn DeGeit Andrew Nette Roger Souckey	CCFN: Chief Keith Corston BHFN: Chief Kevin Tangie Camerado Energy Consulting: Rick Hendriks Hutchinson Environmental: Dennis Gregor FN Liaison: Cheryl Naveau
12/03/15 23:00	Meeting	First Nation Advanced Exploration Closure Plan Consultation	First Nation Information Session hosted at Chapleau Cree First Nation Band Office - all 3 Communities Invited. Topics of discussion/concern included: - collection of water runoff - financial assurance for closure - protection of trees for new infrastructure - integrity of the ecology of Borden Lake	Donna Byce, Roger Souckey, Chantal Clement	First Nation Sign-in sheet EEM: Andrew Sanford Klohn Crippen Berger: Robert Cross
12/04/15	Email	Copies of signed agreements and Environmental ToR	Provided First Nations legal counsel with copies of signed agreements and a copy of the Mark-up of the Environmental Terms of Reference reflecting our November 27th meeting discussions	Donna Byce, Roger Souckey, Amy Hu	OKT LLP: Bryce Edwards -Legal Counsel
12/04/15	Email	Closure Plan Review by FN Environmental Advisor	FN request to review the ECA for Industrial Sewage Works before submitting comments on the Closure Plan.	Chantal Clement, Roger Souckey, Donna Byce	Camerado Energy Consulting: Rick Hendriks Hutchinson Environmental Sciences Ltd: Dennis Gregor FN Coordinator: Cheryl Naveau
12/04/15	Email	Goldcorp Work Schedule January -June 2016	Goldcorp provided First Nations with the work schedule form January-June 2016.	Donna Byce	Cheryl Naveau
12/07/15	Email	Exploration Fee Payments for 2015	Goldcorp provided Cheryl with exploration fee payouts for 2015	Donna Byce	FN Coordinator: Cheryl Naveau
12/07/15	Email	Goldcorp Project Description	Provided a copy of the Project Description to Firelight Group as per request.	Donna Byce, Roger Souckey, Chantal Clement, Sophie Bergeron, Maarten Van Koppen	Firelight Group: Jeffrey Hackett

GOLDCORP
BORDEN GOLD

THREE NATIONS (CHAPLEAU CREE, BRUNSWICK HOUSE AND CHAPLEAU CREE FIRST NATIONS)

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
12/09/15	Email	Exploration Expenditures Breakdown	Provided First Nations with the Explorations Expenditures breakdown and will continue to do so for future payments.	Donna Byce	FN Coordinator: Cheryl Naveau
12/15/15	Email	First Nation Follow-up from site visit	First Nation service provider participated in a site visit on November 18 and December 3rd and provided feedback.	Chantal Clement, John Young	Camerado Energy Consulting: Rick Hendriks CCFN: Chief Keith Corston FN Coordinator: Cheryl Naveau
12/21/15	Email	Socio -Ec Draft Interim Report	Follow up on the timing of the Draft Socio-economic report.	Roger Souckey, Chantal Clement	Camerado Energy Consulting: Rick Hendriks OKT LLP: Bryce Edwards -Legal Counsel
12/21/15	Email	Goldcorp Heritage Chance Find Protocol	First Nation Environmental Service Provider provided feedback on GC's chance find protocol.	Donna Byce, Roger Souckey, Amy Hu	CCFN: Chief Keith Corston COFN: Chief Anita Stephens BHFN: Chief Kevin Tangie Wabun Tribal Council: Shawn Batise Jason Batise OKT LLP: Bryce Edwards -Legal Counsel Camerado Energy Consulting: Rick Hendriks
01/07/16	Email	List of Business Opportunities provided to FNs-Won/Lost	Goldcorp provided the First Nations with a list of business opportunities that were presented to them, indicating which one were awarded and which ones were lost.	Donna Byce	Cheryl Naveau
01/08/16	Email	Draft ECA-Industrial Sewage Works	Shared draft ECA-Industrial Sewage Works application with First Nation Service Provider.	Chantal Clement, Lynn DeGeit, Sophie Bergeron, Roger Souckey, Donna Byce, John Young	Camerado Energy Consulting: Rick Hendriks

GOLDCORP
BORDEN GOLD

THREE NATIONS (CHAPLEAU CREE, BRUNSWICK HOUSE AND CHAPLEAU CREE FIRST NATIONS)

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
01/14/16 17:00	Meeting	Sub-Committee Procurement Call - January 14/2016	Discussion of recent/new procurement opportunities.	Donna Byce, Roger Souckey	CCFN: Brian Ritchie Wabun Tribal Council: Jason Batise FN Liaison: Cheryl Naveau
01/18/16		Air/Noise ECA Application	Provided First Nation service provider draft Air/Noise ECA for review.	Chantal Clement, Sophie Bergeron, Roger Souckey, Donna Byce, John Young	Camerado Energy Consulting: Rick Hendriks
01/22/16 17:00	Meeting	TLU and SIA Bi-weekly update Meeting-January 22,2016	Update on the status of First Nations TLU and Social Baseline studies.	Donna Byce, Roger Souckey	Firelight Group: Jeff Hackett Diana Gibson EEM: Andrew Sanford
01/26/16 20:30	Meeting	Chapleau Cree First Nation Advanced Exploration Closure Plan and ECA Consultation	Chapleau Cree First Nation Advanced Exploration Closure Plan and ECA Consultation. Topics of discussion/concern included: - market conditions for gold - mill location - Goldcorp aboriginal policy - water storage pond size - ammonia concentration in water storage ponds - pipeline discharge size and water quality in Borden River - air emissions within property area	Donna Byce, Roger Souckey, Chantal Clement, John Young	First Nation Sign-in sheet AMEC Foster Wheeler: Sheila Daniel
01/27/16	Email	Q4 Royalty Payment to First Nations	Provided First Nation Coordinator with info for First Nation's Q4 Royalty Payments	Donna Byce	FN Coordinator: Cheryl Naveau
01/28/16 12:30	Meeting	Borden Work Schedule Review Call - January 28, 2016	Goldcorp provided First Nations with a work schedule from January 2016-June 2016 to help them prepare for upcoming work contracts/business opportunities.	Donna Byce, Sophie Bergeron, John Young, Maarten Van Koppen	CCFN: Brian Ritchie Wabun Tribal Council: Jason Batise FN Liaison: Cheryl Naveau
02/01/16	Email	Visual Impact Supplementary Analysis	Provided First Nation service provider with a copy of the Visual Impact Supplementary Impact Analysis.	Donna Byce, Roger Souckey, Sophie Bergeron	Camerado Energy Consulting: Rick Hendriks

GOLDCORP
BORDEN GOLD

THREE NATIONS (CHAPLEAU CREE, BRUNSWICK HOUSE AND CHAPLEAU CREE FIRST NATIONS)

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
02/09/16 17:00	Meeting	Sub-Committee Procurement Call - February 09/2016	Discussion of recent/new procurement opportunities.	Donna Byce, Roger Souckey	CCFN: Brian Ritchie Wabun Tribal Council: Jason Batise FN Liaison: Cheryl Naveau
02/22/16 14:30	Meeting	Brunswick House First Nation Advanced Exploration Closure Plan and ECA Consultation	Brunswick House First Nation Advanced Exploration Closure Plan and ECA Consultation. Topics of discussion/concern included: - volume of truck traffic on Highway 101 - project timeline .	Donna Byce, Roger Souckey, John Young, Maarten Van Koppen, Lynn DeGeit	Camerado Energy Consulting: Rick Hendriks Hutchinson Environmental: Dennis Gregor FN Liaison: Cheryl Naveau
02/24/16 12:00	Meeting	February 24th, 2016 First Nation Negotiation Session	IBA Negotiation Session - content confidential	Mark Lauzier, Amy Hu, Donna Byce, Roger Souckey	CCFN: Chief Keith Corston Brian Ritchie BHFN: Chief Kevin Tangie Wabun Tribal Council: Shawn Batise OKT LLP: Bryce Edwards -Legal Counsel FN Liaison: Cheryl Naveau Financial consultant: Eric Coombs
02/24/16	Email	Scope of Work for Assay Lab	Provided First Nations with the opportunity to participate in the work for the Assay Lab.	Donna Byce	Brian Ritchie Jason Batise Cheryl Naveau

GOLDCORP
BORDEN GOLD

THREE NATIONS (CHAPLEAU CREE, BRUNSWICK HOUSE AND CHAPLEAU CREE FIRST NATIONS)

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
02/26/16 22:00	Meeting	Chapleau Ojibwe First Nation Advanced Exploration Closure Plan and ECA Consultation	Information Session hosted at Algoma Water Tower Inn, Sault Ste Marie, ON - Closure Plan and ECA	Donna Byce, Roger Souckey, Lynn DeGeit, Joe Picody	First Nation Sign in sheet AMEC Foster Wheeler: Debbie Dyck Camerado Energy Consulting: Rick Hendriks Hutchinson Environmental: Dennis Gregor FN Liaison: Cheryl Naveau MNDM: Jason Postma
03/04/16	Email	Socioeconomic Report Information Request	Request for information from Goldcorp for updated information on procurement, employment and timing related to the project phases as well as any information on the camp.	Donna Byce, Roger Souckey, John Young	Firelight Group: Jeffrey Hackett Diana Gibson Steve DeRoy
03/10/16	Email	Hydrogeo/geotech scope	Hydrogeology scope work presented to First Nations and follow-up.	Donna Byce, Maarten Van Koppen, Yannick Barbaux-Cooper	Brian Ritchie
03/23/16 17:00	Meeting	Sub-Committee Procurement Call - March 23/2016	Discussion of recent/new procurement opportunities.	Donna Byce, Roger Souckey	CCFN: Brian Ritchie Wabun Tribal Council: Jason Batise Darlene Lafontaine FN Liaison: Cheryl Naveau
04/11/16 16:00	Meeting	Sub-Committee Procurement Meeting - April 11/2016	Discussion of recent/new procurement opportunities.	Donna Byce, Roger Souckey	CCFN: Brian Ritchie Wabun Tribal Council: Jason Batise Darlene Lafontaine Shawn Batise FN Liaison: Cheryl Naveau

GOLDCORP
BORDEN GOLD

THREE NATIONS (CHAPLEAU CREE, BRUNSWICK HOUSE AND CHAPLEAU CREE FIRST NATIONS)

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
04/12/16 12:00	Meeting	April 12th, 2016 First Nation Negotiation Session	IBA Negotiation Session - content confidential	Mark Lauzier, Amy Hu, Donna Byce, Roger Souckey, Luc Joncas	CCFN: Chief Keith Corston Brian Ritchie BHFN: Chief Kevin Tangie Wabun Tribal Council: Shawn Batise OKT LLP: Bryce Edwards -Legal Counsel FN Liaison: Cheryl Naveau
04/21/16 11:00	Meeting	Brunswick House Economic Development Opportunities	Discussion of BHFN economic opportunities.	Roger Souckey, Donna Byce	Possibilities Group: Norm Jaehrling
04/21/16	Email	Area A - Low Impact work notification (BHFN and CCFN)	CSR Manager provided notification to Chapleau Cree First Nation and Brunswick House First Nation leadership for low impact work to be conducted in Area A to keep the claims active.	Donna Byce	CCFN: Chief Keith Corston BHFN: Chief Kevin Tangie
04/28/16 13:00	Meeting	April 28-Cross Consultancy Meeting	Monthly call to provide Borden project updates (site activities, baseline studies, permitting, consultation requirements) and convey this information back to the community members.	Donna Byce, Roger Souckey, Chantal Clement, Lynn DeGeit	Camerado Energy Consulting: Rick Hendriks Hutchinson Environmental: Dennis Gregor FN Liaison: Cheryl Naveau
04/28/16 17:00	Meeting	Borden Work Schedule Review Call- April 28/2016	Goldcorp provided First Nations with an updated work schedule from January 2016-June 2016 to help them prepare for upcoming work contracts/business opportunities.	Donna Byce, Luc Joncas, Maarten Van Koppen	CCFN: Brian Ritchie Wabun Tribal Council: Jason Batise FN Liaison: Cheryl Naveau

GOLDCORP
BORDEN GOLD

THREE NATIONS (CHAPLEAU CREE, BRUNSWICK HOUSE AND CHAPLEAU CREE FIRST NATIONS)

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
05/18/16		First Nation Environmental Monitor Training	MOU Guardianship Committee Funded a 3 day Environmental Monitor Training provided by Blue Heron Environmental.	Donna Byce	BHFN: Tania Saunders Kyle Naveau, FN Core Tech Bruce Golden, Lands and Resource Nancy Neshawabin, Elder CCFN: Dustin VanHorne, FN Monitor Patty Ann Owl, Economic Development Officer Steve Caldwell, Elder
05/24/16 17:30	Meeting	May 24-Cross Consultancy Meeting	Monthly call to provide Borden project updates (site activities, baseline studies, permitting, consultation requirements) and convey this information back to the community members.	Donna Byce, Lynn DeGeit, John Young	AMEC: Debbie Dyck Sheila Daniel Camerado Energy Consulting: Rick Hendriks Hutchinson Environmental: Dennis Gregor FN Liaison: Cheryl Naveau
06/03/16 12:00	Meeting	June 3rd, 2016 First Nation Negotiation Session	IBA Negotiation Session - content confidential	Mark Lauzier, Amy Hu, Donna Byce, Roger Souckey, Luc Joncas	CCFN: Chief Keith Corston Brian Ritchie BHFN: Chief Kevin Tangie Wabun Tribal Council: Shawn Batise Jason Batise OKT LLP: Bryce Edwards -Legal Counsel Camerado Energy Consulting: Rick Hendriks FN Liaison: Cheryl Naveau Other: Patty Ann Owl

GOLDCORP
BORDEN GOLD

THREE NATIONS (CHAPLEAU CREE, BRUNSWICK HOUSE AND CHAPLEAU CREE FIRST NATIONS)

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
06/06/16 14:00	Meeting	Chapleau Ojibwe First Nation Project Update Meeting - June 2016	Update on status of Advanced Exploration permits, baseline studies, drilling activities and Project Description for the potential operating mine. Topics of discussion/concern included: - location of mine and processing facility	Donna Byce, Roger Souckey, Lynn DeGeit, Joe Picody	First Nation Sign in sheet Camerado Energy Consulting: Rick Hendriks Hutchinson Environmental: Dennis Gregor FN Liaison: Cheryl Naveau
06/07/16 17:00	Meeting	Brunswick House First Nation Project Update Meeting - June 2016	Update on status of Advanced Exploration permits, baseline studies, drilling activities and Project Description for the potential operating mine. Topics of discussion/concern included: - availability of study results - drill depth of exploration holes	Donna Byce, Roger Souckey, John Young, Chantal Clement, Lynn DeGeit	First Nation Sign in sheet Camerado Energy Consulting: Rick Hendriks Hutchinson Environmental: Dennis Gregor FN Liaison: Cheryl Naveau

GOLDCORP
BORDEN GOLD

MICHIPICOTEN FIRST NATION

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
03/25/15	Letter	Introductory letter and brief update of activities	Provided MFN with an introductory letter to Goldcorp by email as well as a brief update of activities.	Donna Byce	MFN: Carol Sanders Chief Joe Buckell
05/19/15 13:00	Meeting	Goldcorp introduction meeting with Michipicoten First Nation	Provided MFN with documents relating to the Advanced Exploration (project description, permits and closure plan as well as baseline studies conducted to date.	Stephen Price, Roger Souckey, Donna Byce	MFN: Chief Joe Buckell Carol Sanders - Band Manager Doreen Boissoneau - Executive Secretary Lynn Lavingne - EDO Don Humpsford - Councillor Evelyn Stone - Councillor Linda Peterson - Councillor Irene Armstrong - Councillor
05/22/15	Email	Email sent to Michipicoten EDO regarding training conference	During the May 19th meeting, Goldcorp spoke with EDO to invite MFN to participate in Environmental Monitoring Workshop as well as Aboriginal Forum in Timmins.	Donna Byce	MFN: Lynn Lavigne
05/22/15	Email	Contact info for Environmental Consultant	Provided Michipicoten First Nation with contact info for the First Nation service provider that local First Nations (CCFN, BHFN, COFN) retained to review material relating to the Borden Gold project.	Donna Byce	MFN: Chief Joe Buckell Carol Sanders Doreen Boissoneau Bell Bernard: John Kim Bell
05/29/15	Email	Advanced Exploration follow-ups	Request for future meetings and follow up on material provided in relation to Advanced Exploration.	Donna Byce	MFN: Chief Joe Buckell Carol Sanders Doreen Boissoneau DST Consulting: Laura Ritchie
08/05/15 14:00	Meeting	MFN Consultation Discussion	Discussion to bring MFN's service provider up to date on the Borden Gold Project as well as provide an update on our efforts to meet with MFN.	Steve Price, Donna Byce, Roger Souckey	MFN: John Kim Bell - MFN service provider
09/11/15	Email	Draft MOU Provided to MFN service provider	Provided MFN's service provider with a draft copy of our MOU temple for mark up.	Donna Byce	Bell Bernard: John Kim Bell
09/11/15	Email	Follow up from MFN Consultation Discussion	Follow up emails with MFN's service provider regarding information provided and engagement.	Donna Byce, Roger Souckey	Bell Bernard: John Kim Bell
09/24/15 07:00	Meeting	Information regarding Borden project shared with MFN service provider	Provided information regarding completion of project description, timeline for EIS, project jurisdiction, Advanced Exploration Closure Plan submission, baseline Studies undertaken to date, and plans to secure project approval to move forward to the construction phase.	Donna Byce	MFN: John Kim Bell - MFN service provider
10/19/15	Email	MOECC -PTTW documentation confirming efforts to engage MFN	MOECC requested that Borden Gold provide information confirming their efforts in engaging in consultation with MFN in order to help process our PTTW application	Donna Byce	MOECC: Brooke Campbell-Paterson
10/21/15	Email	Letter to MOECC with details of consultation efforts	MOECC requested more additional information relating to efforts made in consulting with MFN	Donna Byce	MOECC: Brooke Campbell-Paterson
10/22/15	Email	Follow Up with MFN service provider for consultation	Email chain of follow ups from September 23-Oct.6 2015 regarding MOU and consultation with MFN	Donna Byce	Bell Bernard: John Kim Bell
10/22/15	Email	MFN Letter to MOECC	Letter MFN provided to MOECC regarding Goldcorp's application for PTTW	Donna Byce	Bell Bernard: John Kim Bell
10/27/15	Email	Provide MFN with a copy of the original PTTW	Provided MFN with a copy of the original PTTW	Donna Byce	Bell Bernard: John Kim Bell

