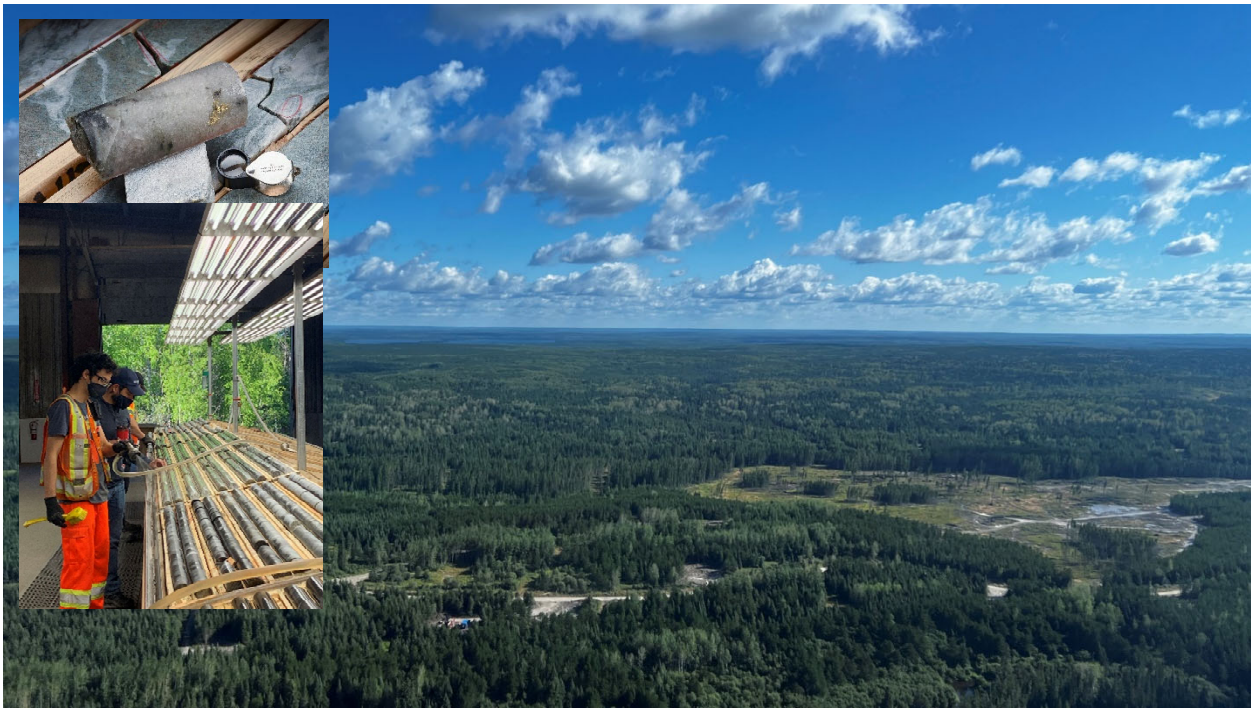
KINROSS GOLD CORPORATION

GREAT BEAR GOLD PROJECT

DETAILED PROJECT DESCRIPTION

PLAIN LANGUAGE SUMMARY

January 2024



GREAT BEAR GOLD PROJECT

DETAILED PROJECT DESCRIPTION
PLAIN LANGUAGE SUMMARY

KINROSS GOLD CORPORATION

PROJECT NO.: OMEMA2303
DATE: JANUARY 2024

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ABBREVIATIONS

AEX program	advanced exploration program
CO_2e	carbon dioxide equivalent
ha	hectare
Kinross	Kinross Gold Corp.
km	kilometre
kV	kilovolt
Project	Great Bear Gold Project
Property	Great Bear Property
m	metre
m^2	square metre
m^3	cubic metre
Mt	million tonnes
MW	megawatts
t	tonne
tpd	tonnes per day

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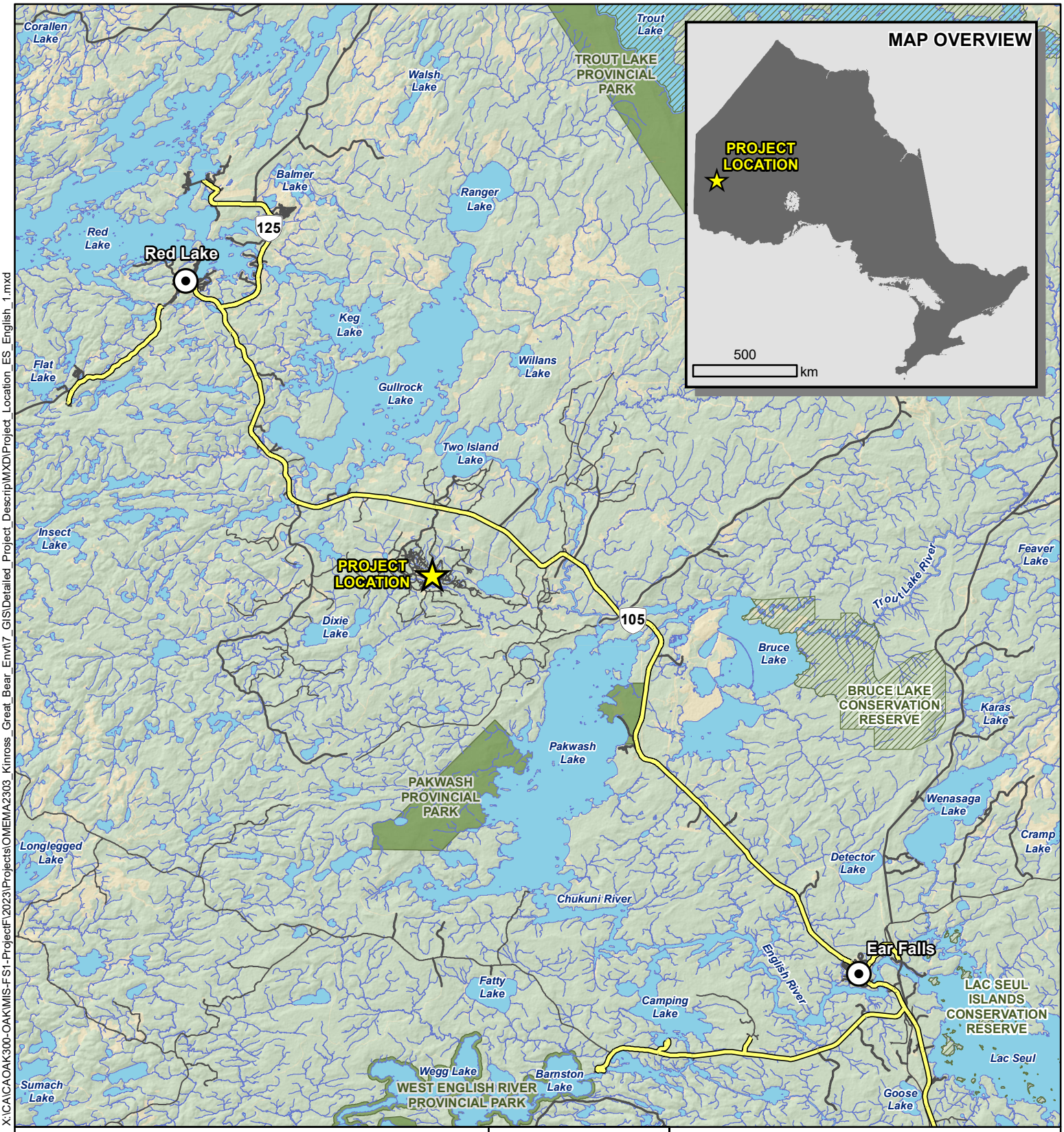
1 INTRODUCTION

This document is a plain language summary of the Detailed Project Description prepared for the Great Bear Gold Project (or Project).

Kinross Gold Corp. (Kinross) is planning to develop, operate and eventually reclaim an underground and open pit, gold mine on the Great Bear Property (the Property), located near Red Lake, Ontario (see Figure S.1). Kinross is a Canadian-based senior gold mining company founded in 1993. Kinross acquired Great Bear Resources Ltd. and the Property in 2022 and is committed to establishing a long-term presence in the Red Lake area. Kinross believes that responsible mining generates sustainable value for investors, host countries and communities. Further information is available from: https://www.kinross.com.

The Property is generally undeveloped, although there are ongoing forestry, aggregate and exploration activities. Kinross has environmental applications in progress with provincial ministries for an advanced exploration (AEX) program to complete drilling collect rock from the underground starting in 2024. In order to reduce environmental impacts, the new mine (the Great Bear Gold Project) will expand on facilities being developed for the AEX program where practical.



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LEGEND

- Project Location
- Town
- Conservation Reserve
- Provincial Park
- Highway
- Local Road
- Resource / Recreation Road
- Watercourse
- Waterbody

0 2.5 5 10 15 20 Kilometres

NOTES:
- Base data acquired from Land Information Ontario (MNRF), 2022.
- Road information provided by Kinross, August 2022.
- Watercourses and waterbody acquired from Land Information Ontario (MNRF) and modified to match aerial imagery and LiDAR.

Datum: NAD83
Projection: UTM Zone 15N

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GREAT BEAR PROJECT

Project Location

PROJECT N°: OMEMA2303	**FIGURE: S.1**
SCALE: 1:320,000	DATE: January 2024

2 GENERAL INFORMATION

2.1 PROJECT NAME, SECTOR AND LOCATION

Project Name	Great Bear Gold Project (or Project)
Sector	Mines and minerals - gold mine
Location	23 kilometres (km) southeast of the Town of Red Lake (see Figure S.1).

2.2 PROPONENT

Proponent	Great Bear Resources Ltd. a subsidiary of Kinross Gold Corporation (Kinross) https://kinross.com
Corporate Contact	Luke Jalsevac, Vice President, Project Director, Great Bear Great Bear Resources / Kinross Gold Corporation 25 York Street, Suite 15th Floor, Toronto Ontario M5J 2V5 O: 416-365-2497 M: 647-338-2672 Email: luke.jalsevac@kinross.com
Proponent Contact	Aaron MacDonell, Director, Environmental Services Great Bear Resources / Kinross Gold Corporation 25 York Street, Suite 15th Floor, Toronto Ontario M5J 2V5 M: 807-620-8573 Email: aaron.macdonell@kinross.com
Supporting Consultant	Sheila Daniel, Geoscientist Fellow WSP E&I Canada Limited 6925 Century Avenue, Suite 600 Mississauga, ON, Canada L5N 7K2 M: 416-524-5928 Email: sheila.daniel@wsp.com

2.3 SUMMARY OF ENGAGEMENT WITH STAKEHOLDERS

Potentially interested stakeholders were identified to date based on whether they lived close or owned lands near the Project, had interest in similar projects or developments in the region, or government guidance related to exploration or advanced exploration. The following stakeholders have been identified and were consulted during preparation of the Initial Project Description and Detailed Project Description:

- Citizens from the Red Lake and Ear Falls areas
- Local residents in proximity to the Project
- Local tourist camp operators
- Confederation College
- Domtar Corporation (Sustainable Forest License holder)

- Enbridge Gas
- Highway 105 Tourism
- Hydro One Networks Inc.
- Independent Electricity System Operator
- Lafarge Canada
- Keewatin Patricia District School Board
- Kenora District Services Board
- Northwestern Health Unit
- Ontario Provincial Police
- Potentially affected trapline holders
- Red Lake Airport
- Red Lake Career and Employment Services
- Red Lake Fire Department
- Sioux Lookout Friendship Accord Economic Development
- Municipality of Red Lake
- Municipality of Ear Falls and Council
- Ministry of Economic Development, Job Creation and Trade (Ontario)
- Ministry of Energy (Ontario)
- Ministry of Environment, Conservation and Parks (Ontario)
- Ministry of Indigenous Affairs (Ontario)
- Ministry of Natural Resources and Forestry (Ontario)
- Ministry of Northern Development (Ontario)
- Ministry of Mines (Ontario)
- Ministry of Transportation (Ontario)
- Impact Assessment Agency of Canada (IAAC)
- Natural Resources Canada
- Other provincial ministries, and federal departments and agencies.

Kinross intends to continue to engage with these and other stakeholders as the Project progresses. Locations of the communities referenced above are shown in Figure S.2.

Key issues raised by stakeholders to date related to the Project include:

- Confidence that the mine will be built
- Development of an open pit mine as underground mines are more common in the region
- Reclamation and closure of the mine
- Maximizing socioeconomic benefits, including potential for local hiring
- Social risks related to changing social structures as Project direct and indirect employment expands
- Housing and accommodation supply constraints
- Road safety
- How flooding, forest fires or other natural disasters may impact access to the communities and site.

2.4 SUMMARY OF ENGAGEMENT WITH INDIGENOUS NATIONS AND PEOPLES

Kinross is committed to regular, open dialogue and meaningful engagement with local Indigenous communities and their designated representatives through all phases of the Project. Kinross recognizes that the Project is within the traditional territory of the collective members of the Anishinaabe Nation in Treaty No. 3 and acknowledge Métis as a distinct Indigenous people with a unique history, culture, language and way of life.

Potentially interested Indigenous Nations were identified by Kinross based on:

- Proximity to the Project, including known historic and current Indigenous traditional land use and occupation, location of Reserve lands
- Potential for their interests to be affected by Project activities
- Past or current interest in similar projects or developments in the region
- Guidance from government agencies, such as the provincial Ministry of Mines.

Relationships with local Indigenous communities have been fostered on the Project for a number of years. The following Indigenous communities were engaged prior to and during preparation of the Initial Project Description and Detailed Project Description:

- Grand Council Treaty No. 3
- Grassy Narrows First Nation
- Lac Seul First Nation
- Northwest Métis Council (Region 1)
- Wabauskang First Nation.

Locations of the local First Nation Reserves and Métis Nation of Ontario Region 1 are shown in Figure S.2.

