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# MEMO

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|---|---|
| **From** | Chris LeGoffe, Superintendent, Environment, B2Gold Nunavut |
| **To** | Richard Dwyer, Manager of Licensing, Nunavut Water Board (NWB) |
| **Ref.** | 2AM-BRP1831 Amendment No. 1 |
| **Date** | 5-OCT-2026 |
| **Subject** | 2027 Winter Ice Road Technical Memo – B2Gold Nunavut |

Dear Mr. Dwyer,

B2Gold Nunavut is pleased to submit the following Technical Memorandum detailing the construction, operation, water withdrawal and seasonal closure strategy for the 2027 Winter ice Road (WIR) connecting the Allen Kapolak Marine Laydown Area (AKMLA) to the Goose Property.

This document has been prepared in full compliance with Part E, Item 13 of the Type A Water Licence 2AM-BRP1831, Commercial Lease KTCL-D18D003 and Project Certificate No. 007. It has also incorporated updated operational alignments, DFO fish and fish habitat protection measures, and daily water extraction tracking protocols.

Should you have any questions or require further technical clarification, please do not hesitate to reach out.

Sincerely,

Chris LeGoffe

**Chris LeGoffe**
Superintendent, Environment

Cc: Dan Gagnon, General Manager, B2Gold Nunavut
Jamie Richards, Operations Manager, B2Gold Nunavut
Braeden Connor, Environmental Permitting Manager, B2Gold Nunavut

# 1. INTRODUCTION

The Goose Mine (the Mine) is a gold mining operation owned and operated by B2Gold Back River Corp. (B2Gold) within the West Kitikmeot region of southwestern Nunavut. It is situated approximately 400 kilometres (km) southwest of Cambridge Bay, 95 km southeast of the southern end of Bathurst Inlet (Kingaok), and 520 km northeast of Yellowknife, Northwest Territories (Figure 1). The Mine is located predominantly within the Queen Maud Gulf Watershed (Nunavut Water Regulations, Schedule 4).

This technical memorandum presents the 2027 Winter Ice Road (WIR) construction, operations, and seasonal closure strategy. This document has been prepared to demonstrate compliance with the regulatory requirements set forth in Project Certificate No. 007 (issued by the Nunavut Impact Review Board), Type A Water Licence 2AM-BRP1831 (issued by the Nunavut Water Board), and the Kitikmeot Inuit Association (KIA) Commercial Lease KTCL-D18D003.

# 2. WINTER ICE ROAD ALIGNMENT

The proposed 2027 Winter Ice Road (WIR) alignment incorporates minor route optimizations to align with updated site operational requirements in the region. Spanning approximately 170 km, the corridor connects the Allen Kapolak Marine Laydown Area (AKMLA) to the Goose Mine, traversing roughly 60% to 70% over ice surfaces and 30% to 40% over land, subject to final field alignment. The route generally follows the historical alignment from previous WIRs.

Two main adjustments have been implemented to improve traffic safety:

- **Within the PDA (Goose Mine):** The road will be rerouted west of the dewatered Llama Lake to accommodate open-pit development commencing in late Q4.
- **The "Saddle" Area (between Bathurst Lake and Bathurst Inlet):** Sharp corners have been straightened to ease navigation.

Minor localized realignments may also occur along the rest of the route to address ice thickness, engineering needs, or real-time operational constraint on an as-needed basis.

These minor realignments were surveyed for archaeological and cultural significance in August 2026 and were confirmed to either be absent of historical artifacts or were fully mitigated. An archaeological report documenting this 2026 survey will be included in the 2026 Annual Report.

An updated figure depicting the alignment and spatial features is included in Appendix A.

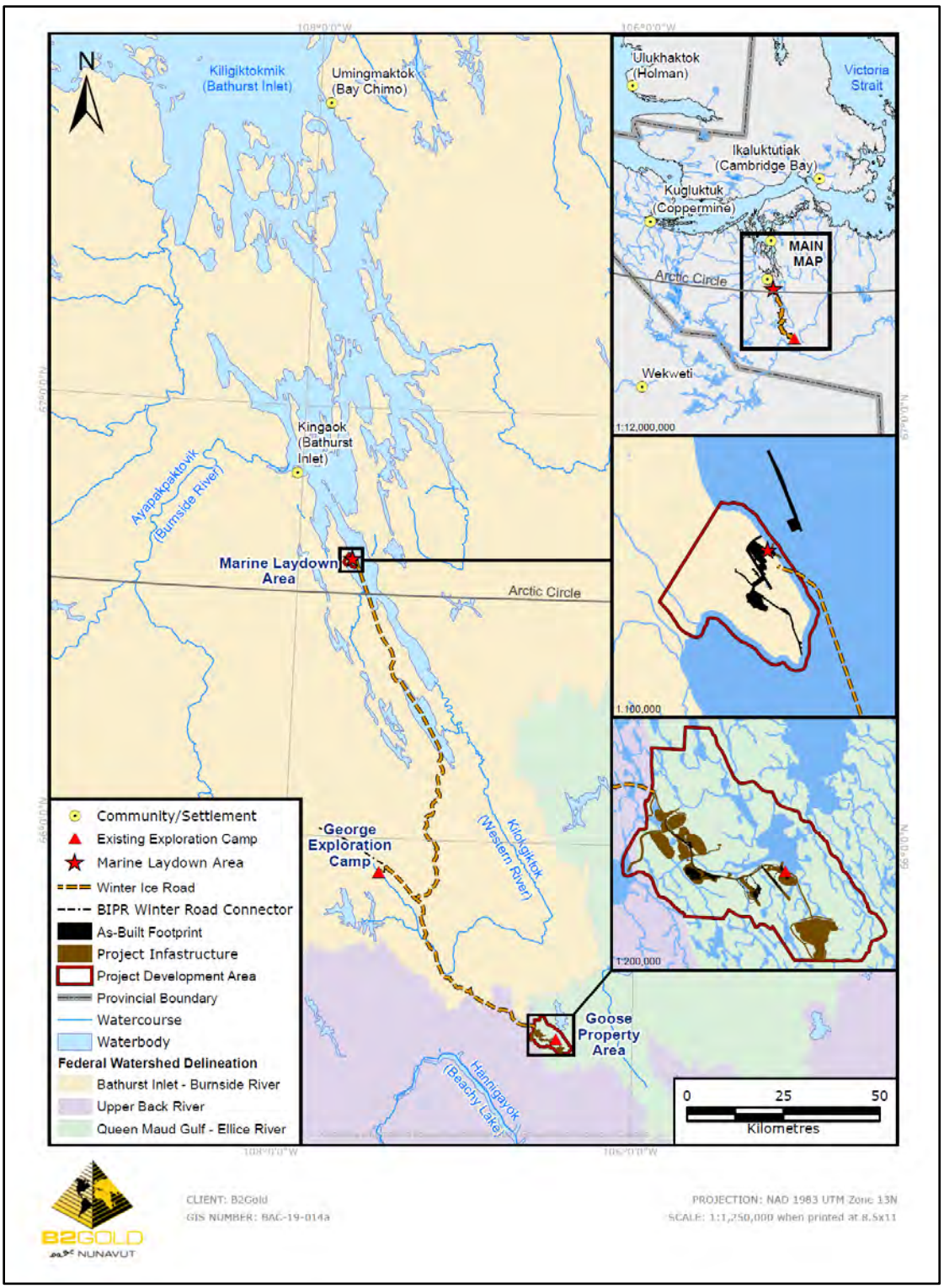



**Figure 1: Overview of Back River Project**

# 3. WINTER ICE ROAD SCHEDULE

Construction of the 2027 WIR is scheduled to take 45 to 60 days, commencing at the beginning of December 2026 with a targeted completion by late February 2027. Following completion of construction, continuous maintenance will occur throughout the operational period to facilitate the transport of approximately 2,800 commercial tractor-trailer loads from the AKMLA south to the Goose Mine.

Upon completion of haul operations, seasonal closure and active demobilization of the route will be completed within a multi-day window. In the event of operational or environmental delays extending traffic beyond the April 15 operational deadline, B2Gold will submit formal written notification to the KIA and the Government of Nunavut in accordance with the protocols specified in the approved Back River Project Wildlife Mitigation and Management Plan.

To support the overall schedule, camp facilities at the AKMLA have remained operational since sealift offloading to facilitate pre-construction equipment maintenance and preparation. Additionally, the Goose Camp remains operational to support ongoing site activities and seasonal readiness.

# 4. WINTER ICE ROAD CONSTRUCTION

Construction of the WIR will advance concurrently from four primary work fronts: AKMLA Main Camp, Goose Main Camp, AKMLA Forward Camp, and Goose Forward Camp. Pre-construction activities, including initial ice profiling, are scheduled to commence on or about November 24, 2026. Water delivery and ice creation is expected to begin on December 1$^{st}$, 2026, subject to ambient temperatures and achieving the required subgrade freezing depth to safely support light tracked equipment.

A qualified third-party geotechnical contractor will execute continuous pre-construction ice profiling, thickness verification, and load capacity assessments along the alignment throughout construction, maintenance, and operations. Construction protocols will comply with the *Guidelines for Safe Ice Construction* (GNWT DoT, 2015), *Northern Land Use Guidelines: Access Roads and Trails* (INAC, 2010), and applicable safety principles from the *Guideline for Building and Working Safely on Ice Covers* (Government of Alberta, 2024).

To enhance operational safety and emergency response, B2Gold will deploy three (3) temporary radio repeater stations on engineered snow/ice pads along the alignment, eliminating ground disturbance to tundra. Temporary workforce accommodations will be supported via AKMLA Main Camp, Goose Main Camp, and the two mobile forward camps. Up to three permanent service/emergency shelters will also be positioned along the 160 km corridor, at the discretion of B2Gold.

Access to George Lake Camp will be established via a winter trail connecting to the main WIR at Kilometer 55 for cat-train mobilization of equipment over land and frozen waterbodies (utilizing approved water sources Lake 16, 17, 986, 991, 989, 992, and 990).

*Note: Final inclusion and construction of the George Lake WIR access route remains subject to ongoing operational and financial evaluation.*

# 5. WINTER ICE ROAD OPERATIONS

Hauling operations for the 2027 WIR are scheduled to occur over a 30- to 45-day window, commencing in mid-to-late February 2027 and concluding by late March 2027. B2Gold anticipates transporting up to 2,800 commercial loads of materials, equipment, fuel, and site consumables along the corridor during this operational period. Freight transport will utilize double or triple-axle flatbed trailers with an estimated average payload of 25 tonnes per shipment.

Engineered load capacity evaluations will be regularly conducted based on measured ice thickness to confirm structural integrity prior to dispatching operational equipment. Continuous ice profiling will be executed throughout the operational period to monitor natural ice accretion, verify safety factors, and optimize allowable gross vehicle weight limits.

# 6. WINTER ICE ROAD CLOSURE

Decommissioning of the Winter Ice Road will focus on restoring natural surface drainage patterns during frozen conditions and eliminating potential flow obstructions prior to freshet. Closure activities will also include the recovery of any sand along the alignment that may have been transferred by hauling equipment to frozen lakes from adjacent portages; this sand would only be placed on portages if additional traction was required for hauling vehicles. Closure activities will focus on the protection of fish and fish habitat by ensuring sediments or other deleterious substances do not cause mortality of fish and maintain safe passage of fish for all crossings.

All temporary infrastructure, including radio towers, signage and field supplies, will be demobilized and consolidated at the AKMLA, AKMLA Forward Camp, Goose Forward Camp, and Goose Mine for off-season storage.

# 7. WINTER ICE ROAD WATER USE

Water withdrawal is required for constructing overland portage subgrades, ice access ramps, and ongoing surface maintenance. All authorized extraction sources along the alignment will be clearly identified with high-visibility, reflective signage displaying specific lake names as designated in the 2018 Golder WIR Technical Memorandum (Appendix B).

Water extraction will strictly adhere to authorized volumetric thresholds, maximum depth profiles, and predicted water level fluctuations outlined in the 2018 evaluations. In compliance with Fisheries and Oceans Canada (DFO) protocols and Type A Water Licence 2AM-BRP1831 conditions:

- **Under-Ice Depth & Volume:** B2Gold Winter Ice Road personnel will verify under-ice water depths using auger profiling prior to pumping to confirm compliance with DFO under-ice withdrawal limits (maintaining a minimum 2-metre under-ice water depth where applicable).
- **Intake Screening:** All water intake hoses will be equipped with fish screens adhering to the *DFO Code of Practice: Water Intake Screens for the Protection of Fish* to prevent fish entrainment or impingement.

- **Monitoring & Reporting:** Daily withdrawal volumes from each approved source will be metered and reported in accordance with Schedule 1, Table 2 of Licence 2AM-BRP1831.

## 8. SUPPORTING DOCUMENTATION

Appended to this memo are supporting documents that provide additional information on B2Gold's management of the 2027 Winter Ice Road, specifically:

- Appendix A: Winter Ice Road Route Overview 2027;
- Appendix B: Winter Ice Road Water Withdrawal Evaluation – Back River Project (Golder, 2018).

# 9. REFERENCES

B2Gold Nunavut. (2024, October). *Back River Mine wildlife mitigation and monitoring program plan* (Version 13) [Prepared by ERM]. B2Gold

DFO (Fisheries and Oceans Canada). 2020. Code of Practice: Water Intake Screens for the Protection of Fish. Fisheries and Oceans Canada.

Golder Associates Ltd. 2018. Winter Ice Road Water Withdrawal Evaluation – Back River Project. Technical Memorandum prepared for Sabina Gold & Silver Corp. / B2Gold.

Government of Alberta. 2024. *Guideline for Building and Working Safely on Ice Covers*. Occupational Health and Safety Code Explanation and Safety Guidelines. Government of Alberta, Edmonton, AB.

Government of the Northwest Territories Department of Transportation (GNWT DoT). 2015. *Guidelines for Safe Ice Construction*. GNWT DoT, Yellowknife, NT. February 2015.

Indigenous and Northern Affairs Canada (INAC). 2010. *Northern Land Use Guidelines – Access: Roads and Trails*. Natural Resources and Environment Branch, INAC, Ottawa, ON. January 2010. ISBN: 978-1-100-14743-7.

# APPENDIX A WIR ALIGNMENT & SPATIAL FEATURES

375,000 mE
400,000 mE
425,000 mE
7,375,000 mN
7,350,000 mN
7,325,000 mN
7,300,000 mN
7,275,000 mN

N

Marine Laydown Area (MLA)

Lake 34-0
QUARRY 5
QUARRY 7
Lake 31-0
MLA Forward Camp
Lake 30-0
QUARRY 11
Lake 29-0
Lake 28-0
Lake 997
Lake 26-0
Lake 25-0
Lake 994
Lake 995
Lake 24-0
George Lake
Lake 23-0
Lake 20-0
QUARRY 13
Lake 19-0
Lake 18-1
Lake 984
Lake 18-0
QUARRY 15
Exploration Camp Lake 16
Lake 17-0
Lake 16-0
Fuel Hub at George Junction
Lake 15-0
Lake 14-1
QUARRY 18
Lake 14-0a
Lake 13-0a
Lake 13a
QUARRY 24 AND 25
Goose Lake Forward Camp 2024
Lake 11-0
Lake 9-0
Lake 7-0
Lake 6-0
Lake 4-0
Lake 3-0
Lake 2-0
Goose Lake
Lake 1-0
Goose Lake Main Camp

## Legend

- 20260928 WIR Km Markers
- WIR Approved Lake Names
- B2Gold Forward Camps
- B2Gold WIR 2026 Route - 260928
- 2026-27 WIR Quarries
- AreasToAvoid

Canvec_Lakes
- Intermittent
- Permanent

Inuit Owned Lands
- Subsurface and Surface
- Surface

B2GOLD
NUNAVUT

| | |
|---|---|
| | Back River Project<br>2027 Winter Ice Road<br>260929 Update Quarry and Lakes<br>Summary Map |
| Date: 2026-10-02 | |
| Author: PMc. | |
| Office: Vancouver | |
| Drawing: | |
| Scale: 1:325,000 | Projection: UTM Zone 13 (NAD 83) |

0 5 10 15
kilometres

# APPENDIX B 2018 WINTER ICE ROAD TECHNICAL MEMORANDUM – WATER WITHDRAWAL EVALUTION

# TECHNICAL MEMORANDUM

**DATE** November 8, 2018 **REFERENCE No.** 1776921_021_MEM_Rev0

**TO** Merle Keefe
Sabina Gold & Silver Corp.

**CC** Matthew Pickard, Dionne Filiatrault

**FROM** Cam Stevens **EMAIL** cameron_stevens@golder.com

**WINTER ICE ROAD WATER WITHDRAWAL EVALUATION – BACK RIVER PROJECT**

Golder Associates Ltd. (Golder) was retained by Sabina Gold & Silver Corp. (Sabina) to provide an evaluation of potential water sources for winter ice road construction along the proposed 160 km-long winter road corridor from the Goose Property at Goose Lake to the Marine Laydown Area at Bathurst Inlet. Potential water sources are waterbodies deeper than 3.5 m (i.e., lakes) and available water volumes in those waterbodies are no more than 10% of the under ice volume, as per the Fisheries and Oceans Canada (DFO) protocol for mitigating water withdrawal effects on fish in ice-covered waterbodies in the North (DFO 2010).

The information provided in this technical memorandum (memo) fulfills commitments made during the environmental review of the Back River Project (the Project) (see Addendum Appendix V6-6G in Sabina [2017]), and provides Sabina with the necessary information to minimize, if not eliminate, any potential effects to overwintering fish and fish habitat, including spawning shoal habitat, during the construction of the winter ice road. The current plan for the winter ice road requires 108,000 $m^3$ of water per season (675 $m^3$ per km) to maintain ice thickness as per the Project Description (Volume 2 in Sabina [2017]).