GOLDCORP
BORDEN GOLD

MICHIPICOTEN FIRST NATION

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
10/28/15	Email	Request from MFN to receive the interim agreement	Request from MFN to receive the interim agreement	Donna Byce, Roger Souckey	Bell Bernard: John Kim Bell
10/30/15	Email	Letter of Agreement	An interim Letter of Agreement between MFN & Goldcorp for the purpose of commencing an initial consultation on Goldcorp's application for the PTTW and its project site to conclude a final MOU on current exploration project	Donna Byce, Roger Souckey	Bell Bernard: John Kim Bell
11/03/15 12:00	Meeting	Consultation Meeting with MFN and their service provider	Consultation meeting with MFN and their service provider. Topics of discussion/concern included: - Price of gold - Trucking of ore - Expectations for manpower - Goldcorp aboriginal policy - agreements in place with other First Nations - other First Nations being consulted for the project - extent of Goldcorp claims - ore grade - baseline studies - possible species at risk - power requirements - MFN input on archaeology study - Advanced Exploration cost and timeline - water quality and treatment	Roger Souckey, Sophie Bergeron, Chantal Clement, Donna Byce	MFN: Chief Joe Buckell, Carol Sanders, Evelyn Stone, Linda Peterson, Lynn Lavinge, Loreen Boissoneau Bell Bernard: John Kim Bell DST Group: Laura Ritchie
11/05/15	Email	Follow up with MFN after the November 3, 2015 Meeting	Goldcorp followed up regarding additional information needed and steps moving forward.	Donna Byce, Roger Souckey	MFN: Chief Joe Buckell Carol Sanders Bell Bernard: John Kim Bell
11/10/15	Email	Follow up with MFN service provider since meeting on November 3rd	Follow up on invoicing, upcoming meeting and letter to MOECC and Goldcorp.	Donna Byce, Roger Souckey	MFN: Chief Joe Buckell Carol Sanders Bell Bernard: John Kim Bell
11/12/15	Email	MFN Letter to MOECC for Goldcorp PTTW	MFN Letter to MOECC for Goldcorp's PTTW	Donna Byce, Roger Souckey	MOECC: Brooke Campbell-Paterson Carrie Hutchison MFN: Chief Joe Buckell Carol Sanders DST Group: Laura Ritchie Bell Bernard: John Kim Bell

GOLDCORP
BORDEN GOLD

MICHIPICOTEN FIRST NATION

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
11/20/15	Email	MOECC's Response to MFN for PTTW	MOECC provided a written response to MFN regarding their concerns for the Borden Gold PTTW name change/renewal.	Donna Byce, Roger Souckey	MOECC: Brooke Campbell-Paterson Carrie Hutchison MFN: Chief Joe Buckell Carol Sanders DST Group: Laura Ritchie Bell Bernard: John Kim Bell
11/23/15	Email	Update MFN to set up further consultation meetings - Nov. 11-23	Efforts made to set up future meetings with MFN.	Donna Byce, Roger Souckey	MFN: Chief Joe Buckell Carol Sanders Bell Bernard: John Kim Bell
11/30/15	Email	MFN Letter to Goldcorp after Nov. 2-2015 Meeting	MFN provided their concerns via a letter to Goldcorp after the Nov.3 2016 Meeting.	Donna Byce, Roger Souckey	MFN: Chief Joe Buckell Carol Sanders Evelyn Stone Linda Peterson DST Group: Laura Ritchie Bell Bernard: John Kim Bell MOECC MNDM MNR MTCS
12/01/15	Email	MFN Letter to Goldcorp - Follow up	Follow up from the letter MFN provided to Goldcorp.	Donna Byce, Roger Souckey	Bell Bernard: John Kim Bell
12/03/15	Email	Draft MOU provided by MFN	Draft copy of MFN's version of MOU provided to Goldcorp.	Donna Byce, Roger Souckey	Bell Bernard: John Kim Bell
12/07/15	Email	Note from MFN service provider about Draft MOU Update	Set up a meeting to discuss the Draft MOU that Michipicoten provided.	Donna Byce, Roger Souckey	MFN: Chief Joe Buckell Carol Sanders Bell Bernard: John Kim Bell
12/14/15	Email	Follow Up for December & January Meetings	Email exchange between Goldcorp and MFN service provider to arrange upcoming meetings.	Donna Byce, Roger Souckey	Bell Bernard: John Kim Bell
12/14/15	Email	December 14, 2016 Follow up	Additional follow up to set up meetings.	Donna Byce, Roger Souckey	Bell Bernard: John Kim Bell
12/17/15	Email	MNDM attendance during January 5th Meeting	Request if MFN would like MNDM attendance during the Jan. 5, 2016 meeting, as MFN noted in previous meeting minutes that they would like MNDM to participate in consultation.	Donna Byce, Roger Souckey	MFN: Carol Sanders Bell Bernard: John Kim Bell

GOLDCORP
BORDEN GOLD

MICHIPICOTEN FIRST NATION

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
12/18/15 14:00	Meeting	Draft MOU Discussion with MFN service provider	Conference call to discuss the draft MOU that MFN provided.	Donna Byce, Roger Souckey	MFN: John Kim Bell - MFN service provider
12/22/15	Email	Blanding turtle Existence around project area	MNF had asked Goldcorp to inquire if the Blanding Turtle existed in the project area.	Donna Byce	MFN: Chief Joe Buckell Carol Sanders Bell Bernard: John Kim Bell
12/29/15	Email	Download site for agenda and studies	MFN was seeking a site to download agenda and studies.	Donna Byce, Roger Souckey	MFN: Chief Joe Buckell Carol Sanders DST Group: Laura Ritchie Bell Bernard: John Kim Bell
01/05/16 12:00	Meeting	Advanced Exploration Closure Plan Consultation Meeting with MFN and their service provider- January 5, 2016	Advanced Exploration Closure Plan consultation meeting with MFN and their service provider. Topics of discussion/concern included: - project timeline - relationship with cottagers - water quality and geochemistry - water discharge - power source and capacity - possibility of metals leaching - thickness of pond liners	Roger Souckey, Maarten Van Koppen, Chantal Clement, Donna Byce	MFN: Chief Joe Buckell, Carol Sanders, Evelyn Stone, Lynn Lavinge, Loreen Boissoneau Bell Bernard: John Kim Bell DST Group: Laura Ritchie MNDM: Jason Postma Peter Caldbick
01/07/16	Email	Meeting January 5th - MFN Feedback	Feedback from MFN about the January 5, 2016 Meeting	Donna Byce, Roger Souckey	Bell Bernard: John Kim Bell
01/07/16	Email	Draft MOU Version 2	The second Draft MOU was exchanged.	Donna Byce, Roger Souckey	MFN: Chief Joe Buckell Carol Sanders Bell Bernard: John Kim Bell
01/15/16	Email	Goldcorp response to Michipicoten MOU	Goldcorp provided a response to the MOU MFN provided.	Donna Byce, Roger Souckey	Bell Bernard: John Kim Bell
01/15/16	Email	Borden - ECA Industrial Sewage Works - DRAFT for review	Provided MFN Environmental consultant with a copy of the ECA - Industrial sewage works for Advanced Exploration.	Donna Byce	DST Group: Laura Ritchie
01/18/16	Email	Air/Noise ECA Applications	Provided MFN environmental service provider with a copy of the Advanced Exploration ECA-Air & Noise for review.	Donna Byce	DST Group: Laura Ritchie

GOLDCORP
BORDEN GOLD

MICHIPICOTEN FIRST NATION

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
01/20/16	Email	Aboriginal Consultation Plan for Michipicoten First Nation-Probe Gold Mine	As part of the new mining regulatory regime, Goldcorp was to submit to MNDM an aboriginal consultation plan for Michipicoten. MFN requested a copy of the plan that was submitted. GC provided a copy.	Donna Byce, Roger Souckey	MFN: Chief Joe Buckell Carol Sanders Bell Bernard: John Kim Bell MNDM: Jason Postma
01/29/16	Email	Request from MFN service provider for ECA supporting documents	MFN service provider requested supporting documents for ECA.	Donna Byce, Roger Souckey	MFN: Chief Joe Buckell Carol Sanders Doreen Boissoneau Lynn Lavigne Bell Bernard: John Kim Bell
01/31/16	Email	Michipicoten MOU - Connection MFN with Shawn	Connected John Kim Bell with Shawn Batise who represents the 3 local First Nations to discuss issues with respect to the employment and business opportunities in the MOU.	Donna Byce, Roger Souckey	MFN: Chief Joe Buckell Carol Sanders Bell Bernard: John Kim Bell Wabun Tribal Council: Jason Batise
02/04/16	Email	Borden Activity Update - Permits & Applications	Goldcorp provided MFN with an update on current activities as well as Borden exploration permit renewal information and Hydro One application to discuss capacity.	Donna Byce, Roger Souckey	MFN: Chief Joe Buckell Carol Sanders Bell Bernard: John Kim Bell
02/12/16	Email	ECA application with the appendices	Provided MFN with a copy of the ECA which included appendices.	Donna Byce	DST Group: Laura Ritchie Bell Bernard: John Kim Bell
02/16/16	Email	Request for a teleconference between John Kim Bell (MFN) & Shawn Batise (3 Nations)	Director CSR suggested that John (MFN) and Shawn (3 Nations) should discuss procurement opportunities related to Borden.	Donna Byce, Roger Souckey	MFN: Chief Joe Buckell Carol Sanders Evelyn Stone Doreen Boissoneau Lynn Lavigne Bell Bernard: John Kim Bell Wabun Tribal Council: Shawn Batise

GOLDCORP
BORDEN GOLD

MICHIPICOTEN FIRST NATION

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
02/18/16	Email	MFN March 2016 proposed meeting dates	MFN and Borden email exchange to set a March meeting date.	Donna Byce, Roger Souckey	MFN: Chief Joe Buckell Carol Sanders Evelyn Stone Doreen Boissoneau Lynn Lavigne Bell Bernard: John Kim Bell DST Group: Laura Ritchie
02/18/16	Email	MFN Invoice - Letter of Agreement - January 2016	MFN provided first invoice for $28,300 for consultation and material review as per Letter of Agreement	Donna Byce	MFN: Carol Sanders Jessica Webb Bell Bernard: John Kim Bell
02/24/16	Email	Revised MOU Attached From Michipicoten (Version 3) February 21 with JKB and Michipicoten Comments	MFN service provider provided a copy of the revised MOU Version 3 with comments.	Donna Byce, Roger Souckey	MFN: Chief Joe Buckell Carol Sanders Evelyn Stone Doreen Boissoneau Lynn Lavigne Bell Bernard: John Kim Bell
02/24/16	Email	Closure Plan Comments	MFN notified Goldcorp that it would be receiving a copy of the closure plan comments by end of day February 24, 2016.	Donna Byce, Roger Souckey	MFN: Chief Joe Buckell Carol Sanders Evelyn Stone Doreen Boissoneau Lynn Lavigne Bell Bernard: John Kim Bell DST Group: Laura Ritchie
02/24/16	Email	Goldcorp - Borden Project Closure Plan Letter and Comments	Goldcorp received a copy of letter and closure plan comments from MFN.	Donna Byce, Roger Souckey	MFN: Chief Joe Buckell Carol Sanders Evelyn Stone Doreen Boissoneau Lynn Lavigne Bell Bernard: John Kim Bell DST Group: Laura Ritchie MNDM: Jason Postma Dave Bell

GOLDCORP
BORDEN GOLD

MICHIPICOTEN FIRST NATION

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
03/01/16	Email	MFN January Invoice follow up	CSR Manager requested clarification on January invoice that MFN Band Manger (Carol Sanders) provided.	Donna Byce	MFN: Carol Sanders Jessica Webb Bell Bernard: John Kim Bell
03/23/16	Email	Baseline Studies	CSR Manager provided MFN consultants (Laura & John) with copies of baseline studies that have recently been completed. They include water quality, climate, terrestrial and hydrology.	Donna Byce	Bell Bernard: John Kim Bell DST Group: Laura Ritchie
03/23/16	Email	Baseline Studies - Terrestrial	CSR Manager provided MFN consultants (Laura & John) with copy of baseline study for terrestrial that was recently been completed.	Donna Byce	Bell Bernard: John Kim Bell DST Group: Laura Ritchie
03/29/16	Email	MFN final Invoice for Letter of Agreement	Received final invoice from MFN Band Manager (C. Sanders) for the Letter of agreement	Donna Byce	MFN: Carol Sanders Jessica Webb Bell Bernard: John Kim Bell
04/14/16 12:00	Meeting	MOU Negotiation Meeting with John Kimbell	Intent of the meeting was to conclude an MOU with MFN, which Goldcorp sees as an MOU for exploration & advanced exploration.	Roger Souckey, Amy Hu, Donna Byce	MFN: John Kim Bell - MFN service provider

GOLDCORP
BORDEN GOLD

METIS NATION OF ONTARIO

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
04/20/15	Email	Project Update & Contact Info	CSR Manager provided MNO with a brief introduction to Goldcorp as well as contact info.	Donna Byce	MNO: Alden Barty Jesse Fieldwebster
07/29/15	Email	Borden Gold Update - July 29/2015	CSR Manager provided MNO with a quarterly project update.	Donna Byce	MNO: Alden Barty
11/06/15	Email	Borden Gold Project Update - November 2015	CSR Manager provided MNO with quarterly update.	Donna Byce	MNO: Alden Barty Jesse Fieldwebster James Wagar
02/02/16	Email	Borden Gold Project Update - February 2016	CSR Manager provided MNO with quarterly update.	Donna Byce	MNO: Alden Barty Jesse Fieldwebster James Wagar
03/23/16	Email	AEP Permit Submission notification	CSR Manager notified MNO that Borden would be submitting permit applications for Advanced Exploration the week of March 21st, 2016.	Donna Byce	MNO: Alden Barty Jesse Fieldwebster James Wagar
05/29/16 13:00	Meeting	Metis Nation of Ontario - Introduction to Borden Project / CSR	Borden CSR Manager & Goldcorp Director met with the Metis Nation of Ontario Mineral Development Advisor in Timmins to provide an introduction to the Borden Project as well as receive information on the MNO consultation protocol.	Donna Byce, Roger Souckey	MNO: Andy Lefebvre, Mineral Development Advisor
06/10/16 14:00	Meeting	Metis Nation of Ontario - Consultation Committee Meeting - June 10, 2016	Purpose of the meeting was to provide MNO with a Goldcorp Introduction, project overview and drilling activities.	Donna Byce, Roger Souckey, John Young, Lynn DeGeit	MNO: Andy Lefebvre, Marcel Lafrance, Urgel Courville, George Ethier, Liliane Ethier, Jennifer Frappier, Dave Hamilton AMEC Foster Wheeler: Debbie Dyck

GOLDCORP
BORDEN GOLD

TOWNSHIP OF CHAPLEAU

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
03/13/15 16:00	Meeting	Goldcorp SVP & VP Meet and Greet with Mayor, CAO & CEDC	Goldcorp SVP & VP Meet & Greet with Chapleau Leadership & CEDC	Marc Lauzier, Chris Woodall, Donna Byce	Township of Chapleau: Allan Pellow-CAO Giselle Noel-Deputy Mayor Chelsea Swearengen-EDO, CEDC
03/17/15 12:00	Meeting	Goldcorp Meet & Greet with Mayor Council & CEDC	Meet & Greet - Goldcorp Introduction with Chapleau Leadership and CEDC	Roger Souckey, Steve Price, Donna Byce	Township of Chapleau: Allan Pellow-CAO Giselle Noel- Council/Deputy Mayor Gerard Bernier-Council Chelsea Swearengen-EDO, CEDC
04/15/15 12:00	Meeting	Goldcorp Meet & Greet with CEDC Board Members	Goldcorp Meet & Greet with CEDC Board Members	Steve Price, Donna Byce	CEDC: Chelsea Swearengen Giselle Noel Jocelynne Bernier Kevin Lindquist Stephen Lee Jamie Thibeault Terry Black
06/01/15 16:00	Meeting	Special Council Meeting & Waterfront Cheque Presentation	Goldcorp prepared a presentation for Mayor & Council which provided them with information about the company and an update on the Borden Gold activities, and presented a cheque for support of the Chapleau Waterfront project.	Steve Price, Donna Byce	Township of Chapleau: Giselle Noel - Deputy Mayor Allan Pellow - CAO Gerard Bernier - Council Kevin Lindquist - Council Les Jones - Treasurer
06/03/15 17:00	Meeting	Mining Readiness Meeting with CEDC	Goldcorp met with CEDC to discuss the relationship, format and schedule for the Township's Mining Readiness study.	Steve Price, Donna Byce	CEDC: Chelsea Swearengen
06/10/15 18:00	Meeting	Social Baseline Introduction & Presentation	Met with CAO, EDO and Township Treasurer to introduce EEM and provide a presentation on scope of work for social baseline studies.	Donna Byce	EEM: Rob Cole Catherine Lussier Jean-Philippe Roux-Groleau Township of Chapleau: Allan Pellow (CAO) Chelsea Swearengen (EDO) Les Jones (Treasurer)