Key issues raised to date by Indigenous communities related and/or applicable to the Project include:

- Desire to participate actively in environmental baseline studies, and in the Impact Assessment and environmental approvals processes
- Consideration of Indigenous knowledge during the Impact Assessment
- Maintenance of access to sites of interests (values) on the Property
- Understanding implications of open pit mining
- Contaminants of concerns with a focus on mercury use
- Reclamation and closure of the site
- Potential for effects on water quality, fish habitat and fish populations
- Road safety
- Spills management
- Consideration of flooding, forest fires or other natural disasters that may affect access to the communities and site
- Opportunities for long-term careers for Indigenous youth
- Consideration of power constraints and opportunities that may impact local communities

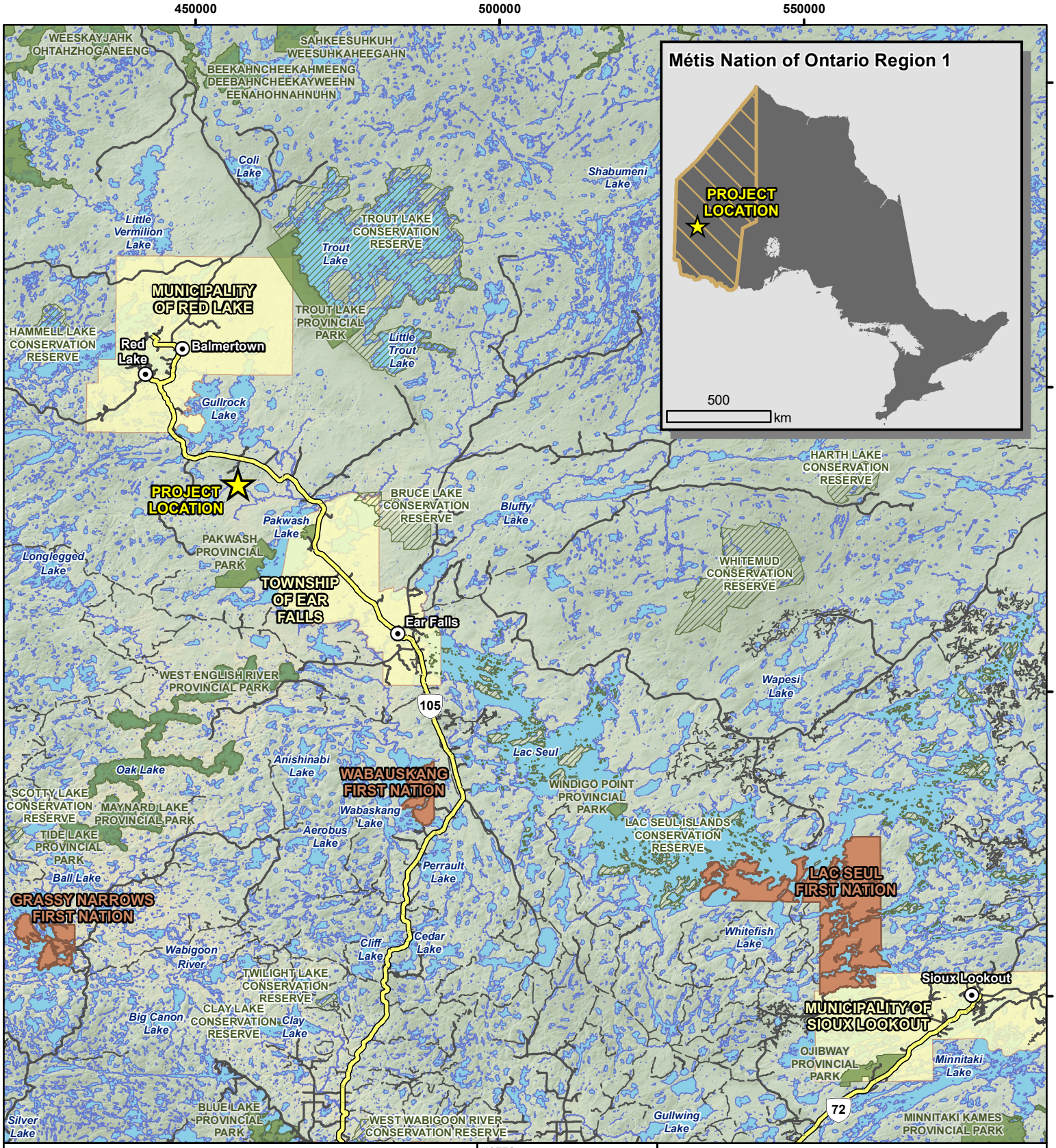
- Consideration and impact to local communities as a result of onsite camp
- Concerns centered on the approach and long-term management of tailings and mine waste
- Changes to social structures of the communities
- Risk to proposed Indigenous Protection Conservation Area.

2.5 SUMMARY OF ISSUES

As part of the federal Impact Assessment Planning Process, the Impact Assessment Agency provided Kinross with a Summary of Issues based on the Agency consultation after the acceptance of the Initial Project Description. A copy of the comments provided in the Summary of Issues, and Kinross' Responses are provided in Appendix C of the Detailed Project Description. Where applicable, additional information has been provided in this Summary based on the issued identified.

2.6 REGIONAL STUDIES / ASSESSMENTS AND STRATEGIC ASSESSMENTS

There are no regional studies or Regional Assessments close to the location of the Project. The Detailed Project Description fully considered the Strategic Assessment of Climate Change developed by Environment and Climate Change Canada.



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LEGEND

- Project Location
- Town
- First Nation Reserve
- Métis Nation of Ontario Region 1
- Lower Tier Municipal Boundary
- Conservation Reserve
- Provincial Park
- Highway
- Local Road
- Resource / Recreation Road
- Waterbody

NOTES:
- Base data acquired from Land Information Ontario (MNRF), 2022.
- Métis Nation of Ontario Region 1 digitized from "MNO Regions" map. https://www.metisnation.org/about-the-mno/mno-regions/

Datum: NAD83
Projection: UTM Zone 15N

0 5 10 20 30 40 50 Kilometres

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GREAT BEAR PROJECT

Regional Communities and Indigenous Nations

PROJECT N°: OMEMA2303 | **FIGURE: S.2**

SCALE: 1:850,000 | DATE: January 2024

3 PROJECT INFORMATION

3.1 PURPOSE AND NEED FOR PROJECT, AND POTENTIAL BENEFITS

The purpose of the Project is to produce gold doré bars on site, by constructing and operating an underground and open pit mine, process plant and associated facilities. Doré bars are semi-pure products that will be trucked off site for further purification. The purified product will be sold to meet global demands and provide a return on investment, while supporting local employment and prosperity for the region.

Gold is required for many applications and the strong global demand cannot be fully met by recycling of metals already produced, resulting in a need for additional mining and processing of ore containing these metals.

The Project is expected to have a positive effect on the local and regional economy. During all consultation to date, Kinross has received questions about jobs, business and training opportunities. Up to approximately 500 to 1,000 permanent jobs are expected if the mine is approved to proceed, as well as a large number of contracts for qualified contractors in the region. The Project is not expected to result in a large change in regional or local populations but may contribute to modest growth in the base population within commuting distance from the site. Training and work experience may result in capabilities that are transferable for local residents and contractors.

If an Impact Assessment is required, potential both positive and negative changes from the Project will be assessed, and plans provided to monitor, measure and mitigate the negative effects and enhance the positive effects.

3.2 APPLICABLE PHYSICAL ACTIVITIES REGULATION PROVISIONS

The following provisions of the Physical Activities Regulations (SOR/2019-285) pursuant to the *Impact Assessment Act* apply to the Project based on the current preliminary project design:

18 The construction, operation, decommissioning and abandonment of one of the following:

(c) a new metal mine,…, with an ore production capacity of 5,000 tonnes per day (tpd) or more

(d) a new metal mill, other than a uranium mill, with an ore input capacity of 5,000 tpd or more.

The Project is not part of a larger project that is not listed on the Project List.

Kinross is submitting a Detailed Project Description so that the Impact Assessment Agency of Canada can determine if an Impact Assessment is required, as required. This plain language summary forms part of that submission.

3.3 ACTIVITIES, INFRASTRUCTURE, STRUCTURES AND PHYSICAL WORKS

Kinross is planning to develop, operate and eventually reclaim a new underground and open pit gold mine, with processing facilities and infrastructure at the Project site. A preliminary site plan is provided in Figure S.3 and a cross section view of the mine development is shown in Figure S.4.

The new mine will be designed to re-use and expand on the AEX program facilities where practical, to reduce environmental impacts. Kinross is currently preparing and has environmental applications in progress with provincial (Ontario) ministries for an AEX program. The AEX program includes extraction of an up to 60,000 tonnes (t) bulk (ore) sample using underground mining methods. The goal of the program and ongoing exploration drilling from surface, is to collect additional information to support a decision on whether to proceed to develop a mine and help with the engineering design. Facilities required to support the AEX program on the Property are planned to include:

- Two surface openings (portals) and ramps to access and develop underground exploration workings
- Stockpiles of overburden / organics, ore and mine rock (other rock removed to access the ore)
- Bulk sample crusher
- Various trailers and other buildings, including a truck shop and wash bay
- Utilities area, material laydown area and covered storage
- Explosives magazine / storage (temporary on surface and underground)
- Diesel, gasoline and propane fuel, storage and dispensing
- Temporary camp
- Groundwater well, fire water tank, water treatment systems and associated ponds
- Treated effluent discharge pipeline to the Chukuni River.

Power supply for the AEX program is expected to initially include diesel-fired generators (less than 5 megawatts; MW), followed by either:

- A natural gas supply and onsite power generation, supported by a short natural gas pipeline connected to Enbridge main line located along Highway 105
- A 115 kilovolt (kV) transmission line, or a power distribution line connected to the regional electric grid at Highway 105, if capacity is available.

3.3.1 PROPOSED MINE FACILITIES AND INFRASTRUCTURE

Table S.1 lists the major facilities for the proposed mine in comparison to the AEX program facilities.

The underground and open pit mine will operate year-round on a continuous (24-hour) basis, except for periodic maintenance and similar disruptions. Mined ore will be transported to the surface for processing in an onsite facility. Based on the proposed processing rate and current information regarding the ore body, a mine life of up to 25 years is expected. This timing may be extended with additional ore resources.

Table S.1 Proposed Mine Facilities

TYPE OF FACILITY	GREAT BEAR GOLD PROJECT (MINE)
Underground and Open Pit Mine	
Surface portals	– AEX portals will continue to be used – Additional portal (potentially three) to access new areas
Ramps and underground workings	– Extension of ramp and expansion of AEX workings – New ramp and workings from additional portal(s)
Shaft, headframe and hoist room	– New facility
Ventilation raises	– Raises (potentially four) for both fresh air and exhaust
Compressor facility	– Minor modifications to AEX facility – New facility for each portal developed
Mine dry	– AEX dry will continue to be used – New facility
Open pits	– Three new open pits
Mine air heating	– AEX facilities will continue to be used – New facility or expansion to AEX facilities
Stockpiles	
AEX stockpiles	– May continue to be used
Mine rock stockpile	– New stockpile (at different location / scale)
Overburden stockpile	– New stockpile (at different location / scale)
Organic soil / organics stockpile	– New stockpile (at different location / scale)
Ore (run of mine) stockpile	– New stockpile (at different location / scale)
Low grade ore stockpile	– New stockpile
Primary Buildings / Facilities	
Crushing facilities and conveyors	– New facility
Crushed ore facility	– New facility
Process plant	– New facility
Paste / backfill plant	– New facility
Consolidated rockfill	– New facility
Laboratory	– New facility
Electrical / mechanical shop	– New facility
Trade / maintenance shop / wash bay	– AEX facilities may continue to be used – New facilities will be established
Warehouse / storage building(s)	– AEX facilities may continue to be used – New facilities will be established
Offices	– AEX facilities may continue to be used – New facilities will be established
Laydown areas and parking	– AEX facilities may continue to be used – New facilities will be established
Contractor office / area	– New facility
Explosive storage – surface	– New facility may be established and/or AEX facility continue to be used
Explosive storage – underground	– New facilities may be established and/or AEX facility continue to be used
Explosive manufacturing	– Not part of the Project (if developed will be vendor owned and operated)
Tailings and Water Management	
Tailings management facility and related infrastructure	– New facility
Underground sumps	– AEX facilities may continue to be used – New sumps will be established
Open pit sumps	– New sumps as needed
Water ponds, ditching, pumps and pipelines	– AEX facilities may continue to be used – New ponds, pumps and pipelines will be established as needed
Effluent treatment plant	– New facility will be established – AEX facilities may continue to be used
Effluent discharge pipeline	– AEX facilities will continue to be used
Water supply well(s)	– AEX facilities may continue to be used or new well(s) established
Freshwater pumphouse and pipeline	– New facility

TYPE OF FACILITY	GREAT BEAR GOLD PROJECT (MINE)
Potable water treatment plant	– New facility
Aggregates Supply	
Quarries	– New facility (up to three) for onsite use
Sand and gravel pits	– New facility (up to two) for onsite use
Waste Management	
Temporary solid waste storage / waste transfer facility	– New facility may be established or AEX facilities may continue to be used
Domestic sewage treatment	– New facility may be established or AEX facilities may continue to be used and expanded
Domestic landfill	– Potential new facility
Demolition landfill	– Potential new facility
Power Supply	
Emergency diesel-fired generator(s)	– Continued use of AEX generators – Potential additional generators
Natural gas power supply (pipeline and metering station, and generation facilities)	– Continued use of AEX facilities – Potential upgraded facilities with additional capacity for emergency use or power generation (if natural gas generation is established as part of the AEX program)
Onsite electrical distribution lines	– AEX facilities may continue to be used – New facilities will be established
Electrical substation and transmission line to E2R	– Continued use of AEX facilities and new facilities as needed (if grid power is established as part of the AEX program as preferred)
Fuel and Reagents	
Reagents / chemicals	– AEX facility may continue to be used – New storage will be required at process plant and equipment maintenance facilities
Propane tank farm	– AEX facilities may continue to be used – New facilities will be established
Compressed natural gas tanks	– Not currently proposed, but may be used
Fuel station, diesel and gasoline fuel tanks	– AEX facilities may continue to be used – New facilities will be established
Other Onsite Infrastructure	
Access road within Property	– Upgrade of existing access road and/or potential minor route changes (to be determined)
Haul roads	– AEX facility will continue to be used – New facilities will be established
Scale	– New facility
Existing Dixie Creek bridge crossing	– Potential upgrade to existing bridge
Other pipelines / utility corridor(s)	– AEX facility may continue to be used – New facilities will be established
Communications infrastructure (such as towers, fibre optic cable)	– AEX facility may continue to be used – New facilities will be established
Security gatehouse / fencing	– New facility
Core shack	– AEX facility will continue to be used – New facilities will be established
Accommodations	– AEX facility may continue to be used – New facilities may be established
Infrastructure Off Property	
Access road to site	– Upgrade of existing access road and/or potential minor route changes (to be determined)
Pipeline and connection to regional Enbridge pipeline at Highway 105	– AEX facility may continue to be used
115 kV transmission line and related infrastructure	– AEX facility may continue to be used if developed – New facilities may be established to connect to a regional transmission line near site (such as E2R)

This table is based on the current preliminary design and may change with additional engineering and regulatory guidance. AEX facilities not required or modified for the mine, will be reclaimed during the mine operations phase or when the mine closes.