The following sections of the memo provide methods and results for the available under-ice water volumes, the volumes representing 10% of available under-ice water, and the reduction in water depth associated with withdrawals of 10% of the available under-ice water per each lake in the winter road corridor. The memo also evaluates changes in water depths in terms of risk to spawning shoal habitat loss in lakes as per methods outlined in Addendum Appendix V6-6G in Sabina (2017). Based on that evaluation, recommended volumes for water withdrawal that present negligible risk of habitat loss are provided.

## 1.0 METHODS

Bathymetric digital elevation models were generated by Aeroquest Mapcon (Aeroquest) for 118 waterbodies within the winter road corridor using stereo-photogrammetric interpretation methods of stereo, 8 band, 50 cm satellite imagery; imagery was collected in August 2017 by DigitalGlobe's Worldview-2 satellite (Legleiter et al. 2014; Dörnhöfer and Oppelt 2016). For each waterbody, surrounding terrain characteristics were used to interpret slopes entering the waterbody at the shorelines, where the slopes were then extrapolated into the waterbody to connect with the lake bottom topography visualized through 'coastal blue', 'blue' and 'green' (spectral) bands in the imagery in a Geographic Information System (GIS). These spectral bands allow the identification of detailed lakebed topography to a depth of 30 m.



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Bathymetric models of each waterbody were provided to Golder in raster format for analyses of volume and area per depth in a GIS platform for each waterbody deeper than 3.5 m. Tables produced from the raster analysis (see Appendix A) were used to estimate available under-ice water volumes for ice road construction for each source lake (i.e., 10% of under ice volume); where it was assumed that the maximum ice thickness is 2 m (DFO 2010). Changes in water levels from water withdrawals were also estimated. As it was assumed that all waterbodies deeper than 3.5 m support large-bodied fish, predicted changes in water levels were assigned a level of risk for spawning habitat loss as per Addendum Appendix V6-6G in Sabina (2017) (Table 1). Waterbodies with a potential risk of spawning habitat loss from a 10% under-ice volume reduction were identified as sources where water withdrawals should be reduced, particularly during below-average precipitation years. Recommended volumes for water withdrawal that present negligible risk of habitat loss were then calculated for these waterbodies.

**Table 1: Water Withdrawal Risk Level Framework for Spawning Shoal Habitat for Fall-Spawning Fish[(a)]**

| Risk of Spawning Habitat Loss | Change in Water Elevation Under Ice (m) | Rationale |
|---|---|---|
| Nil or negligible | Less than 0.22 | The reduction in water level lies within the average change in ice thickness (i.e., within normal variation) |
| Low | 0.22 to less than 0.42 | The reduction in water level remains within 1 SD of the average |
| Medium | 0.42 to 0.8 | The reduction in water level remains between 1 and 2 SD of the average |
| High | Greater than 0.8 | The reduction in water level is beyond 2 SD of average and there is less than a 5% chance for this occurring naturally |

a) includes coregonid species, such as Lake Whitefish (*Coregonus clupeaformis*), and Lake Trout (*Salvelinus namaycush*); SD = standard deviation

A characterization of whether bathymetric data are representative of below-average, average, or above-average water level conditions was provided using precipitation statistics for the region. Statistics were derived for both 2017 and 30-year (1981-2010) 'normal' data, obtained from a representative monitoring station in west-central Nunavut (station name: Kugluktuk A; see Government of Canada 2017).

The evaluation of satellite imagery results (volumes) also included a comparison with results generated by bathymetric (sonar) surveys previously performed in the field for a subset of seven lakes (Appendix V6-3A in Sabina [2017]; Rescan 2014). The lakes with existing bathymetric data included five lakes surveyed in early July 2014 (Fold Lake, Winter Road Lake 01, Winter Road Lake 02, Winter Road Lake 05, and Winter Road Lake 06) and two lakes surveyed in August 2010 (Llama Lake and Chair Lake). All lakes were less than 30 m depth, the extent to which accurate detection of the spectral bands in the satellite imagery is known to be effective. It was assumed that the previously conducted surveys of each lake were performed consistent with methods described by DFO (2010), and included one longitudinal transect (connecting the two farthest shorelines) and a minimum of two perpendicular transects evenly spaced on the longitudinal transect at maximum intervals of 500 m. Project lakes with existing bathymetric data that were excluded from the comparison were either outside the boundary of the winter road corridor, or had insufficient data to provide a reliable volume estimate.

## 2.0 RESULTS AND DISCUSSION

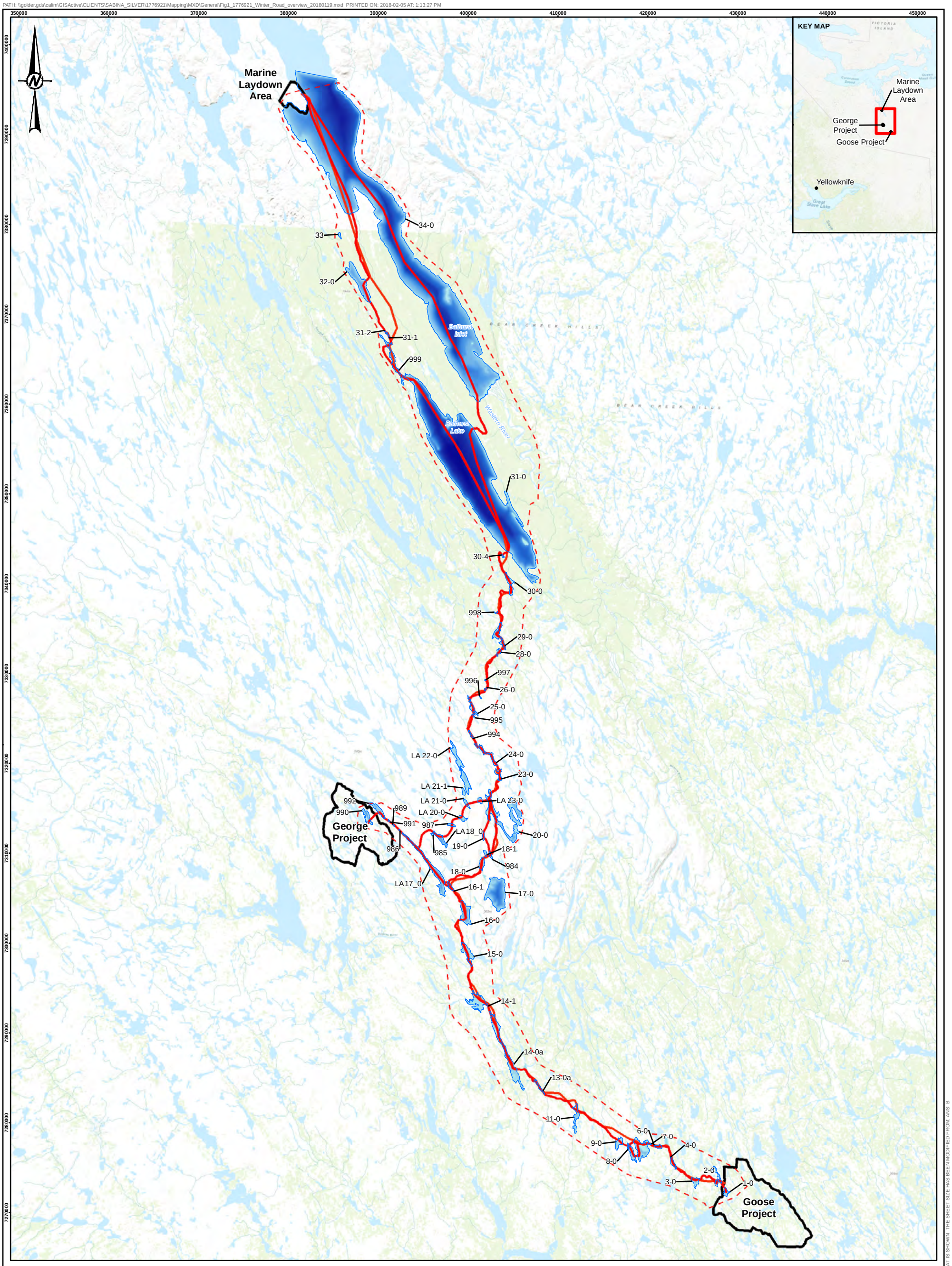
Of the 118 waterbodies examined for use for winter ice road construction, 55 lakes were identified as being deep enough (greater than 3.5 m) for under-ice water withdrawal (Table 2; Figure 1; Appendix B). Overall, source lakes were determined to provide a median capacity of 39,637 $m^3$ of water per lake for winter ice road construction, where available 10% under-ice volumes may range from 683 $m^3$ for Lake 996 to 301,075,442 $m^3$ for Lake 34-0 (i.e., lower Bathurst Inlet). The provided volume statistics for lakes in the winter road corridor are expected to represent average lake level conditions, given that cumulative precipitation levels in August 2017 totalled 208.4 mm, just 1 mm below normal totals for that time of the year when the imagery was acquired (Figure 2). It is expected that available water volumes for winter ice road construction is lower during below-average precipitation years and higher during above-average precipitation years.

**Table 2: Water Sources, Bathymetry Statistics, and Available Volumes for Winter-Ice Road Construction for the Back River Project**

| Waterbody ID | North. UTM | East. UTM | Surface Area (SA) ($m^2$) | Volume (V) ($m^3$) | V:SA ratio (m) | Under Ice Volume Below 2 m Depth ($m^3$) | 10% Volume Below 2 m Depth ($m^3$) | Predicted Water Level Change (m) | Risk of Habitat Loss For 10% Guideline | Calculated Volume for Nil Risk ($m^3$) |
|---|---|---|---|---|---|---|---|---|---|---|
| Lake 1-0 | 7272263 | 428691 | 348,021 | 951,009 | 2.7 | 396,025 | 39,603 | 0.19 | Nil | 39,603 |
| Lake 2-0 | 7273318 | 427649 | 598,077 | 1,487,839 | 2.5 | 535,068 | 53,507 | 0.17 | Nil | 53,507 |
| Lake 3-0 | 7273459 | 425284 | 557,865 | 1,738,708 | 3.1 | 793,748 | 79,375 | 0.21 | Nil | 79,375 |
| Lake 4-0 | 7275521 | 422778 | 349,596 | 705,486 | 2.0 | 193,786 | 19,379 | 0.13 | Nil | 19,379 |
| Lake 8-0 | 7276631 | 418218 | 765,711 | 2,427,790 | 3.2 | 1,137,977 | 113,798 | 0.20 | Nil | 113,798 |
| Lake 7-0 | 7277136 | 419314 | 2,211,876 | 8,325,456 | 3.8 | 4,336,453 | 433,645 | 0.22 | Low | 424,972 |
| Lake 6-0 | 7277346 | 421197 | 224,514 | 614,579 | 2.7 | 253,622 | 25,362 | 0.19 | Nil | 25,362 |
| Lake 9-0 | 7277741 | 416761 | 620,172 | 1,581,371 | 2.5 | 537,030 | 53,703 | 0.14 | Nil | 53,703 |
| Lake 11-0 | 7280643 | 411983 | 885,771 | 2,406,329 | 2.7 | 981,876 | 98,188 | 0.19 | Nil | 98,188 |
| Lake 13-0a | 7284074 | 407857 | 290,376 | 597,123 | 2.1 | 151,117 | 15,112 | 0.12 | Nil | 15,112 |
| Lake 14-0a | 7287885 | 404204 | 3,942,630 | 10,415,812 | 2.6 | 3,597,800 | 359,780 | 0.16 | Nil | 359,780 |
| Lake 14-1 | 7293431 | 401036 | 2,221,497 | 4,779,159 | 2.2 | 881,912 | 88,191 | 0.08 | Nil | 88,191 |
| Lake 15-0 | 7298909 | 399919 | 1,441,269 | 5,027,754 | 3.5 | 2,373,270 | 237,327 | 0.19 | Nil | 237,327 |
| Lake 16-0 | 7303281 | 399696 | 2,068,272 | 12,016,309 | 5.8 | 8,139,725 | 813,973 | 0.40 | Low | 447,685 |
| Lake 17-0 | 7305916 | 402441 | 5,913,261 | 61,932,318 | 10.5 | 50,372,624 | 5,037,262 | 0.90 | High | 1,239,167 |
| Lake 16-1 | 7306279 | 398021 | 319,815 | 812,512 | 2.5 | 260,311 | 26,031 | 0.14 | Nil | 26,031 |
| Lake LA17-0 | 7308172 | 395986 | 3,193,056 | 18,907,975 | 5.9 | 12,865,851 | 1,286,585 | 0.43 | Med. | 643,293 |
| Lake 18-0 | 7308843 | 401524 | 635,085 | 2,886,128 | 4.5 | 1,690,494 | 169,049 | 0.28 | Low | 128,478 |
| Lake 984 | 7309759 | 402495 | 153,108 | 296,424 | 1.9 | 71,739 | 7,174 | 0.17 | Nil | 7,174 |
| Lake 18-1 | 7310007 | 401912 | 161,253 | 426,414 | 2.6 | 150,589 | 15,059 | 0.15 | Nil | 15,059 |
| Lake LA18-0a | 7311590 | 396960 | 714,708 | 4,368,027 | 6.1 | 3,006,955 | 300,695 | 0.36 | Low | 128,478 |
| Lake 19-0 | 7311911 | 401691 | 160,065 | 360,221 | 2.3 | 98,274 | 9,827 | 0.12 | Nil | 9,827 |
| Lake 985 | 7312109 | 395983 | 40,914 | 106,234 | 2.6 | 35,130 | 3,513 | 0.13 | Nil | 3,513 |
| Lake 986 | 7312574 | 392342 | 16,299 | 37,926 | 2.3 | 12,753 | 1,275 | 0.14 | Nil | 1,275 |
| Lake 989 | 7313114 | 391719 | 29,322 | 62,690 | 2.1 | 17,580 | 1,758 | 0.13 | Nil | 1,758 |
| Lake 987 | 7313141 | 398133 | 206,199 | 760,584 | 3.7 | 393,753 | 39,375 | 0.21 | Nil | 39,375 |
| Lake 991 | 7313599 | 391191 | 36,702 | 76,595 | 2.1 | 21,030 | 2,103 | 0.13 | Nil | 2,103 |

| Waterbody ID | North. UTM | East. UTM | Surface Area (SA) ($m^2$) | Volume (V) ($m^3$) | V:SA ratio (m) | Under Ice Volume Below 2 m Depth ($m^3$) | 10% Volume Below 2 m Depth ($m^3$) | Predicted Water Level Change (m) | Risk of Habitat Loss For 10% Guideline | Calculated Volume for Nil Risk ($m^3$) |
|---|---|---|---|---|---|---|---|---|---|---|
| Lake LA20-0 | 7313887 | 399363 | 324,144 | 940,089 | 2.9 | 389,431 | 38,943 | 0.18 | Nil | 38,943 |
| Lake 990 | 7314076 | 388751 | 761,706 | 3,456,788 | 4.5 | 2,130,011 | 213,001 | 0.41 | Low | 115,021 |
| Lake 20-0 | 7314226 | 404075 | 5,757,903 | 24,053,493 | 4.2 | 14,139,389 | 1,413,939 | 0.29 | Low | 1,060,454 |
| Lake 992 | 7314853 | 389975 | 893,646 | 3,525,249 | 3.9 | 1,938,558 | 193,856 | 0.24 | Low | 178,347 |
| Lake LA21-0 | 7315592 | 399777 | 256,878 | 761,896 | 3.0 | 309,761 | 30,976 | 0.18 | Nil | 30,976 |
| Lake LA23-0 | 7315882 | 401330 | 265,968 | 1,013,844 | 3.8 | 524,720 | 52,472 | 0.23 | Low | 51,947 |
| Lake LA21-1 | 7316914 | 399454 | 204,606 | 406,055 | 2.0 | 129,313 | 12,931 | 0.16 | Nil | 12,931 |
| Lake LA22-0 | 7317386 | 399995 | 2,393,802 | 5,635,137 | 2.4 | 1,697,105 | 169,711 | 0.16 | Nil | 169,711 |
| Lake 23-0 | 7318800 | 403392 | 498,888 | 1,218,007 | 2.4 | 396,365 | 39,637 | 0.14 | Nil | 39,637 |
| Lake 24-0 | 7321054 | 402094 | 876,762 | 2,011,377 | 2.3 | 599,951 | 59,995 | 0.13 | Nil | 59,995 |
| Lake 994 | 7323246 | 400275 | 136,197 | 276,346 | 2.0 | 61,034 | 6,103 | 0.11 | Nil | 6,103 |
| Lake 995 | 7325353 | 400617 | 103,959 | 233,491 | 2.2 | 75,975 | 7,597 | 0.17 | Nil | 7,597 |
| Lake 25-0 | 7326281 | 400452 | 483,390 | 1,713,886 | 3.5 | 868,241 | 86,824 | 0.23 | Low | 80,746 |
| Lake 996 | 7327338 | 401382 | 26,253 | 43,840 | 1.7 | 6,832 | 683 | 0.09 | Nil | 683 |
| Lake 26-0 | 7328257 | 401915 | 59,454 | 181,351 | 3.1 | 97,110 | 9,711 | 0.30 | Low | 6,992 |
| Lake 997 | 7329276 | 401911 | 17,280 | 41,763 | 2.4 | 15,122 | 1,512 | 0.17 | Nil | 1,512 |
| Lake 28-0 | 7332392 | 403397 | 265,680 | 653,963 | 2.5 | 239,515 | 23,951 | 0.18 | Nil | 23,951 |
| Lake 29-0 | 7334245 | 403433 | 1,174,887 | 5,393,491 | 4.6 | 3,246,825 | 324,682 | 0.34 | Low | 211,044 |
| Lake 998 | 7336793 | 403071 | 46,809 | 125,763 | 2.7 | 53,343 | 5,334 | 0.20 | Nil | 5,334 |
| Lake 30-0 | 7340003 | 404631 | 927,360 | 1,683,771 | 1.8 | 566,741 | 56,674 | 0.21 | Nil | 56,674 |
| Lake 30-4 | 7343073 | 403851 | 48,825 | 101,926 | 2.1 | 28,590 | 2,859 | 0.15 | Nil | 2,859 |
| Lake 31-0 | 7351852 | 400718 | 82,758,231 | 2,779,474,304 | 33.6 | 2,616,978,541 | 261,697,854 | 3.39 | High | 17,010,361 |
| Lake 999 | 7364930 | 391663 | 1,645,029 | 13,130,162 | 8.0 | 10,124,845 | 1,012,485 | 0.76 | Med. | 293,621 |
| Lake 31-1 | 7367584 | 391134 | 34,803 | 70,470 | 2.0 | 16,035 | 1,604 | 0.12 | Nil | 1,604 |
| Lake 31-2 | 7367973 | 390840 | 55,377 | 137,368 | 2.5 | 52,909 | 5,291 | 0.22 | Low | 5,185 |
| Lake 32-0 | 7373635 | 387860 | 3,747,375 | 21,976,529 | 5.9 | 14,966,675 | 1,496,668 | 0.37 | Low | 868,067 |
| Lake 33-0 | 7378706 | 385690 | 124,371 | 270,935 | 2.2 | 86,426 | 8,643 | 0.17 | Nil | 8,643 |
| Lake 34-0 | 7380542 | 390639 | 157,216,248 | 3,320,662,011 | 21.1 | 3,010,754,419 | 301,075,442 | 2.03 | High | 32,516,148 |

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**LEGEND**

- WINTER ROAD
- PROJECT AREA
- LAKE EXTENT (DEPTH > 3.5M)
- PROJECT BOUNDARY

**BATHYMETRY (1 M INTERVAL)**

0
-13
-26
-39
-52
-65

0 10 20

1:400,000 KILOMETRES

**REFERENCE(S)**

SERVICE LAYER CREDITS: SOURCES: ESRI, HERE, DELORME, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), SWISSTOPO, MAPMYINDIA, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
PROJECTION: UTM ZONE 13 DATUM: NAD 83

CLIENT
SABINA GOLD & SILVER CORP.

