BACK RIVER PROJECT

2023 Annual Report for

Water Licence 2AM-BRP1831

Prepared by
RainCoast Environmental Services Ltd.

For
B2Gold Back River Corp.

For Submission to
Nunavut Water Board

April 2024

BACK RIVER PROJECT
2023 2AM-BRP1831 Annual Report

Table of Contents

List of Tables

TABLE **PAGE**

Acronyms

B2Gold Nunavut	B2Gold Back River Corp., known as B2Gold Nunavut, a subsidiary of B2Gold Corp.
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
Inspector	CIRNAC Inspector
KIA	Kitikmeot Inuit Association
The Licence	Water Licence 2AM-BRP1831
MLA	Marine Laydown Area
NIRB	Nunavut Impact Review Board
NU	Nunavut
NWB	Nunavut Water Board
The Project	Back River Project
Sabina	Sabina Gold & Silver Corp.
STP	Sewage Treatment Plant

Executive Summary - English

B2Gold Back River Corp. (B2Gold Nunavut) has filed its Annual Report on its activities during 2023 under Water Licence No. 2AM-BRP1831 (the Licence) issued by the Nunavut Water Board. As set out in Part B Item 2 and Schedule B of the Licence, the report includes information on the following topics:

- Information related to the dikes, dams and structures constructed to withhold water or waste;
- A summary report of Water use, Winter Ice Road activities, dewatering activities, and any updates to the Water and Load Balance results;
- Summaries of geochemical monitoring results, ore stockpile quantities, seepage and runoff monitoring, and waste disposal;
- A list of unauthorized discharges and a summary of follow-up actions taken;
- A summary of Modifications and/or major maintenance work carried out on all Water and Waste-related structures and facilities;
- Monitoring program results and interpretation;
- A summary of any progressive Closure and Reclamation work undertaken;
- An updated estimate of the current restoration liability;
- A summary of any studies requested by the Board that relate to Water use, Waste disposal or Reclamation, and a brief description of any future studies planned
- Any revisions to Management Plans, reports or manuals;
- A summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector;
- A summary of public consultation/participation, describing consultation with local organizations and residents of the nearby communities, if any were conducted;
- Any other details on Water use requested by the Board by the 1st November of the year being reported.

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B2Gold Back River Corp. (B2Gold Nunavut) ᐊᕐᕌᒍᑕᒦᖅ ᐅᓂᑳᖕᑲᓐᓂᒃ ᑐᓂᓯᓚᐅᖅᑐᑦ ᖃᓄᐃᓕᐅᕐᓂᕆᔭᖕᒋᑦᑕ ᒥᒃᓵᓄᑦ 2023-ᒥᑦ ᒪᓕᒃᑲᓗ ᐃᒪᕐᒧᑦ ᓚᐃᓴᓐᓯ ᓈᓴᐅᑎᖕᒐ 2AM-BRP1831 (ᓚᐃᓴᓐᓯ) ᑐᓂᔭᐅᔪᖅ ᓄᓇᕗᒻᒥ ᐃᒪᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖕᒋᑦ. ᐅᖃᖅᓯᒪᓂᖕᒐᑐᑦ ᐃᓚᖕᒐᓂᑦ B-ᒥᑦ ᑎᑎᖅᑲᖅ 2 ᐊᒻᒪ ᐃᓚᖕᒐᓂ B–ᒥ ᓚᐃᓴᓐᓯᒥᑦ, ᐅᓂᑳᒥᑦ ᐃᓚᐅᔪᑦ ᑐᑭᓯᐅᒪᔾᔪᑏᑦ ᐱᔾᔪᑎᖃᖅᑐᑦ ᐅᑯᓂᙵᑦ:

- ᑐᑭᓯᕆᐊᕈᑎᒃᓴᑦ ᐅᑯᓄᖕᒐ ᓯᒥᒃᑐᖅᓯᒪᔪᑦ, ᐊᕙᓗᓕᐊᖑᓯᒪᔪᑦ ᐊᒻᒪ ᓴᓇᓯᒪᔪᑦ ᐃᒪᕐᒥᑦ ᐅᕙᓗᓐᓂᑦ ᑯᕕᖅᑕᑯᒥᑦ ᐊᑐᖅᑕᐅᔪᒃᓴᑦ;
- ᑐᑭᓯᕆᐊᕈᑎᒃᓴᑦ ᑐᓴᕈᑎᒃᓴᓕᐊᖅ ᐃᒪᕐᒥᑦ ᐊᑐᓚᐅᕐᓂᕐᒧᑦ, ᐅᑭᐅᒃᑯᑦ ᓯᑯᒃᑯᑦ ᐊᑉᕐᑯᑎᓴᖅ ᐱᓕᕆᐊᑦ, ᐃᒪᐃᔭᐃᓂᕐᒧᑦ ᐱᓕᕆᐊᑦ, ᐊᒻᒪ ᑐᓴᕈᑎᒃᓴᑦ ᐃᒪᕐᒧᑦᑐ ᐅᓯᕐᑲᑦᑕᕐᓂᕐᒧᑦᑐ ᐱᐊᓂᒃᑐᑦ;
- ᓇᐃᓇᖅᓯᒪᔪᑦ ᐅᔭᕋᕐᓂᐊᓂᕐᒧᑦ, ᐅᔭᕋᕐᓂᐊᒐᒃᓴᖅ ᓇᕙᑕᐅᓯᒪᔪᖅ; ᓯᒥᒃᑐᖅᓯᒪᔪᖅ ᓯᒥᒃᑐᖅᓯᒪᑦᑎᐊᕋᓗᐊᒪᖕᒐᑦ ᖃᐅᔨᓴᖅᐸᖕᓂᖅ ᐊᒻᒪ ᕐᑯᕙᖅᑕᖅᕙᒃ;
- ᑎᑎᕋᖅᓯᒪᔪᑦ ᐱᔪᖕᓇᖅᑎᑕᐅᓯᒪᙱᕐᓗᑎᒃ ᑯᕙᓯᓃᑦ ᐊᒻᒪᓗ ᓇᐃᓈᖅᓯᒪᔪᖅ ᖃᐅᔨᕆᐊᒃᑲᓐᓂᕐᓂᐅᔪᑦ;
- ᓇᐃᓇᖅᓯᒪᔪᑦ ᐊᓯᐊᖑᐊᖅᔪᒃᓗᒍ ᐊᒻᒪ/ᐅᕝᕙᓘᓐᓃᑦ ᐊᖏᔫᒪᓇᒃ ᐱᓕᕆᐊᖅ ᑲᒪᒋᔭᐅᔭᕆᐊᕐᑲᓚᐅᖅᑐᖅ ᐃᒪᕐᒧᑦ ᐊᒻᒪ ᑯᕙᖅᑕᖅᕙᒧᑦ ᐱᑉᐳᒍ ᐊᒻᒪ ᐃᓂᕐᑲᖅᕙᐅᔪᑦ;
- ᖃᐅᔨᕆᐊᖅᑳᑦᑕᕐᓂᕐᒥᑦ ᖃᓄᐃᓕᖕᒐᓕᕐᓂᖕᒐ ᐊᒻᒪ ᑐᑭᓕᐅᖅᓯᒪᔪᑦ;
- ᓇᐃᓴᖅᓯᒪᔪᖅ ᖃᓄᐃᓕᐅᕐᓂᐅᔪᖅ ᕿᒪᐃᓂᐊᕐᓂᕐᒧᑦ ᐊᒻᒪ ᓄᓇᒥᒃ ᓴᓗᒪᖅᓴᐃᓂᖅ;
- ᖃᓂᕐᑯᓯᒪᑉᐳᒍ ᐅᒃᑐᕋᐅᓯᖅ ᒪᓐᓇᐅᔪᖅ ᐊᑭᓕᒐᒃᓴᐅᓇᔭᖅᑐᖅ ᓱᕈᖅᓯᒪᔪᒧᑦ;
- ᓇᐃᓇᖅᓯᒪᔪᑦ ᑐᑭᓯᕆᐊᕈᑎᒃᓴᑦ ᑲᑎᒪᔩᑦ ᑐᒃᓯᕋᖅᓯᒪᔭᖕᒋᑦ ᐃᒪᖅ ᐊᑐᖅᑕᐅᕙᓂᖕᒐᓄᑦ; ᐊᒃᑕᑯᕈᓯᖅ ᐅᕝᕙᓘᓐᓃᑦ ᓄᓇᒥᒃ ᓴᓗᒻᒪᖅᓴᐃᓂᖅ ᓇᐃᓇᖅᓯᒪᓗᒍ ᖃᐅᔨᓴᕐᓂᐊᕐᓂᖅ ᓯᕗᓂᒃᓴᒥ ᖃᓄᐃᓕᐅᕈᑕᐅᓂᐊᕐᓂᖕᒐ
- ᐊᓯᐊᖑᐃᓂᖅ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐸᕐᓇᐅᑏᑦ, ᐅᕙᓗᓐᓂᑦ ᒪᓕᒃᑕᐅᔪᒃᓴᑦ;
- ᑎᑎᕋᖅᓯᒪᔪᑦ ᖃᓄᐃᓕᐅᕐᓂᑯᑦ ᑲᒪᒋᕐᑯᔭᐅᔪᑦ ᐱᐸᓗᒋᑦ ᐅᕝᕙᓘᓐᓃᑦ ᐱᐊᓂᒃᓯᒪᖕᒋᑦᑐᑦ ᖃᐅᔨᓴᐃᓂᒃᑯᑦ ᑐᓴᕈᑎᒥ ᐊᒻᒪ/ᐅᕝᕙᓘᓐᓃᑦ ᖃᐅᔨᓴᖅᑎᐅᑉ ᐱᐊᓂᒃᓯᒪᓂᕋᖅᑕᖕᒋᑦ;
- ᓇᐃᓈᖅᓯᒪᔪᑦ ᐃᓄᓗᒃᑖᓂᒃ ᐅᖃᖃᑎᖃᕐᓃᑦ/ᐃᓚᐅᖃᑕᐅᑎᑦᑎᓃᑦ, ᐅᖃᐅᓯᖃᕐᓗᓂ ᐅᖃᖃᑎᖃᕐᓂᐅᓚᐅᖅᑐᓂᒃ ᓄᓇᓕᖕᒥᑦ ᑲᑐᔾᔨᖃᑎᒌᓂᒃ ᐊᒻᒪᓗ ᐃᓄᖕᒋᓐᓂᒃ ᖃᓂᑦᑐᓂᒃ ᓄᓇᓕᖕᒥᐅᓂᑦ, ᐅᖃᖃᑎᖃᓚᐅᖅᐸᑕᔭ;
- ᓱᓇᑐᐃᓐᓇᐃᑦ ᐊᓯᖕᒋᑦ ᓇᓗᓇᐃᔭᖅᓯᒪᔪᑦ ᐃᒪᕐᒥᒃ ᐊᑐᕐᓂᕐᒧᑦ ᑐᒃᓯᕋᖅᑕᐅᔪᖅ ᑲᑎᒪᔨᓄᑦ ᓄᕙᐱᕆ 1-ᒥᑦ ᐅᑭᐅᕐᒥᑦ ᐅᓂᒃᑳᓕᐊᖑᖕᒪᑦ.

Aulapkaiyini Naittuq – Inuinnaqtun

B2Gold Back River Corp. (B2Gold Nunavut) tuniyat Ukiumun Tuhaqhitaut huliniqnut atuqtitlugu 2023 malikhugu Imaqmun Laisa Nappaa 2AM-BRP1831 (tamna Laisa) tuniyat tapkuat Nunavut Imaligiyit Katimayit. Taima ihuaqhihimaniagut talvani Ilanga B Titiraq 2 tamnalu Atugakhaliaq B talvani Laisami, tamna tuhaqhitaut ilalik tuhagakhat tahapkununga pityutinut:

- Tuhagakhat turangayut haputinut, hapuhiugaqnut hanahimayutlu hanaugat imaqaqviuyukhat uvaluniit iqakunut;
- Nainaqhimayuq tuhaqhitaut Immap atuqnianut, Ukiumi Hikukkuk Apqutit huliniit, imaiyainiqmun huliniit, kitutluliqak nutanguqnit tapkununga Immap Hunaqaqninutlu Ihuaqhihimani qanuritnit;
- Nainaqhimani nunaliqutit qanuritnit munarini, havikhat qaliriktitaqnit aktilangit, maqinit kuukviunitlu munarinit, tapkuatlu iqakut iqaqnit;
- Titiqat pilaqtitauhimaittut kuvititnit nainaqhimayutlu kinguagut huliniit piyauni;
- Nainaqhimayut Ihuaqhigiarutit tamnalu/uvaluniit angiyut hanayauni havariyaunit tamaitnut Immap Iqakutlu-turangayut hanahimayut havagutailu;
- Munarini havagutt qanuritnit tukiliurutailu;
- Nainaqhimayut kitutliqak pivalianit Umiktirnianut Halumaqtiqnianutlu havariyauyut;
- Nutanguqhimayut mikhautnit tatya ilitquhiraluanganut utiqtitnahuaqni akiliqtutaulat;
- Nainaqhimayut kitutliqak naunaiyautit atuquyai tapkuat Katimayit turangayut Immap atuqnianut, Iqakut iqaqni uvaluniit Halumaqtiqninut, nainaqhimayuqlu unniqtut kitunutliqak hivunikhami naunaiyaqni parnaktauyut
- Kitutliqak nutanguqni tapkuat Aulatauni Parnautit, tuhaqhitautit makpiraliugatlu;
- Nainaqhimani hulinit atuqtauyut hugiaqninut ihumaalutit uvaluniit iniqhimaittut titiqni qauyihainiqmun tuhaqhitautit tamnalu/uvaluniit malikhaqni tuhaqhitautit tuniya taphuma Qauyihaiyip;
- Nainaqhimayuq inungnut uqaqaqtigiknit/piqataunit, unnirtuqni uqaqatigikni nunalikni timiuyut nunaliuyutlu haniani nunaliuyut, atuqtauhimaniqata;
- Kitutluliqak ahii unniqtuttiaqni Immap atuqni pitquyauyut Katimayinit qangiqtitnagu Nuvipa 1 ukiunganut tuhaqhitautauyumun.

1. Introduction

This report to the Nunavut Water Board (NWB) summarizes activities and monitoring undertaken at the B2Gold Back River Corp.'s (B2Gold Nunavut's) Back River Project (BRP; the Project) Marine Laydown Area (MLA) and Goose Lake project areas in accordance with Part B, Item 2 of 2AM-BRP1831 (the Licence). This License was issued on September 21, 2018 and will expire on December 31, 2031.

The Back River Project is located within the West Kitikmeot region of southwestern Nunavut. It is situated approximately 400 km southwest of Cambridge Bay, 95 km southeast of the southern end of Bathurst Inlet (Kingaok), and 520 km northeast of Yellowknife, Northwest Territories. The Project is located predominantly within the Queen Maud Gulf Watershed.

The Project is comprised of two main areas; the MLA situated along the western shore of southern Bathurst Inlet and the Goose Lake Area south of the MLA where the gold deposits are located. These areas are connected seasonally by an approximately 160 km long winter ice road (WIR). The majority of annual resupply is brought in by water to the MLA and necessary materials are transferred via winter ice road to the Goose Lake property.

In April of 2023, B2Gold Nunavut purchased Sabina Gold and Silver Corp. (Sabina), including the Back River Project. The Back River Project is now wholly owned and operated under B2Gold Nunavut, a subsidiary of B2Gold Corp. The Project is fully financed and B2Gold Nunavut will be continuing activities at the Back River Project.

Project initial development works began in 2018 and have included the development of pads, all-weather access roads and an airstrip at the MLA, as well as the construction of a tent camp, bulk fuel tank, and barge off-loading area for the receipt, storage and transfer of materials necessary to support construction activities via sealift and WIR. Development at the Goose Property through 2022 has included all-weather roads, bulk fuel tank, pad areas, and pre-stripping of Echo Pit. See the 2018 and 2019 Annual Reports for Water Licence 2BC-BRP1819 and the 2020 through 2022 Annual Reports for Water Licence 2AM-BRP1831 for further details.

In 2023, B2Gold Nunavut continued construction activities at the Project, with a focus on advancing and de-risking future development. 2023 activities completed include:

- Ongoing construction of the plant site, mill, and truck shop at the Goose property.
- Phase 1 of the accommodations complex at the Goose property was completed in July 2023, including sleeping quarters and kitchen. This added 310 beds to the existing 160 beds of the exploration camp.
- The Goose mine camp sewage treatment plant was commissioned in Q3 of 2023.
- Initiation of construction of the primary pond at the Goose property.
- The concrete batch plant and a fully automated rebar cutting and bending machines became operational at the Goose property.
- Earthworks necessary to extend the Goose airstrip to 5,000 ft were completed.
- Echo Pit prestripping continued.
- Continuing advancement of the Vault Underground decline.

- The Rascal Stream upgrade crossing at the Goose property was completed to accommodate haul truck traffic.
- Llama and Umwelt lakes and upstream waterbodies were fished out in preparation for future dewatering.
- Over 800 loads were transported on the WIR during the 2022/2023 winter season.
- The fuel tank containment area at the MLA was enlarged to facilitate additional storage.
- The MLA was reorganized to maximize space for the 2023 sealift unload.
- All major equipment and materials required for construction have been either procured, marshalled at our east and west transportation hubs, have been delivered or are in transit to the MLA.
- Environmental monitoring and baseline programs including: atmospheric, archaeology, water quality, fisheries, wildlife, geochemical/ geotechnical, and vegetation programs.

At this time, no mine waste or water management infrastructure have yet been completed at Goose, with the exception of the Goose Mine Sewage Treatment Plant (STP). The STP was activated in August 2023 with trials and testing ongoing through the remainder of the year.

The construction of mine waste or water management infrastructure facilities will be documented as they are completed in construction reports filed with the NWB, as required by Water Licence 2AM-BRP1831. As these facilities are developed and put into use, appropriate additional information will be included in this Annual Report. For 2023, use of exploration waste and water management facilities are reported in the Annual Report for Water Licence 2BE-GOO2028, and use of mine-related water and waste facilities are reported in this report.

2. Annual Report per Part B, Item 2

This section of the report has been constructed to address the requirements of Part B, Item 2 and Schedule B of the Licence. For ease of comparison, each subheading within this section corresponds directly with the identically numbered subheading of Schedule B of Water Licence 2AM-BRP1831.

CONSTRUCTION

2.1 FOR THE DIKES, DAMS AND STRUCTURES CONSTRUCTED TO WITHHOLD WATER OR WASTE

No dikes, dams or structures designed to withhold water or waste have yet been completed under this Licence. B2Gold Nunavut has retained a third party engineer who conducted a site inspection in January of 2024, and who will be generating the design and construction reports required to be submitted in advance of construction of such facilities. These reports will be provided to the NWB for review and approval 60 days in advance of construction of any future facilities. The construction of these facilities will be documented as they are completed in construction reports filed with the NWB, as required by Water Licence 2AM-BRP1831.

WATER

2.2 MONTHLY AND ANNUAL VOLUME OF FRESH WATER OBTAINED FROM ALL SOURCES

Water use allotments under the Licence are 992,450 m^3 annually for the Goose Property, with up to 608,700 m^3 of this to be from Goose Lake and up to 273,750 m^3 from Big Lake. An additional 1,400,000 m^3 annually is allowed for dewatering (which was not undertaken in 2023) and 2,0225 m^3/km per year for WIR development and maintenance.

Details on water use, including annual, monthly, and per kilometer (for the WIR) totals are provided below for the WIR and Goose Mine Site. In 2023, no dewatering was undertaken and no freshwater was used at the MLA in 2023. Water for MLA use was instead supplied by the desalination of seawater from Bathurst Inlet. Please refer to the 2023 Annual Report for 2BE-GOO2028 for more detail on water usage related to the Goose exploration camp and project.

WIR Water Use

Table 2.2-1 presents the monthly and annual volume of fresh water used for the WIR for the 2022/2023 winter season. Appendix A provides monthly and annual water use by water source and a comparison to the available water capacity of each source. During the 2022/2023 WIR season, some water sources not identified in the 2023 Winter Ice Road Technical Memorandum for the Back River Project which was submitted to NWB prior to the 2022/2023 WIR construction. For these water sources, available water capacity has been retroactively calculated to ensure these withdrawals would not have had a negative impact on the water sources. To calculate available water capacities, the surface area of the water source (as determined by available GIS data) was multiplied by 10 cm. This calculation is considered protective of the lake habitat and has been previously used to determine water withdrawal capacity in both Nunavut and the Northwest Territories. No prescribed or calculated available water capacities were exceeded during the 2022/2023 WIR season.

Available Total WIR water use per kilometer during the 2022/2023 winter season was 217 m^3/km of road and did not exceed the cumulative WIR Licence allotment. Water withdrawal protocols including allowable volumes and waterbody locations followed the 2023 Winter Ice Road Technical Memorandum for the Back River Project which was submitted to NWB prior to the 2022/2023 WIR construction.

Table 2.2-1 Monthly and Annual Freshwater Water Use for 2022/2023 Winter Ice Road

Month	**Volume (m^3)**
December 2022	1,884
January 2023	11,458
February 2023	6,910
March 2023	9,444
April 2023	4,952
2022/2023 Total	**34,648 m^3**
2022/2023 Total per km	**217 m^3/km**

Goose Mine Water Use

In 2023, water was used at the Goose Mine site for the following activities:

1. Potable water for the newly constructed Goose Mine Camp (August 1-December 31);
2. Underground activities; and
3. Dust control (July-September).

All water used at the Goose Mine Site was withdrawn from Goose Lake. Water use for 2023 was estimated as being:

1. Five x 10 m^3 truckloads supplied to the Goose Mine Camp per day from August through December
2. Eighteen x 16 m^3 truckloads of water used to support underground activities
3. Ten x 16 m^3 truckloads of water used for dust suppression/day between July through September

Based on these estimates, monthly and annual quantities of water used at the Goose Mine Site have been provided in Table 2.2-2. B2Gold Nunavut is actively sourcing and equipping all Goose Mine water supply facilities and equipment with meters to more accurately track water use going forward.

Table 2.2-2 Monthly and Annual Freshwater Water Use for Goose Mine Site 2023

Month	Freshwater Volume Used (m^3)
January	80
February	144
March	0
April	64

May	0
June	0
July	4,960
August	6,510
September	6,300
October	1,550
November	1,500
December	1,550
Total:	22,658

2.3 SUMMARY OF INTERCONNECTION WINTER ICE ROAD PLANS IMPLEMENTED IN ACCORDANCE WITH PART E, ITEM 13

As per Part E, Item 13 in Water Licence 2AM-BRP1831, B2Gold Nunavut submitted the Winter Ice Road Technical Memorandum to the Board for review prior to the construction of the 2022/2023 WIR. The memorandum outlined planned routing, bathymetry, depth, potential locations of possible water withdrawal, proposed volumes to be extracted (including for the WIR Service/Emergency Camps), and anticipated Water level decreases.

The 2022/2023 WIR was constructed and operated as described in the Technical Memorandum, and no significant deviations/alterations were made.

2.4 SUMMARY OF DEWATERING PLANS IMPLEMENTED IN ACCORDANCE WITH PART E, ITEM 14

No dewatering activities have occurred to date. Dewatering is however planned for 2024, and a Dewatering Plan was provided to the NWB on February 23, 2024 in accordance with Part E Item 14 of the Licence, which requires a dewatering plan be provided at least 60 days prior to initiation of dewatering.

2.5 SUMMARY UPDATE TO THE WATER AND LOAD BALANCE RESULTS, IF ANY INCLUDING AN ANNUAL COMPARISON OF MEASURED GROUNDWATER INFLOW RATES TO MODEL PREDICTIONS.

B2Gold Nunavut provided an updated Water and Load Balance Model Report and Hydrodynamic Model to the NWB on August 31, 2022. No further updates were made to these models in 2023, and no groundwater inflows have been encountered.

WASTE

2.6 GEOCHEMICAL MONITORING RESULTS

a. Operational acid/base accounting and associated test work used for Waste Rock designation (PAG and NPAG rock);

Section 2.6 c for acid/base accounting sample results. A small amount of waste rock identified as PAG (5400 m3) was excavated and placed on the Ore Stockpile Pad.

b. As-built volumes of Waste Rock used in construction and placed in the Waste Rock Storage Areas with estimated balance of acid generation to acid neutralization capacity in a given sample as well as metal toxicity;

A total of 284,173 Bank Cubic Meters of waste rock was generated and used for construction in 2023.

c. All monitoring data with respect to geochemical analyses on site and related to roads and quarries;

Fifty-seven samples of potential construction material were collected during at the Back River project site in 2023. The ML/ARD potential of the samples were assessed using total sulphur and total carbon content. The analyses were performed at Global ARD in Burnaby, BC.

The acid potential (AP) for each sample was calculated using total sulphur concentration according to the following equation:

Total Sulphur (wt. %) * 31.25 = Acid Potential (kg $CaCO_3$/t)

The use of total sulphur to determine the AP assumes that all the sulphur is present as pyrite and can generate acid. The neutralization potential was calculated using the total carbon concentration according to the following equation:

Total Carbon (wt. %) * 83.34 = Neutralization Potential (kg $CaCO_3$/t)

The use of total carbon to determine the NP assumes that all carbon is present as calcite and can neutralize acid. This determination of NP can be considered conservative as it discounts the contribution from silicate minerals. Table 2.6-1 presents the AP, NP and neutralization potential ratio (NPR) results for the 57 samples. Neutralization potential ratio is calculated as the ratio of NP to AP. The ARD classification of samples results uses the following criteria:

NPAG = NP/AP > 3

NPAG – Low Sulphur = NP/AP < 3 and Total Sulphur < 0.16 wt. %

PAG – Uncertain = 1 < NP/AP < 3

PAG = NP/AP < 1

Using the NPR, 9 samples were classified as potentially acid generating (PAG) and 8 as PAG – Uncertain. Eight samples were classified as non-potentially acid generating (NPAG), and 32 samples were classified as NPAG – Low Sulphur based on having and NPR less than 3 and a total sulfur content less than 0.15 wt. %.

These data indicated that the materials with low ARD potential (NPAG and NPAG – Low Sulphur) are suitable for use in construction based on the material classification criteria outlined in the Quarry Management Plan. The PAG and PAG – Uncertain material are not suitable for use in construction.

The Quarry Management Plan requires only a subset of samples be assessed for metal leaching potential using the shake flask extraction (SFE) methodology, however all samples were tested and screened against ten times the Canadian Council of Ministers of the Environment (CCME) guidelines for the protection of freshwater aquatic life. Total aluminum concentrations were found to exceed ten times the CCME guideline in 26 of the samples. No other exceedances were noted in the 57 samples assessed. SFE is not a direct measure of construction rock water quality and the comparison against CCME guidelines was used only as an indication of potentially leachable metals. These results are not suggestive of a high metal leaching potential.

Table 2.6-1. Geochemical Characterization Results

Sample ID	Total Carbon	Total Sulphur	AP	NP	NPR	ARD Classification

	(wt. %)	(wt. %)	(kg $CaCO_3$/tonne)	(kg $CaCO_3$/tonne)		
793551	0.13	0.08	2.5	7.5	3	NPAG
793552	0.06	0.06	1.88	5	2.67	NPAG - Low Sulphur
793553	0.17	0.07	2.19	7.9	3.61	NPAG
793554	0.07	0.1	3.13	10.4	3.33	NPAG
793555	0.07	0.13	4.06	6	1.48	NPAG - Low Sulphur
793556	0.18	0.09	2.81	10.9	3.88	NPAG
793557	0.11	0.06	1.88	7	3.73	NPAG
793558	0.07	0.09	2.81	5.5	1.96	NPAG - Low Sulphur
793559	0.17	0.09	2.81	4.7	1.67	NPAG - Low Sulphur
793562	0.28	0.22	6.88	6.1	0.89	PAG
793563	0.5	0.12	3.75	6.1	1.63	NPAG - Low Sulphur
793564	0.37	0.13	4.06	11.9	2.93	NPAG - Low Sulphur
793565	0.23	0.11	3.44	5.4	1.57	NPAG - Low Sulphur
793566	0.15	0.15	4.69	5.9	1.26	PAG - Uncertain
793568	0.16	0.13	4.06	5.3	1.3	NPAG - Low Sulphur
793569	0.18	0.23	7.19	6	0.83	PAG
793570	0.13	0.15	4.69	6.3	1.34	PAG - Uncertain
793571	0.12	0.08	2.5	4.9	1.96	NPAG - Low Sulphur
793572	0.09	0.19	5.94	7.2	1.21	PAG - Uncertain
793573	0.12	0.19	5.94	6.7	1.13	PAG - Uncertain
793574	0.11	0.1	3.13	5.1	1.63	NPAG - Low Sulphur
793575	0.4	0.43	13.44	9.9	0.74	PAG
793576	0.41	0.35	10.94	6.8	0.62	PAG
793578	0.16	0.09	2.81	4.4	1.56	NPAG - Low Sulphur
793579	0.28	0.31	9.69	6	0.62	PAG
793580	0.1	0.16	5	5.5	1.1	PAG - Uncertain
793581	0.33	0.23	7.19	5.6	0.78	PAG
793582	0.19	0.16	5	4.4	0.88	PAG
793583	0.14	0.15	4.69	5.6	1.19	PAG - Uncertain
793584	0.17	0.19	5.94	6.6	1.11	PAG - Uncertain
793585	0.18	0.1	3.13	6	1.92	NPAG - Low Sulphur
793586	0.12	0.1	3.13	5.9	1.89	NPAG - Low Sulphur
793587	0.07	0.11	3.44	5.9	1.72	NPAG - Low Sulphur
793588	0.7	0.39	12.19	7.7	0.63	PAG
793589	0.22	0.08	2.5	7.7	3.08	NPAG
793590	0.21	0.14	4.38	6.7	1.53	NPAG - Low Sulphur

793591	0.29	0.33	10.31	7.9	0.77	PAG
793592	0.45	0.09	2.81	6.6	2.35	NPAG - Low Sulphur
793593	0.84	0.06	1.88	6.9	3.68	NPAG
793595	0.08	0.12	3.75	5	1.33	NPAG - Low Sulphur
793901	0.09	0.09	2.81	4.3	1.53	NPAG - Low Sulphur
793902	0.14	0.08	2.5	4.8	1.92	NPAG - Low Sulphur
793903	0.11	0.07	2.19	4.5	2.06	NPAG - Low Sulphur
793904	0.07	0.09	2.81	4.3	1.53	NPAG - Low Sulphur
793905	0.25	0.11	3.44	5.3	1.54	NPAG - Low Sulphur
793906	0.13	0.09	2.81	5.4	1.92	NPAG - Low Sulphur
793907	0.12	0.09	2.81	4.7	1.67	NPAG - Low Sulphur
793908	0.11	0.07	2.19	5.3	2.42	NPAG - Low Sulphur
793909	0.12	0.11	3.44	6.1	1.77	NPAG - Low Sulphur
793910	0.18	0.08	2.5	5.7	2.28	NPAG - Low Sulphur
793911	0.14	0.04	1.25	5.7	4.56	NPAG
793912	0.23	0.14	4.38	7	1.6	NPAG - Low Sulphur
793913	0.41	0.12	3.75	5.4	1.44	NPAG - Low Sulphur
793914	0.07	0.17	5.31	7.4	1.39	PAG - Uncertain
793915	0.08	0.11	3.44	5	1.45	NPAG - Low Sulphur
793561	0.2	0.11	3.44	2	0.58	NPAG - Low Sulphur
793577	0.14	0.11	3.44	6.3	1.83	NPAG - Low Sulphur

d. Any Leaching observations and tests collected on pit slope and dike exposure;

This infrastructure has not yet been constructed.

e. Any geochemical outcomes or observations that could imply or lead to environmental impact.

Geochemical outcomes and observations were within those outlined during Project assessment and permitting as being anticipated.

2.7 VOLUMES OF ORE STOCKPILED

A small vein of ore was encountered in 2022, and this ore has been kept within Echo Pit. The volume of this ore is 5,313 m^3. No further ore was encountered in 2023.

2.8 SUMMARY OF QUANTITIES AND ANALYSIS OF SEEPAGE AND RUNOFF MONITORING FROM THE TAILINGS STORAGE FACILITY, WASTE ROCK STORAGE AREAS, LANDFILL(S) AND ASSOCIATED DIKES/BERMS.

