

BORDEN GOLD PROJECT

PROJECT DESCRIPTION FOR MINE DEVELOPMENT



foster wheeler





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.

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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 nonpotentially 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) CO₂ 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 | Scale |
|--|---|
| (other minor structures may also be present) | (dimensions where known are approximate) |
| Underground advanced exploration development, including a portal | Portal: 5 metres (m) by 5 m |
| on surface and ramp to underground | Ramp: 60 m length to portal opening |
| Notes and agreement development will be dealer unit of a condition of and | Advanced exploration ramp total length: approximately |
| Note: underground developments will include: mine workings and bays, water sumps and explosive magazine. Early in the advanced | 2,500 m from portal opening |
| exploration phase (only) there will be a limited temporary surface | |
| explosives magazine. | |
| Mine rock stockpile on high density polyethylene liner / bedding | 250,000 t; 125,000 cubic metres (m³) |
| sand | 21,000 square metres (m²) footprint |
| | Maximum height of approximately 10 m |
| Mine rock generated during advanced exploration will be present on | 3H:1V (horizontal:vertical) slope |
| surface at the start of production mining | |
| Diversion / collection berms to direct contact water from natural | Berm height: 1.0 m |
| surface runoff | Berm width: 2.0 m |
| | Side slopes: 1.5:1I |
| Water treatment pond (lined) to collect and treat underground mine | 162 m by 113 m |
| water as well as stockpile site runoff | 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 |
| | 4- 40 4 4 4 |
| Maintenance shop for large haul trucks (non-highway) / warehouse / | 15 m x 42 m footprint |
| Shop / office | Two 4 m v 10 m office and meeting room trailers |
| 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 |
| MILLE | 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 | One or two (up to) 2.5 m radius ventilation raises to surface |
| Emergency Egress | One smaller (up to) 1 m radius raise for emergency egress |
| Stockpiles | Mine Rock: |
| o to on pinos | Additional stockpile volume of approximately 440,000 t (220,000 m³) |
| | 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 m³) |
| | 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 | A few new structures and more permanent structures may replace some or all of the advanced |
| Infrastructure | 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 receive trailers 4 m x 45 m |
| | Mine rescue trailer: 4 m x 15 m Starsga dame: 30 m x 10 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 |
| | Security and First Aid trailer. 4 III X 12 III |
| | 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. |
| | Si the premimitary one plant enorm (riggins o 2) to annoupation to 20 or 1000 than 2 min origin. |
| | 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 | Highway 101: No proposed change to existing highway; except the potential for a turning lane |
| Infrastructure and | at the Borden Gold Project site. Proposed additional traffic is within the capacity of highway. |
| Facilities | |
| | 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 | |
|--|-----|
| Federal Lands (excluding First Nation Reserves) | |
| Pukaskwa National Park | |
| Lake Superior National Marine Conservation Area | 270 |
| National Wildlife Areas | |
| Chapleau Crown Game Preserve | |
| Priority Ecosystems (closest only listed) | |
| Chapleau-Nemegosenda River Provincial Park (Waterway Class) | |
| Ivanhoe Lake Provincial Park (Natural Environment Class) | |
| Windermere Goldie Lake Complex Conservation Reserve | |
| Ivanhoe Lake Wetland, Provincially Significant | |
| Migratory Bird Sanctuaries / Important Bird Areas | |
| On018 - Mary's River Complex, including St. Joseph's Island Migratory Bird Sanctuary; Nationally Significant: Congregatory Species | |
| On017 - The Cousinsblind River, Ontario; Globally Significant: Congregatory Species | |
| On150 - Manitoulin Island North Shore Gore Bay; Globally Significant: Congregatory Species | |
| Boundaries | |
| Ontario Provincial border, land boundary | |
| Ontario Provincial border / United States of America, water boundary | |

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 | Potential Effect |
|---|--|
| Component | (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 | Potential Effect |
|---|---|
| Component | (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.