PROJECT
BACK RIVER PROJECT

TITLE
**OVERVIEW OF WATER SOURCES FOR WINTER ICE ROAD CONSTRUCTION FOR THE BACK RIVER PROJECT**

CONSULTANT
Golder Associates

| | |
|---|---|
| YYYY-MM-DD | 2018-02-05 |
| DESIGNED | BW |
| PREPARED | JG |
| REVIEWED | |
| APPROVED | |

| PROJECT NO. | CONTROL | REV. | FIGURE |
|---|---|---|---|
| 1776921 | 1300/1320 | A | 1 |

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

0 25mm

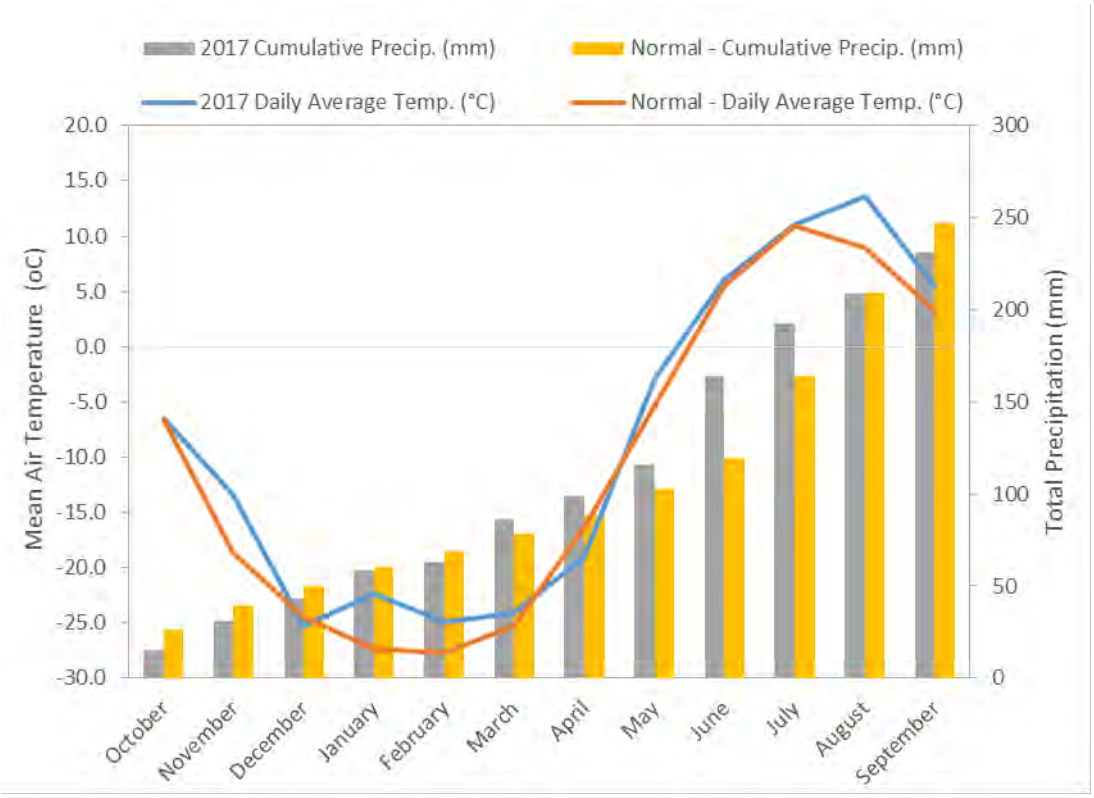



*Figure 2: A Comparison of Monthly Total Precipitation and Mean Air Temperature for 2017 versus 'Normals' (1981-2010)*

No measurable effects are predicted for fish and fish habitat for most of the identified source lakes if using the 10% under-ice volume guideline for water withdrawal (Table 2). However, potential effects to fish and fish habitat may result for some lakes with large volumes of water relative to the surface area of the lake (i.e., lakebeds profiled as a deep 'bathtub' or 'bowl' shape). For example, minor effects to fish habitat may result in Lake LA17-0 and Lake 999 where predicted water levels may be reduced by 0.43 m, and 0.76 m, respectively, during water withdrawal. To avoid effects to fish and fish habitat (e.g., exposing incubating eggs on shoals) in these two lakes, it is recommended that volumes less than the 10% under ice volume be withdrawn (e.g., approximately 5% for Lake LA17-0, and 3% for Lake 999). A similar recommendation is made for Lake 31-0 (Bathurst Lake) where moderate to major effects to fish habitat may result from water withdrawals unless reduced below the DFO guideline. Given that predicted water levels may drop by 3.39 m if extracted volumes are 10% the under-ice volume, it is recommended that approximately 1% of the under ice volume be withdrawn from Lake 31-0 for road construction. Although the available under ice volume for Lake 34-0 (i.e., lower Bathurst Inlet) for winter ice road construction may be larger than that reported in Table 2 because of receiving under-ice flows from the Western River, the reported under ice volume is recommended without additional hydrological study as a protective measure for fish and fish habitat.

The lake volume statistics generated by the satellite imagery interpretation method were similar to those generated from a field-based sonar survey of lakes. Lake volumes generated by the satellite imagery interpretation method were only marginally higher (by 9.2%) than the previously estimated volumes (Table 3). Differences may be a result of annual or seasonal changes in lake conditions, and also a result of differences underlying the two methods. Although a field-based sonar survey can collect accurate elevation details using a depth sounder, coverage is often limited in spatial extent due to time or logistical constraints. Furthermore, DFO's protocol

recommends only one longitudinal transect (connecting the two farthest shorelines) and a minimum of two perpendicular transects evenly spaced on the longitudinal transect at maximum intervals of 500 m (DFO 2010). The spatial extent of topographic detail collected in the field can clearly be much less than what can be provided by satellite imagery, and recent studies suggest that accurate elevation data (within 0.2 m) can be achieved using high-quality imagery and stereo-photogrammetry interpretation methods (Ehses and Rooney 2015; Mohamed et al. 2016).

**Table 3: Comparison of Volume Estimates for Field Survey-Derived Bathymetry versus Satellite Imagery-Derived Bathymetry**

| Analysis ID | Existing ID | Maximum Depth (m) | Field-Derived Volume ($m^3$) | Satellite-Derived Volume ($m^3$) | Volume % Difference |
|---|---|---|---|---|---|
| Lake 990 | Fold Lake | 15.4 | 2,970,486[(a)] | 3,456,788 | 16.4 |
| Lake 4-0 | Winter Road Lake 01 | 8.5 | 664,318[(a)] | 705,486 | 6.2 |
| Lake 13-0a | Winter Road Lake 02 | 5.4 | 435,046[(a)] | 597,123 | 37.3 |
| Lake 25-0 | Winter Road Lake 05 | 11.3 | 1,482,102[(a)] | 1,713,886 | 15.6 |
| Lake 26-0 | Winter Road Lake 06 | 10.5 | 190,557[(a)] | 181,351 | -4.8 |
| Lake 1-0 | Llama Lake | 13.6 | 1,130,613[(b)] | 951,009 | -15.9 |
| Lake 2-0 | Chair Lake | 10.3 | 1,355,660[(b)] | 1,487,839 | 9.8 |
| | | | | Mean Difference | 9.2 |

a) Rescan (2014)
b) Appendix V6-3A in Sabina (2017)

In summary, the recommended (negligible risk to fish habitat) under-ice water volumes to be withdrawn for the construction of the winter ice road (in Table 2) are expected to be more protective of fish and fish habitat than the DFO 10% under-ice volume guideline. Furthermore, actual volumes of water to be withdrawn from each lake during construction are expected to be much less than the recommended volumes. The current plan for the winter ice road requires only 108,000 $m^3$ of water in total, which is lower than the recommend volume for some of the individual source lakes and is considerably lower than the combined recommended volumes in Table 2-1. However, water withdrawal targets should be re-evaluated annually for lakes if and when climate-related changes influence lake conditions beyond the baseline characterization described in this memo.

## 3.0 CLOSURE

We trust the above meets your needs, if you have any questions or concerns, please do not hesitate to contact the undersigned.

Sincerely,

Cam Stevens
Associate, Fisheries Biologist

Nathan Schmidt
Principal, Senior Water Resources Engineer

CS/NS/jr

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# APPENDIX A

Bathymetry Results for Source Lakes for Winter Ice Road Construction

# APPENDIX A

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**Table 1: Lake 1-0 (Llama Lake)**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 951,009 | 348,021 |
| -0.5 | 786,774 | 311,913 |
| -1 | 638,670 | 270,801 |
| -1.5 | 510,448 | 242,370 |
| -2 | 396,025 | 214,992 |
| -2.5 | 295,643 | 186,885 |
| -3 | 208,840 | 155,556 |
| -3.5 | 138,458 | 126,351 |
| -4 | 82,119 | 96,138 |
| -4.5 | 39,609 | 74,187 |
| -5 | 7,540 | 11,493 |
| -5.5 | 2,876 | 7,317 |

**Table 2: Lake 2-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 1,487,839 | 598,077 |
| -0.5 | 1,206,147 | 536,076 |
| -1 | 950,662 | 482,616 |
| -1.5 | 726,548 | 414,567 |
| -2 | 535,068 | 343,089 |
| -2.5 | 378,487 | 284,283 |
| -3 | 250,032 | 213,183 |
| -3.5 | 156,529 | 162,261 |
| -4 | 86,311 | 83,394 |
| -4.5 | 49,066 | 65,880 |
| -5 | 20,279 | 29,286 |
| -5.5 | 8,028 | 20,043 |

**Table 3: Lake 3-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 1,738,708 | 557,865 |
| -0.5 | 1,471,400 | 515,466 |
| -1 | 1,222,799 | 476,883 |
| -1.5 | 996,480 | 428,517 |
| -2 | 793,748 | 372,249 |
| -2.5 | 618,754 | 328,077 |
| -3 | 465,410 | 282,915 |
| -3.5 | 334,237 | 242,181 |
| -4 | 222,877 | 186,147 |
| -4.5 | 139,473 | 148,266 |
| -5 | 73,867 | 108,693 |
| -5.5 | 28,801 | 72,639 |

**Table 4: Lake 4-0 (Winter Road Lake 01)**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 705,486 | 349,596 |
| -0.5 | 543,299 | 302,454 |
| -1 | 402,231 | 248,976 |
| -1.5 | 288,067 | 208,080 |
| -2 | 193,786 | 155,061 |
| -2.5 | 123,756 | 125,640 |
| -3 | 67,658 | 90,612 |
| -3.5 | 28,424 | 66,951 |

**Table 5: Lake 8-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 2,427,790 | 765,711 |
| -0.5 | 2,062,180 | 704,376 |
| -1 | 1,722,511 | 639,504 |
| -1.5 | 1,416,714 | 584,028 |
| -2 | 1,137,977 | 505,422 |
| -2.5 | 896,624 | 460,161 |
| -3 | 677,996 | 390,681 |
| -3.5 | 498,982 | 325,350 |
| -4 | 352,629 | 232,290 |
| -4.5 | 247,406 | 188,874 |
| -5 | 163,374 | 136,503 |
| -5.5 | 102,089 | 109,107 |
| -6 | 53,617 | 70,497 |
| -6.5 | 22,787 | 53,226 |

**Table 6: Lake 7-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 8,325,456 | 2,211,876 |
| -0.5 | 7,247,255 | 2,110,995 |
| -1 | 6,213,087 | 2,021,373 |
| -1.5 | 5,238,844 | 1,876,698 |
| -2 | 4,336,453 | 1,730,376 |
| -2.5 | 3,503,990 | 1,599,210 |
| -3 | 2,737,090 | 1,432,809 |
| -3.5 | 2,067,760 | 1,242,540 |
| -4 | 1,496,684 | 974,259 |
| -4.5 | 1,053,454 | 800,208 |
| -5 | 694,516 | 599,229 |
| -5.5 | 427,598 | 469,224 |
| -6 | 224,290 | 284,922 |
| -6.5 | 101,840 | 206,397 |
| -7 | 15,882 | 24,579 |
| -7.5 | 5,966 | 15,507 |

**Table 7: Lake 6-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 614,579 | 224,514 |
| -0.5 | 508,726 | 201,150 |
| -1 | 413,116 | 181,332 |
| -1.5 | 327,974 | 159,327 |
| -2 | 253,622 | 137,583 |
| -2.5 | 189,913 | 117,333 |
| -3 | 136,266 | 94,599 |
| -3.5 | 93,626 | 76,032 |
| -4 | 60,191 | 56,196 |
| -4.5 | 35,098 | 44,199 |
| -5 | 15,937 | 25,083 |
| -5.5 | 5,842 | 15,588 |

**Table 8: Lake 9-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 1,581,371 | 620,172 |
| -0.5 | 1,283,776 | 574,164 |
| -1 | 1,006,749 | 525,564 |
| -1.5 | 757,986 | 469,674 |
| -2 | 537,030 | 405,927 |
| -2.5 | 348,525 | 348,795 |
| -3 | 187,488 | 260,631 |
| -3.5 | 77,135 | 184,167 |

**Table 9: Lake 11-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 2,406,329 | 885,771 |
| -0.5 | 1,986,081 | 803,664 |
| -1 | 1,602,079 | 709,965 |
| -1.5 | 1,270,068 | 619,065 |
| -2 | 981,876 | 521,703 |
| -2.5 | 738,637 | 452,313 |
| -3 | 528,555 | 382,608 |
| -3.5 | 353,075 | 319,824 |
| -4 | 208,294 | 199,395 |
| -4.5 | 120,846 | 151,551 |
| -5 | 55,599 | 80,262 |
| -5.5 | 22,085 | 54,639 |

**Table 10: Lake 13-0a (Winter Road Lake 02)**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 597,123 | 290,376 |
| -0.5 | 462,061 | 254,862 |
| -1 | 342,054 | 215,253 |
| -1.5 | 240,406 | 191,115 |
| -2 | 151,117 | 156,141 |
| -2.5 | 81,631 | 122,094 |
| -3 | 28,802 | 37,107 |
| -3.5 | 13,126 | 26,073 |
| -4 | 2,450 | 3,024 |
| -4.5 | 1,081 | 2,412 |

**Table 11: Lake 14-0a**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 10,415,812 | 3,942,630 |
| -0.5 | 8,508,701 | 3,706,839 |
| -1 | 6,707,236 | 3,413,583 |
| -1.5 | 5,076,385 | 3,109,680 |
| -2 | 3,597,800 | 2,447,298 |
| -2.5 | 2,465,903 | 2,080,647 |
| -3 | 1,517,173 | 1,296,630 |
| -3.5 | 925,510 | 1,073,889 |
| -4 | 439,353 | 581,913 |
| -4.5 | 186,010 | 435,573 |

**Table 12: Lake 14-1 (Winter Road Lake 03)**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 4,779,159 | 2,221,497 |
| -0.5 | 3,696,902 | 2,121,723 |
| -1 | 2,656,345 | 1,995,939 |
| -1.5 | 1,713,762 | 1,775,016 |
| -2 | 881,912 | 1,167,093 |
| -2.5 | 391,958 | 793,134 |
| -3 | 87,827 | 148,545 |
| -3.5 | 30,358 | 84,393 |

