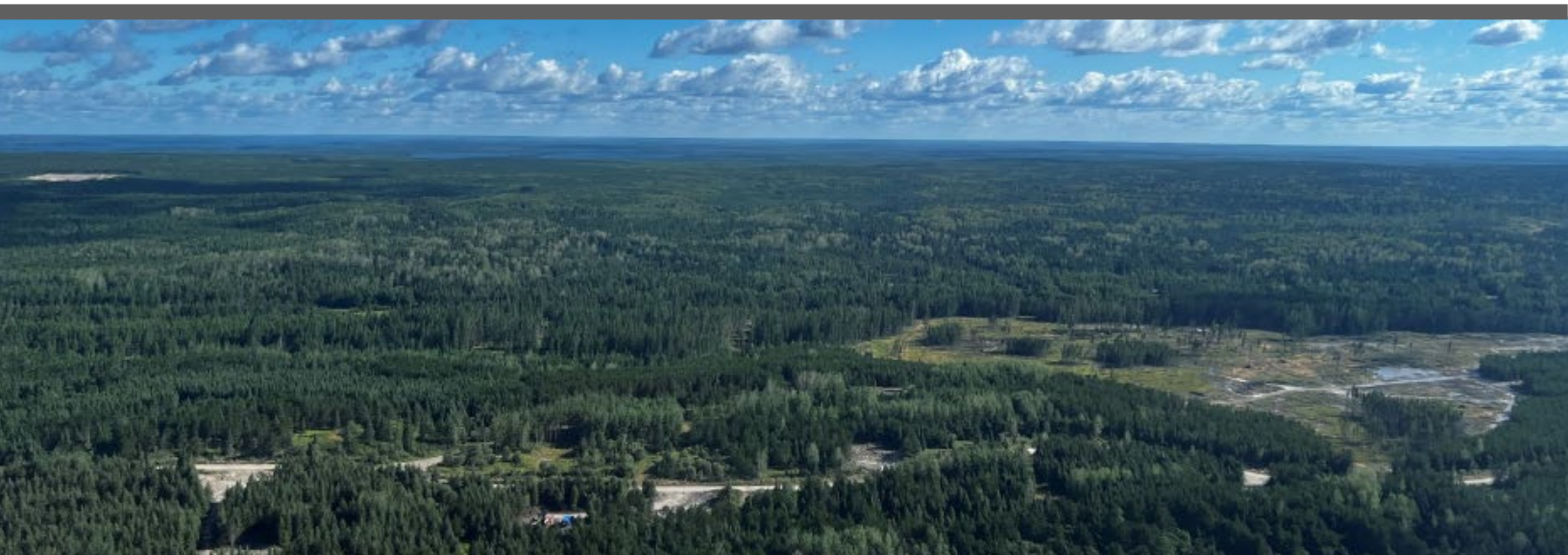
KINROSS Great Bear

Great Bear Gold Project
Impact Statement

Appendix V:

Navigable Waters Assessment Information



GREAT BEAR RESOURCES

GREAT BEAR PROJECT

INFORMATION FOR NAVIGABLE WATERS ASSESSMENT

DECEMBER 2024

GREAT BEAR PROJECT

INFORMATION FOR NAVIGABLE WATERS ASSESSMENT

GREAT BEAR RESOURCES

PROJECT NO.: OMEMA2303
DECEMBER 2024

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1 INTRODUCTION

1.1 PROJECT BACKGROUND

Great Bear Resources Ltd. (Great Bear Resources), a wholly owned subsidiary of Kinross Gold Corporation, is proposing to develop the Great Bear Project (Project), a proposed gold mine with related facilities and infrastructure to be located approximately 25 kilometres (km) southeast of the Municipality of Red Lake in northwestern Ontario (Figure 1-1).

The Project is located primarily within the watershed of the Dixie Creek and associated tributaries. Dixie Creek flows into the Chukuni River which is a relatively large water system that flows into Pakwash Lake. The key watercourses and waterbodies discussed in this document and land tenure aspects are shown on Figure 1-2a and Figure 1-2b.

1.2 OBJECTIVE

This information package has been prepared by WSP Canada Inc. (WSP) to support the assessment by Transport Canada of the navigability of the following watercourses and waterbodies:

- Unnamed Watercourse 1, 2, 3, 4 and 6
- Unnamed Waterbody 1, 2, 4 and 6
- Dixie Creek

Potential effects to navigation may result from overprinting by mine-related facilities and infrastructure, or reductions in flow and level resulting from a need to contain contact waters for the Project. Access, water flows and water levels in some of the above listed watercourses and waterbodies may be affected.

Information is also provided in this document regarding the Chukuni River as it is proposed to receive the treated effluent from the Project. Limited infrastructure will be required to placed below the high water mark along the western bank of the river. Great Bear Resources recognizes that the Chukuni River has been used and continues to be navigated.

As per the *Canadian Navigable Waters Act*, a navigable water is defined as:

> *"a body of water, including a canal or any other body of water created or altered as a result of the construction of any work, that is used or where there is a reasonable likelihood that it will be used by vessels, in full or in part, for any part of the year as a means of transport or travel for commercial or recreational purposes, or as a means of transport or travel for Indigenous peoples of Canada exercising rights recognized and affirmed by section 35 of the Constitution Act, 1982, and a) there is public access, by land or by water; b) there is no such public access but there are two or more riparian owners; or c) Her Majesty in right of Canada or a province is the only riparian owner."*

WSP understands that navigability will be assessed by Transport Canada for each watercourse / waterbody based on the following categories:

- Physical Characteristics
  - Coordinates, length, width and depth
  - Bank type and bottom type
  - Hydrology of the waterbody and surrounding area

- Accessibility
  - Is there public access by land or water?
  - Are there two or more riparian (waterfront) owners around the body of water?
  - Is the Crown (Federal or Provincial) the only waterfront owner?
- Use by a vessel for transport or travel purposes (commercial, recreational or exercising of rights by Indigenous peoples)
  - Is it being used currently?
  - Is there a reasonable likelihood of future use?

Brief information about these aspects for the identified watercourses and waterbodies as currently available has been provided in this document to facilitate assessment by Transport Canada. Representative photographs are provided at the end of each section.

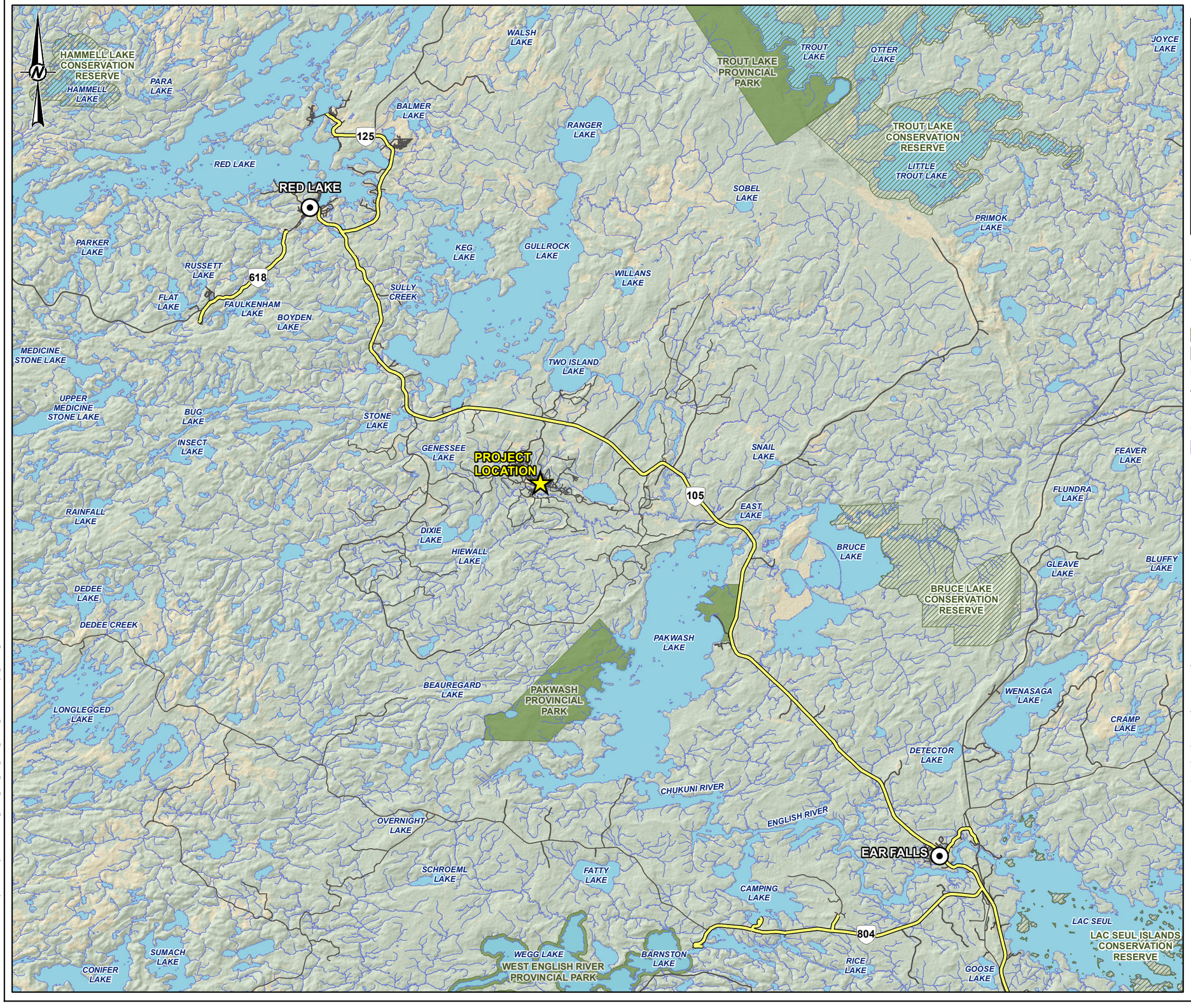
Great Bear Resources has attempted to obtain information regarding Indigenous use of these watercourses and waterbodies from the communities of Wabauskang First Nation (WFN) and Lac Seul First Nation (LSFN), in addition to ongoing dialogue with Asubpeeschoseewagong Netum Anishinabek (ANA). Great Bear Resources has received input from these communities on the comprehensive environmental baseline program completed and ongoing at the site. In addition, input has been received through the advanced exploration permitting process. An overview of the dialogue to date is presented below. Great Bear Resources will continue to work with these communities as well as the Northwestern Ontario Métis Community as the Project progresses.

