Appendix C.9

Navigable Waters Assessment

Crawford Nickel Project: Navigable Waters Assessment

September 30, 2024

Prepared for:

Canada Nickel Company

Prepared by:

Stantec Consulting Ltd.

Limitations and Sign-off

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Signature

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Printed Name

Reviewed by: Greg Schatz Digitally signed by Greg Schatz Date: 2024.09.24 07:32:39 -05'00'

Signature

Greg Schatz, M.Sc., P.Biol, R.P.Bio

Printed Name

Approved by: Way, Elizabeth Digitally signed by Way, Elizabeth Date: 2024.09.24 14:22:03 -02'30'

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Elizabeth Way, M.Sc

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Project Personnel

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Acronyms and Abbreviations

IAA	*Impact Assessment Act*, 2019
LSA	Local Study Area
Mt	million tonnes
PA	Project Area
TIS Guidelines	Tailored Impact Statement Guidelines
tpd	tonnes per day
VC	Valued Component

1 Introduction

Canada Nickel Company Incorporated (Canada Nickel) proposes to develop, operate, and progressively reclaim the Crawford Nickel Project ('the Project'), a new open pit nickel mine and processing facility approximately 42 kilometres (km) north of Timmins, Ontario along Highway 655. The Project is being assessed in accordance with the *Impact Assessment Act* (IAA), 2019.

Stantec Consulting Ltd. (Stantec) has been retained by Canada Nickel to conduct a navigability assessment based on the proposed Project design and corresponding activities proposed during construction, operations, and decommissioning of the Project.

This Navigable Waters Assessment has been completed to inform the Impact Statement. It has been prepared pursuant to the IAA and in consideration of the Tailored Impact Statement Guidelines: Crawford Nickel Project (Impact Assessment Agency of Canada 2023) (TIS Guidelines). As per the TIS Guidelines, the assessment of effects on navigable waters, as per the *Canadian Navigable Waters Act*, 2019, is intended to include navigation of the public and Indigenous nations through waterbodies expected to be affected by the Project through direct changes (e.g., removal) or indirect change (e.g., changes in access or flow).

1.1 Study Objectives

The Navigable Waters Assessment will inform the Impact Statement for the Project. The objectives of this study are to describe and present available information on the navigation conditions within the study area.

The scope of this assessment includes:

- Collection and review of available information and data
- Review of supporting Valued Components (VC)
- An evaluation of the likelihood of navigation of watercourses and waterbodies within the study area under baseline conditions
- Assessment of predicted changes in navigability

1.2 Project Overview

The Project includes the development of an Open Pit, Stockpiles, two ore processing plants, and other mine related infrastructures, as well as new rail spur line and the relocation of Highway 655 and 500 kilovolt (kV) transmission line. Project components are shown on Figure A.1 in of this report. Ore will be extracted from a single Open Pit that will be divided into an East Zone and Main Zone. The Project has a mineral reserve estimate of 1,715 million tonnes (Mt) and an expected project life of 41 years.

The Crawford Project site is located approximately 42 km north of the City of Timmins, Ontario, in the geographic townships of Crawford, Carnegie, Kidd, Lucas, Beck, Nesbitt, Wark and Prosser. A small portion of the Project extent within the geographic townships of Kidd and Wark also lies within the municipal boundary of the City of Timmins.

Based on the current Project design, the maximum rate of ore extraction will be up to 240,000 tonnes per day (tpd) during year 5 of operations and an average rate of 160,000 tpd over the life of mine. The two ore Processing Plants and associated service facilities will process run of mine ore delivered to primary crushers to produce nickel concentrate, iron concentrate, and tailings at a rate of approximately 60,000 tpd at the start of mine life, ramping up to a maximum of 120,000 tpd. In addition to nickel and iron, other metals such as cobalt, chromium, palladium and platinum are expected to be recovered from concentrate streams.

Based on the proposed processing rate and current information regarding the ore body, the current life of the proposed Project is expected to be approximately 41 years. Mining would be completed at a faster pace than milling, thus mining of ore would occur for about 30 years, then milling alone for the last 11 years.

Concentrate from the processing plants will be loaded onto rail cars and shipped via the rail spur line for refinement offsite.

1.3 Key Project Activities

The temporal boundary of the assessment includes all Project phases from the start of construction through to the end of closure. Based on the current Project schedule, the Project phases include:

- Construction: Approximately Year -3 to Year -1
- Operations
  - Operations phase 1 (Year 1 to Year 5); 60 kilotonnes per day (kt/d) milling capacity with ore extraction
- Operations phase 2 (Year 5 to Year 30); 120 kt/d milling capacity with ore extraction
  - Operations phase 3 (Year 30 to Year 41); 120 kt/d milling capacity with no ore extraction

- Decommissioning and closure
  - Active closure (Year 41 to Year 46)
  - Passive closure (Year 46+)

1.3.1 Construction Phase

The construction phase will include the preparation of the site up to the point at which the first process plant has been commissioned and is ready to commence operations. This phase will include site preparation, physical construction, pre-production, and commissioning activities. Construction is anticipated to begin in the Main Zone and East Zone, and rock extracted at this time may be crushed into aggregate using a mobile aggregate crusher for use during the construction of roads and other infrastructure, as necessary.

It is noted that additional construction will occur through the operations phases of the Project, and that this phase is defined by the start of ore processing.

1.3.2 Operations Phase

The operations phase is focused on the active processing of ore and generation of concentrate for delivery to market, specifically operation of the process plant(s). Due to the sequential nature of the mine operations, the operations phase of the Project has been divided into 3 sub-phases based on the Open Pit extraction schedule and sequential operation of the two process plants.

The three sub-phases of the Operations Phase include:

- Operations phase 1 – This phase includes the operation of the first of two process plants that will be operating at an ore processing capacity of approximately 60 kt/day (or 21.9 Mt/a). IPT carbonation within the process plant may also commence if a CO_2 source is available. Mining operations during this phase will produce more ore than the process plant can process, with surplus material to be stockpiled in the East Stockpile location for future processing. Construction will continue during the phase to expand and construct the second process plant and other supporting mine infrastructure, including the Highway 655 realignment. Material will begin to be stored within the West Stockpile at the end of this phase.
- Operations phase 2 – This phase includes the operation of both process plants that will be operating at an ore processing capacity of approximately 120kt/d (or 43.8 Mt/a), including IPT carbonation. Mining operations during this phase will produce up to 240 kt/day, which is more ore than the process plants can process. Surplus ore will continue to be stockpiled in the East and/or the West Ore Stockpiles.
- Operations phase 3 – This phase includes continuation of the operation of both process plants at an ore processing capacity of approximately 120kt/d (or 43.8 Mt/a) following completion of mining operations (e.g., no further extraction of ore from the pits). The process plants, including IPT carbonation, will continue to operate by processing the ore stockpiled during operations Phase 1

and 2. As mine operations cease, there will be an opportunity for progressive reclamation of the pits, haul routes, and other no longer used areas of the Project site.

1.3.3 Decommissioning and Closure Phase

Following the completion of ore processing, all Project operations will cease, and active closure will commence. Active closure includes the removal of buildings, structures, and other infrastructure, as well as reclamation and site stabilization activities. Once complete, the Project will then enter a passive closure phase as the pit lake fills. During this time, closure monitoring and adaptive mitigation will occur. Following pit lake filling, the Project site will be permanently closed.

Activities completed during the decommissioning and closure phase of the Project are focused on reclaiming the environments, establishing physical, chemical, and biological stability at the site, and to meet desired end land functions and uses. A Closure Plan will be prepared and updated throughout the life of the Project as necessary to reflect the environmental requirements in place at the time of closure. The Closure Plan will be prepared, refined, and implemented in accordance with the Ontario *Mining Act* and Ontario Regulation 35/24. A Conceptual Closure Plan has been prepared to support the Impact Statement and is included as Appendix F of the Impact Statement.

Progressive reclamation throughout the course of the mine life will occur, but the majority of the closure activities will commence at the cessation of mining activities and will be completed five years after ore processing ceases. Ongoing closure monitoring and maintenance activities will be carried out throughout active and passive closure phases until the closure objectives have been satisfied and the Project has been moved to a closed out and abandoned status.

2 Study Area

The Project comprises approximately 11,758 hectares (ha) (118 square kilometres [km^2]) along Highway 655 approximately 42 km north of the City of Timmins, Ontario. The Project is located mostly within the Geographic Townships of Crawford and Lucas, with elements also in the Townships of Nesbitt, Beck, Carnegie, and Prosser. The proposed Highway 655 Realignment and rail spur line extend into the geographic Townships of Kidd and Wark (which are considered to be part of the City of Timmins).

The **Project Area (PA)** encompasses the Project footprint and is the anticipated area of physical disturbance associated with the construction, operations, and decommissioning and closure of the Project. The PA is shown on Figure A.1 in Appendix A.

The **Local Study Area (LSA)** for navigable waters aligns with the LSA established for land and resource use (refer to Chapter 23 in the Impact Statement [Assessment of Potential Effects on Economic Conditions]), which includes the PA and a 1.5 km buffer around the PA (Figure A.1 in Appendix A) and was established to consider the area in which Project activities could have direct or indirect effects on navigation.

A **Regional Study Area** was not required for the purposes of this study.

3 Regulatory Setting

Navigation in Canada is federally regulated by Transport Canada through the *Canadian Navigable Waters Act* (CNWA), 2019. The legislation protects the public right to navigation on navigable Canadian waters (e.g., rivers, lakes, and canals). Under the CNWA, approval is required to construct or place works in, on, over, under, through, or across a scheduled waterbody that may interfere with navigation.

Scheduled navigable waters are listed on a Schedule to the CNWA so that works within those waterbodies with the capacity to interfere with navigation are afforded additional oversight by Transport Canada. Non-scheduled waters may still be navigable and therefore the CNWA would still apply. Under the CNWA, navigable waters are 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 of 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."

This definition of navigable waters does not include artificial irrigation channels or drainage ditches.

Under the CNWA Minor Works Order, Transport Canada has identified typical works (e.g., outfalls, pipelines) and supporting temporary structures (e.g., in-stream isolation) which can proceed without public notice provided information is deposited on the Common Project Search and public notice is provided, where applicable, and the works meet the conditions of the Minor Works Order for the given class of works. Similarly, the Major Works Order includes classes of works (e.g., bridges) which require review and approval by Transport Canada. Works that do not interfere with navigation can proceed provided a Notice of No Interference is filed with Transport Canada through the Navigation Protection Program. Finally, works that do not meet the conditions of the Minor Works Order or the Major Works Order and may interfere with navigation require review by Transport Canada.

