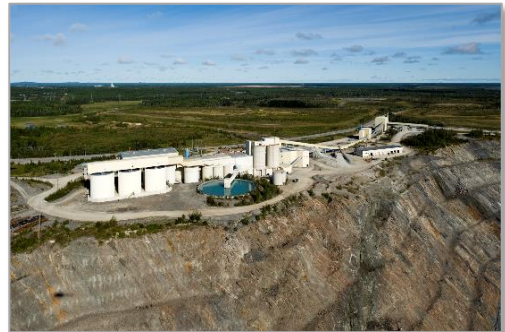




## CENTURY GOLD PROJECT

### PROJECT DESCRIPTION SUMMARY FOR A NEW PROCESSING FACILITY AND REDEVELOPMENT OF AN EXISTING OPEN PIT



July 2018  
Ver. 3

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## **SUMMARY**

Goldcorp Canada Ltd. (Goldcorp) owns and operates Porcupine Gold Mines (PGM) in northeastern Ontario. Goldcorp proposes to develop a modern processing facility with associated surface facilities, and redevelop a historic open pit (the Dome open pit) located in southeast Timmins, Ontario as the Century Gold Project (Figures S-1 and S-2). The Dome Mine open pit ceased operation in 2008 and the Dome underground operations ceased at the end of 2017. The Dome Processing Plant remains in operation processing ore from other mines owned by PGM and/or other custom milling sources as required. Goldcorp proposes to redevelop the historic Dome property as the Century Gold Project.

### **1.0 Project Overview and Context**

The Century Gold Project is a proposed redevelopment of an existing mine site. The approximate centroid of the Century Gold Project is located at coordinates are 482408 E 5367830 N in the Universal Transverse Mercator NAD83 coordinate system (Zone 17); or 81°14'16.69" W and 48°27'48.09" N. Other coordinates can be determined from Figure S-3.

Goldcorp is planning to construct a modern processing facility to replace the existing Dome Processing Plant. The Century Gold Project Processing Facility will operate year-round on a continuous (24-hour) basis, at a capacity of up to a maximum of 70,000 tonnes per day (tpd). The Century Gold Project Processing Facility will utilize conventional processing methods, and continue the shared processing approach of the Dome Processing Plant, whereby ore from multiple sources is processed in a single, centralized facility. This approach significantly reduces potential environmental effects including overall mining footprint in the region by having only one processing facility for multiple mine sites, and also results in a considerable reduction in energy usage and greenhouse gas emissions.

PGM production in the Timmins area will decline since the Dome Underground Mine ceased operation in 2017, and the Hollinger Mine and Hoyle Pond Mine resources are becoming depleted. By developing a new higher tonnage, modern processing facility, Goldcorp also has the opportunity to redevelop the open pit gold mine at the Dome site. Based on current geological information available, mining of ore from the Century Pit will occur over a period of from 10 to 16 years, at a maximum rate of up to 70,000 tpd.

A schematic of the proposed development is shown in Figure S-3. This figure shows the proposed redevelopment overlain on a satellite image of the existing Dome Mine. A preliminary schedule is provided in Figure S-4.

Goldcorp is dedicated to responsible gold mining practices balanced to promote long-term shareholder value, and the health and well-being of employees and communities. The objective of the Century Gold Project is to extend the life of the PGM operations in the Timmins area, while operating in a responsible manner with neighbours, local communities and the environment.

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The proposed redevelopment of the Dome Open Pit as the Century Gold Project, as a high tonnage / low grade gold mine supported by a new, modern shared processing facility, is anticipated to:

- Provide a good return on investment;
- Add 10 to 16 years of life to PGM operations and provide associated economic benefits to the Timmins area;
- Optimize life of existing assets utilizing major infrastructure already in place; and
- Support future mining projects as yet unknown, with a modern, efficient processing facility.

## 2.0 Proponent

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Goldcorp is a leading gold producer focused on responsible mining practices throughout the Americas. A Canadian company headquartered in Vancouver, British Columbia, Goldcorp

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employs more than 15,000 people worldwide. Goldcorp operates a number of mines and processing facilities in Ontario, and is a major employer in Timmins, Ontario.

### **3.0 Project Information**

#### **Key Physical Works and Activities**

Physical works related to the Century Gold Project are proposed to consist of:

- Processing Facility: a modern, regional facility intended to process gold ore from Timmins-area PGM mining operations, as well as potentially from other non-PGM mines. The Century Gold Project Processing Facility is expected to operate year-round on a continuous (24-hour) basis, at a maximum rate of up to 70,000 tpd. Ore processing will involve:
  - Crushing of ore in a Primary Crusher;
  - Additional sizing of ore, such as a pebble crusher and mill at the Processing Facility;
  - In-plant cyanide treatment to release gold;
  - Cyanide recovery circuit;
  - Gold recovery;
  - Doré gold bar production using an induction furnace; and
  - Tailings deposition.
- Open pit: the Century Gold Project will expand the depth and diameter of the Open Pit that ceased operation in 2008. The Century Open Pit will be approximately circular having an area of approximately 226 hectares (ha) and depth of 640 metres (m). Open pit mining will occur at a maximum rate of up to 70,000 tpd of ore production for 10 to 16 years based on current geological information. Ore will be processed in the Century Processing Facility. Explosives will be used to extract rock from the pit. Based on available information, the ore and waste rock (rock that must be removed to access the ore, but which does not have sufficient economic value itself) from the Century Open Pit is non-reactive.
- Ore stockpile(s): small stockpiles of ore (up to 5 million tonnes; MT) will be needed in order to temporarily store ore to allow for continuous Processing Plant operations. A low grade ore stockpile may also be developed to temporarily store lower grade ore until it can be processed, or determined to not have economic value.
- Mineral waste stockpile(s): overburden and waste rock will need to be extracted to access the ore. Overburden and waste rock not required for site construction purposes will be stored in surface stockpiles. The primary area for waste rock storage is proposed to be a new waste rock storage area, proposed to be named the Central Waste Rock Storage Area. This stockpile will expand on existing historic waste rock storage areas already present on the Century Gold Project site, across the South Porcupine River valley, to an existing tailing management area (TMA No. 6). Based on information regarding the

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existing ground conditions, the stockpile needs to be relatively flat and as a result, the stockpile will have an area of approximately 460 ha as currently proposed. There is the potential that some waste rock from the Century Open Pit could be stored in the existing Dome South Stockpile until the current design capacity is reached.

- Tailings management area: the existing Dome TMA No. 6 will be used at the start of the Century Gold Project, until a new area is required, to store tailings produced as a by-product of processing of ore in the Century Gold Project Processing Facility. A preferred new area for tailings storage has been identified which is immediate west of the existing TMA No. 6 to receive tailings from the Facility either at the same time as TMA No. 6, or more likely after capacity within TMA No. 6 is depleted. The new cell would cover an area of approximately 600 ha and provide capacity for the storage of the up to approximately 300 Mt of tailings produced over the Century Gold Project life.
- Reclaim Pond: water that drains from TMA No. 6 and the TMA West Cell will be directed to a Reclaim Water Pond, as will excess mine water and other site contact waters. The Reclaim Water Pond will be approximately 120 ha in area. Storage of these contact waters in a large pond will support natural degradation of ammonia from mine water and residual cyanide from the tailings effluent if applicable. The Reclaim Pond will also store water for re-use in the Century Gold Project Processing Facility.
- Effluent treatment plant: a new effluent treatment plant will be built as part of the Century Gold Project when needed to ensure that effluent quality meets regulatory requirements. Effluent from the Century Gold Project is anticipated to be discharged to the South Porcupine River (the receiver for effluent from the Dome operations); or potentially to the Porcupine River, subject to on-going engineering and regulatory discussions.
- Development of the Century Gold Project as currently proposed, requires the diversion of a portion of the South Porcupine River and its headwater area, around the Century Open Pit and Central Waste Rock Storage Area which will fill a portion of the South Porcupine River valley. The preliminary routing of the waters around the site includes new diversions:
  - An upper diversion (South Diversion) of approximately 2.5 km length, that would direct natural runoff from the headwater areas not collected by the TMA West Cell into Edwards Lake (which would continue to overflow naturally into Porcupine River through an unnamed tributary, locally named Edwards Creek); and
  - A bypass channel of about 3 to 4 km length located between the existing railway right of way and Gold Mine Road that would divert any excess flow from the headwater area further downstream.

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- Other new ponds or ditches will be developed as needed to meet site needs for water management, and in accordance with regulatory requirements for monitoring of contact waters. If practical, all site contact waters including runoff and treated domestic sewage, may be directed to the TMA Complex, to allow for a single effluent discharge from the Century Gold Project site.
- Domestic sewage will be either treated on the site as per current authorizations or within a new facility, such as by means of a septic tank and tile field bed, a package sewage treatment plant; or other means in accordance with regulatory requirements. All non-hazardous and hazardous wastes produced at the Century Gold Project will be transported to an approved waste management storage facilities in accordance with applicable regulations.
- Transmission line: power for the operations phase is proposed to be supplied by a short 230 kilovolt transmission line connected to the Hydro One Networks Inc., Timmins Transformer Station, located approximately 2 km northwest of the proposed Century Gold Project site. Goldcorp is also considering the alternative of cogeneration and other options including a compressed natural gas plant to provide power to the Project, including for load shedding during peak hours and for emergency purposes. Distribution lines and other power infrastructure will be located throughout the Project to provide electrical power to various site components as needed.
- The Century Gold Project is adjacent to Gold Mine Road which will remain as is. Onsite access will be provided by linkage(s) to this road, as well as an existing internal road network and external haul road network with extensions as appropriate. There are existing dedicated haul roads between the Hollinger Mine and Dome Mine, and between the Pamour Mine / Hoyle Pond Mine and the Dome Mine which are anticipated to continue to be used.
- Goldcorp does not propose to construct dedicated, permanent accommodations for the Century Gold Project either on site or off site. It is anticipated that contractors and personnel will utilize existing accommodations in the City of Timmins or other locations.
- Explosives needed for the mine development will be prepared in a dedicated explosive facility under the care and control of an independent supplier and are not considered part of the Century Gold Project.

Further information regarding the scale and capacity of the Century Gold Project facilities is provided in Table S-1.

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**Table S-1: Preliminary Summary of Century Gold Project Facilities, Infrastructure and Activities**

<b>Facility / Infrastructure</b>	<b>Scale (approximate; pending ongoing engineering)</b>
<b>Open Pit</b>	<ul style="list-style-type: none"> <li>• Production rate (maximum) of 70,000 tpd ore</li> <li>• 560 to 640 m deep, with surface expression of approximately 226 ha</li> </ul>
<b>Mineral Waste Management</b>	<p><b>Waste Rock:</b></p> <ul style="list-style-type: none"> <li>• Approximately 820 Mt</li> <li>• Stockpile footprint of 460 ha and height of approximately 160 m (Central Waste Rock Storage Area)</li> </ul> <p><b>Ore:</b></p> <ul style="list-style-type: none"> <li>• Temporary stockpiles to allow for continuous ore processing: 5 Mt</li> </ul> <p><b>Soil and/or Overburden:</b></p> <ul style="list-style-type: none"> <li>• Temporary storage in designated area if needed</li> </ul> <p><b>TMA No. 6:</b></p> <ul style="list-style-type: none"> <li>• Place waste rock buttress around existing dams and raise existing dams to provide additional storage</li> </ul> <p><b>TMA West Cell</b></p> <ul style="list-style-type: none"> <li>• Approximately 300 Mt covering 600 ha</li> <li>• Maximum dam heights are expected to be in the range of up to about 35 m grade</li> </ul>
<b>Ore Processing</b>	<ul style="list-style-type: none"> <li>• Production rate (maximum) of 70,000 tpd ore.</li> <li>• Ore to come from Century Open Pit, other PGM Mines, potentially other mines to be determined, and reprocessing of Dome mineral waste (historic waste rock and tailings)</li> </ul>
<b>Onsite Buildings</b>	<ul style="list-style-type: none"> <li>• Processing Facility</li> <li>• Primary Crusher</li> <li>• Administrative and Ancillary Buildings</li> <li>• Maintenance Shop</li> <li>• Warehouse</li> <li>• Reagents and Consumable Storage</li> <li>• Security / Gatehouse</li> <li>• Various temporary construction facilities / trailers</li> </ul>
<b>Onsite Infrastructure</b>	<ul style="list-style-type: none"> <li>• Petroleum Product Storage Facilities and Laydown Areas</li> <li>• Water supply and storage ponds</li> <li>• Reclaim Water Pond with surface expression of approximately 120 ha</li> <li>• Seepage and water collection ditch network</li> <li>• Effluent Treatment Plant and discharge pipeline</li> <li>• South Diversion: approximately 2.5 km length</li> <li>• North Diversion (bypass): approximately 4 km length</li> <li>• Fuel tank farm and fueling station: storage of approximately 600,000 litres diesel fuel</li> <li>• Offsetting and compensation works (scale and location to be determined)</li> <li>• Other ancillary buildings, facilities and yards (scale and location to be determined).</li> <li>• Power substation, and associated onsite power distribution and infrastructure</li> <li>• Potential compressed natural gas plant (for peak load shedding / emergency power)</li> </ul>
<b>Offsite Infrastructure</b>	<ul style="list-style-type: none"> <li>• 230 kilovolt feeder transmission line of less than 2 km length</li> </ul>

As indicated above, the Century Gold Project is the proposed redevelopment of the Dome Open Pit with a new Processing Facility. The Dome Processing Plant will continue to operate, processing ore from other Goldcorp operations and potentially from other custom milling sources, until such time as a decision is made to cease processing (either for economic reasons, or it is replaced by the Century Processing Facility). Accordingly, replacement of Dome facilities and infrastructure to maintain current operation, and/or reclamation of facilities and infrastructure no longer required at the Dome site, is expected to continue in accordance with the Dome Mine

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Closure Plan and other approvals, irrespective of the Century Gold Project and thus is not included within the Project Description scope.