UNDERGROUND MINE

The underground mine will extend the advanced exploration ramps and expand the underground workings. Underground mining will occur at a rate of up to approximately 10,000 tpd of ore as an annual average. The final mining rate will be confirmed through ongoing engineering and design activities. Figure S.4 shows potential conceptual underground development. Ore will be extracted from underground stopes (rooms) by drilling and blasting using explosives and trucked to the surface via the ramp. Additional portals and a shaft may be developed to support development of the underground mine. Personnel will also access the underground workings by means of the ramp. If a shaft is developed, it may be used for personnel, equipment and rock movement.

Other rock that needs to be moved to access the ore (mine rock) will be put back into mine stopes and ramp areas as needed and practical, mixed with cement or similar materials for strength. Excess mine rock that cannot be kept underground will be transported to surface and stored in a stockpile. Some of the stockpiled mine rock may be returned underground as needed for support, re-used as a construction material (aggregate) if the quality is good, or will remain in the stockpile for eventual reclamation in place.

OPEN PITS

Some of the ore body is located nearer the surface and is more suitable for open pit mining than underground mining. Kinross proposes to develop three open pits of approximately the following scale that will operate for the first few years:

- Discovery Pit: 170 m depth, 60 hectares (ha; surface footprint)
- Main Pit: 280 m depth, 210 ha
- Viggo Pit: 70 m depth, 25 ha.

The pit will be developed blasting the rock with explosives and will be designed for safety based on industry standards. Excess water in the open pits will be pumped to the surface for management.

STOCKPILES

Stockpiles will be created on the surface to store ore, mine rock, and overburden / organics that result from the site and mine development. The preliminary approximate stockpile sizes are as follows:

- Run of mine (i.e., uncrushed rock from the mine) ore stockpile: 0.1 to 0.5 million tonnes (Mt)
- Low grade ore stockpile: 5 to 20 Mt
- Mine rock stockpiles: 210 Mt
- Overburden / organics stockpile: 40 Mt.

Rain and other water that contacts the stockpiles will be collected and treated in the site water management system. It is expected that one or more of the Project stockpiles will need to be placed on top of minor creeks which may contain fish.

ORE PROCESSING

Ore processing will occur at a rate of up to approximately 15,000 tpd of ore as an annual average. This rate includes a contingency and is above the planned output. Ore from stockpiles will be moved to an onsite crushing facility where it will be crushed to the size needed. The crushed the ore is then conveyed to the process plant for gold recovery. Ore processing includes several stages of conventional mineral

processing such as grinding and classification, and cyanide leaching to separate the gold / silver from the wastes leading to production of doré bars. The bars will be periodically trucked off site for sale, equivalent to a few trucks per year in volume.

TAILINGS MANAGEMENT

The primary by-product of ore processing is tailings. Tailings consist of ground rock and contact water from the processing of ore. Tailings will be treated in the plant to make sure that any cyanide content is very low. The majority of the tailings will be transferred to an onsite surface tailings management facility designed to meet all regulatory requirements and the Canadian Dam Association Dam Safety Guidelines. Some of the tailings may be mixed with a binder (such as cement) to increase their strength, and will be pumped to the underground mine to provide additional underground stability.

BUILDINGS AND YARD AREAS

The preliminary site layout (see Figure S.3) has been developed to take advantage of the existing regional infrastructure and AEX program facilities, as well as accommodate existing ground conditions while avoiding potential ore resources. The final site plan will be determined during the environmental approvals process and detailed engineering design.

The following new facilities are planned for the Project:

- Process plant and crusher / conveying system
- Mine office / dry / maintenance complex
- Cold and warm storage buildings
- Reagent storage facilities
- General laydown areas
- Additional core shack, laboratory and outbuildings
- Accommodations.

These facilities will be supported by roads, piping and power infrastructure as needed.

Explosives manufacturing, transport, storage and use will be under the care and control of an external company. If a new transmission line is developed, it is expected to be developed by Hydro One as part of reinforcement of the regional electrical grid and would not be part of the.

WATER MANAGEMENT FACILITIES AND DRAINAGE WORKS

Kinross will establish an integrated water management system for the site to manage water that comes into contact with Project facilities. The water management and treatment infrastructure developed for the advanced exploration program is expected to be re-used at the beginning of operations and may be incorporated into the water management system for the operating mine.

The water management system and effluent treatment plant will be designed and operated to ensure that excess water meets all regulatory requirements and can be discharged to the environment. A preliminary site effluent discharge location has been identified on the Chukuni River, which will allow continued use of the pipeline corridor established for the advanced exploration program.

Most of the industrial water needs for the Project will be met by water recycling, including within the process plant, and re-use of water returned from the tailings management facility. Freshwater needed will come from an onsite well and/or the Chukuni River.

ACCESS AND SITE ROADS

There is existing all-weather access road (Tuzyk's Road) from the Highway 105 that already provides access year-round access to the site. Portions of the road will be upgraded to support the mine. This may include minor re-routing, widening or strengthening the road base and replacing existing culverts.

New roads will be built within the site as needed, constructed of aggregate or non-potentially acid generating mine rock. Minor water crossings may be needed, likely as culverts. The existing prefabricated truss bridge across Dixie Creek may be upgraded.

DOMESTIC AND INDUSTRIAL WASTES

A domestic and/or demolition landfill may be established on the site for disposal of non-hazardous wastes for the mine site. Special management / hazardous materials from Project will be shipped off site to appropriate facilities.

Domestic sewage will be treated in an onsite sewage treatment plant. A different method, including treatment off site, may be used during early construction and later in the closure phase, when there are fewer people on site.

POWER SUPPLY

The total electrical demand for the Project is expected to peak at a maximum of 50 to 60 MW but may be higher if additional electrification of the mine occurs. If sufficient power is not available at a local grid connection to support the mine, onsite natural gas power generation may continue for the mine.

AGGREGATE OPERATIONS

Construction aggregate will be required to develop the Project. The primary source of material is proposed to be non-reactive mine rock and overburden resulting from other onsite activities. Additional needs may be met by purchasing aggregate from licensed commercial operators and/or a new source may be developed by Kinross on the Property.

3.3.2 PRELIMINARY LIST OF MINE ACTIVITIES

The following (and other) activities will occur prior to construction of the mine:

- Completion of engineering studies
- Completion of environmental baseline studies
- Development and implementation of environmental protection and monitoring plans for construction
- Ongoing engagement and consultation, with stakeholders and Indigenous Peoples
- Submit applications to government and receive needed environmental permits (or amendments to advanced exploration permits)
- Corporate decision to develop a mine
- Hiring of individuals and contractors, and procuring material and equipment.

Table S.2 provides a preliminary listing of activities associated with the construction, operations, and decommissioning and closure phases of the Project.

Table S.2 Preliminary List of Activities for the Project

Construction Phase

– Implement site-specific erosion and sediment control, and water management plans
– Move construction equipment and materials to site
– Excavate and grade site as needed
– Construct new site facilities and/or expand existing advanced exploration facilities (see Table S.1)
– Develop aquatic habitat compensation features as needed
– Mitigate heritage resources and other effects as needed
– Strip and stockpile overburden and organic material
– Initiate open pit mine development
– Expand existing advanced exploration facilities, including underground workings and infrastructure
– Establish additional water management and treatment works
– Establish new mine waste management facilities including tailings management facility dams
– Conduct environmental monitoring and reporting, including work by Indigenous monitors as applicable

Operations Phase

– Receive outstanding environment-related permits if any
– Develop and implement environmental protection and monitoring plan(s) for operation
– Continue engaging and consulting with stakeholders and Indigenous Nations
– Stockpile overburden and organic material from the open pits, or use in progression reclamation on site
– Extract mine rock from the underground mine and open pits, and stockpile, re-use as aggregate, or potentially re-use a consolidated rockfill underground
– Extract ore from the underground workings and open pits, and stockpile on surface or transport directly to the crushing system for crushing
– Crushed ore will be processed to recover the gold in a processing facility, and produce gold doré bars that will be periodically shipped off site for sale
– Tailings produced from processing ore will be stored in a surface tailings management facility or used as backfill underground
– As operations continue, the underground mine will become progressively deeper and wider below the ground surface and the open pit will become deeper and will have a progressively larger surface area
– Progressive reclamation will occur of facilities when no longer needed / depleted as practical
– Ongoing management and treatment of mine water and contact waters for discharge of excess waters that meet regulatory requirements to the Chukuni River
– Ongoing management of chemicals and wastes, including remediation of incidental spillage if any
– Environmental monitoring and reporting, including work by Indigenous monitors as applicable
– Follow up environmental studies
– Periodic updates / amendments of the Closure Plan will be filed with the Province as needed to reflect changes

Decommissioning and Closure Phase

– Develop and implement environmental protection and monitoring plans for closure
– Ongoing engagement and consultation with stakeholders and Indigenous Nations
– Remove reagents and chemicals for disposal off site following all regulatory requirements
– Demolish facilities as no longer needed
– Remove equipment / facilities, and allow the underground mine and open pits to fill with water
– Seal openings to underground for long-term site safety
– Manage demolition waste in accordance with all regulatory requirements; a demolition landfill may be established on site for inert waste
– Remove power infrastructure when no longer needed
– Break concrete foundations down to near grade
– Break up concrete pads, puncture liners, scarify compacted grounds etc. to establish free drainage
– Investigate and remediate affected ground from spillage if any, such as near liquid fuel storage areas
– Regrade the ground surface as needed for long-term stability and to establish final surface drainage
– Place growth material such as overburden, over affected areas as needed for long-term vegetation success
– Environmental monitoring and reporting, including work by Indigenous monitors as applicable
– Close (revoke) operations phase approvals when no longer required
– Connect the water-filled open pits to the Dixie Creek system if appropriate, once water quality meets requirements
– Reclamation financial assurance returned to Kinross when Ministry of Mines is satisfied

3.4 MAXIMUM PRODUCTION CAPACITY

The anticipated size or production capacity of the Project is as follows:

- Metal ore extraction from the combined open pit and underground mine is planned at a rate up to 15,000 tpd; the maximum rate of ore extraction may reach up to 60,000 tpd on some days when only ore is mined
- Processing of metal ore extracted from the Project is planned at a maximum rate of up to 15,000 tpd as an annual average over the life of the mine. During periods of high ore production from the mine, ore will be temporarily stockpiled until there is capacity in the plant.

3.5 PRELIMINARY SCHEDULE

The stages envisioned for overall Property development are as follows:

	Development Phase / Activity	**Timing**
	Environmental baseline studies and investigations	2021 to 2024
	Engineering and other technical studies	2022 to 2024
	Advanced exploration environmental approvals / procurement	2023 to 2024
	Advanced exploration development and bulk sample extraction	2024 to 2028
	Impact assessment process	2023 to 2026
	Environmental approvals* and pre-construction activities	2024 to 2027
	Construction	2027 to 2029
	Operations (mining and processing)	2029 to 2054
	– Underground mine	2029 to 2054
	– Open pit mine	2029 to 2042
	– Ore processing	2029 to 2054
	Decommissioning and closure	2055 to 2058
	Post-closure and monitoring	2059+

Designated Project
Other Site Activities

* Kinross intends to initiate the federal and provincial environmental approvals processes concurrently with the Impact Assessment process.

3.6 POTENTIAL ALTERNATIVES

Kinross proposes to develop and operate the Project to provide a reasonable return on investment to their shareholders. Metal prices are at a sustained high level, and capital and operating costs are only expected to increase over time. Neither abandoning the Project nor delaying Project development to some later time meet the purpose of the Project. There are therefore no alternatives to the Project that are technically and economically feasible, and meet to needs and purpose of the Project.

A preliminary list of alternatives that may be considered in developing the preferred Project design is provided below, which will be refined by ongoing engagement, regulatory advice and the results of ongoing engineering studies to determine economic and technical feasibility:

- Mine rock (re-use as construction and reclamation material, various stockpile locations based on geotechnical and geochemical properties, and storage in depleted open pit)
- Tailings management methods and locations (conventional slurry, thickened, filtered tailings and desulphurized tailings, at various surface storage locations and re-use as backfill underground)
- Solid waste management location (approved onsite facility and existing approved offsite facility)
- Water supply source (Chukuni River and groundwater well)
- Aggregate supply source (re-use mine rock, purchase aggregate from suppliers and develop onsite quarry and/or pit)
- Power supply (diesel generators, natural gas power generation and electrical grid power; note that constructing a dedicated regional transmission line for the project is not being considered)
- Mine decommissioning and closure methods (open pits, mineral waste storage facilities and demolition waste management).

No alternative methods have been identified that are economically viable for:

- Mining methods (underground and open pit mining; mine location is constrained by orebody location and geometry)
- Ore processing methods (controlled by laboratory testing and analyses to obtain optimal recovery utilizing full scale proven technologies)
- Type and location of explosive storage and siting (strictly controlled by federal regulations and rock type / blast requirements).