For potentially affected waterbodies that are not specifically listed on the Schedule, proponents must issue a public notice and provide detail regarding the proposed works (with the exception of Minor Works) on navigable waters. This approach provides the public with opportunity to provide feedback and identify concerns prior to construction. The Minister of Transport has the authority to regulate obstructions on navigable waters and review works on navigable waters where there are unresolved public concerns. Obstructions are considered anything that prevents navigation, slows navigation, or makes navigation more dangerous or difficult.

Sections 21, 22, and 23 of the CNWA outline prohibited activities that may interfere with navigation on navigable waters, including the following that apply to proposed Project activities*:*

- Throwing or depositing of materials (e.g., rock, sawdust, or cinders) that may sink to the bottom of a navigable waterbody or interfere with a waterbody that is navigable or flows into a navigable water
- Lowering the water level of a navigable water or part of a navigable water to a level that prevents navigation

A prohibited activity, as defined by the CNWA (i.e., sections 21, 22, and 23), applies to any navigable body of water, whether or not it is listed on the Schedule. The Governor in Council may exempt a project / activity from sections 21, 22, or 23 if the minister receives an application for exemption and determines it is in the public interest.

4 Background

Review of publicly available resources indicates that navigation in this region of Ontario is likely achieved by canoe or kayak by Indigenous nations and the public. Connectivity of watercourses within the PA to the Mattagami River could facilitate access by water or access may be obtained by land on Highway 655. The Government of Ontario identifies the canoeing and kayaking season to extend from May to October with peak paddling season between July and August (Government of Ontario 2024a,b).

The Project overlaps waterbodies within the North Driftwood River and West Buskegau River watersheds, which drain into the Abitibi River, and the Jocko Creek watershed which drains into Kidd Creek and subsequently into the Mattagami River. In addition, there are several lakes adjacent to the PA which drain into the North Driftwood River. The PA is north of the City of Timmins and is crossed by Highway 655 which provides access to several waterbodies in the region.

To support construction of the Project, Canada Nickel proposes to realign the North Driftwood River to divert flow from Martin Lake westward along the realigned Highway 655 corridor and back into the North Driftwood River downstream of the Project.

5 Methods

Transport Canada's Navigation Protection Program Project Review Tool (Government of Canada 2024a) and associated navigability self-assessment guidance (Government of Canada 2024b) were used as guidance to support the Project's navigability assessment. The following questions were considered when determining if a waterbody crossed by the Project is a navigable water:

- Part 1
  - Is there evidence that the waterbody is currently being used by the public as means of transport or travel, for commercial or recreational purposes, or as a means of travel for Indigenous nations?
- Part 2
  - Is the public likely to use the waterbody for transport or travel, for commercial or recreational purposes, or as a means of transport for Indigenous nations?
  - Is there evidence that the waterbody has been used in the past for transport or travel, for commercial or recreational purposes by the public or Indigenous nations?
- Part 3
  - Is there public access by land or water to the body of water?
  - Are there two or more waterfront owners?
  - Is the Crown (His Majesty in right of Canada or a province) the only waterfront owner?

Baseline navigability was characterized through a desktop assessment and relied on existing studies in the PA (Canada Nickel 2022; Ausenco Engineering Canada ULC. 2023), publicly available information and known obstructions (e.g., culvert and bridge crossings). In addition, applicable data collected to support baseline analysis for other VCs (i.e., Fish and Fish Habitat, Social Conditions, Indigenous Interests) were reviewed to support evaluation of navigability. In addition, information on recreation for navigation were considered based on publicly available information for Ontario (e.g., Government of Ontario 2024a,b). The Description of Engagement with Indigenous Peoples (Chapter 7 of the Impact Statement) contributed to the understanding of existing land and resource uses in the area, informed baseline conditions, and supported the scope of the navigability assessment.

Each of the watercourses and waterbodies with a defined bed and bank potentially affected by the Project were classified for potential navigational use. Indigenous knowledge and publicly known navigational use was considered, where available. In the absence of known navigational use, the physical capacity of the watercourses and waterbodies was evaluated for navigation potential. Criteria were adapted from the 2010 Minor Waters User Guide (Transport Canada 2010). The Minor Works User Guide as prepared in 2010 for use with the 2010 Minor Works Orders which was issued under the former *Navigable Waters Protection Act*. In the absence of an updated equivalent document, it has been used for information for

the Project. The assessment considered existing data collected during baseline hydrology and fish habitat assessments, aerial imagery, and Strahler stream order. Based on the baseline data collected for the Project, it was determined that the stream order was a suitable screening tool for the likelihood of navigation.

The screening criteria for assigning the likelihood of navigation at each watercourse and waterbody assessed for the Project is described in Table 5.1. Photographs 1 through 3 show examples of conditions in watercourses within the PA representing an unlikely, uncertain, and likely navigability ranking, respectively.

Table 5.1 Likelihood of Navigation Ranking Criteria

Ranking	Description
Unlikely	• the watercourse/waterbody does not have the physical capacity to support a small vessel (e.g., canoe or kayak)[a]; or, • the watercourse/waterbody has the physical capacity to support a vessel, but evidence indicates no current or historical use, there is no planned use of the watercourse/waterbody for navigation purposes, or there are access routes via land in the same area; or, • the watercourse/waterbody has the physical capacity to support a vessel but characteristics of the watercourse/waterbody and the presence of obstructions (e.g., road or rail crossings, beavers dams, dense vegetation, debris, or shallow riffles < 0.3 m) and/or alternate access via land reduce the likelihood of navigation; or, • streams of Strahler Order 1[b].
Uncertain	• the watercourse/waterbody has the physical capacity to support a small vessel but current, historical, or planned use are unknown, and there are access routes via land in the same area; or, • streams of Strahler Order 2 to 3[b].
Likely	• the watercourse/waterbody has the physical capacity to support a small vessel and there is evidence the watercourse/waterbody is, was, or will be used for navigation purposes; or, • streams of Strahler Order 4[b] and above.

Notes:
a. The physical capacity to support a small vessel was assessed using the Minor Waters User Guide (Transport Canada 2010) developed for the 2010 Minor Works Orders which were issued under the *Navigable Waters Protection Act*.
b. Strahler Order was used as an initial screening tool to rank the likelihood of navigation. However, the rankings for several watercourses differ from those based on Strahler Order based on aerial imagery and data collected by other VCs.

The Project has the potential to affect the navigability of watercourses by altering changes in flow volumes, which could occur as a result of water management within the footprint of Project infrastructure or stream diversions around Project infrastructure. A flow change assessment was conducted as part of the Surface Water Resources Assessment (Appendix C.5 of the Impact Statement). Three watersheds, Jocko Creek, West Buskegau River, and North Driftwood River, overlap the PA and were used to delineate the boundaries of the hydrologic assessment, which was used to inform the assessment of potential change in navigability that could result from reductions in downstream flow in each watershed.

Photo 1 Unlikely Navigable Waterbody

Note: Downstream view in a tributary to the North Driftwood River. Does not have the physical capacity to support a small vessel (e.g., canoe or kayak) (May 30, 2024).

Photo 2 Uncertain Navigable Waterbody

Note: Downstream view in a tributary to the North Driftwood River. Highway 655 (background) and overgrown vegetation are barriers to navigation (June 30, 2024).

Photo 3 Likely Navigable Waterbody

Note: Upstream view in the North Driftwood River, approximately 4 km downstream from the Lower Sturgeon Dam Road (June 6, 2024).

6 Results

6.1 Desktop Assessment

The Project will overlap with various waterbodies that are considered navigable (Figure A.2 and Figure A.3 in Appendix A). The linear distance for each watercourse and waterbody overlapped by the PA, relative to navigation likelihood, is provided in Table 6.1. In general, reaches of the North Driftwood River and Jocko Creek are overlapped by the PA and are likely navigable given their size and lack of obstructions. The West Buskegau River generally flows along the east side of the PA and is only overlapped in four locations where water from wet ponds or non-contact water will be discharged, which is not anticipated to affect navigation. However, tributaries to the Buskegau River, which are considered uncertain for navigation, are overlapped by the PA (Figure A.2 and Figure A.3 in Appendix A).

Table 6.1 Linear Distance of Watercourse and Waterbody Navigation Within the PA

Likelihood of Navigation	Distance (km)[a]
Unlikely	143.14
Uncertain	25.23
Likely	15.31
Total	**183.68**

Note:
a The liner distance of waterbodies (e.g., lakes) was calculated using the polyline data from Land Information Ontario (LIO) geospatial data layers and field-assessed streams recorded during the fish habitat assessment, and is an approximation.

Watercourses that were found to be unlikely navigable were based on aerial imagery and field assessments (Appendix B.8.1 of the Impact Statement [Fish and Fish Habitat Supplemental Baseline Report]; Chapter 17 of the Impact Statement [Assessment of Potential Effects on Fish and Fish Habitat]; and Chapter 15 of the Impact Statement [Assessment of Potential Effects on Surface Water]). These watercourses are typically either too narrow to accommodate a vessel (i.e., canoe or kayak), too shallow for a vessel to successfully navigate, or have a known obstruction that prevents navigation. Watercourses with an uncertain navigation ranking are likely to meet the physical criteria based on desktop and field data and are likely capable of conveying a vessel; however, current, historical, or planned use are unknown. These watercourses will require additional field validation and will be discussed with Transport Canada. Watercourses identified as likely navigable have evidence of the physical capacity to convey a vessel and are accessible by water or land. Several lakes (i.e., Martin Lake, Gerry Lake, Jack Lake, Davis Lake, and Zed Lake) are not within the PA; however, the PA will overlap tributaries of Jocko Creek which connect the lakes to flowing waters.

6.2 Effects Assessment

Construction and operations of the Project is predicted to result in a loss or alteration of access to or through navigable waters within the PA. Construction of the Project could result in temporary access restrictions to navigable waters surrounding the PA and prevent access to navigable waters within the PA (e.g., access to waterbodies during relocation of Highway 655). Once construction is complete, temporary access and workspaces (e.g., traffic accommodation on roadways) will be reclaimed and access restored. Where Project infrastructure results in direct physical disturbance to waterbodies that are considered navigable (e.g., Open Pit),loss of navigation is anticipated. The removal of navigable waters within the PA will prevent navigation through the PA during construction and operations; however, the North Driftwood River Diversion Channel realignment works will provide a revised navigation route so that the North Driftwood River remains navigable around the Project. This channel realignment could maintain navigation between the lakes outside the PA and the North Driftwood River.