Discussions to date with WFN and LSFN have focused on water management, environmental monitoring, and the integration of Traditional Knowledge in decision-making processes. Key comments raised as part of dialogue to date include the potential for cumulative impacts on the Chukuni River and surrounding waterbodies. Consultation remains ongoing, with attention to specific feedback on water treatment, sediment quality and aquatic resource protection. LSFN and WFN have emphasized the need for robust safeguards to prevent long-term environmental harm, particularly given the cultural significance of the Chukuni River.

Great Bear has maintained active engagement with the ANA to address environmental and cultural concerns related to the advanced exploration, with a particular focus on water quality in the Chukuni River and its surrounding ecosystems. ANA has raised critical feedback regarding the potential for sulphate and methylmercury release, cumulative impacts on water quality, and the efficacy of proposed water treatment. Navigability concerns have not been expressed to date for residual and primary watercourses or waterbodies within the Project footprint. Through transparent consultation and technical collaboration Great Bear continues to refine its water management strategies and closure planning to address comments from ANA.

As noted, to date Great Bear Resources has not received knowledge that imparts the historic or existing use of the watercourses and waterbodies listed in this document, apart the Chukuni River from Indigenous communities to date.

Resource users, including Pakwash Lake property owners and local trappers, have raised comments regarding potential environmental impacts from the advanced exploration, and overall Project development. Key issues include the potential degradation of water quality in the Chukuni River and Pakwash Lake, risks to aquatic ecosystems, and cumulative impacts from regional industrial activities. Additionally, stakeholders have commented about potential disruptions to traditional land use, including trapping as well as the sustainability of fish and game resources critical to their livelihoods. Ongoing use and navigability concerns have not been raised by resource users, residents, trappers, or commercial harvesters outside of potential Project interaction with the Chukuni River and Pakwash Lake.



KEY MAP

SCALE 1:30,000,000

LEGEND

- PROJECT LOCATION
- TOWN
- CONSERVATION RESERVE
- PROVINCIAL PARK
- HIGHWAY
- LOCAL ROAD
- RESOURCE/ RECREATION ROAD
- WATERCOURSE
- WATERBODY

0 2.5 5 10

1:250,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. WATERCOURSES AND WATERBODY ACQUIRED FROM LAND INFORMATION ONTARIO (MNRF) AND MODIFIED TO MATCH AERIAL IMAGERY AND LIDAR.
3. ROADS INFORMATION PROVIDED BY KINROSS, AUGUST 2022.
4. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
PROJECT LOCATION

CONSULTANT
wsp

YYYY-MM-DD	2024-09-06
DESIGNED	----
PREPARED	MD
REVIEWED	----
APPROVED	----

PROJECT NO.	CONTROL	REV.	FIGURE
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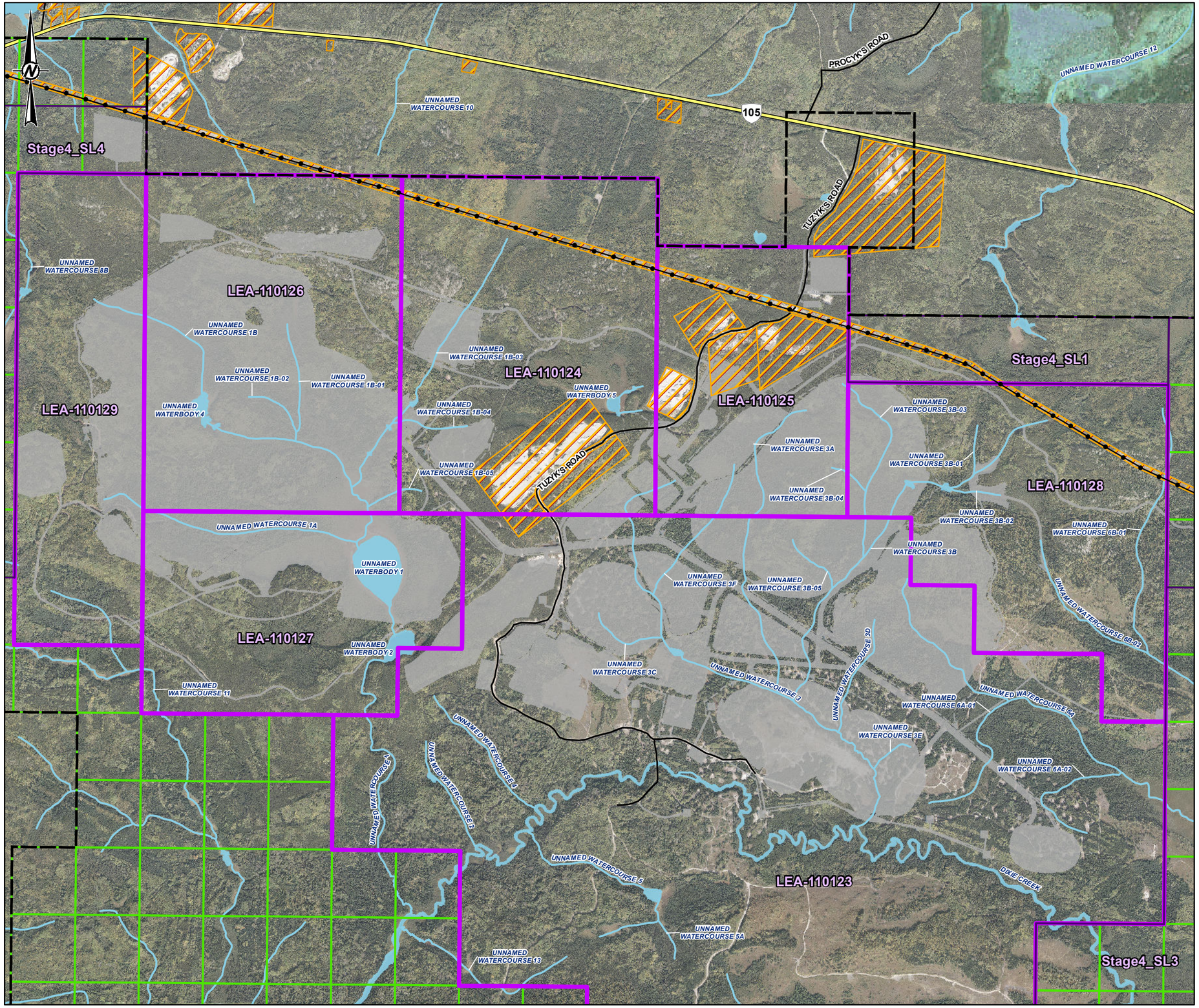
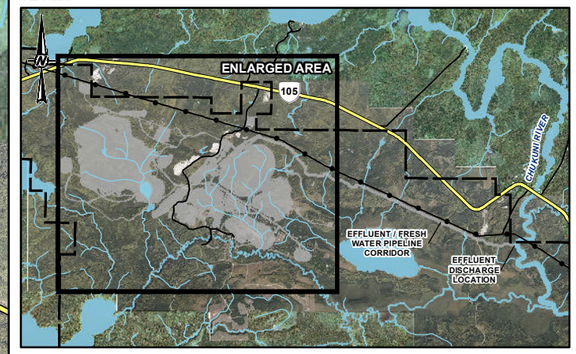


KEY MAP



SCALE 1:175,000

LEGEND

- PROPERTY BOUNDARY
- GREAT BEAR PROJECT FOOTPRINT
- HIGHWAY (INCLUDING NATURAL GAS PIPELINE)
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY
- EXCLUSIONS / LANDS HELD BY OTHERS

GREAT BEAR RESOURCES LAND TENURE

- LEASE (MINING AND SURFACE RIGHTS)
- 2024 REQUESTED LEASE
- CLAIM

0 0.25 0.5 1

1:26,500 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. AERIAL IMAGERY PROVIDED BY KINROSS (SCENE DATE: SEPTEMBER 2022).
3. PROPERTY BOUNDARY PROVIDED BY KINROSS, AUGUST 2024.
4. GREAT BEAR RESOURCES LAND TENURE PROVIDED BY KINROSS, FEBRUARY 2024.
5. ROADS INFORMATION PROVIDED BY KINROSS, AUGUST 2022.
6. SITE PLAN BASED ON INFORMATION PROVIDED BY WORLEY, APRIL/MAY 2024.
7. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
UNNAMED WATERCOURSES AND WATERBODIES (ZOOMED)