452000 454000 456000 458000 460000 462000 464000 466000

5638000 5636000 5634000 5632000

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Natural Gas Pipeline
TUZYK'S ROAD
105
Tailings Management Facility
Mine Rock Stockpile
Low Grade Ore Stockpile
Discovery Pit
Advanced Exploration Site
Overburden Stockpile
Main Pit
Viggo Pit
Explosive Magazine
Existing Dixie Creek Bridge
Potential Explosive Magazine
Effluent / Fresh Water Pipeline Corridor
Existing 115 kV E2R (Ear Falls to Red Lake)
Effluent Discharge Location
Unnamed Watercourse 8B
Unnamed Watercourse 6B
Unnamed Waterbody 2
Unnamed Watercourse 1
Unnamed Waterbody 6
Unnamed Watercourse 6
Dixie Creek
Chukuni River
Dixie Lake

LEGEND

- Property Boundary
- Highway (Including Natural Gas Pipeline)
- Existing Transmission Line
- Watercourse
- Waterbody
- Major Contours (20 m interval)
- Minor Contours (10 m interval)
- Extent of Lidar Survey

Proposed Mine Features

- Open Pit
- Shaft
- Mine Rock Stockpile
- Ore Stockpile
- Overburden Stockpile
- Mine Facilities / Infrastructure
- Tailings Management Facility
- Pond
- Advanced Exploration Site
- Road
- Transmission Line
- Natural Gas Pipeline
- Effluent / Fresh Water Pipeline Corridor

NOTES:
- Base data acquired from Land Information Ontario (MNRF), 2022.
- Contours acquired from Land Information Ontario (MNRF), 2022 and 2022 LiDAR survey.
- Property boundary provided by Kinross, March 2023.
- Roads information provided by Kinross, August 2022.
- Watercourses and waterbody acquired from Land Information Ontario (MNRF) and modified to match aerial imagery and LiDAR.
- Site plan based on information provided by Kinross, October 2023.

Datum: NAD83
Projection: UTM Zone 15N

0 1 2 4 6 8 10 Kilometres

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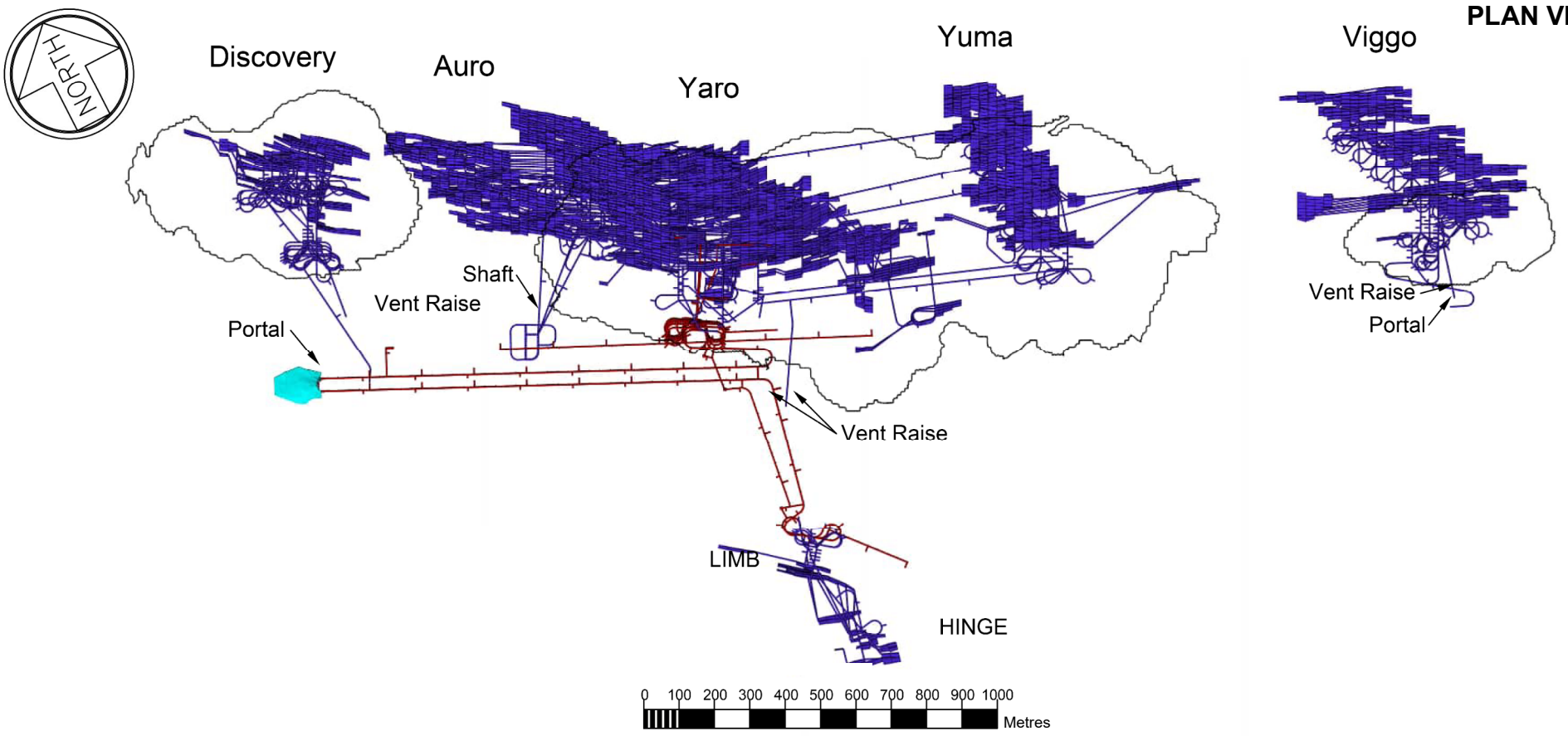
GREAT BEAR PROJECT

Conceptual Site Plan

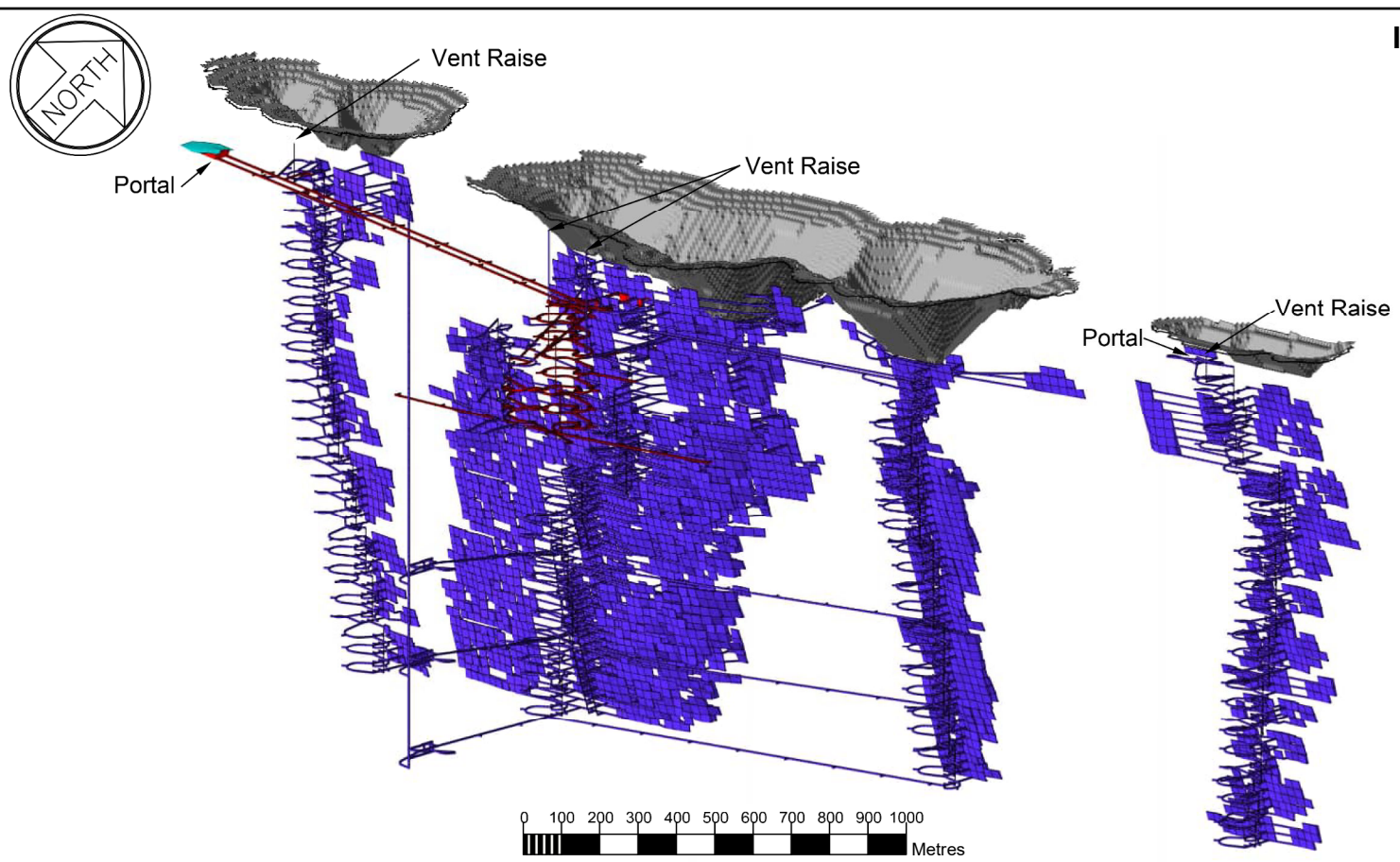
PROJECT N°: OMEMA2303 | **FIGURE: S.3**

SCALE: 1:36,000 | DATE: January 2024

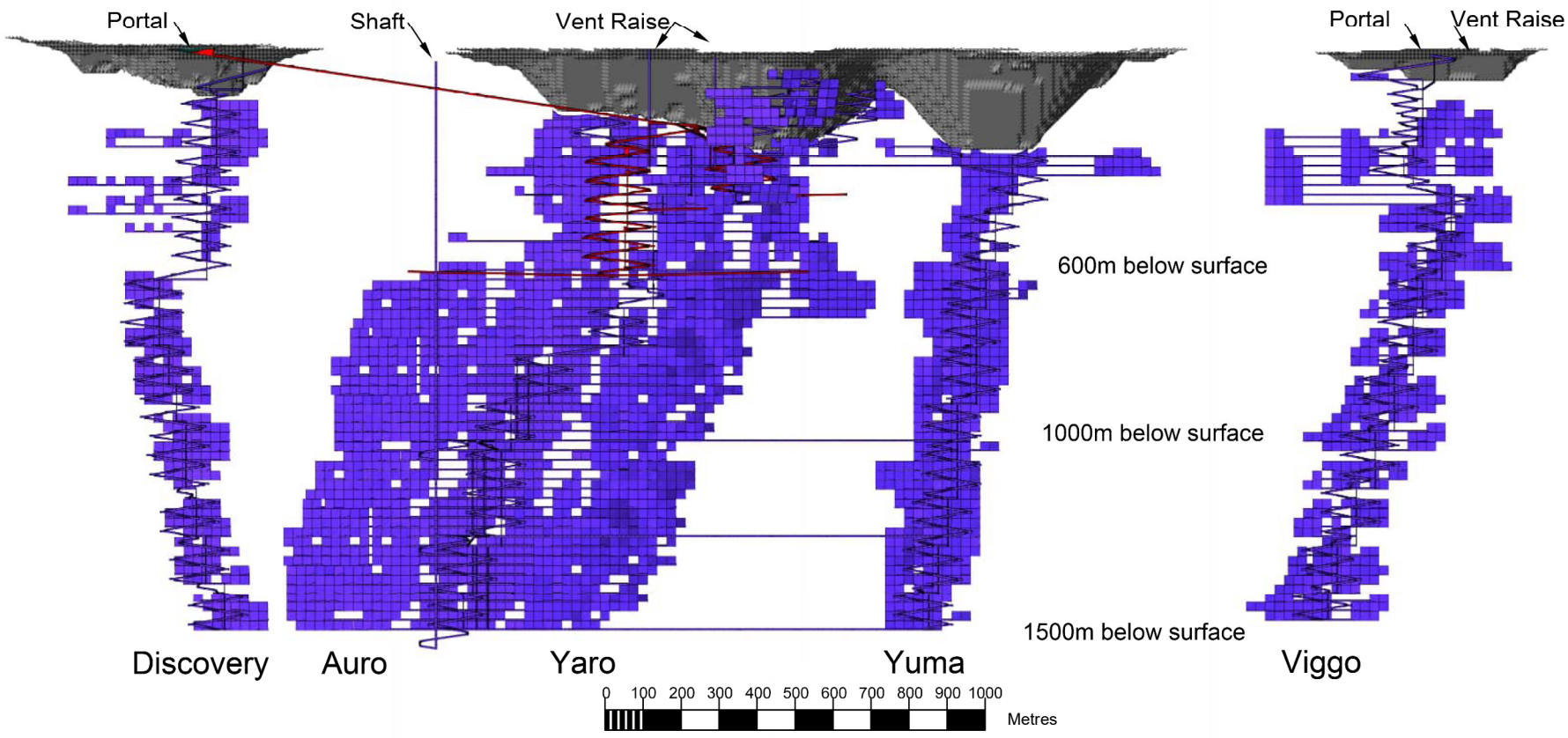
PLAN VIEW



ISOMETRIC VIEW



SECTION VIEW



LEGEND

- AEX
- Life of Mine
- Open Pit

NOTES:
- Preliminary underground mine plan provided by Kinross, July 10, 2023.
- Schematic is based on potential future mine development and not proven resources.

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GREAT BEAR PROJECT

Conceptual Underground Mine Plan

PROJECT N°: OMEMA2303	**FIGURE: S.4**
SCALE: AS SHOWN	DATE: January 2024

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4 LOCATION AND CONTEXT

4.1 GEOGRAPHIC COORDINATES

The centroid of the main Project site is approximately 455665E 5633910N, Zone 15N NAD 83. Approximate coordinates of other major Project facilities (Zone 15N NAD 83) are as follows:

- Ore stockpile; 456235E, 5635504N
- Mine rock stockpile; 457703E, 5635680N
- Overburden stockpile; 458668E, 5634506N
- Tailings management facility; 453027E, 5636459N
- Main pit; 457029E, 5634159N
- Discovery pit; 455675E, 5635060N
- Viggo pit; 458563E, 5633427N
- Effluent / freshwater pipeline corridor; 455241E, 5634757N to 464960E, 5633585N.