GOLDCORP
BORDEN GOLD

TOWNSHIP OF CHAPLEAU

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
10/05/15 08:00	Meeting	Project Update Meeting - October 5th, 2015	Presentation to mayor and council. Township concerns included: - Land package boundaries - Winter Ice Drilling program - Water quality - specifically water being tested before discharged - What Goldcorp will do with waste from the ponds - Timeline for Advanced Exploration - Size of the bulk sample - Goldcorp's involvement in a Mining Readiness Study that the township is conducting - Estimated Labour force needed for Advanced Exploration - Business opportunities the township can participate in	Yannick Barbaux, Chantal Clement, Sophie Bergeron, Marc Lauzier, John Young, Donna Byce, Roger Souckey, Maarten Van Koppen, Pablo Castanos	Township of Chapleau: Allan Pellow - CAO Michel Levesque - Mayor Guilhaume Tremblay - Councillor Kevin Lindquist - Councillor Gerard Bernier - Councillor Les Jones - Treasurer Klohn Crippen Berger: Robert Cross AMEC Foster Wheeler: Sheila Daniel
10/14/15 14:00	Meeting	Discussion with CEDC and CGV Builders for potential housing options	Meeting was to discuss potential options available to Goldcorp if they are considering housing or a camp situation in the future.	John Young, Sophie Bergeron, Donna Byce	CEDC: Chelsea Swearengen CGV Builders: David Butler Mike Vezeau Harriman Planning: Keith Harriman
10/30/15 12:30	Meeting	Meeting with Chapleau Economic Development Corporation Economic Development Officer	CEDC requested to see the presentation Goldcorp provided to the Township as EDO was out of town and unable to make it for the meeting.	Donna Byce	CEDC: Chelsea Swearengen
11/12/15	Email	CAO of Chapleau - Request for operating Hours - Concerned Resident	CAO sent an email in reference to a complaint he received from a local resident about banging noises and people talking/laughing in the late hours. Community Liaison discussed with the Senior Geologist and confirmed it was the delivery of core on a couple of occasions that was causing the disturbance. The Senior Geologist notified the contractor to only deliver core during regular business hours.	Donna Byce	Township of Chapleau: Allan Pellow, CAO

GOLDCORP
BORDEN GOLD

TOWNSHIP OF CHAPLEAU

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
11/30/15 19:30	Meeting	Advanced Exploration - Closure Plan Consultation	Advanced Exploration Closure Plan consultation with the Township, including Q&A. Details in meeting minutes.	Lynn DeGeit, Chantal Clement, Sophie Bergeron, Roger Souckey, John Young, Donna Byce, Maarten Van Koppen	Township of Chapleau: Mayor Levesque Gerard Bernier - Councillor Giselle Noel - Councillor Kevin Lindquist - Councillor Guillhume Tremblay - Councillor Allan Pellow - CAO Chelsea Swearengen - EDO AMEC Foster Wheeler: Debbie Dyck EEM: Andrew Sanford Klohn Crippen Berger: Robert Cross
12/02/15 11:30	Meeting	Final Social Baseline Assessment Review	EEM presented Social Baseline Assessment study and the Township provided feedback and additional details for some points.	Sophie Bergeron, Roger Souckey, Donna Byce	Township of Chapleau: Mayor Levesque Allan Pellow - CAO Chelsea Swearengen - EDO Les Jones - Treasurer EEM: Andrew Sanford
01/15/16	Email	Chapleau Final Baseline Assessment	Provided the CEDC EDO with a copy of the Chapleau Social Baseline Assessment	Donna Byce	CEDC: Chelsea Swearengen
01/18/16 12:30	Meeting	Mining Readiness Introductions	CEDC arranged for a conference call to introduce Sophie to the consultant for the Mining readiness Study.	Donna Byce, Sophie Bergeron	CEDC: Chelsea Swearengen KPMG: Oskar Poloni
01/18/16 12:30	Meeting	Mining Readiness - second follow-up call	Discussion between Goldcorp and KPMG consultant about the Mining Readiness Study.	Donna Byce, Sophie Bergeron	KPMG: Oskar Poloni
02/01/16		Township of Chapleau Mining Readiness	Goldcorp attended the Township's Mining Readiness strategy to support the township in their public open house.	Donna Byce, John Young Jason Rickard	Township of Chapleau
05/30/16 16:00	Meeting	Chapleau Mining Readiness Strategy draft review	Conference call set up by EDO to review the Goldcorp content that will be included in the Chapleau Mining Readiness Report.	Donna Byce, Roger Souckey, Luc Joncas	CEDC: Chelsea Swearengen KPMG: Oskar Poloni

GOLDCORP
BORDEN GOLD

TOWNSHIP OF CHAPLEAU

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
05/31/16 17:30	Meeting	Introduction of new Borden Operations Manager to Township CAO, Treasurer and EDO	Set up an introductory meeting at the Township of Chapleau to introduce Luc to the CAO, Treasurer, and EDO.	Donna Byce, Luc Joncas	Township of Chapleau: Allan Pellow - CAO Chelsea Swearengen - EDO Les Jones - Treasurer

GOLDCORP
BORDEN GOLD

BORDEN LAKE COTTAGERS

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
03/17/15 22:00	Meeting	Goldcorp Introduction to Borden Lake Cottagers	Meet & Greet to introduce Roger and Steve to the Cottagers	Roger Souckey, Steve Price, Donna Byce	Cottagers: Diana & Barry McCartney Normand Frappier Craig Taylor Maureen & Keith Travis Joanne & David Laughland Bill & Doreen Cachagee
05/21/15 22:00	Meeting	Borden Lake Cottagers Update meeting- May 21, 2015	Update meeting- discussion of Borden Lake ice drilling clean up, drilling program and introduction of community Feedback Protocol.	Stephen Price, Donna Byce	Cottagers: Norm & Cindy Frappier Diana & Barry McCartney Lisi Bernier Craig & Emily Taylor Maureen & Alanna Travis L Swanson-Serviss Lake Marianne Leach-Serviss Lake Kristi & Peter Vogel Carol Hay-Chapleau Lodge Joanne Laughland Mike Martineau Twyla Berry-Swanson Bill Cormier-Borden Lake Campground Major Drilling: Jake Girard Gerry Chartier Norm Doyon Jesse Pare Henri Riopel
06/10/15 19:00	Meeting	Social Baseline Introduction & Presentation	Met with Cottagers to provide an introduction to EEM and presentation on scope of work for social baseline studies. Minutes are attached.	Donna Byce	EEM: Rob Cole Catherine Lussier Jean-Philippe Roux-Groleau Cottagers: Bill Cormier Doreen & Bill Cachagee Lisi Bernier Joanne & David Laughland Sylvain Pilote Keith Travis Greg & Sandy Sommers

GOLDCORP
BORDEN GOLD

BORDEN LAKE COTTAGERS

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
07/06/15 22:00	Meeting	Borden Lake Cottagers update - July 6, 2015	Project update and presentation. Action items in meeting minutes.	Steve Price, Donna Byce, Jason Rickard-Exploration Manager, Chantal Clement, JY Young	Borden Lake Cottagers: Larry Moore Craig Taylor Emily Taylor Lisi Creighton-Bernier Caroline Hay Chis Taylor Dave & Joanne Laughland Sharon Swanson Major Drilling: Jake Girard Henri Riopel Gerry Chartier EEM: Catherine Lussier
08/12/15 21:30	Meeting	Borden Gold Site Tour	A Borden Gold site tour for the Borden Lake Cottagers was planned and executed.	JY Young, Donna Byce, Miro	Cottagers: Twyla Berry-Swanson Lorne Swanson Andrew Schroeder Andrew Saari Craig Taylor Louis Martin Joanne Laughland Keith Travis Maureen Travis Major Drilling: Gerry
10/05/15 22:00	Meeting	Borden Lake Cottagers - Update Meeting October 5th, 2015	Borden Lake Cottagers - Update Meeting October 5th, 2015. Topics of discussion/concern included: - road maintenance - mitigation of drilling noise - ice drilling program and remediation of ice ramp - project timeline - generator noise	Steve Price, Donna Byce, Chantal Clement, JY Young	Cottagers: Kristi Vogel Lisi Bernier Claude Martel Keith Travis
10/19/15	Email	Proposed Drill Road and Target Area	Email sent to Cottagers spokesperson to inform them of proposed drill road and target area.	Donna Byce	Borden Lake Cottagers: Emily Taylor

GOLDCORP
BORDEN GOLD

BORDEN LAKE COTTAGERS

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
10/29/15		Mining Matters (PDAC) session with Borden Lake Cottagers & Campground	A Mining Matters session was held on October 29, 2015 with the Borden Lake Cottagers as well as the Borden Lake Campground. Information relating to mining essentials and mining cycle was presented.	Donna Byce, Breanne Beh	Borden Lake Cottagers: Maureen & Keith Travis Doreen Cachagee Borden Lake Campground: Peggy & Allan Domingue FN Coordinator: Cheryl Naveau
11/30/15 22:00	Meeting	Advanced Exploration Closure Plan Consultation	Advanced Exploration Closure Plan Consultation and presentation. Topics of discussion/concern included: - noise increase after leaves fell in autumn - duration of closure - trucking of ore to Timmins - concerns about blasting and vibration - water pH - local hiring - sound from generators - financial requirements for closure - break in drilling program	Sophie Bergeron, Chantal Clement, Roger Souckey, John Young, Donna Byce, Maarten Van Koppen, Lynn DeGeit	Sign-in sheet AMEC Foster Wheeler: Debbie Dyck EEM: Andrew Sanford Klohn Crippen Berger: Robert Cross
01/22/16	Email	Cottager Meeting - January 28th 2016	Community Liaison reached out to Borden Lake Cottagers to confirm meeting on January 28, 2016 and provide conference call details for those unavailable to attend.	Donna Byce	Borden Lake Cottagers: Lisi Bernier
01/28/16 22:00	Meeting	Borden Lake Cottagers - Update Meeting January 28th, 2016	Goldcorp presented a new drill location on East (cottagers) side of Borden (Cottagers side) and indicated that they would commence drilling in that area in the next week or so. A trail would be cut and drilling would finish sometime before May long weekend. Goldcorp presented the cottagers with a letter to invite them to provide information on water sources for baseline studies.	Donna Byce, Roger Souckey, Chantal Clement, John Young, Miro Mytny	Sign-in sheet
02/08/16	Email	East Drilling Update - 1	Community Liaison Coordinator provided the Cottagers with an update on the East Drilling program.	Donna Byce	Borden Lake Cottagers: Lisi Bernier
03/01/16	Letter	O'Riley - Well & Mining Lease Letter	CSR Manager called the property owner on March 01/2016 regarding Goldcorp's intent to bring mining claim to lease. CSR Manager requested a meeting to answer any questions they may have. Property owner requested that the information be sent in writing. CSR Manager mailed (registered letter) all information regarding well survey and lease on March 11/2016.	Donna Byce	Syd & Gail O'Riley

GOLDCORP
BORDEN GOLD

BORDEN LAKE COTTAGERS

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
03/07/16	Email	Borden Road Maintenance	Cottager contacted CSR Manager to notify that the Cottagers road past the East drill trail requires maintenance. This road maintenance was discussed during Cottager meeting and Goldcorp agreed to provide assistance in maintaining the Cottagers road to a maximum of $3,000. CSR Manager contacted Brunswick House to get the grader out there before the milder temperature.	Donna Byce, John Young	Lisi Bernier, Claude Martel
03/07/16	Email	Travis - Well & Mining Lease Email	CSR Manager provided Cottager owner with information regarding Goldcorp's intent to bring mining claim to lease. CSR Manager requested a meeting or call to answer any questions they may have.	Donna Byce	Keith Travis
03/07/16	Meeting	Hazen - Well & Mining Lease	CSR Manager met with Cottager owner on Monday March 07/16 to provide information regarding Goldcorp's intent to bring mining claim to lease as well as request information regarding well. Property owner kindly provided information for a well survey and had no concerns regarding the mining lease letter.	Donna Byce	Murray Hazen
03/08/16 22:00	Meeting	Borden Lake Cottagers - East Drilling Update Meeting	Project personnel announcements and East Drilling update. Key takeaway messages received is that the road is very vulnerable and Goldcorp should look to get trails cut and equipment in ASAP to avoid any impacts to the road.	Donna Byce, Lynn DeGeit, John Young, Miro Mytny	Cottagers: Craig & Emily Taylor Bill & Doreen Cachagee Normand Frappier Keith & Maureen Travis Syd O'Riley
03/08/16	Email	Martineau - Mining Lease Email	CSR Manager provided Cottager owner with information regarding Goldcorp's intent to bring mining claim to lease. CSR Manager requested a meeting or call to answer any questions they may have.	Donna Byce, John Young	Mike Martineau
03/08/16	Email	Bernier - Mining Lease Email	CSR Manager provided Cottager owner with information regarding Goldcorp's intent to bring mining claim to lease. CSR Manager requested a meeting or call to answer any questions they may have.	Donna Byce, John Young	Lisi & Paul Bernier
03/11/16	Email	Pilote - Mining Lease Email	CSR Manager provided Cottager owner with information regarding Goldcorp's intent to bring mining claim to lease. CSR Manager requested a meeting or call to answer any questions they may have.	Donna Byce	Sylvain Pilote
03/11/16	Email	Morita -Mining Lease Email	CSR Manager provided Cottager owner with information regarding Goldcorp's intent to bring mining claim to lease. CSR Manager requested a meeting or call to answer any questions they may have.	Donna Byce	Robert Morita

GOLDCORP
BORDEN GOLD

BORDEN LAKE COTTAGERS

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
03/11/16	Email	Martel - Mining Lease Email	CSR Manager provided Cottager owner with information regarding Goldcorp's intent to bring mining claim to lease. CSR Manager requested a meeting or call to answer any questions they may have.	Donna Byce	Claude Martel
03/11/16	Email	Saari_Martin - Mining Lease	CSR Manager provided Cottager owner with information regarding Goldcorp's intent to bring mining claim to lease. CSR Manager requested a meeting or call to answer any questions they may have.	Donna Byce	Kendra Saari
03/11/16	Email	At. Amand - Mining Lease Email	CSR Manager provided Cottager owner with information regarding Goldcorp's intent to bring mining claim to lease. CSR Manager requested a meeting or call to answer any questions they may have. Cottager Owner left a voice mail regarding email to follow up	Donna Byce	Danah & Keith St. Amand
03/11/16	Email	Wilson - Mining Lease Email	CSR Manager provided Cottager owner with information regarding Goldcorp's intent to bring mining claim to lease. CSR Manager requested a meeting or call to answer any questions they may have.	Donna Byce	Sharon Swanson
03/11/16	Email	Vogel Mining Lease Email	CSR Manager provided Cottager owner with information regarding Goldcorp's intent to bring mining claim to lease. CSR Manager requested a meeting or call to answer any questions they may have.	Donna Byce	Kristi Vogel
04/08/16	Email	Travis-Notification of transferring mining claim to lease	CSR Manager provided Cottager owner with information regarding Goldcorp's intent to bring mining claim to lease. CSR Manager requested a meeting or call to answer any questions they may have.	Donna Byce	Keith Travis
04/22/16	Email	Drilling on the East side of Borden Lake	CSR Manager sent an email to Cottagers to notify them of the change in drill location. Drilling stopped on the East side of Borden Lake and commenced on site.	Donna Byce	Borden Lake Cottagers: Emily Taylor
04/26/16 22:00	Meeting	Borden Lake Cottagers - Update Meeting April 26th, 2016	Project update and presentation. Topics of discussion/concern included: - electrification of the mine - communication tower	Roger Souckey, Chantal Clement, Donna Byce, Lynn DeGeit, Christine Schultis	Cottagers: Normand Frappier, Bill Cachagee, Craig Taylor, Dave Laughland, Joanne Laughland, Emily Taylor, Lisi Bernier, Marshall Canning, Bill Cormier