Not applicable at this time. The Tailings Storage Facility, Waste Rock Storage Areas, Landfill, and associated dikes and berms have not yet been constructed.

2.9 A SUMMARY REPORT OF ALL GENERAL WASTE DISPOSAL ACTIVITIES INCLUDING MONTHLY AND ANNUAL QUANTITIES IN CUBIC METRES OF WASTE GENERATED AND LOCATION OF DISPOSAL.

Information on waste disposal is provided in Appendix B and includes quantities and types of wastes backhauled to KBL Environmental in Yellowknife (Appendix B Table B-1) as well as wastes incinerated and open burned at the Goose Property (Appendix B Table B-2) and MLA (Table B-3). Wastes backhauled included incinerator ash as well as wastes from the Goose, MLA and George Properties. KBL Environmental provides waste management services and transfer of Project wastes to approved disposal facilities outside of Nunavut. Non-Hazardous wastes aligned with wastes identified as being suitable for landfilling on site per the Back River Project's Landfill and Waste Management Plan as being temporarily stored in the Goose quarry until the Goose Mine Site WRSA Landfill is developed. The quantity of waste placed in the temporary Quarry Landfill is provided in Appendix B, Table B-4.

In the review of the 2022 annual report, ECCC requested that items subjected to open burning be specified, and recommends that these items be considered for incineration, contingent on incinerator availability, as a preferred alternative to open burning (comment EC-4). B2Gold Nunavut confirms that only paper products, paperboard packing including boxboard and cardboard, and untreated wood including lumber and plywood, and natural fiber textiles are open burned at the Back River Project.

2.10 REPORTING OF INCINERATOR TEST RESULTS INCLUDING THE MATERIALS BURNED AND THE EFFICIENCY OF THE INCINERATOR IN RELATION TO EFFECTS ON WATER AND THE POTENTIAL DEPOSIT OF WASTE INTO WATER.

No incinerator testing was conducted in 2023 but has been scheduled for in 2024.

SPILLS

2.11 A LIST AND DESCRIPTION OF ALL UNAUTHORIZED DISCHARGES INCLUDING VOLUMES, SPILL REPORT LINE IDENTIFICATION NUMBER AND SUMMARIES OF FOLLOW-UP ACTION TAKEN

All spills are recorded for adaptive management purposes at the Back River Project. Appendix G presents the reportable spills that occurred in 2023 and associated water quality information.

MODIFICATIONS

2.12 A SUMMARY OF MODIFICATIONS AND/OR MAJOR MAINTENANCE WORK CARRIED OUT ON ALL WATER AND WASTE-RELATED STRUCTURES AND FACILITIES

No modifications or major maintenance work was carried out on any water or waste-related structures in 2023.

MONITORING

2.13 THE RESULTS AND INTERPRETATION OF THE MONITORING PROGRAM IN ACCORDANCE WITH PART I AND SCHEDULE I

A high level monitoring summary outlining activity related to each monitoring station indicated in Part I and Schedule I of the Licence is provided in Appendix C. Monitoring details are provided below for monitoring stations that were active in 2023.

Water use and waste deposition related to operation of the Goose exploration Camp is reported in the 2BE-GOO2028 annual report.

BRP-G General Site Runoff

No site runoff with the potential to enter a freshwater waterbody was observed at the Project, with the exception of during culvert construction at Rascal Stream as described in Section 2.11 above as spill.

BRP-17 Goose Property Sewage Treatment

For 2023, the new mine site accommodations complex and associated Sewage Treatment Plant was put into use in August of 2023. Approximately 7,650 m^3 of treated sewage effluent was discharged to the tundra during this period at a monthly rate equal to the monthly volume of water provided to the Goose Mine Camp (See Section 2.2 of this report above). No flow or water was available for sampling at sampling location BRP-17 during the period of operation due to the relatively small daily volumes discharged, the over-land uptake of this water and, during winter months, the frozen site conditions. B2Gold is prepared to sample flows once freshet and warmer conditions facilitate further downstream flows.

BRP-40 and 41 MLA Bathurst Inlet Desalination

Information on desalination water sampling results are provided in the Marine Monitoring Report included in B2Gold Nunavut's 2023 Annual Report to the Nunavut Impact Review Board which will be filed on the NIRB public registry. This report has not additionally been submitted here given that this water is seawater.

BRP-42 MLA Greywater

Approximately 3,896 m^3 of greywater was discharged to the tundra from the MLA camp at a monthly rate approximately equivalent to the quantity of desalinated water produced at the MLA (Table 2.13-1). No flow or water was available for sampling downstream of the discharge point (i.e. at BRP-42). No site seepage or runoff with the potential to enter a freshwater waterbody was observed at the MLA site.

Table 2.13-1 Estimated Monthly Greywater Discharge at the MLA in 2023

Month	Volume (m^3)
January	279
February	252
March	295
April	295
May	304
June	367

July	382
August	423
September	316
October	372
November	295
December	317
Total (m^3):	**3,896**

2.14 THE RESULTS OF MONITORING RELATED TO THE GENERAL AND AQUATIC EFFECTS MONITORING PROGRAM IN ACCORDANCE WITH PART I ITEM 1

Aquatic Effects Monitoring has not yet commenced for the Project. This monitoring is scheduled to start in 2024, in parallel with dewatering activities.

CLOSURE

2.15 A SUMMARY OF ANY PROGRESSIVE CLOSURE AND RECLAMATION WORK UNDERTAKEN, INCLUDING PHOTOGRAPHIC RECORDS OF SITE CONDITIONS BEFORE AND AFTER COMPLETION OF OPERATIONS, AND AN OUTLINE OF ANY WORK ANTICIPATED FOR THE NEXT YEAR, INCLUDING ANY CHANGES TO IMPLEMENTATION AND SCHEDULING

Photographic records of pre-construction site conditions have been taken and are maintained by B2Gold Nunavut for comparison with photos to be taken after completion of Operations. No progressive reclamation activities have been undertaken to date. B2Gold Nunavut anticipates that these activities will commence once areas are determined to be no longer in use and subject to further impact.

2.16 PROVISION OF A STATUS REPORT WITHIN 30 DAYS OF NOTIFYING THE BOARD OF A SHORT-TERM CLOSURE OR PERIOD OF CARE AND MAINTENANCE REFERRED TO IN PART J, ITEM 3

Per Schedule B, Item 16, should B2Gold Nunavut provide a notice of a short term closure or period of care and maintenance, a Status Report on “all planned Progressive Reclamation activities undertaken to date” will be submitted within 30 days. “The Report will identify those activities that remain incomplete due to the closure. The Status Report is to be filed in addition to the Care and Maintenance Plan referred to in Part J, Item 4 and will include details on site conditions at the cessation of operations as outlined in Schedule J.”

No short-term closure or period of care and maintenance is currently planned.

2.17 AN UPDATED ESTIMATE OF THE CURRENT RECLAMATION LIABILITY BASED ON PROJECT DEVELOPMENT MONITORING, RESULTS OF RESTORATION RESEARCH AND ANY CHANGES OR MODIFICATIONS TO THE APPURTENANT UNDERTAKING

No updates were made to the reclamation liability estimates for the approved Project in 2023.

2.18 PROGRESSIVE RECLAMATION WORK PLAN (PRWP), ONE (1) YEAR FOLLOWING THE COMMENCEMENT OF OPERATIONS. THE PRWP WILL PROVIDE A BREAKDOWN OF THE PROGRESSIVE RECLAMATION ACTIVITIES PLANNED TO BE COMPLETED THAT YEAR IN ACCORDANCE WITH THE CRITERIA SET IN SCHEDULE J.

Not yet applicable Project phase.

PLANS/REPORTS/STUDIES

2.19 A SUMMARY OF ANY STUDIES REQUESTED BY THE BOARD THAT RELATE TO WATER USE, WASTE DISPOSAL OR RECLAMATION, AND A BRIEF DESCRIPTION OF ANY FUTURE STUDIES PLANNED

No studies were requested by the Board in 2023.

2.20 WHERE APPLICABLE, REVISIONS AS ADDENDA, WITH AN INDICATION OF WHERE CHANGES HAVE BEEN MADE, FOR PLANS, REPORTS, AND MANUALS

B2Gold Nunavut did not submit any plans directly applicable to this Licence in 2023.

However, B2Gold Nunavut submitted a Dewatering Plan as well as an updated Spill Contingency Plan (in alignment with the requirements of the Environmental Emergency Regulations) to the NWB in early 2024; these two plans are on the NWB public registry.

Further, a Thermal Monitoring Plan and a Geotechnical Inspection Report are being provided to the NWB with this report.

It is noted that the following Plans were submitted in 2022 and are still in the NWB approval process and can be found on the NWB public registry.

Plan	Current Update Date	NWB Approval	Updates
Landfill and Waste Management	August 2022	Pending	All sections of this plan were updated to reflect Construction Phase waste management activities, to align with overall Project waste management approach, and to compliment and remove overlap with related waste management plans.
Water Management Plan	April 2022	Pending	All sections of this plan were updated for submission to the NWB as a Supporting Document for Type A Water Licence Amendment Application.

Tailings Management Plan	April 2022	Pending	Revisions to Sections 1 and 2.1 of the plan to addresses commitment made during the technical review of the amendment application for Water Licence 2AM-BRP1831 to include a section on additional approved development analogous to other Back River management plans.
Mine Waste Rock Management Plan	April 2022	Pending	Revisions to Sections 1 and 5.1.3 of the plan to addresses commitment made during the technical review of the amendment application for Water Licence 2AM-BRP1831 to include Sulphur as criteria for defining potentially acid generating rock

B2Gold Nunavut notes that comments have been submitted on these plans, and B2Gold Nunavut will be reaching out to the NWB to discuss the best path forward at this time, given that further revisions to some of these plans (e.g. the Landfill and Waste Management Plan), as well as other Project plans, are also currently separately under review by the NIRB in relation to the Back River Project Energy Center Proposal.

As noted in the 2022 Annual Report to the NWB, B2Gold Nunavut also notes that the Licence approved the incorrect version of B2Gold Nunavut's Incineration Management Plan; the current version of the Incineration Management Plan is dated June 2020.

2.21 AN EXECUTIVE SUMMARY IN ENGLISH, INUKTITUT, AND INUINNAQTUN OF ALL PLANS, REPORTS, OR STUDIES CONDUCTED UNDER THIS LICENCE.

Executive summaries of this report are provided in Inuktitut, Inuinnaqtun, and English at the start of this report.

GENERAL

2.22 A SUMMARY OF ACTIONS TAKEN TO ADDRESS CONCERNS OR DEFICIENCIES LISTED IN THE INSPECTION REPORTS AND/OR COMPLIANCE REPORTS FILED BY AN INSPECTOR

CIRNAC conducted inspections of the Back River Project in both March and September of 2023. Inspection reports as well as B2Gold Nunavut's responses summarizing actions taken to address identified deficiencies can be found on the NWB public registry.

In response to the 2023 inspections, B2Gold Nunavut has hired a 3rd party engineer to address the concerns outlined in the inspection reports. A summary of the concerns and the actions taken are provided below.

- Remove the barrels of historical waste from the snow pile near the runway
  B2Gold Nunavut removed the barrels shortly after the March 2023 CIRNAC inspection.

- Hazardous Waste Containment
  B2Gold Nunavut retained a third-party engineering firm (SRK) who was mobilized to site in January 2024 to review options for a new hazardous waste storage facilities for Goose

and the MLA aligned with the permit requirements of License *2AM-BRP1831*. SRK will create the required construction submissions and drawings for the new facilities prior to their build. B2Gold Nunavut will ensure the construction drawings and detailed report concerning the construction of a permanent hazardous waste storage facility are submitted to the Board at least 60 days before construction commences.

OTHER

2.23 A SUMMARY OF PUBLIC CONSULTATION AND PARTICIPATION WITH LOCAL ORGANIZATIONS AND THE RESIDENTS OF THE NEARBY COMMUNITIES, INCLUDING A SCHEDULE OF UPCOMING COMMUNITY EVENTS AND INFORMATION SESSIONS

B2Gold Nunavut's Back River Project engagement record is provided in Appendix F.

2.24 ANY OTHER DETAILS ON WATER USE OR WASTE DISPOSAL REQUESTED BY THE BOARD BY NOVEMBER 1ST OF THE YEAR BEING REPORTED

No additional sampling or details on water use or waste disposal activities related to this Licence was requested by the Board in by November 1 of 2023.

However, on February 19, 2023, the NWB issued a technical review of the 2022 annual report. Within the technical review, the NWB required B2Gold Nunavut to provide responses to the KIA's outstanding information queries which were summarized by the NWB. B2Gold Nunavut has discussed these queries with the KIA and provided a status update on the various review phases and have committed to ongoing discussion.

Appendix A WIR Water Use

Table A-1 Winter Ice Road Water Use (n m3) by Lake and Month for 2022/2023 WIR Season

Water Source Lake ID	December	January	February	March	April	Total Water Use (m3)	Available Capacity (m3)
1	408					408	39,603
2	96				36	132	53,507
3	1,200	1,440	60	70	298	3,068	79,375
4		444	84	84	294	906	19,379
5		1,332			60	1,392	22,275*
6		1,728		72	400	2,200	25,362
8		2,012	180	288	542	3,022	113,798
9		1,072	144	148	512	1,876	53,703
10			1,252	136	480	1,868	29503*
11			528		28	556	98,188
12			480	226	360	1,066	213,902*
13			1,428	128	502	2,058	15,112
14			2,418	992	934	4,344	359,780
16				994	326	1,320	447,685
17				360	74	434	1,239,167
18				472	166	638	128,478
19				2,112	472	2,584	9,827
20				572	940	1,512	38,943
21				526	350	876	12,931
22				1,544	28	1,572	169,711
23				2,388	434	2,822	39,637
24				938	378	1,316	59,995
25				2,156	462	2,618	80,746
26				182	56	238	6,992
27		168		2,156	1,484	3,808	7,438*
28				2,702	1,638	4,340	23,951
29				3,850	546	4,396	211,044
30			56	2,912	924	3,892	56,674
31			238			238	17,010,361
32		98	8,477	2,338	1,372	12,285	868,067
33			931			931	8,643
34			4,960	1,456	1,652	8,068	32,516,148
35		952	784			1,736	363,392*
101			180	108	24	312	5,100*
202	180			294	254	728	8,244*
204				374	18	392	11,441*
281					280	280	3,656*
401		1,368		116	42	1,526	62,487*
8A		672		150	172	994	5,502*
8B		516		64	360	940	5,651*
9B		874	156	236	472	1,738	6,928*
Total	**1,884**	**12,676**	**22,356**	**31,144**	**17,370**	**85,430**	

**Available capacities of these lakes were calculated based on lake surface area multiplied by 10 cm. For all other lakes, Available Capacity was that outlined in the WIR Technical Memorandum.*

WIR water withdrawals did not exceed Available Capacity for any Water Source.

Appendix B Waste Disposal

Table F-1 Back River Project Waste Backhaul for 2023

Date		Description	Quantity	Weight/Volume	Units
Jan 9th 2023	Tote	Non Reg - Hydrulic Hoses	1	222	KG
	Drum	Non Reg - Incincerator Ash	4	121	KG
Jan 17th 2023					
	Drum	Non Reg - Incincerator Ash	18	97	KG
	Drum	Non Reg - Scrap Metal	3	58	KG
	Drum	Non Reg - Empty Drum	24	456	KG
	Drum	Non Reg - Contaminated Snow	16	103	KG
	Drum	Non Reg - Hydrulic Hoses	1	165	KG
Jan 26th 2023					
	Pail	Waste Leachate - Mix (glycol/Water/Oil)	33	660	L
	Pail	Flammable Liquids	4	80	L
Jan 31st 2023					
	Drum	Non Reg - Incinerator Ash	4	98	KG
	Drum	Non Reg - Scrap Metal	23	59	KG
	Pail	Contaminated Water	58	1160	L
Feb 2nd 2023					
	Drum	Non Reg - Empty Drum	4	76	KG
	Drum	Non Reg - General Debris	4	67	KG
	Pail	Contaminated Water	1	20	L
	Pail	Waste Leachate - Mix (Glycol/Water/Oil)	3	60	L
	Drum	Flammable Liquid	2	410	L
	Drum	Oil/Fuel Filters	1	83	KG
	Drum	Contamianted Soil	2	121	KG
	Drum	Non Reg - Scrap Metal	12	99	KG
	Drum	Contaminated Snow	1	81	KG
	Tote	Contamianted Water	2	2000	L
	Drum	Contaminated Water	4	820	L
Feb 7th 2023					
	Drum	Non Reg - Empty Drum	20	380	KG
	Pail	Contaminated Water	7	240	L
	Pail	Waste Leachate - Mix (Glycol/Water/Oil)	3	60	L
	Pail	Flammable Liquids	2	40	L
	Drum	Non Reg - Incinerator Ash	12	155	KG
	Drum	Non Reg - General Debris	11	78	KG
	Drum	Contaminated Water	4	820	L
Feb 28th 2023					
	Drum	Non Reg - Incinerator Ash	32	2464	KG
	Drum	Waste Leachate - Oil	7	1430	L
	Drum	Waste Leachate - Mix (Glycol/Water/Oil)	16	3280	L
	Megabag	Contaminated Snow	5	1015	KG
	Drum	Non Reg - Scrap Metal	4	220	KG
	Each	Appliances with Freon	2	150	KG
	Drum	Non Reg - General Debris	1	69	KG
	Drum	Flammable Liquids	7	1435	L
	Drum	Waste Leachate - Glycol	4	820	L

March 7th 2023					
	Drum	Non Reg - Incinerator Ash	8	776	KG
March 21st 2023					
	Megabag	Contaminated Snow	2	604	KG
	Tote	Oil/Fuel Filters	1	421	KG
	Drum	Waste Leachate - Mix (Glycol/Water/Oil)	4	820	L
March 28th 2023					
	Megabag	Non Reg- General Debris	1	77	KG
	Drum	Non Reg- Crushed Oil Filters	2	332	KG
	Megabag	Non Reg- Scrap Metal	1	152	KG
	Skid	Non Reg-E Waste	1	97	KG
	Megabag	Non Reg-Scrap Metal	1	333	KG
	Each	Batteries- Lead Acid	52	510	KG
	Each	Batteries- Non Spillable	3	30	KG
		Non Reg- Incinerator Ash	18	5418	KG
April 5th 2023					
	Megabag	Contaminated Snow	3	795	KG
	Each	Non Reg White Goods(washer/dryer)	2	150	KG
	Tote	Waste Leachate -Glycol	1	1000	L
April 14 2023					
	Megabag	Scrap Metal	1	355	KG
	Megabag	Aerosols	1	365	KG
	Drum	Ash	18	1432	KG
	Drum	Oil	21	4305	L
	Drum	Glycol	1	205	L
	Drum	Fuel	1	205	L
	Megabag	General Debris	1	177	KG
	Megabag	Ewaste	1	265	KG
	Tote	Hydraulic Hoses	2	367	KG
	Drum	Mix	11	2255	L
	Drum	Scrap Metal	1	69	KG
	Megabag	General Debris	3	291	KG
	Drum	Fuel	1	205	L
April 16 2023					
	Drum	Non Reg Incinerator Ash	9	981	KG
	Megabag	Soil Contaminated with Hydrocarbons	1	462	KG
	Tote	Waste Leachate Mix	1	1000	L
	Drum	Flammable Liquids Fuel	20	4100	L
	Drum	Waste Leachate Oil	12	2460	L
	Drum	Waste Leachate Mix	11	2255	L
	Drum	Waste Leachate Glycol	1	205	L
	Drum	Non Reg Scrap Metal	3	231	KG
April 17 2023					
	Drum	Waste Leachate Mix	8	1640	L
	Drum	Flammable Liquids Fuel	12	2460	L
	Drum	Waste Leachate Oil	4	820	L
April 30 2023					
	Megabag	Contaminated Snow	4	952	KG
May 18 2023					
	Megabag	Non Reg General Debris	8	984	KG

May 18 2023					
	Megabag	Non Reg General Debris	2	246	KG
	Drum	Non Reg Incinerator Ash	12	1860	KG
May 31 2023					
	Drum	Water Contaminated with Hydrocarbons	2	410	L
	Tote	Aerosols Processible	2	444	KG
	Megabag	Soil Contaminated with Hydrocarbons	2	770	KG
	Drum	Non Reg Incinerator Ash	5	675	KG
	Drum	Soil Contaminated with Hydrocarbons	2	358	KG
	Megabag	Non Reg Hydraulic Hoses	1	333	KG
	Megabag	Non Reg Scrap Metal	1	356	KG
June 20 2023					
	Each	Batteries Lead Acid	54	540	KG
	Megabag	Non Reg General Debris	4	404	KG
	Drum	Non Reg Scrap Metal	2	330	KG
	Drum	Non Reg Incinerator Ash	16	2736	KG
	Drum	Flammable Liquids Fuel	3	205	L
	Drum	Non Reg Oil/Fuel Filters	2	208	KG
	Drum	Soil Contaminated with Hyrdrocarbons	1	197	KG
	Drum	Non Reg Empty Drums	38	722	KG
	Drum	Flammable Liquids Fuel	3	615	
June 28 2023					
	Each	Non Reg Vehicle Rims	9	135	KG
	Tote	Non Reg Scrap Metal	4	1684	KG
	Tote	Non Reg Hydraulic Hoses	3	999	KG
	Each	Non Reg General Debris Toilets	2	34	KG
July 25 2023					
	Drum	Non Reg Incinerator Ash	10	1520	KG
	Drum	Non Reg Empty Drums	4	76	KG
July 25 2023					
	Drum	Non Reg Incinerator Ash	4	780	KG
	Drum	Soil Contaminated with Hydrocarbons	2	246	KG
	Drum	Non Reg Empty Drums	4	76	KG
July 25 2023					
	Tote	Non Reg Scrap Metal	1	385	KG
	Drum	Non Reg Scrap Metal	1	142	KG
	Drum	Non Reg Incinerator Ash	8	1128	KG
	Drum	Water Contaminated with Hydrocarbons	4	820	L
	Drum	Non Reg Crushed Oil/Fuel Filters	4	388	KG
	Drum	Non Reg Empty Drums	16	304	KG
	Tote	Aerosols Prosessable	1	285	KG
	Drum	Non Reg Oily Debris	4	264	KG
July 25 2023					
	Drum	Non Reg Scrap Metal	2	194	KG
	Drum	Non Reg Incinerator Ash	43	6622	KG
	Each	Non Reg White Goods	5	325	KG
	Megabag	Non Reg General Debris	6	606	KG
	Drum	Non Reg Scrap Metal Recycleables	2	132	KG
	Drum	Non Reg Glass	1	222	KG
	Drum	Non Reg Rags and Absorbants	4	576	KG
	Drum	Non Reg Oily Debris	2	184	KG

	Drum	Non Reg Scrap Metal	9	828	KG
	Drum	Non Reg Petro Grease	1	155	KG
	Drum	Soil Contaminated with Hydrocarbons	1	179	KG
	Drum	Aerosols Processable	1	79	KG
	Drum	Hydraulic Hoses	1	126	KG
	Drum	Sodium Bisulphate	4	620	KG
	Pail	Polymer	219	8103	KG
July 28 2023					
	Each	Tires Less than 24"	20	260	KG
	Each	Tires Greater than 24"	7	154	KG
	Each	Tires OTR	2	268	KG
Aug 3 2023					
	Drum	Non Reg Incinerator Ash	4	752	KG
	Drum	Non Reg Ewaste	1	72	KG
	Each	Batteries Lead Acid	27	351	KG
August 10 2023					
	Tote	Waste Leachate Oil	3	3000	L
August 10 2023					
	Drum	Non Reg Oil Fuel Filters	1	127	KG
August 24 2023					
	Tote	Waste Leachate Glycol	1	1000	L
	Tote	Waste Leachate Mix	1	1000	L
	Tote	Waste Leachate Oil	9	9000	L
	Drum	Non Reg Insinerator Ash	5	880	KG
	Drum	Non Reg Hydraulic Hoses	2	222	KG
	Drum	Non Reg Scrap Metal Recycleables	1	42	KG
Sept 25 2023					
	Megabag	Non Reg Oil Hoses	1	280	KG
	Drum	Non Reg Incinerator Ash	31	4464	KG
	Drum	Soil Contaminated with Hyrdrocarbons	1	152	KG
	Drum	Non Reg Scrap Metal	13	1378	KG
	Drum	Non Reg Hydraulic Hoses	1	122	KG
	Drum	Non Reg Electric Wiring	2	126	KG
	Megabag	Non Reg Scrap Metal	1	384	KG
	Tote	Waste Leachate Coolant	1	1000	L
	Tote	Waste Leachate Mix	1	1000	L
	Drum	Aerosols Prosessable	2	252	KG
	Drum	Flammable Liquids Fuel	4	820	L
	Drum	Waste Leachate Oil	1	205	L
	Drum	Water Contmainted with Hydrocarbons	1	205	L
Sept 29 2023					
	Drum	Non Reg Incinerator Ash	8	1144	KG
	Drum	Waste Leachate mix	4	820	L
	Tote	Waste Leachate mix	2	2000	L
Oct 13 2023					
	Pail	Non Reg Kitchen Grease	42	1848	KG
	Drum	Non Reg Emoty Drums	8	152	KG
	Drum	Non Reg Hydraulic Hoses	3	402	KG
	Drum	Non Reg Incinerator Ash	7	931	KG
	Drum	Water Contaminated with Hydrocarbons	1	205	L
	Drum	Waste Leachet Oil	2	410	L

	Drum	Non Reg Scrao Metal	4	368	KG
	Drum	Non Reg Rags and Absorbants	6	864	KG
Nov 22 2023					
	Drum	Non Reg Incinerator Ash	25	3600	KG
	Drum	Non Reg Hydraulic Hoses	4	544	KG
	Drum	Water Contaminated with Hydrocarbons	1	205	L
	Drum	Waste Leachate Mix	1	205	L
	Drum	Soil Contaminated with Hydrocarbons	3	225	L
	Drum	Polyurethane part B	1	205	L
	Megabag	Non Reg General Debris	4	296	KG
	Drum	STP	1	166	KG
Dec 29 2023					
	Megabag	Non Reg EWaste	2	260	KG
Dec 29 2023					
	Each	Tires	4	248	KG
	Tote	Waste Leachate Oil	4	4000	L
	Megabag	Non Reg Rags and Absorbants	1	362	KG
	Megabag	Contaminated Snow	1	222	KG
	Tote	Non Reg Oil Fuel Filters	1	208	KG
	Tote	Waste Leachate Glycol	1	1000	L
	Megabag	Non Reg Oil Debris	3	225	KG
	Drum	Non Reg Incinerator Ash	4	572	KG
	Megabag	Non Reg Hydraulic Hoses	1	322	KG
	Drum	Water Contaminated with Hydrocarbons	4	820	L
	Drum	Flammable Liquids Fuel	4	820	L

Table F-2 Goose Incinerator and Open Burn Log for 2023

Incinerator					LBS	Open Burn (m^3)	Waste Oil to Furnace (Litres)
Month	Food (lbs)	Human Waste (lbs)	Misc. (lbs)	Waste Water (Lit)	Ash (lbs)		
January	15,964	11,500	16,164	0	4,577	28	0
February	29,428	19,302	9,939	0	3,334	42	0
March	17,466	10,325	8,806	0	3,630	63	1,390
April	21,120	15,860	4,679	0	0	46	0
May	11,208	12,511	11,480	0	3,573	109	100
June	13,249	8,793	12,053	0	3,179	85	220
July	22,994	15,958	14,516	0	2,662	89	1,485
August	26,167	9,923	12,875	0	3,801	181	40
September	21,139	9,361	14,868	0	3,928	125	640
October	28,945	18,378	15,571	0	4,160	205	250
November	25,482	14,609	12,989	0	3,850	206	0
December	25,955	23,723	20,716	0	5,312	470	0
Total 2023:	259,117	170,243	154,656	0	42,006	1,648	4,125

Table B-3 MLA Incinerator and Open Burn Log for 2023

Incinerator					LBS	Open Burn (m^3)	Waste Oil to Furnace (Litres)
Month	Food (lbs)	Human Waste (lbs)	Misc. (lbs)	Waste Water (Lit)	Ash (lbs)		
January	3,374	1,621	2,760	0	955	0	0
February	4,453	3,206	4,031	0	2,153	1	0
March	8,395	4,410	9,570	0	2,440	0	0
April	8,765	8,003	10,737	0	2,710	0	0
May	7,327	3,926	7,359	0	1,890	0	0
June	4,956	3,520	6,619	0	2,347	0	0
July	4,956	3,520	6,619	0	2,347	0	0
August	4,956	3,520	6,619	0	2,347	0	0
September	13,845	9,553	8,074	0	3,357	0	0
October	8,722	3,780	3,870	0	1,740	0	0
November	8,722	3,780	3,870	0	1,740	0	0
December	9,570	6,655	4,453	0	2,153	0	0
Total 2023	88,041	55,494	74,581	0	26,179	1	0

Table B-4 Waste Quantities and Types Placed in Temporary Quarry Landfill in 2023

Month	Waste Quantity and Type				
January	-	-	-	-	-
February	-	-	-	-	-
March	2 Bins Metals, 2 Bins misc., 1 dryer, 1 washer	1 bin sorted	-	-	-
April	-	-	-	-	-
May	2 bin metal, 1 matress	2 blue metal bins	1 bin clean metal	-	-
June	5 bins metal, 5 mattresses	1 bin misc.	1 bin clean metals. 1 bin misc.	2 blue metal bins	6 full mega bags, 1 full tote of metal
July	2 bins metal	1 mattress	3 bins clean metal, 1 bbq	-	-
August	1 tote of glass, 2 totes scrap metal	20 mega bags of mega bags	-	-	-
September	-	-	-	-	-
October	1 bin clean metal. 15 megabags plastic	5 megabags plastic, 3 totes metal	-	-	-
November	-	-	-	-	-
December	-	-	-	-	-