4.2 DESCRIPTION OF LANDS AND SURROUNDING AREA

Kinross is the 100% owner of the 11,780 ha Great Bear Property consisting of boundary cells and single cell mining claims located in the unorganized townships of Faulkenham Lake, South of Byshe, Dixie Lake and Bruce Lake (see Figure S.5). The process to lease surface and mining rights for a portion of the Property from the province was initiated in June 2021 and is ongoing. A Hydro One Networks Inc. easement crosses or is located near the Property. This easement will be avoided by the Project and is not in conflict with the proposed Project.

The Property is located in an area of very low population density in northwestern Ontario (see Figure S.1 and Figure S.2). The nearest larger communities are the Municipality of Red Lake located about 23 km to the northwest cross country (31 km by road) and the Township of Ear Falls, located 37 km to the southeast cross country (49 km by road). There are no federal lands near the Property or in the local area. The closest federal land is the Ear Falls Airport located approximately 24 km to the southeast.

The Project site is located inland, and there are no related marine or port aspects associated with the Project.

The Project is located within Treaty No. 3. No Project facilities will be located on or near First Nation Reserves. The closest Reserve lands are located the following distances away cross-country: Wabauskang Reserve - 56 km; Grassy Narrows Reserve - 77 km; and Lac Seul Reserve - 101 km. The Project is located within Métis Nation of Ontario Region 1 which covers northwestern Ontario (see Figure S.2).

Publicly available information regarding ongoing land claims and assertions by Indigenous Nations is provided in Table S.3.

Table S.3 Ongoing Claims and Assertions by Indigenous Nations

INDIGENOUS NATION	ONGOING CLAIMS AND ASSERTIONS
Lac Seul First Nation	Lac Seul First Nation is negotiating a 2014 claim relating to the failure to set Reserve lands around Bruce Lake pursuant to Treaty No. 3.
Wabauskang First Nation	Joint claim submitted to the provincial and federal governments in 1993, asserting they did not receive all the land they were entitled under Treaty No. 3. The province accepted the claim (March 2011) and proceeded with negotiations. The federal government accepted the claim (October 2019), and negotiations began in early 2020.
Grassy Narrows First Nation	
Métis Nation of Ontario – Region 1	A right to harvest large areas of Ontario is asserted. An interim agreement with the province recognizes the Harvester Card system. In April 2018 a Framework Agreement on Métis Harvesting was signed that advanced the recognition of Métis' rights in Ontario.

Source: Government of Canada (2023), Government of Ontario (2023), Métis Nation of Ontario (2021).

Kinross is not aware of any land codes or Community Land Use Plans in place or in progress associated with Indigenous Nations that may be affected by the Project.

4.3 PHYSICAL AND BIOLOGICAL ENVIRONMENTAL SETTING

Kinross and its predecessors have been conducting environmental baseline and other investigations on the Project site since 2018. Kinross will incorporate Indigenous knowledge as available in the Impact Statement per Federal guidance.

4.3.1 CLIMATE, AIR QUALITY, NOISE AND LIGHT

- Daily average temperatures range from a low of -18.3 degrees Celsius in January to a high of 18.1 degrees Celsius in July
- Mean annual precipitation for Red Lake is 686 millimetres and May to September is typically the wettest period
- The commercial aggregate operations on Tuzyk's Road and traffic on Highway 105 are the major sources of air emissions and noise locally
- There may also be localized areas of noise emissions from recreational, forestry and exploration activities
- There are limited local man-made sources of existing light, although light is given off by ongoing exploration; there will be light sources from the AEX program when developed.

4.3.2 PHYSIOGRAPHY AND GEOLOGY

- The Property is gently sloping generally from the west to east, with an elevation range of approximately 350 to 460 m above sea level
- The overall landscape is glaciated bedrock terrain, with an undulating overall topography with occasional flat and low-lying areas
- Geochemistry investigations to date indicate that a large proportion of the ore and mine rock are potentially acid generating, which will be confirmed through the ongoing comprehensive testing program.

4.3.3 SURFACE WATER AND GROUNDWATER

- Project site is located mainly in the Dixie Creek watershed (see Figure S.6)
- Dixie Creek flows into the Chukuni River to the east, a relatively large water system that flows into Pakwash Lake (see Figure S.7)
- Pakwash Lake receives inflows from a very large area and discharges into the English River system
- Ongoing surface water sampling at and near the site indicates that local baseline water quality is typical of northern Ontario
- Groundwater flows from the main site area generally follows the local topography and flows downslope toward the local watercourses / waterbodies.

4.3.4 TERRESTRIAL ENVIRONMENT

- Excluding locations of recent forest harvesting activity, coniferous and mixed forests cover the majority of Property
- Main species include jack pine, black spruce, trembling aspen, and white birch, with some balsam fir and white spruce
- Unnamed waterbody 1 and unnamed waterbody 6 contain wild rice marshes
- Common wildlife species in the local area include moose, black bear, grey wolf, coyote, Canada lynx, American marten, fisher and snowshoe hare
- Beaver, muskrat, American mink and river otter are found along waterbodies and waterways
- At least 144 species of birds have been observed in or near the Property, mainly common boreal bird species
- Significant wildlife habitat viewed during investigations to date include a Bonaparte's gull nesting colony on a small waterbody west of Dixie Road, several raptor nests, and a sharp-tailed grouse lek
- A small number of reptile and amphibian species are present locally.

4.3.5 AQUATIC ENVIRONMENT

- Studies have been completed on local watercourses and waterbodies including for fish habitat and community assessment, fish collection, and benthic invertebrate and sediment analyses
- The fish communities within these locations represent cool to coldwater species typical of northern Ontario
- Beaver activity has shaped the landscape and has created online ponded habitat within many of the inland tributaries which support forage fish
- Northern pike is the most abundant top predatory species within the Dixie Creek drainage, although the Chukuni River is known to support walleye.

4.3.6 SPECIES AT RISK

Table S.4 summarizes the Species at Risk identified on the Property or near the anticipated Project footprint.

Table S.4 Species at Risk Presence Summary

SPECIES	IDENTIFIED PRESENCE		FEDERAL STATUS (3)	PROVINCIAL STATUS (4)
	PROPERTY (1)	FOOTPRINT (2)		
Little brown myotis	X	X	Endangered	Endangered
Tri-colored bat	X	X	Endangered	Endangered
Wolverine	X	X	Special Concern	Threatened
Bank swallow	X	X	Threatened	Threatened
Eastern whip-poor-will	X		Threatened	Threatened
Short-eared owl	X (M)	X (M)	Special Concern	Threatened
Common nighthawk	X	X	Special Concern	Special Concern
Canada warbler	X	X	Threatened	Special Concern
Eastern wood-pewee	X	X	Special Concern	Special Concern
Evening grosbeak	X	X	Special Concern	Special Concern
Olive-sided flycatcher	X	X	Threatened	Special Concern
Rusty blackbird	X (M)	X (M)	Special Concern	Special Concern
Yellow rail	X		Special Concern	Special Concern
Snapping turtle	X		Special Concern	Special Concern
Yellow-banded bumble bee	X	X	Special Concern	Special Concern
Black ash	X	X	-	(5)

Source: Northern Bioscience (2023)

Notes:

(M) Observed during migration
1 Within the Property boundary (shown on Figure S.5)
2 Within or near the approximate Project footprint based on current design
3 Per Schedule 1 of federal *Species at Risk Act*
4 Per provincial *Endangered Species Act*
5 Provincial protection for this species has been suspended by Ontario until at least 2023.

Boreal caribou (a Species at Risk) under *Species at Risk Act* and *Endangered Species Act*, is not listed above because there is no direct evidence (e.g., animals, tracks, pellets, lichen, cratering or bones) or published information indicating Boreal caribou currently use the Property. Boreal caribou are present in the region and the Property may still be capable of supporting Boreal caribou.

4.4 SOCIAL, ECONOMIC AND HEALTH CONTEXT

4.4.1 SOCIAL CONTEXT

- The Project site is located in the unorganized territory, District of Kenora in northwestern Ontario which covers an area of 395,432 km^2, has a total population of 66,000 and population density of approximately 0.2 persons per km^2
- The area supports recreational activities by locals and tourists, and there are several fly-in cabins and outfitter lodges
- According to the Crown Land Use Policy Atlas mineral exploration and development is encouraged with some limitations
- The Project site is within the Red Lake Forest Management Unit and is subject to the Red Lake Forest Management Plan
- There are also four traplines (see Figure S.8) that cross the Property
- There are no known archaeology sites in the area proposed for development

- Stage 1 and 2 archaeology studies that meet provincial standards have been completed for the development areas
- A Stage 3 archaeology study will be completed for three locations in 2024
- There are no First Nation Reserve lands or other federal lands in close proximity to the site (see Figure S.2), although the site is anticipated to be within the traditional territories of Indigenous Nations
- The Project site is located within Region 1 as defined by the Métis Nation of Ontario
- The closest protected land is Pakwash Provincial Park located approximately 10 km away from the Project site.

4.4.2 ECONOMIC CONTEXT

- The largest industry in the Kenora District is health care and social assistance
- The regional economy has been traditionally reliant upon mining and forestry industries
- There is currently an operating mine (Red Lake Gold Mines) and a suspended mine (Madsen Gold Mine) in Red Lake.

4.4.3 HEALTH CONTEXT

- The Property is located within the service area of the Northwestern Health Unit
- Red Lake Margaret Cochenour Memorial Hospital located in Red Lake, is the closest hospital to the Property
- Ear Falls has a community health centre, dental clinic and pharmacy
- Additional healthcare services are available at the Wabauskang First Nation Health Office, Lac Seul First Nation Health Department and Grassy Narrows First Nation medical centre
- Social services for Indigenous People living in Red Lake are also available at the Indian Friendship Centre.

450000 455000 460000 465000

5640000 5635000 5630000

Two Island Lake
Gullrock Lake
Stone Lake
Genessee Lake
Unnamed Waterbody 3
Unnamed Waterbody 1
Unnamed Waterbody 2
Unnamed Waterbody 6
Dixie Creek
Dixie Lake
Hiewall Lake
Tote Road Lake
Pakwash Lake
Moose Creek
Chukuni River
Caribou Creek

SNOWSHOE ROAD
CHUKUNI RIVER ROAD
TUZYK'S ROAD
DIXIE LAKE ROAD
105

LEA-110123
LEA-110124
LEA-110125
LEA-110126
LEA-110127
LEA-110128
LEA-110129

Stage 4 SL1
Stage 4 SL2
Stage 4 SL3
Stage 4 SL4

300610 204777 216889 316626 147364 250589 315914 261312 250588 225399
262797 251392 132557 196769 309916 262023 130582 166020 160690 261313 160652 165478 315879 114025
113713 262798 151438 233525 262024 232749 268759 194797 232022 194796 225358 160653 315880 213301
268762 146647 114070 332190 268761 131296 225400 194798 114064 328677 160654 194758
114071 166024 232026 309190 146648 249285 232023 194799 332188 114065 268725 231499
213343 213342 309191 160695 215583 214064 167506 330731 270786 250047 213302
114072 315917 146649 309192 114286 316627 262800 151443 317890 216179 162005
249354 270090
162006 160649
160650
194754 114024 309145
215604 249300 196043 114304
161434 166757 147888 269495
514310 514311 514312 131305 309927 147882 316642
514307 514308 514309 114299 262043 269493 166752
514306 514305 514304 514303 332450 215600 196617 270578 326847
210168 312130 144682 222219 126994 166753 214085 332451 132391 309928 132390 271146 328159 179882 162318 121913 233738 210200 164901 196839 270274 343367 117813 285771 181701 208274 125688 330950 183135 264297 343980 335323 323026 217769 293813 217768 181141 154397 182379 330880 182378 187834 154720 138479 162793 162792 143920 270257 270256 166895 282263 289642 262203 289641 116858
144683 126995 258186 100220 222220 316643 215601 179913 179912 160392 260267 116829 230251 160260 117738 278973 198305 152281 217081 284362 217770 285022 206378 102595 206377 303210 151235 169889 112519 276608 138480 325968 282351 195647 262808 121662 262204 214243 179662 166309
258187 276181 210169 114996 126996 215602 161432 102583 292355 117896 328803 296298 116830 166275 211435 330951 123771 282975 180349 270873 166983 215696 282980 151236 101733 254522 266597 257282 257281 112520 240469 195648 166896 215076 214245 282264 214244 121663 166310
235614 152265 205694 262284 270240 215603 114300 152310 123795 168914 214978 262162 340662 196929 102589 329568 329567 101722 329566 341918 341917 101734 230303 101829 223533 210640 276609 257283 101612 121774 282352 341289 289645 289644 289643 166311 215002

527756
521888 521876 521889 521878
521883 521886 521884 521877
214884 270305 521893 521899
214885 160939 521894 521896
203461 128876 521897 521898 521908 521905 521909 521912 521910 521906 521904
230862 211554 521900 521895 521913 521902 521911 521903 521901 521914 521907 521915
101895 326180 322398 274264 173077 219093 220491 117462 295081 287704 228423 190510 345391 274386 266890 126417
219754 219753 293160 322399 118232 266297 127704 172297 174543 155097 155096 209018 173190 206957 189774 293784 189773
118161 219756 103070 171031 219094 227046 170893 345290 220493 155648 220492 117411 155098 275648 323006 266892 345392 266891 274387
125191 227692 293812 173746 173078 151726 125785 117674 293161 303209 254521 227047 174544 295082 336134 166894 116114 160898 166308 179661 262202 269657 101530

LEGEND

- Property Boundary
- Preliminary Project Footprint
- Highway
- Local Road
- Power Line
- Watercourse
- Waterbody

Great Bear Resources Land Tenure
- Lease (Mining and Surface Rights)
- Requested Mining Lease #4
- Claim

0 0.5 1 2 3 4 5 Kilometres

NOTES:
- Base data acquired from Land Information Ontario (MNRF), 2022.
- Roads information provided by Kinross, August 2022.
- Property boundaries and land tenure provided by Kinross, February 2024.
- Proposed project footprint provided by Kinross, October 2023.
- Watercourses and waterbody acquired from Land Information Ontario (MNRF) and modified to match aerial imagery and LiDAR.