**Table 13: Lake 15-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 5,027,754 | 1,441,269 |
| -0.5 | 4,320,561 | 1,395,918 |
| -1 | 3,631,480 | 1,355,472 |
| -1.5 | 2,978,026 | 1,258,470 |
| -2 | 2,373,270 | 1,149,336 |
| -2.5 | 1,834,521 | 1,003,284 |
| -3 | 1,372,339 | 795,123 |
| -3.5 | 1,001,136 | 690,291 |
| -4 | 681,553 | 501,993 |
| -4.5 | 452,038 | 416,331 |
| -5 | 265,208 | 302,211 |
| -5.5 | 132,056 | 231,246 |
| -6 | 33,062 | 53,973 |
| -6.5 | 11,835 | 32,049 |

**Table 14: Lake 16-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 12,016,309 | 2,068,272 |
| -0.5 | 10,997,464 | 2,014,488 |
| -1 | 10,001,007 | 1,967,616 |
| -1.5 | 9,044,365 | 1,860,210 |
| -2 | 8,139,725 | 1,742,535 |
| -2.5 | 7,289,399 | 1,658,664 |
| -3 | 6,480,762 | 1,575,414 |
| -3.5 | 5,717,933 | 1,476,243 |
| -4 | 5,004,215 | 1,375,101 |
| -4.5 | 4,341,201 | 1,277,172 |
| -5 | 3,726,880 | 1,167,093 |
| -5.5 | 3,169,045 | 1,065,015 |
| -6 | 2,661,580 | 959,958 |
| -6.5 | 2,202,731 | 875,907 |
| -7 | 1,785,082 | 786,681 |
| -7.5 | 1,413,523 | 700,362 |
| -8 | 1,084,083 | 605,790 |
| -8.5 | 799,103 | 534,645 |
| -9 | 548,721 | 457,002 |
| -9.5 | 345,505 | 357,075 |
| -10 | 190,492 | 247,329 |
| -10.5 | 81,526 | 189,459 |

**Table 15: Lake 17-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 61,932,318 | 5,913,261 |
| -0.5 | 58,988,355 | 5,863,014 |
| -1 | 56,069,074 | 5,813,217 |
| -1.5 | 53,191,478 | 5,696,244 |
| -2 | 50,372,624 | 5,540,463 |
| -2.5 | 47,635,707 | 5,406,192 |
| -3 | 44,967,408 | 5,241,510 |
| -3.5 | 42,391,708 | 5,060,475 |
| -4 | 39,906,981 | 4,851,423 |
| -4.5 | 37,526,172 | 4,672,242 |
| -5 | 35,233,773 | 4,421,880 |
| -5.5 | 33,077,330 | 4,204,242 |
| -6 | 31,029,091 | 3,975,948 |
| -6.5 | 29,091,298 | 3,775,158 |
| -7 | 27,253,008 | 3,540,456 |
| -7.5 | 25,520,934 | 3,388,428 |
| -8 | 23,863,695 | 3,223,233 |
| -8.5 | 22,287,815 | 3,080,664 |
| -9 | 20,782,317 | 2,938,743 |
| -9.5 | 19,345,963 | 2,806,947 |
| -10 | 17,974,529 | 2,677,734 |
| -10.5 | 16,665,221 | 2,559,897 |
| -11 | 15,413,919 | 2,444,607 |
| -11.5 | 14,219,600 | 2,332,719 |
| -12 | 13,080,745 | 2,222,280 |
| -12.5 | 11,997,651 | 2,110,113 |
| -13 | 10,970,236 | 1,999,755 |
| -13.5 | 9,998,631 | 1,886,976 |
| -14 | 9,082,514 | 1,775,952 |
| -14.5 | 8,221,505 | 1,668,375 |
| -15 | 7,413,747 | 1,562,508 |
| -15.5 | 6,656,587 | 1,466,451 |
| -16 | 5,946,799 | 1,372,005 |
| -16.5 | 5,284,027 | 1,279,431 |
| -17 | 4,666,741 | 1,189,449 |
| -17.5 | 4,093,761 | 1,102,932 |
| -18 | 3,563,254 | 1,017,972 |
| -18.5 | 3,075,495 | 933,507 |
| -19 | 2,629,259 | 848,709 |
| -19.5 | 2,225,377 | 767,574 |
| -20 | 1,861,215 | 682,425 |

**Table 15: Lake 17-0 (continued)**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| -20.5 | 1,538,744 | 607,680 |
| -21 | 1,252,962 | 524,637 |
| -21.5 | 1,005,985 | 463,815 |
| -22 | 788,650 | 398,403 |
| -22.5 | 603,012 | 344,385 |
| -23 | 443,520 | 277,704 |
| -23.5 | 316,488 | 231,093 |
| -24 | 211,662 | 181,017 |
| -24.5 | 131,801 | 138,987 |
| -25 | 71,788 | 97,299 |
| -25.5 | 29,713 | 71,325 |

**Table 16: Lake 16-1**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 812,512 | 319,815 |
| -0.5 | 656,628 | 303,615 |
| -1 | 508,692 | 286,110 |
| -1.5 | 375,239 | 248,013 |
| -2 | 260,311 | 207,252 |
| -2.5 | 165,049 | 174,015 |
| -3 | 86,367 | 90,900 |
| -3.5 | 46,432 | 69,156 |
| -4 | 16,902 | 25,299 |
| -4.5 | 6,517 | 16,578 |

**Table 17: Lake LA17-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 18,907,975 | 3,193,056 |
| -0.5 | 17,331,869 | 3,111,678 |
| -1 | 15,795,680 | 3,029,634 |
| -1.5 | 14,305,839 | 2,929,986 |
| -2 | 12,865,851 | 2,812,185 |
| -2.5 | 11,491,012 | 2,686,905 |
| -3 | 10,179,056 | 2,553,057 |
| -3.5 | 8,937,258 | 2,414,124 |
| -4 | 7,764,886 | 2,272,824 |
| -4.5 | 6,660,229 | 2,145,879 |
| -5 | 5,618,749 | 2,013,453 |
| -5.5 | 4,657,451 | 1,832,022 |
| -6 | 3,786,398 | 1,600,722 |
| -6.5 | 3,030,687 | 1,422,720 |
| -7 | 2,363,514 | 1,175,598 |
| -7.5 | 1,816,893 | 1,011,708 |
| -8 | 1,351,204 | 752,112 |
| -8.5 | 1,004,902 | 634,284 |
| -9 | 715,587 | 488,862 |
| -9.5 | 494,721 | 395,442 |
| -10 | 319,267 | 258,894 |
| -10.5 | 204,715 | 200,232 |
| -11 | 118,230 | 119,160 |
| -11.5 | 67,019 | 86,382 |
| -12 | 31,037 | 44,217 |
| -12.5 | 12,445 | 30,618 |

**Table 18: Lake 18-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 2,886,128 | 635,085 |
| -0.5 | 2,571,908 | 622,143 |
| -1 | 2,263,916 | 608,175 |
| -1.5 | 1,968,603 | 573,255 |
| -2 | 1,690,494 | 537,786 |
| -2.5 | 1,432,519 | 494,226 |
| -3 | 1,196,240 | 445,176 |
| -3.5 | 983,789 | 404,523 |
| -4 | 792,166 | 352,332 |
| -4.5 | 627,040 | 308,979 |
| -5 | 482,366 | 266,328 |
| -5.5 | 357,855 | 232,326 |
| -6 | 249,488 | 196,920 |
| -6.5 | 160,328 | 160,461 |
| -7 | 88,190 | 123,966 |
| -7.5 | 35,648 | 87,174 |

**Table 19: Lake 984**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 296,424 | 153,108 |
| -0.5 | 222,837 | 141,282 |
| -1 | 154,983 | 116,604 |
| -1.5 | 105,469 | 82,350 |
| -2 | 71,739 | 46,314 |
| -2.5 | 50,654 | 38,205 |
| -3 | 33,417 | 29,034 |
| -3.5 | 20,565 | 22,446 |
| -4 | 10,796 | 15,111 |
| -4.5 | 4,391 | 10,665 |

**Table 20: Lake 18-1**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 426,414 | 161,253 |
| -0.5 | 347,889 | 152,856 |
| -1 | 273,423 | 144,927 |
| -1.5 | 206,642 | 122,508 |
| -2 | 150,589 | 101,844 |
| -2.5 | 103,121 | 88,371 |
| -3 | 62,127 | 74,511 |
| -3.5 | 28,085 | 61,884 |

**Table 21: Lake LA18-0a**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 4,368,027 | 714,708 |
| -0.5 | 4,014,611 | 699,075 |
| -1 | 3,668,821 | 682,677 |
| -1.5 | 3,332,711 | 661,842 |
| -2 | 3,006,955 | 640,116 |
| -2.5 | 2,693,523 | 613,575 |
| -3 | 2,393,308 | 579,033 |
| -3.5 | 2,112,672 | 543,897 |
| -4 | 1,849,433 | 507,033 |
| -4.5 | 1,606,085 | 466,578 |
| -5 | 1,382,725 | 425,655 |
| -5.5 | 1,179,964 | 385,632 |
| -6 | 996,976 | 336,573 |
| -6.5 | 835,437 | 309,663 |
| -7 | 687,154 | 277,686 |
| -7.5 | 556,205 | 246,411 |
| -8 | 440,264 | 209,835 |
| -8.5 | 341,992 | 183,456 |
| -9 | 256,581 | 156,249 |
| -9.5 | 184,461 | 132,399 |
| -10 | 123,961 | 107,064 |
| -10.5 | 75,973 | 85,185 |
| -11 | 38,628 | 51,327 |
| -11.5 | 16,249 | 38,412 |

**Table 22: Lake 19-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 360,221 | 160,065 |
| -0.5 | 283,395 | 147,330 |
| -1 | 212,794 | 133,866 |
| -1.5 | 150,823 | 114,210 |
| -2 | 98,274 | 94,680 |
| -2.5 | 55,599 | 76,140 |
| -3 | 21,703 | 31,635 |
| -3.5 | 8,554 | 21,276 |

**Table 23: Lake 985**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 106,234 | 40,914 |
| -0.5 | 86,360 | 38,592 |
| -1 | 67,644 | 36,297 |
| -1.5 | 50,480 | 32,436 |
| -2 | 35,130 | 28,764 |
| -2.5 | 22,038 | 23,598 |
| -3 | 11,445 | 17,559 |
| -3.5 | 4,342 | 11,160 |

**Table 24: Lake 986**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 37,926 | 16,299 |
| -0.5 | 30,295 | 14,220 |
| -1 | 23,650 | 12,348 |
| -1.5 | 17,841 | 10,917 |
| -2 | 12,753 | 9,513 |
| -2.5 | 8,385 | 8,046 |
| -3 | 4,704 | 6,048 |
| -3.5 | 2,032 | 4,653 |

**Table 25: Lake 989**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 62,690 | 29,322 |
| -0.5 | 48,842 | 26,073 |
| -1 | 36,561 | 22,338 |
| -1.5 | 26,256 | 18,891 |
| -2 | 17,580 | 14,976 |
| -2.5 | 10,895 | 11,817 |
| -3 | 5,699 | 8,595 |
| -3.5 | 2,181 | 5,616 |

**Table 26: Lake 987**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 760,584 | 206,199 |
| -0.5 | 660,430 | 194,562 |
| -1 | 565,753 | 183,537 |
| -1.5 | 476,918 | 171,882 |
| -2 | 393,753 | 160,596 |
| -2.5 | 318,065 | 142,254 |
| -3 | 251,463 | 116,433 |
| -3.5 | 197,446 | 100,071 |
| -4 | 150,792 | 83,763 |
| -4.5 | 112,205 | 70,776 |
| -5 | 79,776 | 58,113 |
| -5.5 | 53,942 | 45,423 |
| -6 | 34,115 | 32,454 |
| -6.5 | 20,002 | 24,156 |
| -7 | 9,785 | 14,814 |
| -7.5 | 3,695 | 9,630 |

**Table 27: Lake 991**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 76,595 | 36,702 |
| -0.5 | 59,409 | 32,085 |
| -1 | 44,450 | 27,594 |
| -1.5 | 31,736 | 23,274 |
| -2 | 21,030 | 19,152 |
| -2.5 | 12,573 | 14,697 |
| -3 | 6,223 | 9,414 |
| -3.5 | 2,372 | 6,093 |

**Table 28: Lake LA20-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 940,089 | 324,144 |
| -0.5 | 783,490 | 302,679 |
| -1 | 637,283 | 271,242 |
| -1.5 | 507,698 | 247,482 |
| -2 | 389,431 | 222,093 |
| -2.5 | 284,596 | 197,334 |
| -3 | 192,027 | 157,527 |
| -3.5 | 120,826 | 127,575 |
| -4 | 64,244 | 90,423 |
| -4.5 | 25,810 | 63,693 |

**Table 29: Lake 990 (Fold Lake)**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 3,456,788 | 761,706 |
| -0.5 | 3,087,385 | 716,427 |
| -1 | 2,739,717 | 656,919 |
| -1.5 | 2,423,106 | 609,525 |
| -2 | 2,130,011 | 545,661 |
| -2.5 | 1,870,827 | 491,571 |
| -3 | 1,638,121 | 400,167 |
| -3.5 | 1,453,581 | 339,399 |
| -4 | 1,297,348 | 285,903 |
| -4.5 | 1,158,719 | 268,677 |
| -5 | 1,028,661 | 251,361 |
| -5.5 | 907,323 | 233,991 |
| -6 | 794,532 | 216,981 |
| -6.5 | 689,551 | 202,869 |
| -7 | 591,575 | 188,604 |
| -7.5 | 500,912 | 173,979 |
| -8 | 417,561 | 159,345 |
| -8.5 | 341,565 | 144,666 |
| -9 | 272,818 | 129,204 |
| -9.5 | 213,107 | 109,845 |
| -10 | 162,911 | 87,579 |
| -10.5 | 122,816 | 72,927 |
| -11 | 89,990 | 56,997 |
| -11.5 | 64,197 | 46,296 |
| -12 | 43,700 | 33,516 |
| -12.5 | 28,675 | 26,550 |
| -13 | 17,063 | 17,811 |
| -13.5 | 9,378 | 13,059 |
| -14 | 3,909 | 6,435 |
| -14.5 | 1,383 | 3,843 |

**Table 30: Lake 20-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 24,053,493 | 5,757,903 |
| -0.5 | 21,274,098 | 5,359,257 |
| -1 | 18,694,202 | 4,914,081 |
| -1.5 | 16,327,151 | 4,554,369 |
| -2 | 14,139,389 | 4,160,286 |
| -2.5 | 12,143,103 | 3,824,901 |
| -3 | 10,313,817 | 3,444,399 |
| -3.5 | 8,671,863 | 3,124,656 |
| -4 | 7,188,577 | 2,734,920 |
| -4.5 | 5,892,489 | 2,450,403 |
| -5 | 4,736,646 | 2,011,113 |
| -5.5 | 3,800,296 | 1,737,054 |
| -6 | 2,996,722 | 1,430,307 |
| -6.5 | 2,332,005 | 1,230,615 |
| -7 | 1,764,101 | 958,626 |
| -7.5 | 1,324,398 | 802,566 |
| -8 | 958,983 | 612,387 |
| -8.5 | 682,383 | 495,297 |
| -9 | 462,115 | 355,122 |
| -9.5 | 303,961 | 279,081 |
| -10 | 181,373 | 194,058 |
| -10.5 | 96,468 | 146,736 |
| -11 | 33,608 | 44,649 |
| -11.5 | 14,164 | 33,363 |

**Table 31: Lake 992 (Lower Long Lake)**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 3,525,249 | 893,646 |
| -0.5 | 3,090,884 | 843,894 |
| -1 | 2,681,132 | 794,889 |
| -1.5 | 2,296,727 | 742,455 |
| -2 | 1,938,558 | 684,441 |
| -2.5 | 1,609,868 | 630,351 |
| -3 | 1,308,061 | 570,294 |
| -3.5 | 1,037,696 | 511,290 |
| -4 | 796,388 | 428,427 |
| -4.5 | 600,504 | 355,113 |
| -5 | 441,327 | 242,514 |
| -5.5 | 331,443 | 197,631 |
| -6 | 243,202 | 131,913 |
| -6.5 | 183,033 | 109,143 |
| -7 | 133,905 | 84,798 |
| -7.5 | 95,742 | 68,004 |
| -8 | 65,674 | 49,887 |
| -8.5 | 43,530 | 38,835 |
| -9 | 26,637 | 26,559 |
| -9.5 | 14,968 | 20,178 |
| -10 | 6,340 | 9,612 |
| -10.5 | 2,417 | 6,255 |

Note: results represent approximately half of the lake

**Table 32: Lake LA21-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 761,896 | 256,878 |
| -0.5 | 636,798 | 243,540 |
| -1 | 518,164 | 230,571 |
| -1.5 | 408,466 | 208,323 |
| -2 | 309,761 | 184,896 |
| -2.5 | 223,571 | 160,011 |
| -3 | 149,502 | 131,949 |
| -3.5 | 90,275 | 105,246 |
| -4 | 43,945 | 61,821 |
| -4.5 | 17,741 | 43,488 |