The Jocko Creek watershed is predicted to experience an increase in flows greater than 10% from baseline conditions during construction and operations of the Project (see Appendix C.5 of the Impact Statement [Surface Water Resources Assessment]). The days when flow is higher than the 10% threshold are typically low flow days that are at or below the environmental flow threshold; therefore, navigation in the Jocko Creek watershed is not anticipated to be affected by changes in flow, but by loss of access and navigable waterbodies from overprinting of Project infrastructure.

In the West Buskegau River watershed, there were several instances of flow reduction in the LSA greater than 10% during operations until year 23 of operations after which a reduction in flow greater than 10% from baseline was not noted (see Appendix C.5 of the Impact Statement [Surface Water Resources Assessment]). The West Buskegau River is not overlapped by the Project, except locations where water from Collection Ponds or non-contact water will be discharged. Most tributaries to the West Buskegau River are unlikely to be used for navigation, and waterbodies with uncertain ratings are typically beaver-impounded channels that could be buffered from changes in depth resulting from reductions in flow. The West Buskegau River watershed is predicted to experience an increase in flows greater than 10% from baseline conditions during construction and operations of the Project. However, the increase is predicted during days that typically experience low flow that is at or below the environmental flow threshold. The predicted change in flow in the LSA in the West Buskegau River watershed is unlikely to result in change to the existing navigation potential in the river.

Flow reductions greater than 10% from baseline during construction and operations are also predicted within the North Driftwood River watershed. The North Driftwood River is likely the only watercourse in this watershed that could be used for navigation. It is possible that reductions in flow in upstream areas of the river could result in decreases in water depth or wetted area, which could affect navigation. However, lower reaches of the river are likely large enough to still be navigable by canoe or kayak.

After closure of the Project, several days with flow increase greater than 10% from baseline conditions is predicted for the North Driftwood River. There were no days of flow reduction or increase predicted to be greater than 10% relative to baseline conditions in the Jocko Creek and West Buskegau River watersheds after Project closure. It is predicted that if navigability is reduced at specific waterbodies

within these watersheds because of reductions in flow during construction or operations, the navigation potential will return to baseline conditions post-closure.

In terms of Indigenous land use activities, a review of the Traditional Land Use information from Indigenous nations confirmed that members of the Mattagami First Nation navigate rivers and lakes in the region by boat (Mattagami First Nation 2023; Chapter 7 of the Impact Statement [Description of Engagement with Indigenous Peoples]). The “Driftwood” was identified as a place for smelt fishing that could be navigated by a small vessel. One historical Mattagami First Nation canoe route used for commuting from Mattagami First Nation to Timmins was noted (specific waterbody is unknown), but is outside the PA. However, traditional use was not identified within the PA or LSA.

7 Mitigation, Management and Monitoring

7.1 Mitigation

The following measures will be applied to mitigate the impacts to navigability on affected navigable watercourses:

- Realignment of the North Driftwood River to maintain navigation from a series of chain lakes west of the TMF to downstream of the PA.
- Signage will be installed around the perimeter of the PA to alert boaters of the presence of the Project and its facilities.

7.2 Management

Signage will need to be maintained through the duration of the Project to confirm that navigational hazards are clearly identified and easily visible to users. Following spring freshet or high run-off events, signs will be inspected for presence and that they are in good condition. Signs which are missing or in poor condition will be replaced to maintain user navigational safety and access.

7.3 Monitoring

As part of regular environmental monitoring and inspections, signs will be inspected and deficiencies reported to appropriate on-site management.

8 Conclusions

Navigation in the PA is expected to be affected during construction and operations of the Project. Navigation is predicted to be affected through restriction of access to navigable waterbodies during construction and operations, and loss of waterbodies within the PA through direct overlap with Project features / infrastructure. The length of likely and uncertain navigable watercourses predicted to be affected in the PA in each of the three watersheds are 4.85 km (Jocko Creek), 27.86 km (North Driftwood River), and 7.83 km (West Buskegau River).

The placement and maintenance of signs identifying hazards to navigation for the duration of construction will support safety use of the water and help users to be aware of potential hazards or obstruction. The North Driftwood River Diversion Channel realignment is expected to support navigation in a manner similar to existing conditions (e.g., by canoe).

9 References

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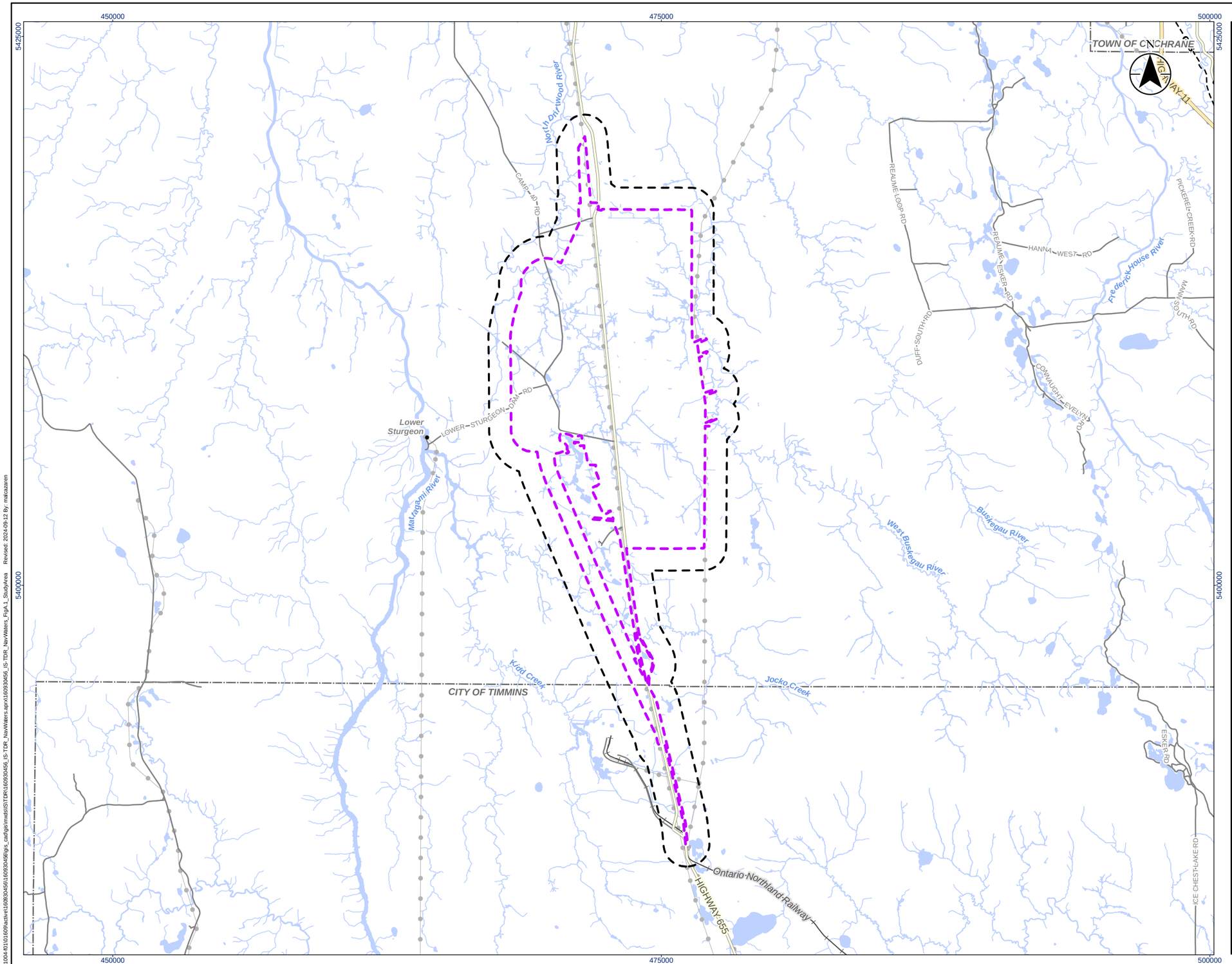
Appendices

Appendix A Figures



Stantec

CANADA NICKEL COMPANY

Legend

- Project Area
- Local Study Area

Base Features

- Expressway / Highway
- Major Road
- Minor Road
- Railway
- Existing Transmission Line
- GAS - Natural Gas Pipeline
- Watercourse
- Municipal Boundary - Lower Tier
- Waterbody

0 5 10 km

1:175,000 (At original document size of 11x17)