Datum: NAD83
Projection: UTM Zone 15N

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GREAT BEAR PROJECT

Land Tenure and Land Use

PROJECT N°: OMEMA2303 | **FIGURE: S.5**

SCALE: 1:51,000 | DATE: January 2024

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450000 455000 460000 465000 470000

5635000

5630000

Gullrock Lake
Stone Lake
Unnamed Watercourse 8
Unnamed Waterbody 3
105
Caribou Creek
Unnamed Waterbody 4
Unnamed Waterbody 5
Genessee Lake
Unnamed Waterbody 1
Unnamed Waterbody 2
Unnamed Watercourse 3
Unnamed Watercourse 6B
Unnamed Watercourse 6C
Unnamed Watercourse 6A
Unnamed Waterbody 6
Unnamed Watercourse 6D
Unnamed Watercourse 1
Dixie Creek
Unnamed Watercourse 6
Chukuni River
East Lake
Dixie Lake
Unnamed Watercourse 7A
Unnamed Watercourse 7
Hiewall Lake
Tote Road Lake
Troutlake River
Pakwash Lake

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LEGEND

- Property Boundary
- Preliminary Project Footprint
- Highway
- Local Road
- Power Line
- Watercourse
- Waterbody
- Flow Direction

NOTES:
- Base data acquired from Land Information Ontario (MNRF), 2022.
- Aerial imagery provided by Kinross (scene date: September 2022) and extracted from AgMaps.
- Property boundary provided by Kinross, March 2023.
- Road information provided by Kinross, August 2022.
- Proposed project footprint provided by Kinross, October 2023.
- Watercourses and waterbody acquired from Land Information Ontario (MNRF) and modified to match aerial imagery and LiDAR.

Datum: NAD83
Projection: UTM Zone 15N

N W E S

0 0.5 1 2 3 4 5 Kilometres

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GREAT BEAR PROJECT

Watercourses and Waterbodies

PROJECT N°: OMEMA2303 | **FIGURE: S.6**

SCALE: 1:60,000 | DATE: January 2024

400000 450000 500000 550000 600000 650000

5750000 5700000 5650000 5600000 5550000 5500000 5450000 5400000

Pikangikum First Nation
Cat Lake First Nation
Cat Lake
Chukuni River Watershed (4,801 km²)
Little Vermilion Lake
Red Lake
Red Lake
Gullrock Lake
105
Chukuni River
PROJECT LOCATION
Trout Lake
Trout Lake Watershed (3,021 km²)
Birch Lake
Zionz Lake
Gull Lake
Kezik Lake
Slate Falls Nation
Mishkeegogamang First Nation
Lake St. Joseph
Pashkokogan Lake
Miniss Lake
Lac Seul Watershed (38,969 km²)
599
English River at Manitou Falls Generating Station Dam Watershed (Cumulative Watershed Area 48,880 km²)
Pakwash Lake
Ear Falls
Ojibway Nation of Saugeen
Savant Lake
Wabauskang First Nation
Wabaskang Lake
Lac Seul
516
Cedar River Watershed (1,743 km²)
Lac Seul First Nation
Sioux Lookout
Seseganaga Lake
664
Big Vermilion Lake
Minnitaki Lake
642
671
72
Sturgeon Lake
Grassy Narrows First Nation
Dryden
Wabigoon Lake
Eagle Lake
Dryberry Lake
Atikwa Lake
17
Mameigwess Lake
Lake of the Woods
Rowan Lake
71
Kakagi Lake
Lower Manitou Lake
502
White Otter Lake
622
Otukamamoan Lake
Marmion Lake
Lac des Mille Lacs
Atikokan
Rainy Lake
613
11
Fort Frances
Pickerel Lake
UNITED STATES

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LEGEND

- Project Location
- First Nation Reserve
- Town
- Manitou Falls Generating Station
- Chukuni River Watershed
- Other Watershed
- Approximate Flow Direction of the English River System
- Highway
- Railway
- National Boundary
- Watershed Outlet
- Flow Direction

NOTES:
- Base data acquired from Land Information Ontario (MNRF), 2022.
- Watersheds delineated using Ontario Watershed Information Tool (MNRF).

Datum: NAD83
Projection: UTM Zone 15N

0 12.5 25 50 75 100 Kilometres

KINROSS

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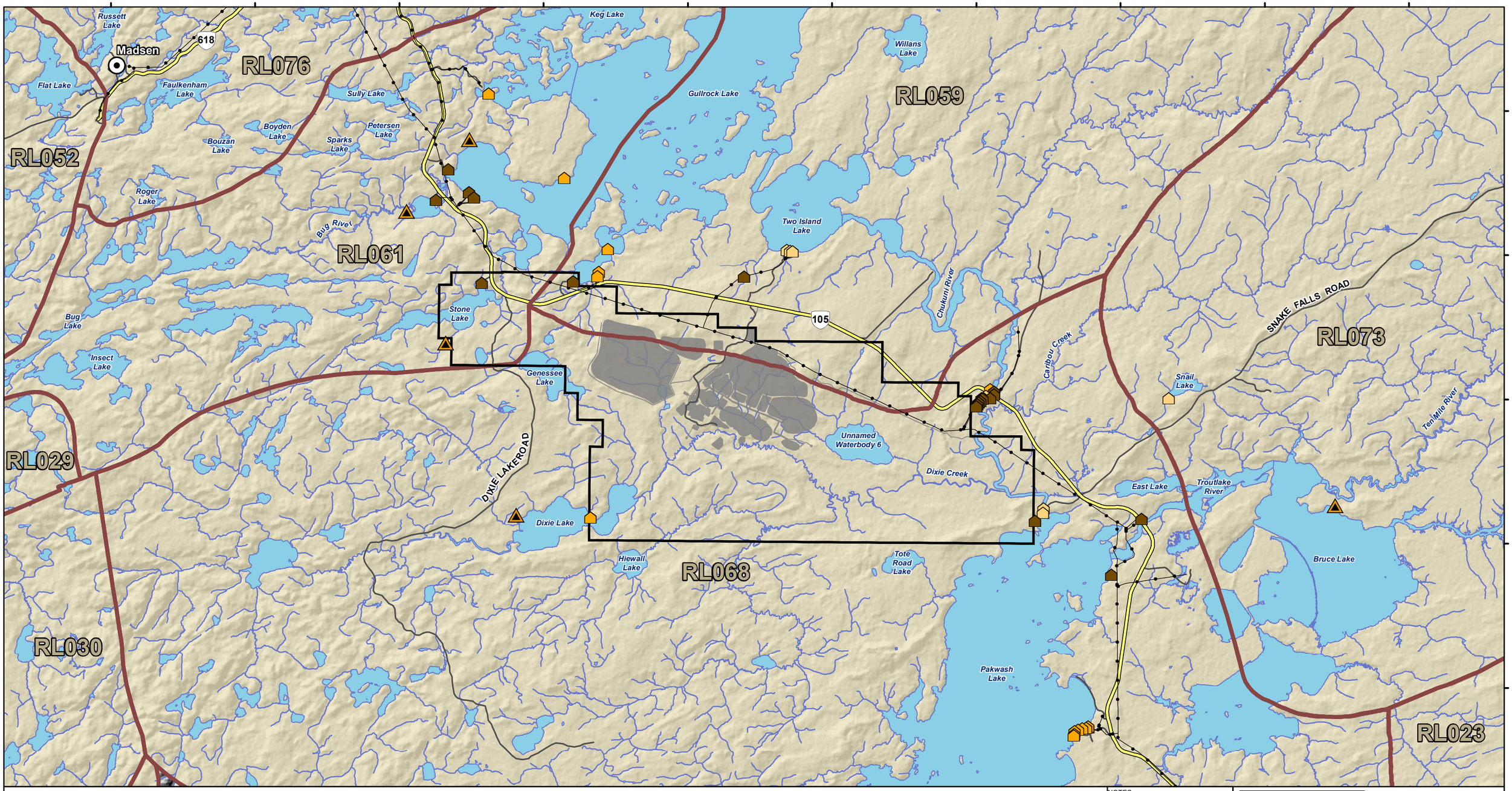
GREAT BEAR PROJECT

Watershed Boundaries

PROJECT N°: OMEMA2303 | FIGURE: S.7

SCALE: 1:1,150,000 | DATE: January 2024



X:\CA\CAOAK300-OAK\MIS-FS1-Project\FV2023\Projects\OMEMA2303_Kinross_Great_Bear_Env\7_GIS\Detailed_Project_Descrip\MXD\Traplines_and_Residences_ES_English_1.mxd

LEGEND

- Property Boundary
- Preliminary Project Footprint
- Town
- Highway
- Local Road
- Power Line
- Watercourse
- Waterbody
- Trapper Cabin
- Trapline Areas (Labelled with ID)

Cottage / Residential Areas

- Cottage Site (Not Remote)
- Cottage Site (Remote)
- Residential Site (Not Remote)

0 2.5 5 10 15 20 Kilometres

NOTES:
- Base data acquired from Land Information Ontario (MNRF), 2022.
- Roads information provided by Kinross, August 2022.
- Property boundary provided by Kinross, March 2023.
- Trapline areas provided by Great Bear Resources.
- Trapper cabins digitized from Forest Management Plans.
- Watercourses and waterbody acquired from Land Information Ontario (MNRF) and modified to match aerial imagery and LiDAR.

Datum: NAD83
Projection: UTM Zone 15N

KINROSS

wsp

GREAT BEAR PROJECT

Traplines and Residences

PROJECT N°: OMEMA2303 | **FIGURE: S.8**

SCALE: 1:125,000 | DATE: January 2024

5 FEDERAL, PROVINCIAL, INDIGENOUS AND MUNICIPAL INVOLVEMENT AND EFFECTS

5.1 FEDERAL FUNDING OR LANDS

There is no expected federal funding for the Project. No federal lands will be used to carry out the Project, including Reserve lands.

5.2 ENVIRONMENTAL APPROVALS

5.2.1 FEDERAL

- The Project is expected to require federal approvals in addition to the potential requirement for completion of an Impact Assessment pursuant to the *Impact Assessment Act*
- Table S.5 provides a preliminary list of federal environmental approvals that may be required for the Project
- Others may arise through consultation with federal agencies.

5.2.2 PROVINCIAL

- The requirement for provincial environmental assessment process(es) if any, will be confirmed through regulatory discussions with the Province
- Completion of a provincial Class Environmental Assessment for Resource Stewardship and Facility Development Projects may be required for the Project
- The same body of knowledge is commonly used to meet both federal and provincial process needs in accordance with the existing Canada-Ontario Agreement on Environmental Assessment Cooperation
- Table S.5 provides a preliminary listing of the provincial environmental approvals that are expected for the Project
- No facilities are planned in Manitoba (the closest provincial boundary), and no transboundary negative impacts from the Project are anticipated.

5.2.3 MUNICIPAL

- Municipal environmental approvals will not be needed as the Project is located outside of municipal boundaries.

Table S.5 Environmental Approvals Anticipated to be Required

APPROVAL AND REGULATORY INSTRUMENT (1,2)	AGENCY	DESCRIPTION / FACILITY
Schedule 2 Listing (Metal and Diamond Mining Effluent Regulations), *Fisheries Act* [new]	Environment and Climate Change Canada	– Storage of potentially deleterious mineral waste (such as tailings and mine rock) covering minor tributaries that are frequented by fish – An alternative assessment in the prescribed format will be required along with an approved fish habitat compensation plan
Authorization for Harmful Alteration, Disruption or Destruction of Fish Habitat or Death of Fish by means other than Fishing, *Fisheries Act* [new]	Fisheries and Oceans Canada	– For direct impacts to fish habitat if needed, and indirect impacts to fish habitat including flow reductions – An approved fisheries offset plan will be required
Approval under the Navigation Protection Program, *Canadian Navigable Waters Act* [new]	Transport Canada	– Alteration of navigable waters and crossing of navigable waters with infrastructure
Aeronautical Obstruction Clearance Canadian Aviation Regulations, *Aeronautics Act* [new]	Transport Canada	– Marking and lighting for structures that could interfere with aeronautical navigation
Licence for Magazine *Explosives Act* [new]	Natural Resources Canada	– A new or amended licence may be required for an explosive magazine
Land Use Clearance, *Aeronautics Act* [new]	NAV Canada	– Construction of tall structures, use of cranes, transmission line towers
Closure Plan, *Mining Act* [new]	Ministry of Mines	– Progressive reclamation and final closure – Construction of dams above the high-water mark of watercourses if any
Environmental Compliance Approval - Industrial Sewage Works, *Environmental Protection Act* [new or amendment]	Ministry of Environment, Conservation and Parks	– Treatment system for mine water and contact water, and discharge of treated effluent to the environment
Environmental Compliance Approval - Air and Noise, *Environmental Protection Act* [new or amendment]		– Onsite atmospheric emissions, such as from the crusher
Permit to Take Water, *Ontario Water Resources Act* [new or amendment]		– Dewatering of underground mine workings and open pits, and potentially an onsite water well and/or surface water fresh water supply
Work Permit or Letter of Authority, *Public Lands Act* or *Lakes and Rivers Improvement Act* [new]	Ministry of Natural Resources and Forestry	– For work on Crown land (*Public Lands Act* or *Lakes and Rivers Improvement Act*)
Aggregate Permit, *Aggregate Resources Act* [new or amendment]		– An aggregate resource permit may be sought to provide a source of aggregate for mine construction and operation
Land Use Permit, *Public Lands Act* [new]		– For land tenure for facilities located on Crown land not governed by the *Mining Act*
Forest Resource License and Authority to Haul, *Crown Forest Sustainability Act* [new]		– Harvesting of merchantable timber resource that is retained by the Crown to clear lands for construction
Licence to Collect Fish for Scientific Purposes, *Fish and Wildlife Conservation Act* [new]		– Required for fish collection and transfer during construction if needed

Note(s):

1 Other regulatory approvals may be required

2 A federal *Species at Risk Act* permit and/or provincial *Endangered Species Act* overall benefit permit could be required.