The components of the Dome Mine that will become part of Century Gold Project if developed are:

- Dome Open Pit (redevelopment to establish mine operations);
- TMA No. 6 (facility as currently approved will continue to operate and receive tailings from the Dome Processing Plant);
- East Waste Rock Storage Area and Preston Waste Rock Storage Area (will be partially removed to make way for Century Gold Project facilities, with the historic waste rock moved to the Central Waste Rock Storage Area or potentially processed pending economic evaluation); and
- No. 3 Tailings Management Area (historic tailings from this inactive facility will be partially removed by the Century Open pit, with the tailings relocated to the active tailings management area, either directly or as a result of reprocessing in the Century Processing Facility).

## **Related Activities**

Primary activities related to the Century Gold Project not described above include:

- Completion of engineering studies and associated field investigations;
- Completion of legal / business / land agreements, if any;
- Corporate (internal) decision to proceed to mining based on results of engineering studies;
- Hiring of individuals and contractors;
- Obtaining environmental approvals to construct and operate the Century Gold Project;
- Modification of existing environmental management plans or development of new plans;
- Clearing of vegetation for construction and operation in greenfield areas of the site; and
- Covering of a number of watercourses / waterbodies by site facilities through offsetting and compensation plans.

## **Opportunities and Innovation**

Goldcorp is committed to the efficient use of natural resources. Some of the environmental issues facing the mining industry include: water and energy conservation, climate change and the management of mining waste. Goldcorp is considering alternative technologies and approaches as Project design and planning are advanced, and over the mine life as technologies change. Goldcorp is currently conducting a number of investigations in its engineering design for the Century Gold Project including:

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- Various production rates for the Processing Facility;
- Alternate ore sources such as reprocessing of historic tailings (Dome TMA No. 3; T3) and waste rock (East / Preston);
- Options for mine waste storage locations;
- Tailings disposal methods and disposal locations; and
- Power supply options, including the potential for development of a power plant to support the Project.

Determining the preferred options for the Century Gold Project will be based on economic, technical, environmental and social considerations. Goldcorp is also including optimization of the Century Gold Project within the family of PGM properties, to address historic / legacy mining issues in the Timmins area, as well as to meet proposed end land use objectives for Goldcorp's current operations.

### **Overall Schedule**

The approximate duration of the key phases of the Century Gold Project as currently envisioned are as follows (Figure S-4):

- Construction: 3 years (Years 1 to 3);
- Operation: 10 to 16 years (Years 4 to Years 13 to 19);
- Active reclamation: 2 to 3 years (Years 20 to 22); and
- Post-closure: (after Year 22).

It should be noted that the operations phase timing listed above is for the Century Open Pit. Goldcorp proposes to continue to operate the Century Processing Facility subsequently, if sufficient ore is available including from other non-PGM mines.

The schedule aims for gold ore production starting in early 2024 following construction. The uncertainty in timing of environmental process and approvals is understood. The actual timeline for project development will therefore depend in part on the timing of the assumed Federal EA process and subsequent environmental approvals.

Operation of the Dome Processing Plant and reclamation of facilities associated with the Dome Mine is expected to continue in accordance with environmental approvals for the Dome Mine, while construction of the Century Gold Project is underway. The proposed sequencing of activities is shown in Figure S-5.

## **4.0 Environmental Setting**

### **Climate**

The Century Gold Project is located in northeastern Ontario, in an area having long, cold winters and warm, relatively short, summers. Mean monthly temperature at the Porcupine Ontario Hydro

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climate station located approximately 2 km west of the Century Gold Project, ranged from a low of - 16.7 °C in January to a high of 18.6 °C in July based on 30-year Climate Normals for the period of 1981 to 2001. Total annual precipitation at this same station averaged 865 millimetres (mm), with 555 mm falling as rain and 310 mm as snowfall. The 25-year wind rose for Timmins has a predominantly westerly wind direction, with an overall west-northwest vector.

The Century Gold Project is a redevelopment of the Dome Open Pit and a new Processing Facility. The Dome Processing Plant will continue to operate on the site as a regional processing facility until such time as it is replaced by the Century Processing Facility. Accordingly, the ambient air quality for a large portion of the Century Gold Project site, is that of an operating industrial facility. The Dome Mine and Processing Plant have a valid Provincial Environmental Compliance Approval for air and noise emissions, with which it operates in compliance.

Ambient air quality will also be influenced by other anthropogenic sources and natural sources, such as traffic along Gold Mine Road, dust from other Timmins industry, pollen and fires (including wood burning stoves / fireplaces and natural fires). Long-range transport would be expected to be a source for the particulates, nitrogen dioxide and sulphur dioxide. Ambient air quality monitoring is ongoing, the results of which will be included in the Environmental Impact Statement (EIS) submission.

### **Sound and Vibration**

The Century Gold Project is located within the City of Timmins limits, on the site of an operating industrial facility. The Dome Mine and Processing Plant operate in compliance with Provincial Environmental Compliance Approval for noise (and air) emissions. The area surrounding the Century Gold Project is mixed use and characterized by natural areas, permanent homes and industrial / commercial operations. As a result of the Project being located at an operating mine and in a developed area there are existing sources of vibration in the area. Further information regarding the result of ongoing monitoring will be presented in the EIS.

### **Terrain and Geology**

The topography in the Timmins area is dominated by its location at the transition of Precambrian Shield terrain to the south and southwest, and by flat-lying glaciolacustrine silt and clay plains to the north and east. There is an extensive glaciolacustrine sand plain lies south of Timmins that extends into the lower, southwest portion of the Project site area. The natural local topography reaches a maximum of about 330 to 340 m above sea level (asl) in the areas west, south and east of the Century Gold Project, sloping to the northeast to the lower elevations present at the neighbourhood of South Porcupine and Porcupine Lake. The local topography at the Century Gold Project strongly reflects its nature as a brownfield mine site. Local high elevations are associated with the mine stockpiles (up to approximately 370 m asl) and there is a low elevation at the base of the Dome Open Pit (-25 m asl).

The Century Gold Project is located in the western part of the Abitibi Greenstone Belt within the Superior Province of the Canadian Precambrian Shield. The geology of the Timmins area is

structurally complex, and includes several major fault zones and anticline / syncline systems, many of which control surface topographic expressions. Bedrock exposures are widespread locally, but often covered by glaciolacustrine silt, clay and sand plains.

Geochemistry investigations are ongoing to support engineering and inform environmental effects assessment for the Century Gold Project. Information to date including from the Dome Mine, suggests that the waste rock and ore from the Century Open Pit will be non-potentially acid generating / non-reactive. Further information regarding the geochemistry of the mineral wastes associated with the Century Gold Project will be presented in the EIS.

## **Hydrology**

The eastern portion of Timmins where the Century Gold Project is located is drained by the Porcupine River and its minor tributaries. The Porcupine River flows into Porcupine Lake, a 276 ha waterbody, before continuing into Night Hawk Lake and the Frederick House River system. The Frederick House River system drains into Lake Abitibi, and northward into the Abitibi River which joins the Moose River and empties into James Bay (Figure S-6).

The Century Gold Project footprint drains either directly or indirectly to the South Porcupine River, or to the Porcupine River by means of the Edwards Creek. Both watercourses are in the order of a metre width in the headwater and mid-reaches, except where flow is influenced by beaver dams or other obstacles causing ponding. The South Porcupine River meanders to the northeast from its headwaters, through a wetland area constrained by existing mining facilities, prior to flowing into the Porcupine River west of Porcupine Lake. The South Porcupine River originates southwest of the Dome Mine site. McDonald Lake and Simpson Lake are two of the more prominent waterbodies in the river headwaters, situated alongside Gold Mine Road. The area west of the Dome Open Pit, including Edwards Lake, drains northward by means of an officially unnamed creek (known locally as Edwards Creek) into the Porcupine River, north of Highway 101. After the inflow from Edwards Creek, Porcupine River flows south-south east past the western edge of the neighbourhood of South Porcupine, before it receives the South Porcupine River inflow, and then flow east to Porcupine Lake.

Simpson Lake consists of two distinct basins separated by a 200 m long narrows, with a combined lake area of 38.7 ha, and mean measured depths of 9.8 m and 2.6 m. Both basins exhibit variable shoreline habitat types comprising exposed bedrock, wetlands and altered shoreline areas. A natural topographic divide separates Simpson Lake and Edwards Lake to the north. Edwards Lake is a smaller lake with area of approximately 5.9 ha, surrounded by a broad cattail wetland, with a maximum measured depth of 3.2 m.

The watersheds of the South Porcupine River and Porcupine River at their confluence just west of Porcupine Lake, measure 32.0 and 42.7 square kilometres respectively. The monthly average flow rates in local watercourses (uncontrolled) is greatest in the spring, (April and May), coinciding with the snowmelt period. Lowest flows are recorded most typically during the mid-winter months (January through March), when precipitation is accumulated and held as snow and ice, and also occur in the mid- to late summer typically.

## **Surface Water Quality**

Extensive surface water quality sampling has been collected in the Century Gold Project area, as a result of ongoing monitoring for the Dome Mine operation (both background and effluent quality, including for Environmental Effects Monitoring). There is a considerable amount of multi-season data available to support the Century Gold Project design for the surrounding watercourses and waterbodies.

Much of the Porcupine River drainage basin upstream of Nighthawk Lake has been influenced by the development of the City of Timmins (the regional centre for northeastern Ontario); and past and present industrial activity, including mining and forestry. Some of the existing waterbodies are associated with historic tailings storage areas (Gillies Lake, Simpson Lake and Edwards Lake for example). As a result of the above activities, a number of key metals are elevated above natural background conditions in the drainage basin. Overall metal concentrations in the Porcupine River system appear to be improving with time, and particularly as historic sites have been actively reclaimed. Water quality conditions in the South Porcupine River are generally similar to those of the Porcupine River. Water quality at reference locations in South Porcupine River and the Edwards Creek is generally of good quality, although it is impaired relative to background. Several metals are found in concentrations above the Provincial Water Quality Objectives and Canadian Water Quality Guidelines for the protection of aquatic life, which has been attributed to historic and existing mining operations as well as natural metal-rich rock in the area.

## **Aquatic Environment**

Baseline investigations are ongoing to characterize the watercourse / waterbodies near the Century Gold Project and supplement information available from monitoring associated with the Dome Mine. The small watercourses present at the Century Gold Project are shallow, and slow moving, often constrained by significant beaver activity. Accordingly, the small watercourses and shallow lakes / ponds provide a limited seasonal habitat for cool to warm water species. Simpson Lake is a slightly deeper waterbody and provides a year-round habitat for a cool to warm water fish community. Table S-2 provides a summary of the fish species identified in field investigations to date in various unnamed watercourses / waterbodies near the Century Gold Project site, as well as the South Porcupine River and locally named, Edwards Lake and Simpson Lake. Investigation locations and unnamed watercourse / waterbody identifiers are provided in Figures S-6 and S-7. There are no known Species at Risk fish species or plants in the vicinity of the Century Gold Project.

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**Table S-2: Preliminary Aquatic Sampling Results**

Name <sup>1</sup>	Number (see Figure S-7)	Blacknose Shiner	Brassy Minnow	Brook Stickleback	Brown Bullhead	Common Shiner	Creek Chub	Fathead Minnow	Finescale Dace	Iowa Darter	Johnny Darter	Lake Chub	Northern Pike	Northern Redbelly Dace	Pearl Dace	White Sucker	Yellow Perch
<b>Year Sampled: 2016</b>																	
South Porcupine River and Immediate Unnamed Tributaries / Ponds	25		X	X		X	X		X		X	X		X	X	X	
	47		X	X		X	X		X		X	X		X	X	X	
	26		X	X		X	X		X		X	X		X	X	X	
	48	X	X	X		X	X		X		X			X	X	X	
	49	X	X	X		X	X		X		X			X	X	X	
	50	X	X	X		X	X		X		X			X	X	X	
	28	X	X	X		X	X		X		X			X	X	X	
	52	X	X	X		X	X		X		X			X	X	X	
	53	X	X	X		X	X		X		X			X	X	X	
<b>Year Sampled: 2017</b>																	
Simpson Lake	29				X								X				
	9				X								X				
Edwards Lake	30			X										X	X		
Boyd Lake	2			X				X	X					X			
Unnamed	3			X				X	X					X			
Unnamed	4			X				X	X								
Unnamed	5			X										X			
Unnamed	6			X										X			
South Porcupine River and Immediate Unnamed Tributaries / Ponds	12		X	X				X	X					X			
	13		X	X				X	X					X			
	14			X					X					X			
	18		X	X				X	X					X			
	19		X	X				X	X					X	X		
	20		X	X				X	X					X	X		
	21		X	X				X	X					X	X		
<b>Year Sampled: 2018 (results available to date reported below)</b>																	
Simpson Lake	29	X	X			X				X					X		
	9	X	X			X				X					X		
Unnamed	62		X	X				X	X	X				X	X		
Unnamed	63		X	X				X	X	X				X	X		
South Porcupine River and Immediate Unnamed Tributaries / Ponds	8			X	X				X	X						X	
	36			X	X					X						X	
	45			X	X				X	X						X	
	54				X												
	55			X	X				X								
	56				X												
	60				X												
	66			X	X				X	X	X					X	
Goose Creek Unnamed Tributary / Ponds	34				X				X	X							
	35			X	X				X	X							
	62			X	X				X	X		X					
	63			X	X				X	X		X					
	65			X	X				X	X							

Note: <sup>1</sup> Local names or "Unnamed" has been used in the absence of official names for local watercourse / waterbodies.