Appendix C Monitoring Activity Overview by Station

Table C-1 2023 Monitoring Activity Overview by Station

Monitoring Program Station	Monitoring Type	Description	Mine Phase	Group Code*	Frequency	Monitoring Activity
BRP-G-01 to BRP-G-TBD	Regulated Monitoring	**General Site Runoff** Surficial runoff anywhere at both Goose Property and MLA, including quarries; monitoring for erosion and sedimentation.	Construction	C	Weekly if flow enters a waterbody	No flow entering a waterbody was observed in 2023 with exception of during culvert construction (See Annual Report)
BRP-S-01 to BRP-S-TBD	General Monitoring	**General Seeps** Seepage or runoff from excavated and/or stockpiled material anywhere at both Goose Property and MLA, including quarries, that does not gather into a collection system or the site is reclaimed.	Construction and Operations	A, D	Monthly during flow, or as found	No seepage was observed in 2023
BRP-01	Regulated Monitoring	**Goose Lake Discharge** (discharge point for release of dewatering effluent with or without treatment)	Construction	A, B, G	Weekly during dewatering	N/A – dewatering activities have not been initiated
				D	Four times during dewatering, at the same time as the weekly samples	
				H	Once per month during dewatering, at the same time as Group D	
				I	One time during dewatering, at the same time as Group D	
BRP-02	General Monitoring	**Llama Lake** (intake point for dewatering, triggers need for treatment prior to discharge at BRP-01)	Construction	C (TSS only)	Weekly if treatment is required; no sample if treatment is not required	N/A – dewatering activities have not been initiated
BRP-03	Verification Monitoring	**Llama Pit** (representative of collected pit water prior to transfer to tailings management facility)	Operations Stage 1 to Operations Stage 2	A, G	At Licensee's discretion	N/A – facility construction has not been initiated/ n/a mine phase
BRP-04	General Monitoring	**Llama Pit Lake** (representative of flooded pit during flooding and before overflow to the downstream environment)	Closure* to Post-Closure	A, D	Twice per year	N/A – facility construction has not been initiated/ n/a mine phase
BRP-05	Verification Monitoring	**Llama WRSA Pond** (representative of collected water quality)	Operations Stage 1 to Closure	A, G	At Licensee's discretion	N/A – facility construction has not been initiated/ n/a mine phase
BRP-06	General Monitoring	**Umwelt Lake** (intake point for dewatering, triggers need for treatment prior to discharge at BRP-01)	Construction	C (TSS only)	Weekly if treatment is required; no sample if treatment is not required	N/A – dewatering activities have not been initiated
BRP-07	Verification Monitoring	**Umwelt Pit** (representative of collected pit water prior to transfer to tailings management facility)	Construction to Operations Stage 2	A, G	At Licensee's discretion	N/A – facility construction has not been initiated
BRP-08	General Monitoring	**Umwelt Pit Lake** (representative of flooded pit during flooding and before overflow to the downstream environment)	Closure to Post-Closure	A, D	Twice per year	N/A – facility construction has not been initiated/ n/a mine phase
BRP-09	Verification Monitoring	**Umwelt WRSA Pond** (representative of collected water quality, including landfill seepage/runoff)	Construction to Closure (early)*	A, G	At Licensee's discretion	N/A – facility construction has not been initiated
BRP-10	Verification Monitoring	**Primary Water Pond** (representative of collected water quality)	Construction to Closure (early)	A, D	At Licensee's discretion	N/A – facility construction has not been initiated
BRP-11	Verification Monitoring	**Saline Water Pond** (representative of stored water quality)	Construction (late) to Closure (early)	A, D	At Licensee's discretion	N/A – facility construction has not been initiated
BRP-12	General Monitoring	**Big Lake Intake** (intake point for potable and industrial water withdrawal)	Construction to Closure	A, D	Four times per year	N/A – facility construction has not been initiated
				B	Weekly	
BRP-13	Verification Monitoring	**Ore Stockpile Pond** (representative of collected water quality)	Construction to Closure (early)	A, D	At Licensee's discretion	N/A - facility still in constrcition in 2023.
BRP-14	Verification Monitoring	**ANFO Plant** (representative of collected water quality)	Construction to Closure	A, E	At Licensee's discretion	N/A – facility construction has not been initiated
BRP-15	Regulated Monitoring	**Goose Fuel Tank Farm** (representative of collected water quality)	Construction to Closure	A, E	Prior to discharge or transfer of water	N/A – facility constructed, consturction summary report in progress, no ponding water observed
BRP-16	Regulated Monitoring	**Goose Hazardous Waste Management Area** (representative of collected water quality)	Construction to Closure	A, E	Prior to discharge or transfer of water	N/A – facility construction has not been initiated
BRP-17	Regulated Monitoring	**Goose Property Sewage Treatment Plant** (treated sewage discharge/drainage immediately prior to the point of entry into freshwater)	Construction to Closure	A, F	Monthly	The STP was comissioned in August of 2023 but no water was available for samplign at BRP-17. See Annual Report.
BRP-17A	Regulated Monitoring	**Goose Property Sewage Treatment Plant** (discharge point for treated sewage into Tailings Storage Facility or Tailing Facility)	Construction to Closure*	A, F	Prior to discharge	N/A – discharge only occurred on the tundra in 2023; the TSF is not yet constructed
BRP-18	General Monitoring	**Llama Watershed Outflow** (representative of non-contact water, PN04 from Water and Load Balance)	Operations Stage 1 to Closure	A, D	Once during freshet and monthly during upstream construction while visible flow is present at the stations	N/A mine phase
BRP-19	General Monitoring	**Echo Outflow** (representative of non-contact water). PN09 from water and load balance	Operations Stage 1 to Closure	A, D	Once during freshet and monthly during upstream construction while visible flow is present at the stations	N/A mine phase
BRP-20	Verification Monitoring	**Echo Pit** (representative of collected pit water prior to transfer to tailings management facility)	Operations Stage 2	A, G	At Licensee's discretion	Initial construction has occured; no transfer or discharge of water required in 2023. See Annual Report.
BRP-21	General Monitoring	**Echo Pit Lake** (representative of flooded pit during flooding and before overflow to the downstream environment)	Closure to Post-Closure	A, D	Twice per year	N/A – facility construction has not been initiated/ n/a mine phase

BRP-22	Verification Monitoring	**Echo WRSA Pond** (representative of collected water quality)	Operations Stage 2 to Closure (early)	A, G	At Licensee's discretion	N/A – facility construction has not been initiated/ n/a mine phase
BRP-23	General Monitoring	**Gander Pond Outflow** (representative of non-contact water, PN07 from Water and Load Balance)	Operations Stage 1 to Closure	A, D	Once during freshet and monthly during upstream construction while visible flow is present at the stations	N/A mine phase
BRP-24	General Monitoring	**Goose Lake Intake** (intake point for potable and industrial water withdrawal)	Operations Stage 1 to Closure (early)	B	Weekly	N/A- no water withdrawn under this Licence in 2023
BRP-25	Verification Monitoring	**Goose Pit** (representative of collected pit water prior to transfer to tailings management facility)	Operations Stage 1 to Operations Stage 2	A, G	At Licensee's discretion	N/A – facility construction has not been initiated/ n/a mine phase
BRP-26	General Monitoring	**Goose Pit Lake** (representative of flooded pit during flooding and before overflow to the downstream environment)	Closure* to Post-Closure	A, D	Twice per year	N/A – facility construction has not been initiated/ n/a mine phase
BRP-27	Verification Monitoring	**Goose Main Tailings Facility** (intake point for water treatment, represents pre- treatment water quality)	Operations Stage 3 to Closure	A, G	At Licensee's discretion	N/A – facility construction has not been initiated/ n/a mine phase
BRP-28	Verification Monitoring	**Goose Main Tailings Facility** (discharge point for water treatment, represents post-treatment water quality)	Operations Stage 3 to Closure	A, G	At Licensee's discretion	N/A – facility construction has not been initiated/ n/a mine phase
BRP-29	Verification Monitoring	**TSF WRSA Pond** (representative of collected water quality, including landfill seepage/runoff)	Operations Stage 1 to Closure	A, G	At Licensee's discretion	N/A – facility construction has not been initiated/ n/a mine phase
BRP-30	General Monitoring	**Goose Southeast Inflow** (representative of non-contact water, PN06 from Water and Load Balance)	Operations Stage 1 to Closure	A, D	Once during freshet	N/A mine phase
BRP-40	General Monitoring	**Bathurst Inlet Intake** (intake point in marine environment for potable and industrial water withdrawal)	Construction to Closure	A, D, B	At Licensee's discretion	Water was withdrawn from this Location in 2023
BRP-41	General Monitoring	**Bathurst Inlet Discharge** (discharge point in marine environment for effluent from desalinization plant)	Construction to Closure	A, J	At Licensee's discretion	Water was discharged at this location in 2023
BRP-42	Regulated Monitoring	**MLA Greywater** (representative drainage at point of entry to the marine receiving environment)	Construction to Closure	A, F	Prior to discharge or transfer of water	Greywater was discharged at the MLA in 2023 but no water was available for sampling at BRP-42
BRP-43	Regulated Monitoring	**MLA Fuel Tank Farm** (representative of collected water quality)	Construction to Closure	A, E	Prior to discharge or transfer of water	Discharge of 10 m3
BRP-44	Regulated Monitoring	**MLA Landfarm** (representative of collected water quality)	Construction to Closure	A, E	Prior to discharge or transfer of water	N/A – facility construction has not been initiated
BRP-45	Regulated Monitoring	**MLA Hazardous Waste Management Area** (representative of collected water quality)	Construction to Closure	A, E	Prior to discharge or transfer of water	N/A – facility construction has not been initiated
BRP-49	Regulated Monitoring	**MLA Temporary Fuel Storage Facility** (representative of collected water quality)	Construction	A, E	Prior to discharge or transfer of water	N/A - no water was discharged from this facility
BRP-51	Regulated Monitoring	**Goose Landfarm** (representative of collected water quality)	Construction to Closure	A, E	Prior to discharge or transfer of water	N/A - no water was discharged from this facility
BRP-52	General Monitoring	**MLA Pond S1** (intake point for potable and industrial water withdrawal)	Construction to Closure	A, D	Once per quarter when in use	No water was withdrawn from this location in 2023
				B	Weekly when in use	
BRP-53	General Monitoring	**MLA Pond S2** (intake point for potable and industrial water withdrawal)	Construction to Closure	A, D	Once per quarter when in use	No water was withdrawn from this location in 2023
				B	Weekly when in use	
BRP-54	General Monitoring	**MLA Lake 3** (intake point for potable and industrial water withdrawal)	Construction to Closure	A, D	Once per quarter when in use	No water was withdrawn from this location in 2023
				B	Weekly when in use	
BRP-55	General Monitoring	**MLA Lake 4** (intake point for potable and industrial water withdrawal)	Construction to Closure	A, D	Once per quarter when in use	No water was withdrawn from this location in 2023
				B	Weekly when in use	
BRP-56	General Monitoring	**Llama Tailings Facility** (collected at "inlet" to treatment facility Pre-treatment quality)	Operations to Closure	A, G	At Licensee's discretion	N/A – facility construction has not been initiated/ n/a mine phase
BRP-57	General Monitoring	**Llama Tailings Facility** (after treatment; collected at "outlet" of treatment facility; no discharge to the receiving environment Post-treatment quality to confirm treatment efficiency)	Operations to Closure	A, G	At Licensee's discretion	N/A – facility construction has not been initiated/ n/a mine phase
BRP-58a to BRP-58xx (TBD)	Regulated Monitoring	**Final Discharge Point Goose Lake**			As per Part F, Item 16	No discharge occurred from this location in 2023
BRP-I-01 to BRP-I-TBD	General Monitoring	**Interconnection Winter Ice Road Proximal Water Bodies** (intake points for fresh water used in the construction of the Interconnection Winter Ice Road and WIR Service/Emergency Camps)	Construction to Closure	B	Weekly when in use	No water was withdrawn from this location in 2023

* Refers to Group Code from Water Licence 2AM-BRP1831 Schedule I Table 1

Appendix D Thermal Monitoring Plan

Revision 00

Back River Project: Site-wide Ground Thermal Monitoring Plan

Back River Project, Nunavut, Canada
B2Gold Corporation

SRK Consulting (Canada) Inc. ▪ CAPR003102 ▪ April 2024

srk consulting

Revision 00

Back River Project: Site-wide Ground Thermal Monitoring Plan

Back River Project, Nunavut, Canada

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Cover Image(s):
Historic ground temperature monitoring site with data logger housing at surface.

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The opinions expressed in this document have been based on the information available to SRK at the time of preparation. SRK has exercised all due care in reviewing information supplied by others for use on this project. While SRK has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. SRK does not accept responsibility for any errors or omissions in the supplied information, except to the extent that SRK was hired to verify the data.

Contents

Tables

Figures

Appendices

Table of Revisions

Date	Revision	Remarks
April 1, 2024	Rev 00	Initial revision submitted as part of 2023 Annual Reporting Package

This document will be a 'live' document that will be continually updated as the Back River project advances, and as additional infrastructure on site is constructed. A history of the thermal monitoring plan report revisions is provided in the table above.

1 Introduction

1.1 Background

The Back River project (the project) is a proposed open pit and underground gold mining project in the West Kitikmeot region of Nunavut, approximately 520 km northeast of Yellowknife and 75 km south of Bathurst Inlet. The mine will consist of a Marine Laydown Area (MLA) at Bathurst Inlet and the mine located at the Goose property (Figure 1). The MLA will serve as the primary resupply point for the mine. B2Gold Corporation (B2Gold) began and are completing construction at the MLA and Goose site under their site Water License 2AM-BRP1831 – Amendment No. 1, issued by the Nunavut Water Board (NWB) on October 15, 2021.

A ground temperature monitoring plan and annual report is provided to meet the terms and conditions agreed to in the project certificate. In particular, the Project Certificate Terms and Conditions #11 states that “During construction, the Proponent shall, on an annual basis, provide additional permafrost mapping information documented in fulfillment of this Term and Condition in the Proponent’s annual report to the Nunavut Impact Review Board.”

This Plan provides a framework for monitoring ground temperature and changes to permafrost at the project site. Section 2 of this plan provides background information on site conditions and infrastructure. Section 3 reviews historical and current ground temperature sites used for baseline characterisation of the ground thermal regime. Section 4 identifies the long-term background and infrastructure monitoring sites. Section 5 provides guidance on implementation of the plan, data management, and instrument maintenance, followed by reporting requirements, presented in Section 6.

1.2 Monitoring Objectives

The ground temperature monitoring objectives include:

- Identifying natural climate-driven changes to the ground thermal regime and permafrost at background sites located outside of direct influence of mining activities; and
- Identifying changes to the ground thermal regime and permafrost immediately beneath or adjacent to mine infrastructure.

1.3 Key Elements

Key elements of the monitoring plan include:

- Ground temperature data collection from long-term monitoring stations;
- Data management and quality assurance;
- Instrument inspection and maintenance for ground temperature site; and
- Annual reporting requirements.

2 Site Conditions

2.1 Topography

The topography is characterized by low relief terrain at both the Goose property and MLA. At the Goose Property, the land is dominated by undulating or rolling landscapes, presented as a sequence of smooth, non-linear rises and hollows that are largely formed by glacial drumlines at the Goose Property. Frostboils form micro-relief at the ground surface and have developed from repeated freeze thaw cycle at the site. Drainage is variable from well to poorly drained ground depending on local topography, surficial material, and permafrost. The MLA is located near sea level and characterized by gentle slopes and level plains that drain toward Bathhurst Inlet.

2.2 Climate

The region around the Back River project is characterized by long dark winters, shorter summers and generally gently rolling topography. Typically, the ground is covered in snow from October (and as early as September) to June (sometimes snow melting earlier in mid to late may). Similar to other Northern Canadian sites, Back River is subject to very cold weather and at times persistent Arctic winds.

In the winter the lakes and sea are covered with ice that can be greater than 2m in thickness. This can allow for on-ice activities such as diamond drilling, winter ice road, and airstrip construction and use. The mean annual air temperature (MAAT) is around -10°C at the Goose Station. The mean annual precipitation ranges from around 270 to 430mm (SRK 2021)

Meteorological data has been collected at the Goose Station (Lat. 65.54, Long. -106.41, Elev. 277 masl) since August 2004 and at the MLA Station (Lat. 66.65, Long. -107.69, Elev. 11 masl) since 2012. The stations are equipped with gauges to monitor air temperature, precipitation as rainfall and snowfall, solar radiation, wind speed, and wind direction (SRK 2021, Rescan 2014b). Meteorological data collected at these two stations will be used to support understanding of changes in ground temperature and permafrost (see Section 4).

2.3 Surficial and Bedrock Geology

Surficial geology at the project site is largely a reflection of the last advance of the North American Laurentide ice sheet during the Wisconsin Glaciation. The maximum extent of the continental glacier occurred approximately 21,000 years ago and began withdrawing from the Kitikmeot Region approximately 10,000 years ago.

The landscape is striated with overburden materials characteristic of a post-glacial environment. At the Goose property, the common surficial deposits include glacial till and drumlines. Glacial till consists of sand and variable amounts of silt and gravel. Drumlines also coarse sand, silt, and gravel compositions and are often associated with kettle lakes. Organic veneers (less than 1 m in depth) are also common, resulting from the accumulation of very slowly decomposing vegetation, typically in the wet lowlands.

The majority of the Goose Property is underlain by clastic meta-sedimentary rock types consisting of turbidites (greywacke and mudstone) of the Slave Province (Rescan 2013) Vol 5 EIS). This sequence is cut by felsic dikes and gabbroic dikes. From oldest to youngest, the sequence is composed of central greywacke, lower iron formation, middle mudstone, upper iron formation, and upper sediments. Exposed bedrock can be found throughout the Goose Property or immediately below a thin veneer of glacial sediments.

At the MLA, the surficial deposits include marine and morainal deposits. Marine and moraine deposits consist mainly of coarse sands. Poorly drained areas with accumulated organics may also have fine-grained soils and higher amounts of ground ice.

2.4 Ground Thermal Regime

Back River is located within a zone of Continuous permafrost, with an estimated 90 to 100% of the land area underlain by permafrost. Permafrost temperature has been measured to range from -4.7°C to -7.5°C at the Goose Property, with an average of -6.3°C (SRK 2015a). The seasonally thawed active layer ranges from approximately 1 to 4 m below ground surface (bgs). The greatest active layer depth occurs in areas with thin soil veneers above bedrock. The base of permafrost is estimated to range from 490 to 570 meters below ground surface (mbgs) using the 0°C isotherm, with a reported geothermal gradient of 0.013 to 0.014°Cm (SRK 2015a). The local groundwater chemistry results in a freezing point depression and unfrozen taliks at the base of permafrost, also referred to as basal cryopegs. The basal cryopeg has been estimated to be 100 m thick.

2.5 Infrastructure

Proposed surface infrastructure development to support the mining generally includes the following:

- Marine Laydown Area:
  - Laydown facilities
  - Fuel tank farm
  - Camp and ancillary facilities
  - Workshop and ancillary facilities
  - Airstrip
  - Fuel offloading and general site access roads linking the above elements
- Goose Site (primary focus of this report):
  - Processing plant and ancillary facilities
  - Mine equipment workshops, warehousing and ancillary facilities
  - Laydown facilities
  - Fuel tank farm

- Camp and ancillary facilities
- In-Pit tailings facilities
- Waste rock and overburden piles
- Ore stockpiles
- Airstrip
- Water management facilities (Primary Pond, Camp Pad, Echo Diversion etc.)
- Culvert crossings.
- All weather roads linking the above infrastructure elements.

The Back River site continues to be in a period of transition, in a pre-operation ramp up stage. This means that many of the pads, roads, ponds, and water conveyance (culvert) structures are currently at an interim state and / or were not yet completed at the end of 2023 (and at the time of writing this initial revision of the thermal monitoring plan). Therefore, there are many elements listed in bullets above that are not year apparent on site. As later discussed, thermal monitoring is planned to be incorporated as part of much of the more critical infrastructure (e.g. ponds, in-pit tailings deposition, tank farms etc..) final designs and construction.

3 Ground Temperature Sites

3.1 Historic Sites

The ground thermal regime has been characterised as part of baseline studies completed at Goose and MLA (Rescan 2014a). Thermistor cables were installed in drillholes (and one test pit) at the Goose property in 1997, 2008, 2011, 2012, and 2013, 2015, and 2017 (Table 1). At the Goose property, a total of thirty-five thermistor cables were installed nearby the planned open pits and infrastructure sites. An additional six drillholes were instrumented with thermistor cables at the MLA.

Figure 2 shows the location of the historic ground temperature sites located at the Goose property by year of installation. Figure 3 shows the location of the historic ground temperature sites install at the MLA. At the time of reporting, the historic sites are considered to be inactive, and no recent measurements have been made from the sites. A portion of the historic site are planned to be used for long-term ground monitoring pending final determination of instrument function, as discussed in Section 4.

The thermistor cables installed at the historic ground temperature sites were manufactured by RST (SRK 2012, SRK 2015b, Rescan 2010, Rescan 2012), or by GKM (KP 2013a; 2013b). The cables were typically designed to characterise either shallow or deep ground temperature (see classification in Table 1). Most of the instruments were connected to data loggers manufactured by Campbell Scientific (Rescan 2010; 2012; KP 2013a; 2013b) or RST (SRK 2012). Manual temperature readings were collected from cables not connected to data loggers.

Ground temperature measurements collected at Goose and MLA are provided in Appendix B. The historic ground temperature records are often limited to measurements made several months to years following installation. The historic (pre-mining) baseline measurements will be used to evaluate change in permafrost temperature over the period of mining (see Section 4).

3.2 Recent Sites

In 2023 and 2024, recent ground temperature sites were installed at the Goose Camp Pad and Primary Pond Dam (Figure 2; Table 2). Drillholes were instrumented with calibrated digital ground temperature cables (GTCs) which provide analog to digital conversion of the measurements at the sensor. The read out of the cables is temperature using factory established calibration coefficients, which eliminates the need to convert measured resistance to temperature.

At the Goose Camp Pad, the GTCs were installed at SRK-23-CPI-DH1 and SRK-23-CPI-DH2 to monitoring ground temperature in the rock pad and foundation (Figure 2; Table 2). Manual measurements have been made since installation (Appendix B).

Six GTCs were installed at the Primary Pond Dam during the first season of construction. The GTCs are installed in vertically in the foundation and horizontal along the excavated and backfilled key trench (Figure 2; Table 2). An additional four temporary sites were instruments to characterise the foundation and support construction of the Primary Pond Dam. The temporary sites include SRK-24-PP-DH01, SRK-24-PP-DH02, SRK-24-PP-DH03, and SRK-24-PP-DH04 (Appendix B).

Table 1: Historic Ground Temperature Sites Installed Between 1997 and 2017

Location	Site ID	Year	Northing	Easting	Status	Monitoring Type	GTC Length [m] (Approx.)
Goose Property	13-GSE-261B	2013	7269381	433838	Inactive	Background	560
	13-GSE-286	2013	7269612	434066	Inactive	Background	210
	13-GSE-314	2013	7269764	434278	Inactive	Background	210
	11SRKGL-10	2011	7269557	433734	Inactive	Background	21.5
	08-GSE-009	2008	7269461	433904	Inactive	Background	300
	97-GO-14	1997	7269623	434056	Inactive	Background	7
	13-GSE-288	2013	7270686	430310	Inactive	Background	560
	13-GSE-279	2013	7270260	430189	Inactive	Background	560
	12-GSE-233C	2012	7270546	430544	Inactive	Background	565
	13-GSE-277B	2013	7272125	428852	Inactive	Background	265
	13-GSE-284	2013	7272370	428710	Inactive	Background	390
	13-GSE-289	2013	7272218	428790	Inactive	Background	660
	12-GSE-218	2012	7272301	428508	Inactive	Background	390
	12-GSE-223	2012	7272161	429104	Inactive	Background	285
	14-GSE-468	2014	7268705	432707	Inactive	Background	375
	14-GSE-472	2014	7268724	432957	Inactive	Background	375
	TIA-GT13-03	2013	7272636	430246	Inactive	Background	17
	TIA-GT13-10	2013	7273951	430604	Inactive	Background	17
	TIA-GT13-15	2013	7273180	431079	Inactive	Background	17
	TIA-GT13-16	2013	7272989	431079	Inactive	Background	17
	GAS-GT13-01	2013	7269913	432983	Inactive	Background	17
	GAS-GT13-02	2013	7269571	433495	Inactive	Background	27
	GAS-GT13-04	2013	7268574	434367	Inactive	Background	27

Location	Site ID	Year	Northing	Easting	Status	Monitoring Type	GTC Length [m] (Approx.)
	GAS-TP13-51	2013	7268379	434496	Inactive	Background	3
	GPS-GT13-01	2013	7271857	431171	Inactive	Background	17
	SRK-15-GSE-DH12	2015	7267857	434863	Inactive	Background	15
	SRK-15-GSE-DH13	2015	7267876	434944	Inactive	Background	15
	SRK-15-GSE-DH15	2015	7267916	435125	Inactive	Background	15
	SRK-15-GSE-DH16	2015	7267940	435231	Inactive	Background	15
	SRK-15-GSE-DH17	2015	7267942	435336	Inactive	Background	15
	SRK-15-GSE-DH18	2015	7267919	435427	Inactive	Background	15
	SRK-15-GSE-DH19	2015	7267905	435517	Inactive	Background	15
	SRK-15-GSE-DH20	2015	7267893	435603	Inactive	Background	15
	SRK-15-GSE-DH21	2015	7267877	435685	Inactive	Background	15
	SRK-15-GSE-DH26	2015	7266311	435268	Inactive	Background	15
MLA Property	17-ML_AA005	2017	7394381	381098	Inactive	Background	4.5
	17-ML_AA008	2017	7394715	381331	Inactive	Background	2.9
	17-ML_AA020	2017	7394872	380934	Inactive	Background	2.6
	17-ML_AA021	2017	7394212	381331	Inactive	Background	1.9
	17-ML_AA022	2017	7394185	381145	Inactive	Background	4.3
	17-ML_AA023	2017	7394530	381258	Inactive	Background	3.7

Table 2: Recent Ground Temperature Sites Installed Between 2023 and 2024

Location	Area	Drillhole ID	Year	Northing	Easting	Status	Monitoring Type	GTC Length [m] (Approx.)
Goose Property	Primary Pond Dam	PP-VTC-640-US	2023	7271205	429849	Active	Infrastructure	15.5
		PP-VTC-640-KT	2023	7271180	429830	Active	Infrastructure	12.9
		PP-VTC-640-DS	2023	7271168	429821	Active	Infrastructure	15.5
		PP-HTC-B1-KT	2023	7271196	429838	Active	Infrastructure	99
		PP-HTC-640-LN	2023	7271169	429912	Active	Infrastructure	22
		PP-HTC-B2-KT	2023	7271137	429963	Active	Infrastructure	131
	Umwelt Pit	22UMU004B	2023	7270357	430280	Active	Underground	430
	Camp Pad	SRK-23-CPI-DH1	2023	7270012	429952	Active	Infrastructure	13.4
		SRK-23-CPI-DH2	2023	7269927	430029	Active	Infrastructure	8.8
	Primary Pond Dam	SRK-24-PP-DH01	2024	7271328	429660	Inactive	Temporary	8
		SRK-24-PP-DH02	2024	7271366	429613	Inactive	Temporary	9
		SRK-24-PP-DH03	2024	7271323	429658	Inactive	Temporary	8
		SRK-24-PP-DH04	2024	7271319	429664	Inactive	Temporary	5

4 Long-term Monitoring

4.1 Background Sites

The long-term background sites will be established to monitor climate-driven changes in ground temperature at locations that are not directly impacted by mining. The background sites will be selected to capture representative ground conditions based on surficial geology, surface hydrology, vegetation, and expected ground temperature and active layer depth. Sites will be established at both the Goose property and MLA.

An attempt will be made in 2024 (likely in Q3 and Q4) to bring back online some of the historic ground temperature sites for background ground temperature monitoring. If the instruments are determined to not be operable, new background sites will be established in close proximity to the former background site or at new nearby locations which are representative of the range in ground conditions at the property. Three new background monitoring sites are planned for the MLA in 2024 (Figure 3). The planned sites are located within undisturbed terrain at the south end of the MLA airstrip (MLA-GTC-4), southeast side of the Shoreline Pad (MLA-GTC-5), and nearby the explosive storage berm (MLA-GTC-6) (Figure 3).

4.2 Infrastructure and Disturbance Sites

Long-term ground temperature monitoring will be established at infrastructure and ground disturbance sites to monitor changes in ground temperature at locations directly influenced by mining activity. At infrastructure sites, the change in ground temperature is expected to result from the combined effects of climate and the infrastructure. Disturbance site would include areas adjacent to mine infrastructure that are influence or directly impacted by mining activity.

At present, infrastructure monitoring sites included in this monitoring plan include two sites at the Goose Camp Pad (SRK-23-CPI-DH1 and SRK-23-CPI-DH2) and three of the sites at the Primary Pond Dam (PP-VTC-640-US, PP-VTC-640-KT, PP-VTC-640-DS). The three sites at the Primary Pond Dam consist of vertical GTCs installed in the foundation beneath the upstream (US), key trench (KT), and downstream (DS), respectively. In 2024 additional cables are planned to be installed at the Primary Pond dam location, and one cable is planned to be installed at the Goose Tank Farm. The exact location of the Goose Tank Farm cable will be determined after construction of additoinal tanks is completed. However this cable is likely to be installed near the south to south eastern extents of the facilty, where either the fill thicknesses are greater and/ or where the foundation of the berms are not expected to be fully on bedrock (Goose Tanks are located on bedrock).

In 2024, three infrastructure and disturbance monitoring sites are planned for the MLA (Figure 3). One of the GTCs will be installed through the tank farm berm and 15 m into the foundation on the southwest side of the facility, where the berm is constructed on overburden (Figure 3; MLA-TF-GTC-1). The second GTC is planned to be installed on the north edge of the proposed Tank 5 and will extend 20 m deep in the ground (Figure 3; MLA-TF-GTC-2). The purpose of these cables will be to monitor berm

and foundation permafrost conditions. A third GTC is planned near MLA laydown pad where historic tundra disturbance has been noted (MLA-D-GT-3).

Additional GTCs will be installed at the Goose property and MLA as additional mine infrastructure is built. The GTCs will be installed during construction or shortly thereafter. In most cases, the instruments will be part of a larger network of instruments used to monitor infrastructure performance and therefore the locations are subject to change as design and construction advances.

4.3 Meteorological Stations

Climate data collected at the Goose and MLA stations will allow for changes in weather and longer term climate to be assessed against the measured ground temperature. The monitoring plan data management system includes the historical meteorological data from the Goose and MLA stations (Section 5.2, Appendix C). Appendix C provides the baseline measurements for select parameters collected at the stations. The data management system will be updated with the completed timeseries of historical and recent measurements for each parameter. The Goose weather station and climate data is available up to date of submission for this report and presented up until the end of 2023 in Appendix C.

5 Implementation and Maintenance

The operation and maintenance of the long-term ground temperature monitoring sites will be conducted by B2Gold or consultants. The following section provides guidelines for data collection, data management and quality assurance, and instrument inspection and maintenance.

5.1 Data Collection

A key consideration for long-term ground temperature monitoring is the method and frequency of data collection. Data collection will be through the use of data loggers or manual measurement at the frequency described below.

- Data Logger Collection
  - Measurement frequency every four hours (internally recorded)
  - Download of data logger once a quarter
- Manual Data Collection
  - Measurement frequency once a quarter

A standard operating procedures (SOPs) should be developed and appended to this monitoring plan once the sites and instruments have been established. The SOP will ensure consistent and complete data collection.

5.2 Data Management

A ground temperature monitoring database has now been developed in Microsoft PowerBI (data visualization and analytics tools and app) to support data storage, quality assurance and checks, analysis, and reporting. The database includes historic and recent ground temperature sites, along with the long-term ground temperature monitoring sites. The long-term monitoring sites (Background, Infrastructure, and Disturbance sites) for Goose and MLA will be added over time. Meteorological data from the Goose and MLA stations will also be maintained within the database.

Standardised data plots that have been developed to meet and assist with the annual reporting requirements. The data plots include graphical representation of the information as temperature timeseries and temperature versus depth plots. Standardized plots of the climate data for each of the meteorological stations will also be included in the database, such as graphical representation of year-over-year changes and calculated climate indices. The data plots may be expanded as required by data collection, analysis, and reporting.

The database should be updated within one month of manual data collection or data logger download. Climate data should be added to the database on a quarterly basis or at which time the quality checked data is made available.

5.3 Quality Checks

The data will be checked for erroneous (abnormal) readings. An abnormal instrument reading is one that is outside the historic range of measured values or shows a sudden change that is unexplainable. All data should be added to the database and then qualified by a subject matter expert. Abnormal readings will be flagged within the database.

5.4 Instrument Inspection and Maintenance

The instrument inspection and maintenance will be performed to ensure that the instruments are in good working condition to collect complete and accurate data. Prior to data collection (manual or download of the data logger), the instrument enclosure, data logger and components, and all exposed portions of the GTCs will be visually inspected for damage. Damage should be documented along with the need for repair or replacement.

It is inevitable that monitoring equipment will wear out and need to be replaced over time. These installations may require complete replacement in the event of equipment failure. If the equipment fails and requires replacement, B2Gold will make an effort to replace the equipment or the entire GTC cable in a timely fashion to ensure continuity with data collection. In some cases, it may not be practical to replace the instrument at the same location due to impacts on infrastructure or limitations with equipment and site access. If it is determined that the instruments cannot be replaced at the same location, a new installation will be located as close as possible and will be designed to collect the same data as the original installation.

6 Reporting

6.1 Annual Report

An annual ground temperature monitoring report, starting for the 2024 site annual reporting, will be issued with the annual geotechnical inspection report for the site. The report will be developed to:

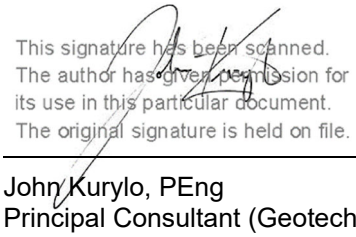
- Summarise data collection for the year;
- Describe instrument maintenance or replacement that has occurred;
- Update graphical plots of the historic and recent measurements for the monitoring sites;
- Analysis of the ground temperature to identify changes in permafrost and longer term trends;
- Analysis of relevant climate parameters to support understanding of changes in permafrost; and
- Action plan for instrument repair or replacement for the upcoming year, as needed.