6 POTENTIAL EFFECTS OF THE PROJECT

6.1 CHANGES TO FISH AND FISH HABITAT, AQUATIC PLANTS AND MIGRATORY BIRDS

Table S.6 provides a preliminary listing of changes to the environment within federal jurisdiction, that may result from the construction, operation and closure of the Project. No changes to federal aquatic Species at Risk as defined in the federal *Species at Risk Act* are anticipated. None are known or expected to be present.

6.2 POTENTIAL CHANGES TO THE ENVIRONMENT ON FEDERAL LANDS OR LANDS OUTSIDE ONTARIO

There are no federal lands near the Project site, and no development is planned to occur on federal lands or Reserve lands. No changes to federal lands including Reserve lands are expected from the Project. The Project will not result in changes to the natural, biophysical or human environment outside of Ontario, as will be confirmed through future modelling. The Project is located more than 100 km from the Ontario - Manitoba border, and there are no direct roads between Manitoba and Ontario. The Project is not of a scale or location that it could result in changes to the environment outside of Canada.

6.3 POTENTIAL EFFECTS TO INDIGENOUS PEOPLES

Kinross is engaging with Indigenous Nations to support the development of Indigenous knowledge studies and to understand the culture and interests of Indigenous Nations. Information gathered through the Indigenous knowledge studies will inform Project design and future mitigation measures if appropriate.

The overall effect to Indigenous Peoples from the Project can be positive, particularly for economic conditions and the associated outcomes arising from improvements in economic circumstances. Key positive benefits of the Project are expected to include employment and business opportunities for Indigenous Nations members and businesses, which Kinross will seek to enhance in collaboration with local Indigenous Nations and strategic, targeted programs.

The Project may also result in adverse impacts to Indigenous Nations and Peoples, such as through:

- Changes to land access, loss of traditional lands and ability to hunt, fish, gather and/or trap, as well as the ability to practice their culture
- Direct impacts to structures, sites or things that are of historical, archaeological, paleontological or architectural importance to Indigenous Peoples if present (none currently known)
- Impacts to health, social and economic conditions.

Table S.7 provides a preliminary assessment of potential effects, including of the Project on Indigenous Peoples, based on information available to date, to be confirmed through ongoing engagement and future assessment.

Table S.6 Preliminary List of Changes to the Environment under Federal Jurisdiction

ASPECT	PROJECT PHASE	POTENTIAL SOURCE	POTENTIAL CHANGE TO THE ENVIRONMENT	PRELIMINARY AREA OF INFLUENCE
Fish and fish habitat, as defined in subsection 2(1) of the *Fisheries Act*	Construction	– Installation of temporary and permanent facilities and infrastructure	– Alteration, disruption and destruction of fish and benthic fauna habitat from direct disturbance, blasting and mine dewatering	– Project footprint
			– Change to the natural surface water flow pattern	– Project footprint
			– Surface water quality alteration (meeting regulatory requirements, but not at background levels at discharge location)	– Project footprint and a short mixing zone downstream of the discharge location
	Operations	– Water management and treatment	– Surface water quality alteration (meeting regulatory requirements, but not at background levels at discharge location)	– Project footprint and a short mixing zone downstream of the discharge location
	Closure	– Site reclamation and closure	– Surface water quality alteration until discharge ends and site is reclaimed	– Project footprint and a short mixing zone downstream of the discharge location
			– Potential for creation of fish habitat in new pit lakes, expected to be re-connected to the Dixie Creek system	– Project footprint
	Preliminary Mitigation	– Minimize in-water work and activities, and avoid where practical the overprinting over of waters frequented by fish through a compact site design – Apply standard industry mitigation measures, including multi barrier approach for erosion and sediment controls, avoidance of in-water work during sensitive seasons such as spawning periods, manage blasting activities near water to avoid killing fish, maintain riparian buffers where possible, and managing materials to avoid deleterious substances from entering waters		
Migratory birds, as defined in subsection 2(1) of the *Migratory Birds Convention Act, 1994*	Construction	– Clearing of habitat to allow for site construction	– Habitat loss	– Project footprint
		– Installation of permanent facilities	– Disturbance of species	– Potential limited area outside the Project footprint related to noise disturbance
		– Additional vehicle traffic	– Increased risk of collision or mortality	– Primarily related to local roads
	Operations	– Operation of permanent facilities	– Disturbance of species	– Potential limited area outside the Project footprint related to noise disturbance
		– Additional vehicle traffic	– Increased risk of collision or mortality	– Primarily related to local roads
	Closure	– Site reclamation and closure	– Habitat redevelopment	– Project footprint
	Preliminary Mitigation	– Develop a compact Project site as practical to reduce habitat loss – Avoid clearing of vegetation during the bird breeding season – Employ standard industry techniques to minimize disturbances from noise and light, as practical		

ASPECT	PROJECT PHASE	POTENTIAL SOURCE	POTENTIAL CHANGE TO THE ENVIRONMENT	PRELIMINARY AREA OF INFLUENCE
Navigable Waters, as defined in subsection 2 of the *Canadian Navigable Waters Act*	Construction	– Overprinting of potentially navigable waterbodies / watercourses	– Project facilities and infrastructure overprinting watercourses which may have historic or future use as a navigable waterway	– Project footprint
	Operations	– Overprinting of potentially navigable waterbodies / watercourses	– Project facilities and infrastructure overprinting watercourses which may have historic or future use as a navigable waterway	– Project footprint
	Closure	– None	– None	– None
	Preliminary Mitigation	– Avoid in-water works and reduction in navigability in watercourse determined to be navigable waters, as practical – Where practical, follow minor works order criteria for works or activities in navigable waters to mitigate effects to navigability – Where works in navigable waters cannot be avoided, utilize industry standard facility / equipment designs to limit impacts to navigation		

Table S.7 Preliminary Summary of Potential Environmental Effects

ASPECT	POTENTIAL EFFECT (PRELIMINARY)	PROPOSED MITIGATION (PRELIMINARY)
Air Quality, Greenhouse Gases, Noise and Light	– Air emissions have the potential to generate dust or products of petroleum hydrocarbon combustion – Noise emissions from the Project have the potential to disturb other area users – Greenhouse gas emissions from the Project have a minor potential to contribute to global carbon dioxide emissions – Operation of an industrial facility will cause a localized light glow that is visible off site – Impacts on how and where Indigenous Nations Rights are exercised Preliminary Areal Extent: – Air quality regulatory requirements will be met at the Property boundary – Noise regulatory requirements will be met at the nearest receptor (likely a cottage or residence, to be determined) – A night glow is expected to be visible off site	– Provincial regulatory requirements will be met for onsite emissions and air quality at the Property boundary – Provincial regulatory criteria will be met for onsite emissions and at surrounding noise sensitive locations, such as cottages – Carbon offset projects may be a practical and complementary option to support reducing greenhouse emissions, and may be considered as a form of mitigation for the Project – Appropriate management practices / plans will be developed and implemented – Water sprays will be used to control dust emissions from haul roads and construction areas, and best management practices will be followed for dust control during operations – Measures will be used to reduce sound emission effects, such as: developing a compact site, maintaining tree screens around work areas, reducing the overall height of stockpiles, maintaining equipment in good working order and utilizing efficient mufflers – Development of a compact overall site as proposed, will reduce haulage / transportation distances for greater fuel economy and reduce greenhouse gas emissions – Maintaining equipment and vehicles in good working order also improves on fuel combustion efficiency – Care will be taken to ensure lights are properly aimed to minimize offsite light disturbance
Local waterbodies / watercourses	– Project development may overprint small creeks and beaver ponds, and have the potential to reduce downstream flow in the immediate vicinity – Diversion of contact waters may reduce runoff to some watercourses and waterbodies, which could have an effect on water flows and surface water areas – There may be an effect on the local surface water system by dewatering required for the underground mine and open pits – An intake / discharge location is proposed (to be determined), which has the potential to affect water quality and flows – Diversion of Dixie Creek is not proposed at this time but could be required pending effectiveness of other mitigation measures – There may be new water crossings at locations to be determined	– Effluent discharge to the environment will meet all federal and provincial regulatory requirements for water quality and water flows – The surface water intake will meet all federal and provincial regulatory requirements for water flows – In-water structures will be designed to avoid interference with navigation as reasonable

ASPECT	POTENTIAL EFFECT (PRELIMINARY)	PROPOSED MITIGATION (PRELIMINARY)
	– Impacts on how and where Indigenous Nations Rights are exercised Preliminary Areal Extent: – Effluent quality will meet regulatory requirements before release to environment – There may be a small area downstream of the discharge location (mixing zone) where water quality may not be the same as the background water quality	
Groundwater System	– Underground mine and open pit dewatering will affect the local groundwater levels and may affect surface water flows – Groundwater quality is not expected to be affected Preliminary Areal Extent: – Dewatering may result in a depression in the local groundwater level which is currently under investigation	– Modelling investigations will fully assess potential effects to support mitigation, if needed – Groundwater levels will return after the mine workings and open pit fill with water at closure
Fish and Fish Habitat	– Project development may overprint small creeks and ponds which are fish frequented – Project footprint and dewatering has the potential to impact water levels and downstream flow volumes in the immediate vicinity, but flow is returned to the same watershed elsewhere – Effects of blasting (Vibration and overpressure) may have adverse effects on aquatics species – An intake / discharge location is proposed (to be determined), which has the potential for habitat disturbance – New water crossings may be needed at locations to be determined which has the potential for habitat disturbance Preliminary Areal Extent: – Habitat disturbance will be limited to the Project footprint – Effluent quality will meet regulatory requirements before release to environment and will be protective of aquatic life	– Effluent discharge to the environment will meet all federal and provincial regulatory requirements – In-water structures will be designed to avoid interference with navigation as reasonable – Compensatory aquatic habitat, which will be consulted upon and approved through a rigorous federal process, will be provided to mitigate the effects to aquatic resources, including habitat loss – Preliminary plan is to re-connect the water filled open pits (pit lake) to the Dixie Creek system on closure, which may include establishment of fish habitat – Best management practices, measures to protect fish and fish habitat; and standards and code of practices will be implemented where reasonable
Natural Vegetation and Wildlife	– Wildlife (and including Moose and other furbearers) may be disturbed by Project activities and disturbance, including noise – Mine site and related infrastructure development, if any, will displace existing terrestrial habitat – Mine site development may displace existing terrestrial habitat for Species at Risk	– A portion of the site has been previously disturbed through past forestry and exploration activities, or will be disturbed by the proposed AEX program, but some areas to be affected remain a more natural condition – A compact site for the new mine will be developed to limit disturbance to new areas as reasonable – Vegetation removal will be avoided where reasonable during the bird nesting season

ASPECT	POTENTIAL EFFECT (PRELIMINARY)	PROPOSED MITIGATION (PRELIMINARY)
	– Impacts on how and where Indigenous Nations Rights are exercised Preliminary Areal Extent: – Habitat disturbance will be limited to Project footprint – Potential limited area outside the footprint related to noise disturbance – Increase potential for wildlife collision primarily on local roads	– The site will be reclaimed after mining ends to support future productive habitat
Hunting, Trapping, Fishing and Tourism	– Limited effect as the mine is to be located on an active exploration and planned AEX program, where access will be controlled / restricted for safety of workers – There will be a more extensive disruption to the local experience in the immediate vicinity of the site from the larger scale mining operation Preliminary Areal Extent: – Potential limited area outside the Project footprint related to noise disturbance	– No mitigation measures are proposed other than final reclamation at closure
Commercial Operations	– Could limit access to people and resources for other operations and potentially draw local people back to the area for jobs Preliminary Areal Extent: – To be determined	– Comprehensive engagement plan with local stakeholders and Indigenous Nations to understand the potential socio-economic risks and opportunities, followed by development of plans to enhance opportunities for economic benefits
Traditional use of lands and resources (1)	– Effects on spiritual relationships and connection with the environment – Effects on locations of sentimental, traditional and heritage value – Effects on traditional use of lands and resources as sites of value and interest to First Nation(s) – Effects on cultural practices – Changes to land and resources resulting in effects on exercising rights Preliminary Areal Extent: – Potential limited area outside the mine-held lands related to noise disturbance	– Ongoing engagement with Indigenous Nations to mitigate potential effects
Indigenous / Public Health and Safety (1)	– All regulatory requirements (such as for air quality, noise, water quality and similar) will be met – Effects on Indigenous women's safety	– Kinross will work with local Indigenous Nations with an aim of enhancing the positive benefits of the Project

ASPECT	POTENTIAL EFFECT (PRELIMINARY)	PROPOSED MITIGATION (PRELIMINARY)
	– Effects on Indigenous women, youth, elders, etc. – Changes to community safety and well-being and health of Indigenous Peoples – Increased risk of vehicle collision due to increased traffic Preliminary Areal Extent: – To be determined	– Traffic management and awareness will reduce potential for accidents on public roads
Socio-economics	– Benefits including employment and procurement opportunities – Benefits for education and training opportunities – Effects on healthcare services and providers – Effects on traffic due to mine personnel commuting to site Preliminary Areal Extent: – To be determined	– Kinross will work with local Indigenous Nations and with communities with an aim of enhancing the positive benefits of the Project
Physical and cultural heritage	– No anticipated effect to known archaeology sites – Effects to cultural heritage to be determined Preliminary Areal Extent: – Heritage disturbance will be limited to project footprint	– Archaeological studies have been conducted and no cultural heritage features or artefacts have been identified in locations of proposed development to date (further investigation planned) – This will continue to be reviewed as additional information is gained and the Project's design progresses; mitigation will be completed, if needed – Kinross' chance find procedure and other measures will be put in place as needed, to identify and protect undetected features or artefacts during construction
Identified structures or sites [2]	– No effect expected	– None expected to be required

Notes:

1 This preliminary assessment was developed in part through engagement activities to date and may be revised for ongoing engagement.
2 Structures or sites of historical, archaeological, palaeontological or architectural significance.

6.4 ESTIMATE OF GREENHOUSE GAS EMISSIONS

Kinross views our Climate Change Strategy and goals as essential to safeguarding the environment, and vital to their long-term success. The Strategy is aligned with the Kinross corporate goal of being a net-zero greenhouse gas emissions company by 2050, and has set a target to achieve a 30% reduction in intensity per ounce produced of Scope 1 and Scope 2 emissions by 2030.