Notes

1. Coordinate System:NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © King's Printer for Ontario, 2023.

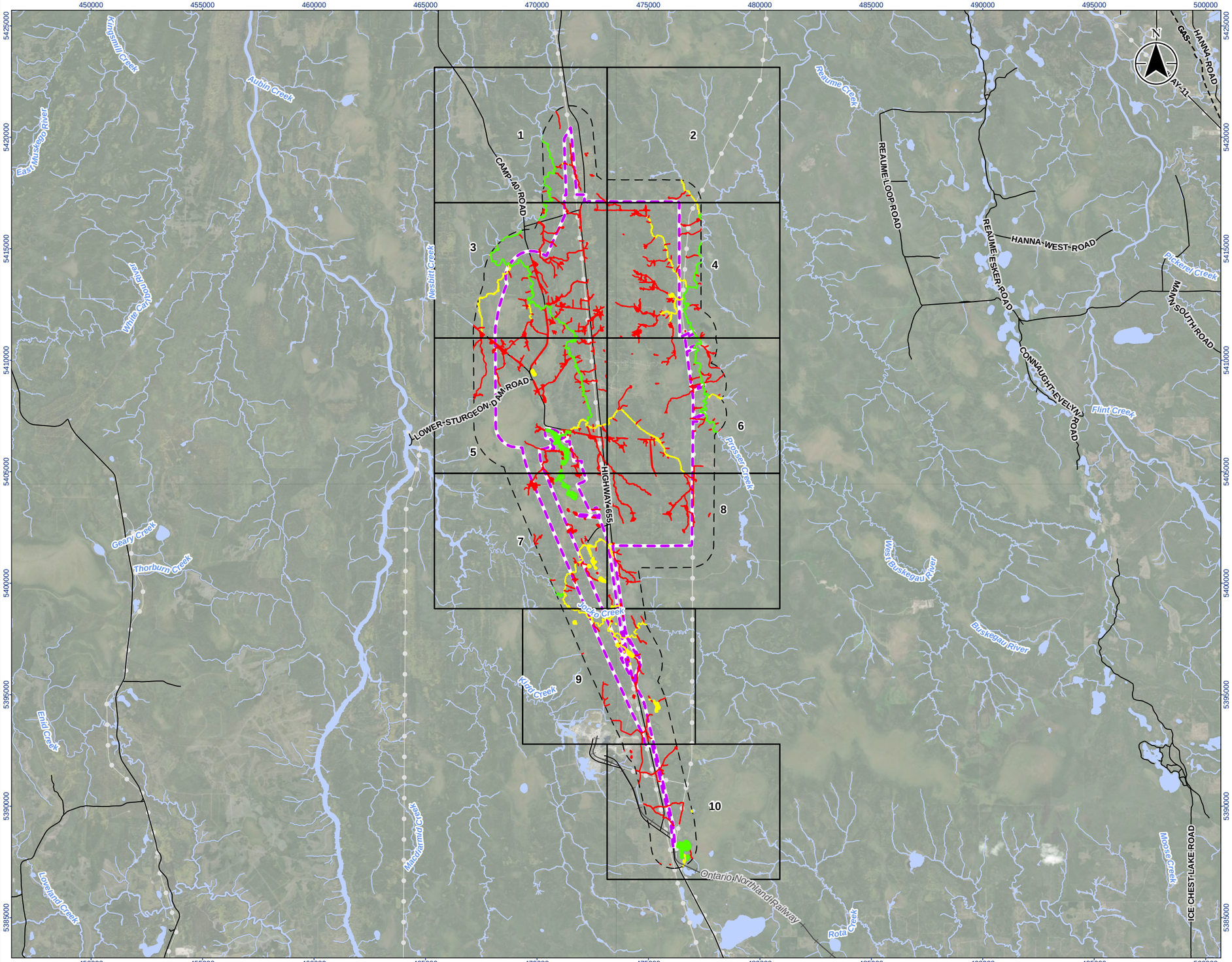
Project Location
Timmins, Ontario

160930456 REVA
Prepared by malcazaren on 2024-09-12

Client/Project
Canada Nickel Company (CNC)
Crawford Nickel Project

Figure No.
A.1

Title
Navigable Waters Project Area and Local Study Area



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Legend

- Project Area
- Local Study Area
- Mapbook Index

Nav Likelihood

- Likely
- Uncertain
- Unlikely

Base Features

- Road
- Railway
- Watercourse
- Waterbody
- Existing Transmission Line
- Natural Gas Pipeline

0 5 10 km

1:175,000 (At original document size of 11x17)

Notes

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Project Location
Timmins, Ontario

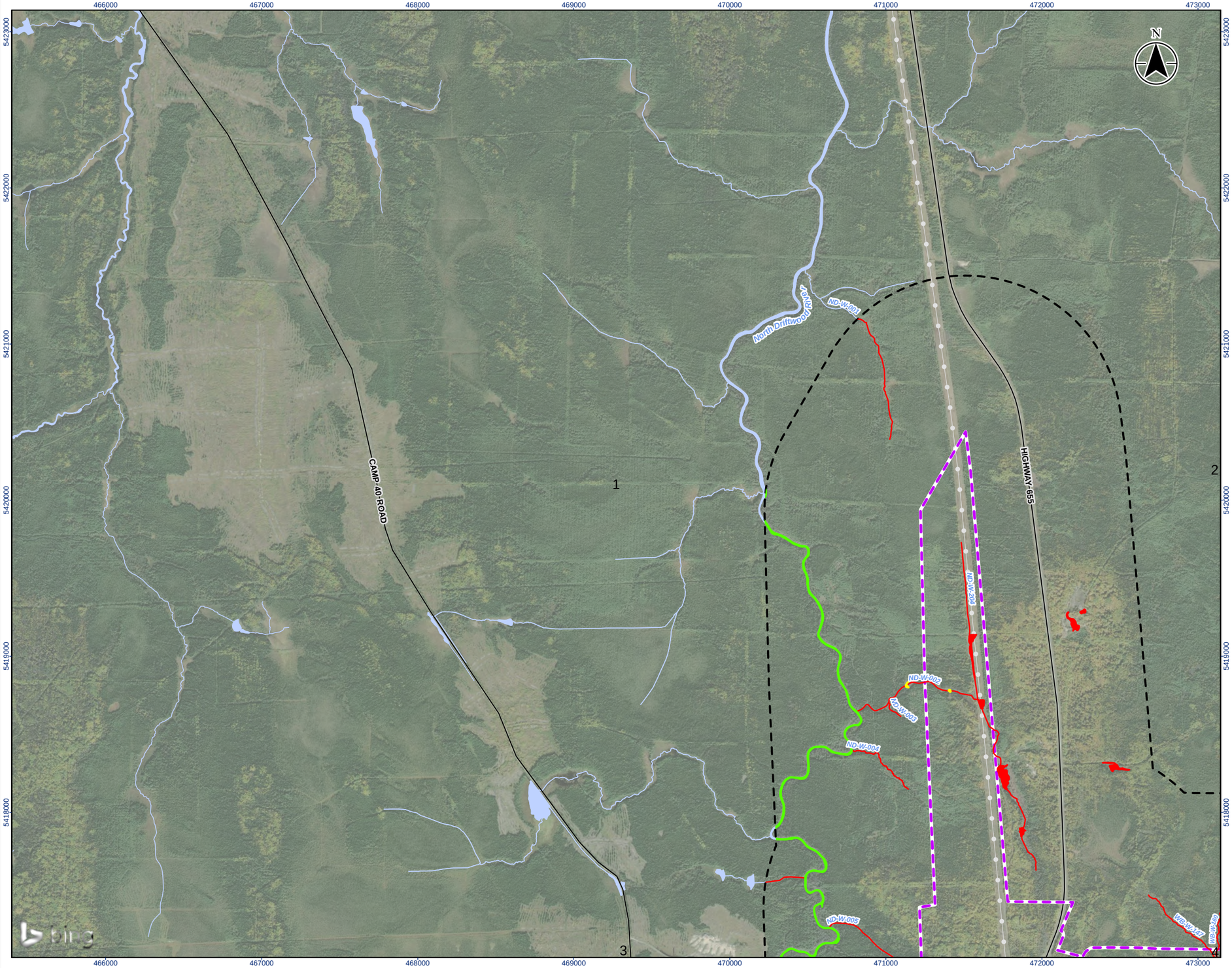
160930456 REVA
Prepared by malcazaren on 2024-09-19

Client/Project
Canada Nickel Company (CNC)
Crawford Nickel Project

Figure No.
A.2

Title
Navigability Likelihood of Waterbodies within the LSA Map Index

\\cd1004-f01\01609\active\160930456\gis_cad\gis\mxds\ISTDR\160930456_IS-TDR_NavWaters.aprx\160930456_IS-TDR_NavWaters_FigA-2_NavigabilityLikelihood Revised: 2024-09-19 By: malcazaren



Stantec

CANADA NICKEL COMPANY

Legend

- Project Area
- Local Study Area

Nav Likelihood

- Likely
- Uncertain
- Unlikely

Base Features

- Road
- Existing Transmission Line
- Watercourse
- Waterbody

0 0.5 1 km

1:25,000 (At original document size of 11x17)

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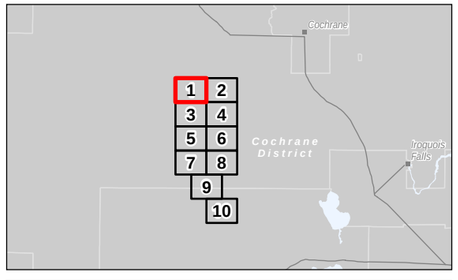


Project Location
Timmins, Ontario

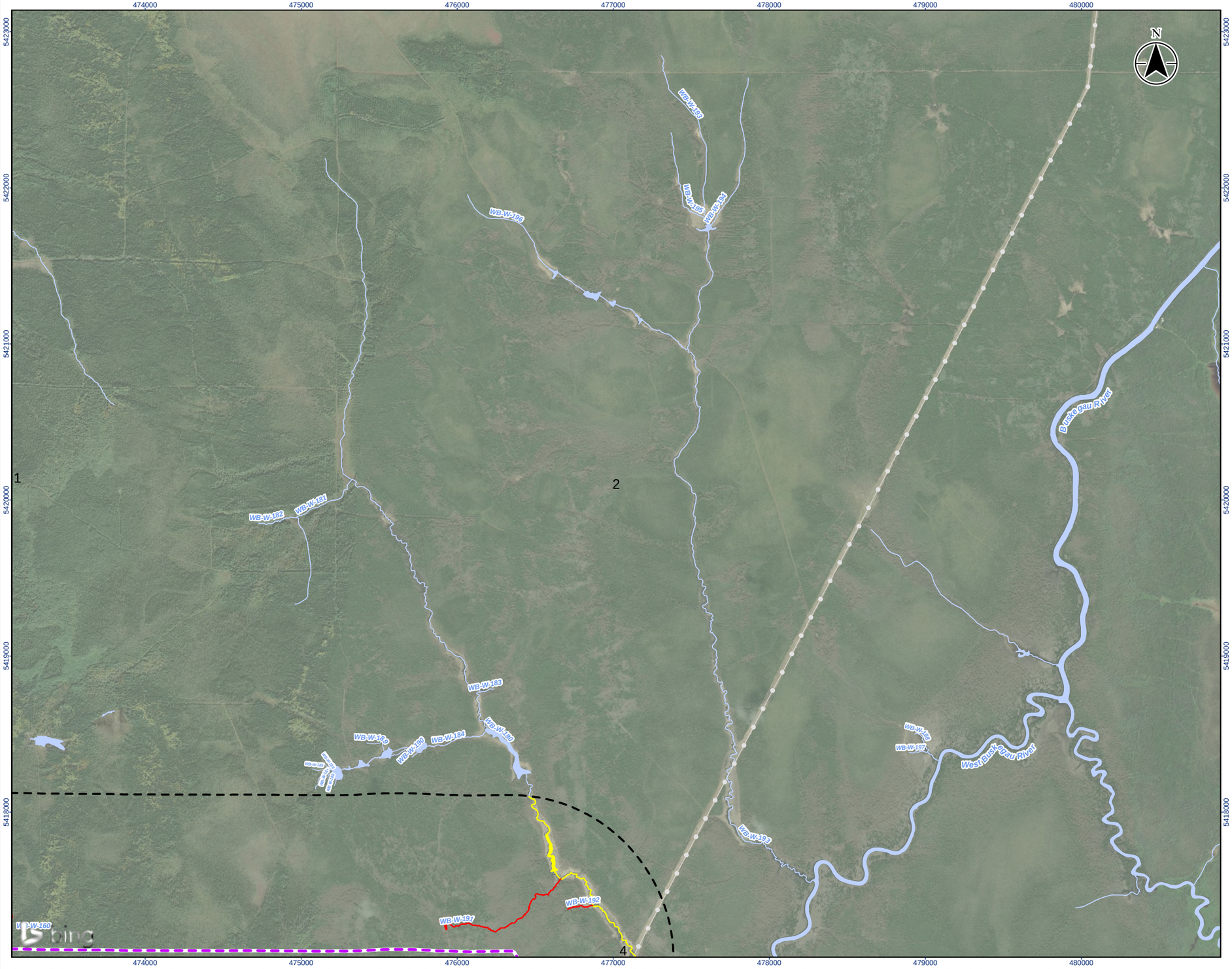
160930456 REVA
Prepared by malcazaren on 2024-09-19