## **Hydrogeology**

The hydrogeologic system at the Century Gold Project site consists of bedrock with various degrees of fracturing or faulting, overlain by a combination of sands, dense till, varved silts and clays, and organic soils and peat. 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. The varved silts and clays present particularly in the lower topographic areas, are relatively impermeable and may act as an aquitard (Golder 2016).

The regional groundwater flow direction is generally to the north and west. The Century Gold Project is however, located in an area of past and current, underground and open pit mining. As a result, the local hydrogeology has been altered from the natural condition. Dewatering of the Dome underground mine workings (and the interconnected Dome Open Pit, and the historic Paymaster Mine and Preston Mine underground workings) has depressed the local groundwater table. While the local groundwater flow continues to be toward the local watercourses and Porcupine Lake overall, the local groundwater levels are controlled by: aquifer depression related to the Dome Mine dewatering, shallow bedrock topography due to its relatively low permeability, and the TMA and waste rock storage areas which act groundwater recharge zones.

## **Vegetation**

There is an extensive history of mining in the Timmins area and large portions of the lands within or adjacent to Century Gold Project are active or reclaimed mineral lands. Cultural thickets are regenerating areas previously cleared or disturbed and are often dominated by Trembling Aspen, Balsam Poplar, White Birch and Willow species, together with a variety of shrub and ground species. Historic tailings areas exhibit varying states of vegetation re-growth from higher density grass / herbaceous community development, to extensive areas of bare tailings, with or without shrub and sapling cover.

The terrestrial environment in undeveloped / undisturbed areas is largely comprised of mixed and coniferous forest and wetland communities. Commonly occurring tree species are boreal and include: Black Spruce, Jack Pine, Trembling Aspen, Balsam Fir, Tamarack, White Birch and Balsam Poplar. Riparian and low-lying areas consist of marsh communities dominated by wide-leaved cattail. Pondweed, Water Plantain, Broadleaf Arrowhead and Yellow Pond-lily are also locally present.

No rare plant species or communities have been identified to date in the Century Gold Project footprint.

## **Wildlife**

A total of 78 bird species were recorded within during the 2017 standardized point count surveys in the Century Gold Project study area, of which 45 had not previously been identified as present in the study area. Additional baseline studies are being completed during 2018. Almost all of the species recorded during the bird surveys are considered common.

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A number of avian Species at Risk were observed during preliminary environmental baseline surveys conducted in 2017 and 2018 (to date): Bank Swallow (Provincial and Federal Threatened), Barn Swallow (Provincial Threatened), Bald Eagle (Provincial Special Concern), Canada Warbler (Provincial Special Concern / Federal Threatened), Common Nighthawk (Provincial Special Concern / Federal Threatened) and Short-eared Owl (Provincial and Federal Special Concern). Mitigation measures will be developed and implemented to align with regulatory requirements, consultation, and Project planning

Mammal species recorded within the Century Gold Project study area are typical of the region based on available published information. Visual sightings, evidence and bat acoustic detection surveys during 2017 found evidence of eight mammal species occurring within the Century Gold Project area: Little Brown Myotis (bat), Silver-haired bat, Hoary Bat, Red Squirrel, American Black Bear, Coyote, Red Fox and Moose. Little Brown Myotis was the only mammal Species at Risk (Endangered both Federally and Provincially) identified during the surveys to date.

Based on range maps available, the following amphibian and reptile species were identified as potentially occurring within the vicinity of the Century Gold Project (Blue-spotted Salamander, Jefferson / Blue-spotted Salamander Complex, American Toad, Boreal Chorus Frog, Spring Peeper, Green Frog, Wood Frog, Northern Leopard Frog, Mink Frog and Eastern Gartersnake). Additional baseline investigations are being completed during 2018, but to date, no reptile or amphibian Species at Risk are known to be present at the Century Gold Project site and immediate environs. Blanding's Turtle (Provincially Threatened) may be present based on information recently received.

## **5.0 Proximity to Other Land Uses and Land Tenure**

### **Other Land Uses**

The Century Gold Project is located in an area recognized as one of the world's great gold districts. The Porcupine deposit was the basis for the development of the City of Timmins, and has been a key driver of the city's prosperity to date. Accordingly, the Century Gold Project is located proximal to a number of other mines both operating and historic.

There are no residences on the Century Gold Project site. The closest structures to the Century Gold Project site are permanent residences are approximately 2 km away from the Century Pit centroid. There are no planned facilities or activities associated with the Century Gold Project on:

- Federal lands of any type;
- Provincial Parks or Conservation Reserves;
- Areas of Natural and Scientific Interest;
- Provincial Forest Reserves; or
- First Nations Reserve lands.

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The Century Gold Project is located distant from any regional protected lands such as Provincial Parks, Conservation Reserve Areas and Areas of Natural and Scientific Interest (Table S-3, Figure S-2). The Century Gold Project is not located in an area that has been subjected to a regional environmental study.

The Century Gold Project is located near the Porcupine Lake Wetland Complex, which contains 325.8 ha of marsh and swamp habitats and is made up of five wetlands situated along Porcupine Lake, Porcupine River and South Porcupine River. The Porcupine Lake Wetland Complex was classified as a Class 1 Provincially Significant Wetland in 1992 by the Mattagami Region Conservation Authority. A small portion of the Provincially Significant Wetland is present on the Century Gold Project site which is proposed to be covered by the Central Waste Rock Storage Area but will be mitigated by the design of a diversion channel along with fish habitat offsetting and compensation programs.

The following other local natural heritage areas have been identified near the Century Gold Project site:

- Areas of aquatic feeding habitat for moose;
- A walleye staging area near Porcupine Lake; and
- Two fish spawning areas.

### **Reserves and Traditional Lands**

Goldcorp has a Resource Development Agreement (RDA) in place with the four First Nations that are local to the Century Gold Project (Figure S-2):

- Flying Post First Nation Reserve 73 (53 km west, 79 km by road);
- Matachewan First Nation Reserve 72 (58 km southeast, 144 km by road);
- Mattagami First Nation Reserve 71 (66 km south-southwest, 107 km by road);
- Taykwa Tagamou Nation New Post Reserve 69A (66 km northeast, 123 km by road); and
- Wahgoshig First Nation Reserve 70 (91 km south-southwest, 107 km by road).

These communities are all signatories to Treaty 9 (James Bay Treaty). There is an expectation based on past engagement with these communities, that the Flying Post First Nation, Matachewan First Nation, Mattagami First Nation and Wahgoshig First Nation consider the Century Gold Project site within their traditional territories. To Goldcorp's knowledge based on research to date, traditional territory maps for these Indigenous communities and others in the region are not available from public sources.

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**Table S-3: Relative Locations of Areas of Interest**

<b>Closest Areas of Interest</b>	<b>Distance (km) <sup>1</sup></b>
<b>Federal Lands (excluding First Nation Reserves)</b>	
Pukaskwa National Park	318
Lake Superior National Marine Conservation Area	419
<b>National Wildlife Areas</b>	
Chapleau Crown Game Preserve	127
Nipissing Crown Game Preserve	206
Himsworth Game Preserve	289
<b>Priority Ecosystems (within 50 km)</b>	
Porcupine Lake Wetland, Provincially Significant	1
Gold Lake Wetland, Provincially Significant	10
Kraft Creek / Murphy Creek Wetland, Provincially Significant	11
Pamour Striations ANSI, Earth Science	11
Carman Bay Wetland, Provincially Significant	15
Frederick House River Wetland, Provincially Significant	20
Whitefish River Wetlands Unit Wetland, Provincially Significant	22
Night Hawk Lake Shoreline Bluffs Conservation Reserve	24
Hwy 101 Conglomerate ANSI, Earth Science	27
Kettle Lakes Provincial Park	28
Kettle Lake Erratic ANSI, Earth Science	29
Tatachikapika River Plain Conservation Reserve	30
Frederick House Lake Provincial Nature Reserve	31
Barlow-Ojibway Form ANSI, Earth Science	31
Dana-Jowsey Lakes Provincial Park (Natural Environment Class)	35
Driftwood Wetland, Provincially Significant	36
Moose Lake Wetland, Provincially Significant	36
Elspeth Lake White Birch Outwash Conservation Reserve	43
Mahaffy Township Ground Moraine Conservation Reserve	44
Whitefish And East Whitefish Lakes Sandy Till Upland Conservation Reserve	45
Whitefish River Sandy Till Conservation Reserve	45
Northern Claybelt Forest Complex Conservation Reserve	46
Driftwood River White Cedar Lacustrine Conservation Reserve	46
<b>Migratory Bird Sanctuaries / Important Bird Areas</b>	
On150 – Manitoulin Island North Shore Gore Bay; Globally Significant: Congregatory Species	280
On017 - The Cousinsblind River, Ontario; Globally Significant: Congregatory Species	289
<b>Boundaries</b>	
Ontario Provincial border with Québec, land boundary	127
Ontario Provincial border with United States of America, water boundary	323

Note: <sup>1</sup> Approximate distance from Century Open Pit centroid.

Historic mining practices in the Century Gold Project site area dating back over one hundred years may have resulted in a general avoidance of the immediate area for traditional land use practices. There is no current traditional use of the Dome Mine industrial lands as there is limited vegetation and wildlife present, and access is only available on request for safety reasons. Goldcorp has not received any requests for access for traditional purposes to date for the Dome Mine.

Through the RDA partnership, research is being initiated with the above-listed communities and Indigenous traditional knowledge experts, to document the available traditional knowledge and traditional land use information for the Century Gold Project area. Goldcorp will continue to update its information base regarding any traditional land uses by other Indigenous groups, resulting from engagement activities described in Section 10, as applicable.

The Century Gold Project is located within the boundaries of Treaty No. 9 and the Abitibi / Temiscamingue Traditional Harvest Territory of the Métis Nation of Ontario. The James Bay Cree Nation has a legal action asserting Aboriginal title and Aboriginal rights over a large portion of northeastern Ontario (Eeyou Istchee – Ontario) which may include the Century Gold Project site.

### **Land Tenure**

Land tenure associated with the Century Gold Project site currently includes surface and mineral tenure held by Goldcorp, and lands held by others under negotiations or are following the required authorization processes. The status of these negotiations / applications is confidential; however, as of the publication date of this document, 88% of the surface tenure in the Tisdale and Deloro Townships are held privately including Goldcorp holdings, and 12% of the surface tenure is held by public entities such as unpatented lands, Crown lands, or by the City of Timmins. Goldcorp is confident that the remaining tenure required to develop the Century Gold Project will be acquired prior to completion of the EA process.

## **6.0 Key Environmental Aspects**

Table S-4 contains a matrix identifying potential interactions between Project components and the environment. A preliminary assessment of the potential environmental effects of the Century Gold Project from construction, operation and closure phases of the Century Gold Project is provided in Table S-5. 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. Direct environmental effects from the Century Gold Project are anticipated to be limited primarily to the Project footprint, and the immediate area / receiving waterbody of site effluent. No effects on Porcupine Lake are expected.

The Century Gold Project will comply with all regulatory requirements, as well as approvals obtained from the Federal and Provincial governments. While meeting regulatory requirements, there is the potential for noise and dust emissions from the Century Gold Project activities to disturb or bother others in the immediate area. This effect will be assessed as part of the EIS.