**Table 33: Lake LA23-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 1,013,844 | 265,968 |
| -0.5 | 883,593 | 255,177 |
| -1 | 758,619 | 244,926 |
| -1.5 | 638,981 | 233,838 |
| -2 | 524,720 | 223,182 |
| -2.5 | 417,547 | 205,551 |
| -3 | 319,059 | 188,469 |
| -3.5 | 231,584 | 161,847 |
| -4 | 156,958 | 135,342 |
| -4.5 | 97,169 | 104,409 |
| -5 | 51,964 | 72,063 |
| -5.5 | 21,204 | 51,399 |

**Table 34: Lake LA21-1**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 406,055 | 204,606 |
| -0.5 | 313,083 | 167,463 |
| -1 | 238,330 | 125,316 |
| -1.5 | 179,826 | 108,810 |
| -2 | 129,313 | 92,871 |
| -2.5 | 87,933 | 72,837 |
| -3 | 56,168 | 50,058 |
| -3.5 | 33,938 | 39,006 |
| -4 | 17,084 | 25,722 |
| -4.5 | 6,464 | 16,857 |

**Table 35: Lake LA22-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 5,635,137 | 2,393,802 |
| -0.5 | 4,482,867 | 2,216,070 |
| -1 | 3,417,646 | 2,004,201 |
| -1.5 | 2,486,972 | 1,719,324 |
| -2 | 1,697,105 | 1,305,063 |
| -2.5 | 1,119,971 | 1,006,281 |
| -3 | 687,345 | 499,131 |
| -3.5 | 461,891 | 403,263 |
| -4 | 283,219 | 234,945 |
| -4.5 | 178,423 | 184,986 |
| -5 | 97,282 | 137,520 |
| -5.5 | 38,910 | 96,624 |

**Table 36: Lake 23-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 1,218,007 | 498,888 |
| -0.5 | 978,980 | 457,965 |
| -1 | 759,688 | 413,127 |
| -1.5 | 565,653 | 363,042 |
| -2 | 396,365 | 304,857 |
| -2.5 | 255,928 | 256,743 |
| -3 | 139,356 | 190,107 |
| -3.5 | 57,778 | 137,799 |

**Table 37: Lake 24-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 2,011,377 | 876,762 |
| -0.5 | 1,593,705 | 794,241 |
| -1 | 1,216,306 | 707,499 |
| -1.5 | 885,350 | 616,248 |
| -2 | 599,951 | 502,839 |
| -2.5 | 370,232 | 417,114 |
| -3 | 182,194 | 251,559 |
| -3.5 | 74,529 | 180,648 |

**Table 38: Lake 994**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 276,346 | 136,197 |
| -0.5 | 211,157 | 124,704 |
| -1 | 151,661 | 108,810 |
| -1.5 | 101,855 | 90,432 |
| -2 | 61,034 | 64,206 |
| -2.5 | 33,180 | 47,628 |
| -3 | 13,069 | 19,656 |
| -3.5 | 4,999 | 12,825 |

**Table 39: Lake 995**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 233,491 | 103,959 |
| -0.5 | 184,607 | 91,971 |
| -1 | 141,616 | 80,118 |
| -1.5 | 105,172 | 65,538 |
| -2 | 75,975 | 49,248 |
| -2.5 | 53,340 | 41,301 |
| -3 | 34,509 | 32,976 |
| -3.5 | 19,729 | 26,199 |
| -4 | 8,207 | 12,276 |
| -4.5 | 3,137 | 8,127 |

**Table 40: Lake 25-0 (Winter Road Lake 05)**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 1,713,886 | 483,390 |
| -0.5 | 1,479,292 | 454,887 |
| -1 | 1,258,717 | 423,630 |
| -1.5 | 1,055,229 | 390,429 |
| -2 | 868,241 | 330,912 |
| -2.5 | 712,176 | 293,499 |
| -3 | 574,202 | 257,418 |
| -3.5 | 451,816 | 232,380 |
| -4 | 341,796 | 204,354 |
| -4.5 | 246,870 | 175,221 |
| -5 | 166,488 | 126,810 |
| -5.5 | 109,103 | 103,149 |
| -6 | 63,042 | 61,848 |
| -6.5 | 36,204 | 45,756 |
| -7 | 16,933 | 11,070 |
| -7.5 | 12,052 | 8,469 |
| -8 | 8,414 | 6,066 |
| -8.5 | 5,663 | 4,896 |
| -9 | 3,483 | 3,753 |
| -9.5 | 1,874 | 2,709 |
| -10 | 757 | 1,224 |
| -10.5 | 278 | 765 |

**Table 41: Lake 996**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 43,840 | 26,253 |
| -0.5 | 31,678 | 22,446 |
| -1 | 21,286 | 18,900 |
| -1.5 | 12,971 | 14,409 |
| -2 | 6,832 | 8,010 |
| -2.5 | 3,481 | 5,508 |
| -3 | 1,240 | 2,079 |
| -3.5 | 436 | 1,233 |

**Table 42: Lake 26-0 (Winter Road Lake 06)**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 181,351 | 59,454 |
| -0.5 | 154,336 | 48,852 |
| -1 | 132,265 | 39,654 |
| -1.5 | 113,597 | 35,064 |
| -2 | 97,110 | 30,897 |
| -2.5 | 82,370 | 28,089 |
| -3 | 69,005 | 25,425 |
| -3.5 | 57,094 | 22,320 |
| -4 | 46,686 | 19,287 |
| -4.5 | 37,659 | 16,812 |
| -5 | 29,834 | 14,472 |
| -5.5 | 23,043 | 12,771 |
| -6 | 17,092 | 10,998 |
| -6.5 | 12,014 | 9,297 |
| -7 | 7,753 | 5,436 |
| -7.5 | 5,320 | 4,320 |
| -8 | 3,393 | 3,141 |
| -8.5 | 2,024 | 2,358 |
| -9 | 1,010 | 1,593 |
| -9.5 | 372 | 1,017 |

**Table 43: Lake 997**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 41,763 | 17,280 |
| -0.5 | 33,611 | 15,246 |
| -1 | 26,461 | 13,284 |
| -1.5 | 20,335 | 11,277 |
| -2 | 15,122 | 9,513 |
| -2.5 | 10,772 | 7,875 |
| -3 | 7,193 | 6,390 |
| -3.5 | 4,381 | 4,842 |
| -4 | 2,264 | 3,240 |
| -4.5 | 911 | 2,214 |

**Table 44: Lake 28-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 653,963 | 265,680 |
| -0.5 | 528,349 | 236,736 |
| -1 | 417,104 | 207,198 |
| -1.5 | 321,078 | 177,165 |
| -2 | 239,515 | 140,265 |
| -2.5 | 174,734 | 119,358 |
| -3 | 119,751 | 93,681 |
| -3.5 | 77,451 | 75,375 |
| -4 | 44,548 | 49,707 |
| -4.5 | 23,042 | 36,387 |
| -5 | 8,010 | 11,835 |
| -5.5 | 3,093 | 7,965 |

**Table 45: Lake 29-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 5,393,491 | 1,174,887 |
| -0.5 | 4,817,050 | 1,131,201 |
| -1 | 4,262,173 | 1,080,720 |
| -1.5 | 3,737,917 | 1,015,686 |
| -2 | 3,246,825 | 921,393 |
| -2.5 | 2,804,519 | 847,629 |
| -3 | 2,399,386 | 757,305 |
| -3.5 | 2,039,176 | 683,649 |
| -4 | 1,715,040 | 594,387 |
| -4.5 | 1,432,061 | 537,903 |
| -5 | 1,176,592 | 472,086 |
| -5.5 | 955,205 | 414,081 |
| -6 | 761,770 | 348,588 |
| -6.5 | 600,293 | 298,143 |
| -7 | 462,858 | 233,271 |
| -7.5 | 355,325 | 197,280 |
| -8 | 264,767 | 151,047 |
| -8.5 | 195,440 | 126,801 |
| -9 | 137,826 | 102,753 |
| -9.5 | 92,119 | 80,523 |
| -10 | 56,906 | 52,065 |
| -10.5 | 34,308 | 38,700 |
| -11 | 17,925 | 26,217 |
| -11.5 | 7,001 | 17,721 |

**Table 46: Lake 998**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 125,763 | 46,809 |
| -0.5 | 103,848 | 40,851 |
| -1 | 84,747 | 35,496 |
| -1.5 | 68,045 | 31,401 |
| -2 | 53,343 | 27,126 |
| -2.5 | 40,766 | 23,247 |
| -3 | 30,037 | 19,116 |
| -3.5 | 21,351 | 15,615 |
| -4 | 14,376 | 12,312 |
| -4.5 | 8,942 | 9,630 |
| -5 | 4,748 | 6,426 |
| -5.5 | 1,948 | 4,725 |

**Table 47: Lake 30-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 1,683,771 | 927,360 |
| -0.5 | 1,258,362 | 778,509 |
| -1 | 900,580 | 370,440 |
| -1.5 | 724,696 | 333,720 |
| -2 | 566,741 | 294,957 |
| -2.5 | 429,027 | 256,815 |
| -3 | 309,111 | 201,456 |
| -3.5 | 216,433 | 169,920 |
| -4 | 138,546 | 127,656 |
| -4.5 | 81,453 | 101,151 |
| -5 | 36,825 | 50,634 |
| -5.5 | 15,061 | 36,639 |

**Table 48: Lake 30-4**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 101,926 | 48,825 |
| -0.5 | 79,011 | 42,921 |
| -1 | 58,908 | 37,179 |
| -1.5 | 42,092 | 30,240 |
| -2 | 28,590 | 23,796 |
| -2.5 | 18,087 | 18,225 |
| -3 | 10,211 | 10,035 |
| -3.5 | 5,873 | 7,398 |
| -4 | 2,787 | 4,374 |
| -4.5 | 1,021 | 2,718 |

**Table 49: Lake 31-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 2,779,474,304 | 82,758,231 |
| -0.5 | 2,738,286,322 | 81,993,276 |
| -1 | 2,697,479,161 | 81,173,871 |
| -1.5 | 2,657,060,478 | 80,500,122 |
| -2 | 2,616,978,541 | 79,766,712 |
| -2.5 | 2,577,275,942 | 79,043,760 |
| -3 | 2,537,934,427 | 78,270,867 |
| -3.5 | 2,498,976,729 | 77,559,606 |
| -4 | 2,460,374,524 | 76,781,853 |
| -4.5 | 2,422,167,580 | 76,045,545 |
| -5 | 2,384,328,503 | 75,273,336 |
| -5.5 | 2,346,852,319 | 74,632,995 |
| -6 | 2,309,694,851 | 73,976,832 |
| -6.5 | 2,272,843,941 | 73,428,219 |
| -7 | 2,236,266,110 | 72,845,262 |
| -7.5 | 2,199,978,270 | 72,306,963 |
| -8 | 2,163,957,904 | 71,748,549 |
| -8.5 | 2,128,208,323 | 71,249,652 |
| -9 | 2,092,707,373 | 70,744,662 |
| -9.5 | 2,057,462,312 | 70,235,793 |
| -10 | 2,022,471,385 | 69,723,927 |
| -10.5 | 1,987,739,440 | 69,204,159 |
| -11 | 1,953,266,573 | 68,684,013 |
| -11.5 | 1,919,046,272 | 68,198,400 |
| -12 | 1,885,068,199 | 67,705,983 |
| -12.5 | 1,851,334,569 | 67,228,920 |

**Table 49: Lake 31-0 (continued)**

| Lake Volume and Surface Area Per Depth | | |
|---|---|---|
| -13 | 1,817,838,881 | 66,697,659 |
| -13.5 | 1,784,611,758 | 66,210,417 |
| -14 | 1,751,627,867 | 65,717,829 |
| -14.5 | 1,718,882,776 | 65,263,140 |
| -15 | 1,686,364,164 | 64,808,766 |
| -15.5 | 1,654,084,897 | 64,309,302 |
| -16 | 1,622,054,442 | 63,761,085 |
| -16.5 | 1,590,297,568 | 63,265,374 |
| -17 | 1,558,788,025 | 62,746,614 |
| -17.5 | 1,527,535,319 | 62,264,043 |
| -18 | 1,496,522,874 | 61,762,707 |
| -18.5 | 1,465,765,321 | 61,268,445 |
| -19 | 1,435,253,763 | 60,769,143 |
| -19.5 | 1,404,995,684 | 60,263,793 |
| -20 | 1,374,989,744 | 59,751,288 |
| -20.5 | 1,345,249,489 | 59,210,694 |
| -21 | 1,315,778,729 | 58,660,461 |
| -21.5 | 1,286,584,459 | 58,117,185 |
| -22 | 1,257,661,383 | 57,566,655 |
| -22.5 | 1,229,012,381 | 57,030,012 |
| -23 | 1,200,631,288 | 56,477,808 |
| -23.5 | 1,172,533,740 | 55,912,635 |
| -24 | 1,144,717,715 | 55,346,733 |
| -24.5 | 1,117,200,617 | 54,721,701 |
| -25 | 1,089,995,211 | 54,093,960 |
| -25.5 | 1,063,111,477 | 53,442,306 |
| -26 | 1,036,552,135 | 52,792,983 |
| -26.5 | 1,010,316,014 | 52,152,156 |
| -27 | 984,399,486 | 51,509,538 |
| -27.5 | 958,815,565 | 50,828,094 |
| -28 | 933,570,502 | 50,145,750 |
| -28.5 | 908,670,006 | 49,457,457 |
| -29 | 884,111,981 | 48,772,368 |
| -29.5 | 859,900,511 | 48,074,625 |
| -30 | 836,036,328 | 47,279,367 |
| -30.5 | 812,565,571 | 46,607,166 |
| -31 | 789,426,176 | 45,925,938 |
| -31.5 | 766,625,128 | 45,280,584 |
| -32 | 744,143,346 | 44,571,042 |
| -32.5 | 722,006,980 | 43,975,332 |
| -33 | 700,167,379 | 43,382,241 |
| -33.5 | 678,627,297 | 42,778,629 |

**Table 49: Lake 31-0 (continued)**

| Lake Volume and Surface Area Per Depth | | |
|---|---|---|
| -34 | 657,388,064 | 42,176,700 |
| -34.5 | 636,455,412 | 41,554,566 |
| -35 | 615,832,872 | 40,931,937 |
| -35.5 | 595,521,309 | 40,315,581 |
| -36 | 575,516,794 | 39,702,060 |
| -36.5 | 555,810,028 | 39,125,016 |
| -37 | 536,390,699 | 38,547,693 |
| -37.5 | 517,270,174 | 37,934,649 |
| -38 | 498,455,270 | 37,322,379 |
| -38.5 | 479,949,509 | 36,701,775 |
| -39 | 461,752,823 | 36,082,944 |
| -39.5 | 443,862,015 | 35,480,250 |
| -40 | 426,271,732 | 34,876,053 |
| -40.5 | 408,991,697 | 34,243,875 |
| -41 | 392,027,236 | 33,613,353 |
| -41.5 | 375,357,554 | 33,065,784 |
| -42 | 358,961,388 | 32,516,379 |
| -42.5 | 342,841,389 | 31,964,148 |
| -43 | 326,996,676 | 31,414,347 |
| -43.5 | 311,425,290 | 30,871,422 |
| -44 | 296,124,835 | 30,327,417 |
| -44.5 | 281,090,826 | 29,809,215 |
| -45 | 266,315,475 | 29,291,625 |
| -45.5 | 251,799,364 | 28,772,748 |
| -46 | 237,542,200 | 28,252,341 |
| -46.5 | 223,568,690 | 27,641,682 |
| -47 | 209,899,524 | 27,030,564 |
| -47.5 | 196,562,608 | 26,317,629 |
| -48 | 183,580,647 | 25,575,021 |
| -48.5 | 171,007,519 | 24,720,444 |
| -49 | 158,858,197 | 23,844,411 |
| -49.5 | 147,142,961 | 23,019,183 |
| -50 | 135,836,868 | 22,053,330 |
| -50.5 | 125,044,753 | 21,117,474 |
| -51 | 114,717,209 | 20,171,889 |
| -51.5 | 104,882,606 | 19,168,425 |
| -52 | 95,546,830 | 18,123,930 |
| -52.5 | 86,725,970 | 17,161,929 |
| -53 | 78,382,597 | 16,124,526 |
| -53.5 | 70,550,222 | 15,209,154 |
| -54 | 63,168,664 | 14,290,947 |
| -54.5 | 56,242,766 | 13,416,732 |

**Table 49: Lake 31-0 (continued)**

| Lake Volume and Surface Area Per Depth | | |
|---|---|---|
| -55 | 49,748,780 | 12,454,083 |
| -55.5 | 43,766,641 | 11,480,868 |
| -56 | 38,262,036 | 9,984,519 |
| -56.5 | 33,494,892 | 9,088,650 |
| -57 | 29,168,416 | 8,002,602 |
| -57.5 | 25,342,406 | 7,304,724 |
| -58 | 21,860,302 | 6,573,060 |
| -58.5 | 18,694,822 | 6,091,542 |
| -59 | 15,766,101 | 5,604,417 |
| -59.5 | 13,077,313 | 5,153,346 |
| -60 | 10,610,749 | 4,659,732 |
| -60.5 | 8,406,393 | 4,161,825 |
| -61 | 6,444,473 | 3,645,792 |
| -61.5 | 4,756,378 | 3,111,633 |
| -62 | 3,327,705 | 2,489,598 |
| -62.5 | 2,211,484 | 1,981,539 |
| -63 | 1,340,252 | 1,264,635 |
| -63.5 | 787,502 | 952,182 |
| -64 | 382,210 | 551,313 |
| -64.5 | 151,366 | 377,046 |