Closure

This report, Back River Project: Site-wide Ground Thermal Monitoring Plan, was prepared by

Christopher Stevens, PhD
Associate (Permafrost and Infrastructure)

and reviewed by



John Kurylo, PEng
Principal Consultant (Geotechnical and Civil)

All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

References

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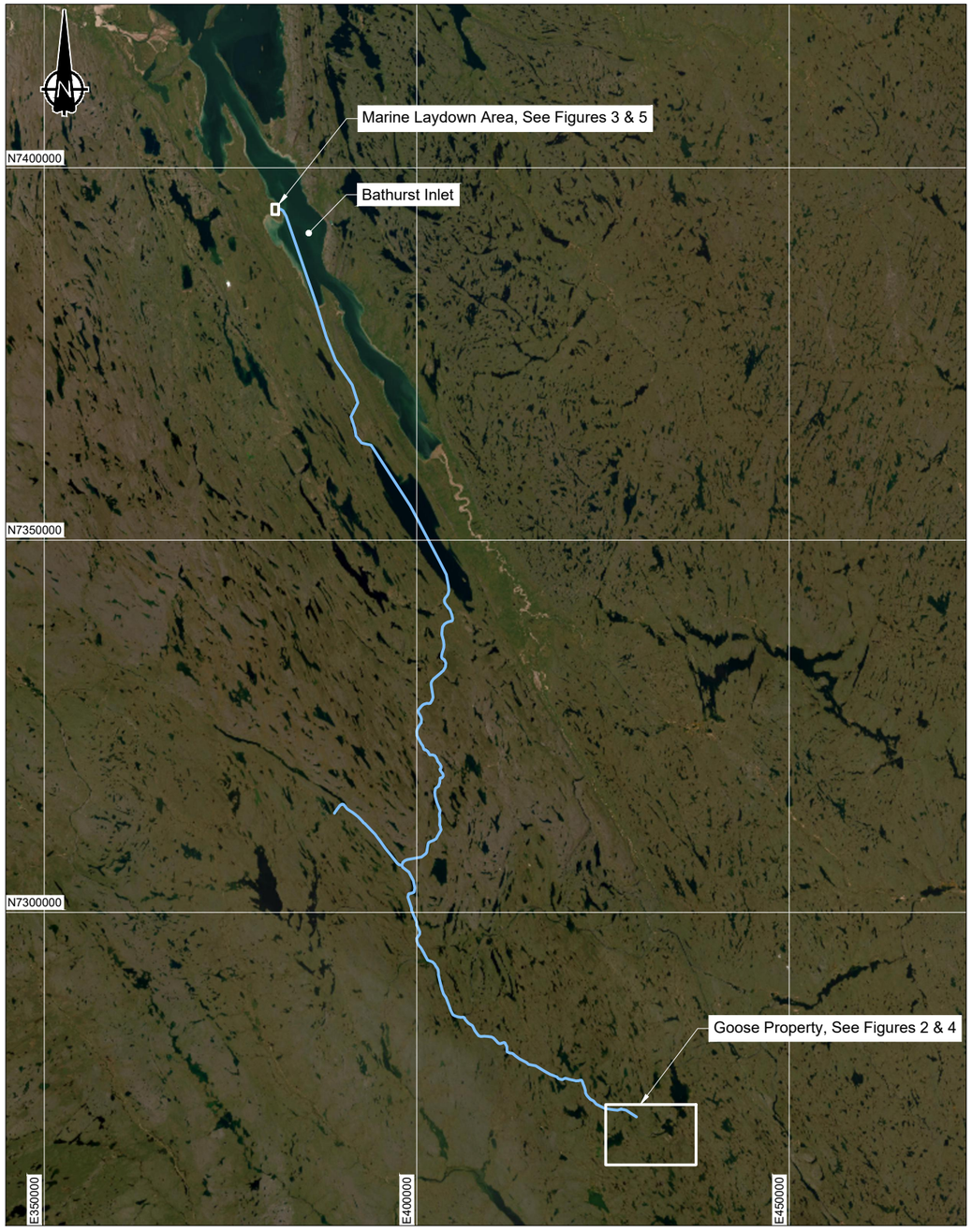
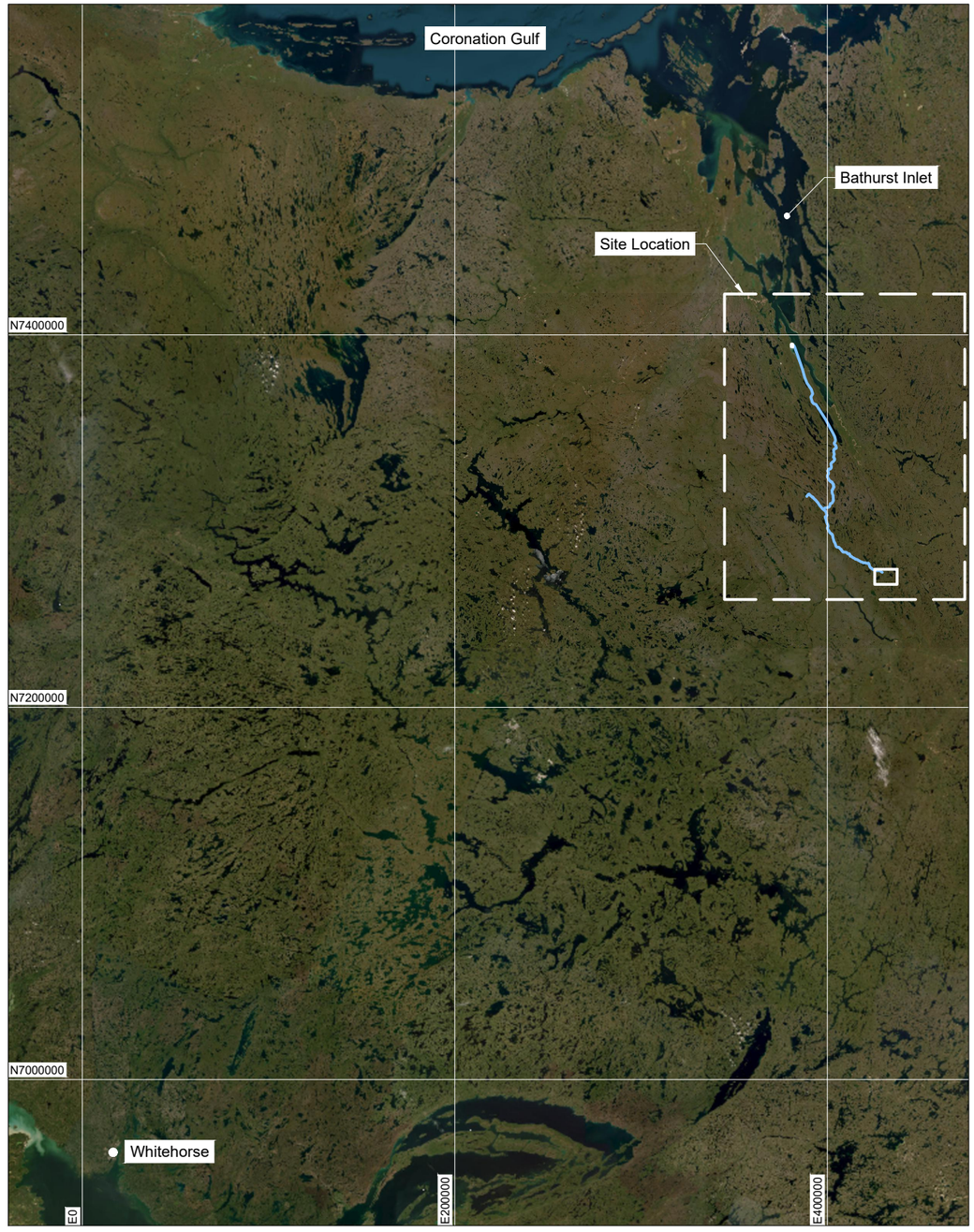
Appendix A Figures





LEGEND

2015 Winter Road Design

NOTES

1. All units are in meters unless otherwise specified.

REFERENCES

NAD83 UTM Zone 13.
Imagery acquired from ESRI World Map on 20240203.

Site Location

0km 5 10 20 30

Key Plan

0km 30 60 90 120

srk consulting

B2GOLD

Back River

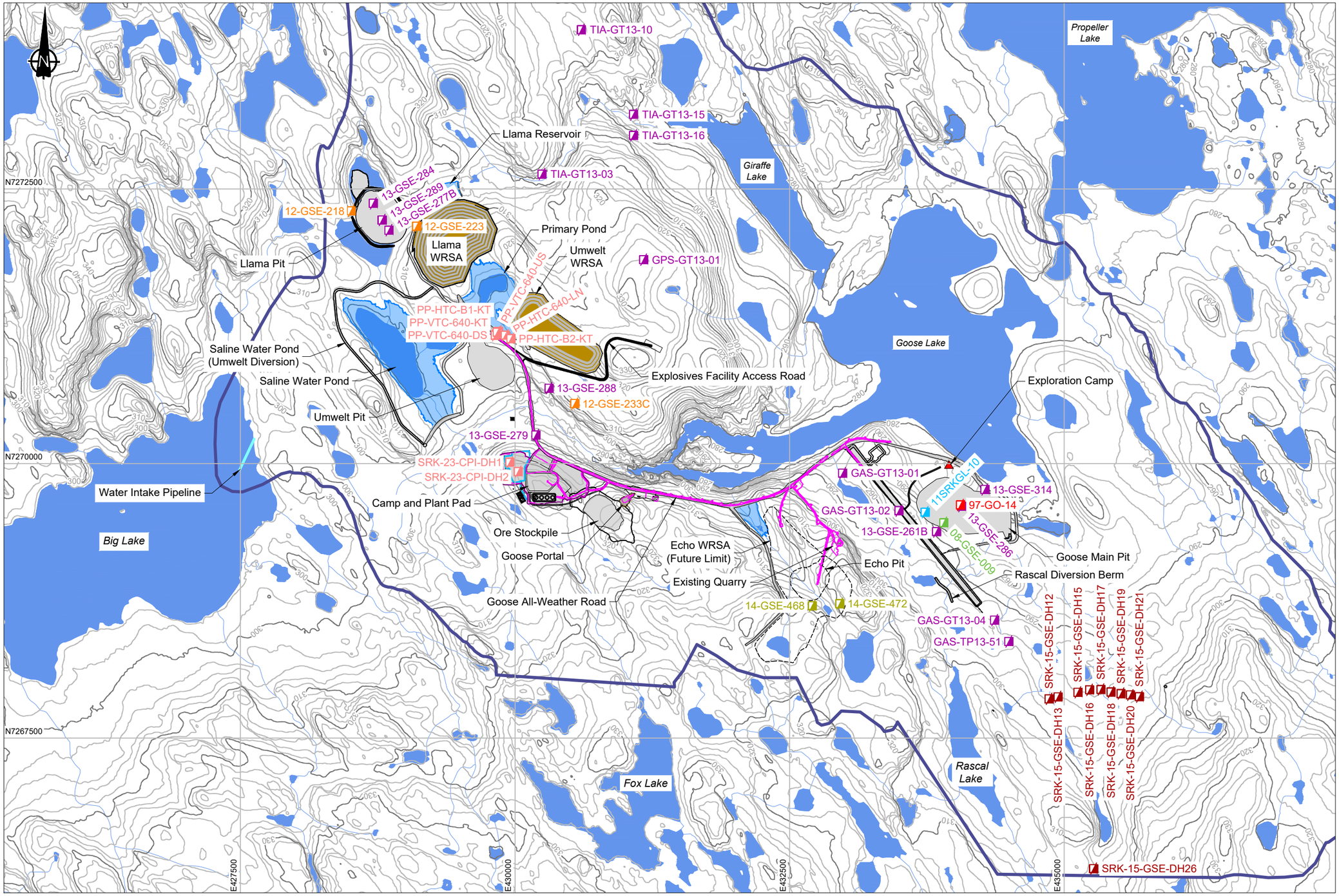
Site-wide Ground Thermal Monitoring Plan

Location Map

SRK JOB NO.:	CAPR003102
FILE NAME:	CAPR003102_GA.dwg

DATE:	APPROVED:	FIGURE:
2024-02-28	-	1

C:\Users\jbokic\SRK Consulting\FS203 Goose Lake (Back River) - 1040_AutoCAD\ACAD_C3D\CAPR003102_GroundThermMonMonitoring Plan\CAPR003102_GA.dwg



LEGEND

- 1997 GTC
- 2008 GTC
- 2011 GTC
- 2012 GTC
- 2013 GTC
- 2014 GTC
- 2015 GTC
- 2023 GTC
- Meteorological Station
- GTC — Ground Temperature Cable
- Crossing Location
- As-built Infrastructure (2021)
- Pipeline Access
- Waterbody
- Design Infrastructure
- Design Stockpile Location
- Project Boundary

NOTES

1. All units are in meters unless otherwise specified.
2. Contours are shown at 2.0 m intervals.

REFERENCES

NAD83 UTM Zone 13.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
SRK JOB NO.: CAPR003102	Back River	Goose Property - Historic and Recent Ground Temperature Sites
FILE NAME: CAPR003102_GTC Locations.dwg		DATE: 2024-02-28 · APPROVED: - · FIGURE: 2

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Bathurst Inlet

MLA-BG-GTC-5

17-ML_AA008

17-ML_AA021

17-ML_AA023

MLA-BG-GTC-4

Sabina MLA Camp

Freight Storage Pad

17-ML_AA022

17-ML_AA005

Laydown Pad

Phase 2 Quarry Tank Farm

MLA-TF-GTC-2

E381000

17-ML_AA020

MLA-D-GTC-3

Airstrip

Phase 1 Quarry Tank Farm

MLA-TF-GTC-1

Existing Tank

Proposed Tank (Typ.)

Explosive Storage Berm

MLA-BG-GTC-6

N7395000

N7394500

N7394000

0m 40 80 120 160

LEGEND

- 2017 GTC
- 2024 (Planned GTC)
- Meteorological Station
- GTC Ground Temperature Cable
- Waterbody
- As-Constructed Infrastructure Boundaries

NOTES

1. All units are in meters unless otherwise specified.
2. Contours are shown at 1.0 m intervals.

REFERENCES

NAD83 UTM Zone 13.

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srk consulting

SRK JOB NO.: CAPR003102

FILE NAME: CAPR003102_GTC Locations.dwg

B2GOLD

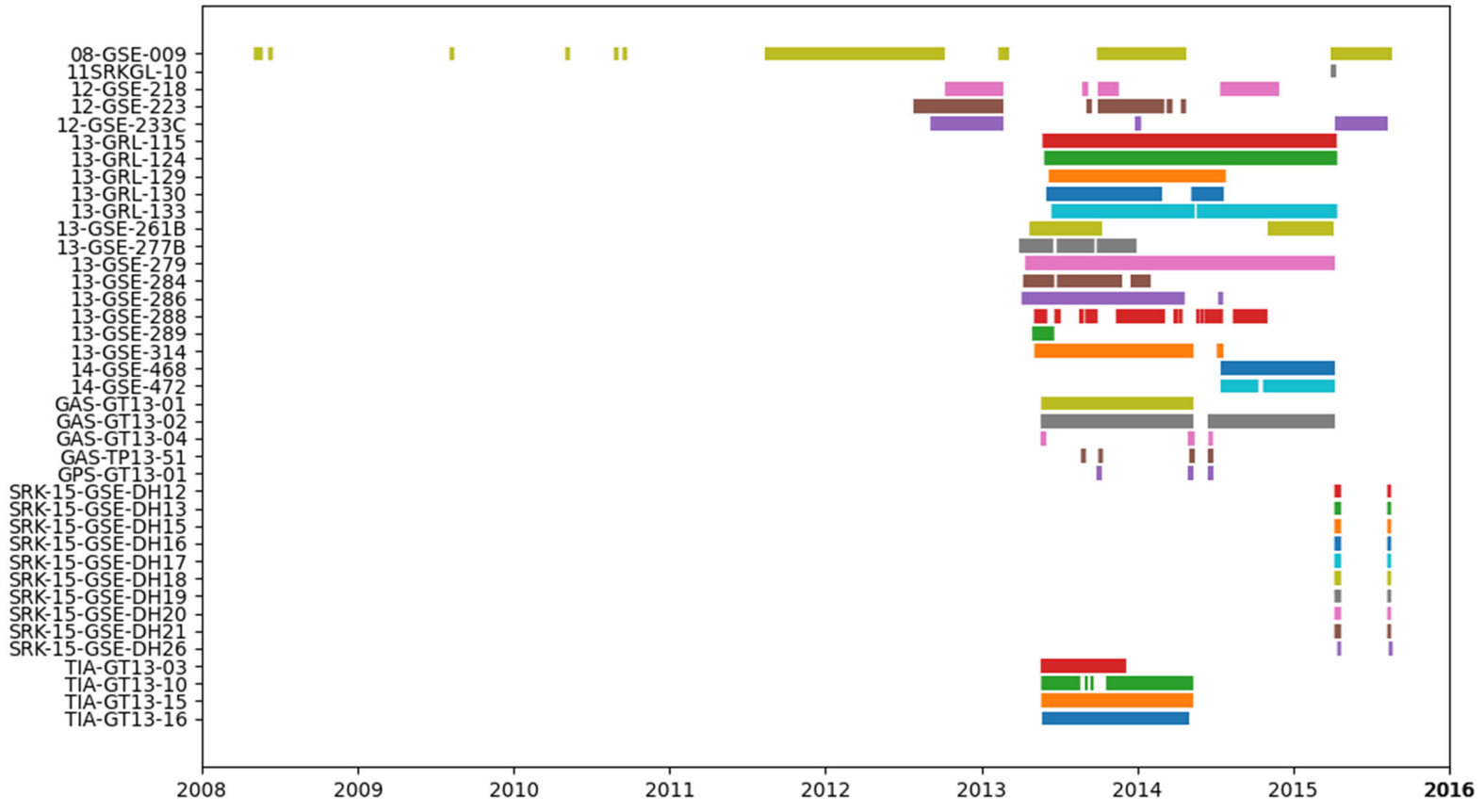
Back River

Site-wide Ground Thermal Monitoring Plan

Marine Laydown Area - Historic and Recent Ground Temperature Sites

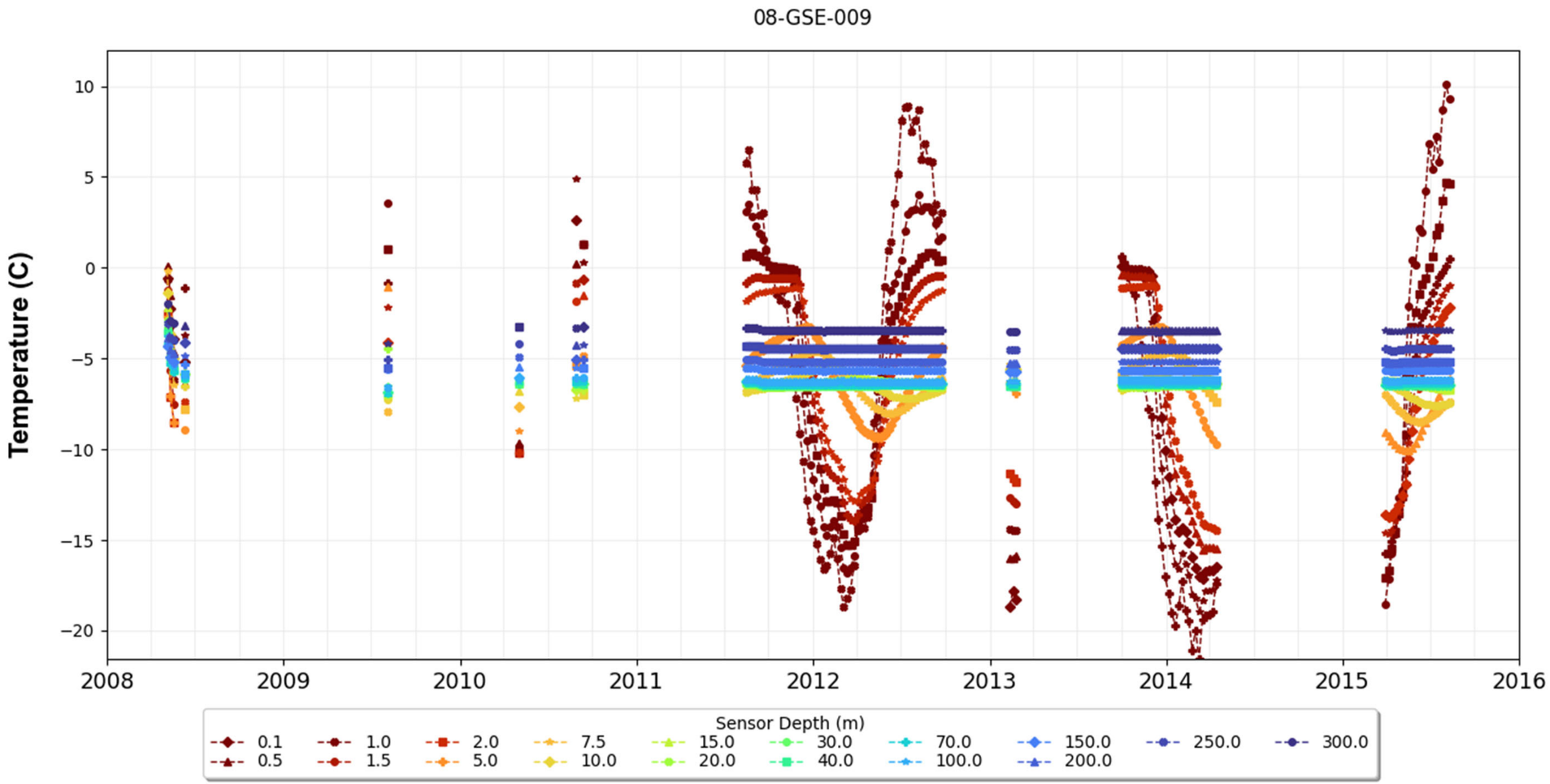
DATE:	APPROVED:	FIGURE:
2024-04-10	-	3

Appendix B Ground Temperature Data



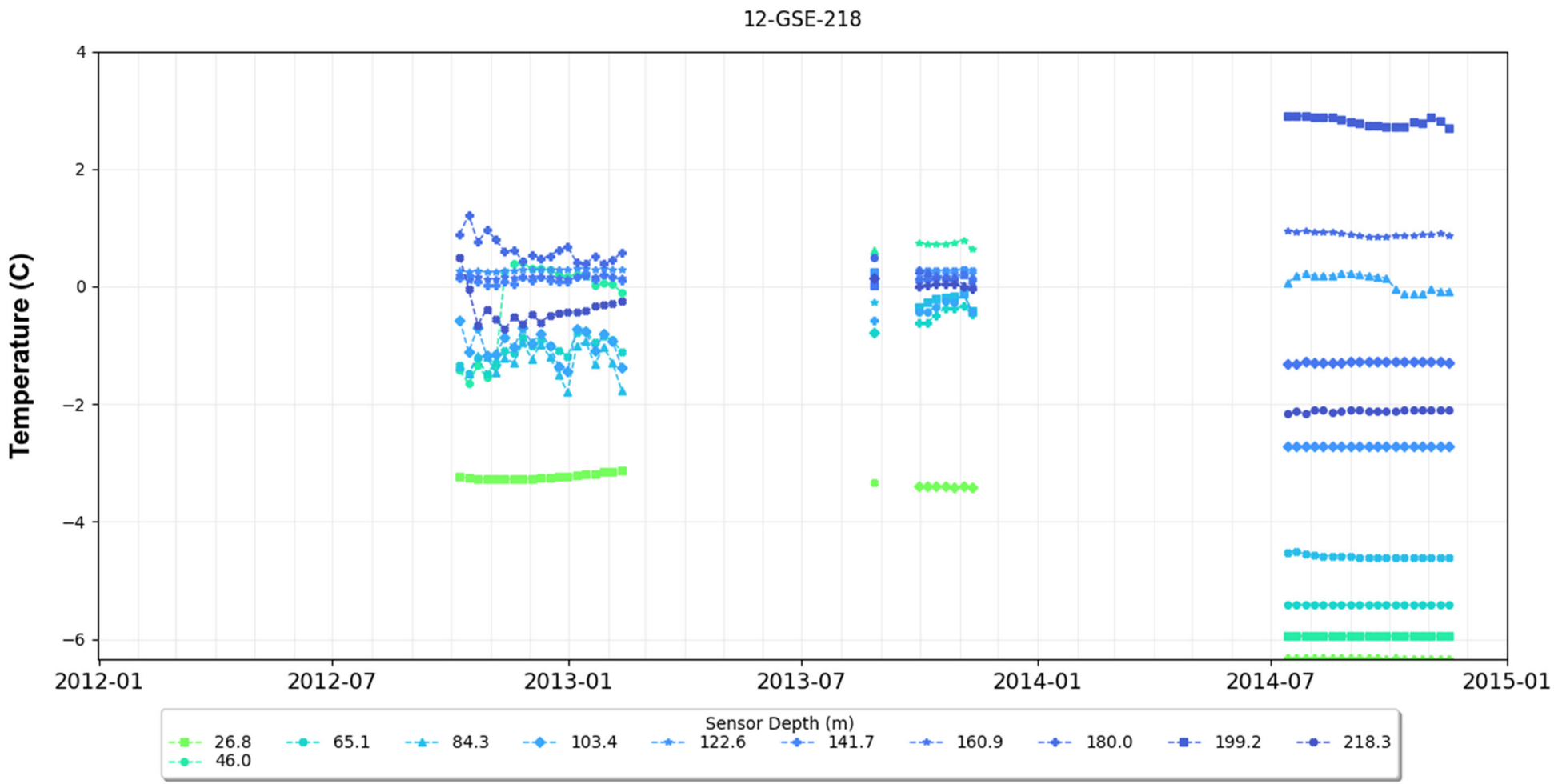
Notes:
1. Data record for inactive ground temperature site (historic sites).

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Historic Ground Temperature Sites – Data Record
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: **B-1**



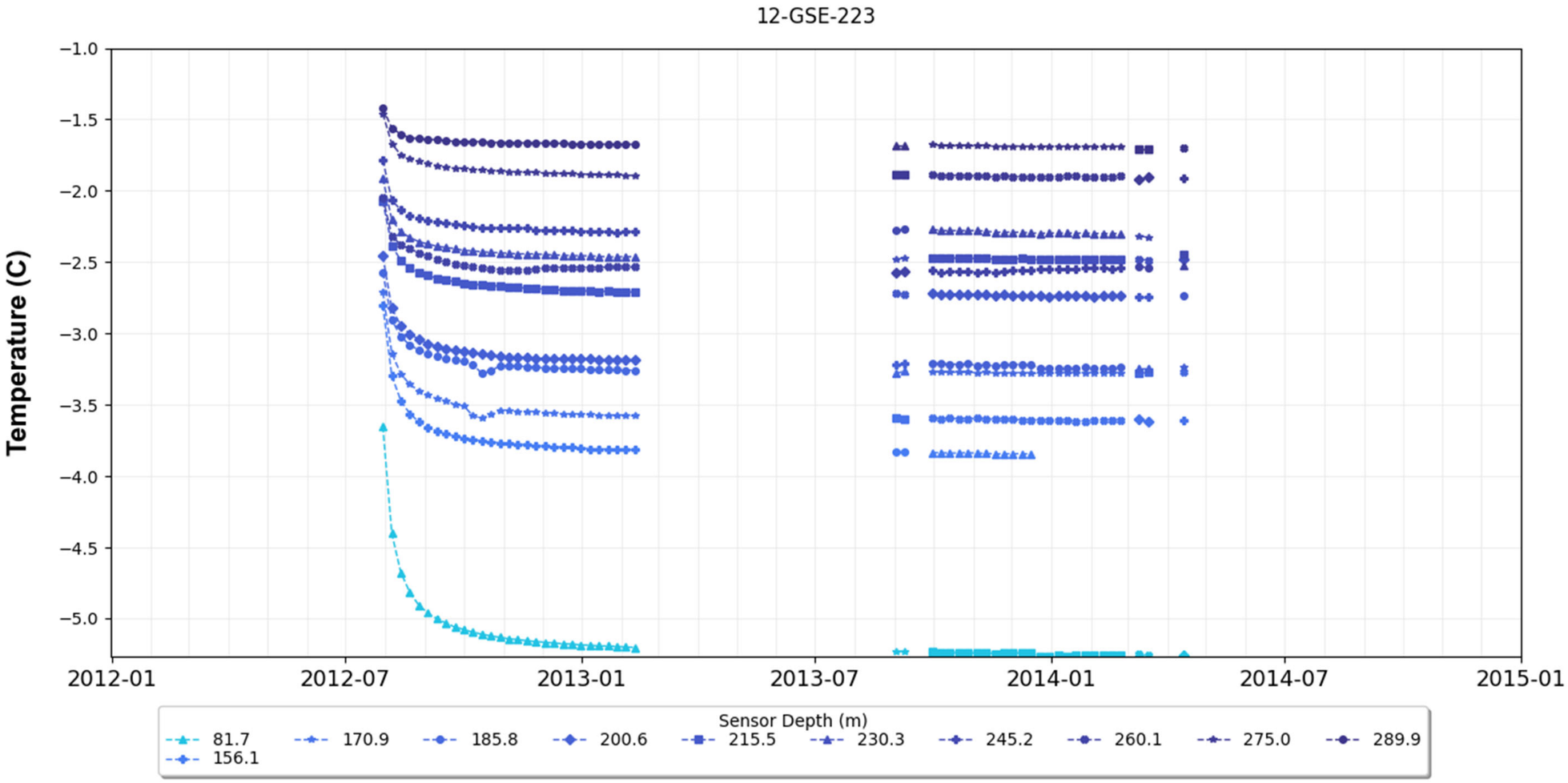
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Historic Ground Temperature Site – 08-GSE-009
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: **B-2**



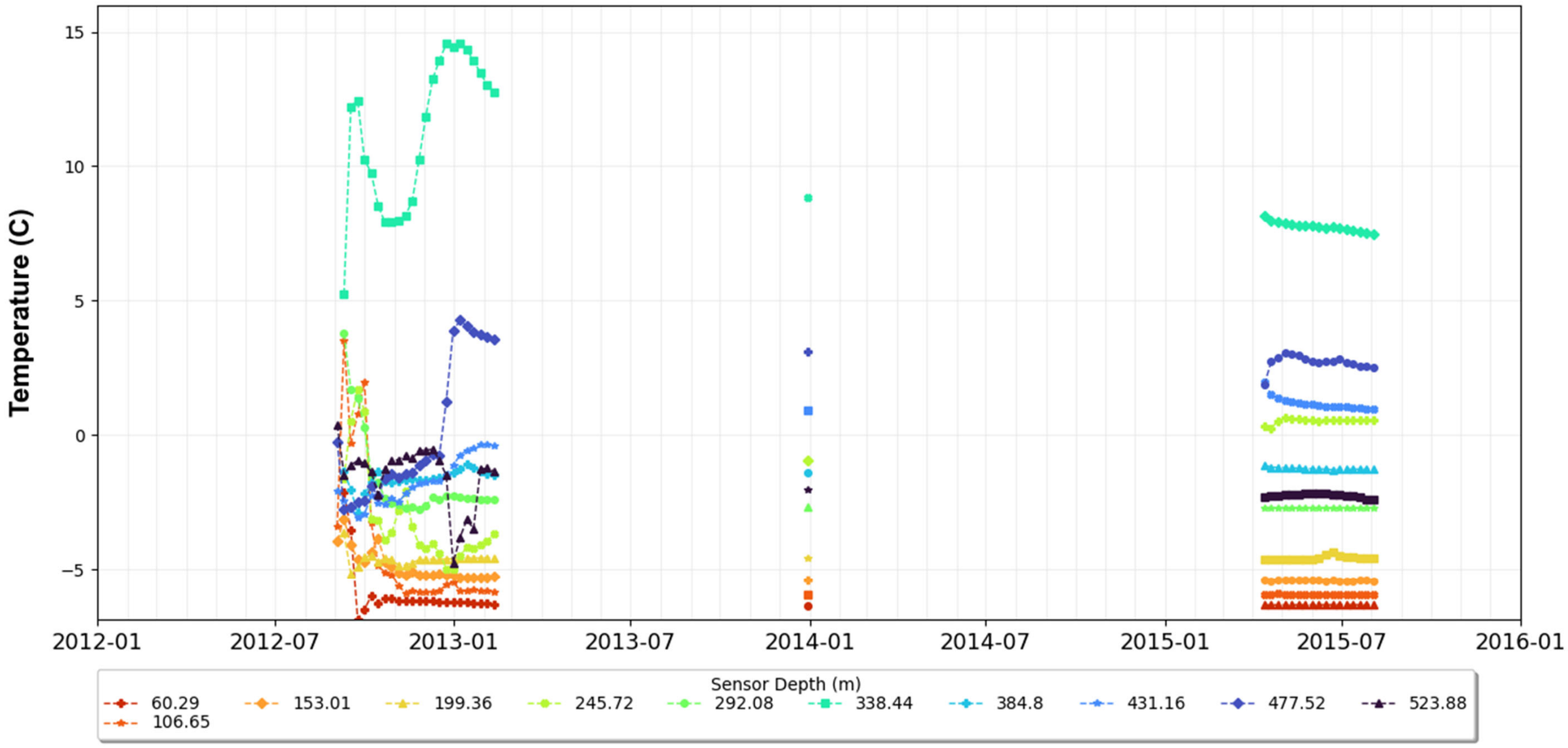
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Historic Ground Temperature Site – 12-GSE-218
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 | Approved: CWS | Figure: **B-3**