GOLDCORP
BORDEN GOLD

BORDEN LAKE CAMPGROUND ASSOCIATION

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
12/21/15	Email	Schedule a January meeting with Borden Lake Campground	Goldcorp Community Liaison Coordinator contacted the president of the campground to schedule a meeting in January for introductions to Goldcorp and answer any questions or concerns they may have.	Donna Byce	Borden Lake Campground Association: Richard Ruffo Leah Cyr
01/29/16	Email	Borden Drilling Activity and Information Material	Community Liaison Coordinator provided Borden Lake campground with information on current drilling activities as well as a copy of the water source information letter as per discussions with campground president during an informal lunch meeting.	Donna Byce	Borden Lake Campground Association: Richard Ruffo
02/02/16	Email	Request for February Meeting and Community Feedback Protocol	Community Liaison contacted the president and secretary of the Borden Lake camp ground to request a meeting with Goldcorp in February as well as provide them with a copy of the Borden Community Feedback Protocol.	Donna Byce	Borden Lake Campground Association: Richard Ruffo
02/22/16 22:00	Meeting	Borden Lake Campground Association Meeting - February 22/2016	Goldcorp organized an introductory meeting with the Borden Lake Campground Association to provide an overview of Goldcorp, current activities and the proposed Advanced Exploration Program. Topics of discussion/concern included: - impact on fish during drilling - air quality be assessed - noise - electrical power - project timeline - training opportunities - Goldcorp support to maintain the roads.	Donna Byce, Roger Souckey, John Young, Lynn DeGeit	Campground Association: Rick Ruffo, William Cormier, Peggy Domingue Rick (last name not identified)
02/29/16	Email	Borden Lake Campground Presentation	Presentation to the Borden Lake Campground Association. Goldcorp to provide copy of presentation and fish studies.	Donna Byce	Borden Lake Campground Association: Richard Ruffo Peggy Domingue
04/28/16 22:00	Meeting	Borden Lake Campground Association Meeting - April 28/2016	Goldcorp organized a meeting with the Borden Lake Campground Association to provide an update on the exploration program for spring/summer 2016. Main concern regarding the 2016 exploration program was the "dump" drilling location, Campers requested that this be drilled in the off season if possible due to proximity to the campground and noise/safety.	Donna Byce, Roger Souckey, Chantal Clement, John Young, Lynn DeGeit	Campground Association: Rick Ruffo, Peggy Domingue, Leah Cyr, Jason McKee, Peggy Babineau, Joanne Ruffo, Alain Lavoie, Keith Friend, Mirelle Larocque, Pierrette Ouellette, Craig Montgomery, Molly O'Connor

GOLDCORP
BORDEN GOLD

LOCAL LAND USERS

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
06/03/15 18:00	Meeting	Meeting with Local Outfitter / Bear Management	Steve met with local outfitted to discuss access to his bear management area and inform us that it is within Goldcorp's property. His concern was gaining access to his area, and he has committed to notifying the Borden Gold office when he is on the property and when bear baiting.	Steve Price	Local outfitter: Jamie Thibeault
06/10/15 16:00	Meeting	Social Baseline Introduction & Presentation	Met with Borden Lake Campground to introduce EEM and scope of work for social baseline studies.	Donna Byce	EEM: Rob Cole Catherine Lussier Jean-Philippe Roux-Groleau Borden Lake Campground: Larry Lacroix Josee Rousseau
06/15/15 22:00:00	Meeting	Borden Gold Public Information Session	Public information session and presentation for local land users. Some topics of discussion/concern included: - drilling schedule - project viability - reclamation - site of ore processing - advanced exploration time frame - employment and employee housing	Roger Souckey, Chantal Clement, Donna Byce, Lynn DeGeit, Maarten Van Koppen, Yannick Couper	Klohn Crippen Berger: Robert Cross AMEC Foster Wheeler: Sheila Daniel MNDM: Jason Postma Sarah Approx. 50 community participants
10/21/15	Public Notice	Mining Matters session with local schools/Public and Cottagers	In collaboration with PDAC Goldcorp hosted a Mining Matters Session during the week of October 26-29 for local students, Cottagers and a Public evening Event.	Donna Byce	General public
11/02/15	Email	Trap Cabin Survey -Dave Hamilton	Probe Mines Limited started discussions with a local trapper to find a better location for his trap cabin. Goldcorp followed up with the surveyor to confirm that the work was been completed.	Donna Byce, Roger Souckey	D.S. Dorland Limited: Bryan Carrier-Dorland

GOLDCORP
BORDEN GOLD

LOCAL LAND USERS

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
12/01/15 22:00	Meeting	Advanced Exploration Closure Plan Consultation - Public	Advanced Exploration Closure Plan consultation and presentation. Topics of discussion/concern included: - electrical power line vs. generators - partnership with First Nations - water discharge quality and location - dust, will it be a problem? - employment and training programs - winter ice drilling	Lynn DeGeit, Chantal Clement, Sophie Bergeron, Roger Souckey, John Young, Donna Byce, Maarten Van Koppen	Approximately 13 people - sign in sheet AMEC Foster Wheeler: Debbie Dyck EEM: Andrew Sanford Klohn Crippen Berger: Robert Cross
12/01/15	Email	Lincoln Twp. Trapper	Local trapper was identified during the AEP Closure plan public information session. He would like to be notified in advance if there are will be any exploration activities in his trap line area which is located in Goldcorp's land package.	Donna Byce	Antony & Claudia Jaworski
12/09/15	Email	Conversation between SEH Superintendent & President of Chapleau Snowmobile Club	A discussion with President of Chapleau Snowmobile Club to know if there was any interest from Goldcorp in brushing an area near the east gate for the snow machines to use.	Donna Byce, John Young	Chapleau Snowmobile Club: Richard Bignucolo
01/27/16 22:00	Meeting	Advanced Exploration Closure Plan Consultation & ECA (second round) - Public	Advanced Exploration Closure Plan consultation and presentation (second round). Topics of discussion/concern included: - timeline - electrical power vs. diesel generators - water quality of wells - size of ponds and pond liners - water quality of discharge water	Donna Byce, Roger Souckey, Chantal Clement, John Young Marc Lauzier	First Nation Sign-in sheet - approx. 30 people
02/29/16	Public Notice	Notice of Commencement of Screening - Diesel Powered Generator(S)	Goldcorp posted a notice of commencement of environmental screening for diesel powered generator(s) in the Chapleau Express, local newspaper on February 4th & 11th, 2016. The notice included information regarding the AEP program, temporary generators as well as contact information should an individual wish to provide feedback.	Donna Byce	General public
04/27/16	Letter	Trap Cabin - Access Agreement (Dave Hamilton)	Goldcorp provided local trapper with a signed copy of Access Agreement which was initiated by Probe Mines to relocate trapping cabin.	Mark Lauzier, Donna Byce	Dave Hamilton

GOLDCORP
BORDEN GOLD

OTHERS

Date	Type	Title	Description	Proponent Contact(s)	Project Stakeholder(s)
04/21/16	Email	Area A - Notification to Flying Post regarding low impact activity in Area A	CSR Manager provided notification to Flying Post regarding low impact work to be conducted in Area A.	Donna Byce	Wabun Tribal Council: Shawn Batise
04/27/16 22:00	Meeting	Serviss Lake Cottagers Meeting - Project Update	Provided Serviss Lake Cottagers with an update on current and upcoming drilling activities in and around Borden Lake.	Donna Byce, Roger Souckey, Chantal Clement, Lynn DeGeit, Craig Yuill	Serviss Lake Cottagers: Twyla & Lorne Swanson Roger Lapointe Rene Tremblay Earle & Nancy Freeborn Susan Cockburn Marianne Leach Krista Leach Ted Debois Ron Martel (did not sign sheet)

C-2: Engagement and Consultation Schedule

BORDEN GOLD PROJECT - CONSULTATION / ENGAGEMENT TO DATE SUMMARY
MINISTRY OF NORTHERN DEVELOPMENT AND MINES

GOLDCORP
BORDEN GOLD

Consultation Activity / Subject Matter	2014				2015																																																			2016																									
	December				January				February				March				April				May				June				July					August				September				October					November				December					January				February				March					April				May				June				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	5
Reporting																																																																																	
Invitation to public consultation events and focus groups				■	■	■	■	■																																																																									
Invitation to closure planning consultation and reporting on closure consultation				■	■	■	■	■																																																																									
Invitation to public consultation on Goldcorp's advanced exploration plans																																																		■								■																						
Submission of consultation reports on MNDM templates											■	■																																	■																							■											
Provision of interim aboriginal consultation reports to MNDM																																													■																							■											

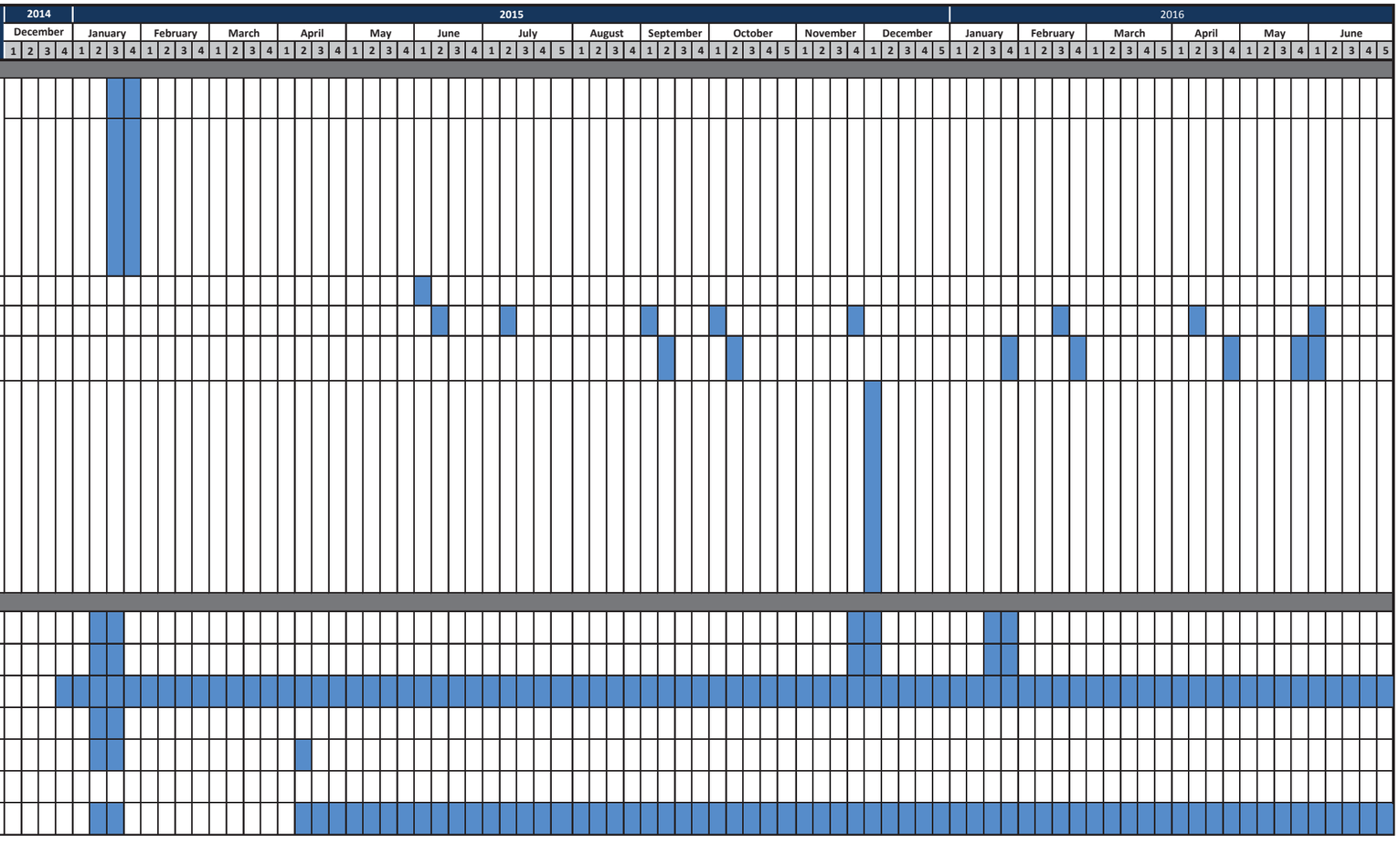
Legend

- Planned completion
- Completed

BORDEN GOLD PROJECT - CONSULTATION / ENGAGEMENT TO DATE SUMMARY
LOCAL FIRST NATIONS - BRUNSWICK HOUSE FIRST NATION, CHAPLEAU CREE FIRST NATION, CHAPLEAU OJIBWE FIRST NATION

GOLDCORP
BORDEN GOLD

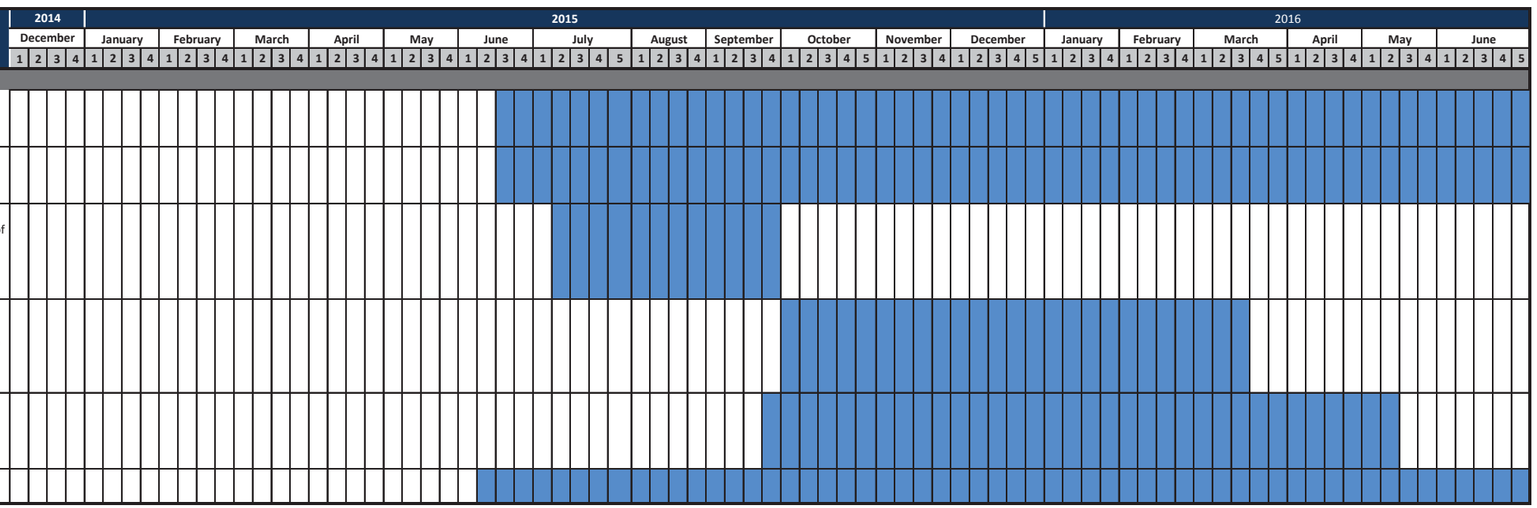
Consultation Activity		Subject Matter
Engagement and Interaction		
Public presentation and Q and A	* Description of advanced exploration process * Summary of main potential impacts and mitigation measures * Overview of closure plan sequence, targets, methods and financial assurance * Plan, timeline and main technical issues for industrial sewage system * Detailed description of work to be undertaken in the lake and in adjacent streams * Use of water and amounts taken * Construction, management and dewatering of underground galleries and structures	* Risks for surface and groundwater quality * Drinking water from Borden Lake * Planning for priority to tender on procurement calls for proposals * Evolution of planning regarding Borden Gold dam * Evolution of mine footprint from advanced exploration stage to extraction phase
Meeting with Chief and Council		
Initiate Collaboration Agreement		* Initiation of negotiations of a Collaboration Agreement between Goldcorp and local First Nations
Monthly Collaboration Agreement negotiation meeting		* Ongoing negotiation of a Collaboration Agreement between Goldcorp and local First Nations
Project update consultation		* Introduce Goldcorp to local First Nations members * Provide a project update presentation * Solicit community, questions and input
Consultation on Goldcorp's advanced exploration plans	* Description of advanced exploration process * Summary of main potential impacts and mitigation measures * Overview of closure plan sequence, targets, methods and financial assurance * Plan, timeline and main technical issues for industrial sewage system * Detailed description of work to be undertaken in the lake and in adjacent streams * Use of water and amounts taken * Construction, management and dewatering of underground galleries and structures * Closure planning	* Update of advanced exploration consultation conducted by Probe Mines in January, 2015 * Present Goldcorp's modified site arrangement and advanced exploration plans.
Communications and Notifications		
Publication of notice of advanced exploration phase and consultation activities in local communities		* Consultation notice
Publication of notice of project phase and consultation activities in Chapleau Express		* Consultation notice
Coordination of communications with Wabun Tribal Council and CCFN (TBD)		* Planning and coordination
Public notices to inhabitants of area around exploration site		* Consultation notice
Publication of consultation summary and next steps in local communities		* Consultation summary
Publication of consultation summary and next steps in Chapleau Express		* Consultation summary
Updates to Wabun Tribal Council on permitting process		* Ongoing project updates



BORDEN GOLD PROJECT - CONSULTATION / ENGAGEMENT TO DATE SUMMARY
LOCAL FIRST NATIONS - BRUNSWICK HOUSE FIRST NATION, CHAPLEAU CREE FIRST NATION, CHAPLEAU OJIBWE FIRST NATION