CONSULTANT

wsp

YYYY-MM-DD	2024-09-13
DESIGNED	----
PREPARED	MD
REVIEWED	----
APPROVED	----

PROJECT NO.	CONTROL	REV.	FIGURE
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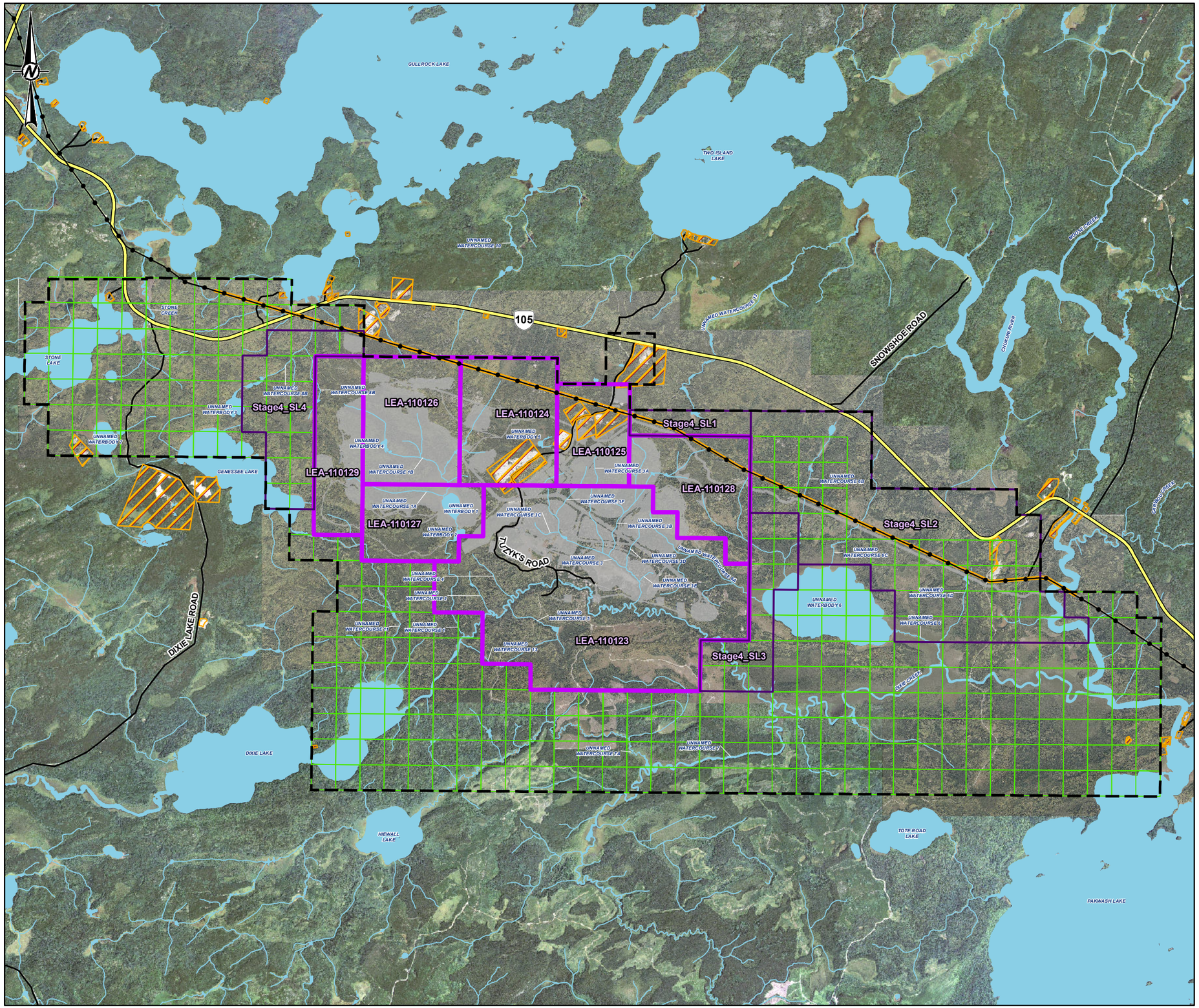

LEGEND

- PROPERTY BOUNDARY
- GREAT BEAR PROJECT FOOTPRINT
- HIGHWAY
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY
- EXCLUSIONS / LANDS HELD BY OTHERS

GREAT BEAR RESOURCES LAND TENURE

- LEASE (MINING AND SURFACE RIGHTS)
- 2024 REQUESTED LEASE
- CLAIM

0 1 2 4

1:70,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. AERIAL IMAGERY PROVIDED BY KINROSS (SCENE DATE: SEPTEMBER 2022).
3. PROPERTY BOUNDARY PROVIDED BY KINROSS, AUGUST 2024.
4. ROADS INFORMATION PROVIDED BY KINROSS, AUGUST 2022.
5. SITE PLAN BASED ON INFORMATION PROVIDED BY WORLEY, APRIL/MAY 2024.
6. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
UNNAMED WATERCOURSES AND WATERBODIES (EXTENDED)

CONSULTANT

wsp

YYYY-MM-DD	2024-09-13
DESIGNED	----
PREPARED	MD
REVIEWED	----
APPROVED	----

PROJECT NO.	CONTROL	REV.	FIGURE
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2 LOCAL WATERCOURSE CHARACTERISTICS

2.1 UNNAMED WATERCOURSE 1

2.1.1 PHYSICAL CHARACTERISTICS

- Unnamed Watercourse 1 drains to Dixie Creek; Unnamed Watercourses 1A and 1B make up the headwaters of Unnamed Watercourse 1
- Coordinates at the northern end where it meets Unnamed Waterbody 2: 454043 E, 5634633 N, UTM Zone 15N
- Approximate length of main branch of the stream: 2.5 km
- Width: 1.4 to 3.0 metres (m)
- Depth: 0.16 to 0.71 m
- Watershed area: 904 hectares (ha)
- Main branch of the stream has sand and silt with occasional gravel substrate
- Related photos: Photos 1 and 2

2.1.2 PUBLIC ACCESS

- Unnamed Watercourse 1 is located on provincial Crown land (Crown land); however, the majority of its length is located on a surface (and mining) lease obtained by Great Bear Resources from the Ministry of Mines (MINES; Figure 1-2a)
- The downstream portion of the creek nearer Dixie Creek (approximately 500 m) is located on mineral claims held by Great Bear Resources on Crown land

2.1.3 EXISTING CONSTRAINTS TO NAVIGABILITY

- Watercourse is overgrown by vegetation (Photo 1)
- Width and depth of channel limit passage
- Beaver dams cause fragmented channel reaches

2.2 UNNAMED WATERCOURSE 1A AND 1B

2.2.1 PHYSICAL CHARACTERISTICS

- Unnamed Watercourse 1A and 1B flow south into Unnamed Waterbody 1
- Coordinates at the discharge into Unnamed Waterbody 1 are: 1A: 453555 E, 565530 N, UTM Zone 15N; 1A: 453626 E, 5636138 N, UTM Zone 15N
- Approximate length of main branch of the tributary: 1A: 1.8 km, 1B: 2.2 km
- Approximate width for both 1A and 1B: 0 to 2.1 m
- Approximate depth for both 1A and 1B: 0 to 0.35 m

- Substrate of 1A consists mainly of organic debris
- Substrate of 1B consists mainly of leaf litter
- Related photos: 1A: Photos 3 and 4, 1B: Photos 5 and 6

2.2.2 PUBLIC ACCESS

- Unnamed Watercourses 1A and 1B are located on surface (and mining) leases held by Great Bear Resources from MINES (Figure 1-2a)

2.2.3 EXISTING CONSTRAINTS TO NAVIGABILITY

- During low precipitation events the minor watercourses have been observed to have no flow
- Noted that in certain areas the water flows underground and resurfaces
- Watercourses are overgrown by vegetation
- Width and depth of channel limit passage
- Beaver dams cause fragmented channel reaches

2.3 UNNAMED WATERCOURSE 2

2.3.1 PHYSICAL CHARACTERISTICS

- Flows southeast to Dixie Creek
- Coordinates at the northern end: 454633 E, 5633662 N, UTM Zone 15N
- Approximate length: 1.0 km
- Width: 0.5 to 0.7 m
- Depth: 0.10 to 0.20 m
- Watershed area: 39 ha
- Stream has silt with occasional boulders within the substrate
- Related photos: Photos 7 and 8

2.3.2 PUBLIC ACCESS

- Unnamed Watercourse 2 is located on a surface (and mining) lease held by Great Bear Resources from MINES (Figure 1-2a)

2.3.3 EXISTING CONSTRAINTS TO NAVIGABILITY

- Watercourse is overgrown by vegetation
- Width and depth of channel limit passage
- Beaver dams cause fragmented channel reaches

2.4 UNNAMED WATERCOURSE 3

2.4.1 PHYSICAL CHARACTERISTICS

- Flows southeast to Dixie Creek
- Coordinates at the northern end: 456063 E, 5634804 N, UTM Zone 15N
- Approximate length of main branch of the stream: 2.3 km
- Width: 0.57 to 2.5 m
- Depth: 0.20 to 0.92 m
- Watershed area: 1,020 ha
- Main branch of the stream has gravel cobble stone substrate and banks
- Other branches of the stream have fine organic substrate and banks
- Related photos: Photos 9 and 10

2.4.2 PUBLIC ACCESS

- Unnamed Watercourse 3 is located on a surface (and mining) lease held by Great Bear Resources from MINES (Figure 1-2a)

2.4.3 EXISTING CONSTRAINTS TO NAVIGABILITY

- During low precipitation events upper reaches of the watercourse has been observed to have limited flow
- Portions of the upper reaches of the watercourse are overgrown by vegetation
- Width and depth of channel limit passage
- Beaver dams cause fragmented channel reaches

2.5 UNNAMED WATERCOURSE 4

2.5.1 PHYSICAL CHARACTERISTICS

- Flows south to Dixie Creek
- Coordinates near the outlet of Unnamed Watercourse 4: 455058 E, 5633740 N, UTM Zone 15N
- Approximate length: 1.5 km
- Width: 0.6 to 1.6 m
- Depth: 0.15 to 0.57 m
- Watershed area: 100 ha
- Related photos: Photos 11 and 12

2.5.2 PUBLIC ACCESS

- Unnamed Watercourse 4 is located on a surface (and mining) lease held by Great Bear Resources from MINES (Figure 1-4a)

2.5.3 EXISTING CONSTRAINTS TO NAVIGABILITY

- Watercourse is overgrown by vegetation
- Width and depth of channel limit passage
- Beaver dams cause fragmented channel reaches

2.6 UNNAMED WATERCOURSE 6A

2.6.1 PHYSICAL CHARACTERISTICS

- Flows from east to Unnamed Waterbody 6
- Coordinates near the centre of Unnamed Watercourse 6A: 458603 E, 5634359 N, UTM Zone 15N
- Approximate length of this branch of the stream: 2.7 km
- Width: 0.5 to 0.65 m
- Depth: 0.07 to 0.25 m
- Watershed area: approximately 288 ha (Unnamed Watercourse 6 has an area of 1,900 ha)
- Banks have overhanging alders, grasses, and shrubs
- Substrate is comprised of cobble, muck and silt
- Related photos: Photos 13 and 14

2.6.2 PUBLIC ACCESS

- Unnamed Watercourse 6A is located on Crown land; however, the majority of its length is located surface (and mining) rights already obtained by Great Bear Resources from MINES
- The most downstream portion is located on a requested surface lease in progress with MINES (Stage 4_SL3; Figure 1-2b)