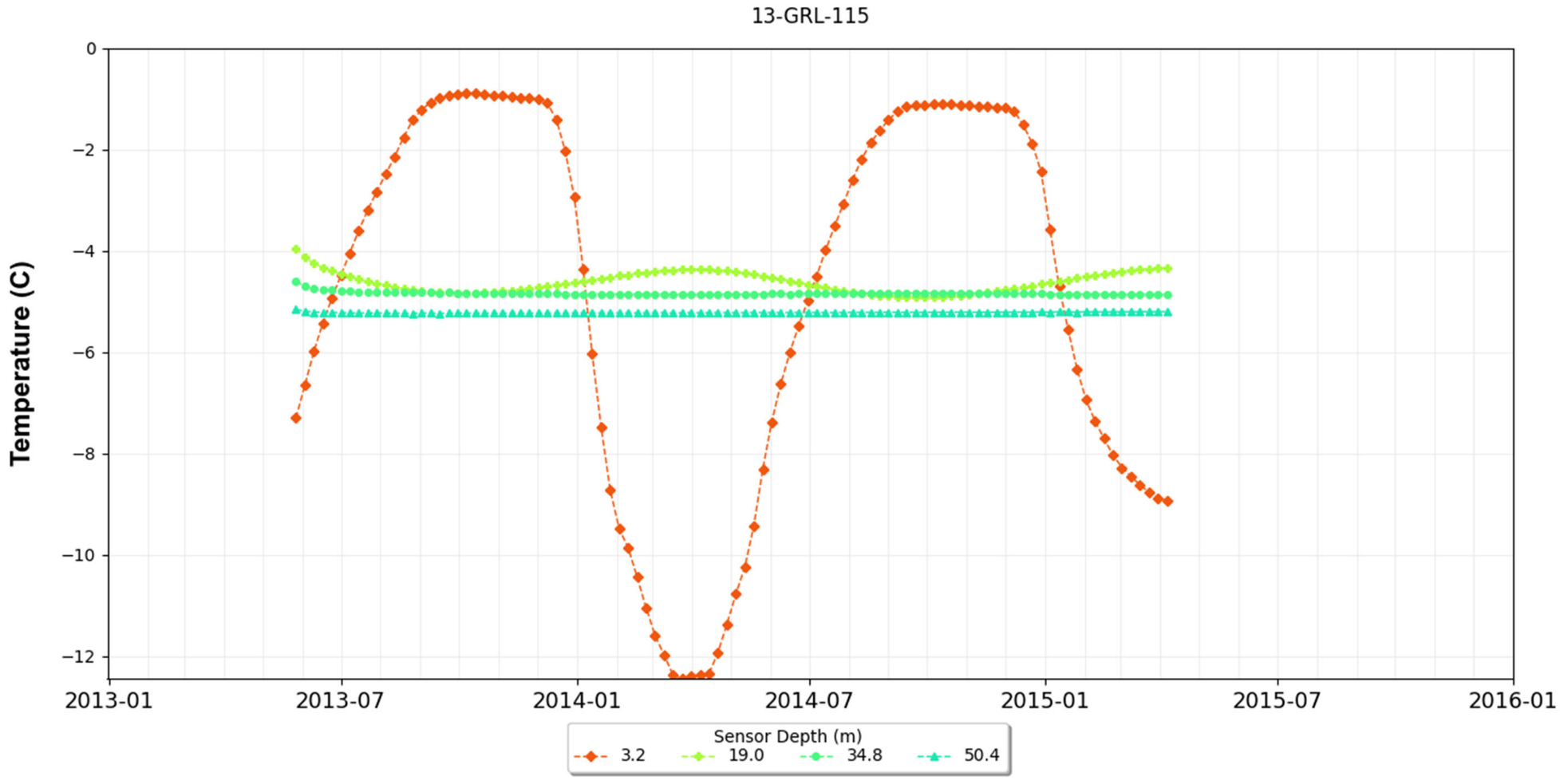
Notes:
1. Average weekly ground temperature shown.

srk consulting		Site-wide Ground Thermal Monitoring Plan
		Historic Ground Temperature Site – 12-GSE-223
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: **B-4**



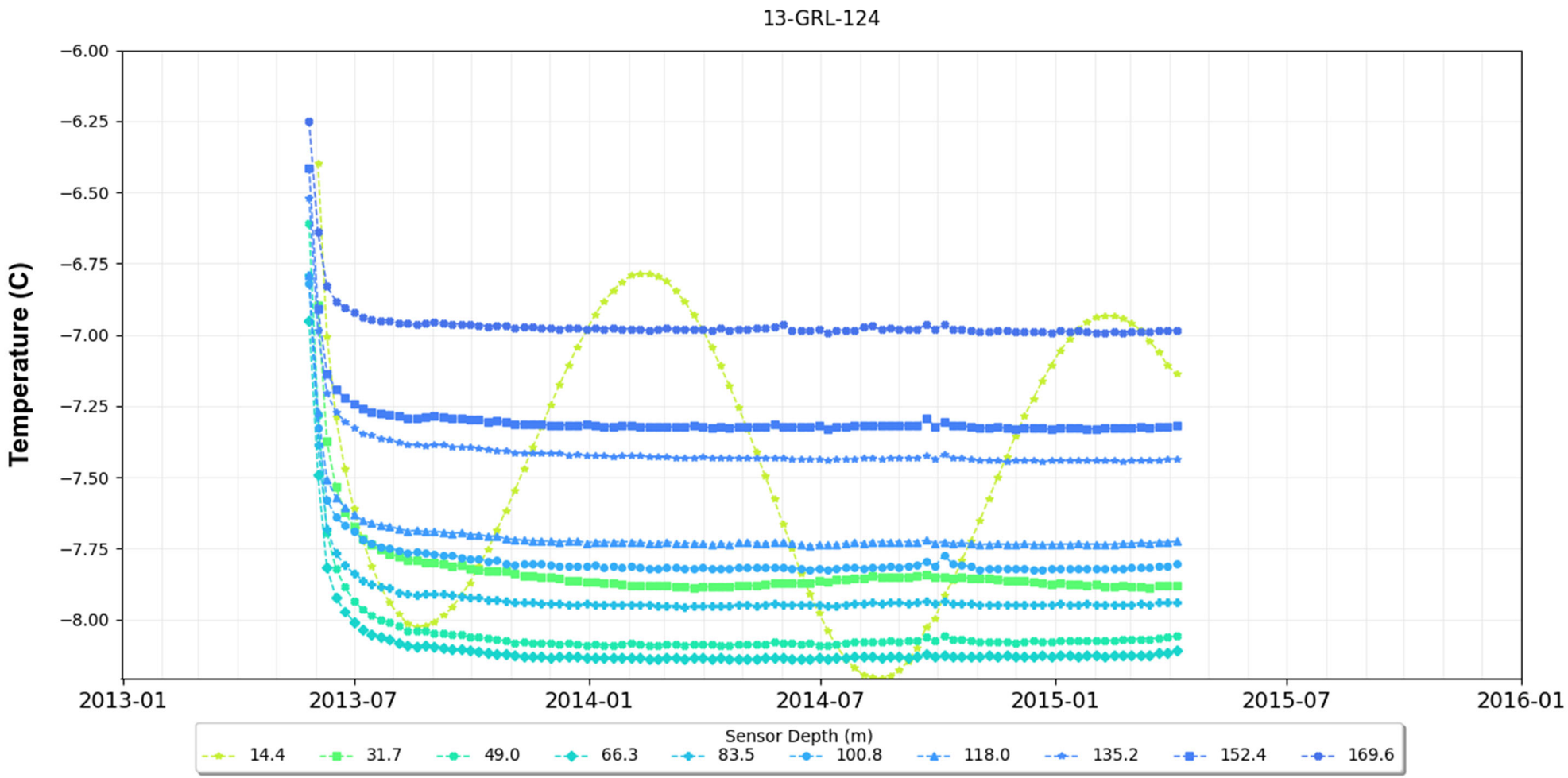
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Historic Ground Temperature Site – 12-GSE-233C
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: **B-5**



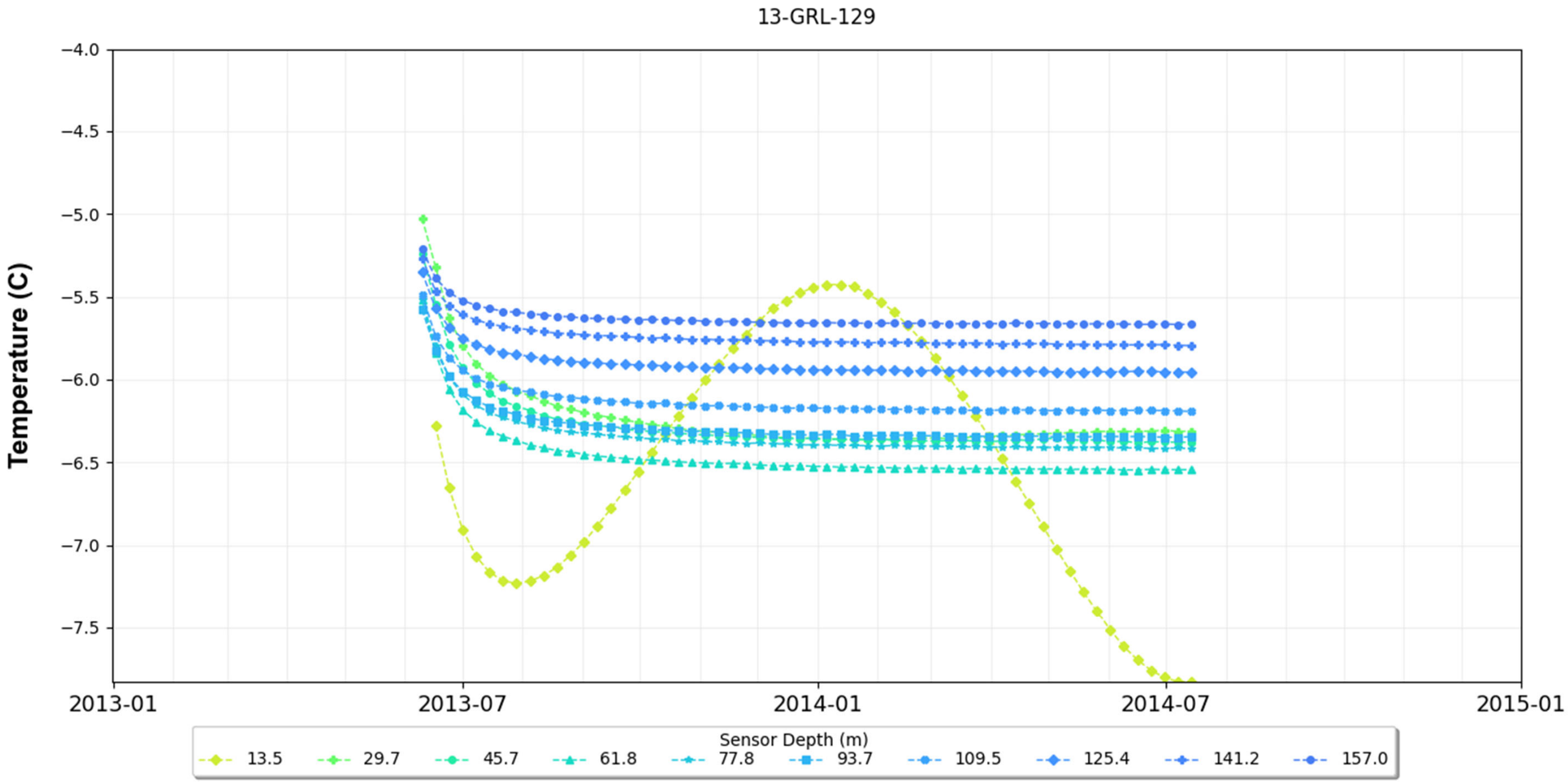
Notes:
1. Average weekly ground temperature shown.

srk consulting		Site-wide Ground Thermal Monitoring Plan
		Historic Ground Temperature Site – 13-GRL-115
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 / Approved: CWS / Figure: **B-6**



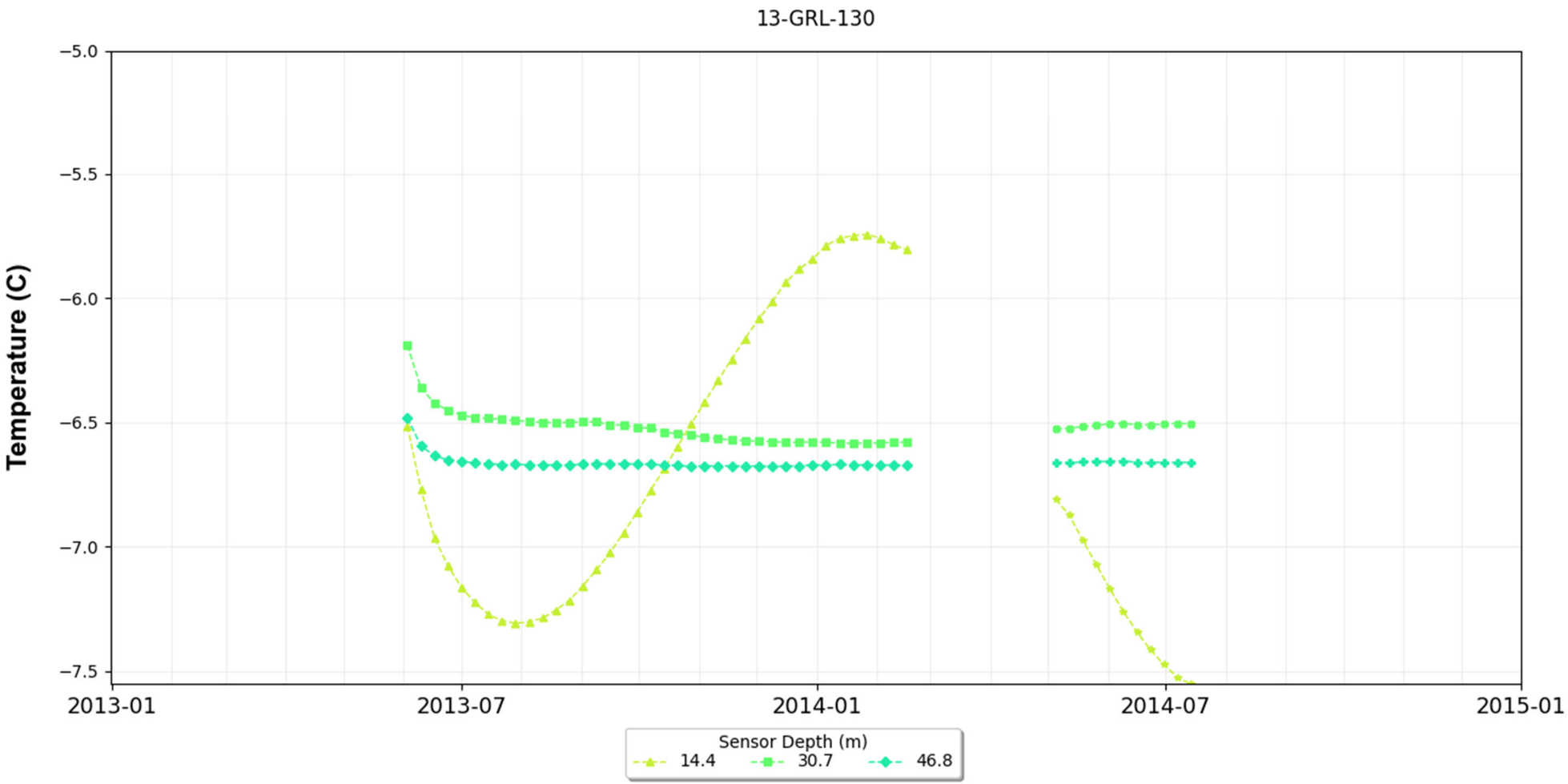
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Historic Ground Temperature Site – 13-GRL-124
		Date: March 2024 / Approved: CWS / Figure: **B-7**



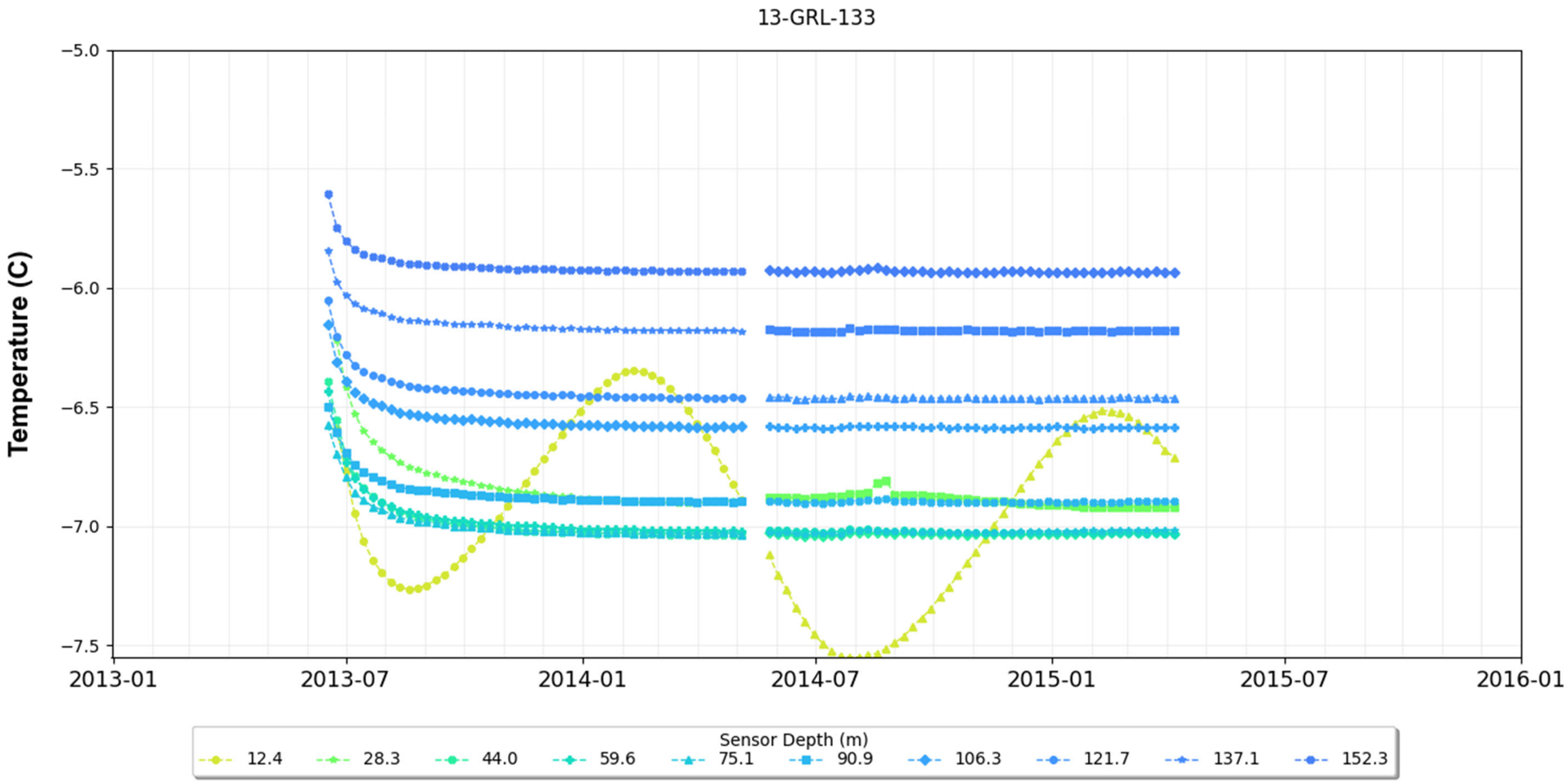
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Historic Ground Temperature Site – 13-GRL-129
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: **B-8**



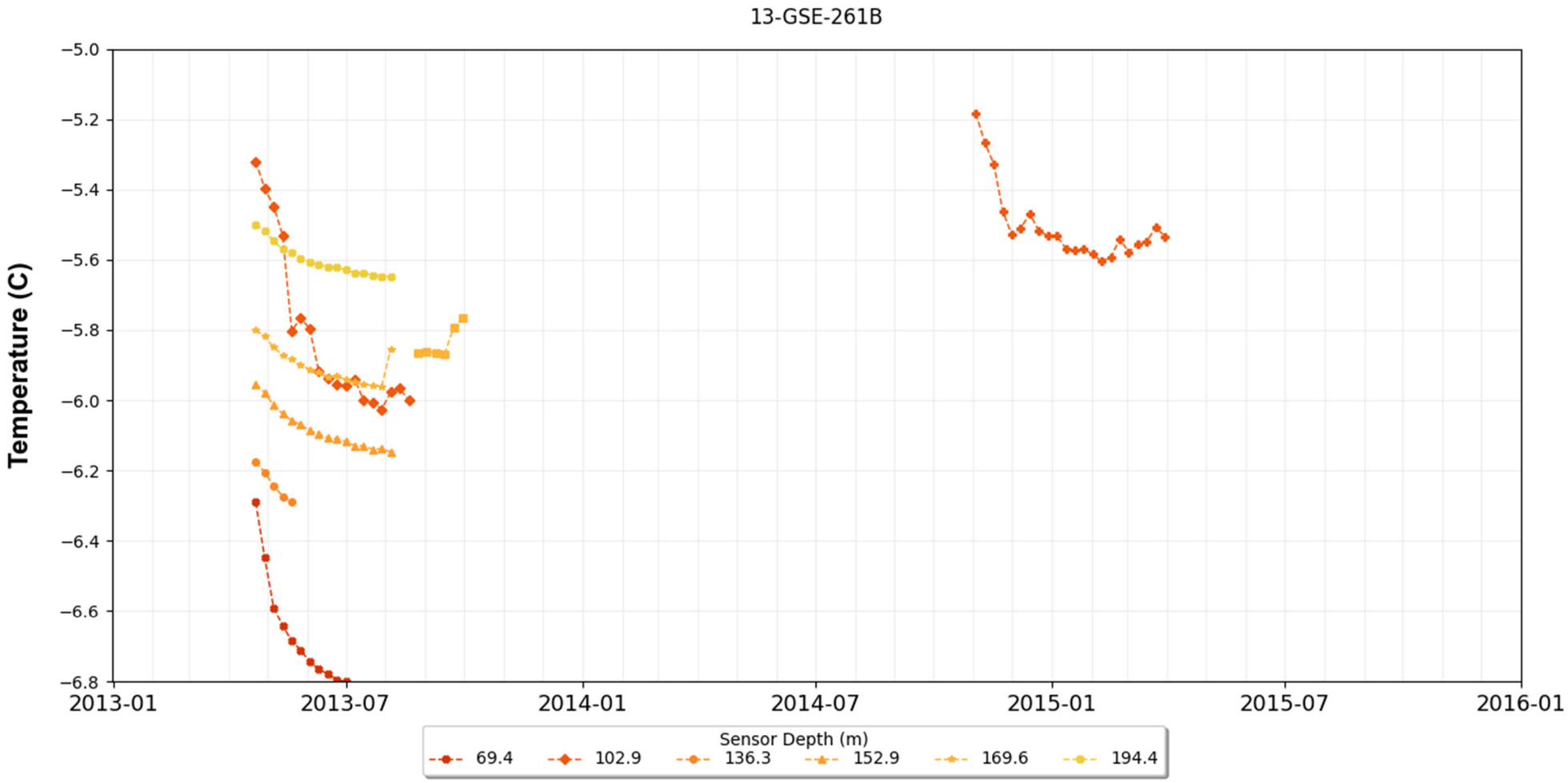
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Historic Ground Temperature Site – 13-GRL-130
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: **B-9**



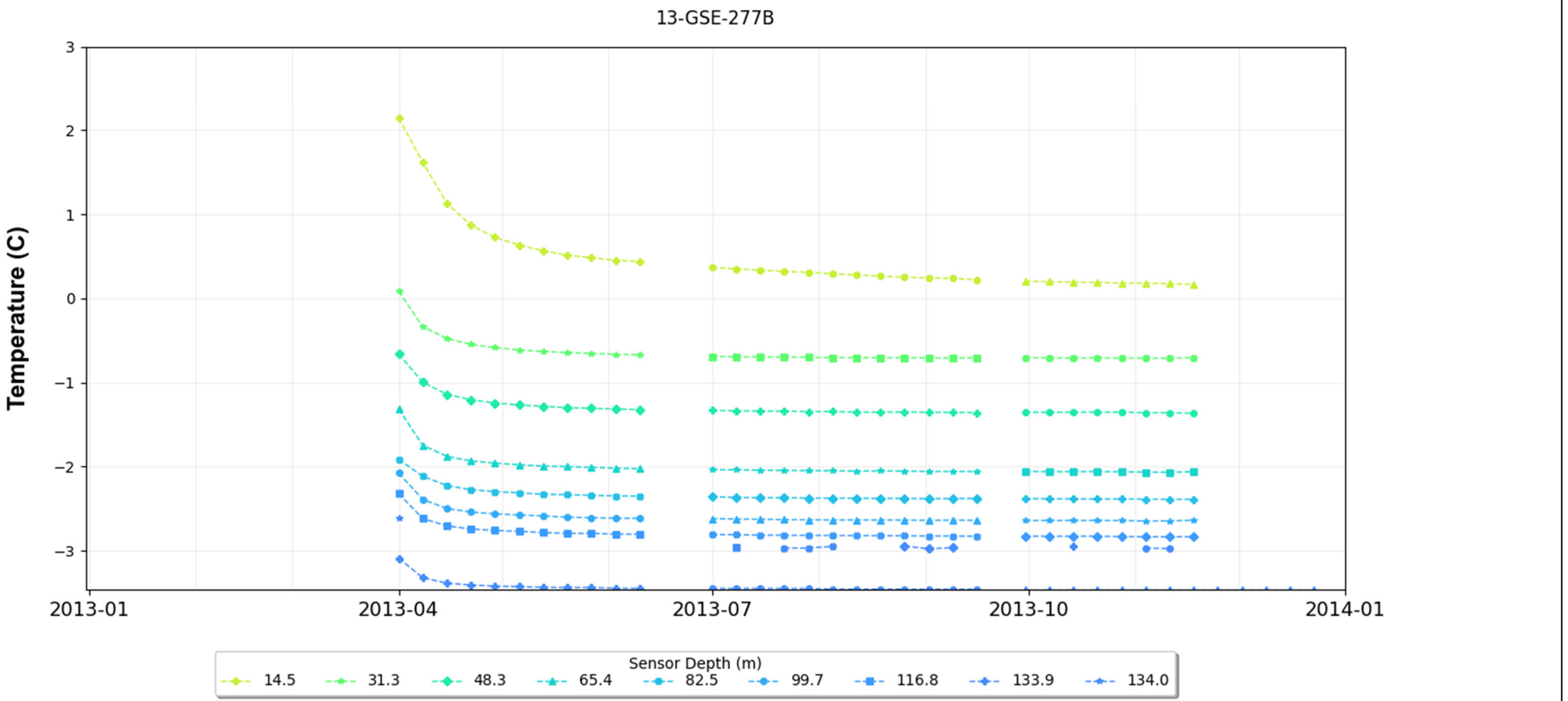
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Historic Ground Temperature Site – 13-GRL-133
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 / Approved: CWS / Figure: **B-10**



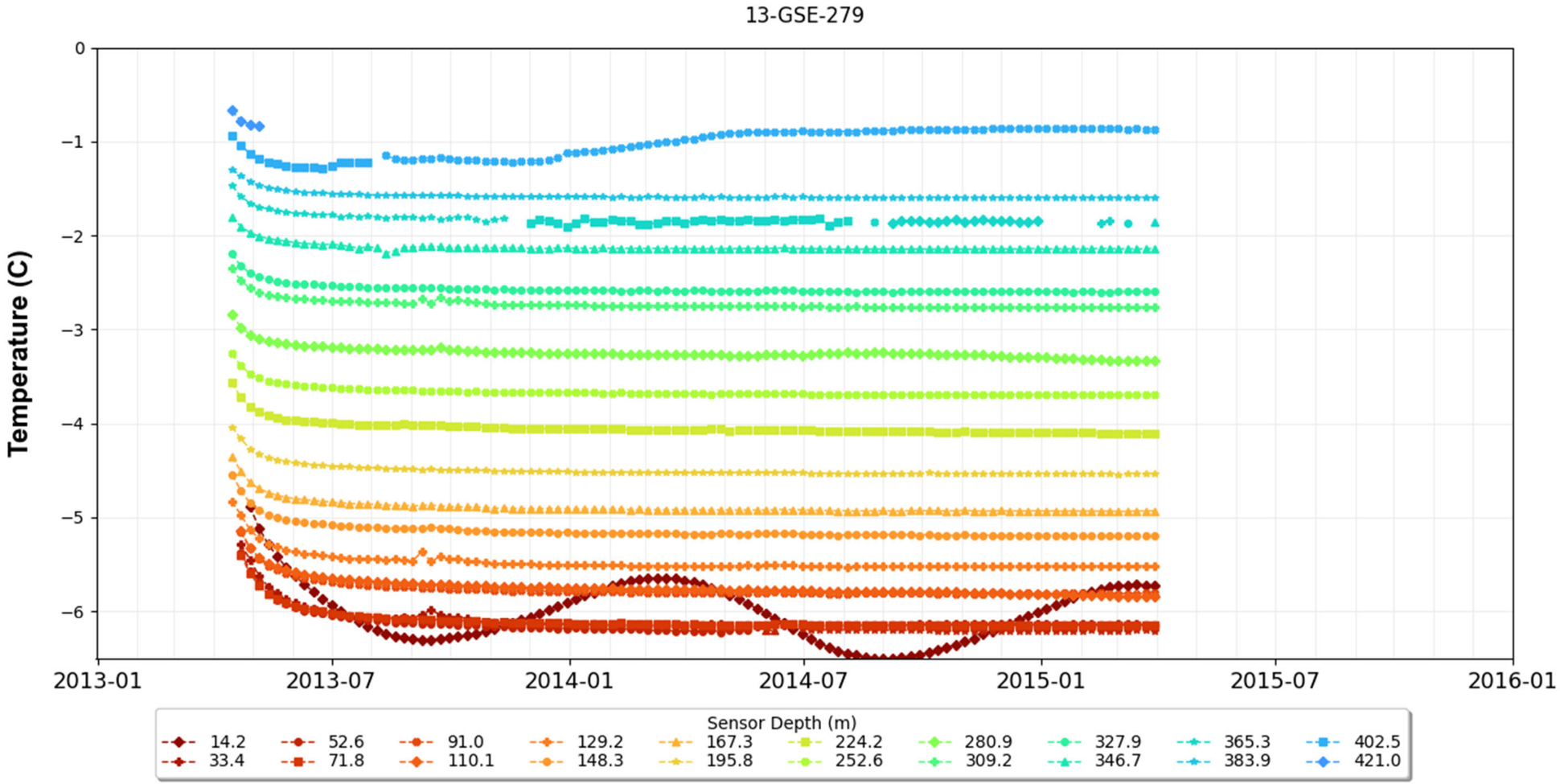
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Historic Ground Temperature Site – 13-GSE-261B
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: **B-11**