GOLDCORP
BORDEN GOLD

Consultation Activity	Subject Matter
Participation in Project Studies	
Ongoing involvement in project planning (frequency and dates to be determined)	* First Nations experts participating in planning and review of all mine-planning studies: technical, environmental, social
Participation in regular project coordination calls (frequency and dates to be determined)	* First Nations experts participating in regular coordination calls between Goldcorp and its consultants (mine-planning, social, environmental)
Archaeology study	* Review of identified areas of archaeological potential prior to commencement of study and addition of areas of importance for First Nations * First Nation Monitor participated in the entire study * First Nation review of study
Land-Use Study	* First Nations commissioning their own land-use study to be funded by Goldcorp * Focus of study on assessing potential project effects to aboriginal land-use, interests and treaty rights
Social Baseline Study	* Solicitation of First Nations baseline data related to: socio-demographics, economic development, infrastructure and services
Environmental Studies	* Participation of First Nations personnel in the scoping and review of environmental studies

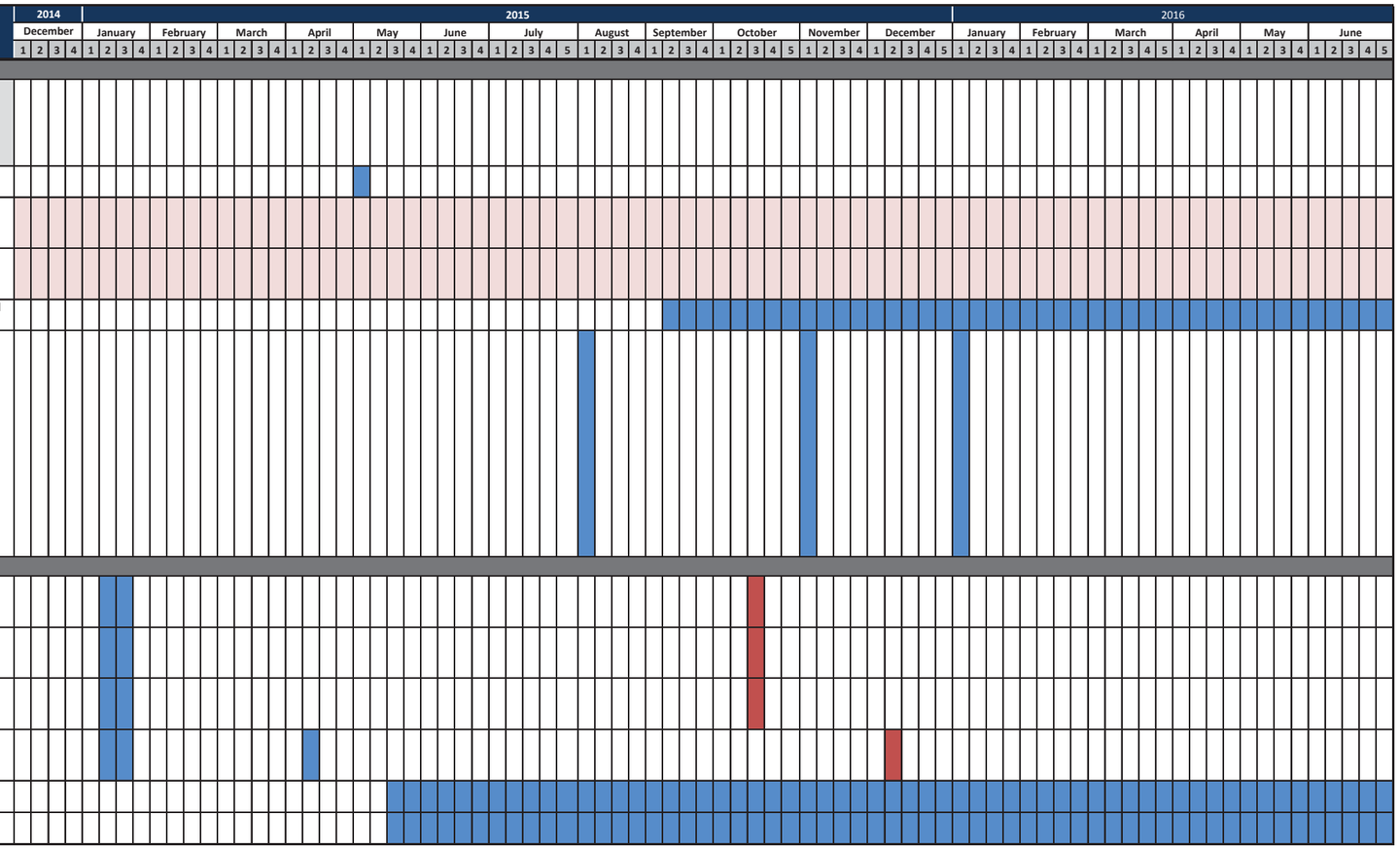


Legend
Planned completion
Completed

BORDEN GOLD PROJECT - CONSULTATION / ENGAGEMENT TO DATE SUMMARY
MICHIPICOTEN FIRST NATION

GOLDCORP
BORDEN GOLD

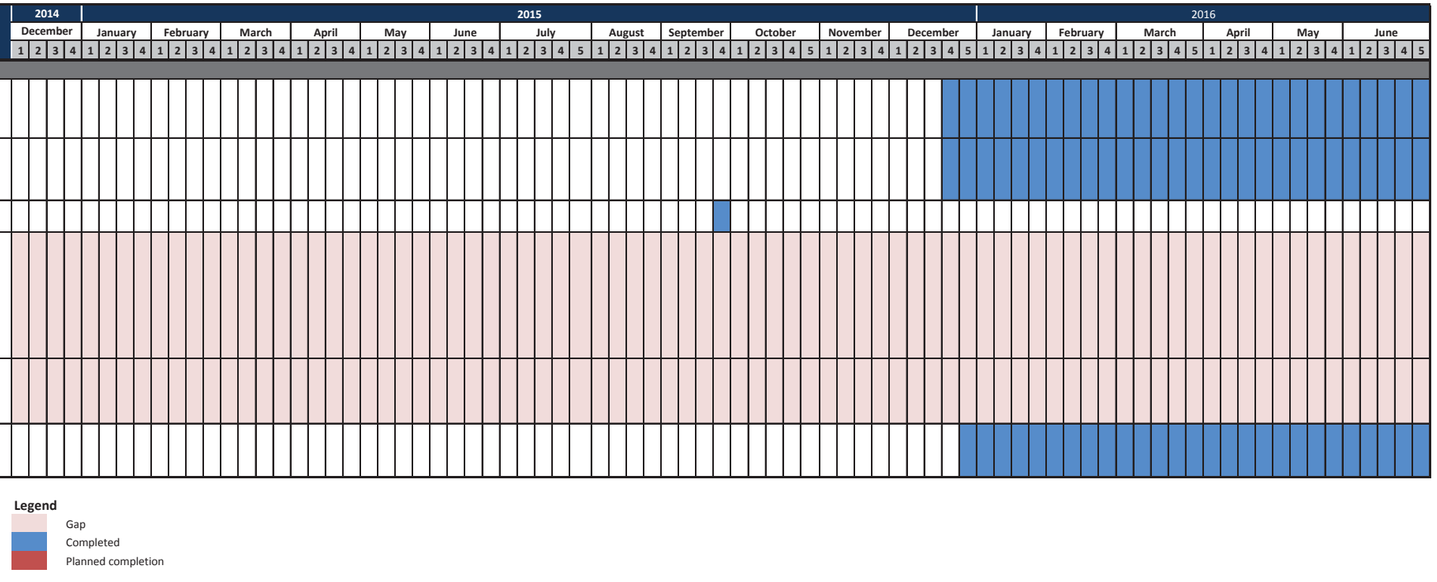
Consultation Activity	Subject Matter	Comments
Engagement and Interaction		
At the time of inaugural community consultations by Probe, the MNDM had not yet identified the obligation to consult Michipicoten First Nation. The First Nation had been contacted but declined to participate in consultation activities conducted in Chapleau.		
Initial consultation between Goldcorp and MFN		
Initiate Collaboration Agreement	* Initiation of negotiations of a Collaboration Agreement between Goldcorp and Michipicoten First Nation	Not started - working to finalize MOU
Monthly Collaboration Agreement negotiation meeting	* Ongoing negotiation of a Collaboration Agreement between Goldcorp and Michipicoten First Nation	Continue to meet to finalize MOU
Finalise Memorandum of Understanding	*Review of MOU template and finalisation of MOU	2nd interim agreement in place to provide technical and business support for the project
Consultation on Goldcorp's advanced exploration plans	* Present Goldcorp's modified site arrangement and advanced exploration plans. * Description of advanced exploration process * Summary of main potential impacts and mitigation measures * Overview of closure plan sequence, targets, methods and financial assurance * Plan, timeline and main technical issues for industrial sewage system * Detailed description of work to be undertaken in the lake and in adjacent streams * Use of water and amounts taken * Construction, management and dewatering of underground galleries and structures * Closure planning	
Communications and Notifications		
Publication of notice of advanced exploration phase and consultation activities in Wawa News	* Consultation notice	No community meetings have taken place. Goldcorp continues to consult with the consultation committee
Publication of notice of project phase and consultation activities in Wawa News	* Consultation notice	No community meetings have taken place. Goldcorp continues to consult with the consultation committee
Public notices to inhabitants of area around exploration site (To be determined according to information on MFN residents)	* Consultation notice	No community meetings have taken place. Goldcorp continues to consult with the consultation committee
Publication of Consultation summary and next steps in Wawa News	* Consultation summary	No community meetings have taken place. Goldcorp continues to consult with the consultation committee
Coordination of communications with MFN Council	* Planning and coordination	
Updates to MFN Council on permitting process	* Ongoing project updates	



BORDEN GOLD PROJECT - CONSULTATION / ENGAGEMENT TO DATE SUMMARY
MICHIPICOTEN FIRST NATION

GOLDCORP
BORDEN GOLD

Consultation Activity	Subject Matter	Comments
Participation in Project Studies*		
Ongoing involvement in project planning (frequency and dates to be determined)	* First Nations experts participating in planning and review of all mine-planning studies: technical, environmental, social	
Participation in regular project coordination calls (frequency and dates to be determined)	* First Nations experts participating in regular coordination calls between Goldcorp and its consultants (mine-planning, social, environmental)	
Archaeology study	* Review of archaeological study	Goldcorp to confirm dates
Land-Use Study	* Goldcorp working with local First Nations to involve Michipicoten First Nation in land-use study being commissioned by the three local First Nations * Focus of study on assessing potential project effects to aboriginal land-use, interests and treaty rights	MFN looking for consultant to do this study
Social Baseline Study	* Solicitation of Michipicoten First Nations baseline data related to: socio-demographics, economic development, infrastructure and services	MFN looking for consultant to do this study
Environmental Studies	* Participation of Michipicoten First Nations personnel in the scoping and review of environmental studies	



Legend
- Gap
- Completed
- Planned completion

BORDEN GOLD PROJECT - CONSULTATION / ENGAGEMENT TO DATE SUMMARY
MÉTIS NATION OF ONTARIO

GOLDCORP
BORDEN GOLD

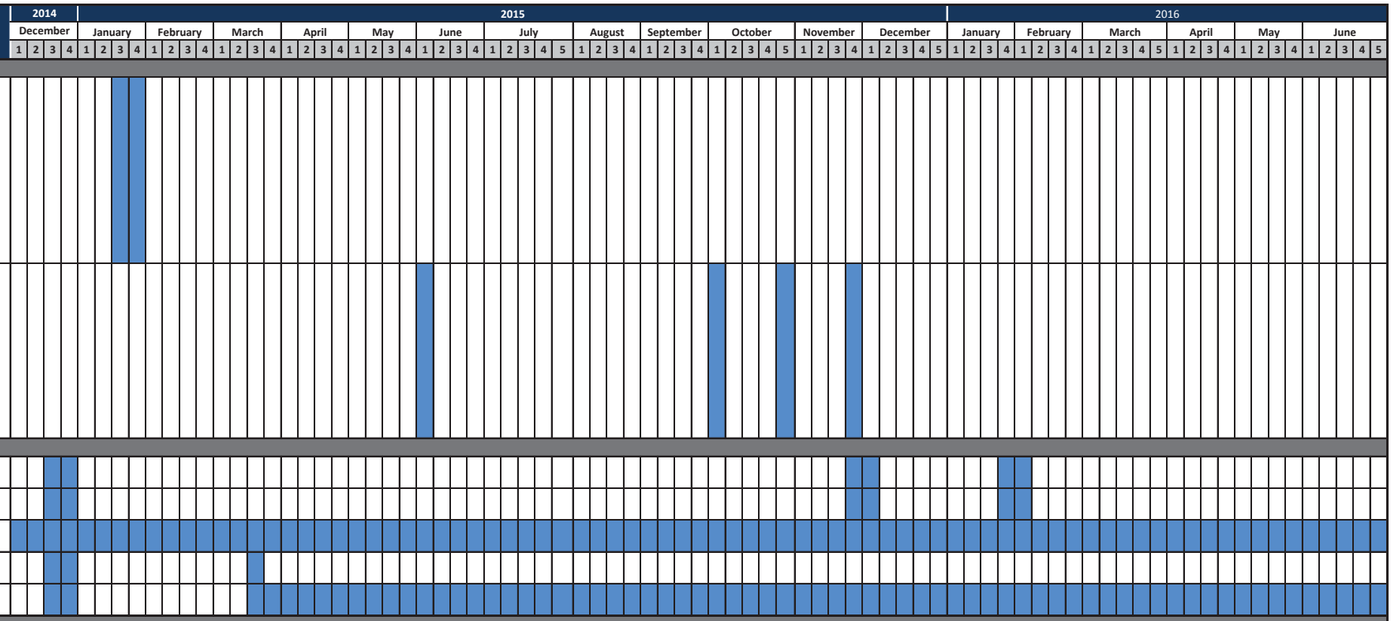
Consultation Activity	Subject Matter	2014	2015	2016
		December	January February March April May June July August September October November December	January February March April May June
		1 2 3 4	1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 5 1 2 3 4 1 2 3 4 1 2 3 4 5 1 2 3 4 1 2 3 4 1 2 3 4 5	1 2 3 4 1 2 3 4 1 2 3 4 5 1 2 3 4 1 2 3 4 1 2 3 4 5
Communications and Notifications				
Project updates	* Provide MNO quarterly project updates when new project information becomes available and solicit feedback related to potential project effects on asserted Aboriginal rights			

Legend
Completed

BORDEN GOLD PROJECT - CONSULTATION / ENGAGEMENT TO DATE SUMMARY
CHAPLEAU TOWNSHIP

GOLDCORP
BORDEN GOLD

Consultation Activity	Primary Subject Matter	Other Subject Matter
Consultations and Interaction		
Open House meeting and Q and A	* Description of Probe's proposed advanced exploration process through extraction phase * Plan, timeline and main technical issues for industrial sewage system * High-level estimates and modelling for dispersion of dust and contaminants, including main risks for public health and ecotoxicology * Detailed description of work to be undertaken in the lake and in adjacent streams *Use of water and amounts taken * Construction, management and dewatering of underground galleries and structures * Summary of main potential impacts and mitigation measures	* Evolution of potential employment levels from advanced exploration going forward to extraction phase * Training and education requirements for position classes * Planning for priority to tender for calls for proposals for local/regional suppliers *Evolution of noise levels from advanced exploration phase to extraction phase * Issues relating to access to capital in the mid to long term * Issues of feasibility
Consultation on Goldcorp's advanced exploration plans	* Description of advanced exploration process * Summary of main potential impacts and mitigation measures * Overview of closure plan sequence, targets, methods and financial assurance * Plan, timeline and main technical issues for industrial sewage system * Detailed description of work to be undertaken in the lake and in adjacent streams * Use of water and amounts taken * Construction, management and dewatering of underground galleries and structures * Closure planning	* Update of advanced exploration consultation conducted by Probe Mines in January, 2015 * Present Goldcorp's modified site arrangement and advanced exploration plans.
Communications and Notifications		
Publication of notice of project phase and consultation activities in Chapleau Express		* Consultation notice
Posting of notice of public event and land users meeting at Town Hall and key nodes		* Consultation notice
Coordination of communications with Chapleau Council (TBD)		* Planning and coordination
Publication of consultation summary and next steps in Chapleau Express		* Consultation summary
Updates to Chapleau Council and CEDC on permitting process		* Ongoing project updates
Participation in Project Studies		
Land-Use Study		* Focus of study on assessing recreational and other land-uses in and around the Advanced Exploration Project site
Social Baseline Study		* Solicitation of local baseline data related to: socio-demographics, economic development, infrastructure and services