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**Table S-4: Preliminary Environment Interaction Matrix**

	PHYSICAL											BIOPHYSICAL						HUMAN ENVIRONMENT			
	Atmospheric Environment				Groundwater		Surface Water		Terrestrial			Aquatic Biology		Terrestrial Environment			SAR	General Public and Indigenous Interest		Indigenous Interest	
	Air Quality	Noise	Greenhouse Gas Emissions	Climate Change	Water Quality	Groundwater Flows and Water Table Elevation	Water Quality	Surface Water Flows or Water Level	Geology	Other Geomorphology Processes	Vibration	Aquatic Biota	Aquatic Habitat	Vegetation Communities / Habitat	Wildlife Species	Migratory Birds	Species at Risk	Land and Resource Use	Human Health	Archaeology / Palaeontology	Traditional Land and Resource Use
Site clearing and site preparation																					
Mining activities including dewatering																					
Waste rock and overburden management																					
Ore processing																					
Process plant effluent / tailings management																					
Effluent discharge																					
Watercourse diversions and fish habitat compensation / offsetting																					
Project infrastructure (roads, drainage etc.)																					
Power supply and infrastructure																					
Fuel and chemicals management																					
Domestic sewage treatment and disposal																					
Solid waste management including hazardous materials																					

Note: This spreadsheet is based on a preliminary scan of the Project components and environmental components interaction, and may be modified as details and information are considered during the EA process.

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**Table S-5: Preliminary Assessment of Potential Environmental Effects**

<b>Environmental Component</b>	<b>Potential Effect (Preliminary) <sup>1</sup></b>
Air quality	Air emissions from the Century Gold Project have the potential to generate dust or products of petroleum hydrocarbon combustion and ore processing 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, including if a compressed natural gas plant is developed.
Noise and Vibration	Noise emissions and vibration from the Century Gold Project have the potential to disturb other area users. Provincial regulatory criteria will be met.
Greenhouse gases	Greenhouse gases associated with Century Gold Project have a very minor potential to contribute to global carbon dioxide emissions and associated climate change.
Ambient light	Operation of an industrial facility will 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 and a localized glow off site similar to that of current Dome operations.
Watercourses / waterbodies	Development of the Century Gold Project will result in the overprinting of a number of watercourses / waterbodies. This is anticipated to result in change to flow and/or water levels (Table S-6). Effluent from the Century Gold Project will be treated to meet Federal and Provincial regulatory requirements.
Aquatic habitat and species	The Century Gold Project is anticipated to have direct and indirect effect on fish and fish habitat (Table S-6).
Groundwater system	Mine dewatering will maintain the local aquifer at the base of the Century Open Pit (higher than its current level with the Dome Mine). Local watercourses are not anticipated to be affected by dewatering. Groundwater quality maybe locally affected by the Century Gold Project.
Terrestrial habitat	Century Gold Project development will displace terrestrial habitat outside the Dome Mine operations area. As the displacement is generally contiguous based on the proposed site plan, there are no known terrestrial habitat linkages that will be affected.
Wildlife and migratory birds	Project development will displace existing terrestrial habitat, some of which is relatively undisturbed.
Species at Risk	Century Gold Project development will displace existing terrestrial habitat. There is the potential Species at Risk (a bat and a turtle) may be affected.
Hunting, fishing and tourism	Limited effect as the Century Gold Project is to be located on an active mine site where access is controlled / restricted for safety of workers and general public.
Indigenous / public health and safety (air emissions, water quality, socio-economics)	All Federal and Provincial regulatory requirements will be met. No negative effect expected on Reserve lands. The Century Gold Project will provide a positive socio-economic effect, in providing employment and commercial opportunities.
Current traditional use of lands and resources	The Project may have a potential effect on the use of lands for traditional purposes due to construction and mining operations, and the increased mining footprint.
Structures, sites or objects <sup>2</sup>	No structures, sites or objects of historic, archaeological or architectural significance are known present. No sites of paleontological significance are known to be present and no effect is anticipated.

**Notes:**

- <sup>1</sup> Effect described is additional to any effect associated with the existing Dome Mine and subject to ongoing engineering design and environmental investigations.
- <sup>2</sup> Structures, sites or objects of historic, archaeological, architectural or paleontological significance.

## **7.0 Project Emissions, Discharges and Wastes**

### **Emissions**

Air emissions will derive from point source and fugitive sources, with fugitive sources likely to contribute the majority of the air emissions. The primary point source air emissions are expected to be suspended particulate (dust) from conveyors and crusher(s). Measures will be taken to minimize dust creation and to utilize dust collection devices where practical. Fugitive dust will be released from: drilling and blasting operations (within the open pit mine); loading and offloading of overburden, waste rock and ore; vehicle and heavy equipment travel on gravel roads; and from wind entrainment from stockpiles, the TMA and other exposed earth materials. Water and other Provincially approved dust suppressants will be used as required to control dust emissions.

Vehicle and heavy equipment use during all Project phases, will release particulates, sulphur dioxide, and nitrogen oxides from the combustion of fuel. Greenhouse gas emissions will derive principally from diesel fuel combustion in heavy equipment operation, and with diesel-fired power generation during the mine construction phase (if required). Energy efficiency and greenhouse gas minimization will be an ongoing consideration in the design of the Century Gold Project. A preliminary assessment potential greenhouse gas emissions from the Century Gold Project was completed of using industry-standard methodology. Based on this preliminary estimate, the maximum greenhouse gas emission from the Century Gold Project per will be approximately year are approximately 180,000 tonnes of carbon dioxide equivalents per year, representing an approximately 0.1% increase to the current annual emissions for Ontario. This estimate is preliminary and will be refined with ongoing project planning and design.

The principal anthropogenic sound sources at the Century Gold Project are expected to derive from open air, heavy equipment operation, such as that associated with the mining and handling of overburden, ore and waste rock. Processing and other facilities will be design in consideration of noise production. During the mine construction phase, there will be additional heavy equipment operation that will contribute to overall sound emissions. Sound source modelling will be carried out to ensure that noise and noise related effects are fully considered during engineering design

The main source of vibration (ground-borne) from the Century Gold Project will be from blasting (explosives usage) required during mining. Blasting can also generate an overpressure shock wave which can travel through air and water. Modelling will be completed to enable assessment of potential mine-related impacts and support development of appropriate mitigation measures.

### **Liquid Discharges**

The Century Open Pit will intercept groundwater and runoff from adjacent areas, as well as collecting direct precipitation. Water within the open pit is termed mine water. This mine water will drain into the existing Dome underground workings. From there it is expected to be re-used (such as in the Century Processing Facility) or pumped to the TMA complex (TMA No. 6, TMA West Cell and/or the Reclaim Water Pond). Alternatively, a dedicated mine water treatment pond could

be constructed if needed. Mine water will contain: suspended solids from general mining and earthmoving activities; ammonia residuals from ammonia-based explosives; and residual hydrocarbons from heavy equipment operation. Leaching of the exposed bedrock within the open pit may also potentially contribute minor quantities of metals to the mine water. Preliminary suspended solids removal will occur within the mine. Ammonia residuals are proposed to be managed at source through best management practices for explosives handling and through extended effluent aging in pond(s) prior to any discharge to the environment.

Runoff from the waste rock and ore stockpiles will contain suspended solids, and potentially metals and residual ammonia. Runoff from the waste rock and ore stockpiles will be collected and handled in accordance with regulatory requirements, and will likely be directed to the TMA Complex to allow for settling of solids. General site runoff resulting from precipitation that falls on the Century Gold Project site within the mine operations area will also be captured and monitored, and if needed diverted for treatment, likely in the TMA Complex. Non-contact runoff from outside the mine operational area, will continue to flow directly to the environment.

Domestic sewage and grey water (from showers and sinks) during the construction and operations phase will be treated if needed either by means of a package sewage treatment plant (e.g., sequencing bioreactor, rotating biological contactor, membrane bioreactor, or equivalent), in a septic tank / tile field, or by other means to be determined. Resulting effluent may be pumped to the TMA Complex,

Excess water stored in the TMA Complex (TMA No. 6, TMA West Cell and Reclaim Pond) will be treated if needed, and will be discharged to the environment once the effluent quality meets regulatory requirements. A new Effluent Treatment Plant will be constructed if necessary to ensure that effluent water quality requirements can be met. Based on current engineering information, either the South Porcupine River or the Porcupine River downstream of the Century Gold Project are anticipated to receive this excess effluent (Figure S-3).

Solid domestic wastes anticipated to be produced at the Century Gold Project include: wood, paper, scrap metal, glass, plastic, food scraps and general refuse. These materials will be transported to a licensed / approved landfill (such as the existing Dome facility) for management in accordance with the approval for the individual facility.

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 temporarily stored in sealed containers in lined, bermed areas (or other means of secondary containment). Used glycol, lubricants and other similar materials will be stored in tanks with secondary containment. All hazardous wastes will be transported to appropriate waste management facilities off site in accordance with regulatory requirements. Contaminated materials, associated with spills, will be excavated and handled in accordance with best management practices and regulatory requirements. Explosive wastes will be destroyed according to an approved methodology by the explosives contractor or otherwise-approved personnel.

## **8.0 Federal Involvement and Potential Changes Related to Federal Legislation**

There is no proposed or anticipated Federal financial support associated with the Century Gold Project development, operation, or reclamation and closure, and no Federal land is required or proposed to be used to carry out the Century Gold Project. The closest Federal, non-Reserve lands are listed in Table S-3. No environmental changes to Federal lands, or lands outside of Ontario (other Provinces or the United States) are predicted to occur as a result of the Century Gold Project, due to the distance of the Project from other jurisdictions.

A variety of fish species and fish habitat are present within the local watercourses and waterbodies, within and downstream of the Century Gold Project. Anticipated direct and indirect effects of the Project on fish and fish habitat are as follows:

- Two watercourse diversions are proposed to be able to direct natural drainage from the surrounding area around the Century Gold Project footprint. In-water work will be required to establish the diversions which will result in a temporary direct effect.
- Capture and management of site runoff from the Century Gold Project operational area for environmental protection purposes, will alter the local flow regime which will result in direct and indirect effects on fish and fish habitat.
- A portion of the mineral wastes associated with the Century Gold Project is expected to overprint waters frequented by fish, pending regulatory approvals. This will result in direct fish habitat loss for which compensation is anticipated to be required.

Further detail is provided in Table S-6.

It is anticipated that the Century Gold Project will require Authorization(s) for Serious Harm to Fish, pursuant to Section 35(2)(b) of the *Fisheries Act* related to the realignment of the South Porcupine River, and alterations to other tributaries and ponds not associated with mine waste deposition. In addition, it is expected that covering of waters frequented by fish by tailings and waste rock storage areas (or other deleterious material) may be necessary and will require Amendment(s) to Schedule 2 of the Metal and Diamond Mining Effluent Regulations, pursuant to the *Fisheries Act*.

A direct effect on migratory birds is anticipated from habitat removal associated with development of the Century Gold Project. While the existing Dome Mine operations area has already been disturbed, the Century Gold Project footprint will require additional lands that are currently undisturbed terrestrial habitat. 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, 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.

**Table S-6: Preliminary Summary of Potential Changes to Waterbodies / Watercourses**

Water Body <sup>1</sup>	Potential Change
South Porcupine River (upstream of Project footprint)	<ul style="list-style-type: none"> <li>Headwater areas diverted around Century Gold Project footprint, remaining in same watershed (Porcupine River)</li> </ul>
South Porcupine River (within Project footprint)	<ul style="list-style-type: none"> <li>Covered (overprinted) by Century Gold Project footprint</li> </ul>
South Porcupine River (downstream of Project footprint)	<ul style="list-style-type: none"> <li>Hydrology affected (flow, water level) downstream of Century Gold Project footprint</li> <li>Water quality potentially affected</li> </ul>
Edwards Creek	<ul style="list-style-type: none"> <li>Flow enhanced by South Diversion</li> <li>North Diversion proposed at a conceptual level to bypass excess flow</li> </ul>
Simpson Lake	<ul style="list-style-type: none"> <li>Lake outlet changed; outflow re-routed into Edwards Lake</li> <li>May require removal of a portion of the south basin to ensure gravity flow</li> <li>Lake hydrology affected (water levels, residence time, circulation)</li> </ul>
Edwards Lake	<ul style="list-style-type: none"> <li>Lake hydrology affected (water level, residence time, circulation) due to South Diversion</li> </ul>
Other Unnamed Ponds / Tributaries	<ul style="list-style-type: none"> <li>Overprinted (within Century Gold Project footprint)</li> <li>Hydrology may be affected (water level) if outside but close to Century Gold Project footprint due to capture of part of the headwater area (such as by the TMA West Cell)</li> </ul>
Porcupine River (upstream of South Porcupine River inflow)	<ul style="list-style-type: none"> <li>Hydrology may be affected (flow, water level)</li> <li>Water quality potentially affected</li> </ul>
Porcupine River (downstream of South Porcupine River inflow)	<ul style="list-style-type: none"> <li>Hydrology may be affected (flow, water level)</li> <li>Water quality potentially affected</li> </ul>
Porcupine Lake	<ul style="list-style-type: none"> <li>Negligible effect on lake water levels</li> <li>Negligible effect on lake water quality</li> </ul>
Porcupine River (downstream of Porcupine Lake)	<ul style="list-style-type: none"> <li>No effect on river flow</li> <li>No effect on river quality</li> </ul>

Note: <sup>1</sup> Local names or "Unnamed" has been used in the absence of official names for local watercourse / waterbodies.

Explosives transport, storage and use are anticipated will remain under the care and control of the explosive contractor over the construction, operation and closure phases of the Century Gold Project. The explosives contractor will obtain the necessary approval(s) under the *Explosives Act* directly for any explosives-related requirements for the Century Gold Project.