Client/Project
Canada Nickel Company (CNC)
Crawford Nickel Project

Figure No.
A.3.1

Title
Navigability Likelihood of Waterbodies within the LSA

\\cd1004-01\01609\active\160930456\160930456\gis_cad\gis\mxd\ISTDR\160930456_IS-TDR_NavWaters-apnX\160930456_IS-TDR_NavWaters_Fig4-3_NavigabilityLikelihood_Mapbook Revised: 2024-09-19 By: malcazaren



Stantec

CANADA NICKEL COMPANY

Legend

- Project Area
- Local Study Area

Nav Likelihood

- Likely
- Uncertain
- Unlikely

Base Features

- Road
- Existing Transmission Line
- Watercourse
- Waterbody

0 0.5 1 km

1:25,000 (At original document size of 11x17)

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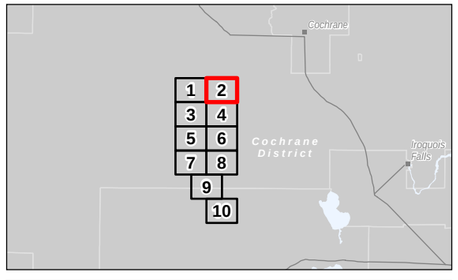

Project Location
Timmins, Ontario

160930456 REVA
Prepared by malcazaren on 2024-09-19

Client/Project
Canada Nickel Company (CNC)
Crawford Nickel Project

Figure No.
A.3.2

Title
Navigability Likelihood of Waterbodies within the LSA

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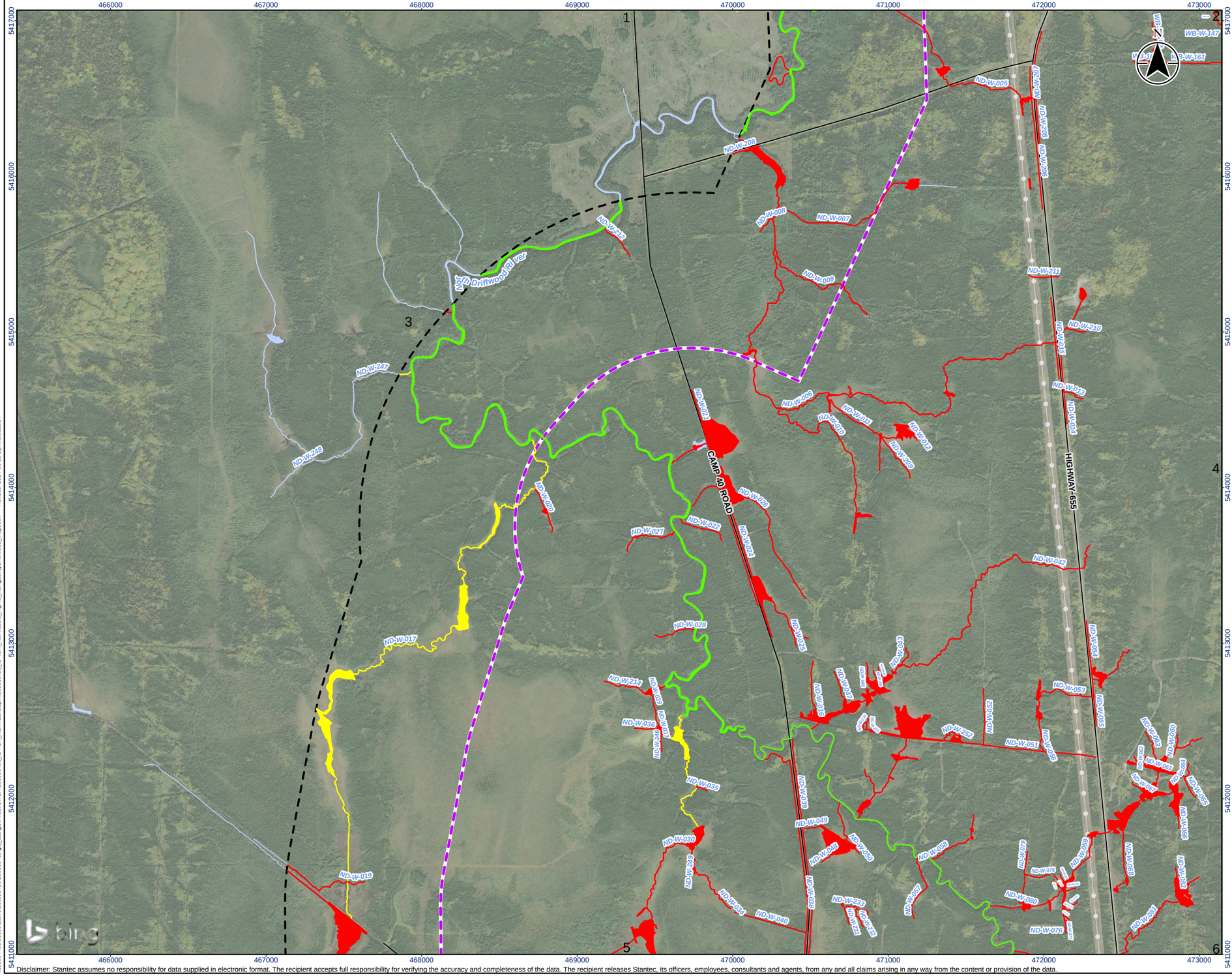

Stantec

CANADA NICKEL COMPANY

Legend

- Project Area
- Local Study Area

Nav Likelihood

- Likely
- Uncertain
- Unlikely

Base Features

- Road
- Existing Transmission Line
- Watercourse
- Waterbody

0 0.5 1 km

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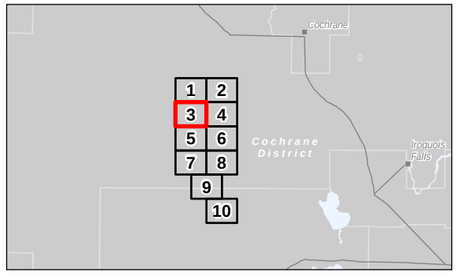

Project Location
Timmins, Ontario

160930456 REVA
Prepared by malcazaren on 2024-09-19

Client/Project
Canada Nickel Company (CNC)
Crawford Nickel Project

Figure No.
A.3.3

Title
Navigability Likelihood of Waterbodies within the LSA

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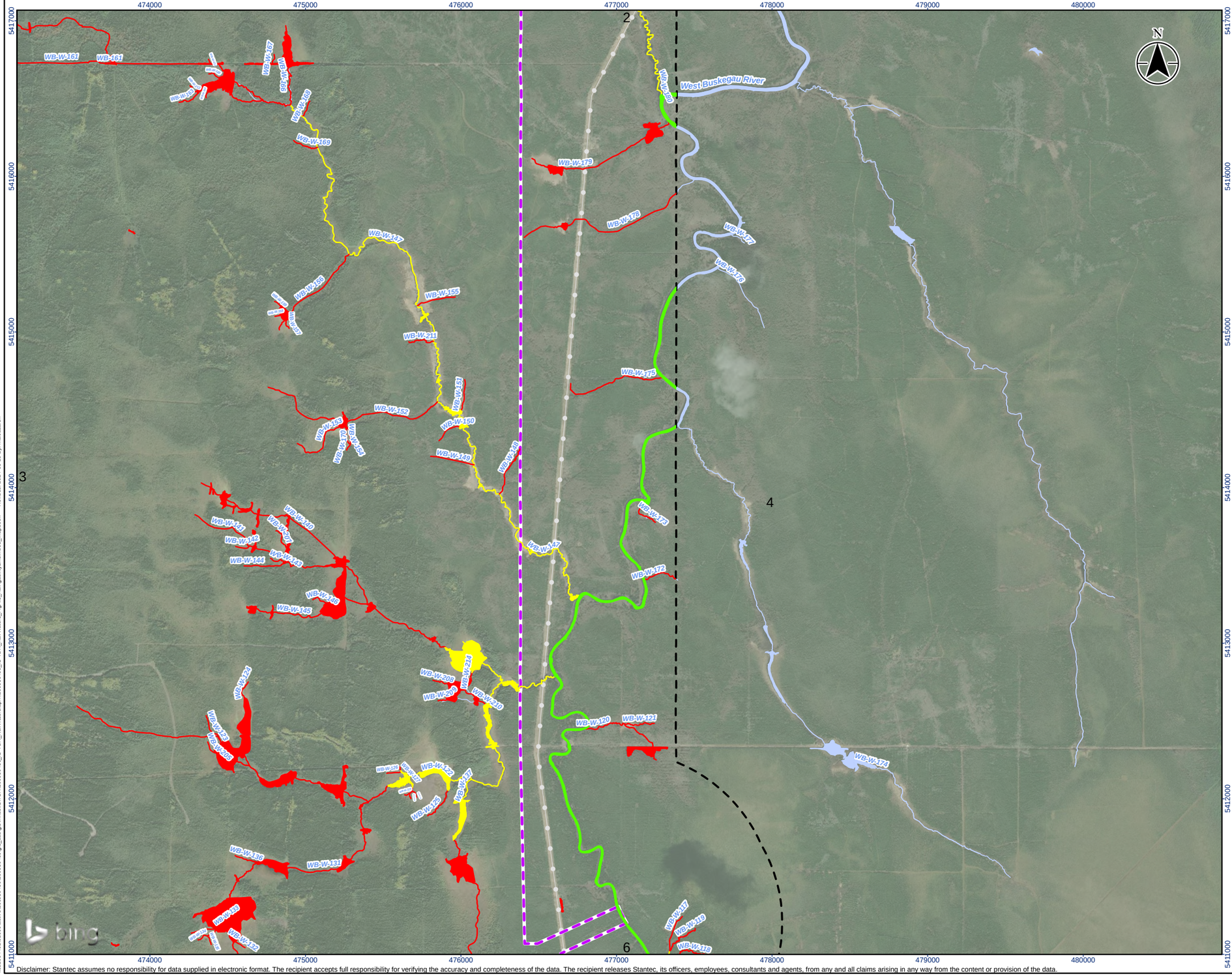