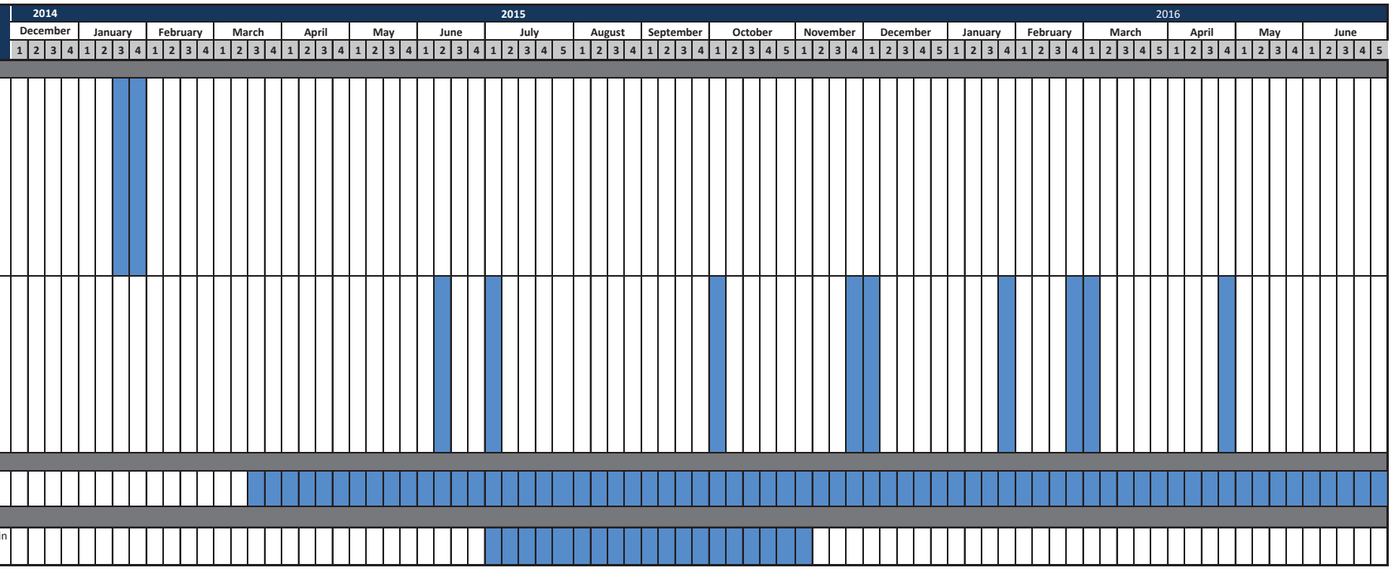


Legend
Completed

BORDEN GOLD PROJECT - CONSULTATION / ENGAGEMENT TO DATE SUMMARY
BORDEN LAKE COTTAGERS AND LOCAL LAND USERS

GOLDCORP
BORDEN GOLD

Consultation Activity	Primary Subject Matter	Other Subject Matter
Consultations and Interaction		
Open House meeting and Q and A	* Description of advanced exploration process through extraction phase * Plan, timeline and main technical issues for industrial sewage system * High-level estimates and modelling for dispersion of dust and contaminants, including main risks for public health and ecotoxicology * Detailed description of work to be undertaken in the lake and in adjacent streams *Use of water and amounts taken * Construction, management and dewatering of underground galleries and structures * Summary of main potential impacts and mitigation measures	* Evolution of potential employment levels from advanced exploration going forward to extraction phase * Training and education requirements for position classes * Planning for priority to tender for calls for proposals for local/regional suppliers *Evolution of noise levels from advanced exploration phase to extraction phase * Issues relating to access to capital in the mid to long term * Issues of feasibility
Consultation on Goldcorp's advanced exploration plans	* Description of Advanced exploration process * Summary of main potential impacts and mitigation measures * Overview of closure plan sequence, targets, methods and financial assurance * Plan, timeline and main technical issues for industrial sewage system * Detailed description of work to be undertaken in the lake and in adjacent streams * Use of water and amounts taken * Construction, management and dewatering of underground galleries and structures	* Update of advanced exploration consultation conducted by Probe Mines in January, 2015 * Present Goldcorp's modified site arrangement and advanced exploration plans.
Communications and Notifications		
Updates to Borden Gold Cottagers		* Updates of permitting process
Participation in Project Studies		
Land-Use Study		* Focus of study on assessing recreational and other land-uses in and around the Advanced Exploration Project site



Legend
Completed

C-3: Aboriginal Comments on Draft Project Description

RESPONSE TO COMMENTS

First Nation: Brunswick House First Nation, Chapleau Cree First Nation, Chapleau Ojibwe First Nation
Contact: Rick Hendriks
Source: *Borden Gold Project – Mine Draft Project Description (June 21, 2016)*

Information Request Source:	Brunswick House, Chapleau Cree and Chapleau Ojibwe First Nations
Information Number:	**IR#1.**
Project:	AMEC Foster Wheeler – Borden Gold Project – Project Description for Mine Development
Information Request To:	Goldcorp Borden Limited
Reviewer:	CECI-RMH
Subject:	**Ambient Light**
References:	Section 2.4.1 (p.12)
Quotations:	
Issue / Concern or Information Deficiency and Rationale:	The EIS Guidelines will require consideration of ambient light.
Information Request:	Please provide a brief section in the Project Description addressing ambient light.
Goldcorp Inc. Response to IR:	A new brief sub-section regarding ambient light will be added to the existing physical and biological setting in the Project Description.

Information Request Source:	Brunswick House, Chapleau Cree and Chapleau Ojibwe First Nations
Information Number:	**IR#2.**
Project:	AMEC Foster Wheeler – Borden Gold Project – Project Description for Mine Development
Information Request To:	Goldcorp Borden Limited
Reviewer:	HESL-DJG
Subject:	**Site Runoff**
References:	Section 2.4.1 (page 14)
Quotations:	*Runoff from other site areas (and away from stockpiles and mine-related facilities that could affect water quality) will be allowed to follow natural drainage patterns and will be released directly to the environmental without further treatment.*
Issue / Concern or Information Deficiency and Rationale:	Great effort is being taken to ensure that flow from the surface envelope of the mine does not reach the lake.
Information Request:	a) Please clarify as to what is meant by "runoff from other site areas" and what this may mean for the natural drainage patterns and what effects if any this drainage may have on the environment and in particular, Borden Lake. Could this include drainage from access roads or the explosives storage area or artesian flow from boreholes and wells on the site? b) Please provide additional information on how seepage and overland flow outside of the main mine footprint will be managed or mitigated to minimize any impact on the Borden Lake.
Goldcorp Inc. Response to IR:	a) The text will be re-worded for greater clarity. Non-contact run-off from areas on Goldcorp lands, but outside the BGP operational area (i.e. outside the project footprint), will flow naturally per existing conditions, to reduce potential flow effects to downstream watercourses / waterbodies through watershed capture. Runoff from access roads and explosive storage area will be managed and treated as needed prior to release to the environment. Should there be determined to be a natural impairment of groundwater quality flowing as a result of artesional conditions from boreholes or wells on site which is not expected, Goldcorp will assess these locations individually and development an approach to mitigate any effects. This could include collection of the waters for treatment within the water management treatment system, or capping / sealing of the borehole(s) / well(s). b) Goldcorp do not plan to manage or mitigate seepage and overland flow outside of the operational area as it will be non-contact water.

Information Request Source:	Brunswick House, Chapleau Cree and Chapleau Ojibwe First Nations

Information Number:	**IR#3.**
Project:	AMEC Foster Wheeler – Borden Gold Project – Project Description for Mine Development
Information Request To:	Goldcorp Borden Limited
Reviewer:	CECI-RMH
Subject:	**Mineral Waste**
References:	Section 2.4.2 (p.15)
Quotations:	*Geochemistry studies are currently underway to better assess the mine rock and related environmental aspects, including acid generation potential. Goldcorp has made the commitment that after the end of the BGP mine life and/or completion of final reclamation of the site as needed, there will be no surface stockpiles of potentially acid generating mine rock (or ore) on the site **under all but an extreme situation**. If for whatever reason this material cannot be taken back underground, Goldcorp will ensure that the material is either transported to another facility for final storage (such as a Goldcorp operation located in Timmins), or will be reclaimed in place, such that all regulatory requirements are met and any potential environmental effects are minimized.*
Issue / Concern or Information Deficiency and Rationale:	The meaning of "an extreme situation" is unclear.
Information Request:	a) Please clarify and provide examples of "extreme situations" that would result in surface stockpiles of potentially acid generating rock remaining indefinitely on site. b) Please indicate how this would affect the closure of the mine (i.e. what measures would be put in place to manage PAG rock runoff) if it could not be removed.
Goldcorp Inc. Response to IR:	Thank-you for your comment and this text will be re-worded. Per Section 2.4.2, there are no planned stockpiles of potentially acid generating mine rock (or ore) on surface after completion of final reclamation of the site, with a goal of removal underground considerably earlier. The text will be reworded; however for completeness, *extreme situation* was meant to reflect an unplanned for circumstance beyond Borden Gold's control, such as: • Change in mine ownership; • Act of God; or • A circumstance where for whatever reason, approval cannot be obtained to ship the rock to facility in Timmins.

Information Request Source:	Brunswick House, Chapleau Cree and Chapleau Ojibwe First Nations
Information Number:	**IR#4.**
Project:	AMEC Foster Wheeler – Borden Gold Project – Project Description for Mine Development
Information Request To:	Goldcorp Borden Limited
Reviewer:	HESL-DJG
Subject:	**Table 2-2 Summary of BGP Facilities and Infrastructure**
References:	Water Management (p.27)
Quotations:	*There is potential that expansion to the system could be required pending ongoing engineering and hydrogeological modelling results, including potentially development of an additional pond.*
Issue / Concern or Information Deficiency and Rationale:	At our update meeting on June 23, 2016, it was suggested that a single pond would be adequate (same volume as 2 ponds) and that treatment of mine water would occur underground and the mine would serve as storage for water in the event of delayed discharge due to inadequate flow in Borden River (not in the event of emergency release from the ponds due to extreme snow melt and runoff events). This seems to introduce another alternative.
Information Request:	Please clarify whether the water management plan refers to the best alternative of all of the alternatives that are currently being considered (as per the AEP {two ponds}, one pond with mine storage or two ponds with option for a third pond) or if all three are being considered.
Goldcorp Inc. Response to IR:	Text and figures of the draft Project Description will be updated to reflect the revised AEP design once finalized. As the engineering design for the mine will be ongoing during the early stages of the Federal EA process, there is the potential that additional water management could be required that has not as yet been identified as required. Goldcorp wishes to be transparent with the Project Description audience that the preliminary design provided may require revision. This could include additional pond(s) or additional forms of water treatment, although none are expected at this time. Any changes will be fully reflected in the Environmental Impact Statement and subsequent environmental approval applications.

Information Request Source:	Brunswick House, Chapleau Cree and Chapleau Ojibwe First Nations
Information Number:	**IR#5.**
Project:	AMEC Foster Wheeler – Borden Gold Project – Project Description for Mine Development
Information Request To:	Goldcorp Borden Limited
Reviewer:	HESL-DJG
Subject:	**Table 2-2 Summary of BGP Facilities and Infrastructure**
References:	Onsite Buildings and Infrastructure (p.27) Section 2.4.1 (p.14)
Quotations:	*Some of the road network may be paved to reduce dust or expanded upon to better and more safely accommodate truck traffic.*
Issue / Concern or Information Deficiency and Rationale:	Paving of roads to minimize dust is an excellent approach to minimize dust, and this is encouraged. However, it is not mentioned as a dust control measure in Section 2.4.1 Air Emissions.
Information Request:	The use or road pavement on the site should be added to Section 2.4.1.
Goldcorp Inc. Response to IR:	The text will be revised to indicate that paving of dust-prone areas of onsite roads will be considered as a potential dust control measure for locations within the development area where application of water and other amendments are proven not to be effective.

Information Request Source:	Brunswick House, Chapleau Cree and Chapleau Ojibwe First Nations
Information Number:	**IR#6.**
Project:	AMEC Foster Wheeler – Borden Gold Project – Project Description for Mine Development
Information Request To:	Goldcorp Borden Limited
Reviewer:	HESL-DJG
Subject:	**Hydrology and Surface Water Quality**
References:	Section 5.1.5 (p.43); Section 5.1.6 (p.44)
Quotations:	*The greatest monthly average flow rates occur in the spring, in April and May, coinciding with the snow melt period. Lowest flows recorded are shown to occur during the mid-winter months (January through March), when precipitation is accumulated and held as snow and ice, and in mid to late summer (Amec Foster Wheeler 2016b).*
Issue / Concern or Information Deficiency and Rationale:	The Project Description should have additional discussion on low flows in Borden River, and indicate that Goldcorp will determine a base flow condition in the River (not the 7Q20) that will be used as an alert for limiting discharge of the mine water pond effluent in order to meet the in-stream mixing zone requirements. This discussion should include a critical value at which effluent discharge will be curtailed until flow recovers, and how this will be managed as part of the mine water management plan.
Information Request:	a) Please provide additional information on how the effluent discharge to Borden River will be managed under low flow conditions. For example, what flow will be considered as an early warning indicator that may mean effluent discharge is reduced and at what critical point effluent discharge will be curtailed until flow has recovered to provide the necessary assimilative capacity. b) Please indicate the mitigation measures (e.g. short term storage of effluent water) that will be used during these low flow periods when effluent discharge is not appropriate.
Goldcorp Inc. Response to IR:	Goldcorp appreciates your comments. Hydrologic monitoring and establishment of a rating curve for the Borden River is ongoing at this time. Aspects related to Borden River flows and water quality will be fully considered during the preparation of the Environmental Impact Statement or future environmental approval applications for mine discharge as applicable.

RESPONSE TO COMMENTS

First Nation: Brunswick House First Nation, Chapleau Cree First Nation, Chapleau Ojibwe First Nation
Contact: Rick Hendriks
Source: *Borden Gold Project – Mine Draft Project Description (July 14, 2016), dated August 2, 2016*

Information Request Source:	Brunswick House, Chapleau Cree and Chapleau Ojibwe First Nations
Information Number:	First Nation IR#1.
Project:	Goldcorp Borden Gold Project
Information Request To:	Goldcorp Borden Limited
Reviewer:	HESL-DJG
Subject:	Table 2-1: Summary of Existing Site Facilities and Infrastructure
References:	Water Treatment Pond (lined) to collect and treat underground mine water as well as stockpile site runoff
Quotations:	The specific dimensions of the pond as provided in the table as approximations are: *"162 m by 113 m"* *"Dam heights to 4.4 m"*
Issue / Concern or Information Deficiency and Rationale:	In the Working Draft of the Project Description (dated June 21, 2016) and in preceding documents related to the Advanced Exploration Project, Table 2-1 of that document indicates that two (2) ponds will be constructed as part of the Advanced Exploration Project. Specifically, the two ponds were detailed as being: i) The Mine Rock Stockpile Collection Pond to collect and treat runoff for stockpiles area was to be 235 m by 110 m with a dam height to 4.5 m; and ii) The Mine Water Pond to collect and treat underground mine water as well as site runoff was to be 230 m by 180 m with a dam height of 5.5. m. The combined volume for these two ponds assuming 0.5 m of freeboard for each is of the order of 310,400 m^3. The Draft Submitted to Government (dated July 14, 2016) allowed for a single water treatment pond 162 m by 113 m with dam heights to 4.4. m. The volume of this single pond is of the order of 73,224 m^3 assuming 0.4 m of freeboard. No explanation of the reduced water treatment capacity is provided.

	We note that the footprint of the mine rock stockpile (see IR # 2 below) is reduced by about 50% but no calculations seem to be provided to justify this reduction in treatment / storage capacity. We note that based on information provided previously that most of the water to the treatment pond is projected to come from mine de-watering itself, and thus changes to the mine rock stockpile dimensions will have little impact on the volume of water that requires treatment.
Information Request:	a) Please provide additional information on the sizing of the single pond as proposed in the Borden Gold Project – Project Description for Mine Development and clearly explain how this single pond will provide the necessary capacity to permit solids settling prior to discharge to the Borden River. b) Please provide a detailed explanation as to how this pond will provide the treatment capacity required under the various runoff events that are required to be considered in the submission for the ECA-ISW and how this pond will provide storage capacity for treatment if the water does not meet the effluent criteria established for the project.
Goldcorp Inc. Response to IR:	Thank-you very much for your comments. We greatly appreciate the effort that Brunswick House First Nation, Chapleau Cree First Nation and Chapleau Ojibwe First Nation have together made to be involved in the project design aspects for the Advanced Exploration Program to date. The advanced exploration treatment pond design contained in the draft Project Description (the subject of this IR) is a work in progress, which you had not seen as yet due to the timing of various deliverables. We appreciate the comments you have provided and look forward to your continued input on the design. Please consider the description and figures of the Advanced Exploration Program provided in the draft Project Description for the Borden Gold Project (the mine), as general descriptions and works in progress. Details regarding the Advanced Exploration Program design (which will be carried through to the proposed mine design) will be discussed with you in the near term. Your input will be requested on an ongoing basis as engineering details become available and environmental approval applications are progressed. A. <u>Pond Sizing:</u> With regards the sizing of the single pond; the sediment treatment parameters and Environmental Design Flood storage remain the same as the previous design. The reduction in pond size is in part due to reducing the Mine Rock Stockpile footprint area for a more efficient shape, but also due to a reduction in the amount of underground water (mine water) that needs to be stored on surface, unrelated to treatment. The previous pond configuration allowed for several days of mine water storage on surface. Upon further refinement of the operating philosophy, in an effort to streamline surface infrastructure requirements, Goldcorp plans to provide mine water treatment capacity at surface; however, if additional storage for mine water is required (not related to treatment), mine water will remain underground within the lower sections of the underground exploration ramp until it can be treated at surface as capacity becomes available. This change has made it possible to remove the second pond without affecting the available treatment or water quality, while still facilitating a reduction of the overall footprint of the site for the advanced exploration program.