2.6.3 EXISTING CONSTRAINTS TO NAVIGABILITY

- Watercourse is overgrown by vegetation
- Width and depth of channel limit passage
- Beaver dams cause fragmented channel reaches

2.7 UNNAMED WATERCOURSE 6B

2.7.1 PHYSICAL CHARACTERISTICS

- Flows south to Unnamed Waterbody 6
- Coordinates near the centre of Unnamed Watercourse 6B: 460532 E, 5635368 N, UTM Zone 15N
- Approximate length of main branch of the stream: 2.7 km
- Width: 1.32 to 3.35 m
- Depth: 0.20 to 0.75 m
- Watershed area: approximately 569 ha (Unnamed Watercourse 6 has an area of 1,900 ha)
- Banks are undercut, and have with silt and muck bottoms
- Substrate is comprised of coarse sand and fine sand or silt
- Related photos: Photos 15 and 16

2.7.2 PUBLIC ACCESS

- Unnamed Watercourse 6B is located on Crown land; however, its entire length including the outlet to Unnamed Waterbody 6, is located on surface (and mining) leases held by Great Bear Resources from MINES, or surface leases in progress with MINES (Stage 4_SL2 and Stage 4_SL3; Figure 1-2b)

2.7.3 EXISTING CONSTRAINTS TO NAVIGABILITY

- Watercourse is overgrown by vegetation
- Width and depth of channel limit passage
- Steep gradient in upper reach
- Beaver dams cause fragmented channel reaches

2.8 UNNAMED WATERCOURSE 6C

2.8.1 PHYSICAL CHARACTERISTICS

- Flows south to Unnamed Waterbody 6 (Figure 1-2b)
- Coordinates near the centre of Unnamed Watercourse 6C: 461389 E, 5634923 N, UTM Zone 15N
- Approximate length of main branch of the stream: 2.7 km
- Width: 1.05 to 1.60 m
- Depth: 0.33 to 0.46 m
- Watershed area: approximately 280 ha (Unnamed Watercourse 6 has an area of 1,900 ha)
- Banks have overhanging alders, grasses, and shrubs
- Substrate is comprised of cobble, muck, and silt
- Related photos: Photos 17 and 18

2.8.2 PUBLIC ACCESS

- The outlet and the northernmost portion of Unnamed Watercourse 6C is located on mining claims held by Great Bear Resources
- The remainder of the watercourse is located on surface leases in progress with MINES (Stage 4_SL2; Figure 1-2b)

2.8.3 EXISTING CONSTRAINTS TO NAVIGABILITY

- Watercourse is overgrown by vegetation
- Width and depth of channel limit passage
- Beaver dams cause fragmented channel reaches

2.9 DIXIE CREEK

2.9.1 PHYSICAL CHARACTERISTICS

- Flows from west to east, from Dixie Lake to the Chukuni River
- Length: Approximately 20 km from Dixie Lake to Chukuni River
- Watershed area: 36,500 ha
- Creek details upstream near the outlet of Dixie Lake:
  - Width: 23.9 to 26 m
  - Depth: 1.3 to 2.6 m
  - Coordinates: 453360 E, 5631748 N, UTM Zone 15N
  - Substrate consists of predominantly fine sand and silt
- Creek details nearest to the Project site:
  - Width: 10.6 to 16.35 m
  - Depth: 1.6 to 2.5 m
  - Coordinates: 455982 E, 5633930 N, UTM Zone 15N
  - Substrate consists of course sands and silt with trace abouts of gravel
- Creek details near the outlet of Unnamed Waterbody 6:
  - Width: 18.6 to 20 m
  - Depth: 2.5 to 2.7 m
  - Coordinates: 462722 E, 5632199 N, UTM Zone 15N
  - Substrate consists of predominantly find silt with a small amount of clay
- Related photos: Photos 19, 20, 21 and 22

2.9.2 PUBLIC ACCESS

- Dixie Creek is located on Crown land with a middle portion of its length located on surface (and mining) leases held by Great Bear Resources from MINES, or surface leases in progress with MINES (Stage 4_SL3; Figure 1-2b)
- Portions of the creek upstream and downstream of these lease areas are located on mineral claims held by Great Bear Resources

2.9.3 EXISTING CONSTRAINTS TO NAVIGABILITY

- Beaver dams have been identified along Dixie Creek shown in Photo 24, causing fragmented channel reaches
- During low flow and beaver dam conditions Dixie Creek can be very shallow

2.10 CHUKUNI RIVER

2.10.1 PHYSICAL CHARACTERISTICS

- Flows from north to south, from Gullrock Lake to the Pakwash Lake
- Length: approximately 20 km
- Areas with moderate flow with occasional fast flow / rapid sections consisting of cobble and boulders
- River has a generally deep channels in moderate flow locations
- Substrate consists of soft, fine grained sediments with localized boulders and cobble / sand
- Watershed area: 480,000 ha
- River details upstream of the proposed discharge location:
    - Approximate width: 150 m
    - Coordinates: 466364 E, 5638044 N, UTM Zone 15N
    - Substrates consist of mostly silt, fine sand and small amounts of clay
- River details nearest the proposed discharge location:
    - Approximate width: 100 m
    - Approximate depth: 13 m
    - Coordinates: 465054 E, 5633821 N, UTM Zone 15N
    - Substrates consist of mostly silt, fine sand and small amounts of course sand
- River details downstream of the proposed discharge location:
    - Approximate width: 100 m
    - Coordinates: 466194 E, 5631664 N, UTM Zone 15N
    - Substrates consist of mostly silt and some fine sand
- Related photos: Photos 23, 24, and 25

2.10.2 COMMERCIAL AND RECREATIONAL TRANSPORT USE

Chukuni River upstream of the proposed discharge location is used for recreational transportation but is not believed to be used for commercial transportation. There are a few residential lodges / houses built on the shores of Chukuni River near Highway 105. Upstream of Highway 105 a series of rapids make Chukuni River inaccessible as shown in Photo 27.

Chukuni River near the proposed discharge location may be used for recreational transportation but is not believed to be used for commercial transportation. This area has no lodges or camps with no public roads, but is accessible by boat launch and residence near Highway 105.

Chukuni River downstream of the proposed discharge location is believed be used for commercial and recreational transportation. The are a few commercial lodges / camps built on the shores of Chukuni River, such as Jette's Adventures and Snake Falls Camp & Flying, located at Chukuni River outlet into Pakwash Lake.

2.10.3 FUTURE AND HISTORIC TRANSPORT USE

Travel is expected to have occurred by Indigenous peoples and will continue on the Chukuni River.

2.10.4 PUBLIC ACCESS

The Project will include an effluent discharge and pumphouse at the Chukuni River. These facilities are not expected to change public accessibility to the river.

2.10.5 EXISTING CONSTRAINTS TO NAVIGABILITY

- Shallow rapids are present upstream of Highway 105 on the Chukuni River
- Snowshoe Rapids dam located on Chukuni River upstream of Highway 105 regulates the water levels of Red Lake and Gullrock Lake systems

Photo 1: Unnamed Watercourse 1, April 2023

Photo 2: Unnamed Watercourse 1, July 2023

Photo 3: Unnamed Watercourse 1A, May 2023

Photo 4: Unnamed Watercourse 1A, July 2023

Photo 5: Unnamed Watercourse 1B, May 2023

Photo 6: Unnamed Watercourse 1B, July 2023

Photo 7: Unnamed Watercourse 2, May 2022

Photo 8: Unnamed Watercourse 2, September 2023

Photo 9: Unnamed Watercourse 3, June 2022

Photo 10: Unnamed Watercourse 3, June 2023

Photo 11: Unnamed Watercourse 4, June 2023

Photo 12: Unnamed Watercourse 4, June 2023

Photo 13: Unnamed Watercourse 6A, October 2022

Photo 14: Unnamed Watercourse 6A, June 2023

Photo 15: Unnamed Watercourse 6B, July 2023

Photo 16: Unnamed Watercourse 6B, September 2023

Photo 17: Unnamed Watercourse 6C, April 2023

Photo 18: Unnamed Watercourse 6C, September 2023

Photo 19: Dixie Creek, October 2022

Photo 20: Dixie Creek, June 2023

Photo 21: Dixie Creek Bridge, May 2022

Photo 22: Dixie Creek Beaver Dam, September 2023

Photo 23: Chukuni River, October 2022

Photo 24: Chukuni River, June 2023

Photo 25: Chukuni River Rapids, October 2023

3 LOCAL WATERBODY CHARACTERISTICS

3.1 UNNAMED WATERBODY 1

3.1.1 PHYSICAL CHARACTERISTICS

- Area: 10.4 ha and approximately 450 m long and 300 m wide
- Watershed area: inclusive of the watersheds of Unnamed Waterbody 1, Unnamed Waterbody 2 and Unnamed Watercourse 1 is 940 ha
- Depth:
  - Maximum: 1.0 m
  - Average: 0.6 m
- Substrate consists of soft fine-grained sediments, predominantly silts with some coarse sand
- Waterbody collects drainage from minor tributaries to the north and drains into Unnamed Waterbody 2 to the south
- Related photos: Photos 26 and 27.

3.1.2 PUBLIC ACCESS

- Unnamed Waterbody 1 is located on surface (and mining) leases held by Great Bear Resources from MINES (Figure 1-2a).

3.1.3 EXISTING CONSTRAINTS TO NAVIGABILITY

- Unnamed Waterbody 1 is very shallow
- Has extremely dense emergent vegetation that makes it difficult to navigate.

3.2 UNNAMED WATERBODY 2

3.2.1 PHYSICAL CHARACTERISTICS

- Area: 2.75 ha and approximately 270 m long and 166 m wide
- Watershed area: inclusive of the watersheds of Unnamed Waterbody 1, Unnamed Waterbody 2 and Unnamed Watercourse 1 is 940 ha
- Depth:
  - Maximum: 8.1 m
  - Average: 3.0 m
- Substrate: consists of soft fine-grained sediments, predominantly silts with some fine sand and clay
- Waterbody collects drainage from Unnamed Waterbody 1 to the north and drains into Unnamed Watercourse 1 to the south which eventually flows into Dixie Creek
- Related photos: Photos 28 and 29.