**Table 50: Lake 999**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 13,130,162 | 1,645,029 |
| -0.5 | 12,324,390 | 1,578,249 |
| -1 | 11,551,678 | 1,504,566 |
| -1.5 | 10,819,036 | 1,426,212 |
| -2 | 10,124,845 | 1,342,953 |
| -2.5 | 9,471,923 | 1,269,396 |
| -3 | 8,855,337 | 1,192,131 |
| -3.5 | 8,273,597 | 1,134,972 |
| -4 | 7,720,226 | 1,074,447 |
| -4.5 | 7,196,013 | 1,022,535 |
| -5 | 6,697,821 | 965,898 |
| -5.5 | 6,227,583 | 914,967 |
| -6 | 5,782,681 | 855,180 |
| -6.5 | 5,366,913 | 807,948 |
| -7 | 4,974,531 | 749,808 |
| -7.5 | 4,608,981 | 712,206 |
| -8 | 4,261,919 | 667,332 |
| -8.5 | 3,936,614 | 633,996 |
| -9 | 3,627,776 | 599,787 |
| -9.5 | 3,336,031 | 567,324 |
| -10 | 3,060,269 | 515,619 |
| -10.5 | 2,809,077 | 489,231 |
| -11 | 2,571,030 | 460,863 |
| -11.5 | 2,346,590 | 437,148 |
| -12 | 2,133,688 | 397,755 |
| -12.5 | 1,939,590 | 378,657 |
| -13 | 1,754,894 | 358,821 |
| -13.5 | 1,580,047 | 340,425 |
| -14 | 1,414,333 | 322,128 |
| -14.5 | 1,257,609 | 304,803 |
| -15 | 1,109,556 | 287,262 |
| -15.5 | 969,988 | 271,035 |
| -16 | 838,528 | 254,754 |
| -16.5 | 715,437 | 237,744 |
| -17 | 600,816 | 219,321 |
| -17.5 | 494,990 | 203,760 |
| -18 | 396,851 | 188,118 |
| -18.5 | 306,567 | 173,007 |
| -19 | 223,659 | 112,086 |
| -19.5 | 170,397 | 100,881 |
| -20 | 122,628 | 81,927 |

**Table 50: Lake 999 (continued)**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| -20.5 | 84,113 | 72,216 |
| -21 | 50,359 | 62,487 |
| -21.5 | 22,284 | 50,175 |

**Table 51: Lake 31-1**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 70,470 | 34,803 |
| -0.5 | 53,923 | 31,437 |
| -1 | 39,034 | 28,197 |
| -1.5 | 26,274 | 22,941 |
| -2 | 16,035 | 14,895 |
| -2.5 | 9,540 | 11,124 |
| -3 | 4,806 | 6,885 |
| -3.5 | 1,913 | 4,752 |

**Table 52: Lake 31-2**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 137,368 | 55,377 |
| -0.5 | 111,092 | 49,734 |
| -1 | 87,524 | 43,290 |
| -1.5 | 68,169 | 34,299 |
| -2 | 52,909 | 22,995 |
| -2.5 | 42,007 | 20,646 |
| -3 | 32,218 | 18,522 |
| -3.5 | 23,705 | 15,561 |
| -4 | 16,557 | 12,969 |
| -4.5 | 10,708 | 10,467 |
| -5 | 6,040 | 8,172 |
| -5.5 | 2,505 | 5,985 |

**Table 53: Lake 32-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 21,976,529 | 3,747,375 |
| -0.5 | 20,130,753 | 3,636,045 |
| -1 | 18,339,977 | 3,518,766 |
| -1.5 | 16,617,299 | 3,372,615 |
| -2 | 14,966,675 | 3,218,004 |
| -2.5 | 13,385,314 | 3,107,889 |
| -3 | 11,858,153 | 2,995,722 |
| -3.5 | 10,405,325 | 2,816,910 |
| -4 | 9,039,923 | 2,641,860 |
| -4.5 | 7,770,292 | 2,437,587 |
| -5 | 6,601,351 | 2,226,348 |
| -5.5 | 5,542,465 | 2,010,033 |
| -6 | 4,590,286 | 1,790,037 |
| -6.5 | 3,742,287 | 1,602,801 |
| -7 | 2,986,697 | 1,408,995 |
| -7.5 | 2,329,723 | 1,219,779 |
| -8 | 1,766,071 | 1,032,291 |
| -8.5 | 1,282,680 | 901,386 |
| -9 | 864,349 | 742,716 |
| -9.5 | 533,637 | 582,318 |
| -10 | 280,019 | 383,598 |
| -10.5 | 114,906 | 278,631 |

**Table 54: Lake 33-0**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 270,935 | 124,371 |
| -0.5 | 212,600 | 108,945 |
| -1 | 161,855 | 87,570 |
| -1.5 | 121,111 | 75,402 |
| -2 | 86,426 | 58,716 |
| -2.5 | 59,865 | 47,709 |
| -3 | 38,572 | 36,459 |
| -3.5 | 22,604 | 27,396 |
| -4 | 11,012 | 15,255 |
| -4.5 | 4,521 | 10,881 |

**Table 55: Lake 34-0 (Lower Bathurst Inlet)**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| 0 | 3,320,662,011 | 157,216,248 |
| -0.5 | 3,242,285,412 | 156,296,529 |
| -1 | 3,164,357,277 | 155,139,363 |
| -1.5 | 3,087,175,952 | 153,595,260 |
| -2 | 3,010,754,419 | 152,013,132 |
| -2.5 | 2,935,337,834 | 149,661,963 |
| -3 | 2,861,083,384 | 147,317,517 |
| -3.5 | 2,787,866,353 | 145,558,773 |
| -4 | 2,715,516,461 | 143,831,412 |
| -4.5 | 2,644,168,880 | 141,559,281 |
| -5 | 2,573,955,889 | 138,770,010 |
| -5.5 | 2,505,117,971 | 136,589,616 |
| -6 | 2,437,357,360 | 134,425,800 |
| -6.5 | 2,370,739,815 | 132,051,222 |
| -7 | 2,305,297,954 | 129,707,748 |
| -7.5 | 2,241,084,611 | 127,158,525 |
| -8 | 2,178,127,683 | 124,601,346 |
| -8.5 | 2,116,626,591 | 121,407,669 |
| -9 | 2,056,715,484 | 117,836,145 |
| -9.5 | 1,998,611,273 | 114,569,469 |
| -10 | 1,942,156,521 | 111,006,765 |
| -10.5 | 1,887,443,003 | 107,868,915 |
| -11 | 1,834,265,954 | 104,774,184 |
| -11.5 | 1,782,515,939 | 102,239,658 |
| -12 | 1,732,011,025 | 99,746,091 |
| -12.5 | 1,682,747,632 | 97,322,355 |
| -13 | 1,634,673,468 | 94,934,628 |
| -13.5 | 1,587,841,099 | 92,418,390 |
| -14 | 1,542,232,067 | 89,901,333 |
| -14.5 | 1,497,855,760 | 87,615,594 |
| -15 | 1,454,603,280 | 85,344,021 |
| -15.5 | 1,412,437,213 | 83,337,822 |
| -16 | 1,371,248,955 | 81,401,391 |
| -16.5 | 1,330,951,001 | 79,797,096 |
| -17 | 1,291,444,162 | 78,208,425 |
| -17.5 | 1,252,743,067 | 76,603,950 |
| -18 | 1,214,832,755 | 75,027,555 |
| -18.5 | 1,177,719,168 | 73,436,157 |
| -19 | 1,141,389,022 | 71,869,878 |
| -19.5 | 1,105,835,767 | 70,359,318 |
| -20 | 1,071,012,696 | 68,925,483 |

**Table 55: Lake 34-0 (Lower Bathurst Inlet) (continued)**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| -20.5 | 1,036,903,801 | 67,520,178 |
| -21 | 1,003,484,304 | 66,104,001 |
| -21.5 | 970,767,886 | 64,767,087 |
| -22 | 938,711,950 | 63,413,928 |
| -22.5 | 907,299,980 | 62,239,320 |
| -23 | 876,467,854 | 61,008,156 |
| -23.5 | 846,253,173 | 59,857,542 |
| -24 | 816,602,873 | 58,743,063 |
| -24.5 | 787,524,687 | 57,575,763 |
| -25 | 759,021,754 | 56,434,914 |
| -25.5 | 731,092,489 | 55,285,002 |
| -26 | 703,733,181 | 54,154,953 |
| -26.5 | 676,913,254 | 53,126,199 |
| -27 | 650,604,821 | 52,108,326 |
| -27.5 | 624,783,781 | 51,175,593 |
| -28 | 599,428,816 | 50,244,048 |
| -28.5 | 574,533,210 | 49,339,089 |
| -29 | 550,088,651 | 48,440,565 |
| -29.5 | 526,087,209 | 47,566,152 |
| -30 | 502,521,118 | 46,698,912 |
| -30.5 | 479,422,657 | 45,698,769 |
| -31 | 456,818,707 | 44,721,144 |
| -31.5 | 434,722,343 | 43,668,513 |
| -32 | 413,149,392 | 42,626,592 |
| -32.5 | 392,102,798 | 41,562,108 |
| -33 | 371,585,866 | 40,507,344 |
| -33.5 | 351,609,916 | 39,399,894 |
| -34 | 332,180,732 | 38,242,395 |
| -34.5 | 313,348,528 | 37,089,666 |
| -35 | 295,088,704 | 35,925,381 |
| -35.5 | 277,429,392 | 34,716,213 |
| -36 | 260,368,854 | 33,488,091 |
| -36.5 | 243,935,626 | 32,248,809 |
| -37 | 228,116,039 | 31,007,007 |
| -37.5 | 212,876,735 | 29,953,134 |
| -38 | 198,160,274 | 28,905,912 |
| -38.5 | 183,963,137 | 27,884,169 |
| -39 | 170,275,692 | 26,857,386 |
| -39.5 | 157,100,529 | 25,846,137 |
| -40 | 144,428,510 | 24,823,413 |
| -40.5 | 132,289,859 | 23,734,530 |

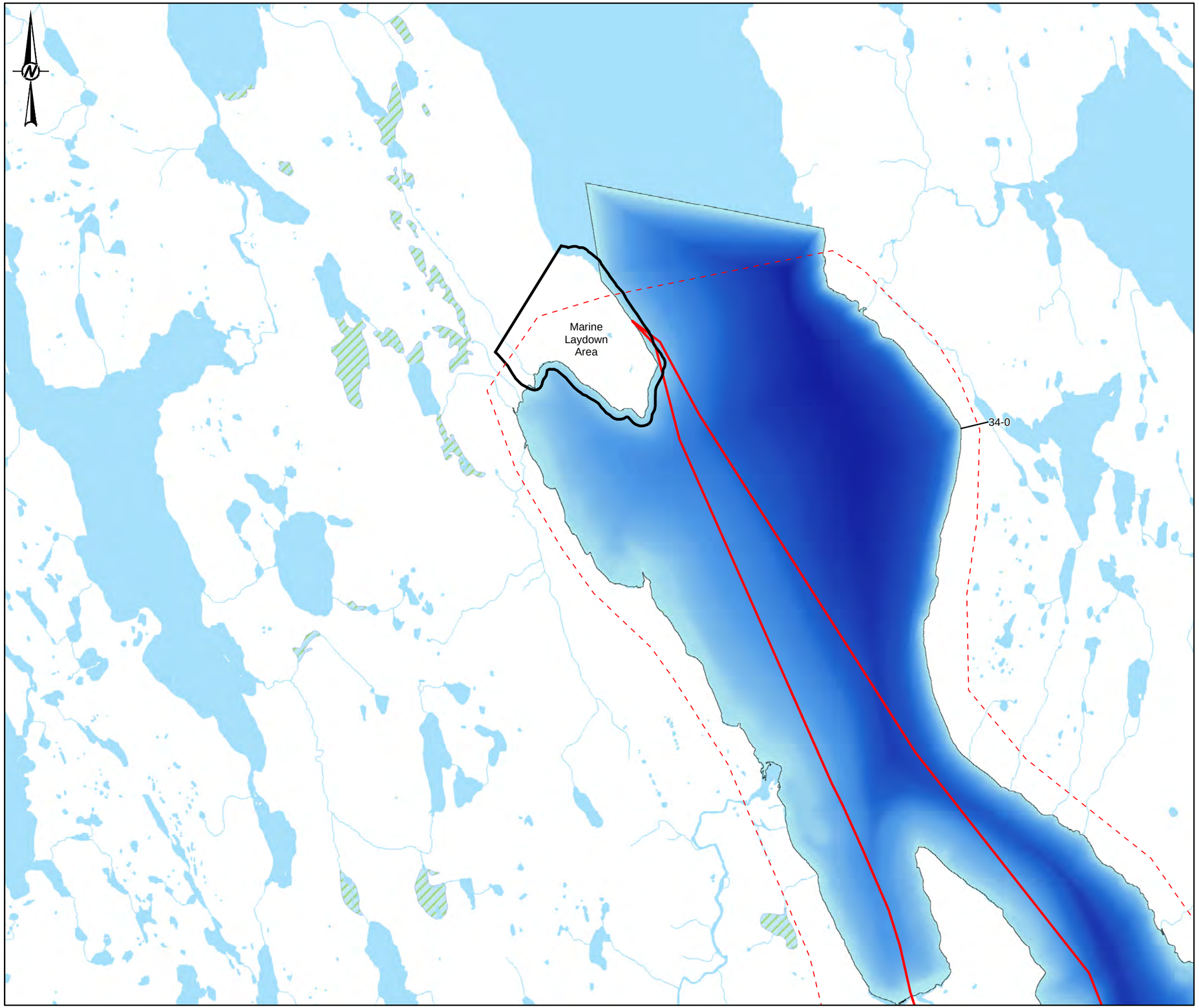
**Table 55: Lake 34-0 (Lower Bathurst Inlet) (continued)**

**Lake Volume and Surface Area Per Depth**

| Elevation (m) | Cumulative Volume ($m^3$) | Cumulative Area ($m^2$) |
|---|---|---|
| -41 | 120,690,883 | 22,664,268 |
| -41.5 | 109,614,224 | 21,645,522 |
| -42 | 99,042,791 | 20,349,549 |
| -42.5 | 89,120,186 | 19,343,151 |
| -43 | 79,696,709 | 18,260,478 |
| -43.5 | 70,870,760 | 17,047,413 |
| -44 | 62,645,297 | 15,560,451 |
| -44.5 | 55,193,891 | 14,252,175 |
| -45 | 48,387,157 | 12,141,720 |
| -45.5 | 42,569,731 | 11,134,899 |
| -46 | 37,245,670 | 9,563,436 |
| -46.5 | 32,665,660 | 8,762,805 |
| -47 | 28,476,533 | 7,786,719 |
| -47.5 | 24,748,249 | 7,133,058 |
| -48 | 21,336,650 | 6,211,449 |
| -48.5 | 18,354,386 | 5,719,374 |
| -49 | 15,616,131 | 5,217,471 |
| -49.5 | 13,113,823 | 4,793,148 |
| -50 | 10,821,496 | 4,370,733 |
| -50.5 | 8,744,070 | 3,940,920 |
| -51 | 6,878,964 | 3,476,700 |
| -51.5 | 5,234,537 | 3,103,515 |
| -52 | 3,772,989 | 2,650,050 |
| -52.5 | 2,559,532 | 2,208,681 |
| -53 | 1,559,990 | 1,605,843 |
| -53.5 | 840,334 | 1,277,856 |
| -54 | 276,818 | 410,859 |
| -54.5 | 107,940 | 270,522 |

# APPENDIX B

Map of Water Sources for Ice Road Construction



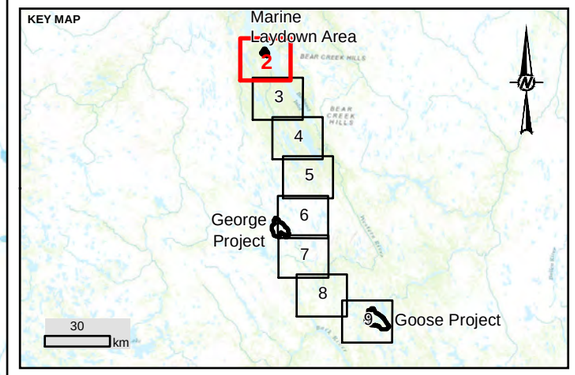

**LEGEND**

- MARINE LAYDOWN AREA
- WINTER ROAD
- WATERCOURSE
- LAKE EXTENT (DEPTH > 3.5M)
- PROJECT BOUNDARY
- WATERBODY
- WETLAND

BATHYMETRY (1 M INTERVAL)

0
-13
-26
-39
-52
-65

**KEY MAP**




0 1.5 3

1:75,000 KILOMETRES

**NOTE(S)**

1. TSF WRSA POND BREACHED TO GOOSE MAIN TF.

**REFERENCE(S)**

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PROJECTION: UTM ZONE 13N DATUM: NAD 83

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| YYYY-MM-DD | 2018-02-05 |
| DESIGNED | BDW |
| PREPARED | JG/RC |
| REVIEWED | |
| APPROVED | |

CLIENT
SABINA GOLD & SILVER CORP.