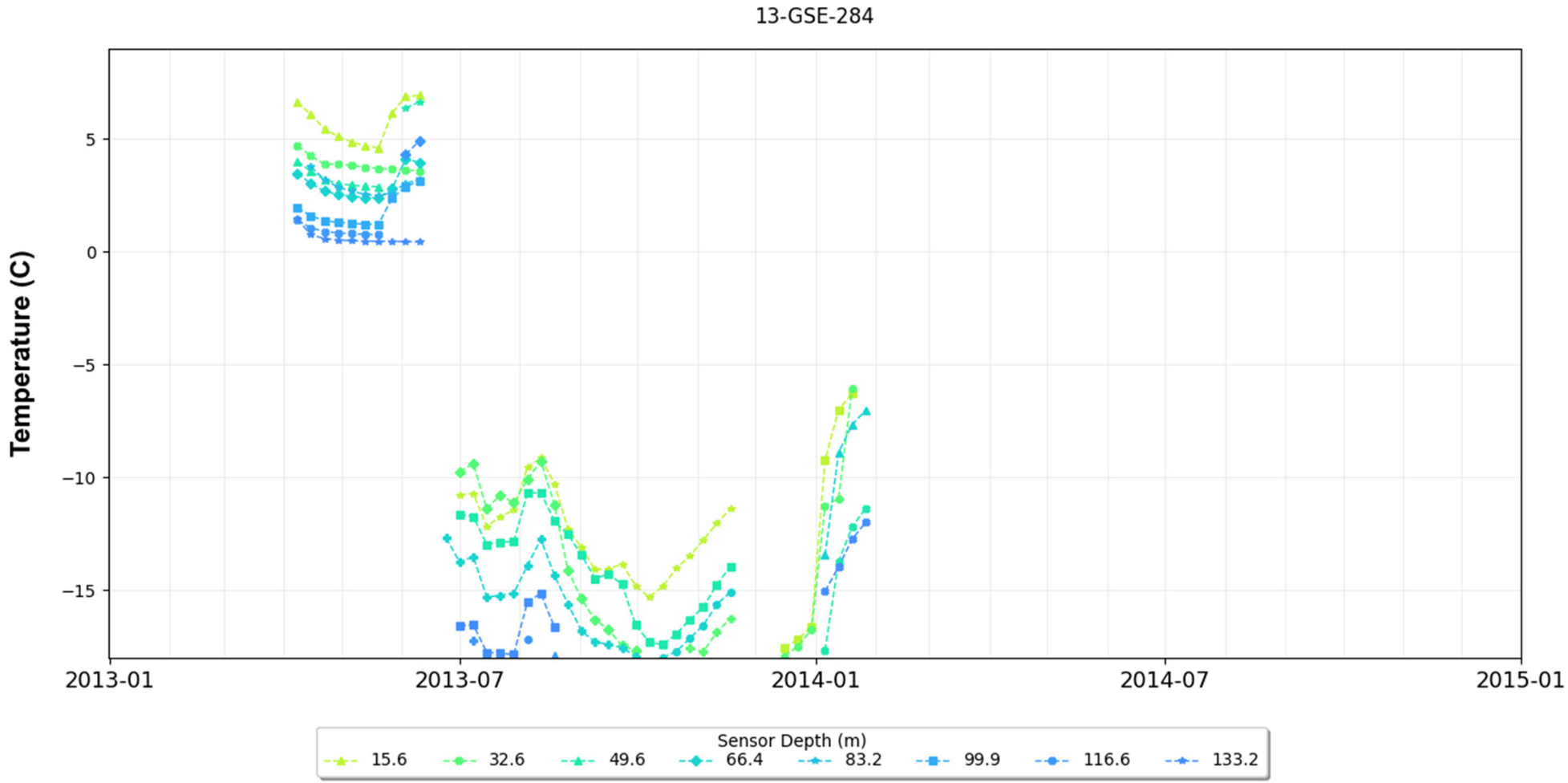
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Historic Ground Temperature Site – 13-GSE-277B
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: **B-12**



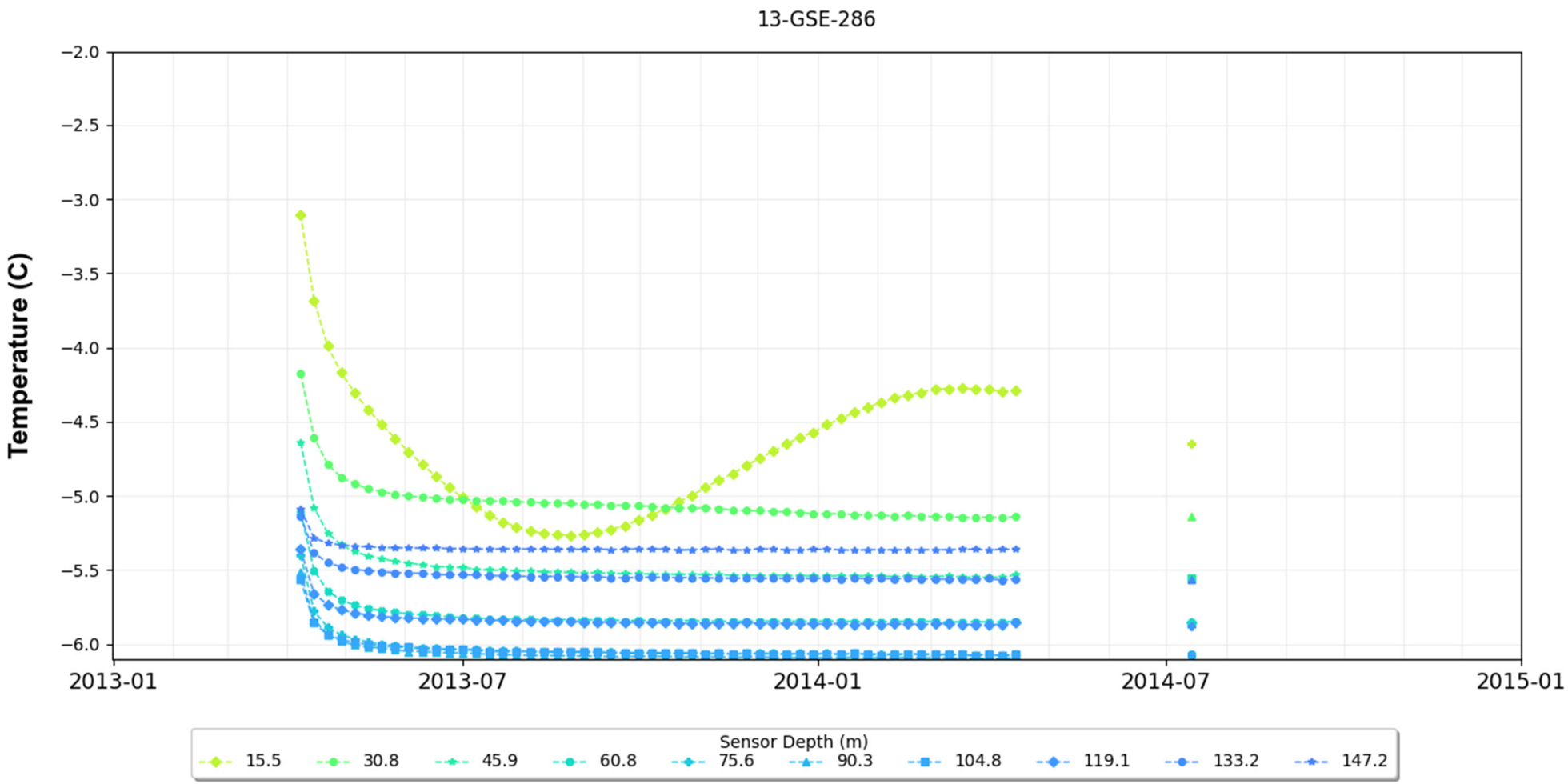
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Historic Ground Temperature Site – 13-GSE-279
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: **B-13**



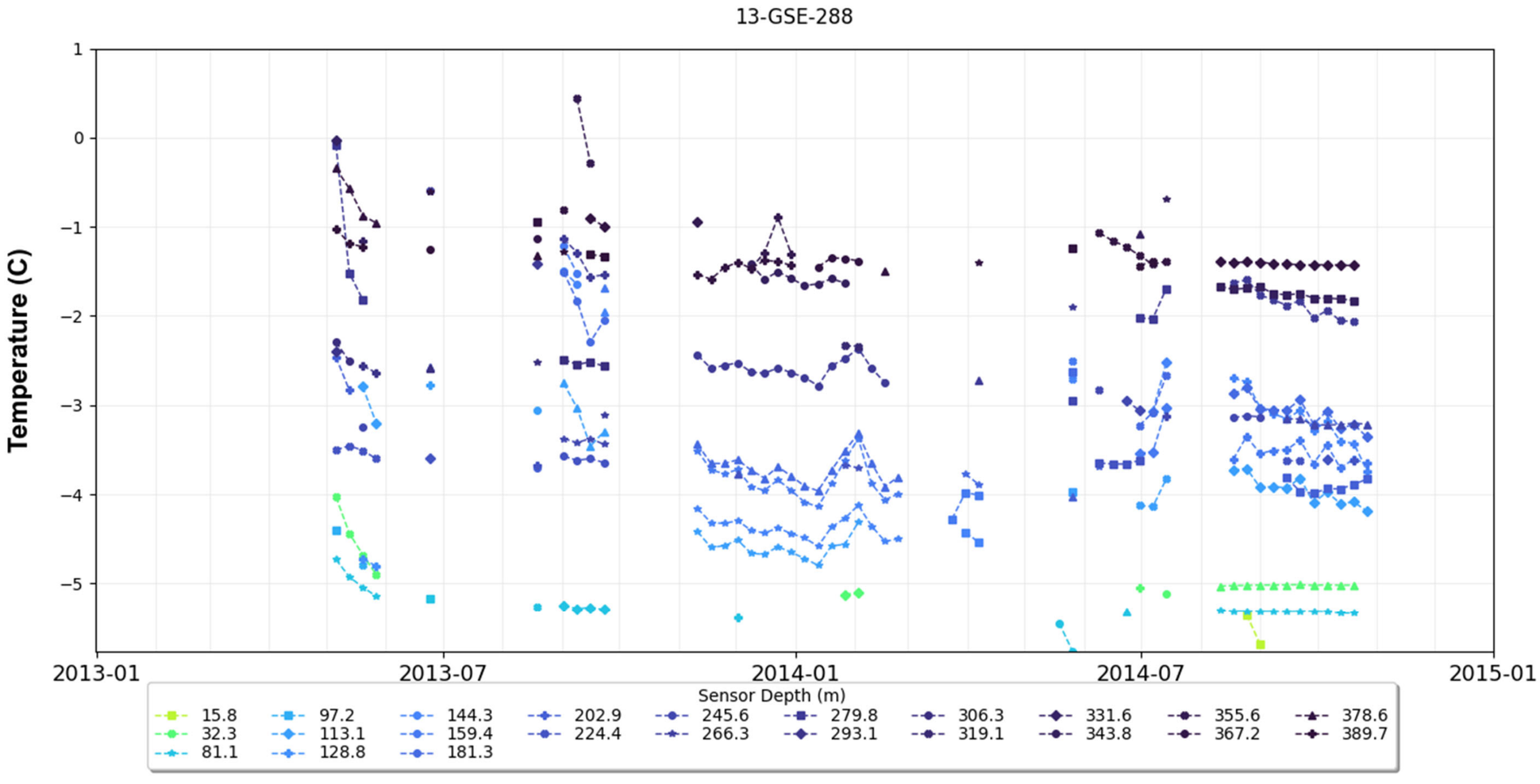
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Historic Ground Temperature Site – 13-GSE-284
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: **B-14**



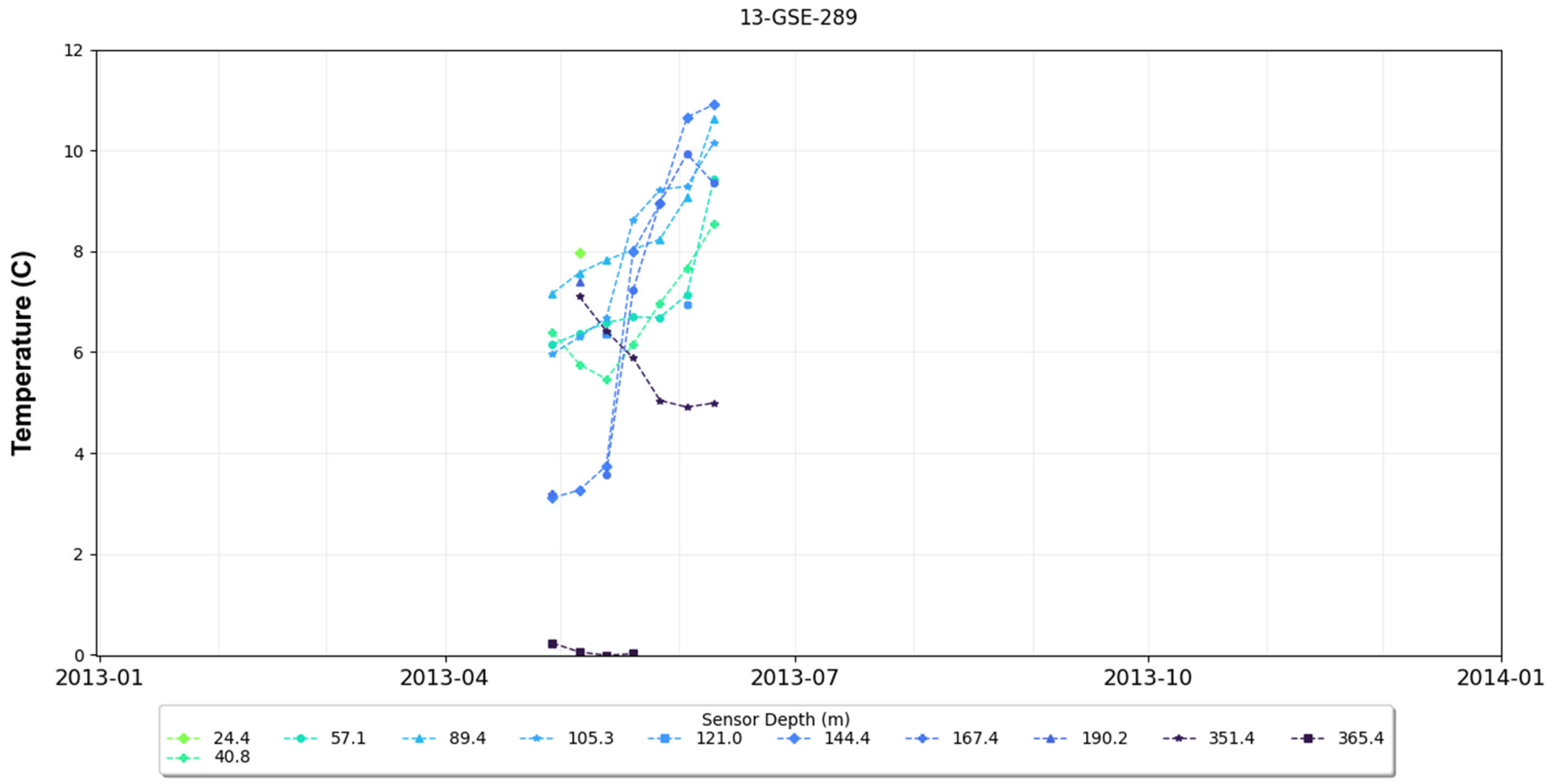
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Historic Ground Temperature Site – 13-GSE-286
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: **B-15**



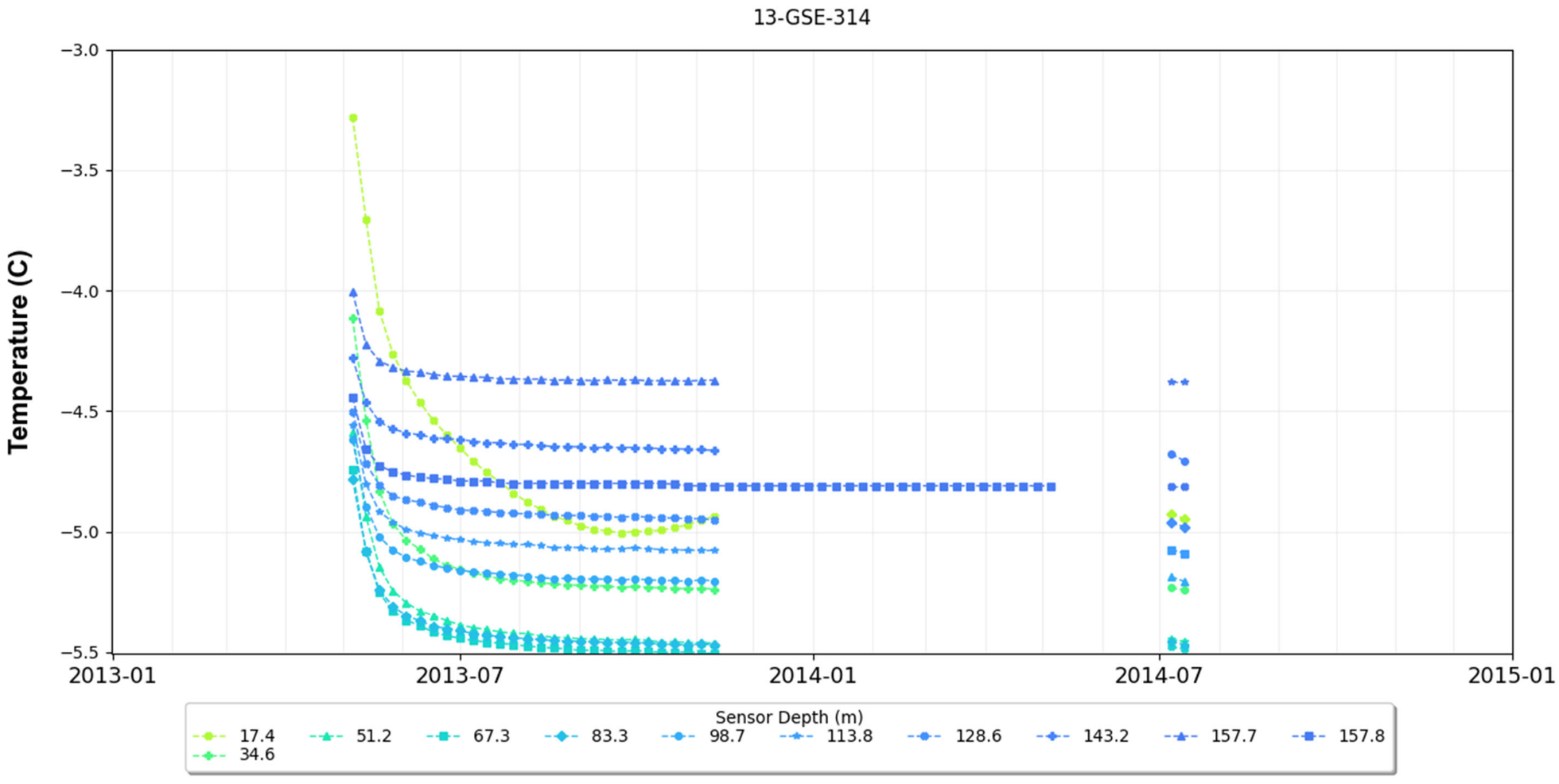
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Historic Ground Temperature Site – 13-GSE-288
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: **B-16**



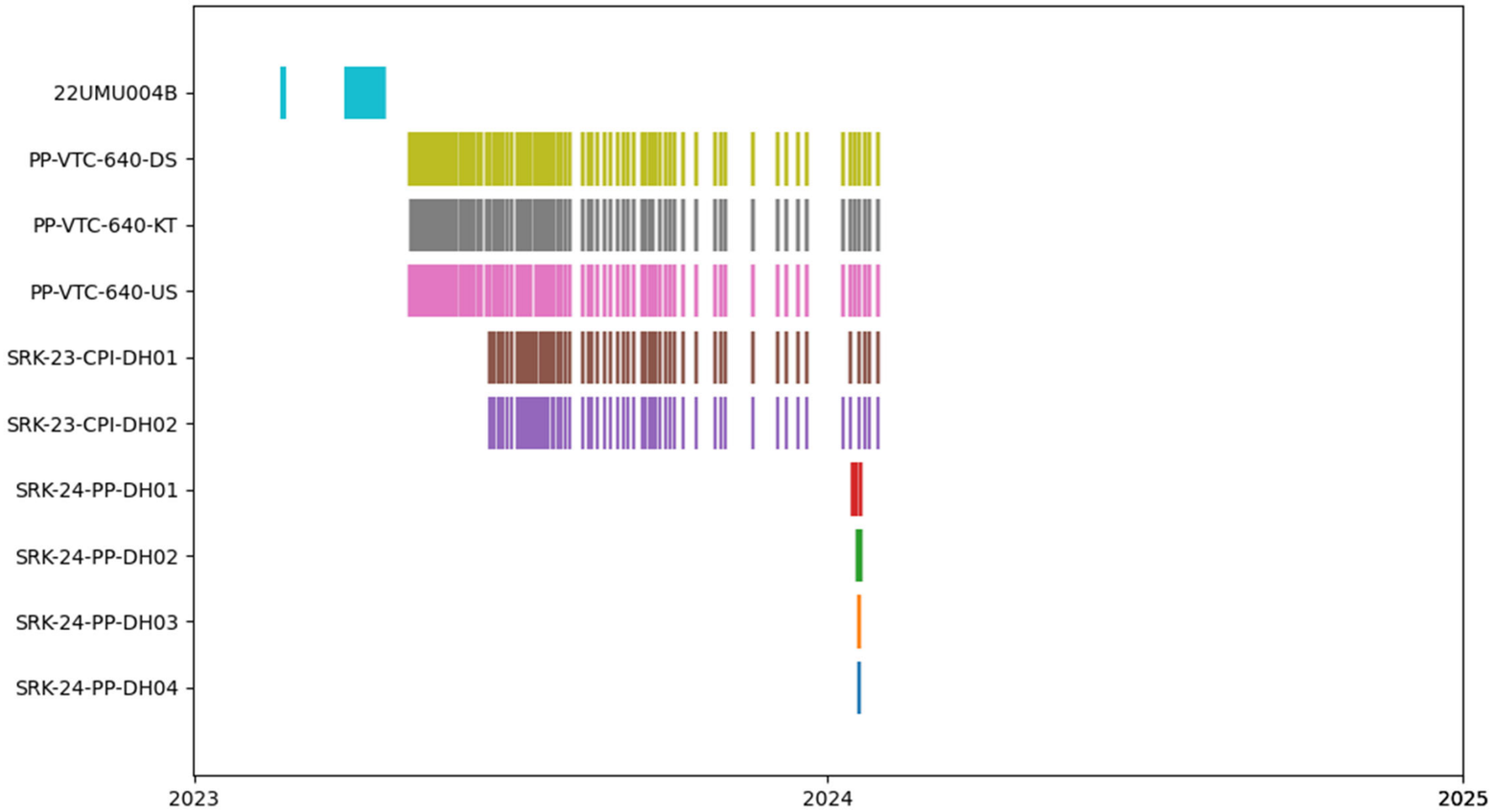
Notes:
1. Average weekly ground temperature shown.

srk consulting		Site-wide Ground Thermal Monitoring Plan
		Historic Ground Temperature Site – 13-GSE-289
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 / Approved: CWS / Figure: **B-17**



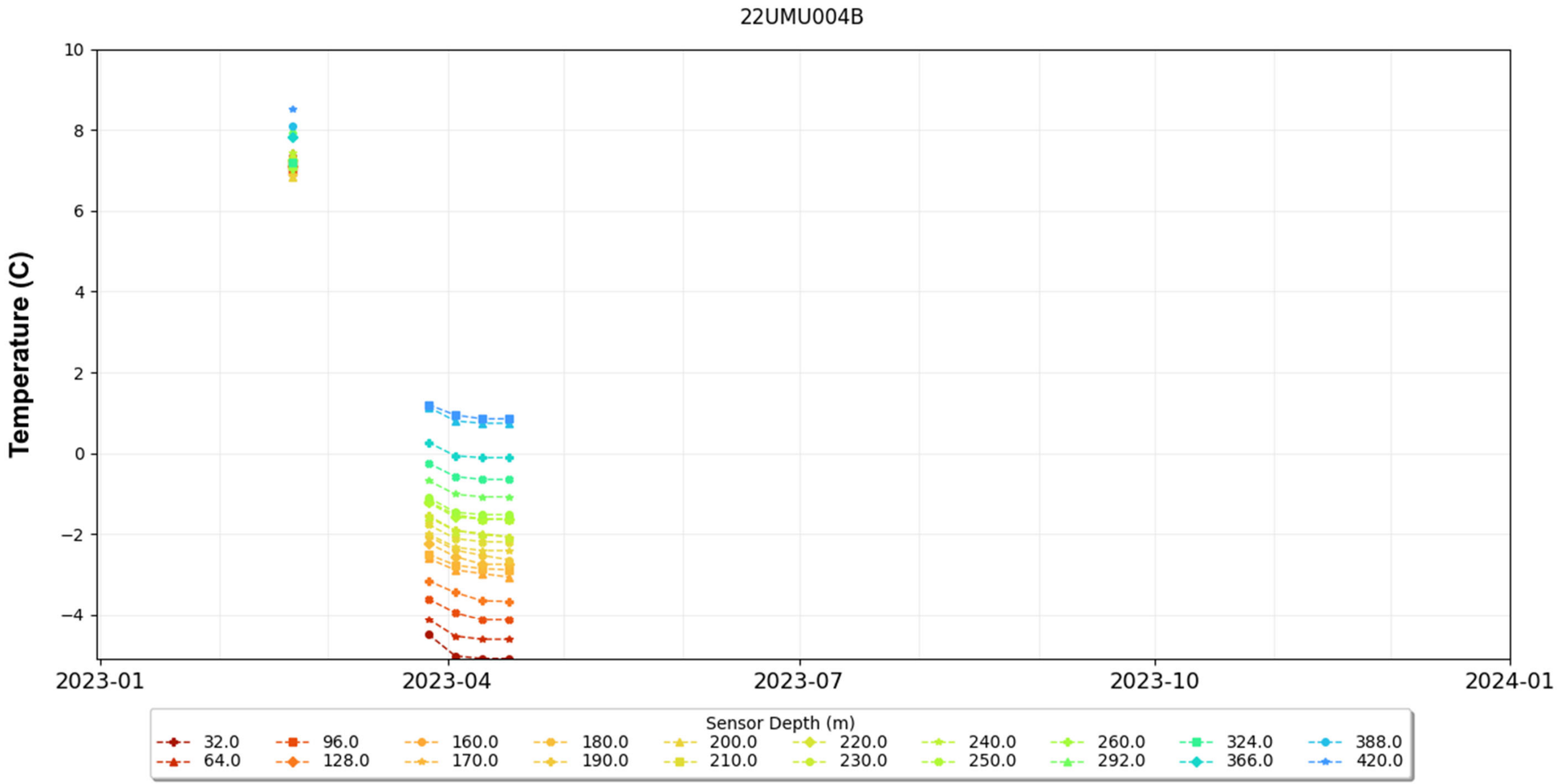
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Historic Ground Temperature Site – 13-GSE-314
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 / Approved: CWS / Figure: **B-18**



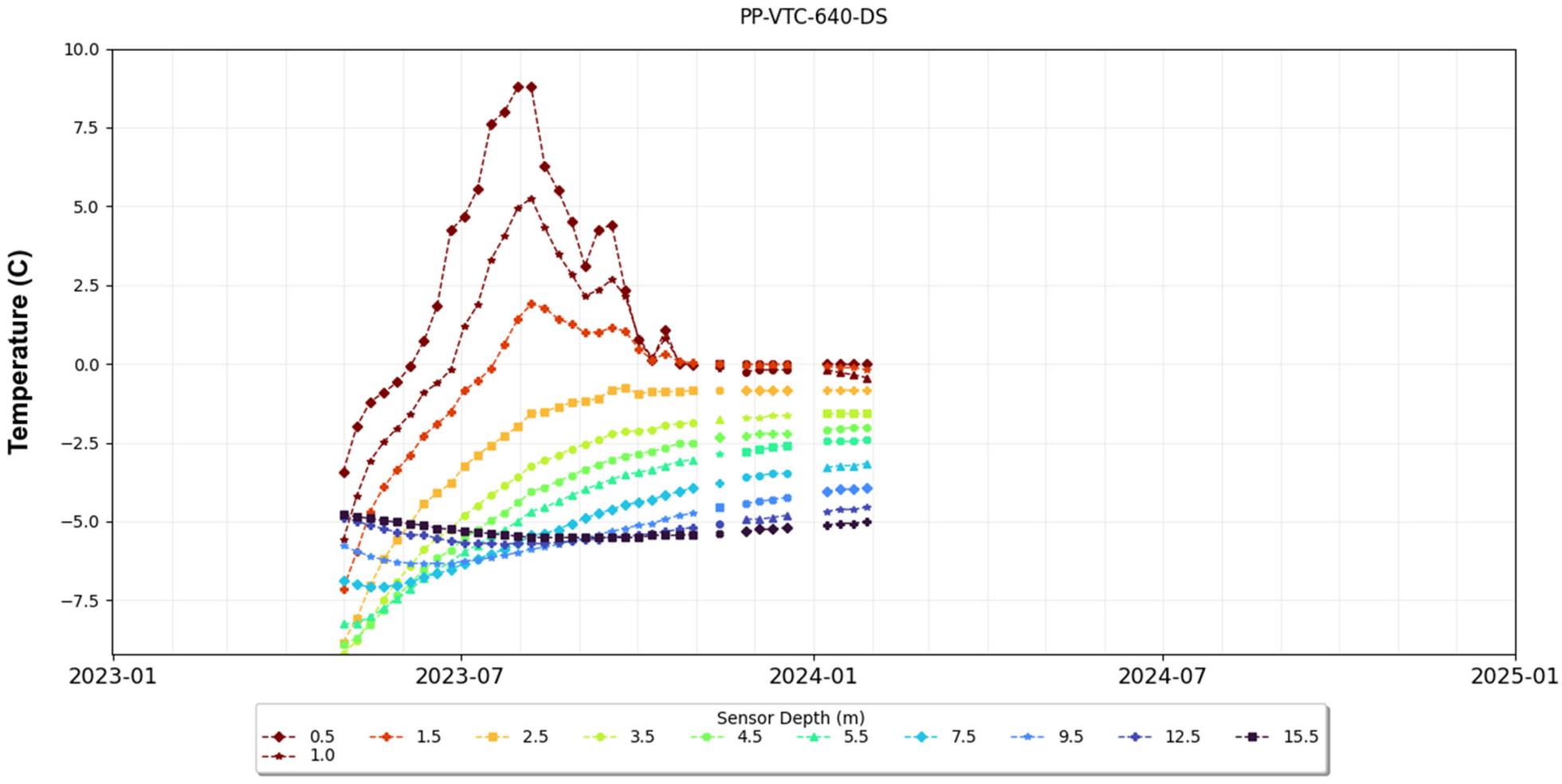
Notes:
1. Data record for active and temporary ground temperature site (recent sites).
2. Temporary ground temperature sites installed to support Primary Pond Dam construction include SRK-24-PP-DH01, -DH02, -DH03, and -DH04.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Recent Ground Temperature Sites – Data Record
		Date: March 2024 | Approved: CWS | Figure: **B-19**