Stantec

CANADA NICKEL COMPANY

Legend

- Project Area
- Local Study Area

Nav Likelihood

- Likely
- Uncertain
- Unlikely

Base Features

- Road
- Existing Transmission Line
- Watercourse
- Waterbody

0 0.5 1 km

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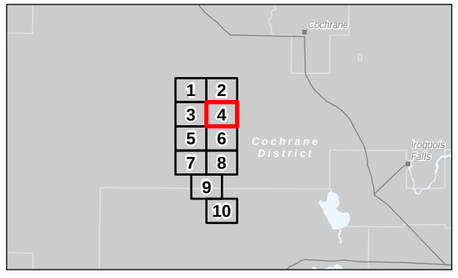

Project Location
Timmins, Ontario

160930456 REVA
Prepared by malcazaren on 2024-09-19

Client/Project
Canada Nickel Company (CNC)
Crawford Nickel Project

Figure No.
A.3.4

Title
Navigability Likelihood of Waterbodies within the LSA

\\cd1004-f01\01609\active\160930456\160930456_IS-TDR_NavWaters_Fig4-3_NavigabilityLikelihood_Mapbook Revised: 2024-09-19 By: malcazaren
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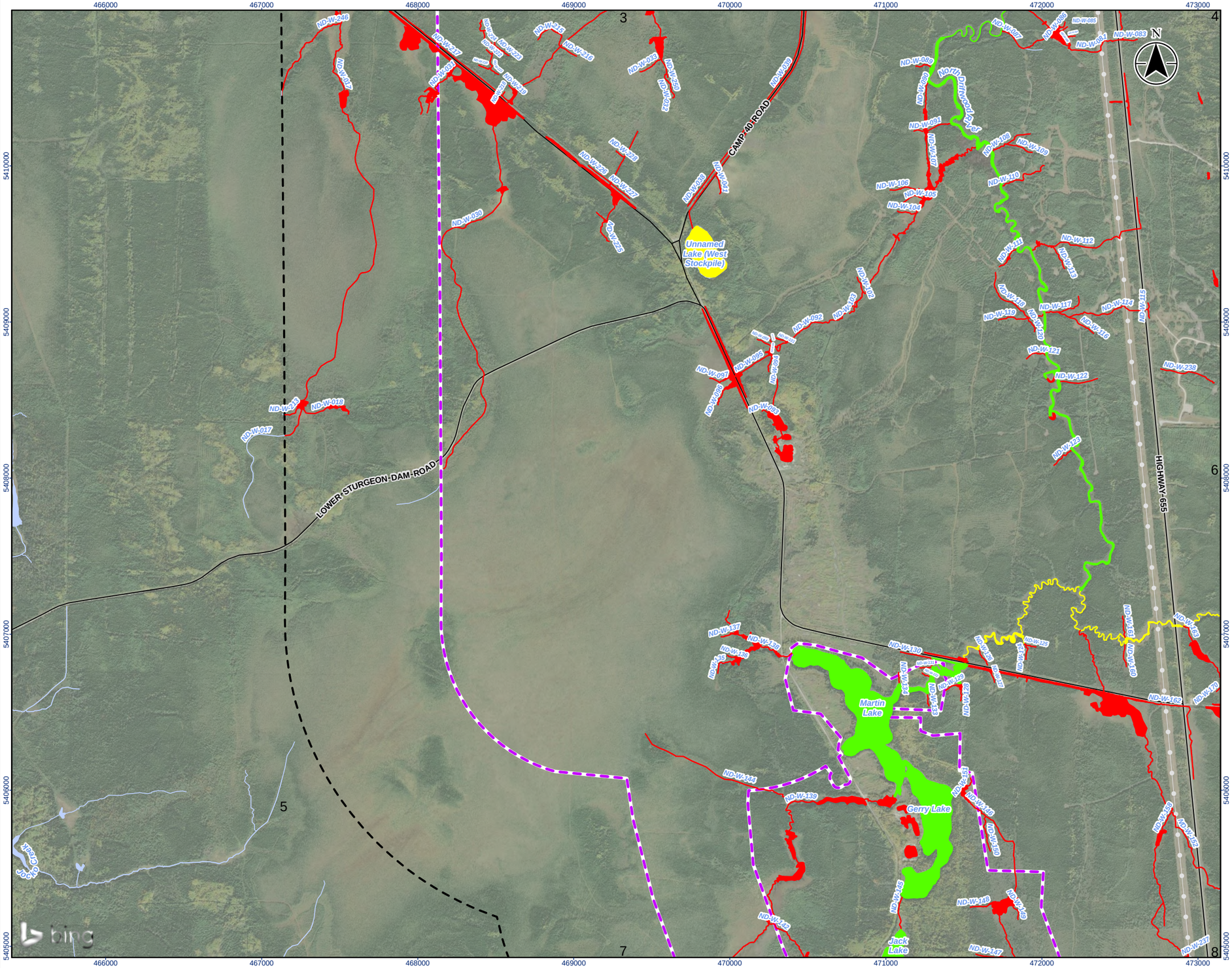

Legend

- Project Area
- Local Study Area

Nav Likelihood

- Likely
- Uncertain
- Unlikely

Base Features

- Road
- Existing Transmission Line
- Watercourse
- Waterbody

0 0.5 1 km

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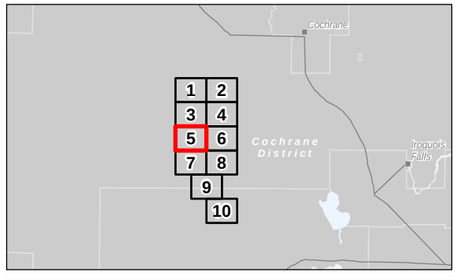


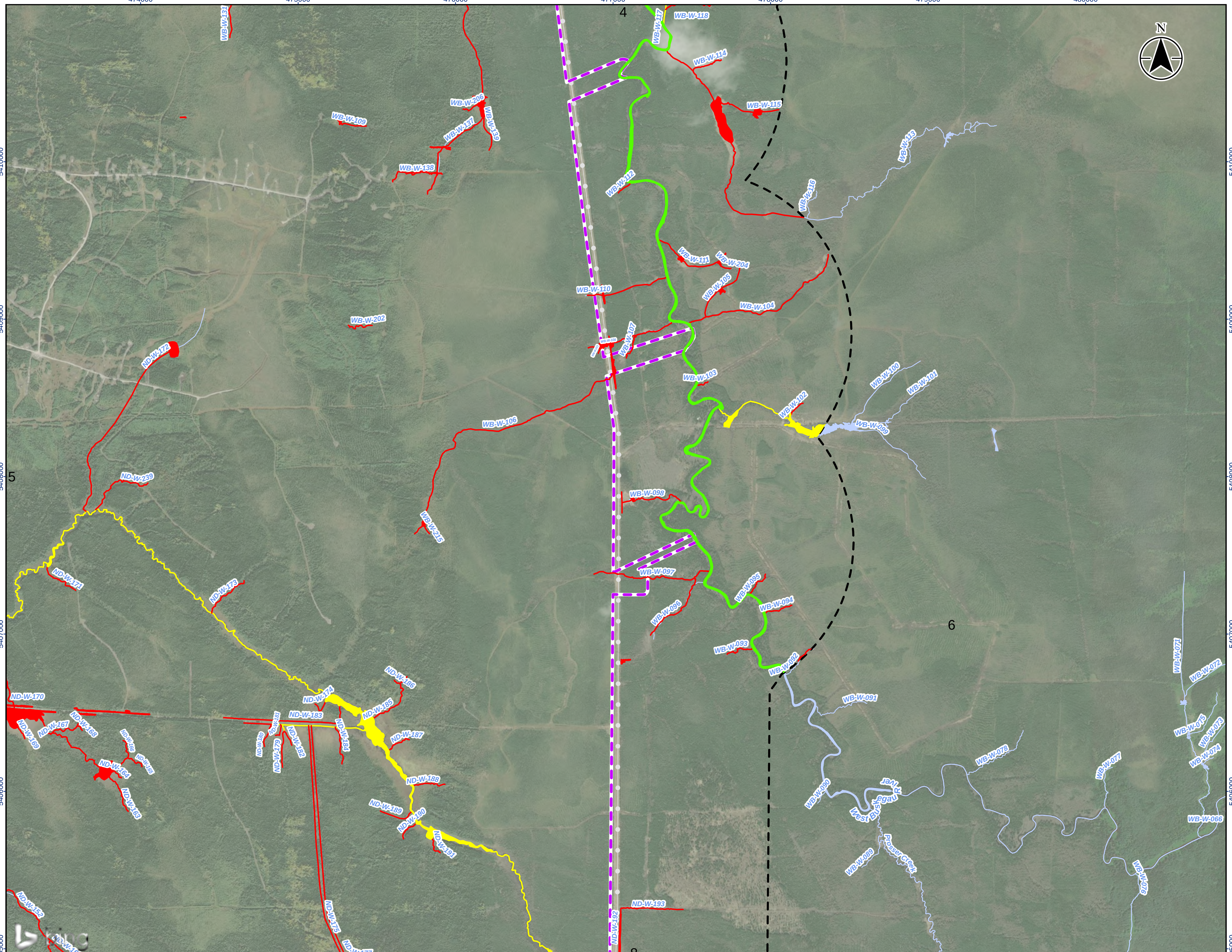
Project Location
Timmins, Ontario

160930456 REVA
Prepared by malcazaren on 2024-09-19

Client/Project
Canada Nickel Company (CNC)
Crawford Nickel Project

Figure No.
A.3.5

Title
Navigability Likelihood of Waterbodies within the LSA



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CANADA NICKEL COMPANY

Legend

Project Area
Local Study Area

Nav Likelihood

Likely
Uncertain
Unlikely

Base Features

Road
Existing Transmission Line
Watercourse
Waterbody

0 0.5 1 km
1:25,000 (At original document size of 11x17)