Kinross is considering design elements into the Project aimed at reducing greenhouse gas emissions as feasible, including:

- Preferentially taking electricity from the provincial grid for the Project with low carbon intensity energy if grid power is available within a reasonable distance
- Utilize natural gas for power generation if grid power can not reasonably be available
- Use distributed power rather than local generators, to meet equipment power demands as practical
- Optimize distances to be travelled by haul trucks during mine planning or use of conveyors
- Use ventilation on demand for underground workings
- Fully consider energy efficiency throughout the process plant and with fixed facilities / equipment
- Consider greenhouse gas generation in mobile equipment selection
- Use dispatch and machine health systems to manage operations and equipment efficiently
- Use an equipment maintenance program to reduce fuel consumption.

As with many other industrial operations, greenhouse gases will be emitted during all phases of the project (construction, operations and closure). Combustion of fossil fuels will produce carbon dioxide, nitrous oxide and methane. The Project will include sources of direct (Scope 1 and 2) and indirect (Scope 3) greenhouse gas emissions. The primary sources of greenhouse gas emissions from each Project phase are expected to be:

- Construction: diesel combustion in mobile equipment
- Operation: diesel combustion in mobile equipment, natural gas combustion in stationary equipment, blasting in the open pit and underground, natural gas or propane for heating onsite facilities and underground, processing of ore and indirect emissions from purchased grid power
- Closure: diesel combustion in mobile equipment.

An initial estimate of net greenhouse gas emissions associated with the Project has been developed utilizing the guidance of Environment and Climate Change Canada, including the Strategic Assessment of Climate Change guidelines (ECCC 2020), and the Draft Technical Guide Related to the Strategic Assessment of Climate Change (ECCC 2021). The following sources and sinks were considered:

- Direct (Scope 1) emissions including hydrocarbon fuel combustion in stationary power and heating equipment, for mobile equipment used on site and released from explosives detonation
- Acquired energy (Scope 2) emissions from the purchased electricity
- Land use changes at the Project.

Preliminary greenhouse gas emissions were calculated for all Project phases converted to units of carbon dioxide equivalent (CO_2e) using the Intergovernmental Panel on Climate Change Fifth Assessment Report AR5 (IPCC 2014), and consistent with Schedule 3 in the *Greenhouse Gas Pollution Pricing Act*. The maximum net greenhouse gas emissions per year are estimated to be 174 kilotonne-CO_2e/year. This is composed of 167 kilotonne-CO_2e/year of direct emissions, and 7 kilotonne-CO_2e/year acquired

electricity. The cumulative net greenhouse gas emissions for the total Project life are estimated to be 2,425 kilotonne-CO_2e. The potential loss of carbon uptake due to changes in land use were estimated at 30 kilotonne-CO_2e. A more detailed assessment of greenhouse gas emissions and mitigation measures will be completed in conjunction with any required Impact Statement.

Due to the limited grid power currently available in the region, the above preliminary greenhouse gas emissions estimate reflects a hybrid power generation scenario. Kinross is continuing to study a grid connection solution for the Project, that covers its entire power supply needs, as onsite power generation is not preferred and increases greenhouse gas emissions significantly. A 100% grid solution if sufficient power is available from Hydro One, is estimated to reduce net greenhouse gas emissions from the above estimate by 583 kilotonne-CO_2e over the life of the Project.

6.5 WASTES AND EMISSIONS

Table S.8 provides a brief summary of the types of wastes and emissions that are likely to be generated from the Project during the construction, operation, closure phases, including in the air, in or on water, and in or on land.

Table S.8 Preliminary List of Types of Wastes or Emissions

ASPECT	PROJECT PHASE	ANTICIPATED WASTE OR EMISSION	PRIMARY PROJECT SOURCES
In the air	Construction, Operations and Closure	– Dust emissions – Air emissions including greenhouse gas emissions from machinery and equipment – Noise emissions – Light	– Blasting, crushers, conveyors, tailings management facility, stockpiles, roads and laydown areas – Process plant, mobile equipment – Open pit blasting, crusher, stockpiling activities – Site illumination for safety
In or on land	Construction	– Domestic solid waste – Regulated and non-regulated, industrial solid and liquid waste – Mineral waste (overburden and mine rock) – Vibration	– Process plant, maintenance, office – Open pit and underground mine
	Operations	– Domestic solid waste – Regulated and non-regulated, industrial solid and liquid waste – Mineral waste (overburden, mine rock and tailings) – Vibration	– Process plant, maintenance, office – Open pit and underground mine
	Closure	– Domestic solid waste – Regulated and non-regulated, industrial solid and liquid waste	– Process plant, maintenance, office – Demolition activities, maintenance, office
In or on water	Construction	– Treated contact runoff discharged to the Chukuni River as effluent – Treated domestic sewage – Vibration	– Project site (captured in water management infrastructure and treated in ponds and water treatment plant) – Sewage treatment plant – Explosive use (open pit)

ASPECT	PROJECT PHASE	ANTICIPATED WASTE OR EMISSION	PRIMARY PROJECT SOURCES
	Operations	– Treated contact runoff and effluent discharged to the Chukuni River – Treated domestic sewage – Vibration	– Project site (captured in water management infrastructure and treated in ponds and water treatment plant) – Sewage treatment plant – Explosive use (open pit)
	Closure	– Treated contact runoff and effluent discharged to the Chukuni River – Treated domestic sewage	– Project site (captured in water management infrastructure and treated in ponds and water treatment plant) – Sewage treatment plant

6.5.1 ATMOSPHERIC EMISSIONS

AIR EMISSIONS

Air emissions will come from point source and fugitive sources. The main point source air emissions are expected to be suspended particulate (dust) from the crusher(s) and conveyors. Measures will be taken to minimize dust creation at the plant site and to use dust collection devices where practical.

Fugitive sources are likely to contribute the majority of the air emissions, including from:

— Drilling and blasting of rock
— Loading and offloading of rock (mine rock and ore) and overburden
— Vehicle and heavy equipment travel
— Exposed earth and mineral waste such including the tailings management facility and stockpiles.

Water and other approved dust suppressants will be used as required to control dust emissions.

GREENHOUSE GAS EMISSIONS

Greenhouse gas emissions from the Project will derive mainly from heavy equipment operation and fuel combustion. Grid power is intended to be preferentially used to meet Project stationary equipment power demands and reduce direct greenhouse gas emissions at the site.

NOISE EMISSIONS

The primary sources of noise from the Project are expected to be from the operation of heavy equipment for construction and handling of mine materials (mine trucks, shovels, loaders, etc.). Plant site operations, including crushing and grinding operations, will be enclosed in buildings and emissions are expected to be minor in comparison to open air noise sources. Blasting from open pit operations will also contribute to noise emissions, although blasts will be a very limited duration of one to two minutes. Noise source modelling will be carried out to understand the noise and noise related effects and inform practical mitigation measures during engineering design.

6.5.2 LIQUID DISCHARGES

MINE WATER AND SURFACE CONTACT WATERS

Mine water includes groundwater that collects in the underground mine, and groundwater, runoff and direct precipitation that collects in the open pit. Mine water will contain suspended solids from mining and earth moving activities, ammonia residuals from ammonia-based explosives and hydrocarbons from heavy equipment operation. Exposed bedrock may contribute minor quantities of metals to the mine water. Mine water will be collected and directed to an integrated water management and treatment system on surface.

Precipitation and groundwater that comes into contact with mine facilities on surface including potentially acid generating materials (contact water) will be collected using ditches and sumps, and will be directed to the integrated water management system. Runoff from the stockpiles (ore, mine rock and overburden) and tailings management facility may contain suspended solids and dissolved metals. Geochemistry investigations are ongoing to support a prediction of water quality, including for residual metals arising from natural bedrock that become exposed through mine-related activities.

Modelling will be completed to assess the volume and quality of the water requiring management, which will be used in the design of the integrated water management and treatment facilities on site. Water from the integrated system will be re-used on site as practical, and will be the primary water supply for the process plant.

PROCESS PLANT AND TAILINGS WATER

Excess process plant water is expected to be pumped with the tailings to a tailings management facility for management. Tailings and process plant water will contain residual processing reagent products and metals from the ore. A destruction circuit will be established within the process plant reduce the concentration of cyanide in the tailings and process plant water, prior to pumping to the tailings management facility. All effluent discharged from the site will be treated if needed, to meet regulatory requirements.

DOMESTIC SEWAGE

Domestic sewage during the construction and operations phase will be treated by an appropriately sized, technically acceptable method, such as a sewage treatment plant, potentially expanding on the facility developed for the AEX program. Effluent meeting applicable criteria will be either be directed to the integrated water management and treatment system, or potentially discharged directly to the environment if all regulatory requirements are met.

EXCESS SITE WATER

Excess water from the integrated water management and treatment system will be discharged to the environment when all regulatory requirements are met for quality and quantity. The discharge location is currently under investigation but has been preliminarily identified as to the Chukuni River (see Figure S.3).

6.5.3 SOLID WASTES

DOMESTIC WASTE

Domestic wastes such as food scraps, refuse, clothing, metal tins, scrap metal, glass, plastic, wood and paper will be produced at the Project site during all project phases. These materials will be managed according to regulations either on site or transported to an existing facility off site.

SPECIAL MANAGEMENT WASTE

Special management wastes produced by the mine are expected to include: waste petroleum products and packaging, waste glycol, petroleum contaminated soils (if present from a spill), waste explosives and biomedical waste. Special management wastes produced will be stored indoors and/or in sealed containers in lined, bermed areas (or other means of secondary containment) until they can be transported off site to an appropriately licensed facility in compliance with provincial and federal regulations.

DEMOLITION WASTE

Salvageable machinery, equipment and other materials will be dismantled and taken off site for sale or reuse if economically feasible. A dedicated non-hazardous landfill may be developed for the closure phase for storage of demolition wastes, such as concrete, steel, wallboard and similar materials.

6.6 OVERVIEW OF POTENTIAL ENVIRONMENTAL EFFECTS

Table S.6 and Table S.7 provides a preliminary assessment of potential changes to the environment under federal jurisdiction and an overview of the potential effects from the Project.

Table S.9 provides an overview of comments received to date and a proposed preliminary approach to address these aspects, including through site design as appropriate. This preliminary information will be clarified through ongoing engagement activities, the environmental approvals process and engineering investigations for the mine.

Table S.9 Preliminary Comments and Preliminary Approach / Actions

SUMMARY OF PRELIMINARY COMMENTS / CONCERN	PRELIMINARY APPROACH TO ADDRESS / ACTIONS
Open pit mining	– Provide information regarding the different means of mining during ongoing engagement activities, and describe how Kinross determined the proposed mining methods – Mining alternatives will be described in the Impact Statement
Confidence that the mine will be built	– Additional engineering studies including the Prefeasibility Study are currently in progress, will be completed to help confirm Project viability – An AEX program is proposed to better understand the ore body and assess the economics of the Project – Project updates will be provided during ongoing consultation
Reclamation and closure of the site	– Reclamation and closure of the site will be discussed during ongoing consultation activities – A preliminary plan for reclamation and closure will be included in the Impact Statement – Prepare and consult on a comprehensive regulatory Closure Plan during the permitting stage of the Project

SUMMARY OF PRELIMINARY COMMENTS / CONCERN	PRELIMINARY APPROACH TO ADDRESS / ACTIONS
Maximization of (positive) socioeconomic impacts, including potential for local hiring	– Kinross believes that responsible mining should strive to create positive economic and social benefits, for local communities and Indigenous peoples, leading to improvements in the overall quality of people's lives – Planning will fully consider provision of local employment and contracting opportunities to the region
Social risks related to changing social structures from direct and indirect Project employment	– The potential for negative impacts from the Project, including on the human environment, will be assessed in the Impact Statement – Mitigation measures will be defined and implemented to minimize these impacts as appropriate
Opportunities for long-term careers for Indigenous youth	– Kinross is committed to establishing a long-term presence in northern Ontario and the Red Lake area – Kinross will work with local Indigenous Nations to identify potential means of meeting this request
Housing and accommodation supply constraints	– Kinross recognizes that there may be accommodation constraints in the region and for that reason is considering development of accommodations on the Project site (for both the advanced exploration program and the mine)
Road safety	– The Project has the advantage of being situated along a major highway designed for industrial traffic loads – Kinross intends to work with the Ministry of Transportation (Highway 105) and MNRF (local forestry roads) to develop appropriate design features and mitigation measures to minimize potential traffic conflicts arising from the Project
Desire of Indigenous Nations to participate actively in environmental baseline studies, and in the Impact Assessment and environmental approvals processes	– Indigenous Nations will continue to be provided opportunities to participate in environmental baseline investigations – Kinross will work with local Indigenous Nations to identify a means of active participation – Consultation and engagement will continue through the Impact Assessment and environmental approvals processes
Consideration of Indigenous knowledge during the Impact Assessment	– Indigenous knowledge provided to Kinross will be fully considered and utilized when assessing Project impacts and determining appropriate mitigation measures
Maintenance of access to sites of interests (values) on the Property	– The safety of employees, visitors and others is a top priority for Kinross – Kinross will fully consider provision of periodic access when requested to known Indigenous values within the Property, if the access can be provided safely
Potential for impacts on water quality, fish habitat and fish populations	– The potential for impacts from the Project water quality, fish habitat and fish populations will be assessed in the Impact Statement – Mitigation measures will be defined and implemented to minimize these impacts as appropriate
Consideration of flooding, forest fires or other natural disasters that may impact access to the communities and site	– The Impact Statement will consider the potential impacts the environment may have on the Project (such as flooding, natural fires, natural disasters and climate change)

The *Impact Assessment Act* requires that cumulative effects from the designated project be considered hat are likely to result in combination with other physical activities that have been or will be carried out. For the Project, it is anticipated this would include cumulative effects associated with the exploration program and AEX program at the site. Kinross is developing the Project (the mine), to expand and/or modify facilities that are being developed during the AEX program to minimize environmental disturbance as practical. Cumulative effects will be assessed in the Impact Statement in accordance with Impact Assessment Agency of Canada guidance.

7 REFERENCES

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