## 9.0 Potential Effects on Indigenous Peoples

The majority of the potential environmental effects related to the Century Gold Project will be confined to the site itself (and on brownfield lands) and the immediate local environment. Due to the considerable distance from any First Nation Reserve lands (the closest community located approximately 50 km away), Goldcorp is not anticipating any direct or indirect environmental effect on Reserve lands. Based on a preliminary assessments and current knowledge of the area, the Project is expected to be located within the area of traditional land use of the Mattagami First Nation, Wahgoshig First Nation, Matachewan First Nation and Flying Post First Nation. The Project is located within the Métis Nation of Ontario Region 3 harvesting areas. Ongoing discussions with the various Indigenous communities will outline their historical or current use of the Project area.

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Goldcorp has confirmed with the Mattagami First Nation, Wahgoshig First Nation, Matachewan First Nation and Flying Post First Nation that there is limited documented traditional knowledge and traditional land use within and surrounding the Century Gold Project area. A traditional knowledge study has been initiated for the Century Gold Project, to determine which, if any, traditional territory may be impacted by the Project. There are no known cultural sites, including archaeological sites that will be affected by the Century Gold Project. Consultation with local community members and Indigenous peoples regarding important historical and current land use will remain ongoing.

Based on available information, preliminary Project interactions with the Indigenous Peoples have been identified in Tables S-4 and S-5. The Project may have a potential effect to non-reserve First Nation lands and use of lands for traditional purposes due to construction and mining operations, and the increased footprint of the Project. Other effects may result from: air emissions, sound emissions; and effluent discharges (resulting from the processing facility, general site runoff, waste rock storage areas and TMA). These may have an indirect impact on local biodiversity including aquatics, wildlife and vegetation, and water flows and quality which may affect the ability for hunting, trapping, fishing, and gathering subsistence and medicinal plants. In order to minimize these effects, the Project supports the ability for Indigenous peoples to access portions of Goldcorp held lands outside of the Century Gold Project footprint. This is to allow for the gathering of berries or other vegetation for medicinal or spiritual purposes, as well as access for cultural and ceremonial purposes, provided it can be done safely. Baseline studies are being conducted to evaluate the current conditions and associated impacts from the Project. Subsequently, measures will be developed and implemented to mitigate any risks identified pending the results from the environmental baseline and traditional knowledge studies.

Early discussions will also be held with the communities to evaluate the proposed final land use and reclamation objectives for the site while taking into consideration Indigenous knowledge.

Overall, the Project is not expected to have a negative effect directly or indirectly on Indigenous peoples related to such aspects as: fisheries, outfitting, guiding, cultural tourism or other Indigenous businesses. Ongoing engagement will inform the inclusion of these interactions within the EA process. Goldcorp will continue to engage Indigenous communities to employ local, qualified workers to the greatest extent practical through all stages of the construction, operation and closure of the mine. Employment and contracting opportunities have been and will continue to be discussed with local Indigenous communities to enhance community participation in employment and contracting opportunities.

The *Canadian Environmental Assessment Act, 2012* requires that the EA 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. As part of the EA, a review will be completed to determine if there are other physical activities that will overlap with the residual environmental effects of the Century Gold Project.

## **10.0 Proponent Engagement with Indigenous Communities**

Goldcorp believes in building partnerships through active engagement, and making positive and long-lasting contributions to the communities where it operates. While consultation and engagement on the Century Gold Project is in the early stage, Goldcorp believe that having proactive engagement with local Indigenous communities is necessary for the success of the Project. Under the existing RDA with the Flying Post First Nation, Matachewan First Nation, Mattagami First Nation and Wahgoshig First Nation (collectively the RDA Communities) Goldcorp has an established framework for existing and future mining projects in the Timmins area. In accordance with the Agreement, Goldcorp will engage with these communities on all new mining developments in the local Timmins area and these communities are considered potentially affected and interested Indigenous communities for the Century Gold Project.

Goldcorp has not as yet received direction from either the Federal Canadian Environmental Assessment Agency (CEA Agency) or the Provincial Ministry of Energy, Northern Development and Mines to date regarding Indigenous communities to be consulted and/or notified with respect to the Century Gold Project. The determination of potentially affected or interested Indigenous communities to be engaged on the Century Gold Project presented herein should be considered preliminary, pending further Indigenous communications and additional regulatory guidance.

Goldcorp recognizes that the Métis Nation of Ontario and Taykwa Tagamou Nation may also have an interest in the Century Gold Project. Goldcorp has also initiated discussions with both communities to determine the level of interest in the Century Gold Project. Other Indigenous communities may be identified in the future as having an interest in the Century Gold Project through engagement and regulatory discussions.

The focus of the early consultation and engagement efforts to date has been to introduce the Century Gold Project to the RDA Communities through the Consultation Committee and Collaboration Committee; and to indicate that there would be future consultation opportunities as the conceptual project design progresses. As consultation and engagement is in the early stage for the Century Gold Project limited comments have been expressed to Goldcorp to date as summarized in Table S-7.

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**Table S-7: Comments from Indigenous Communities and Goldcorp Responses**

<b>Key Comment and/or Concern Expressed</b>	<b>Goldcorp Response</b>
February 7, 2018: Mattagami First Nation Community Open House – Introduction to Century Gold Project.	
Is arsenopyrite in the rock? Is there a potential for leaching arsenic into the water?	Goldcorp explained that there is no arsenopyrite found at the Dome Mine Site. Ongoing geochemistry testing will confirm rock type, mineralogy and chemical composition. A Waste Rock Management Plan has been developed for current operations and will be amended as part of the Project.
Is there the option for a mine site tour for those community members interested?	Goldcorp is open to planning a community site tour. Sign-up sheets were distributed to the communities along with the individual's contact information.
Goldcorp should look at what will be released into the air; not just soil and water.	Goldcorp explained that there is currently a monitoring network of air quality, noise and vibration stations as part of the baseline Studies along with current Dome Mine operations. This will be used to describe existing conditions. Air emissions will be part of the environmental impact assessment. Goldcorp will provide this information with the community as part of the EA process.
February 15, 2018: Flying Post First Nation Community Open House – Introduction to Century Gold Project	
Will there be employment opportunities for students and youth? The challenge with working in Timmins is living arrangements; it is a long way from Nipigon.	Goldcorp encourages students to submit resumes and apply for positions for the current operations. This experience could lead to fulltime employment and skills that could be used in other opportunities, if members of the community apply, in particular students.
February 22, 2018: Matachewan First Nation Community Open House – Introduction to Century Gold Project	
Is this just going to be an open pit mine? No underground mining?	Goldcorp confirmed that at this point in time the Project is expected to be the redevelopment of the existing Dome Open Pit.
Is the mill going to be in the same place? Will there be changes to how the mill will operate? Is there any talk of making the mill larger?	Goldcorp explained that the mill will be replaced with a larger facility. At this point in time, Goldcorp is identifying the preferred location for the new processing facility.  Goldcorp explained that the new mill will be similar in nature, but will be more efficient than the existing mill.  Goldcorp explained that the mill capacity will increase from approximately 12,000 tpd to approximately 50,000 tpd production. However, the mill capacity may change as the project progresses.
How big is the new tailings facility going to be?	Goldcorp explained that it is anticipated to build onto the existing tailings with an expansion cell. The dimension of the area is not currently finalized.
How often do you anticipate being in the community?	Goldcorp explained that pre-set dates have not been established. As new information is provided Goldcorp will return to the communities for comments and feedback. Once the Project Description is submitted, Goldcorp will be actively involved in community discussions. Goldcorp will continue to meet with the RDA Consultation Committee on a monthly basis separate from the community meetings to update on all of PGM operations.
April 19, 2018 Metis Nation of Ontario – Timmins Office. Introduction and Century Gold Project Overview	
Why is a Federal EA needed for Century?	Goldcorp explained that due to the size of the proposed processing facility, this is likely to be determined as a designated project which triggers a Federal EA.

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Key Comment and/or Concern Expressed	Goldcorp Response
May 23, 2018: RDA draft Project Description Submission – Preliminary Comments from RDA Consultation Committee via the RDA Coordinator	
The Project Description mentions the United Nations Women's Empowerment Principles and other national and international sustainability commitments, does Goldcorp align with the United Nations Declaration on the Rights of Indigenous Peoples?	<p>Goldcorp remains committed to ensuring open, respectful dialogue as it is at the heart of everything that we do. As such, Goldcorp aligns with the United Nations Declaration on the Rights of Indigenous Peoples.</p> <p>To ensure that we are aligned, Goldcorp maintains a membership with the International Council of Mining and Metals (ICMM) and adheres to the ICMM Position Statement on Mining and Indigenous Peoples. In 2015, Goldcorp updated a Human Rights Policy in order to address an approach to Free, Prior &amp; Informed Consent (FPIC). Additionally, Goldcorp implemented the Sustainability Excellence Management Systems which includes a Human Rights Standard on FPIC for all operations and projects.</p>
In reference to Baseline Studies, why was no Indigenous Technical Assistant hired to support the RDA communities?	Goldcorp remains committed to continuously improving relations with our Indigenous partners. An Indigenous Technical Assistant position is being considered for the Feasibility Stage of the Century Gold Project. This position would look to support the ongoing environmental baseline studies and consultation process.
Regarding baseline studies, what work is being done to identify culturally significant species (aquatic, bird, mammal, amphibian, reptile and vegetation) and is there an opportunity for indigenous community input?	Through Goldcorp's partnership with the RDA communities and input from the RDA Coordinator, a Traditional Knowledge and Traditional Land Use Study is being initiated. Outside of this study, Goldcorp remains committed to keeping the channels of communication open. While community feedback is welcome any time through the community RDA Consultation Committee representative and RDA Coordinator, Goldcorp will ensure there is plenty of opportunities for indigenous input. Additional community open houses, mine site tours and workshops will continue to occur as the Century Gold Project progresses.
Is Goldcorp able to provide baseline environmental information collected on Simpson Lake?	While baseline environmental studies are ongoing, Goldcorp will ensure that the results of all baseline studies, including on Simpson Lake, are provided to the RDA Communities. Open houses, workshops and communication material have been planned to ensure the opportunity for indigenous community feedback.
The Diversion channel will require a values assessment (under the Traditional Knowledge Study) along the proposed corridor.	Goldcorp confirms that the proposed diversion channel is included within the Traditional Knowledge Study area.
The proposed Diversion channel is being run through two tailings management areas. What are the potential impacts on water quality with this diversion?	As part of pre-feasibility, ongoing baseline and engineering studies are currently in progress for the proposed diversion channel. Goldcorp is committed to keeping the doors of communication open and will present the results of these studies as they are completed.
The proposed Diversion channel is being run through two tailings management areas. What potential impacts on tailings stability could happen with this diversion?	As part of the pre-feasibility, ongoing baseline and engineering studies are currently in progress for the proposed diversion channel. Goldcorp is committed to keeping the doors of communication open and will present the results of these studies as they are completed.

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Key Comment and/or Concern Expressed	Goldcorp Response
With the mention of cogeneration as an option to provide power, will Goldcorp be doing an Air Quality Assessment?	<p>As a part of the pre-feasibility study, all options for the Century Gold Project are reviewed and assessed, including cogeneration. Although no decision has been made at this point in time regarding the construction of this facility, air quality is currently being assessed as part of the 2018 Environmental Baseline Study program.</p> <p>Goldcorp will build on the existing network of air quality testing equipment to incorporate the proposed Century footprint. For more information on what the existing air quality program tests for please refer to the live monitoring system located around the Hollinger Open Pit.</p> <p><a href="https://sentinel.bksv.com/goldcorp/porcupine#Live Monitoring">https://sentinel.bksv.com/goldcorp/porcupine#Live Monitoring</a></p>
RDA identified the opportunity to create a training/work program for community members to support RDA/Century Gold Project. Example provided was the creation of the Indigenous Technical Assistant role.	Goldcorp remains committed to continuously improving relations with our current RDA communities. While the opportunity did not present itself during the pre-feasibility phase, Goldcorp is currently working to include an Indigenous Technical Assistant role beginning in the feasibility stage of the Project.

Note: Accurate to June 15, 2018.

## 11.0 Potentially Affected and Interested Stakeholders

Goldcorp is committed to actively communicating information regarding the Century Gold Project and engaging with the government agencies, local stakeholders, and other interested parties. These activities were initiated during 2017 and are anticipated to expand considerably now that Project design concepts have progressed sufficiently to support public consultation efforts. The primary stakeholders involved in the Century Gold Project to date have been Federal, Provincial and Municipal government agency representatives and similar.

Key government agencies that have been engaged to date regarding environmental aspects, and introduced to the Century Gold Project through discussions, meetings and/or site tours, are listed below:

- **Federal:** CEA Agency;
- **Provincial:** Ministry of Energy, Northern Development and Mines (Ministry of Northern Development and Mines), Ministry of Natural Resources and Forestry, Ministry of Environment, Conservation and Parks (Ministry of the Environment and Climate Change), Ministry of Economic Development and Growth (Ministry of Economic Development, Job Creation and Trade), and Mattagami River Conservation Authority;

- **Municipal:** City of Timmins; and
- **Other Stakeholders:** Hydro One and Union Gas.