3.2.2 PUBLIC ACCESS

- Unnamed Waterbody 2 is located on surface (and mining) leases held by Great Bear Resources from MINES and is adjacent to a forestry road (Figure 1-2a).

3.2.3 EXISTING CONSTRAINTS TO NAVIGABILITY

- Unnamed Waterbody 2 is a small waterbody with access limited by the depth of Unnamed Watercourse 1.

3.3 UNNAMED WATERBODY 6

3.3.1 PHYSICAL CHARACTERISTICS

- Area: 222 ha and approximately 4,900 m long and 2,900 m wide
- Watershed area: inclusive of the watershed areas of the Unnamed Watercourse 6 and Unnamed Waterbody 6 is 1,900 ha
- Depth:
  - Maximum: 1.8 m
  - Average: 1.3 m
- Substrate is predominantly silts with some fine sand and clay
- Waterbody collects drainage from a few unnamed watercourses to the north and drains into Unnamed Watercourse 6 to the southeast which flows into Dixie Creek
- Related photos: Photos 30 and 31.

3.3.2 PUBLIC ACCESS

- Unnamed Waterbody 6 is located on Crown land. A small area in the northwest portion of the waterbody is located within the area where surface rights have been requested by Great Bear Resources from MINES but have not been issued yet (Stage4_SL3; Figure 1-2b).

3.3.3 EXISTING CONSTRAINTS TO NAVIGABILITY

- It is not readily accessible location from roads
- Unnamed Watercourse 6 downstream of Unnamed Waterbody 6 provides access to Dixie Creek.

Photo 26: Unnamed Waterbody 1, June 2023

Photo 27: Unnamed Waterbody 1, July 2023

Photo 28: Unnamed Waterbody 2, May 2022

Photo 29: Unnamed Waterbody 2, June 2023

Photo 30: Unnamed Waterbody 6, June 2022

Photo 31: Unnamed Waterbody 6, August 2023

4 CONCLUSION

Great Bear Resources has provided a brief summary of the watercourses and waterbodies located near the Great Bear Project site to support the assessment of navigability by Transport Canada. Table 4-1 provides a summary of the watercourses and waterbodies based on the surface water and aquatic baseline field investigations.

Most waterbodies and watercourses within the area have low flow with high beaver activity and do not provide access to unique lands or other watercourses. None of the minor watercourse and waterbodies are expected to have been used for transportation in the past or have the potential to be used in the future.

Should you have any questions regarding this application, please do not hesitate to contact Aaron MacDonell, Environmental Services Director at 807-620-8573 or by email at aaron.macdonell@kinross.com.

Table 4-1: Summary of Watercourse and Waterbodies

	Potential for Flow / Level to be Modified by Project	Existing Physical Characteristics constraining to Navigation	Known Commercial / Recreational Use	Known Indigenous Use for Transportation	Known Historic Transport	Publicly Accessible based on Land Tenure [1]
Unnamed Watercourse 1	Yes	Yes	No	No	No	Yes (lower reach)
Unnamed Watercourse 1A	Yes	Yes	No	No	No	No
Unnamed Watercourse 1B	Yes	Yes	No	No	No	No
Unnamed Watercourse 2	Yes	Yes	No	No	No	No
Unnamed Watercourse 3	Yes	Yes	No	No	No	No
Unnamed Watercourse 4	Yes	Yes	No	No	No	No
Unnamed Watercourse 6A	Yes	Yes	No	No	No	No
Unnamed Watercourse 6B	Yes	Yes	No	No	No	No
Unnamed Watercourse 6C	Yes	Yes	No	No	No	No
Dixie Creek	Yes	Yes	No	No	No	Yes (excluding middle reach)
Chukuni River	No (negligible)	Not locally	Yes	Yes	Yes	Yes
Unnamed Waterbody 1	Yes	Yes	No	No	No	No
Unnamed Waterbody 2	Yes	Yes	No	No	No	No
Unnamed Waterbody 6	No (negligible)	Yes	No	No	No	Yes (excluding small portion)

Note:

1 Public access based only on current and requested mining leases from MINES.

KINROSS

Great Bear Project
Potentially Navigable Waters

Transport Canada

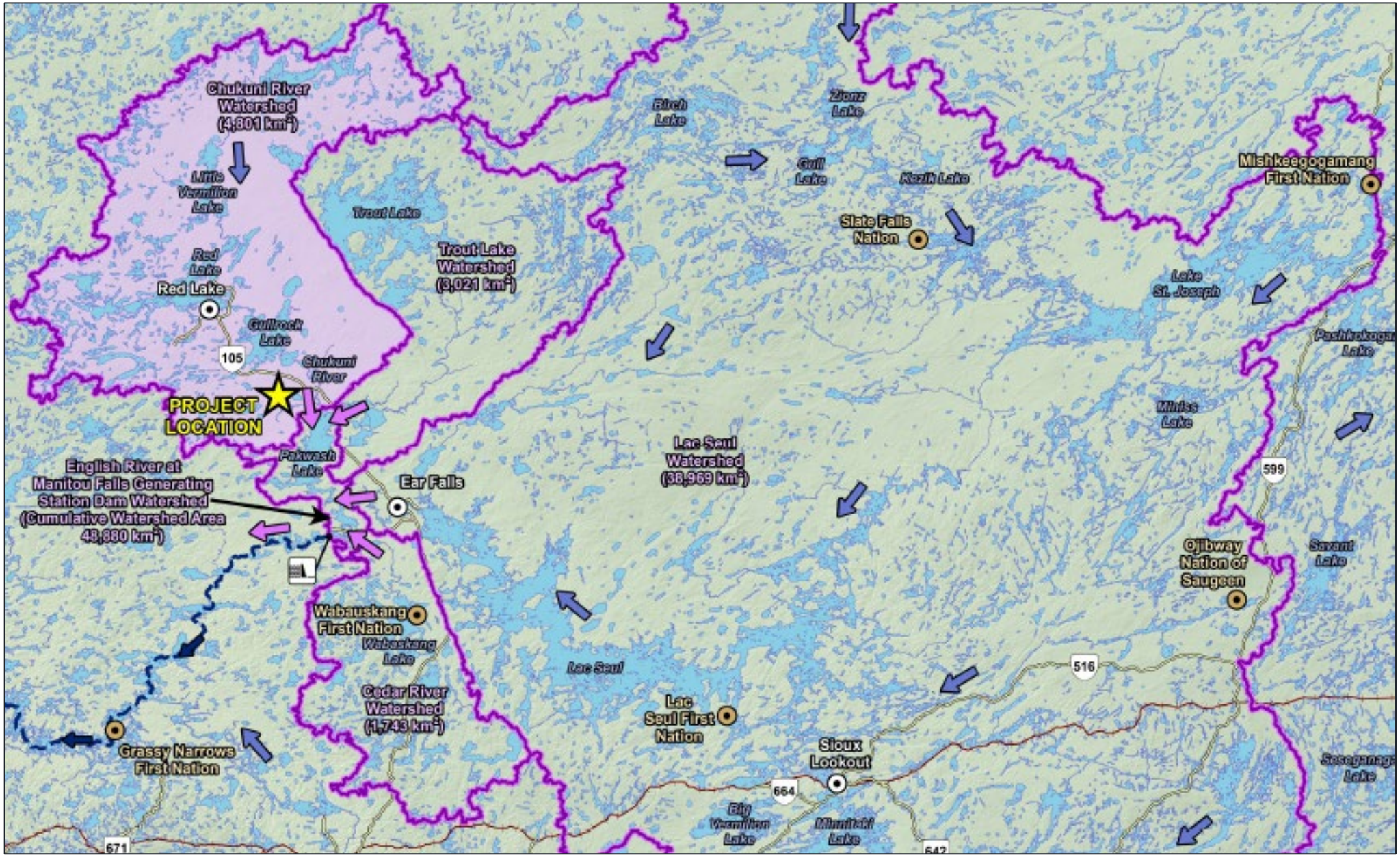
February 2025

Chukuni River

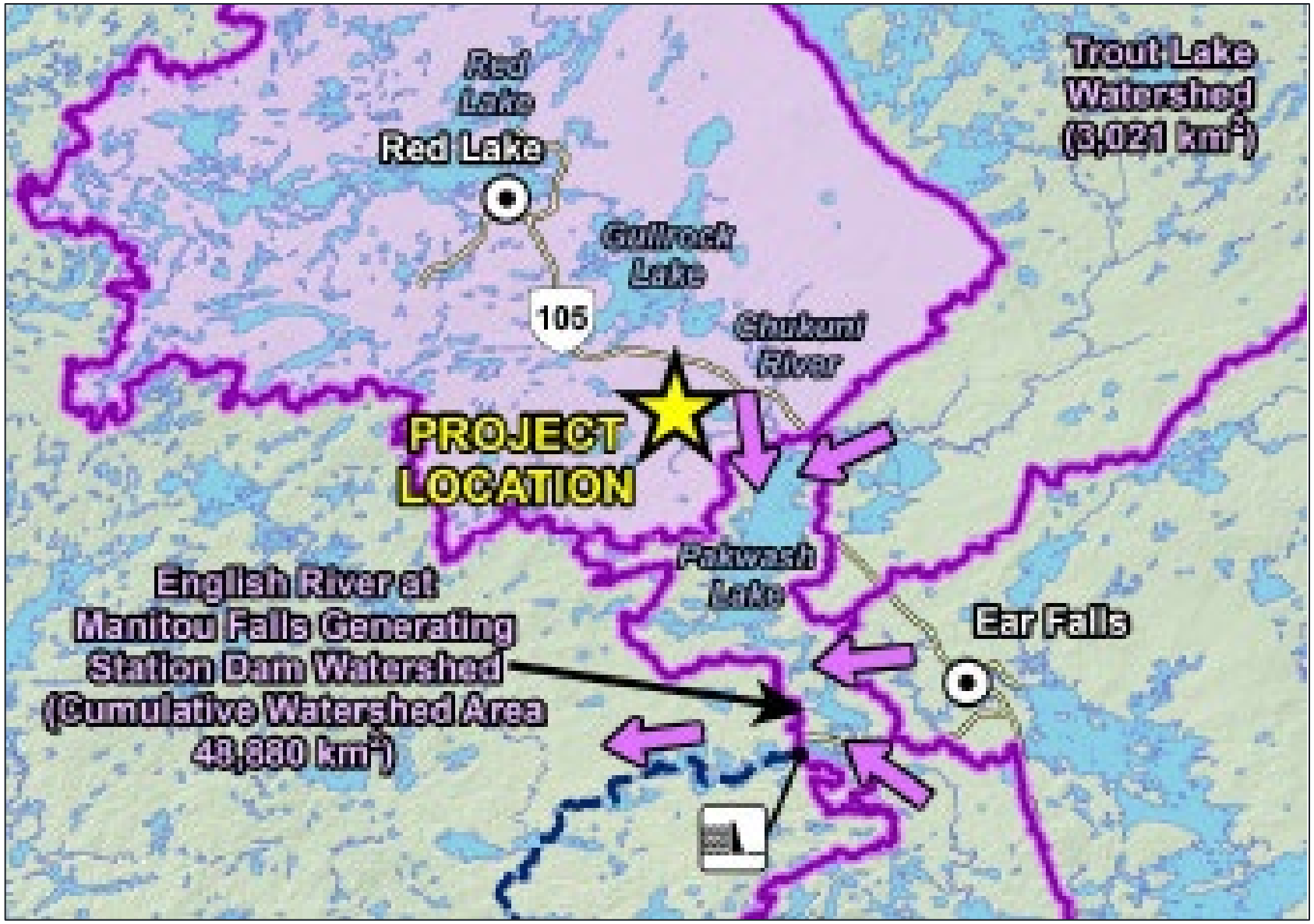
Agenda

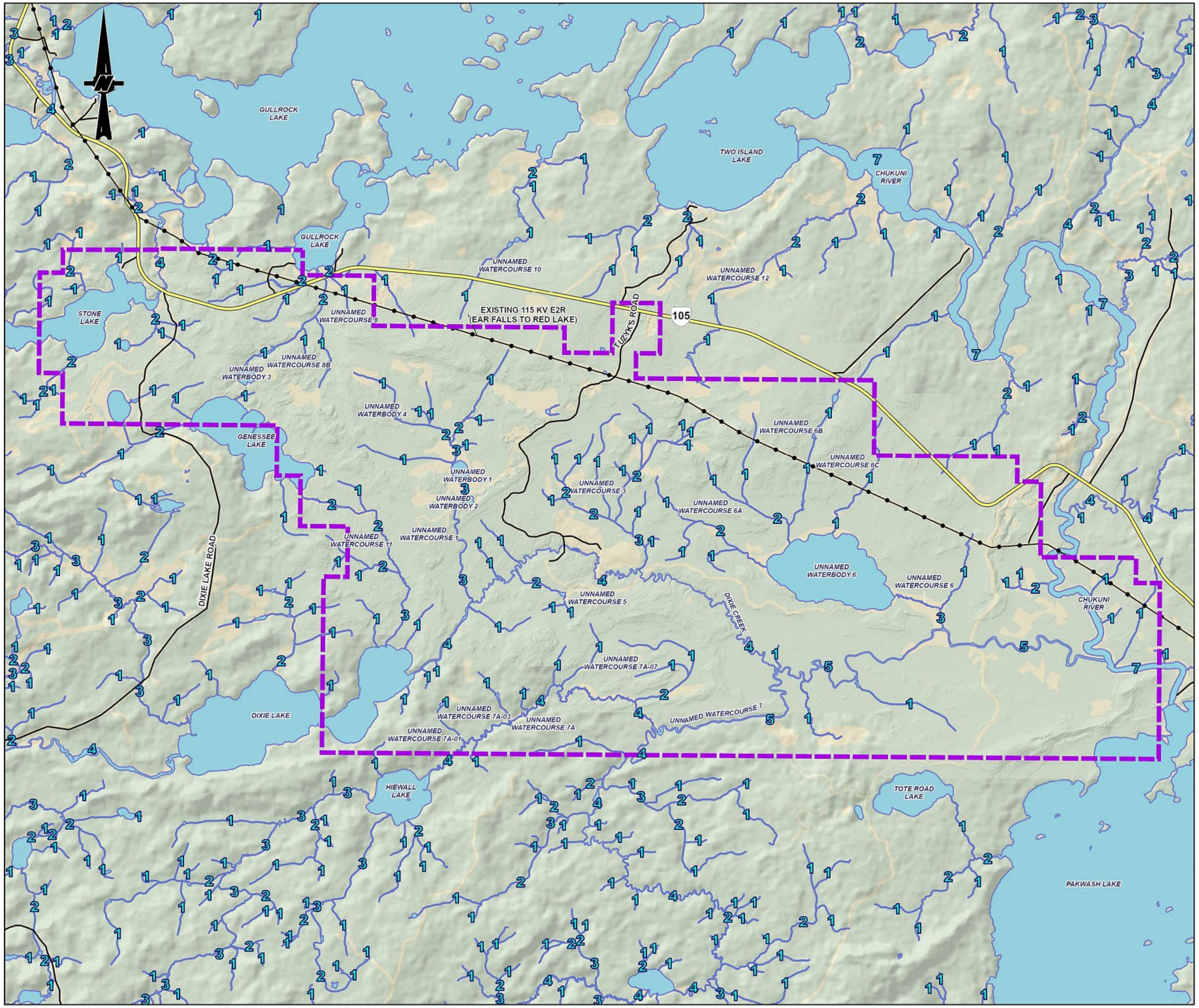
- Introductions
- Hydrologic Setting
- Project Overview
- Waterbodies / Watercourses
- Consultation and Engagement
- Next Steps

Regional Setting / Watersheds

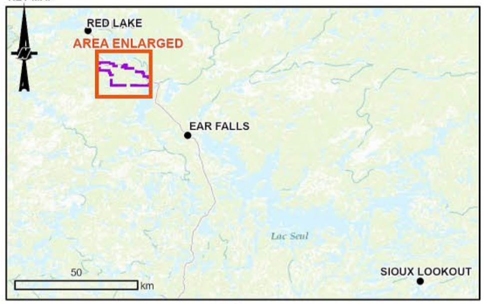


Regional Setting / Watersheds





KEY MAP



SCALE 1:2,100,000

LEGEND

- PROJECT AREA (PROPERTY LIMIT)
- HIGHWAY
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERBODY
- WATERCOURSE – LABELLED WITH STREAM ORDER NUMBER (STRAHLER METHOD)

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)
1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. TOPOGRAPHY ACQUIRED FROM 2022 LIDAR SURVEY.
3. PROPERTY BOUNDARY PROVIDED BY KINROSS, AUGUST 2024.
4. ROADS INFORMATION PROVIDED BY KINROSS, AUGUST 2022.
5. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

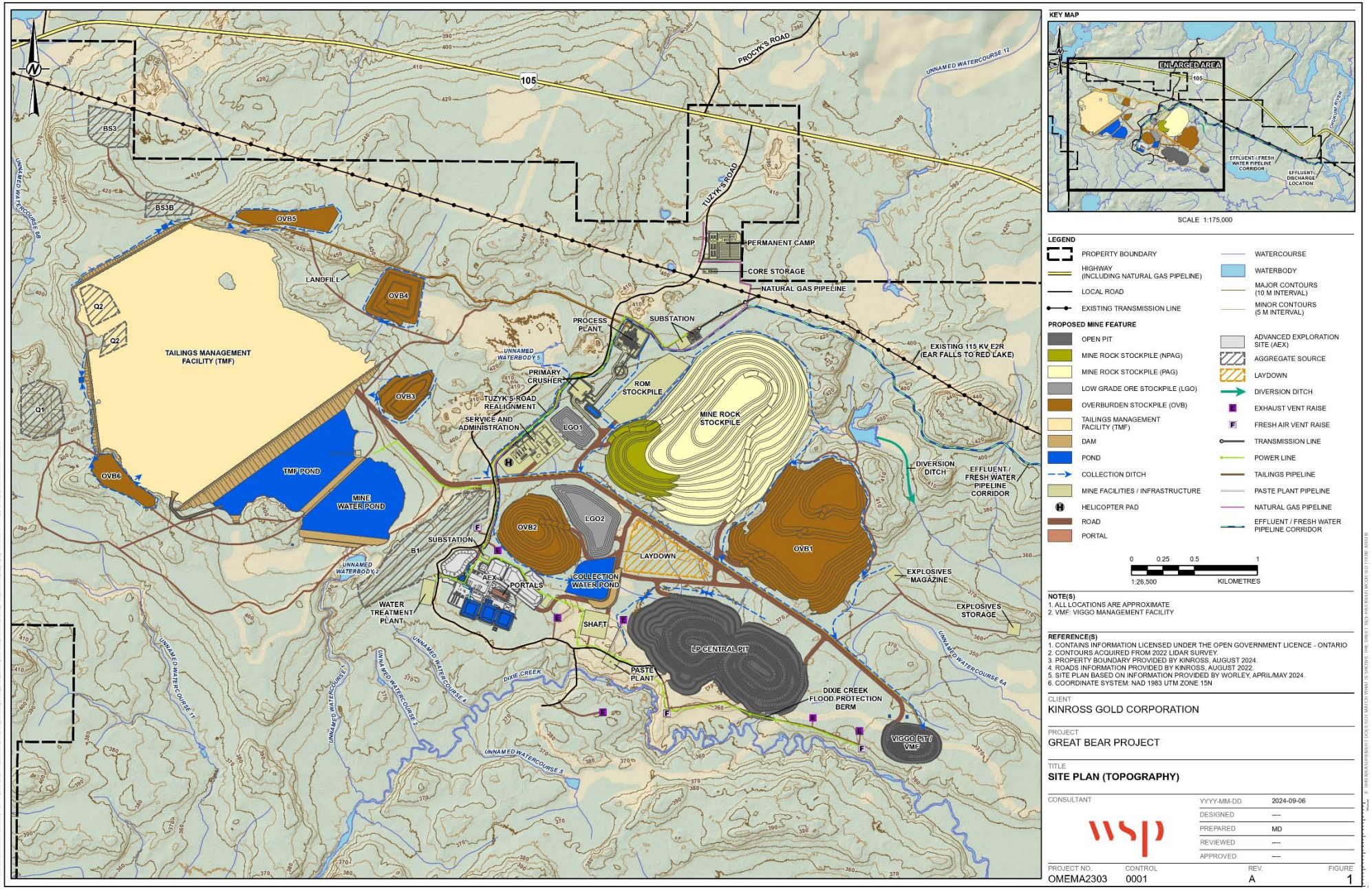
TITLE
PROJECT WATERCOURSES BY STRAHLER STREAM ORDER CLASSIFICATION

CONSULTANT

YYYY-MM-DD	2025-01-16
DESIGNED	----
PREPARED	KB
REVIEWED	MR
APPROVED	---

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	4.2

Preliminary Site Plan



Major Watercourse – Chukuni River

- Large watercourse primarily east of Project Area
- Proposed receiver for treated effluent from mine
- Known use for recreation and past / current use by Indigenous peoples
- Potential Project Effect on Navigation:
    - Effluent discharge pipeline and diffuser along the western shore and bottom of river
    - Intake pipeline along the western shore and bottom of river
- At proposed works, approximate width: 100 m and approximate depth: 13 m
- Location preferred for best mixing of effluent may not meet the criteria for minor works