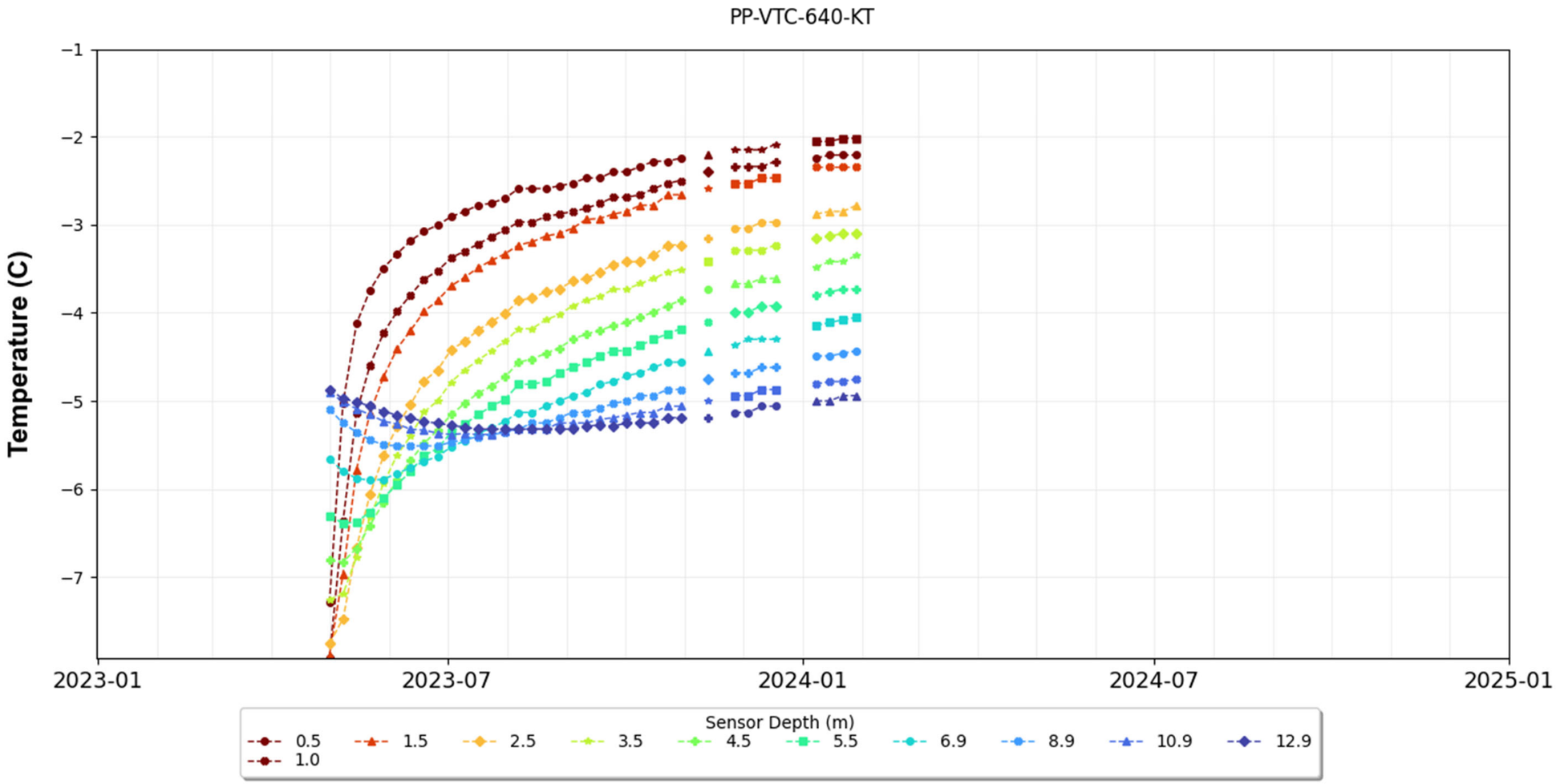
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Recent Ground Temperature Site – 22UM004B
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: **B-20**



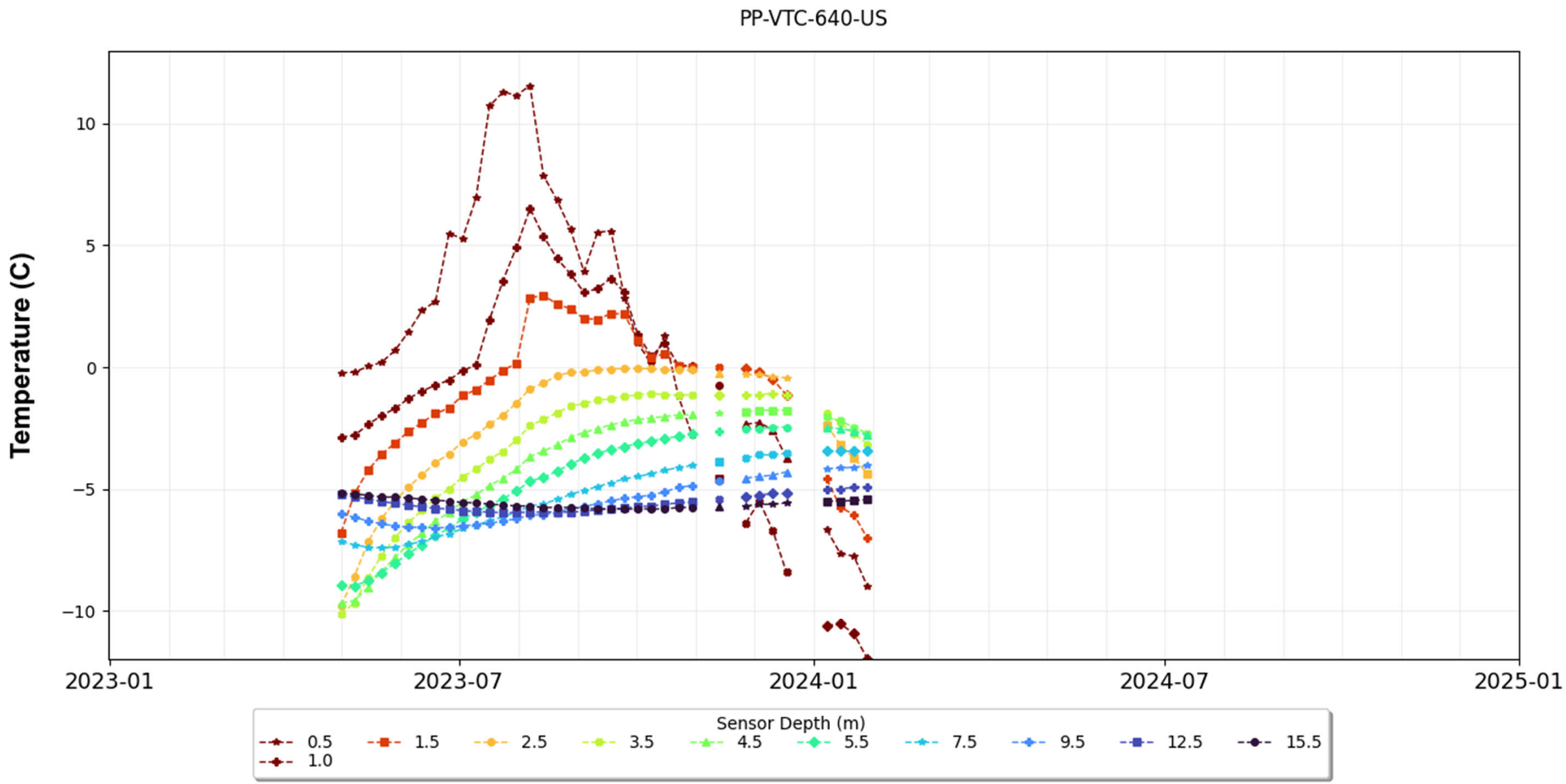
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Recent Ground Temperature Site – PP-VTC-640-DS
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: **B-21**



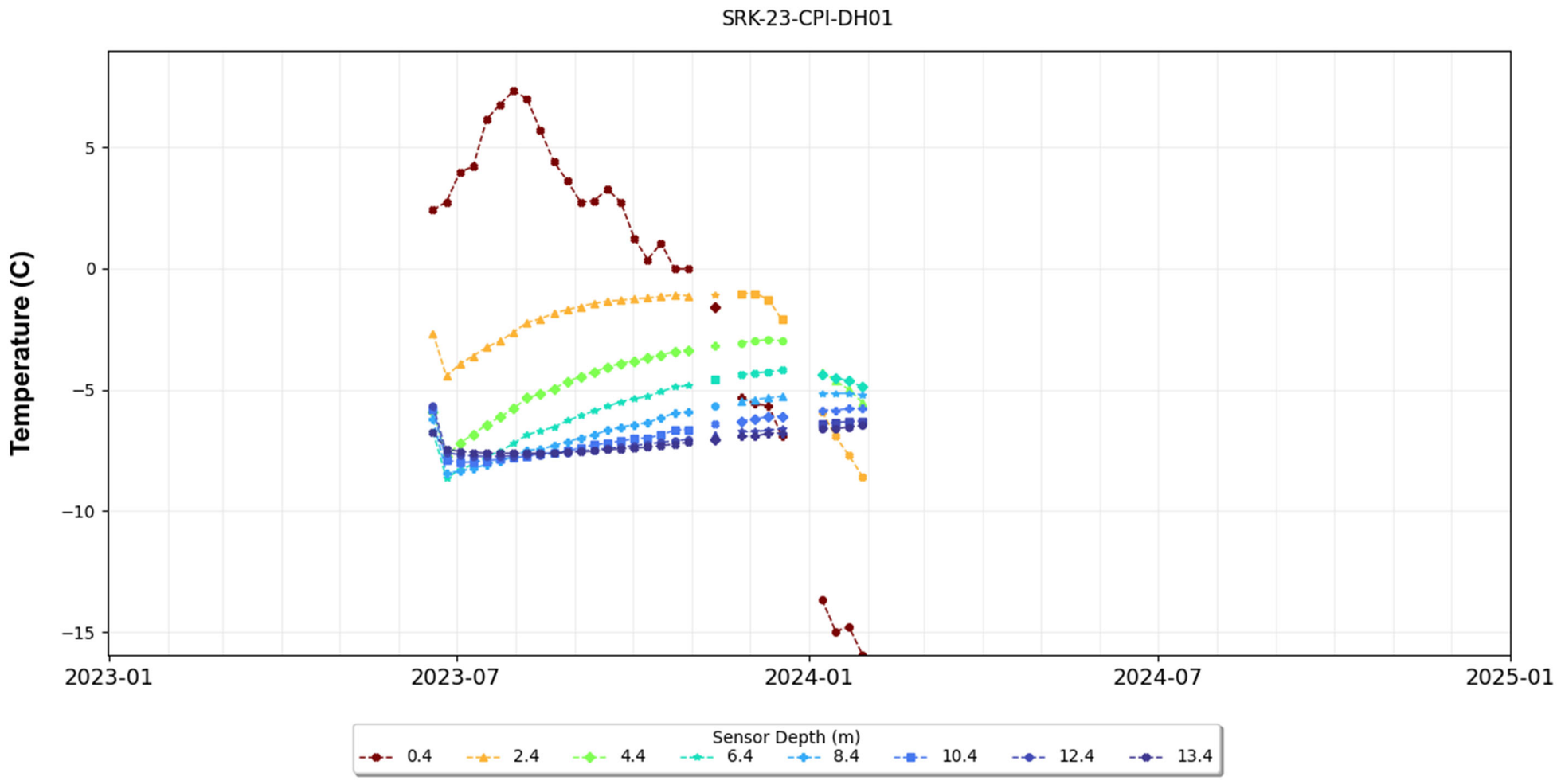
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Recent Ground Temperature Site – PP-VTC-640-KT
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: **B-22**



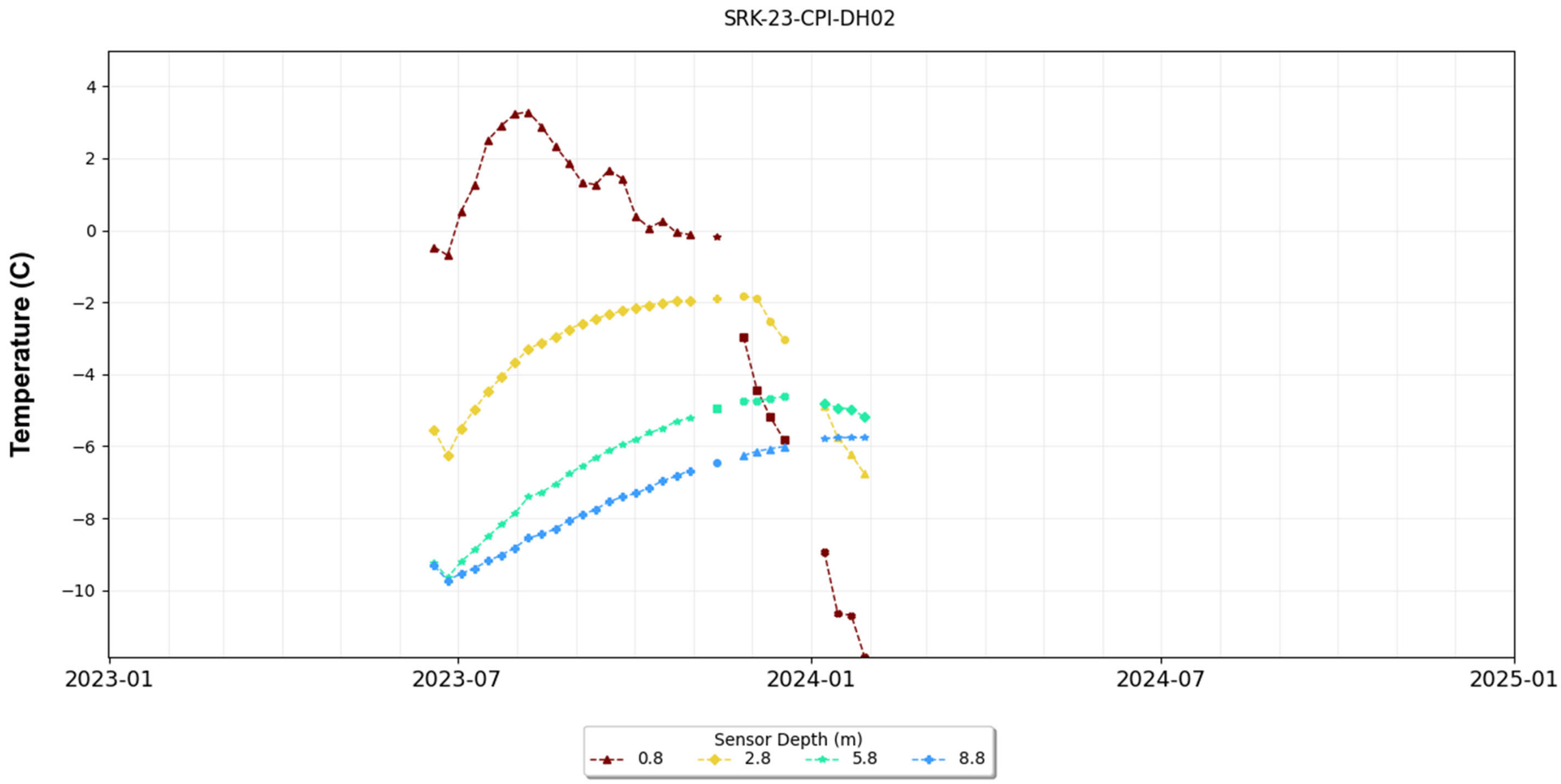
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Recent Ground Temperature Site – PP-VTC-640-US
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: **B-23**



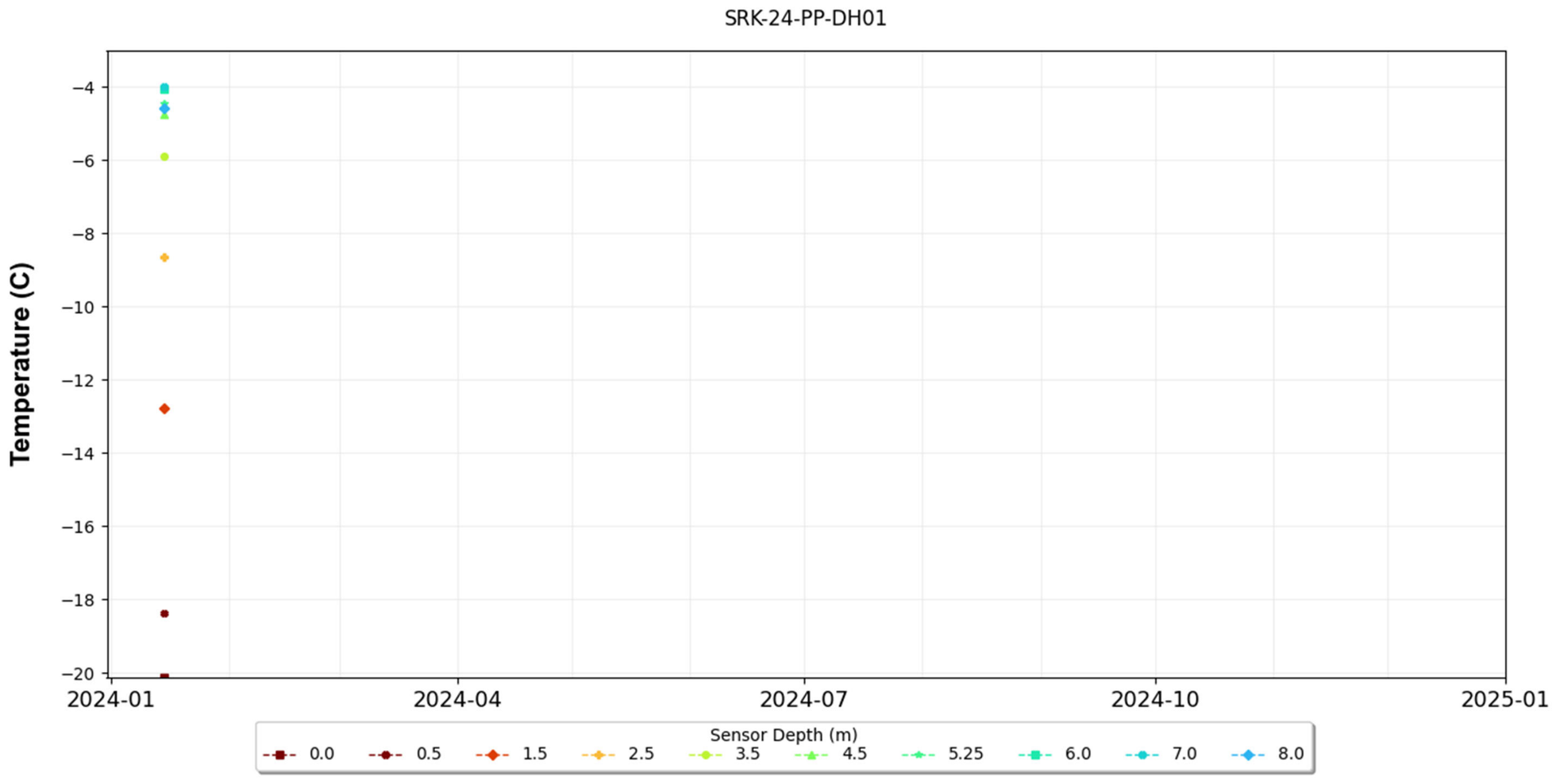
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Recent Ground Temperature Site – SRK-23-CPI-DH01
		Date: March 2024 / Approved: CWS / Figure: **B-24**



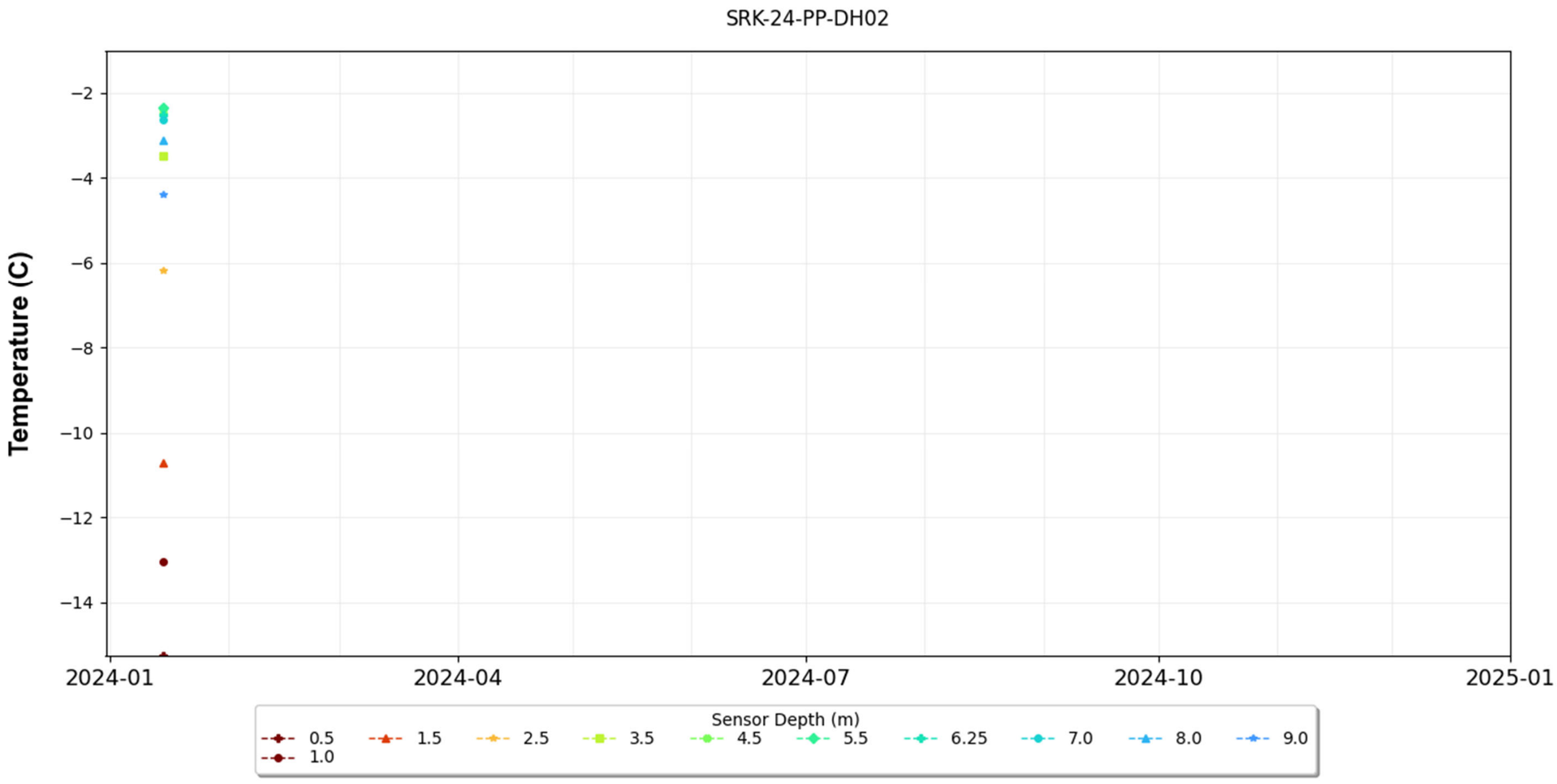
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Recent Ground Temperature Site – SRK-23-CPI-DH02
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 / Approved: CWS / Figure: **B-25**



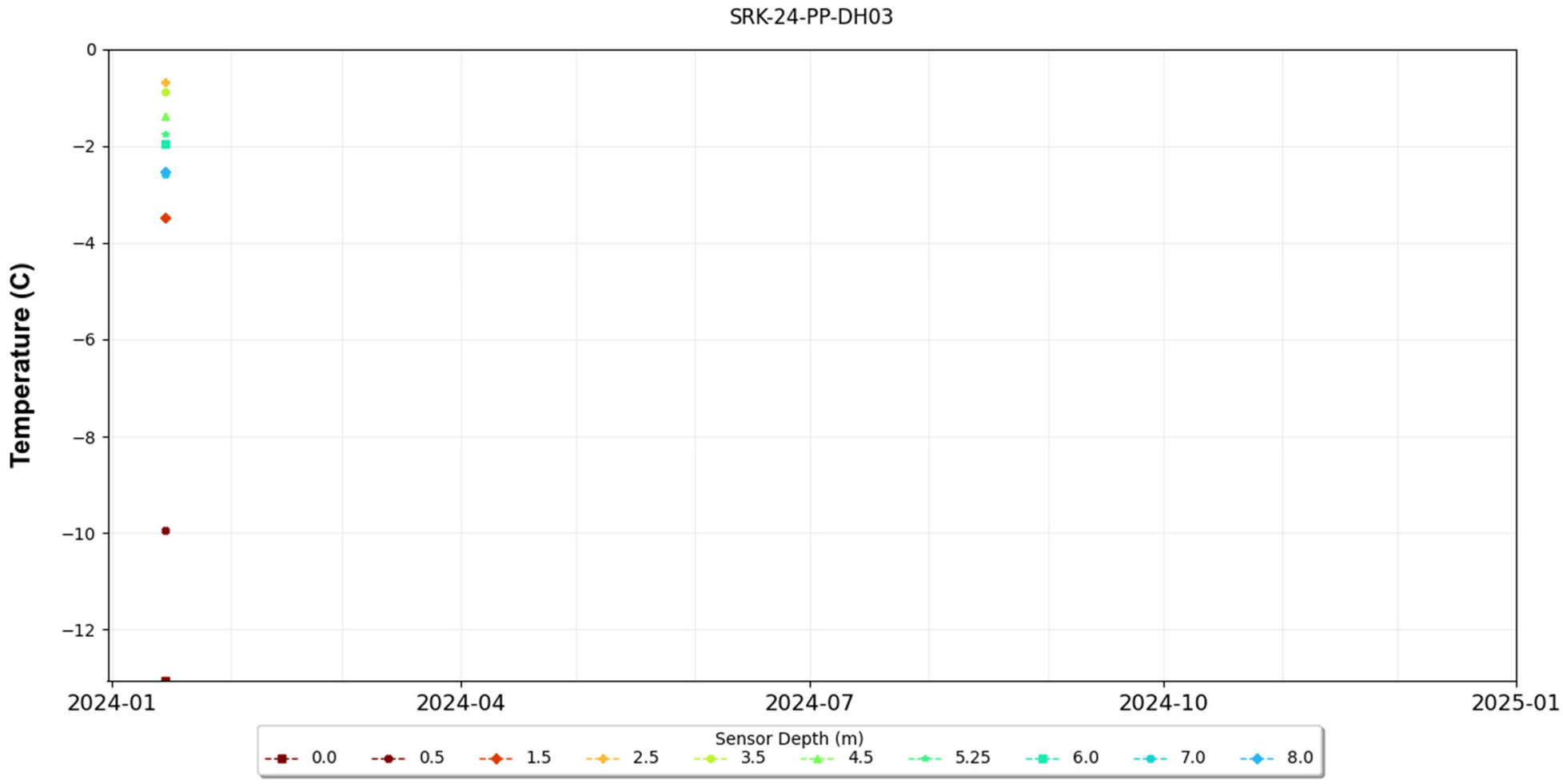
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Recent Ground Temperature Site – SRK-24-PP-DH01
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: **B-26**



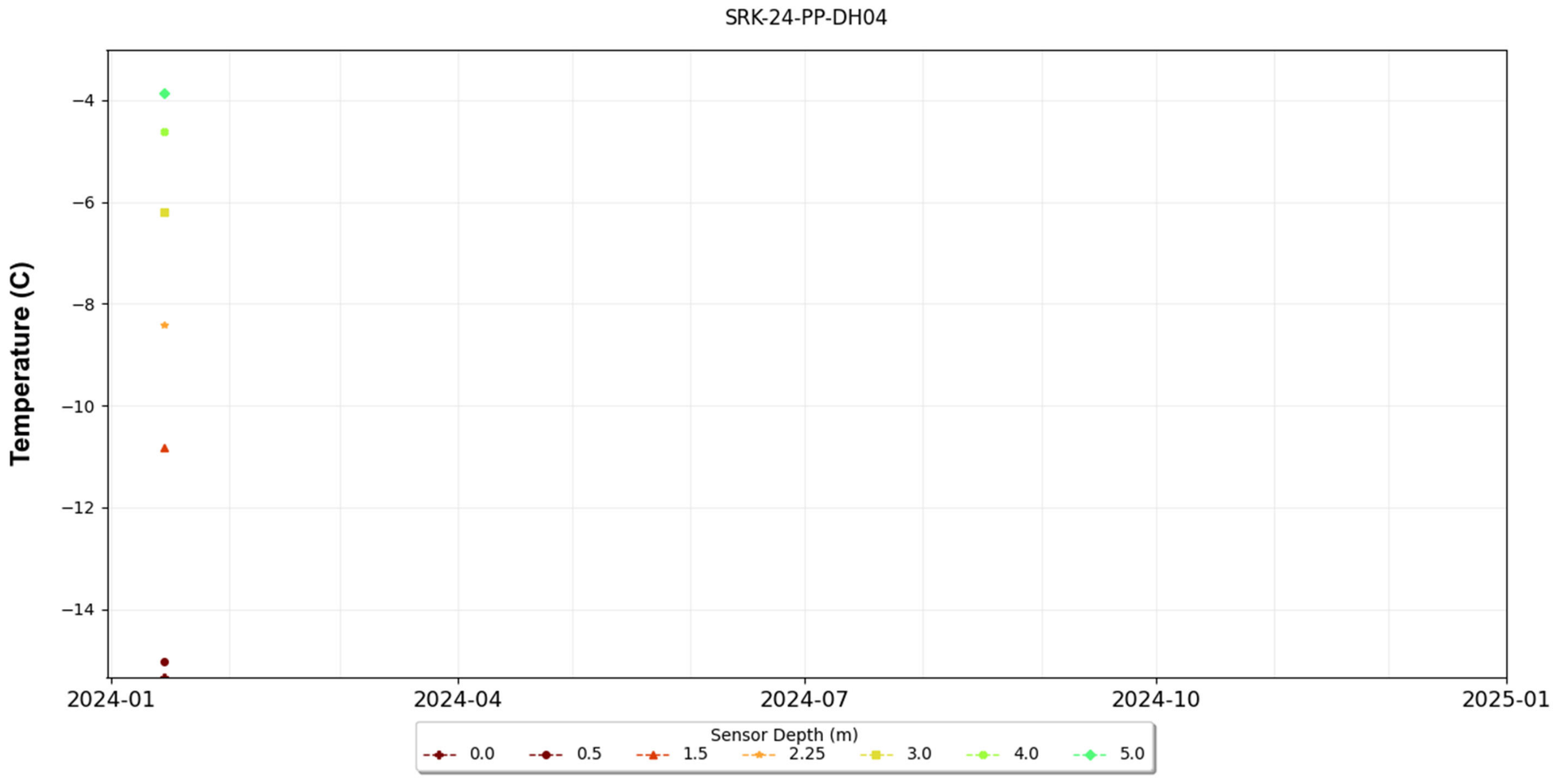
Notes:
1. Average weekly ground temperature shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Recent Ground Temperature Site – SRK-24-PP-DH02
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: **B-27**



Notes:
1. Average weekly ground temperature shown.

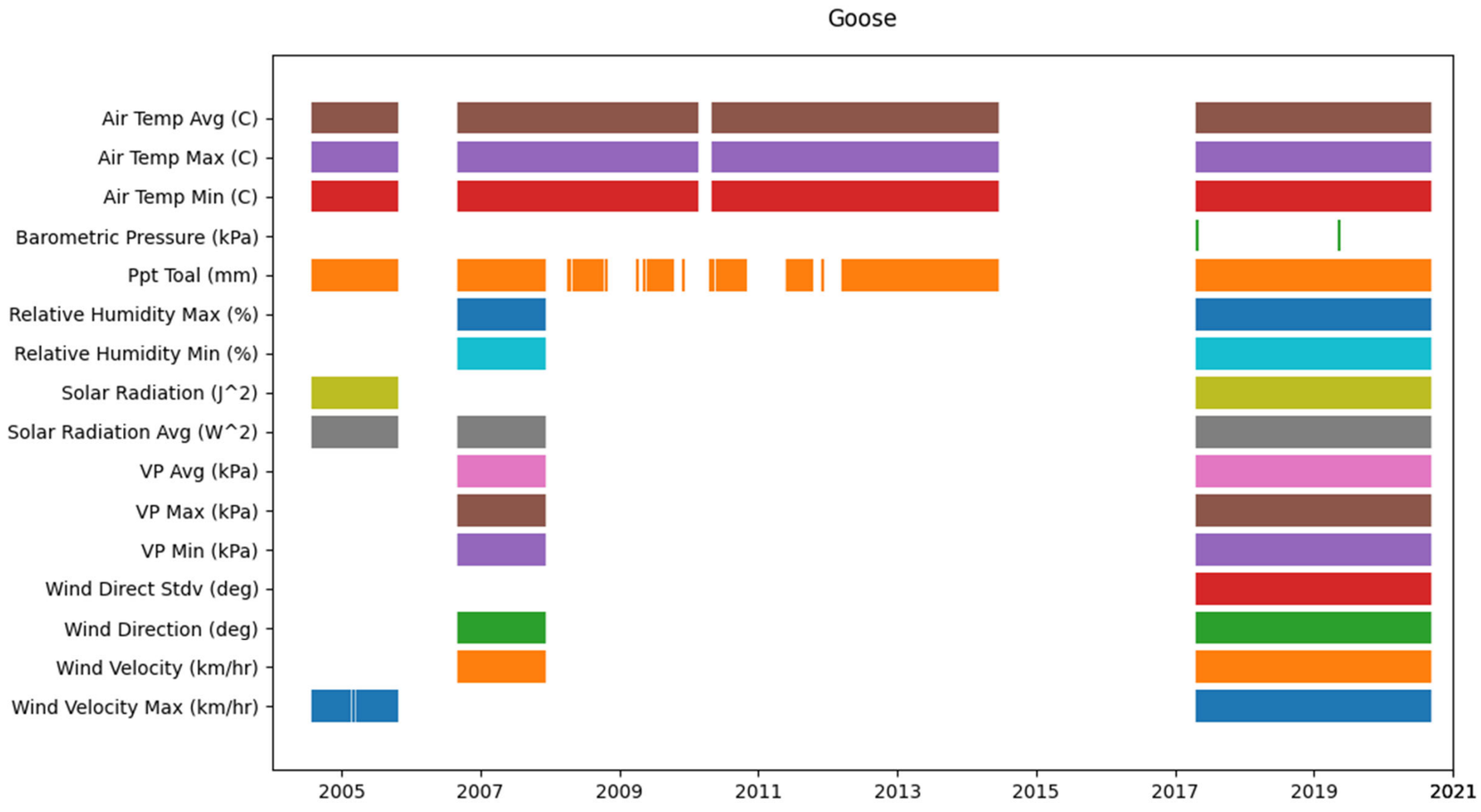
srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Recent Ground Temperature Site – SRK-24-PP-DH03
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: **B-28**



Notes:
1. Average weekly ground temperature shown.