CONSULTANT
Golder Associates

PROJECT
BACK RIVER PROJECT

TITLE
**WATER SOURCES FOR WINTER ICE ROAD CONSTRUCTION FOR THE BACK RIVER PROJECT**

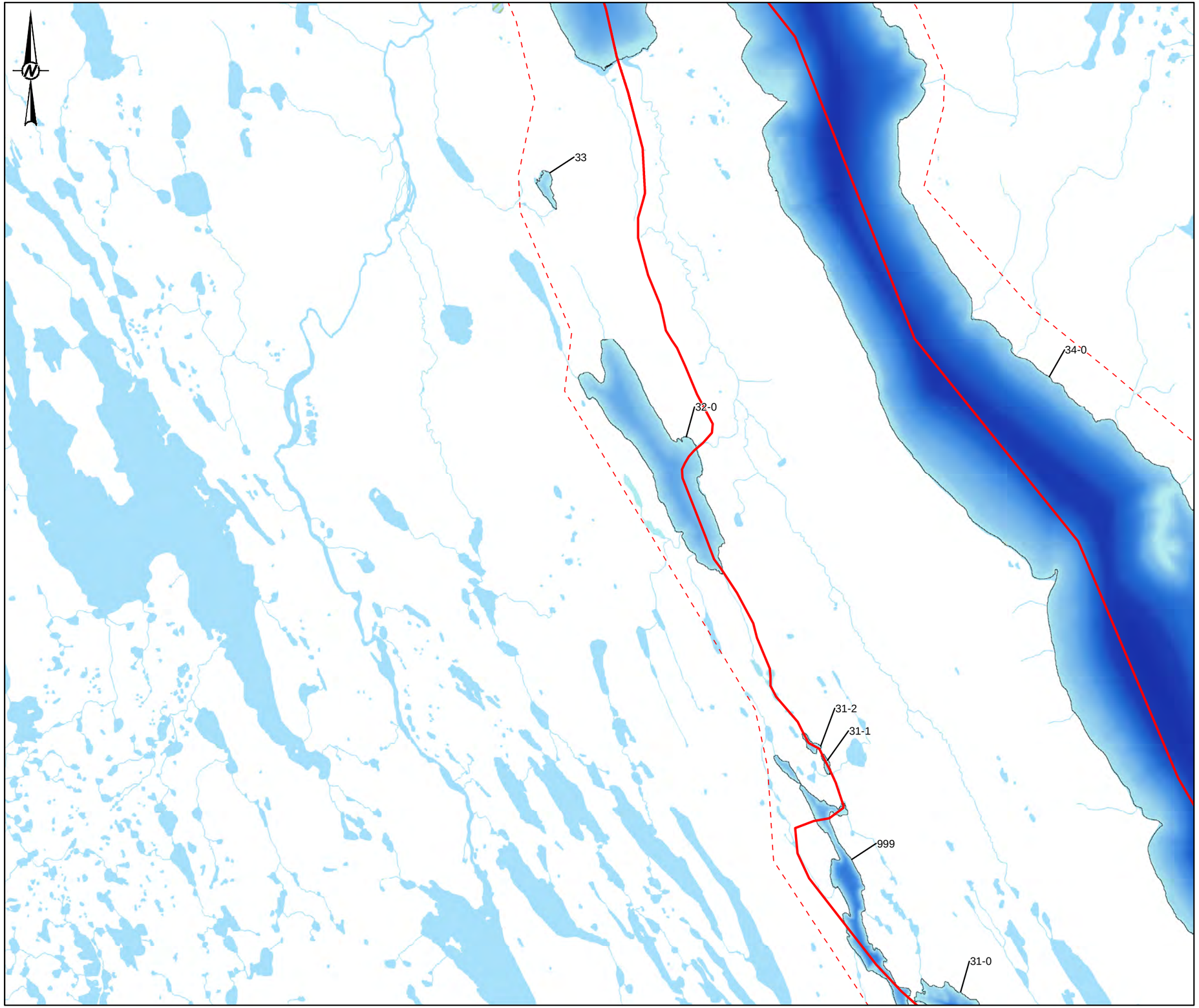
| PROJECT NO. | FIGURE | REV. |
|---|---|---|
| 1776921/1300/1320 | B2 | A |

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

25mm

0

PATH: \\golder.gds\calmin\GIS\Active\CLIENTS\SABINA_SILVER\1776921\Mapping\MXD\General\Fig2-9_1776921_Winter_Road_Maybook_20180119.mxd PRINTED ON: 2018-02-05 AT 1:13:24 PM



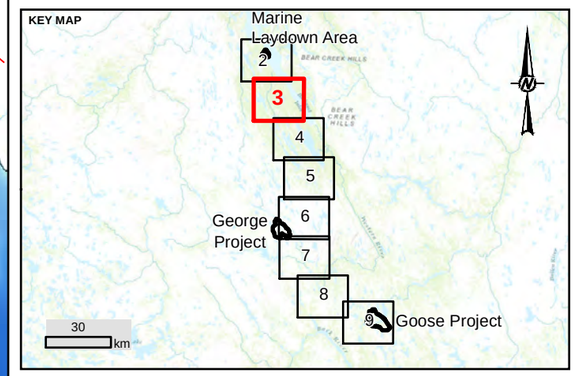

**LEGEND**

- WINTER ROAD
- WATERCOURSE
- LAKE EXTENT (DEPTH > 3.5M)
- PROJECT BOUNDARY
- WATERBODY
- WETLAND

BATHYMETRY (1 M INTERVAL)

0
-13
-26
-39
-52
-65

**KEY MAP**




0 1.5 3

1:75,000 KILOMETRES

**NOTE(S)**

1. TSF WRSA POND BREACHED TO GOOSE MAIN TF.

**REFERENCE(S)**

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PROJECTION: UTM ZONE 13N DATUM: NAD 83

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| YYYY-MM-DD | 2018-02-05 |
| DESIGNED | BDW |
| PREPARED | JG/RC |
| REVIEWED | |
| APPROVED | |

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SABINA GOLD & SILVER CORP.

CONSULTANT
Golder Associates

PROJECT
BACK RIVER PROJECT

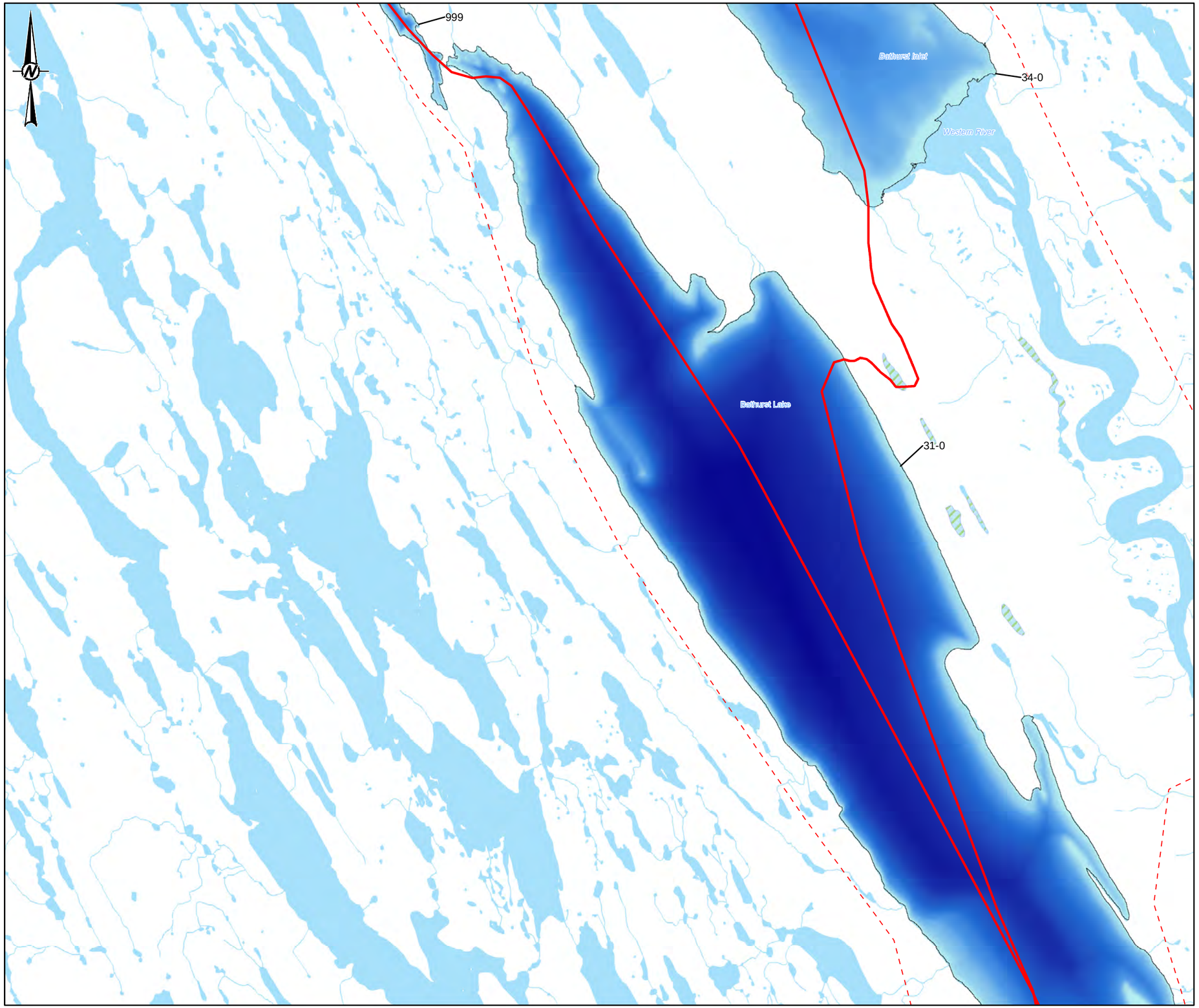
TITLE
**WATER SOURCES FOR WINTER ICE ROAD CONSTRUCTION FOR THE BACK RIVER PROJECT**

| PROJECT NO. | FIGURE | REV. |
|---|---|---|
| 1776921/1300/1320 | B3 | A |

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

0 25mm

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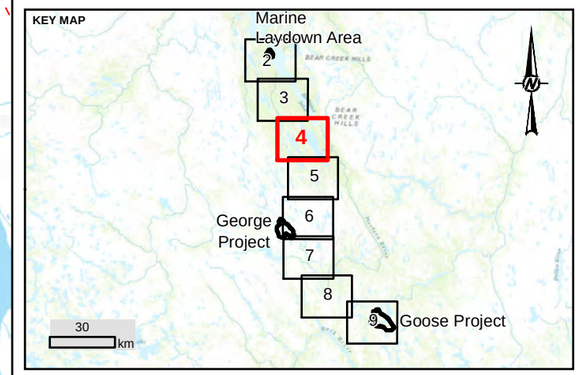

**LEGEND**

- WINTER ROAD
- WATERCOURSE
- LAKE EXTENT (DEPTH > 3.5M)
- PROJECT BOUNDARY
- WATERBODY
- WETLAND

BATHYMETRY (1 M INTERVAL)

0
-13
-26
-39
-52
-65

**KEY MAP**




0 1.5 3

1:75,000 KILOMETRES

**NOTE(S)**

1. TSF WRSA POND BREACHED TO GOOSE MAIN TF.

**REFERENCE(S)**

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PROJECTION: UTM ZONE 13N DATUM: NAD 83

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| DESIGNED | BDW |
| PREPARED | JG/RC |
| REVIEWED | |
| APPROVED | |

CLIENT
SABINA GOLD & SILVER CORP.

CONSULTANT
Golder Associates

PROJECT
BACK RIVER PROJECT

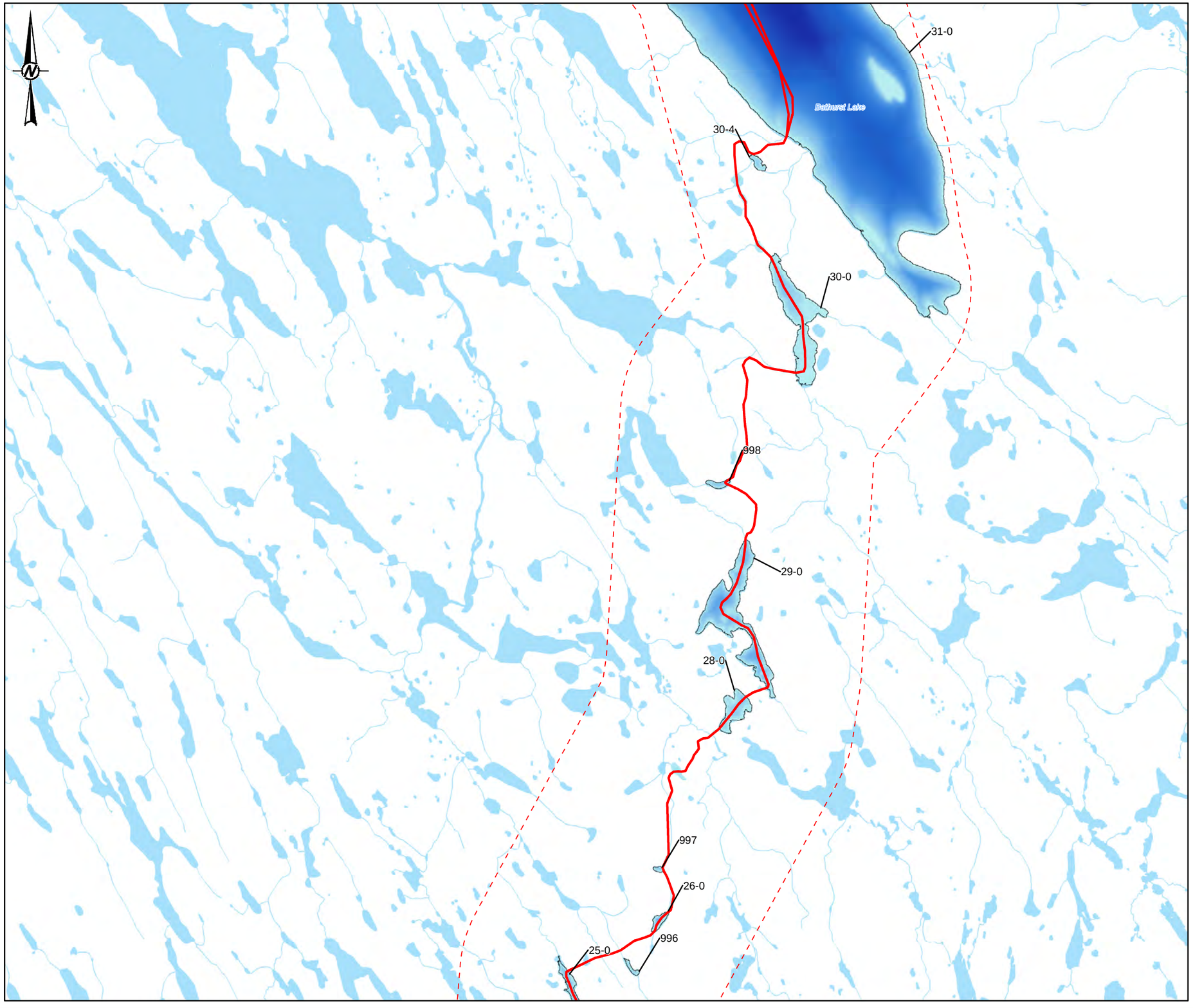
TITLE
**WATER SOURCES FOR WINTER ICE ROAD CONSTRUCTION FOR THE BACK RIVER PROJECT**

| PROJECT NO. | FIGURE | REV. |
|---|---|---|
| 1776921/1300/1320 | B4 | A |

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

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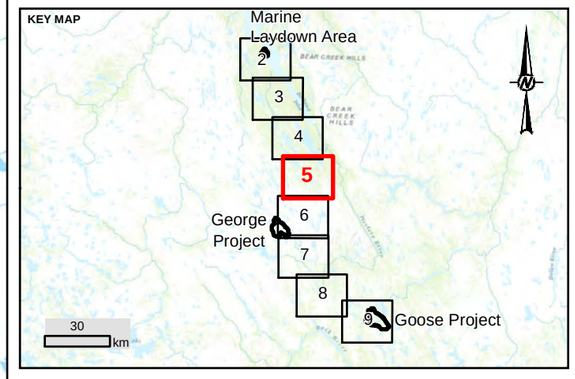

**LEGEND**

- WINTER ROAD
- WATERCOURSE
- LAKE EXTENT (DEPTH > 3.5M)
- PROJECT BOUNDARY
- WATERBODY
- WETLAND

BATHYMETRY (1 M INTERVAL)

0
-13
-26
-39
-52
-65

**KEY MAP**




0 1.5 3

1:75,000 KILOMETRES

**NOTE(S)**

1. TSF WRSA POND BREACHED TO GOOSE MAIN TF.

**REFERENCE(S)**

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PROJECTION: UTM ZONE 13N DATUM: NAD 83

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| DESIGNED | BDW |
| PREPARED | JG/RC |
| REVIEWED | |
| APPROVED | |

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SABINA GOLD & SILVER CORP.