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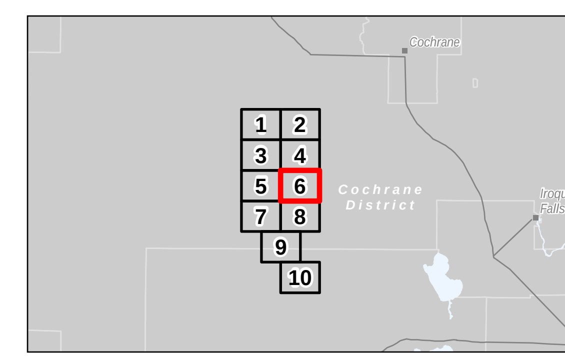


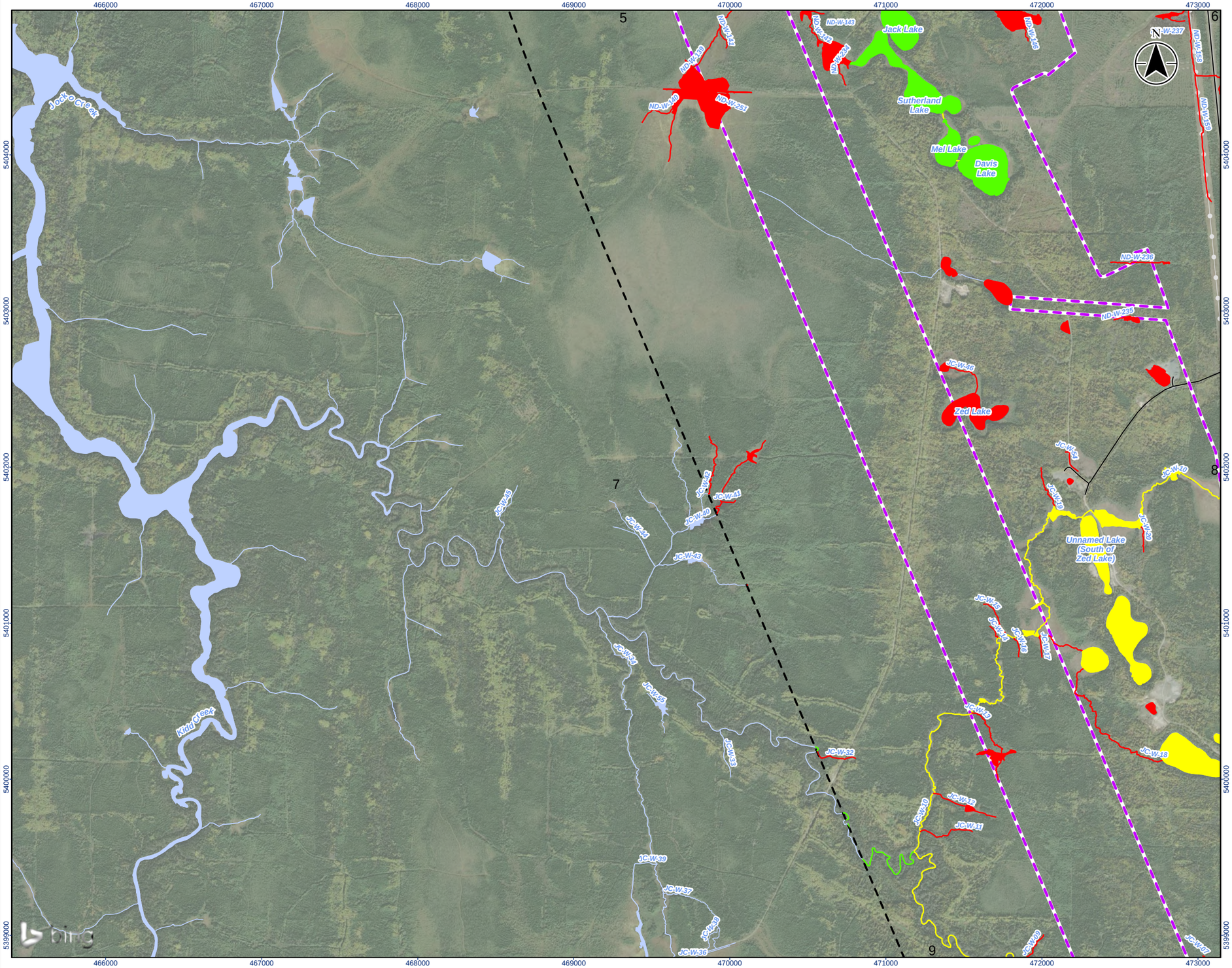
Project Location
Timmins, Ontario

160930456 REVA
Prepared by malcazaren on 2024-09-19

Client/Project
Canada Nickel Company (CNC)
Crawford Nickel Project

Figure No.
A.3.6

Title
Navigability Likelihood of Waterbodies within the LSA



Stantec

CANADA NICKEL COMPANY

Legend

- Project Area
- Local Study Area

Nav Likelihood

- Likely
- Uncertain
- Unlikely

Base Features

- Road
- Existing Transmission Line
- Watercourse
- Waterbody

0 0.5 1 km

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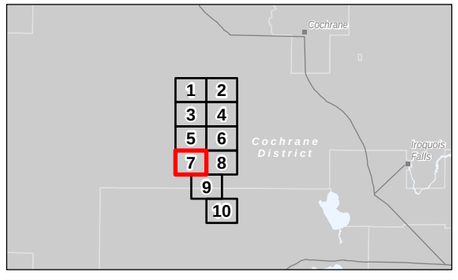


Project Location
Timmins, Ontario

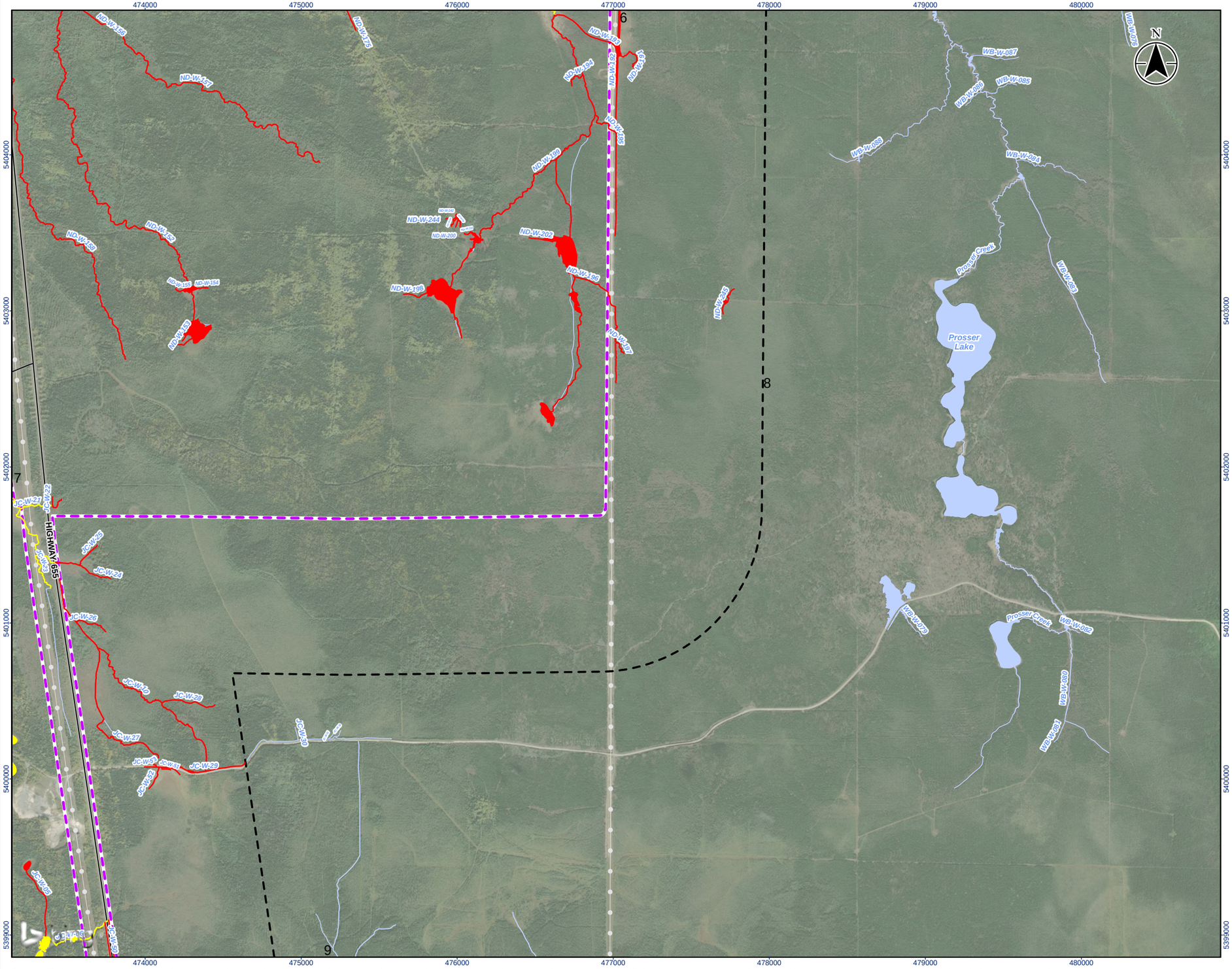
160930456 REVA
Prepared by malcazaren on 2024-09-19

Client/Project
Canada Nickel Company (CNC)
Crawford Nickel Project

Figure No.
A.3.7

Title
Navigability Likelihood of Waterbodies within the LSA

\\cd1004-f01\1609\active\160930456\160930456_IS-TDR_NavWaters-aprx\160930456_IS-TDR_NavWaters_Fig4-3_NavigabilityLikelihood_Mapbook Revised: 2024-09-19 By: malcazaren