Minor Watercourses

- There are a number of minor watercourses within the Project Area (mainly Stream Orders 1 and 2) that will be directly or indirectly impacted
- Many are very shallow, with intermittent flows at times of the year, or are blocked by natural vegetation overgrowth
- Accessibility is limited generally, and there is no known use for of these minor watercourses for navigation (recreation or past / current use by Indigenous peoples or the public)
- Potential Project Effect on Navigation:
  - Covered over by proposed developments
  - Permanently reduced flow due to topographic changes / diversion of non-contact water
  - Temporary limited reduction in flow (i.e., due to dewatering of excavations and mine workings

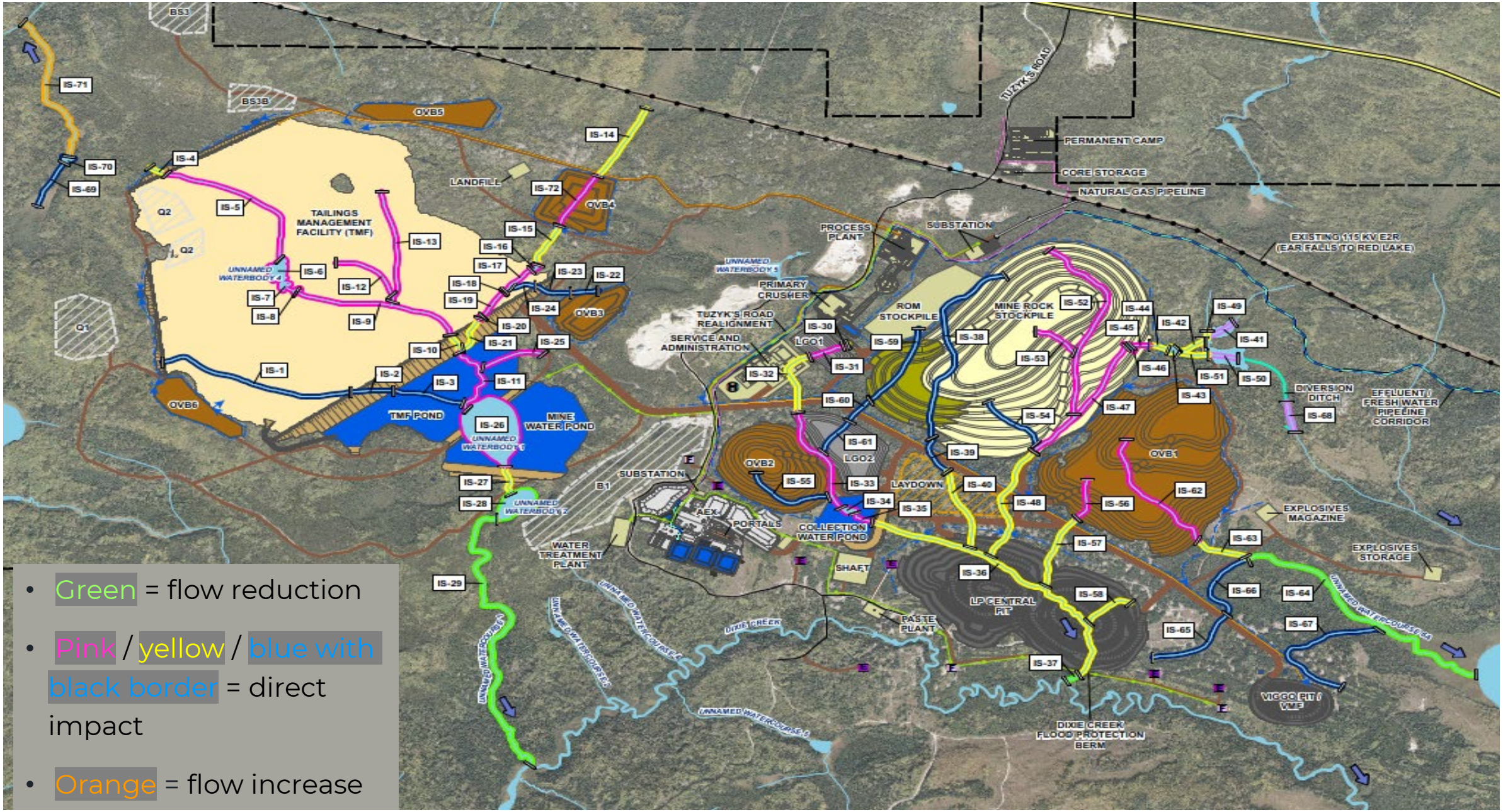
UW-3 (June 2022)

Minor Waterbodies

- There are a number of minor waterbodies that are present within or downstream of the Project Area (bordered by Stream Orders 2 and 3) that will be directly or indirectly impacted
- Many are very shallow, with intermittent flows at times of the year, or are blocked by natural vegetation overgrowth
- Accessibility is limited generally, and there is no known use for of these minor watercourses for navigation (recreation or past / current use by Indigenous peoples or the public)
- Potential Project Effect on Navigation:
  - Covered over by proposed developments
  - Permanently reduced flow due to topographic changes / diversion of non-contact water
  - Temporary limited reduction in flow (i.e., due to dewatering of excavations and mine workings

UW-1 (July 2023)

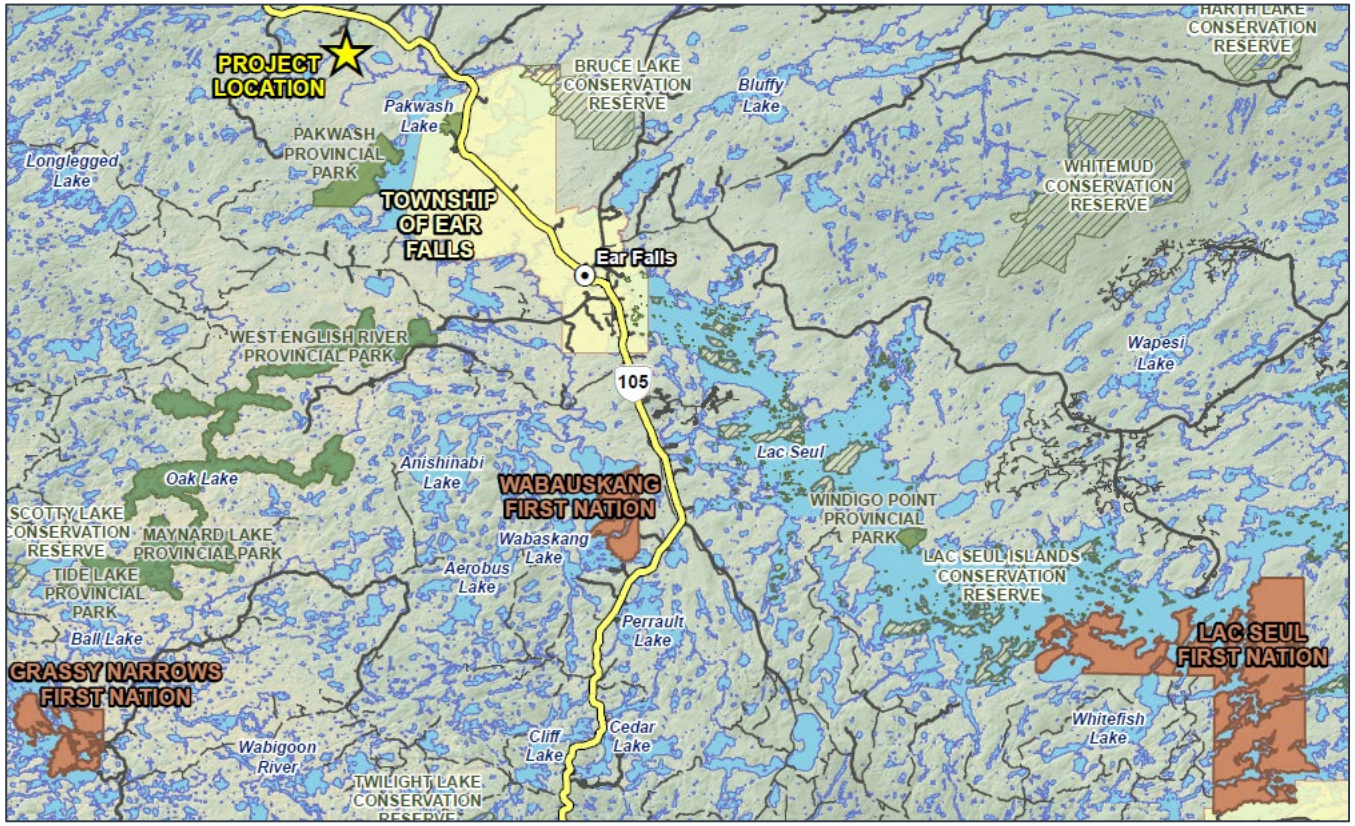
Preliminary Impacts



- Green = flow reduction
- Pink / yellow / blue with black border = direct impact
- Orange = flow increase

Consultation and Engagement

- Great Bear has attempted to obtain information regarding Indigenous use of local and regional waterbodies from each of Wabauskang First Nation, Lac Seul First Nation, Asubpeeschoseewagong Netum Anishinabek, and the Northwestern Ontario Métis Community. Navigability concerns have not been expressed to date for residual and primary watercourses or waterbodies within the Project footprint to date.