Goldcorp anticipates that the government stakeholder list will evolve and expand through the various project stages to reflect varying levels of interest and involvement over time. Based on the location of the project and feedback to date, Goldcorp does not intend to consult or engage with stakeholders outside of Ontario. The following additional potential stakeholders have been identified to date: local residential property owners; local land and resource users; Porcupine Ski Runners; Timmins Snowmobile Club; Timmins Golden Hawks (model aeronautics club); Timmins Fur Council; Ducks Unlimited; General public; and Environmental non-government organizations (such as Porcupine Watchful Eye).

The consultation program that has been completed to date was designed primarily to introduce various government stakeholders to the Century Gold Project. Table S-8 outlines the key stakeholder comments along with Goldcorp responses to date.

## **12.0 Regulatory Requirements**

### **Federal Environmental Assessment and Approvals**

The proposed Century Gold Project as currently understood may require completion of a Federal Environmental Assessment, pursuant to the CEAA, 2012. The Federal Regulation Designating Physical Activities (SOR/2012-147) 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 involve completion of a Federal EA including submission of an Environmental Impact Statement (EIS). The following physical activities are part of the Century Gold Project:

16. *The construction, operation, decommissioning and abandonment of a new:*
  - (b) metal mill with an ore input capacity of 4,000 t/day or more.
17. *The expansion of an existing:*
  - (c) rare earth element mine or gold mine, other than a placer mine, that would result in an increase in the area of mine operations of 50% or more and a total ore production capacity of 600 t/day or more.

The mine operations area for the Dome Mine is approximately 1,125 ha according to the filed Provincial Closure Plan (Golder 2016). Based on the preliminary design information, the operations area for the Century Gold Project is approximately 2,160 ha, and Section 17 may apply.

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**Table S-8: Comments from Non-Indigenous Stakeholders and Goldcorp Responses**

Date / Topic	Key Comment and/or Concern Expressed	Goldcorp Response
September 28, 2017: Provincial Multi-Agency Introduction to Century Gold Project	Are you looking to combine both closure plans (Dome and Dome Century)?	Goldcorp explained that at this point in time, they are being managed separately. However, further into the process this decision is subject to change.
	Are you planning on backfilling the Dome underground?	Goldcorp explained that the Dome underground workings will be allowed to fill with water after operations cease in December 2017.
October 24, 2017: Provincial Multi-Agency Fall Proposed Century Footprint Tour	Is there going to be an opportunity for those who are working directly with the Century Gold Project to visit the site (tailings specifically) in greater detail?	Goldcorp indicated that there will be opportunity for small groups to visit the site at a later point in time. The suggestion was made for a Spring 2018 tour once the base case and single option was confirmed.
December 9, 2017: CEA Agency Meeting – Century Gold Project Update	Commented that Goldcorp will need to clarify within the Project Description what is the Dome operations and what is proposed Century Gold Project.	Goldcorp explained that this has been provided in the current draft Project Description. The draft Project Description is prepared, however Goldcorp has determined that it will be held pending the land acquisition process.
	What Environmental Assessment has the Province raised? What type of Class EA?	Goldcorp explained that an Individual EA is not triggered by the current proposed components and activities, but a Class EA is anticipated for provincial applications, ECA and CoAs amendments. The construction of onsite roads and electrical corridors are not long enough to trigger a Provincial EA. Class EAs will be aligned with <i>Canadian Environmental Assessment Act, 2012</i> (CEAA 2012) impact assessment, anticipated Class C.
	Requested clarification on what the membership and roles of the collaboration and consultation committees are.	The RDA Collaboration Committee membership consists of the leadership of the four RDA signatory communities and two Goldcorp representatives. This committee oversees the implementation of articles under the RDA.  The Consultation Committee membership consists of representatives of the four RDA signatory communities that the leadership has appointed and two representatives of Goldcorp. This committee meets monthly and is focused on consultation requirements outlined in the RDA.
	Is traditional knowledge (TK) included within the PD?	Goldcorp explained that no TK studies are currently available but the site is currently reaching out to the communities for their interest in providing TK work. Goldcorp noted that the Dome Mine has been operating for over 100 years and TK studies will not be similar to other “greenfield” projects and will be unique to this project and area.
February 28, 2018 Century Gold Project Follow-Up Call	Ministry of Environment, Conservation and Parks requested clarification on the anticipated class EA level.	Goldcorp anticipates that a level C would be sufficient. Project will also be assessed under CEAA, 2012.

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Date / Topic	Key Comment and/or Concern Expressed	Goldcorp Response
May 24, 2018 Mattagami River Conservation Authority - Overview of Century Gold Project	Mattagami River Conservation Authority asked if Gold Mine Road would be realigned with the Century Gold Project.	Goldcorp indicated that the current design criteria and project plans are based on maintaining Gold Mine Road.
	Has the Century Gold Project considered the impacts to the South Porcupine residents?	Goldcorp indicated that the site was currently expanding the existing monitoring network to determine existing conditions.

Note: Accurate to June 15, 2018; does not include comments on Draft Project Description.  
For ease of reference current names for Provincial Ministries utilized.

Table S-9 summarizes the Federal environmental approvals expected to be required to construct, operate and close the Century Gold Project.

**Table S-9: Federal Environmental Approvals Expected to be Required**

Approval / Regulatory Instrument	Agency	Description
Authorization(s) for Harmful Alteration, Disruption or Destruction of Fish Habitat <i>Fisheries Act</i>	Fisheries and Oceans Canada	An authorization under Paragraph 35(2)(b) of the Federal <i>Fisheries Act</i> is anticipated to be required as a result of direct and indirect effects on fish habitat deemed to constitute Serious Harm to Fish
Listing on Schedule 2 Metal and Diamond Mining Effluent Regulations, <i>Fisheries Act</i>	Environment and Climate Change Canada	The covering over (overprinting) of waters frequented by fish by tailings and waste rock piles (or other potentially other deleterious material) is expected to require a listing of waterbodies on Schedule 2 of the Metal and Diamond Mining Effluent Regulations.

### Provincial Environmental Assessment and Approvals

The Century Gold Project is located within the Province of Ontario and must meet the regulatory requirements of the Provincial governments. The following Provincial EA process could potentially apply to the Century Gold Project:

- Ontario Ministry of Natural Resources and Forestry Class EA for Resource Stewardship and Facility Development Projects to support issuance of environmental approvals under its regulatory review including in water work and watercourse diversions; and
- In addition, a Class EA for Minor Transmission Line Facilities may be required to support the environmental approvals for the construction of a short transmission line connection to the regional hydroelectric grid at the Timmins Transformer Station.

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Development of the Century Gold Project is also anticipated to require a number of new Provincial environmental approvals or potentially, amendments to existing Dome Mine approvals as summarized in Table S-10, subject to ongoing government consultation and project engineering and environmental studies. There are no known environmental regulatory requirements from other jurisdictions.

**Table S-10: Provincial Environmental Approvals Expected to be Required**

<b>Approval / Regulatory Instrument</b>	<b>Description</b>
Closure Plan <i>Mining Act</i> (Ministry of Energy, Northern Development and Mines)	A Closure Plan will be required for mine development, production and eventual decommissioning of the Century Gold Project including dams considered offline structures by Provincial Ministries
Permit to Take Water <i>Ontario Water Resources Act</i> (Ministry of Environment, Conservation and Parks)	Approval for water takings of greater than 50,000 litres per day for mine dewatering, by-pass pumping associated with in-water work and construction related dewatering (such as for foundation excavations)
Permit to Take Water <i>Ontario Water Resources Act</i> (Ministry of Environment, Conservation and Parks)	Approval for a water taking of greater than 50,000 litres per day from Porcupine Lake or other supply (initial processing facility start-up and/or emergency water supply)
Environmental Compliance Approval – Industrial Sewage Works <i>Environmental Protection Act</i> (Ministry of Environment, Conservation and Parks)	Approval for industrial sewage works (tailings management area and associated pond), and potentially for other local settling ponds / similar structures
Environmental Compliance Approval – Air and Noise <i>Environmental Protection Act</i> (Ministry of Environment, Conservation and Parks)	Approval for air and noise emissions from new processing facility and related facilities
Work Permit <i>Lakes and Rivers Improvement Act</i> (Ministry of Natural Resources and Forestry)	Approval for online work such as dams and culverts below the high water mark of local watercourses, and construction of watercourse diversions
Forest Resource Licence <i>Crown Forest Sustainability Act</i> (Ministry of Natural Resources and Forestry)	Approval for cutting / clearing of Crown merchantable timber (if any)
Work Permit <i>Conservation Authorities Act</i> (Ministry of Natural Resources and Forestry)	Approval for work / construction within defined Regulation Limits under O.Reg. 165/06 (river / stream valleys and lake shorelines)

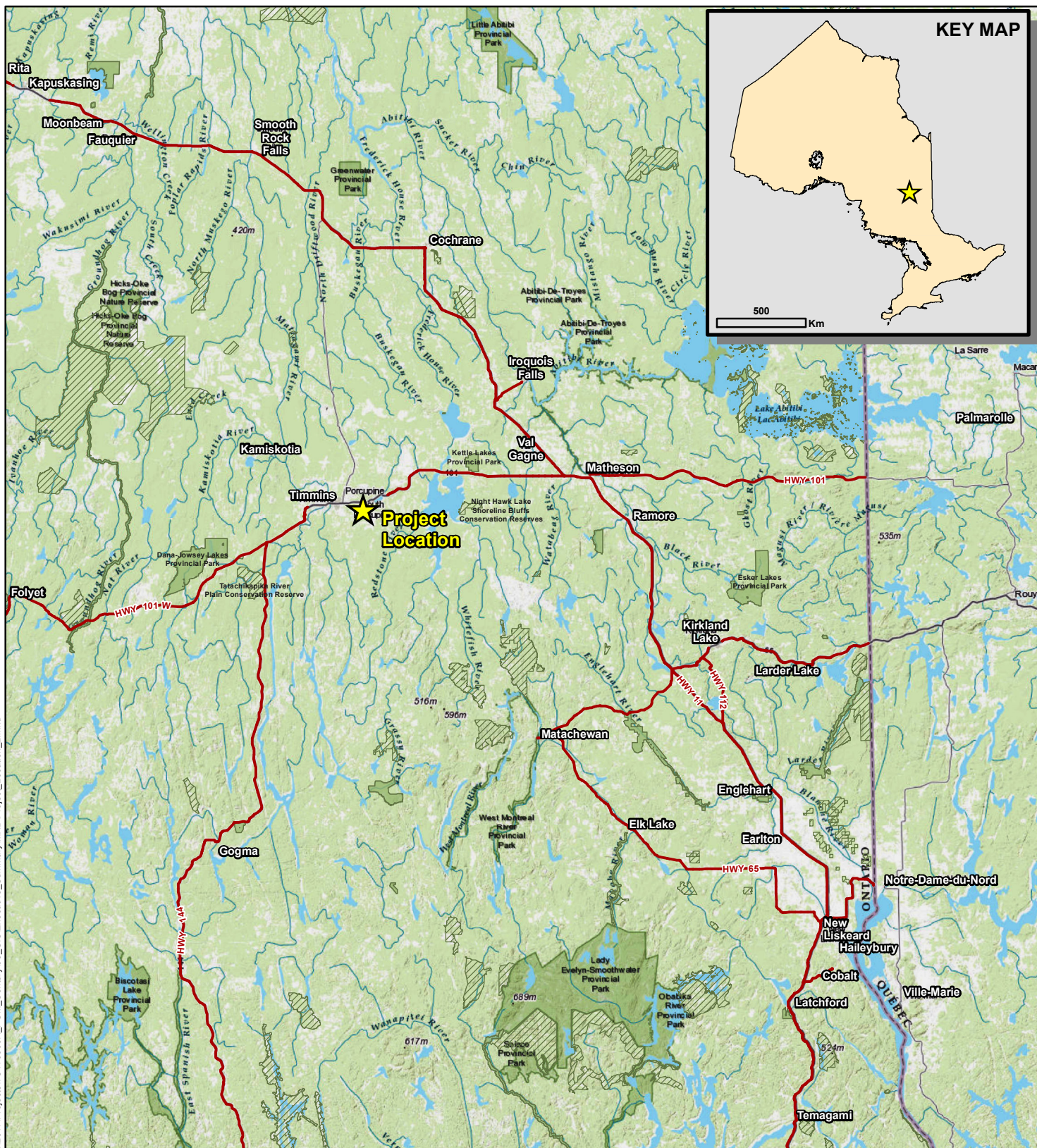
### 13.0 Closing









Goldcorp is dedicated to responsible gold mining practices balanced to promote long-term shareholder value, and the health and well-being of employees and host communities. The Century Gold Project is proposed to extend the life of the PGM operations in the Timmins area, while operating in a responsible manner with neighbours, local communities and the environment. Goldcorp is committed to consulting and engaging with local and regional regulators, stakeholders and Indigenous communities as part of its ongoing PGM operations in Timmins. Goldcorp intends to build on these relationships for the Century Gold Project redevelopment.