CONSULTANT
Golder Associates

PROJECT
BACK RIVER PROJECT

TITLE
**WATER SOURCES FOR WINTER ICE ROAD CONSTRUCTION FOR THE BACK RIVER PROJECT**

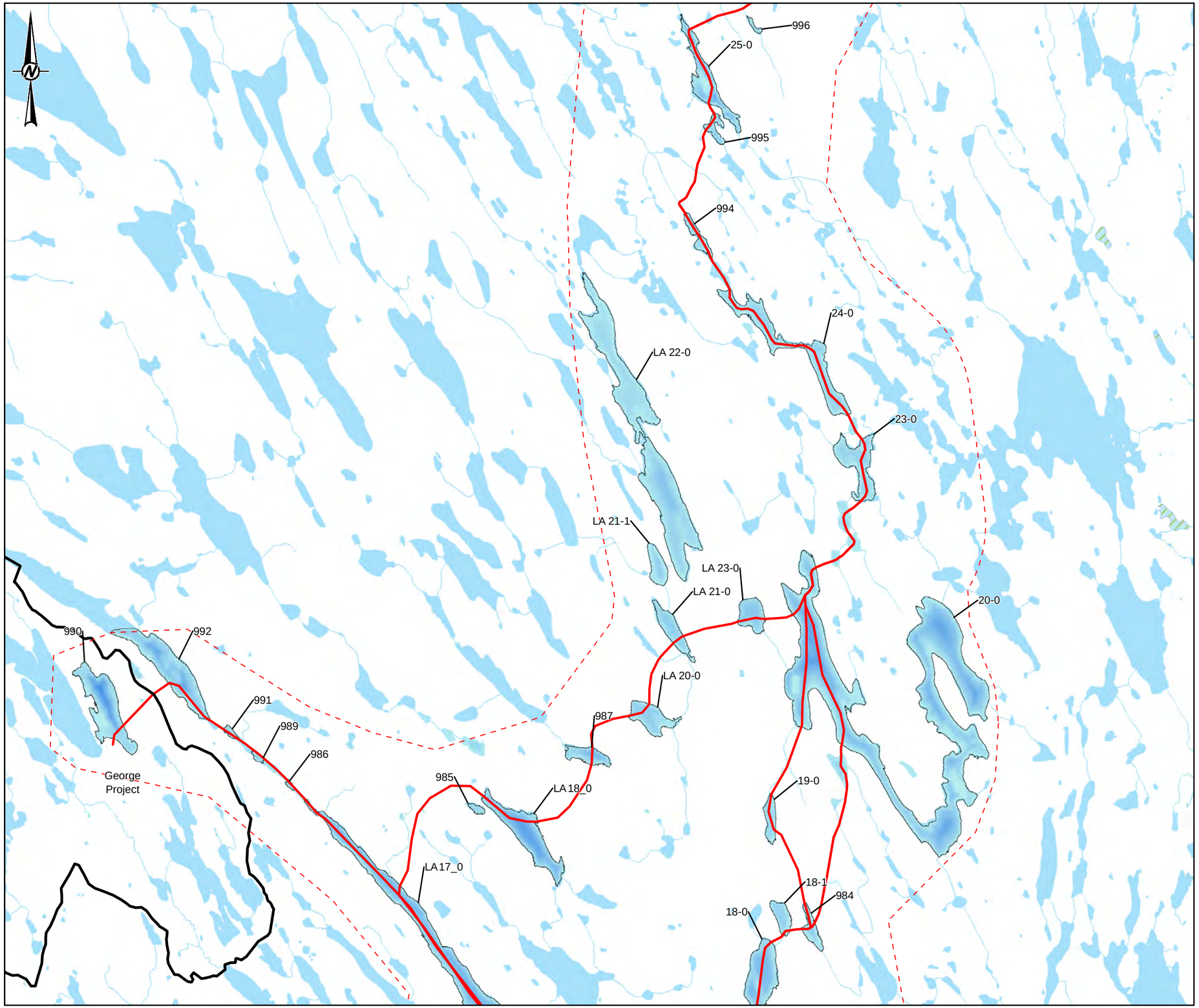
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| 1776921/1300/1320 | B5 | A |

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

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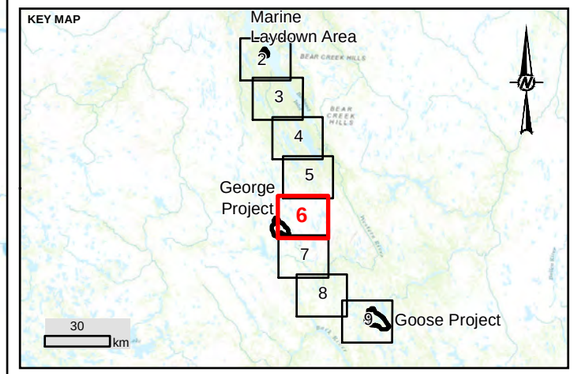



**LEGEND**

- GEORGE PROPERTY AREA
- WINTER ROAD
- WATERCOURSE
- LAKE EXTENT (DEPTH > 3.5M)
- PROJECT BOUNDARY
- WATERBODY
- WETLAND

BATHYMETRY (1 M INTERVAL)

0
-13
-26
-39
-52
-65




0 1.5 3

1:75,000 KILOMETRES

**NOTE(S)**

1. TSF WRSA POND BREACHED TO GOOSE MAIN TF.

**REFERENCE(S)**

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| APPROVED | |

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Golder Associates

PROJECT
BACK RIVER PROJECT

TITLE
**WATER SOURCES FOR WINTER ICE ROAD CONSTRUCTION FOR THE BACK RIVER PROJECT**

| PROJECT NO. | FIGURE | REV. |
|---|---|---|
| 1776921/1300/1320 | B6 | A |

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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George Project

George Project

984

18-0

LA17_0

16-1

17-0

16-0

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14-1

14-0a

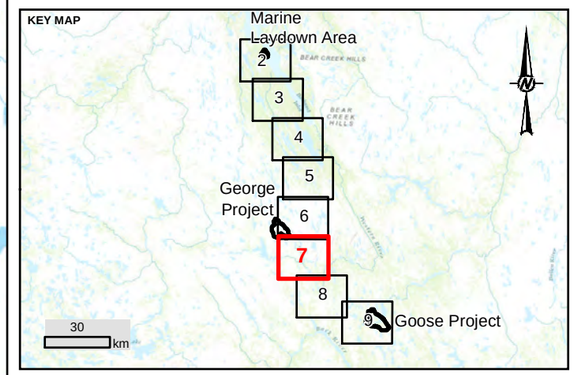
**LEGEND**

- GEORGE PROPERTY AREA
- WINTER ROAD
- WATERCOURSE
- LAKE EXTENT (DEPTH > 3.5M)
- PROJECT BOUNDARY
- WATERBODY
- WETLAND

BATHYMETRY (1 M INTERVAL)

0
-13
-26
-39
-52
-65

**KEY MAP**




0 1.5 3

1:75,000 KILOMETRES

**NOTE(S)**

1. TSF WRSA POND BREACHED TO GOOSE MAIN TF.

**REFERENCE(S)**

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| DESIGNED | BDW |
| PREPARED | JG/RC |
| REVIEWED | |
| APPROVED | |

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CONSULTANT
Golder Associates

PROJECT
BACK RIVER PROJECT

TITLE
**WATER SOURCES FOR WINTER ICE ROAD CONSTRUCTION FOR THE BACK RIVER PROJECT**

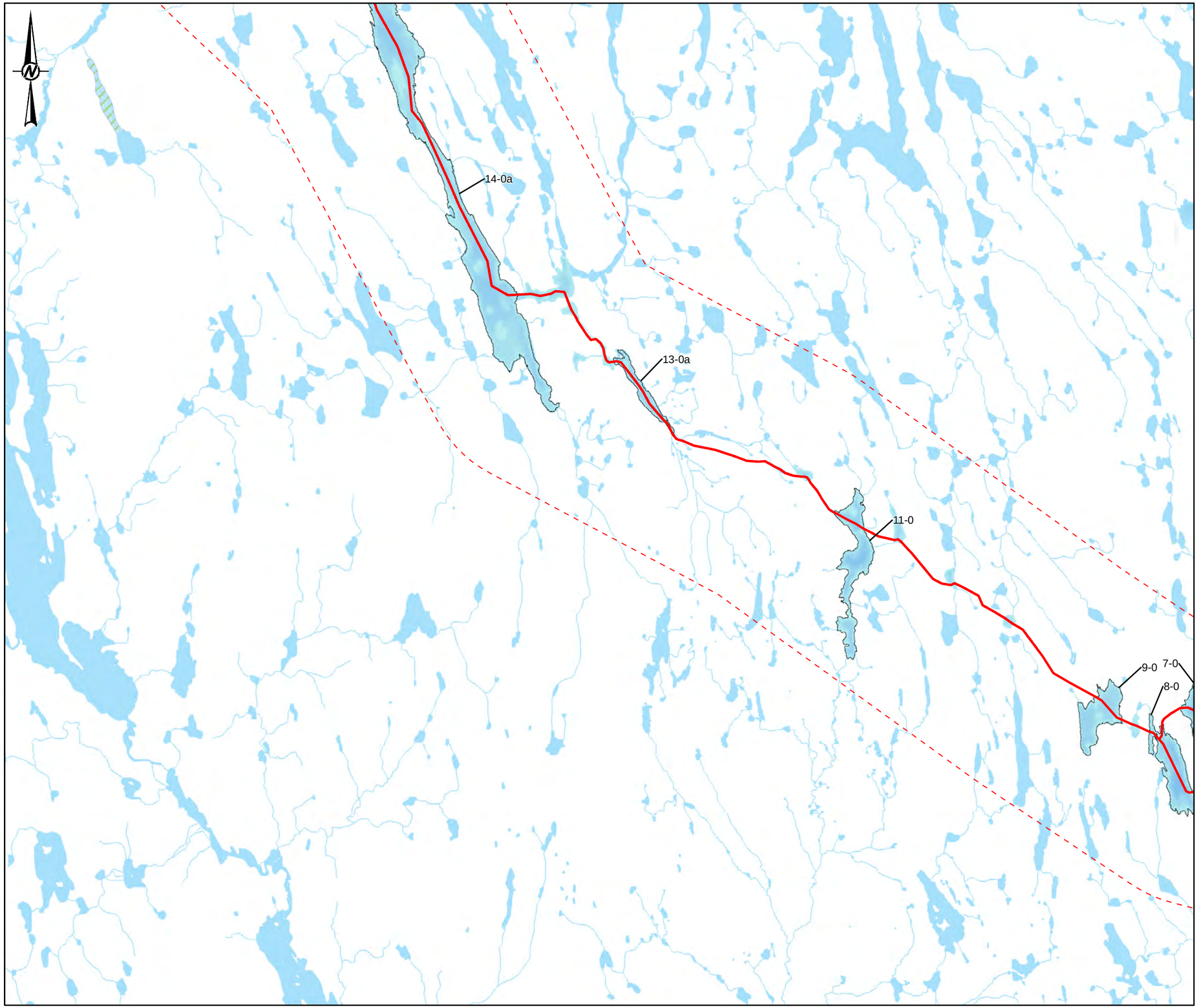
| PROJECT NO. | FIGURE | REV. |
|---|---|---|
| 1776921/1300/1320 | B7 | A |

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

25mm

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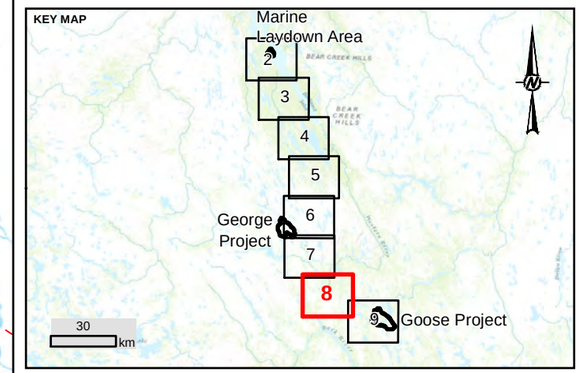

**LEGEND**

- WINTER ROAD
- WATERCOURSE
- LAKE EXTENT (DEPTH > 3.5M)
- PROJECT BOUNDARY
- WATERBODY
- WETLAND

BATHYMETRY (1 M INTERVAL)

0
-13
-26
-39
-52
-65

**KEY MAP**




0 1.5 3

1:75,000 KILOMETRES

**NOTE(S)**

1. TSF WRSA POND BREACHED TO GOOSE MAIN TF.

**REFERENCE(S)**

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PROJECTION: UTM ZONE 13N DATUM: NAD 83

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| DESIGNED | BDW |
| PREPARED | JG/RC |
| REVIEWED | |
| APPROVED | |

CLIENT
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CONSULTANT
Golder Associates

PROJECT
BACK RIVER PROJECT

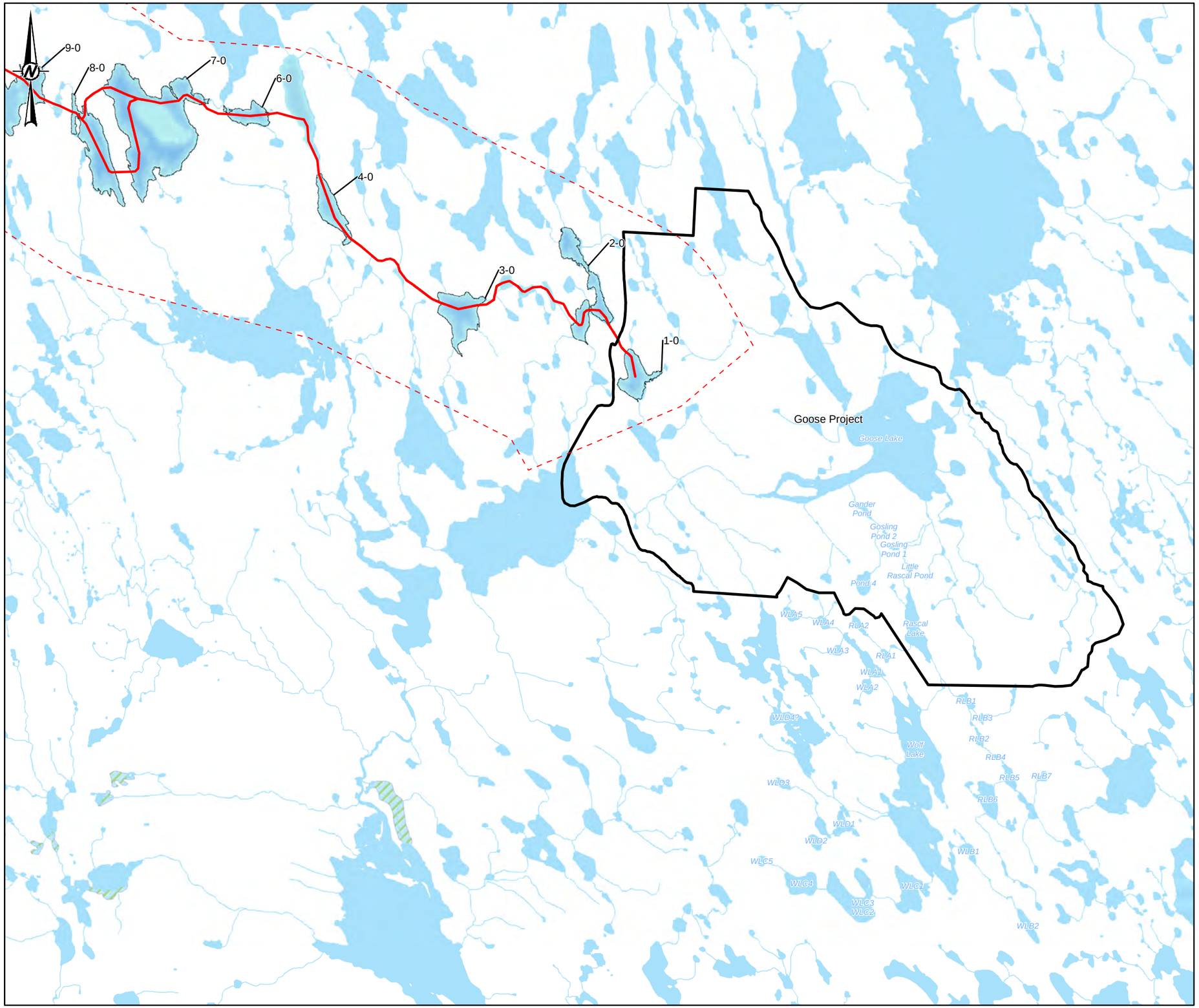
TITLE
**WATER SOURCES FOR WINTER ICE ROAD CONSTRUCTION FOR THE BACK RIVER PROJECT**

| PROJECT NO. | FIGURE | REV. |
|---|---|---|
| 1776921/1300/1320 | B8 | A |

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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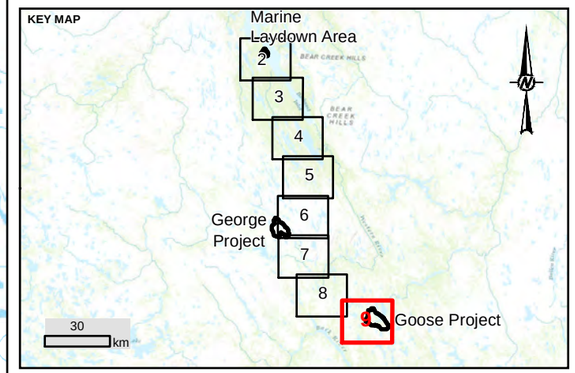

**LEGEND**

- GOOD PROPERTY AREA
- WINTER ROAD
- WATERCOURSE
- LAKE EXTENT (DEPTH > 3.5M)
- PROJECT BOUNDARY
- WATERBODY
- WETLAND

BATHYMETRY (1 M INTERVAL)

0
-13
-26
-39
-52
-65

**KEY MAP**




0 1.5 3

1:75,000 KILOMETRES

**NOTE(S)**

1. TSF WRSA POND BREACHED TO GOOSE MAIN TF.

**REFERENCE(S)**

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PROJECTION: UTM ZONE 13N DATUM: NAD 83

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| YYYY-MM-DD | 2018-02-05 |
| DESIGNED | BDW |
| PREPARED | JG/RC |
| REVIEWED | |
| APPROVED | |

CLIENT
SABINA GOLD & SILVER CORP.

CONSULTANT
Golder Associates

PROJECT
BACK RIVER PROJECT

TITLE
**WATER SOURCES FOR WINTER ICE ROAD CONSTRUCTION FOR THE BACK RIVER PROJECT**

| PROJECT NO. | FIGURE | REV. |
|---|---|---|
| 1776921/1300/1320 | B9 | A |

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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