	The dead storage within the previous pond(s) has accordingly been reduced, and a pre-sediment forebay that can be cleaned out regularly has now been included. It is anticipated that the bulk of sediment accumulation will occur in the forebay, and so the remainder of the pond does not have to be as deep. This also allowed the pond footprint to be smaller while still providing the same level of sediment removal from waters. B. Runoff Scenarios: Suspended particles in water directed to the pond will settle in the wet pond portion of the pond (i.e., permanent pool). The wet pond has been sized to have a sufficient length and retention time to settle out particles from both the mine water, and surface runoff from the mine rock stockpile and other disturbed areas. Additional storage beyond the base Environmental Design Flood storage allowance has been provided within the pond, so that it in the event water does not meet the effluent criteria established for the project it may remain in the pond longer.

Information Request Source:	Brunswick House, Chapleau Cree and Chapleau Ojibwe First Nations
Information Number:	First Nation IR#2.
Project:	Goldcorp Borden Gold Project
Information Request To:	Goldcorp Borden Limited
Reviewer:	HESL-DJG
Subject:	Table 2-1 Summary of BGP Facilities and Infrastructure [Please note that Table 2-1: Summary of Existing Site Facilities and Infrastructure – refers to the Advanced Exploration Project site plan not BGP (the mine) facilities and infrastructure]
References:	Mine Rock Stockpile
Quotations:	The Mine Rock Stockpile on high density polyethylene liner / bedding sand is given the following specific approximate dimensions: *"250,000 t; 125,000 cubic metres (m^3)"* *"21,000 m^2 footprint"* *"Maximum height of approximately 10 m"* *"3H:1V (horizontal:vertical) slope"*
Issue / Concern or Information Deficiency and Rationale:	The Working Draft of the Project Description (dated June 21, 2016) described the Mine Rock Stockpile as follows: 300,000 t; 150,000 cubic metres (m^3) 45,000 m^2 footprint

	Maximum height of approximately 12 m 3H:1V (horizontal:vertical) slope The numbers in the working draft report and the draft report submitted to Government (dated July 14, 2016) do not seem to match. Specifically, the tonnage has dropped by 50,000 t (approximately 17%), the volume has changed by a similar amount; however, the footprint has declined almost by 50% and the height has decreased by 2 m or about 17%. The side slopes are unchanged. On the surface, the only way to accommodate this stockpile would mean that the footprint would have to remain relatively unchanged at roughly 37,000 m^2 (approximately 192 metres squared as opposed 145 metres squared)? Also, the visibility berm that had been part of the prior general arrangement and had been discussed previously with the First Nations and included in the Working Draft Project Description, is no longer included in the Draft Project Description.
Information Request:	a) Please provide additional information as to how this footprint was determined based on these new numbers. b) Please relate the changes in the Mine Rock Storage Stockpile back to the volume required to accommodate runoff and mine water as outlined in IR#1 under the various design runoff events that must be factored into the design of the water treatment pond. c) Please confirm that the visibility berm is no longer required and provide the reason for its removal from the Project Description (e.g. as a result of the lowering of the height of the mine rock stockpile).
Goldcorp Inc. Response to IR:	Thank-you very much for your comments. We greatly appreciate the effort that Brunswick House First Nation, Chapleau Cree First Nation and Chapleau Ojibwe First Nation have made together to date to be involved in the project design aspects for the Borden Gold Project, although it is early in the mine design process. Note that Table 2-1 refers to the Advanced Exploration Program site plan. Please consider the description and figures in the draft Project Description as general descriptions, as currently understood, recognizing that environmental approval applications are in progress for the advanced exploration facilities. Please consider, however, the brief explanations below. A. <u>Footprint Area:</u> The mine rock stockpile was shifted to a location where the foundation is relatively flat, from a previous location against an inclined slope. The revised location has allowed a reduction in the overall footprint of the stockpile and also a reduction in its height, due to its revised geometry. The revised design maximizes the use of space while reducing the footprint of the stockpile.

	B. Runoff Volume: The revised smaller footprint of the mine rock stockpile has marginally reduced the required Environmental Design Flood storage and inflow rate during the design treatment storm (1:10 year return period, 24 hour event); however, the treatment and storage criteria remain the same. As noted in IR#1 mine water will remain underground, in the event of an emergency or extreme storm event, within the lower sections of the underground exploration ramp until it can be treated at surface as capacity becomes available. C. Visibility Berm: The revised stockpile location now falls outside of the sightlines that initially directed the need for a visibility berm (i.e., it is further northwest in comparison to the original mine rock stockpile). The mine rock stockpile is also 2 m lower in crest elevation, and thus both factors led to removing the requirement for the visibility berm. This understanding will be confirmed in the next stage of the project.

RESPONSE TO FOLLOW-UP COMMENTS

First Nation: Brunswick House First Nation, Chapleau Cree First Nation, Chapleau Ojibwe First Nation
Contact: Rick Hendriks
Source: *Borden Gold Project – Mine Draft Project Description (July 14, 2016), dated August 2, 2016; follow-up comments received on September 14, 2016.*

Information Request Source:	Brunswick House, Chapleau Cree and Chapleau Ojibwe First Nations
Information Number:	First Nation IR#1.
Project:	Goldcorp Borden Gold Project
Information Request To:	Goldcorp Borden Limited
Reviewer:	HESL-DJG
Subject:	Table 2-1: Summary of Existing Site Facilities and Infrastructure
References:	Water Treatment Pond (lined) to collect and treat underground mine water as well as stockpile site runoff
Quotations:	The specific dimensions of the pond as provided in the table as approximations are: *"162 m by 113 m"* *"Dam heights to 4.4 m"*
Issue / Concern or Information Deficiency and Rationale:	In the Working Draft of the Project Description (dated June 21, 2016) and in preceding documents related to the Advanced Exploration Project, Table 2-1 of that document indicates that two (2) ponds will be constructed as part of the Advanced Exploration Project. Specifically, the two ponds were detailed as being: i) The Mine Rock Stockpile Collection Pond to collect and treat runoff for stockpiles area was to be 235 m by 110 m with a dam height to 4.5 m; and ii) The Mine Water Pond to collect and treat underground mine water as well as site runoff was to be 230 m by 180 m with a dam height of 5.5. m. The combined volume for these two ponds assuming 0.5 m of freeboard for each is of the order of 310,400 m^3. The Draft Submitted to Government (dated July 14, 2016) allowed for a single water treatment pond 162 m by 113 m with dam heights to 4.4. m. The volume of this single pond is of the order of 73,224 m^3 assuming 0.4 m of freeboard. No explanation of the reduced water treatment capacity is provided.

	We note that the footprint of the mine rock stockpile (see IR # 2 below) is reduced by about 50% but no calculations seem to be provided to justify this reduction in treatment / storage capacity. We note that based on information provided previously that most of the water to the treatment pond is projected to come from mine de-watering itself, and thus changes to the mine rock stockpile dimensions will have little impact on the volume of water that requires treatment.
Information Request:	a) Please provide additional information on the sizing of the single pond as proposed in the Borden Gold Project – Project Description for Mine Development and clearly explain how this single pond will provide the necessary capacity to permit solids settling prior to discharge to the Borden River. b) Please provide a detailed explanation as to how this pond will provide the treatment capacity required under the various runoff events that are required to be considered in the submission for the ECA-ISW and how this pond will provide storage capacity for treatment if the water does not meet the effluent criteria established for the project.
Goldcorp Inc. Response to IR:	Thank-you very much for your comments. We greatly appreciate the effort that Brunswick House First Nation, Chapleau Cree First Nation and Chapleau Ojibwe First Nation have together made to be involved in the project design aspects for the Advanced Exploration Program to date. The advanced exploration treatment pond design contained in the draft Project Description (the subject of this IR) is a work in progress, which you had not seen as yet due to the timing of various deliverables. We appreciate the comments you have provided and look forward to your continued input on the design. Please consider the description and figures of the Advanced Exploration Program provided in the draft Project Description for the Borden Gold Project (the mine), as general descriptions and works in progress. Details regarding the Advanced Exploration Program design (which will be carried through to the proposed mine design) will be discussed with you in the near term. Your input will be requested on an ongoing basis as engineering details become available and environmental approval applications are progressed. A. <u>Pond Sizing:</u> With regards the sizing of the single pond; the sediment treatment parameters and Environmental Design Flood storage remain the same as the previous design. The reduction in pond size is in part due to reducing the Mine Rock Stockpile footprint area for a more efficient shape, but also due to a reduction in the amount of underground water (mine water) that needs to be stored on surface, unrelated to treatment. The previous pond configuration allowed for several days of mine water storage on surface. Upon further refinement of the operating philosophy, in an effort to streamline surface infrastructure requirements, Goldcorp plans to provide mine water treatment capacity at surface; however, if additional storage for mine water is required (not related to treatment), mine water will remain underground within the lower sections of the underground exploration ramp until it can be treated at surface as capacity becomes available. This change has made it possible to remove the second pond without affecting the available treatment or water quality, while still facilitating a reduction of the overall footprint of the site for the advanced exploration program.

	The dead storage within the previous pond(s) has accordingly been reduced, and a pre-sediment forebay that can be cleaned out regularly has now been included. It is anticipated that the bulk of sediment accumulation will occur in the forebay, and so the remainder of the pond does not have to be as deep. This also allowed the pond footprint to be smaller while still providing the same level of sediment removal from waters. B. Runoff Scenarios: Suspended particles in water directed to the pond will settle in the wet pond portion of the pond (i.e., permanent pool). The wet pond has been sized to have a sufficient length and retention time to settle out particles from both the mine water, and surface runoff from the mine rock stockpile and other disturbed areas. Additional storage beyond the base Environmental Design Flood storage allowance has been provided within the pond, so that it in the event water does not meet the effluent criteria established for the project it may remain in the pond longer.
Follow-up IR:	Thank you for this response. BGP's response notes that: "The advanced exploration treatment pond design contained in the draft Project Description (the subject of this IR) is a work in progress, which you had not seen as yet due to the timing of various deliverables." We also note that the Closure Plan lacks the kinds of detail we would like with respect to the Environmental Design Flood and the available storage within the mine to demonstrate that sufficient volume is available for treatment of the water within this new pond. We assume that these details will be forthcoming and will comment further when those details are provided to the First Nations.
Goldcorp Inc. Response to IR:	Thank-you for your follow-up. Additional information regarding the treatment pond design for the Advanced Exploration Program have been / will be provided separately and in association with the Provincial approval applications to which they pertain. The Project Description document is not the most appropriate document for this detailed information regarding the Advanced Exploration Program, as document pertains to the Borden Gold Project (the mine). Information regarding the Advanced Exploration Program has been provided for background on anticipated site conditions.

Information Request Source:	Brunswick House, Chapleau Cree and Chapleau Ojibwe First Nations
Information Number:	First Nation IR#2.
Project:	Goldcorp Borden Gold Project
Information Request To:	Goldcorp Borden Limited
Reviewer:	HESL-DJG
Subject:	Table 2-1 Summary of BGP Facilities and Infrastructure [Please note that Table 2-1: Summary of Existing Site Facilities and Infrastructure – refers to the Advanced Exploration Project site plan not BGP (the mine) facilities and infrastructure]
References:	Mine Rock Stockpile
Quotations:	The Mine Rock Stockpile on high density polyethylene liner / bedding sand is given the following specific approximate dimensions: *"250,000 t; 125,000 cubic metres (m^3)"* *"21,000 m^2 footprint"* *"Maximum height of approximately 10 m"* *"3H:1V (horizontal:vertical) slope"*
Issue / Concern or Information Deficiency and Rationale:	The Working Draft of the Project Description (dated June 21, 2016) described the Mine Rock Stockpile as follows: 300,000 t; 150,000 cubic metres (m^3) 45,000 m^2 footprint Maximum height of approximately 12 m 3H:1V (horizontal:vertical) slope The numbers in the working draft report and the draft report submitted to Government (dated July 14, 2016) do not seem to match. Specifically, the tonnage has dropped by 50,000 t (approximately 17%), the volume has changed by a similar amount; however, the footprint has declined almost by 50% and the height has decreased by 2 m or about 17%. The side slopes are unchanged. On the surface, the only way to accommodate this stockpile would mean that the footprint would have to remain relatively unchanged at roughly 37,000 m^2 (approximately 192 metres squared as opposed 145 metres squared)? Also, the visibility berm that had been part of the prior general arrangement and had been discussed previously with the First Nations and included in the Working Draft Project Description, is no longer included in the Draft Project Description.

Information Request:	a) Please provide additional information as to how this footprint was determined based on these new numbers. b) Please relate the changes in the Mine Rock Storage Stockpile back to the volume required to accommodate runoff and mine water as outlined in IR#1 under the various design runoff events that must be factored into the design of the water treatment pond. c) Please confirm that the visibility berm is no longer required and provide the reason for its removal from the Project Description (e.g. as a result of the lowering of the height of the mine rock stockpile).
Goldcorp Inc. Response to IR:	Thank-you very much for your comments. We greatly appreciate the effort that Brunswick House First Nation, Chapleau Cree First Nation and Chapleau Ojibwe First Nation have made together to date to be involved in the project design aspects for the Borden Gold Project, although it is early in the mine design process. Note that Table 2-1 refers to the Advanced Exploration Program site plan. Please consider the description and figures in the draft Project Description as general descriptions, as currently understood, recognizing that environmental approval applications are in progress for the advanced exploration facilities. Please consider, however, the brief explanations below. A. Footprint Area: The mine rock stockpile was shifted to a location where the foundation is relatively flat, from a previous location against an inclined slope. The revised location has allowed a reduction in the overall footprint of the stockpile and also a reduction in its height, due to its revised geometry. The revised design maximizes the use of space while reducing the footprint of the stockpile. B. Runoff Volume: The revised smaller footprint of the mine rock stockpile has marginally reduced the required Environmental Design Flood storage and inflow rate during the design treatment storm (1:10 year return period, 24 hour event); however, the treatment and storage criteria remain the same. As noted in IR#1 mine water will remain underground, in the event of an emergency or extreme storm event, within the lower sections of the underground exploration ramp until it can be treated at surface as capacity becomes available. C. Visibility Berm: The revised stockpile location now falls outside of the sightlines that initially directed the need for a visibility berm (i.e., it is further northwest in comparison to the original mine rock stockpile). The mine rock stockpile is also 2 m lower in crest elevation, and thus both factors led to removing the requirement for the visibility berm. This understanding will be confirmed in the next stage of the project.

Follow-up IR:	Thank you for this response. We apologize for the confusion with Table 2-1. We note that items within the Project Description were still being clarified at the time of this draft. We assume that these details will be forthcoming with the finalization of the Project Description and we anticipate providing comments, if any, on a final draft of this document prior to its delivery to government and we will comment further when those details are provided to the FNs.
Goldcorp Inc. Response to IR:	Table 2-1 has been updated for the Final Project Description and is attached for your consideration. It is intended and remains only a summary table as background for the Borden Gold Project. We respectfully recommend that the Provincial approval applications for the individual Advanced Exploration Program elements be reviewed for additional details.

Table 2-1: Summary of Existing Site Facilities and Infrastructure

Facility / Infrastructure (other minor structures may also be present)	Scale (dimensions where known are approximate)
Underground advanced exploration development, including a portal on surface and ramp to underground Note: underground developments will include: mine workings and various underground bays, water sumps and explosive magazine. Early in the advanced exploration phase (only) there will be a limited temporary surface explosives magazine(s).	Portal[1]: 5 m by 5 m Ramp: 60 m length to portal opening Advanced exploration ramp total length: approximately 2,500 m from portal opening
Mine rock stockpile on high density polyethylene liner / bedding sand Mine rock generated during advanced exploration will be present on surface at the start of production mining	250,000 t; 125,000 cubic metres (m^3) 21,000 m^2 footprint Maximum height of approximately 10 m 3H:1V (horizontal:vertical) slope
Diversion / collection berms to direct contact water from natural surface runoff	Berm height: 1.0 m Berm width: 2.0 m Side slopes: 1.5H:1V
Water Treatment Pond (lined) to collect and treat underground mine water as well as stockpile site runoff	162 m by 113 m Dam heights to 4.4 m
Water treatment infrastructure (potentially for pH adjustment and flocculent addition)	As required
Effluent discharge pipeline to the Borden River and splash pad	200 millimetre (mm) diameter, 1 km length
Septic tank and raised tile field bed	Sized for approximately 50 persons using showers
Maintenance shop for large haul trucks (non-highway) / warehouse / shop / office	15 m x 42 m footprint
Other temporary (mobile) service buildings / trailers	Two, 4 m x 12 m office and meeting room trailers Two, 11 m x 25 m mine dry trailers One, 4 m x 10 m communications trailer One, 2 m x 10 m mine rescue trailer One, 10 m x 19 m unheated warehouse One 4 m x 10 m security and First Aid trailer
Diesel generators	Up to 4.9 megawatts (MW)
Local power distribution line	13 km distribution line (25 kV)
Diesel storage tank with secondary containment	Two, 38,000 litre (L) tank
Propane storage	10,000 L tank
Site access roads from Highway 101 (gravel) and internal site roads (gravel)	2 km
Parking areas (bus and light vehicles), and general yard and unloading areas	As required

Note: These facilities are proposed as part of the advanced exploration program that will be initiated in late 2016, assuming environmental approvals are obtained and will be in place at the start of construction of the BGP.