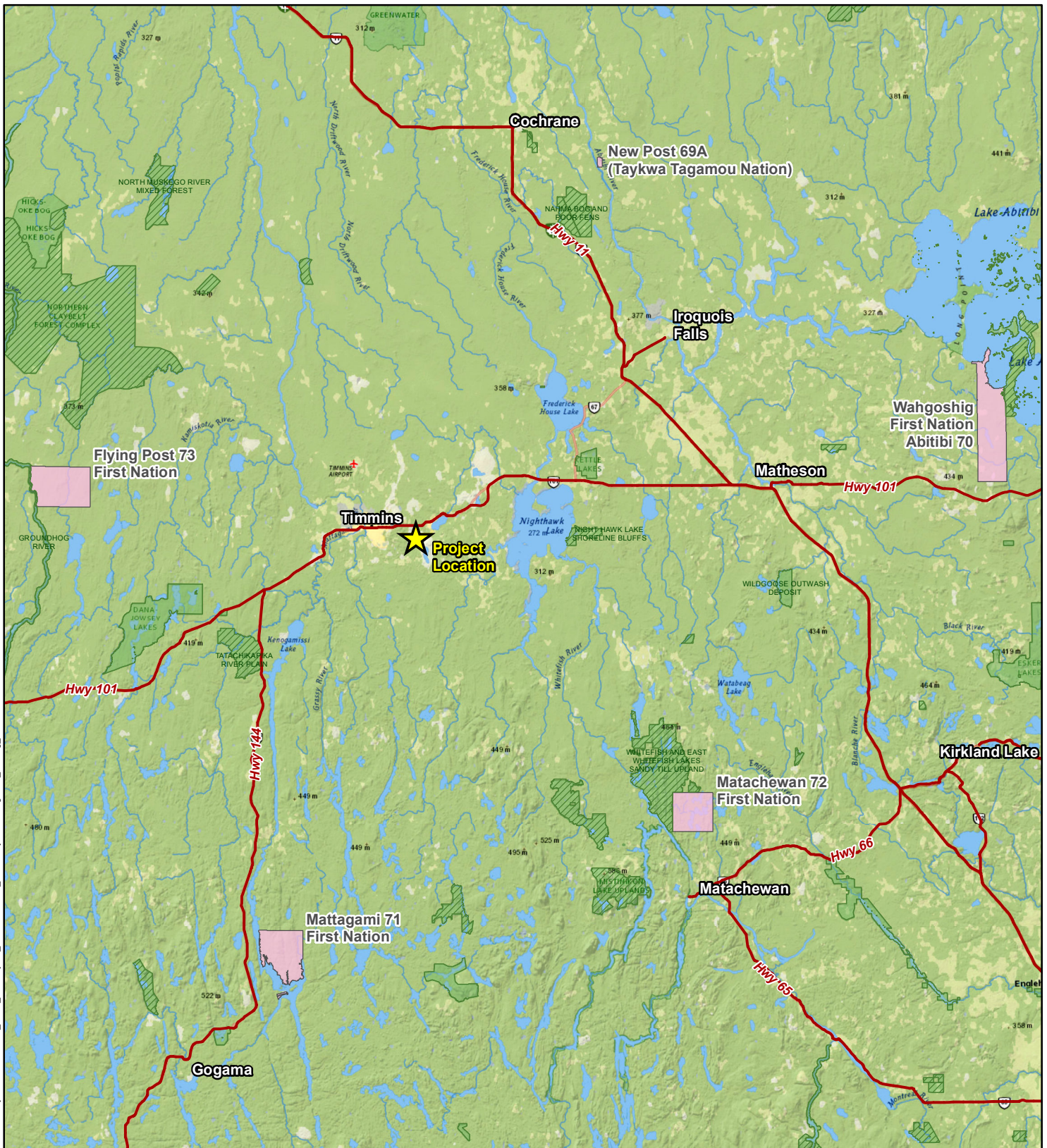
**CENTURY GOLD PROJECT**

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**FIGURES**



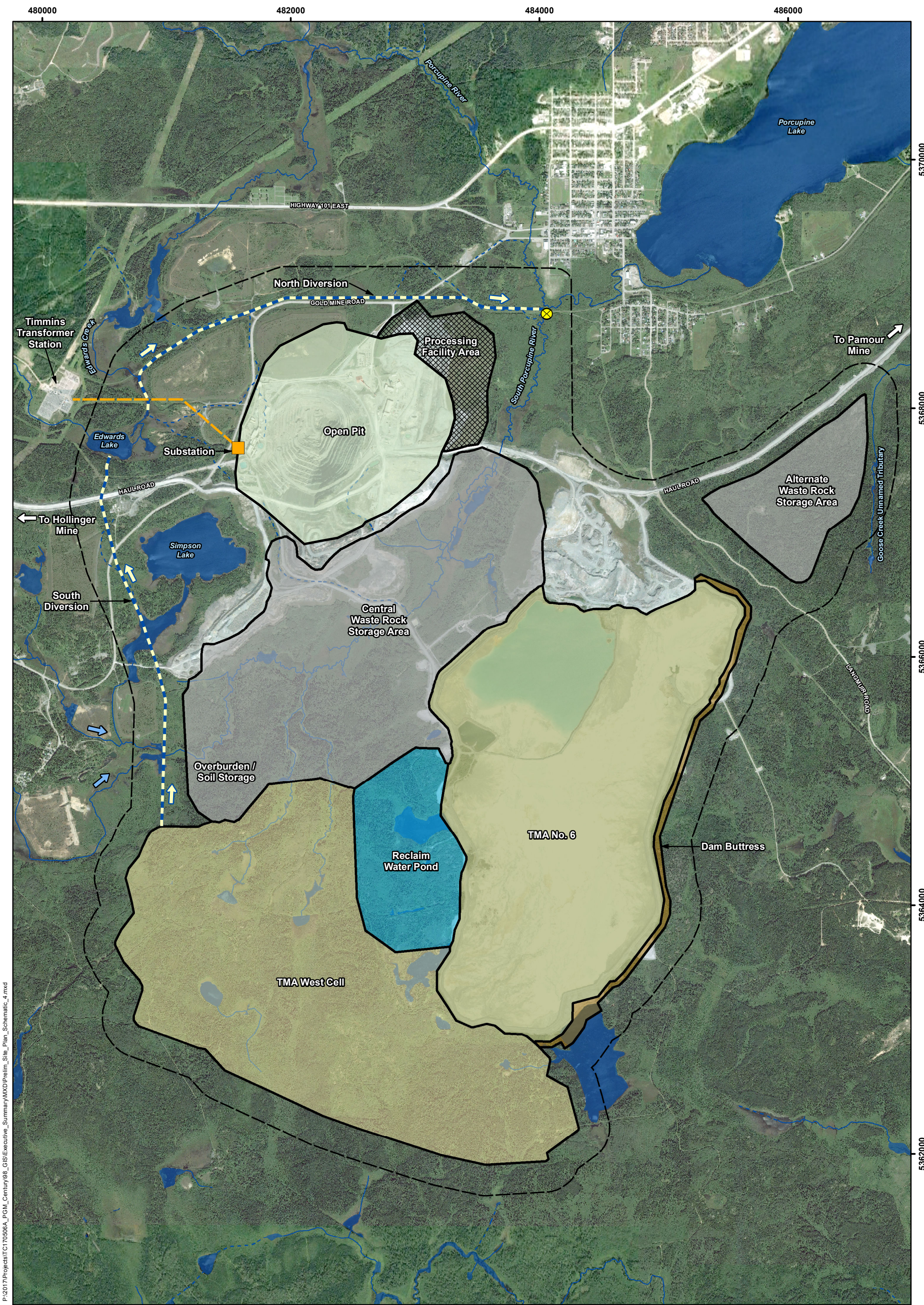
<b>LEGEND</b>		<b>NOTES:</b> <ul style="list-style-type: none"><li>- Highway information extracted from National Road Network, Geogratis.ca</li><li>- Background topographic map information extracted from ESRI Base Map Services</li><li>- Additional park information and conservation reserve information extracted from Land Information Ontario, MNRF</li></ul>		  <p>PORCUPINE GOLD MINES</p>	
 <b>Project Location</b>		 <b>Regional Highways</b>		<b>CENTURY GOLD PROJECT</b>	
 <b>Conservation Reserve Area</b>					
 <b>Provincial Park Area</b>					
		<p>Datum: NAD83 Projection: UTM Zone 17N</p> 		<b>Project Location</b>	
				<b>PROJECT N<sup>o</sup>: TC170506A</b>	
				<b>FIGURE: S-1</b>	
				<b>SCALE: 1:1,350,000</b>	
				<b>DATE: July 2018</b>	



<b>LEGEND</b> Project Location Regional Highways First Nation Conservation Reserve Area Provincial Park Area	<b>NOTES:</b> - Highway information extracted from National Road Network, Geogratis.ca - Background topographic map information extracted from ESRI Base Map Services - Additional park information and conservation reserve information extracted from Land Information Ontario, MNRF	PORCUPINE GOLD MINES	
		<b>CENTURY GOLD PROJECT</b>  <b>Regional Setting</b>  PROJECT N°: TC170506A <b>FIGURE: S-2</b> SCALE: 1:860,000    DATE: July 2018	

Datum: NAD83  
Projection: UTM Zone 17N





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**LEGEND**  
Century Gold Project Proposed Facilities

Open Pit Expansion

Processing Facility Area

Dam Buttress

Reclaim Water Pond

Tailings Management Area

Waste Rock Storage Area

Proposed Watercourse Diversion Routes (Conceptual)

Substation

Potential Effluent Discharge Location

Proposed Transmission Line

Approximate Century Gold Project Area

NOTES:  
- Aerial image extracted from Google Earth, 2016.  
- Watercourses and waterbodies have been edited to reflect conditions in the aerial imagery.

Datum: NAD83  
Projection: UTM Zone 17N

**GOLD CORP**  
PORCUPINE GOLD MINES

**CENTURY GOLD PROJECT**

**Century Gold Project  
Preliminary Site Schematic**

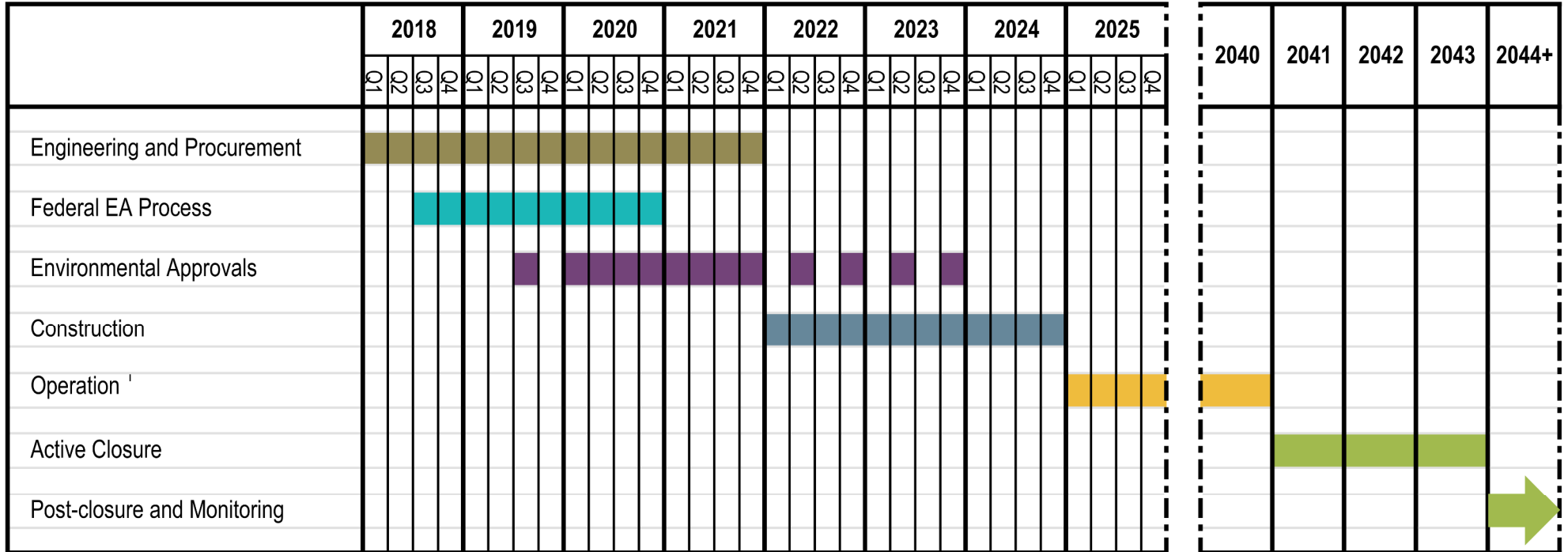
PROJECT N<sup>o</sup>: TC170506A

FIGURE: S-3

SCALE: 1:28,000

DATE: July 2018

00.250.511.522.53Kilometres



Notes: Intermittent line reflects work outside of the main period.