Stantec

CANADA NICKEL COMPANY

Legend

- Project Area
- Local Study Area

Nav Likelihood

- Likely
- Uncertain
- Unlikely

Base Features

- Road
- Existing Transmission Line
- Watercourse
- Waterbody

0 0.5 1 km

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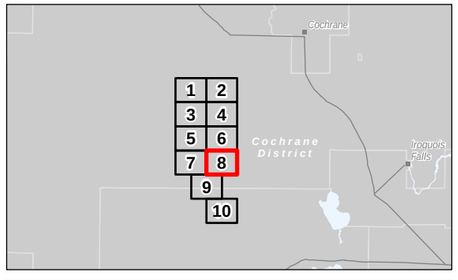


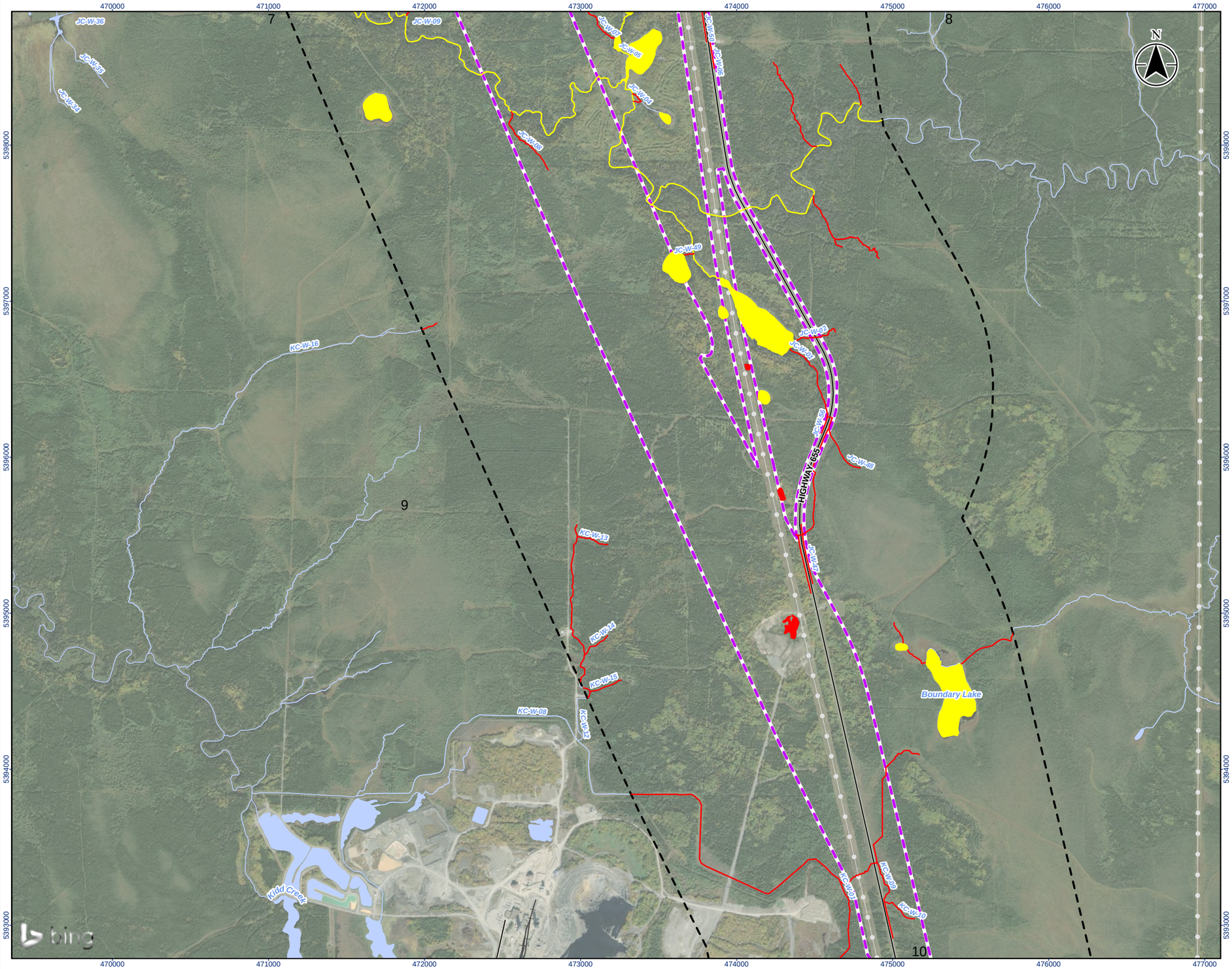
Project Location
Timmins, Ontario

160930456 REVA
Prepared by malcazaren on 2024-09-19

Client/Project
Canada Nickel Company (CNC)
Crawford Nickel Project

Figure No.
A.3.8

Title
Navigability Likelihood of Waterbodies within the LSA



Stantec

CANADA NICKEL COMPANY

Legend

- Project Area
- Local Study Area

Nav Likelihood

- Likely
- Uncertain
- Unlikely

Base Features

- Road
- Railway
- Existing Transmission Line
- Watercourse
- Waterbody

0 0.5 1 km

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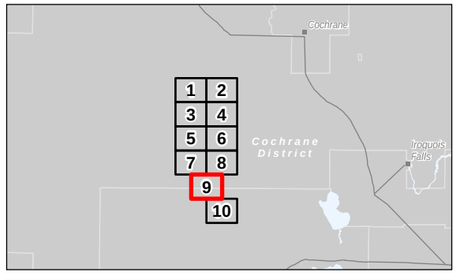

Project Location
Timmins, Ontario

160930456 REVA
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Client/Project
Canada Nickel Company (CNC)
Crawford Nickel Project

Figure No.
A.3.9

Title
Navigability Likelihood of Waterbodies within the LSA

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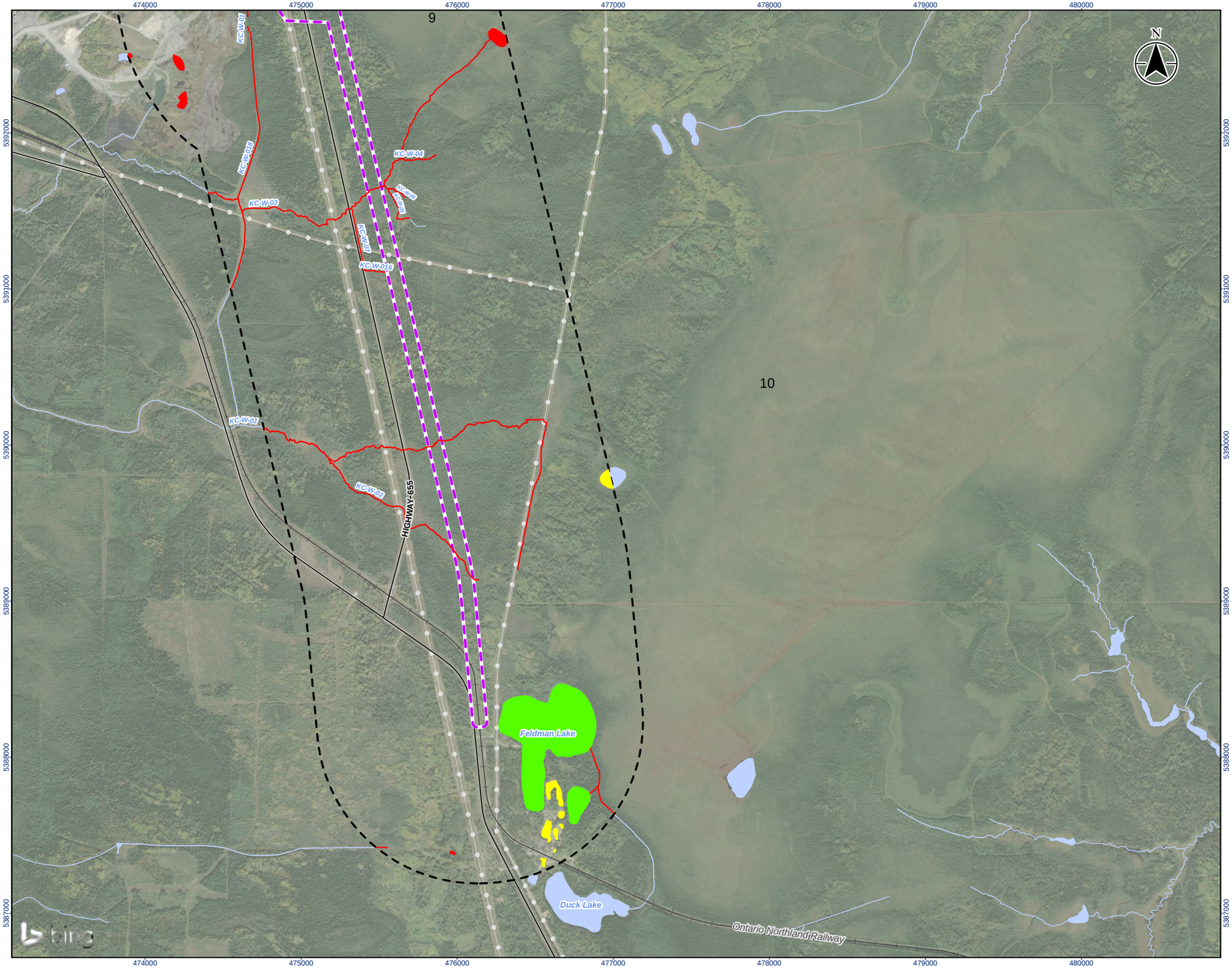

Stantec

CANADA NICKEL COMPANY

Legend

- Project Area
- Local Study Area

Nav Likelihood

- Likely
- Uncertain
- Unlikely

Base Features

- Road
- Railway
- Existing Transmission Line
- Watercourse
- Waterbody

0 0.5 1 km

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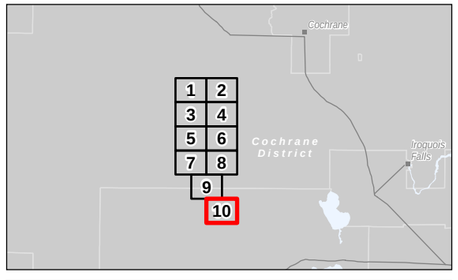

Project Location
Timmins, Ontario

160930456 REVA
Prepared by malcazaren on 2024-09-19

Client/Project
Canada Nickel Company (CNC)
Crawford Nickel Project

Figure No.
A.3.10

Title
Navigability Likelihood of Waterbodies within the LSA

\\cd1004-f01\1609\active\160930456\160930456_IS-TDR_NavWaters.aprx\160930456_IS-TDR_NavWaters-aprx\160930456_IS-TDR_Navigability_Likelihood_Mapbook Revised: 2024-09-19 By: malcazaren