[1] Portal, opening to underground on angle to surface (as compared to a shaft which is near vertical)

RESPONSE TO COMMENTS

First Nation: Métis Nation of Ontario
Contact: James Wagar
Source: *Borden Gold Project – Mine Draft Project Description (June 27, 2016), comments dated September 30, 2016*

Goldcorp acknowledges and respects the Métis Nation of Ontario in the preamble to its comments.

Information Request Source:	Métis Nation of Ontario
Information Number:	Aboriginal IR#1.
Project:	Goldcorp Borden Gold Project
Information Request To:	Goldcorp Borden Limited
Reference:	2.4.2 Solid Wastes
Text Referenced:	Any mine rock that remains on surface from the advanced exploration program, or that is brought to surface during BGP operations, will be re-used during the BGP as practical and reasonable for: • Surface construction purposes (if meeting required physical and geochemical criteria);… If for whatever reason this material cannot be taken back underground, Goldcorp will ensure that the material is either transported to another facility for final storage (such as a Goldcorp operation located in Timmins), or will be reclaimed in place, such that all regulatory requirements are met and any potential environmental effects are minimized.
Quotation:	*The handling of mineral waste ie: NAG PAG separation as described within the Project Description Report is vague. The MNO will require additional information about how the handling of mineral waste will be treated before being able to make any comments.*
Goldcorp Inc. Response to IR:	Additional information regarding the handling of mineral waste will be provided in future environmental assessment documentation as the design of the project progresses further. The BGP will comply with all applicable regulations regarding environmental protection as well as the *Mining Act* with regards to mine development and closure. Goldcorp has committed that PAG mine rock will not be used for construction purposes, and is planned to be returned underground as backfill.

Information Request Source:	Métis Nation of Ontario
Information Number:	Aboriginal IR#2.

Project:	Goldcorp Borden Gold Project
Information Request To:	Goldcorp Borden Limited
Reference:	2.5.2 Main Activities by Project Phase
Text Referenced:	Goldcorp has committed that all potentially acid generating mine rock stockpiled on surface at the BGP site will either be used in the BGP underground mine as backfill, or will be hauled to one of Goldcorp's mine sites near Timmins for appropriate disposal and runoff management (pending regulatory approval).
Quotation:	*If PAG were to be used as backfill, what effects will this have on the groundwater and how will this differ if the PAG were to be transported to Timmins "for proper disposal"? How will the transportation of waste rock and ore to the Timmins – Porcupine site be considered in the Environmental Assessment?*
Goldcorp Inc. Response to IR:	There is no anticipated effect on groundwater from use of PAG as backfill in the underground mine. Additional information regarding the use of backfill will be provided in future environmental assessment documentation as the design of the Borden Gold Project (the mine) progresses further. With respect to transport of ore and mine rock; the trucks will travel over existing highway / road infrastructure to an existing approved facility in Timmins. The additional traffic load is within the capacity of the roads and no material environmental effects are anticipated from the additional traffic. Goldcorp is liaising with the Ministry of Transportation and other identified stakeholders regarding the proposed shipment of ore (and potential, although unexpected, shipment of mine rock).

Information Request Source:	Métis Nation of Ontario
Information Number:	Aboriginal IR#3.
Project:	Goldcorp Borden Gold Project
Information Request To:	Goldcorp Borden Limited
Reference:	2.5.2 Main Activities by Project Phase
Text Referenced:	The surrounding dams will be breached and recontoured over the liner to allow natural drainage to the environment. Additional locally-sourced overburden or soil will be used if needed to support revegetation.
Quotation:	*How will the proposed breaching of dams and berms provide for "natural drainage" and limit effects to the environment?*
Goldcorp Inc. Response to IR:	By reclaiming the site, including breaching of the necessary dams and berms once no longer required and environmental conditions are acceptable, the watershed area captured by the onsite ditching and water management facilities will no longer be diverted directly to the Borden River. It will instead return closer to its original natural course into the minor tributaries, reducing the water reduction caused in these tributaries by the site development.

Information Request Source:	Métis Nation of Ontario
Information Number:	Aboriginal IR#4.
Project:	Goldcorp Borden Gold Project
Information Request To:	Goldcorp Borden Limited
Reference:	3.2.4 Traditional Knowledge and Traditional Land Use
Text Referenced:	A traditional knowledge / traditional land use (TK / TLU) study was conducted for members of Brunswick House First Nation, Chapleau Cree First Nation and Chapleau Ojibway First Nation by The Firelight Group over later 2015 and early 2016. The goal of the study was to document baseline and anticipated project interactions on valued components, based on community knowledge and use at the project study area (The Firelight Group 2016).
Quotation:	*The Métis Nation of Ontario has not yet received capacity to undertake a meaningful TK/TLU study and is very concerned that its community and citizens are being treated differently than First Nations communities when it comes to the Duty to Consult with Aboriginal peoples.*
Goldcorp Inc. Response to IR:	Goldcorp is prepared to support TK/TLU study completion by the MNO. We request that a scope of work be submitted in order that we can provide approval to proceed. Please advise us as soon as possible when a scope could be provided in order that we can move forward on this aspect in an efficient manner.

Information Request Source:	Métis Nation of Ontario
Information Number:	Aboriginal IR#5.
Project:	Goldcorp Borden Gold Project
Information Request To:	Goldcorp Borden Limited
Reference:	5.1 Physical and Biological Setting
Text Referenced:	The study area for the BGP includes the Borden Lake watershed and an area of approximately 5 Km radius around the BGP centroid (Figure 1-2). The BGP property is located north of the Arctic watershed and St. Lawrence watershed divide, and as such the regional drainage flows Northward. Previous investigations conducted for Probe also collected information from other areas.
Quotation:	*It is the MNO's position that a 5 km. radius is insufficient to properly monitor the potential physical and biological impacts that this project may have on the environment.*
Goldcorp Inc. Response to IR:	Thank-you for your preliminary comment. We would appreciate additional information on the rationale for your assertion, in order that we can fully respond to your concern. Potential impacts from the project, including their potential extent will be fully addressed in the future environmental assessment document.

Information Request Source:	Métis Nation of Ontario
Information Number:	Aboriginal IR#6.
Project:	Goldcorp Borden Gold Project
Information Request To:	Goldcorp Borden Limited
Reference:	5.1.5 Hydrology
Text Referenced:	The BGP site is located within the Borden Lake / Borden River watersheds (Figure 5-3). Borden Lake has a surface area of approximately 1,641 ha, and a watershed area of approximately 8,280 ha. Water from Borden Lake flows in a northerly direction to the Borden River through a small dam located at the northwest corner of the lake. The dam is constructed of log crib and wooden decking and is maintained by the MNRF. It is approximately 1.3 m in height and 4.5 m wide (AECOM 2014). The dam height is essentially fixed and not actively raised or lowered (pers. comm., MNRF 2015). Borden River drains under Highway 101 and flows in a north-easterly direction before flowing into the Nemegosenda River at Lake Nemegosenda. The Nemegosenda River continues on in a northeastern direction eventually draining into (in order), the Kapuskasing River, Mattagami River, Moose River, before reporting ultimately to James Bay
Quotation:	*The MNO would like to see additional Hydrologic Monitoring stations installed immediately north of the identified project site. Specifically, the MNO would like to see water quality monitored in the Nemogosenda Lake and river system.*
Goldcorp Inc. Response to IR:	Thank-you for your preliminary comment. Goldcorp has been and is currently monitoring the flow in the Borden River at Highway 101. There are no proposed water takings from the river and, as a result, additional flow monitoring stations within a few hundred metres of this location, which is not readily accessible due to safety concerns, would provide no additional information. Water quality will be monitored both upstream and downstream of the proposed effluent discharge locations (as it is currently in the baseline condition). This includes two locations downstream of the effluent discharge point, and upstream of the Nemogosenda Lake. Effluent from the Borden Gold Project will need to meet strict water quality requirements in order to be protective of the water quality and aquatic life in the Borden River. Within a very short distance of the effluent discharge location, there will be no discernible difference in water quality. Monitoring of the water quality in the Nemogosenda Lake which is kilometres downstream is not necessary. Should your concern be related to a potential malfunction or accident, in that circumstance additional water quality monitoring would occur, including potentially within the Nemogosenda Lake / River system, depending on the situation.

Information Request Source:	Métis Nation of Ontario
Information Number:	Aboriginal IR#7.
Project:	Goldcorp Borden Gold Project
Information Request To:	Goldcorp Borden Limited
Reference:	5.4 Potential Effects on Aboriginal Peoples from Changes to the Environment
Text Referenced:	There is the potential that traditional land uses may be affected by the BGP. As indicated in Section 3.2.4, a TK / TLU study report was prepared on behalf of the: • Brunswick House First Nation; • Chapleau Cree First Nation; and • Chapleau Ojibway First Nation (Firelight 2016). Firelight (2016) indicates that members of these First Nations have used and continue to use the study areas defined in their report (within 250 m, 5 km and 25 km of the BGP footprint) for: • Fishing (e.g., pickerel, pike and lake trout); • Hunting and trapping (e.g., moose, partridge and rabbit); and • Gathering subsistence plants (e.g., blueberries and raspberries) and medicines.
Quotation:	*The MNO is concerned that trapping is not considered as a way of life activity. Many Metis rely on trapping as a commercial and traditional activity.*
Goldcorp Inc. Response to IR:	Any information obtained through the MNO TK / TLU study Goldcorp proposes to support, will be used once received to ensure accurate representation of trapping in future environmental assessment documentation. We will review the Project Description to ensure that trapping is identified as a local commercial activity. Goldcorp is pleased to have been able to work with a local trapper who is a member of the MNO in the past, and have provided a land access agreement for him to relocate his trap camp. From our perspective, this has moved along well to date with no issue and concerns brought forward to our attention. We are certainly open to dialogue and having further discussions in the area of trapping. The proposed TK / TLU studies would help feed some of this discussion.

Information Request Source:	Métis Nation of Ontario
Information Number:	Aboriginal IR#8.
Project:	Goldcorp Borden Gold Project

Information Request To:	Goldcorp Borden Limited
Reference:	5.4 Potential Effects on Aboriginal Peoples from Changes to the Environment
Text Referenced:	There are no known cultural sites, including archaeological sites that will be affected by the BGP.
Quotation:	*The MNO's position is that this statement does not include Metis traditional knowledge. As such, the statement is based on incomplete information.*
Goldcorp Inc. Response to IR:	As indicated in the text, the document reflects the information available to Goldcorp at the time of preparation. We would welcome further information to ensure accurate representation in future environmental assessment documentation. Any information obtained through the MNO TK / TLU study or otherwise provided to Goldcorp in a non-confidential manner, will be used to ensure accurate representation in future environmental assessment documentation. With respect to archaeological sites in particularly, we would appreciated your guidance in the near term if there are any that MNO is aware of, as work is proposed onsite this fall. If appropriate, we will re-visit the findings of the archaeological studies completed to date.

Information Request Source:	Métis Nation of Ontario
Information Number:	Aboriginal IR#9.
Project:	Goldcorp Borden Gold Project
Information Request To:	Goldcorp Borden Limited
Reference:	6.1 Potentially Affected and Interested Aboriginal Group
Text Referenced:	The Provincial MNDM has directed that Goldcorp engage with these First Nations and the Métis Nation of Ontario in regards to the advanced exploration program. Goldcorp anticipates the MNDM will provide the same direction with regard to the proposed mine development. As part of its ongoing consultation activities, Goldcorp has engaged the Brunswick House, Chapleau Cree and the Chapleau Ojibway First Nations communities in a confidential and meaningful way regarding the collection and documentation of TK / TLU surrounding the BGP area. The goal is to ensure that any traditional land uses are properly documented and respectfully taken into account. Efforts to engage with the Michipicoten First Nation and the Métis Nation of Ontario have also been initiated and are underway.
Quotation:	*As of yet, no values (valued ecological components) pertaining to Métis rights, interests and way of life have been identified. GoldCorp and the Crown have the duty to clearly identify Métis specific values for incorporation into the overall project environmental assessment so that potential impacts may be identified, mitigated and if required accommodated.*

Goldcorp Inc. Response to IR:	Goldcorp would welcome the opportunity to engage further with MNO towards developing a formal agreement (such as a Memorandum of Understanding; MOU) to ensure appropriate engagement going forward. As indicated above, Goldcorp is prepared to support TK/TLU study completion by the MNO. We request that a scope of work be submitted in order that we can provide approval to proceed. Please advise us as soon as possible when a scope could be provided in order that we can move forward on this aspect in an efficient manner.

Information Request Source:	Métis Nation of Ontario
Information Number:	Aboriginal IR#10.
Project:	Goldcorp Borden Gold Project
Information Request To:	Goldcorp Borden Limited
Reference:	6.3 Key Comments and Concerns by Aboriginal Groups
Text Referenced:	Job advertisements for the exploration work to date have been issued first to local Aboriginal communities for posting in the band office or other means, to facilitate community access to employment opportunities in advance of being posted publically. The jobs are subsequently posted in the local newspaper (Chapleau Express).
Quotation:	*-The MNO has not been extended the same opportunity for its citizens.* *-Job advertisements have not been circulated to the MNO*
Goldcorp Inc. Response to IR:	We would like to engage in a formal process with MNO in the near term, such as a MOU, to ensure that MNO citizens are aware of opportunities going forward, in addition to gaining information through public postings.

Information Request Source:	Métis Nation of Ontario
Information Number:	Aboriginal IR#11.
Project:	Goldcorp Borden Gold Project
Information Request To:	Goldcorp Borden Limited
Reference:	6.3 Key Comments and Concerns by Aboriginal Groups
Text Referenced:	Key comments about the BGP from Aboriginal groups during earlier discussions with Probe as well as subsequently with Goldcorp, have often be related to employment, training and contracting opportunities, although a genuine interest in the environment and potential environmental effects has also been expressed. In recognition of comments regarding Aboriginal employment and business opportunities,
Quotation:	*To date, the MNO and MNO citizens have been excluded from any project benefits*

Goldcorp Inc. Response to IR:	We would like to engage in a formal process with MNO in the near term, such as a MOU, to ensure that MNO citizens are aware of opportunities going forward, in addition to gaining information through public postings.

Information Request Source:	Métis Nation of Ontario
Information Number:	Aboriginal IR#12.
Project:	Goldcorp Borden Gold Project
Information Request To:	Goldcorp Borden Limited
Reference:	6.4 Overview of Ongoing and Proposed Aboriginal Engagement
Text Referenced:	Goldcorp plans to continue to have regular meeting with local First Nation representatives; generally quarterly with the membership and monthly with identified leaders and/or representatives. Future meetings will be established to gather feedback about EA findings and provide feedback about appropriate management of potential environmental effects. Future community information events will be discussed in advanced with the First Nation involved, with notices subsequently provided for posted in the local Band office and/or distributed by other means.
Quotation:	*The MNO asserts that the activities stemming from the BGP have the potential to profoundly impact Métis rights, interests and way of life. It is imperative that, for purposes of meaningful consultation in respect of the BGP, that the MNO is treated fairly and recognized appropriately within the project's Project Description Report.*
Goldcorp Inc. Response to IR:	Goldcorp has shared its studies and have engaged with MNO and intends to meaningfully engage with the MNO in the future. We look forward to more engagement and formal agreement that will help define a clear path forward.

Information Request Source:	Métis Nation of Ontario
Information Number:	Aboriginal IR#13.
Project:	Goldcorp Borden Gold Project
Information Request To:	Goldcorp Borden Limited
Reference:	6.4 Overview of Ongoing and Proposed Aboriginal Engagement
Text Referenced:	On completion of the EIS, hard copies will be made available at convenient and strategic public locations such as public libraries in local communities, the Goldcorp and government office(s) for a 30-day review. A copy will also be provided to the local First Nation band office. The EIS will also be available for downloading from the Goldcorp website.

Quotation:	*For projects of this scale, it will be very difficult for the MNO to provide comments concerning BGP's EIS within 30 days. The MNO respectfully requests that a comment period of 60 days be provided so that it has the time required to prepare its comments in a clear, concise and accurate manner.*
Goldcorp Inc. Response to IR:	We appreciate your comment and will look to share information and documents on a timely basis to provide the appropriate amount of time for review, recognizing that certain elements are part of regulated processes.

Information Request Source:	Métis Nation of Ontario
Information Number:	Aboriginal IR#14.
Project:	Goldcorp Borden Gold Project
Information Request To:	Goldcorp Borden Limited
Reference:	7.3 Other Jurisdictions
Text Referenced	Based on the current BGP design, there are no anticipated Provincial EA requirements (Ontario Environmental Assessment Act). Should a requirement be identified through the Provincial government review of this Project Description or by other means, it is anticipated that such a Provincial EA process could be coordinated with a Federal EA process.
Quotation:	*In order for the MNO to determine its capacity requirements for purposes of meaningful consultation, the decision with respect to whether or not the BGP will require a provincial review must be answered in a timely manner.*
Goldcorp Inc. Response to IR:	We look forward to establishing a formal agreement that will help define a clear path forward regarding capacity and meaningful consultation and engagement. As indicated in the text, at this time a stand-alone Provincial environmental assessment process is not expected. The decision as to whether or not additional Provincial review is required, lies with the regulators and is not within the control of Goldcorp.