<sup>1</sup> Including Progressive Reclamation as practical



**CENTURY GOLD PROJECT**



**Preliminary Project Schedule**

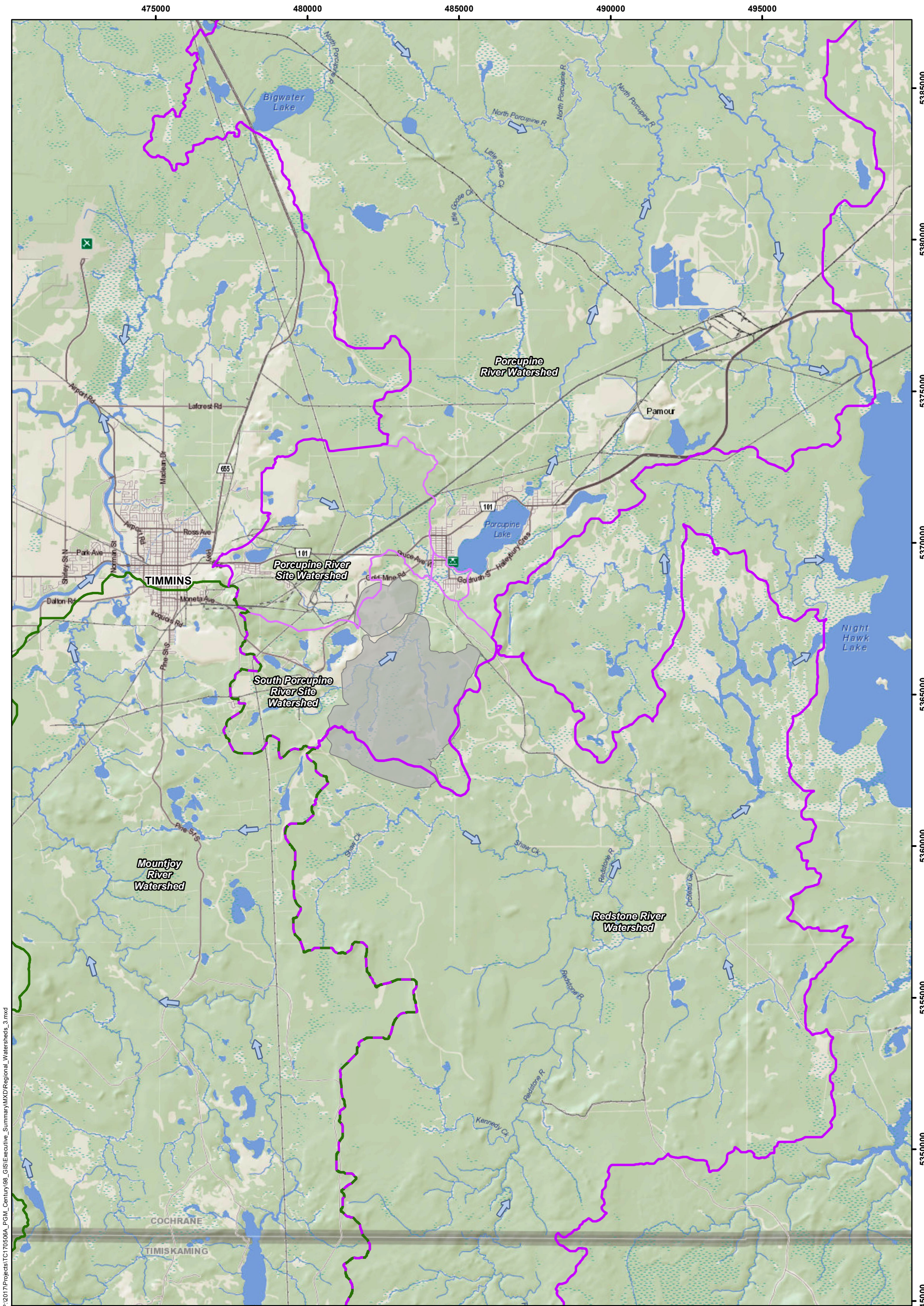
PROJECT N°: TC170506A

FIGURE: S-4

SCALE: NTS

DATE: July 2018

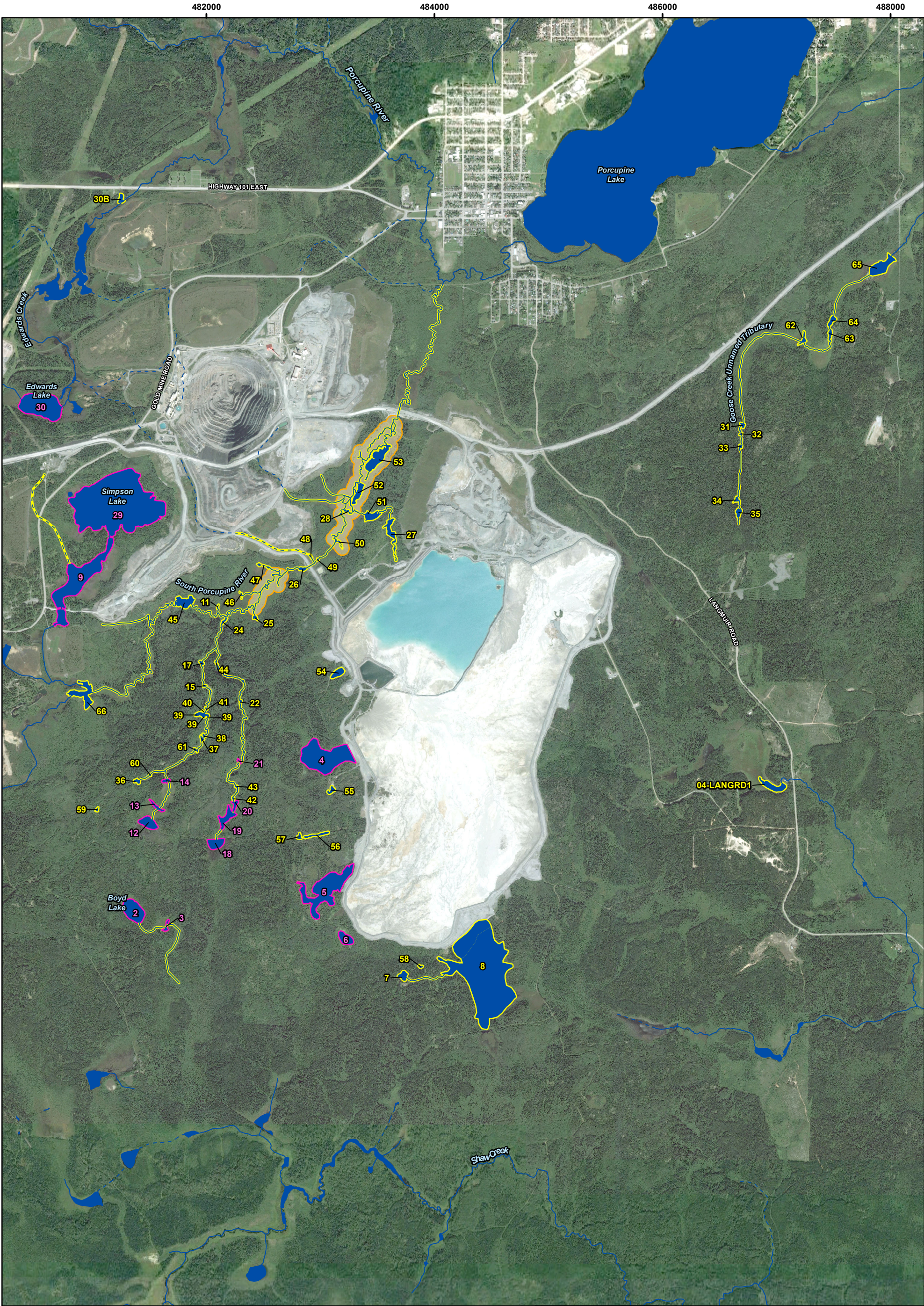
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043		
PGM   DOME OPERATIONS (continuing operation; not part of Century Gold Project)	Timing <sup>4</sup>																											
Operation of Dome Processing Plant, TMA No. 6, Stockpiles and Buildings / Infrastructure <sup>1</sup>	Continued Dome Site Operations																											
Dome Site Progressive Reclamation and Closure of Select Stockpiles and Buildings / Infrastructure		Progressive Reclamation						Active Closure																				
Century Gold Project (new)																												
Summary	Timing <sup>4</sup>																											
Engineering and Procurement																												
Federal EA Process																												
Environmental Approvals																												
Construction																												
Operation (including Progressive Reclamation as practical)																												
Active Closure																												
Major Elements <sup>2</sup>	Timing <sup>4</sup>																											
Redevelopment (including stripping), Operation and Closure of Century Open Pit								Century Open Pit																				
Construction, Operation and Closure of Services to the Century Processing Facility <sup>3</sup>								Century Processing Facility																				
Construction, Operation and Closure of Century Processing Facility and Ancillary Buildings <sup>3</sup>								Century Processing Facility																				
Construction, Operation and Closure of Administrative and Ancillary Buildings <sup>3</sup>								Century Administrative / Ancillary Buildings																				
Construction, Operation and Closure of Maintenance Shops and Warehouses <sup>3</sup>								Century Maintenance Shops and Warehouses																				
Construction, Operation and Closure of Petroleum Product Storage Facilities and Laydown Areas <sup>3</sup>								Century Petroleum Product Storage Facilities and Laydown Areas																				
Construction, Operation and Demolition of Transmission Line, Distribution Lines and Related Facilities <sup>3</sup>								Century Power Supply and Distribution																				
Construction, Operation and Closure of Water Storage Ponds <sup>3</sup>								Century Water Storage Ponds																				
Construction, Operation and Closure of Reclaim Pond <sup>3</sup>								Century Reclaim Pond																				
Construction, Operation and Closure of Additional No. 6 Tailings Management Area Raise for Century Gold Project								Century TMA No. 6 Raise -		To be confirmed																		
Ongoing Construction, Operation / Progressive Reclamation and Closure of Tailings Management Area West Cell <sup>3</sup>								Century TMA West Cell - To be confirmed																				
Construction, Operation and Closure of Seepage and Water Collection Ditch Network <sup>3</sup>								Century Seepage and Water Collection Ditch Network																				
Construction, Operation and Demolition of Century Effluent Treatment Plant <sup>3</sup>																			Century Effluent Treatment Plant		To be confirmed							
Construction and Permanent Operation of Freshwater Diversion (with Offsetting and Compensation)								Century Freshwater Diversion																				
Construction, Operation / Progressive Reclamation and Closure of Central and Alternate Waste Rock Stockpiles								Central and Alternate Waste Rock Stockpiles																				
Relocation (and Potential Reprocessing) of a Portion of East and Preston Waste Rock Stockpiles																												
Relocation (and Potential Reprocessing) of a Portion of Dome T3 Tailings Management Area																												
Construction, Operation and Demolition of Compressed Natural Gas Plant (if developed) <sup>3</sup>								Century Compressed Natural Gas Plant (if developed)																				
Notes: <sup>1</sup> No change to capacity of Dome Processing Plant and infrastructure (no anticipated changes to effluent, or air emissions from ongoing operations). <sup>2</sup> No other facilities are planned for the Century Gold Project. <sup>3</sup> The operation of the Century Process Facility and associated facilities may extend after the Century Open Pit closes, pending availability of ore from other sources. <sup>4</sup> The timing presented is subject to ongoing engineering design / confirmation and regulatory processes.																			 		CENTURY GOLD PROJECT							
																					Preliminary Project Sequencing							
																					PROJECT N°: TC170506A				FIGURE: S-5			
																					SCALE: NTS				DATE: July 2018			



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<b>LEGEND</b> Century Gold Project Flow Direction Regional Watersheds Flowing into Mattagami River Regional Watersheds Flowing into Night Hawk Lake Site Watersheds	Mountjoy River approx. 543 km² Porcupine River approx. 443 km² Redstone River approx. 498 km² Porcupine River approx. 30 km² South Porcupine River approx. 39 km²	<b>NOTES:</b> - Regional watersheds were extracted from Land Information Ontario and modified in areas where LIDAR information was available. - Site watersheds were derived using LIDAR information and OFAT. - Boundaries have not been field confirmed.	
		<div> <b>GOLDCORP</b> PORCUPINE GOLD MINES</div> <div> <b>wood.</b></div>	
		<b>CENTURY GOLD PROJECT</b>  <b>Regional Watercourses and Waterbodies</b>	

Datum: NAD83 Projection: UTM Zone 17N		PROJECT N°: TC170506A	FIGURE: S-6
		SCALE: 1:115,000	DATE: July 2018



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<b>LEGEND</b> Proposed 2018 Sampling Location - Watercourse Proposed 2018 Sampling Location - Waterbody Waterbody Sampled in 2017 Historically Sampled Waterbody (2016 and earlier) Intermittent Watercourse Permanent Watercourse Waterbody	<b>NOTES:</b> - Imagery extracted from Google Earth, 2016. - Watercourse and waterbody information extracted from LIO and modified to match aerial imagery.	 PORCUPINE GOLD MINES	
		<b>CENTURY GOLD PROJECT</b>	
		<b>Aquatic Investigation Areas</b>	
		Datum: NAD83 Projection: UTM Zone 17N	
		PROJECT N°: TC170506A	FIGURE: S-7
		SCALE: 1:31,000	DATE: July 2018