Consultation and Engagement

- **Wabauskang First Nation and Lac Seul First Nation**
  - Great Bear has sought input and validation of assumptions for Navigable Waters across community-based meetings, through the Environmental Management Committee and direct queries to community representatives.
  - Great Bear continues to work with both communities to validate and secure traditional knowledge and land use information for the Project. Great Bear has received information from WFN supporting that there is no known waterway use or significant value as part of the footprint of the Project.

Consultation and Engagement

- **Asubpeeschoseewagong Netum Anishinabek (ANA; Grassy Narrows First Nation)**
  - Great Bear is currently funding the completion of a traditional knowledge and land use study in support of Project development. To date, as part of ongoing dialogue no known usage of minor watercourses has been communicated by ANA.
- **Northwestern Ontario Métis Community (NWOMC)**
  - Great Bear is currently funding the completion of a traditional knowledge and land use study in support of Project development. To date, as part of ongoing dialogue no known usage of minor watercourses has been communicated by NWOMC. As part of communications Great Bear requested that information as aligned to current and future use was requested.

Thank you

wsp.com

Outlook

Great Bear Project - Navigability - Follow Up Information from Great Bear Resources

From Daniel, Sheila <sheila.daniel@wsp.com>

Date Thu 31-Jul-2025 10:32 AM

To Zimmer, Joey (TC/TC) <joey.zimmer@tc.gc.ca>; Bice, Courtney (she,her | elle,la) (TC/TC) <Courtney.Bice@tc.gc.ca>; Craigs, Jeremy (TC/TC) <jeremy.craigs@tc.gc.ca>

Cc Maahs,Dietrich (IAAC/AEIC) <dietrich.maahs@iaac-aeic.gc.ca>; Aaron MacDonell <Aaron.MacDonell@kinross.com>; Connor Devereaux <connor.devereaux@kinross.com>; Ashley Moncrief <Ashley.Moncrief@Kinross.com>; Mac Potter <Mac.Potter@kinross.com>; Gwyneth Carlson <gwyneth.carlson@kinross.com>

Bcc Lindsay, Heather <heather.lindsay@wsp.com>; Klaassen, Leah <Leah.Klaassen@wsp.com>; Ryan Shaw <ryan.shaw@kinross.com>

3 attachments (575 KB)

paste.png; paste.png; paste.png;

Below is additional information in response to your email of July 24, 2025 (below).

DIXIE CREEK:

Multi-disciplinary modelling has been completed to assess the potential effects to the flow and water level on Dixie Creek from the Great Bear Project, primarily related to the need to collect and treat contact waters from the Project site for environmental protection (induced effect).

Current modelling information indicates that the reduction in flow in Dixie Creek near the main Project site (location of maximum effect) will be a maximum of 10.4% flow reduction. This would related to a water level decrease of less than 3 cm at the main Project site. A photo of the creek at the Project site / existing bridge is shown below for reference:

The potential effects to hydrology will be described in the Impact Statement and associated modelling reports which will be appended.

UNNAMED WATERBODY:

Physical Characteristics

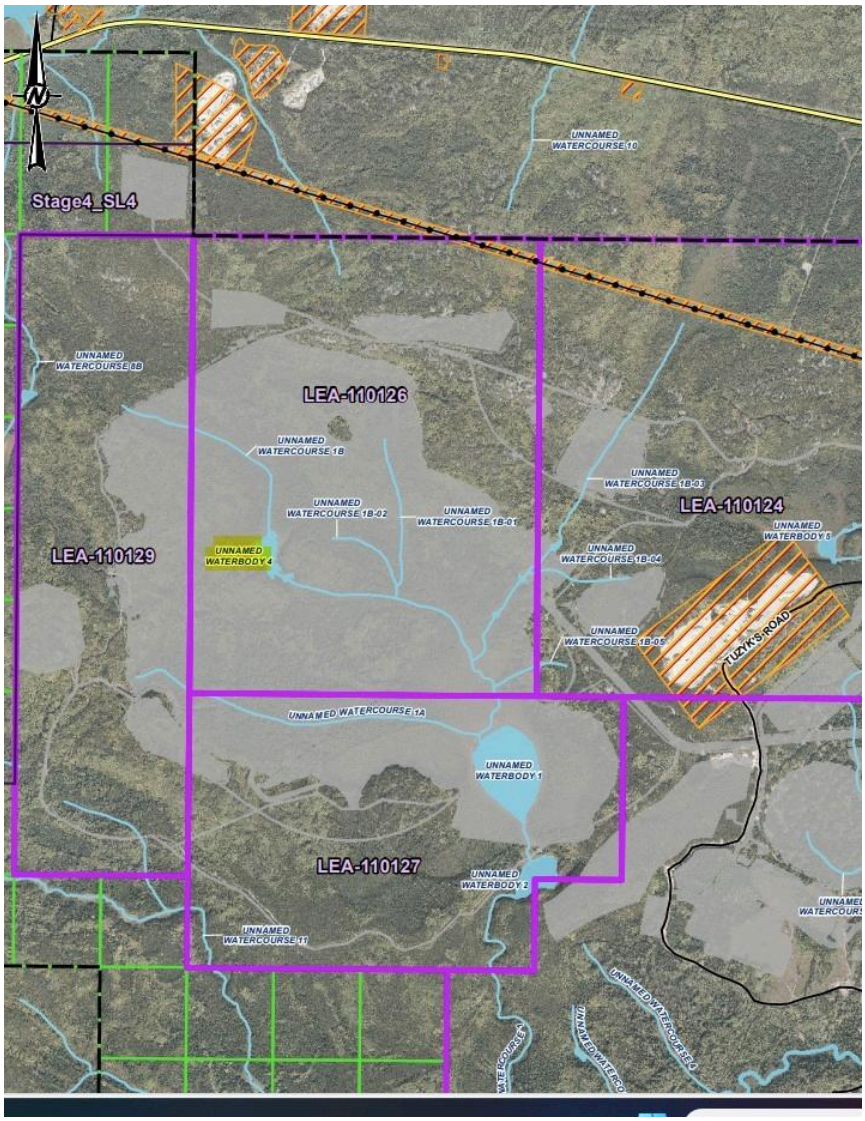
− Area: 1.2 ha and approximately 330 m long and 100 m wide
− Watershed area: inclusive of the watershed areas of Unnamed Watercourse 1 and Unnamed Waterbodies 1, 2 and 4 is 940 ha
− Depth: maximum: 2 m, average: 1 m
− Substrate consists of soft, fine-grained sediments with some localized boulder / bedrock and cobble / sand occurrences, as well as coarse woody debris with detritus
− Waterbody collects drainage from a minor tributary to the north and drains through another unnamed tributary, eventually into Unnamed Waterbody 1 to the southeast.

Public Access
− Unnamed Waterbody 4 is located on surface (and mining) leases held by Great Bear Resources from MINES.

Existing Constraints to Navigability
− Location is remote from roads and trails
− Has extremely dense emergent vegetation that makes it difficult to navigate (see photos below).

Potential Effects from the Great Bear Project

Unnamed Waterbody 4 will be overprinted by the tailings management facility (grey shaded area surrounding the waterbody) as shown in the image below.



Please let us know if this is unclear, or if there is anything that requires further discussion prior to completing your assessment.

Best regards,

Sheila Daniel, M.Sc., P.Geo.
Senior Technical Director

M+ 1 416-524-5928

wsp.com

From: Zimmer, Joey (TC/TC) <joey.zimmer@tc.gc.ca>
Sent: July 24, 2025 8:38 AM
To: Daniel, Sheila <sheila.daniel@wsp.com>; Bice, Courtney (she,her | elle,la) (TC/TC) <Courtney.Bice@tc.gc.ca>; Craigs, Jeremy (TC/TC) <jeremy.craigs@tc.gc.ca>
Cc: Maahs,Dietrich (IAAC/AEIC) <dietrich.maahs@iaac-aeic.gc.ca>; Aaron MacDonell <Aaron.MacDonell@kinross.com>; Connor Devereaux <connor.devereaux@kinross.com>; Ashley Moncrief <Ashley.Moncrief@Kinross.com>; Mac Potter <Mac.Potter@kinross.com>; Gwyneth Carlson

<gwyneth.carlson@kinross.com>
Subject: RE: Great Bear Project - Navigability Discussion - Timing of Determination?

UNCLASSIFIED / NON CLASSIFIÉ

Good morning Sheila,

Thank you for providing the requested information in the Navigable Waters Act and Consultations Consideration document, as well as the Information for Navigable Waters Assessment and Hydrology Information, December 2024 documents.

Following our review, Transport Canada would like to confirm our understanding of the project:

1. Dixie Creek has the potential for modifications to water flow and levels.

Could you please provide additional information and details on how Dixie Creek will be affected and what those impacts are?

Additionally, unnamed Waterbody 4 is mentioned in the documents, but no physical characteristics have been provided for our review. According to the project footprint overview, the Tailings Management Facility overlaps unnamed Waterbody 4.

Could you please clarify how Waterbody 4 will be affected, what those impacts might be, and provide its physical characteristics? For reference, I have attached a screenshot of the project footprint showing unnamed Waterbody 4.

Transport Canada is required to conduct a Navigability Assessment for any water bodies potentially affected by the project. These assessments determine whether the Canadian Navigable Waters Act (CNWA) applies, as the Act only pertains to navigable waters.

Navigation assessments are currently underway, and we are working diligently to complete them. As soon as decisions regarding the assessments are made, I will be sure to reach out directly with next steps.

If you have any questions or need further clarification, please don't hesitate to reach out.

Thank you,

Joey Zimmer

A/Officer
Navigation Protection Program | Programme de protection de la navigation
Transport Canada | Transports Canada
100 Front St. South, Sarnia ON N7T 2M4
519-331-9689 | joey.zimmer@tc.gc.ca
Government of Canada | Gouvernement du Canada