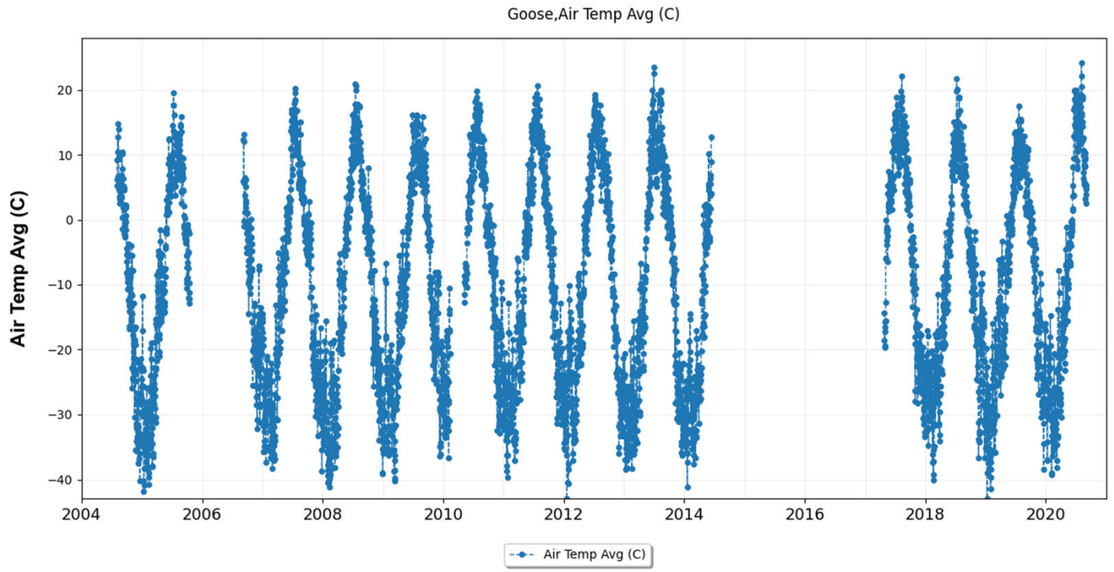
srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Recent Ground Temperature Site – SRK-24-PP-DH04
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: **B-29**

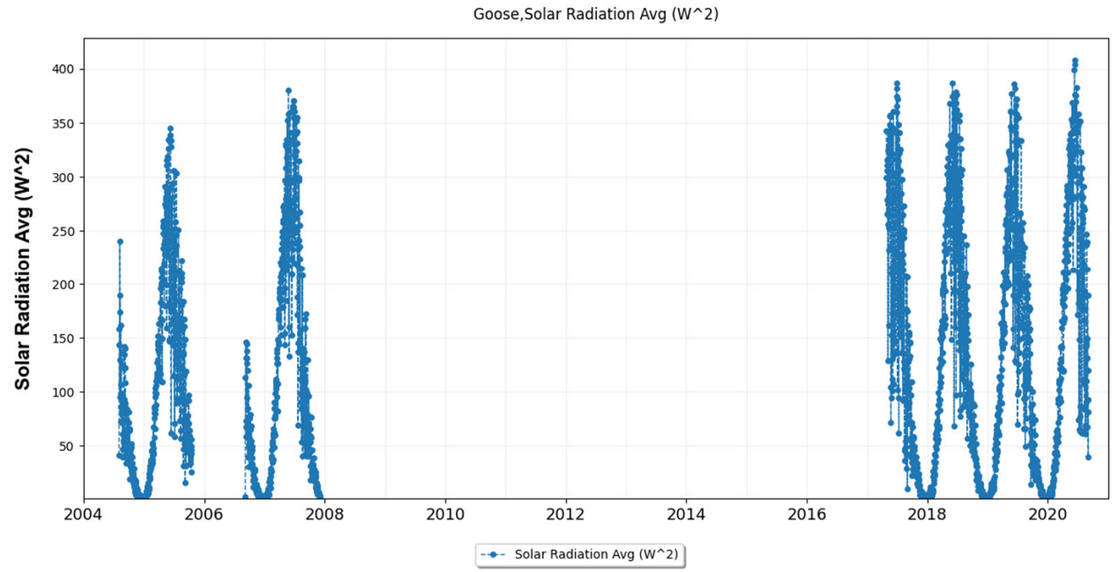
Appendix C Meteorological Station Data

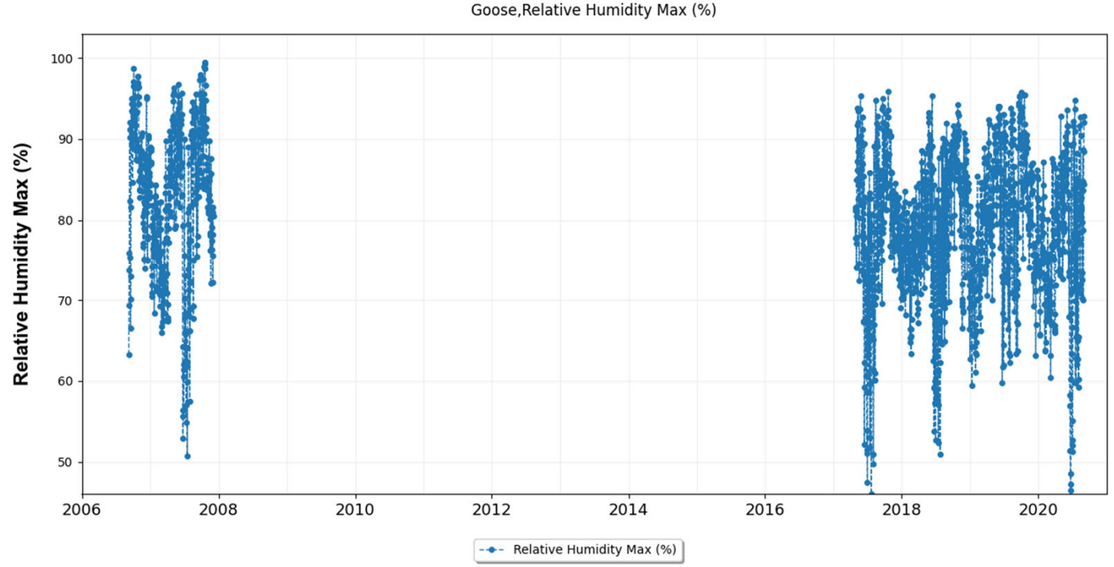


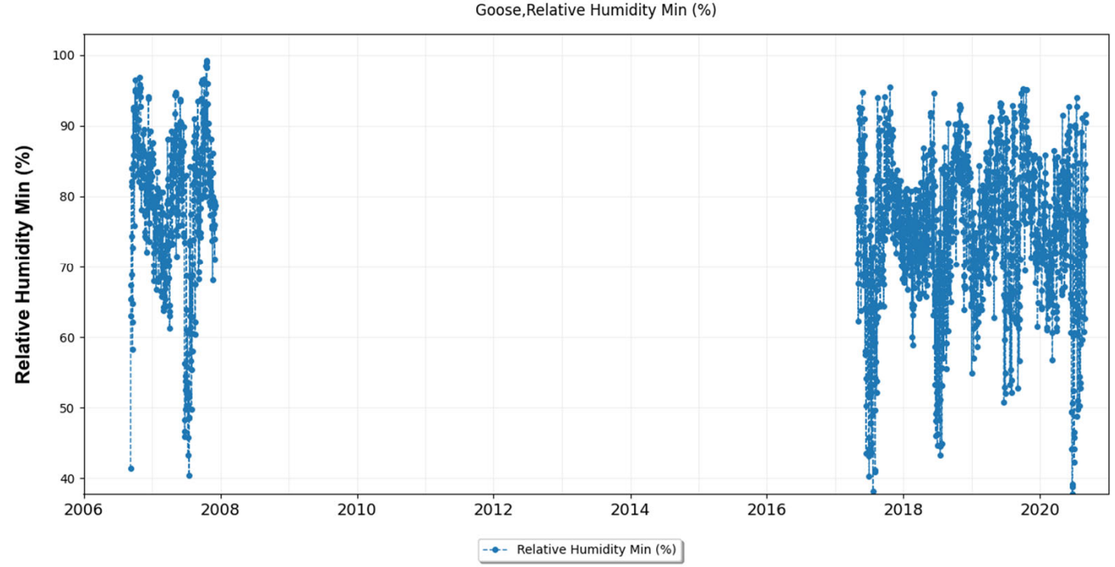
Notes:
1. Data record for Goose weather station.
2. Current measurement not shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Goose Weather Station – Data Record
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 / Approved: CWS / Figure: C-1



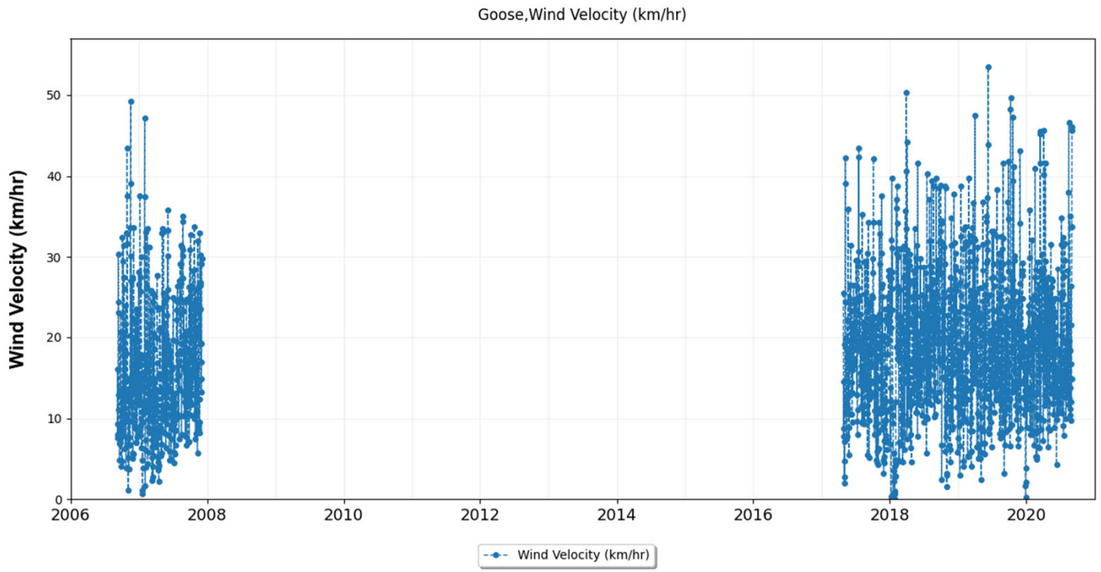


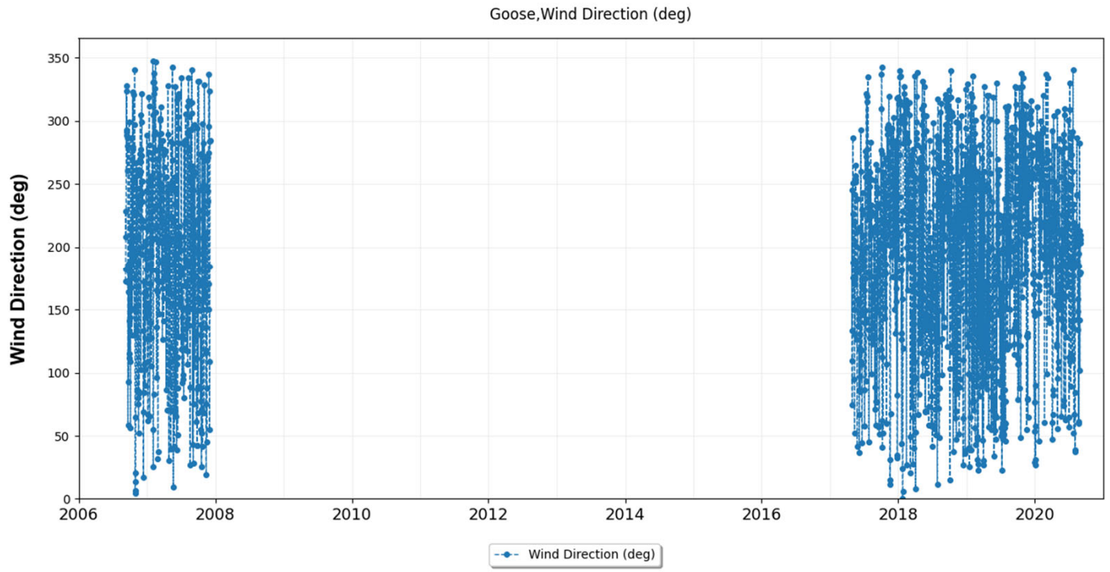


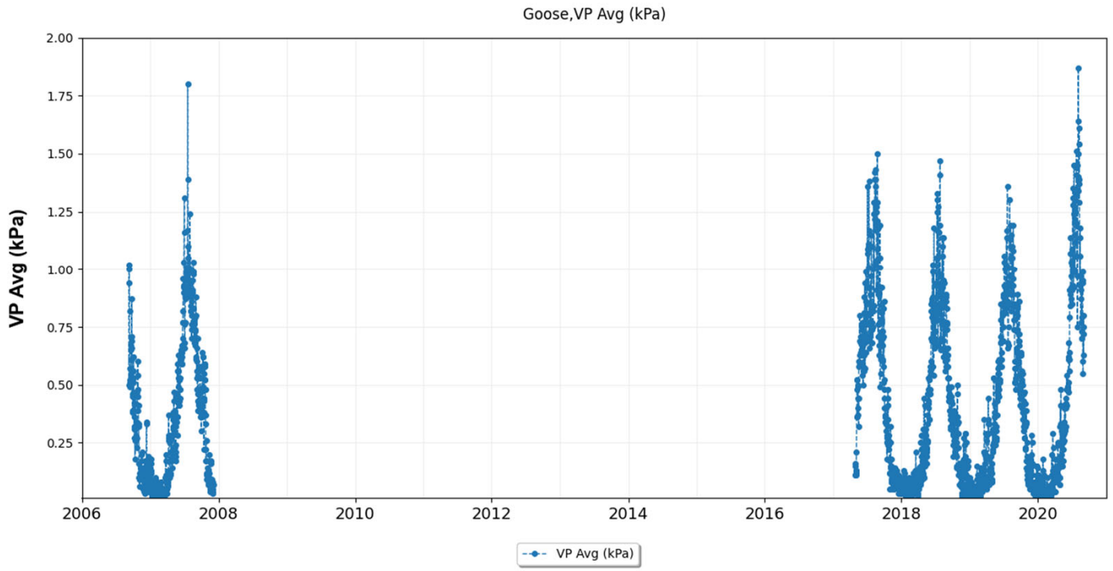


Notes:
1. Select climate parameters measured at the Goose weather station shown.
2. Average daily measurements shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Goose Weather Station – Data Record
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 · Approved: CWS · Figure: C-2

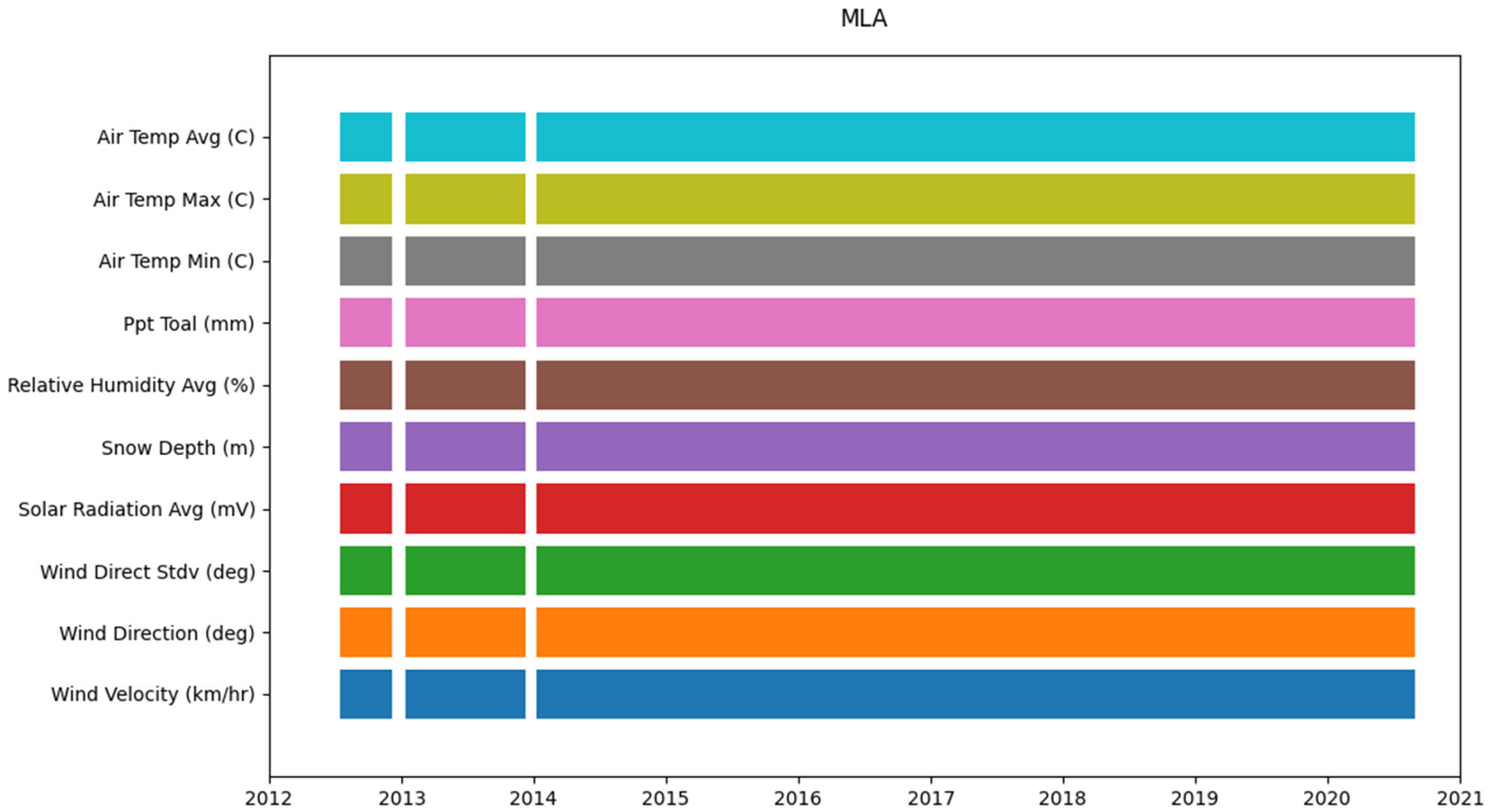






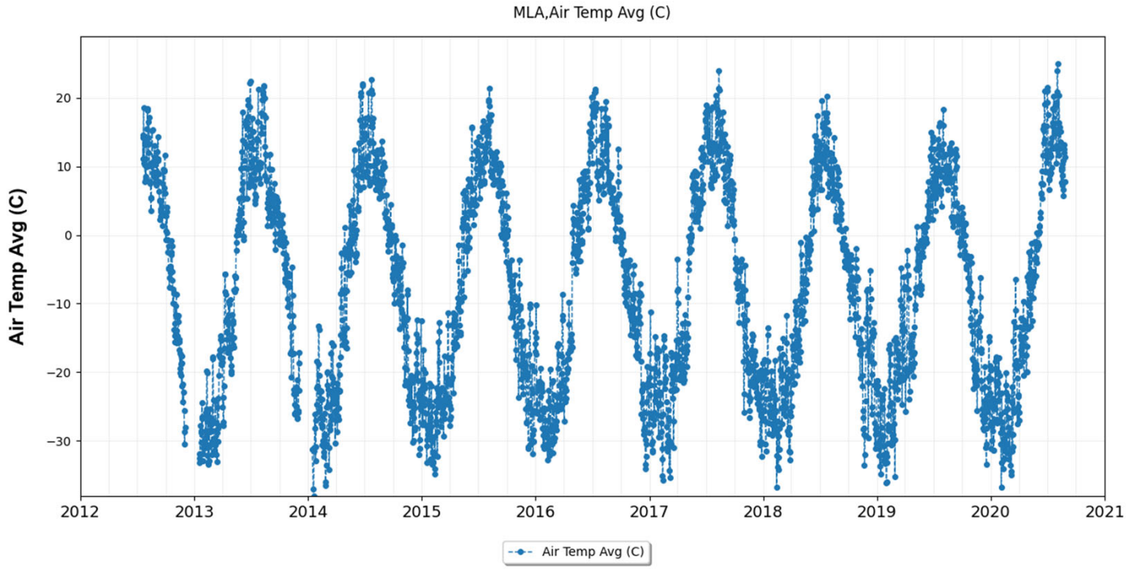
Notes:
1. Select climate parameters measured at the Goose weather station shown.
2. Average daily measurements shown.
3. Vapor pression (VP)

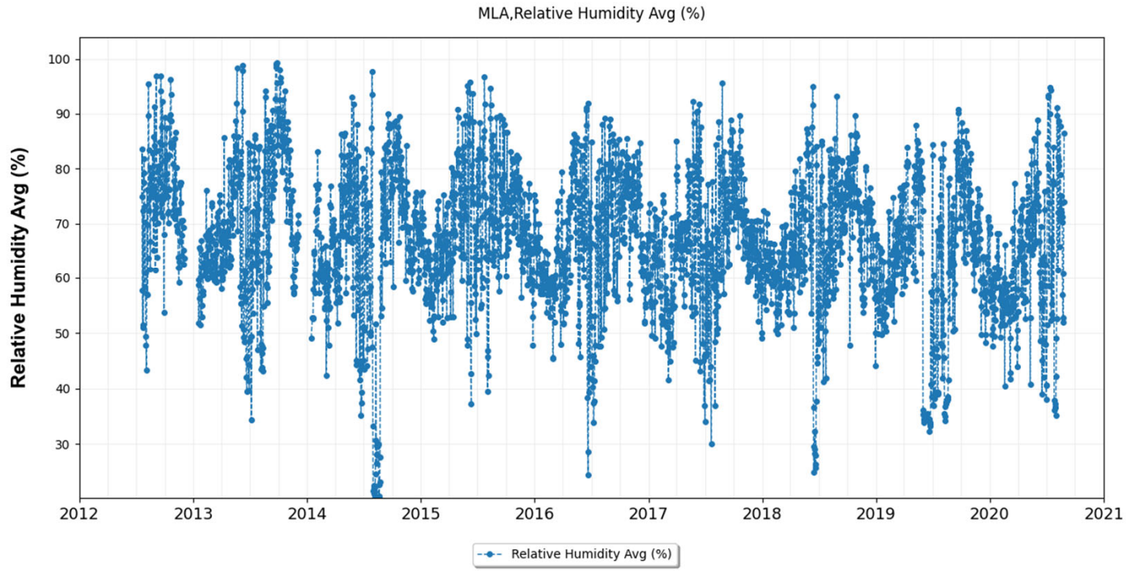
srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Goose Weather Station – Data Record
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 / Approved: CWS / Figure: C-3



Notes:
1. Data record for Marine Laydown Area (MLA) weather station.
2. Current measurement not shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		MLA Weather Station – Data Record
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 / Approved: CWS / Figure: C-4

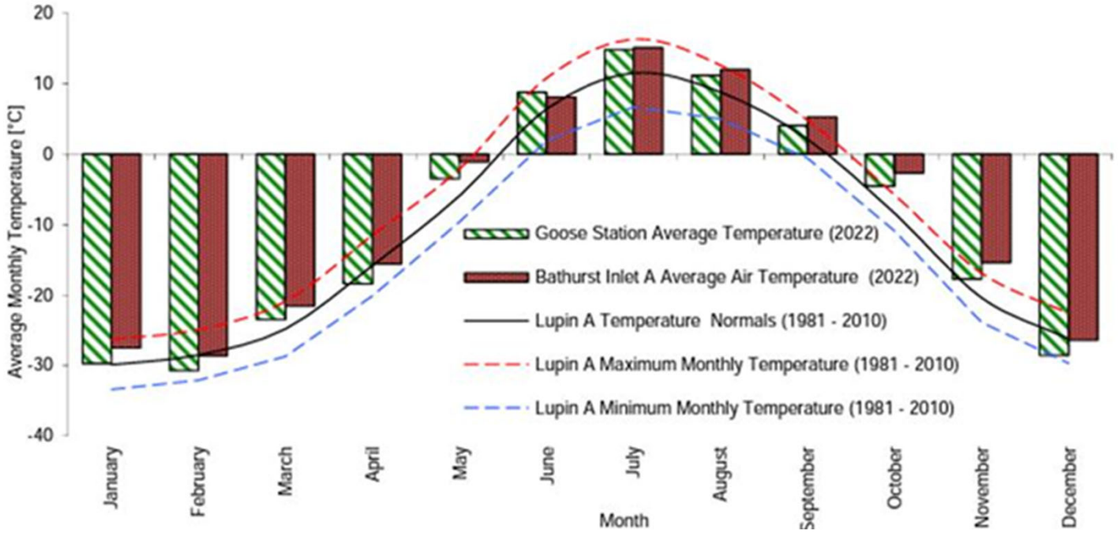




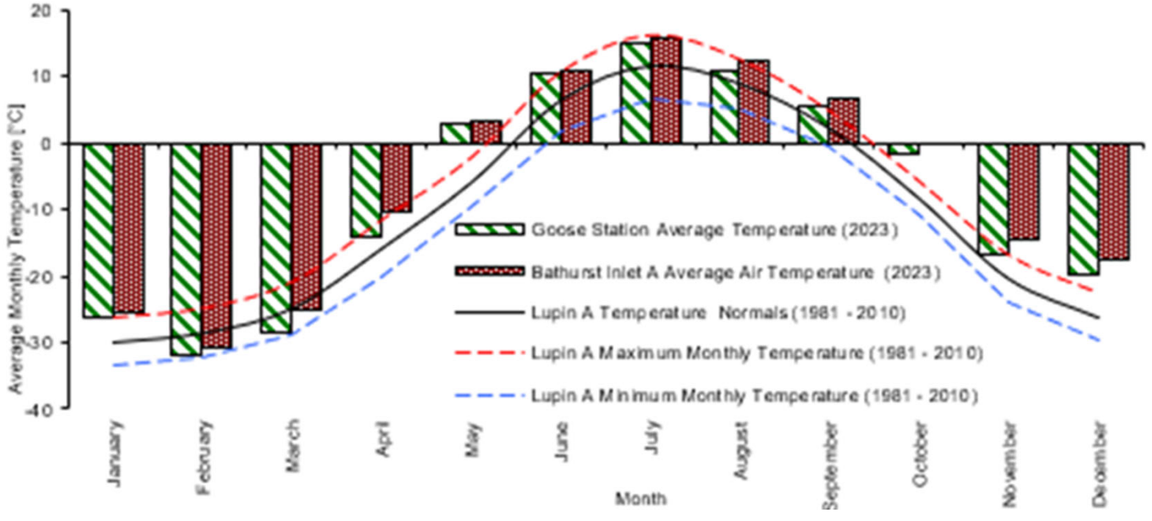
Notes:
1. Select climate parameters measured at the Marine Laydown Area (MLA) weather station shown.
2. Average daily measurements shown.

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		MLA Weather Station – Data Record
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 / Approved: CWS / Figure: **C-5**

2022



2023



Notes:
1. Average monthly air temperature measured at the Goose and MLA weather stations in 2022 and 2023

srk consulting	B2GOLD	Site-wide Ground Thermal Monitoring Plan
		Goose and MLA Weather Station – Air Temperature (2022 & 2023)
Job No: CAPR003102 Filename: Appendix_GroundThermal.pptx	Back River	Date: March 2024 / Approved: CWS / Figure: **C-5**

Appendix E Geotechnical Inspection Report

Appendix F Back River Project Engagement Record

2023				
Date	**Community**	**Organization / Individual(s)**	**Type of Engagement**	**Description**
January 16, 2023	Bathurst Inlet	Connie & Allen Kapolak	Correspondence	Requested participation in Sabina's CAT video
January 17, 2023	Kugluktuk	Hunters and Trappers Organization	Other (see 'Description')	Requested to meet re: fish out 2023
January 31, 2023	Kugluktuk	Career Fair	Public meeting	Participation in a career fair organized by the Government of Nunavut's Career Services Department.
February 1, 2023	Taloyoak	Community Visit	Correspondence	Informed Hamlet Council and Mayor of upcoming community visit via email.
February 6, 2023	Other (see 'Description')	Nunavut Tunngavik Inc.	Other (see 'Description')	Sabina President and CEO provided remarks at the NTI luncheon during PDAC 2023
February 13, 2023	Cambridge Bay	Hamlet	Stakeholder meeting	Project update, and discussion of IIBA RWC Fund and potential for community-Project partnerships
February 13, 2023	Bathurst Inlet and Bay Chimo	Connie Kapolak	Stakeholder meeting	Planning discussion for potential Sabina Project update to Bathurst Inlet and Bay Chimo families
February 13, 2023	Bathurst Inlet	Sam Kapolak	Stakeholder meeting	Teleconference update on B2Gold announcement
February 15-17, 2023	Cambridge Bay	Kitikmeot Trade Show	Public meeting	Sabina participated in the Kitikmeot Trade Show with three staff at a tradeshow booth
February 19, 2023	Bathurst Inlet and Bay Chimo	Bathurst Inlet and Bay Chimo Families	Public meeting	Meeting in Cambridge Bay to provide Bathurst Inlet and Bay Chimo families with a Project update
February 20-21, 2023	Taloyoak	Community Visit	Other (see 'Description')	HR focused visit to meet with potential employment candidates. This was a makeup visit after missing Taloyoak during the 2022 Community Tour due to bad weather.
February 20, 2023	Taloyoak	Hamlet, Senior Administrative Officer	Stakeholder meeting	In-person meeting in Taloyoak to provide the SAO with an update on the Project, introduce the Indigenous & Northern Affairs team, and discuss the B2Gold/Sabina definitive agreement.
February 22, 2023	Bathurst Inlet	Sam, Suzie, and Shayne Kapolak	Stakeholder meeting	Dinner meeting in Yellowknife to provide a Project update, discuss the B2Gold announcement, and Inuit Environmental Advisory Committee
February 24, 2023	Cambridge Bay	Hamlet	Stakeholder meeting	Lunch meeting with Mayor, Deputy Mayor, and CAO to introduce members of the B2Gold team, and provide a Project update
February 24, 2023	Cambridge Bay	Public - Elders	Public meeting	Public meet and greet, and tea and bannock with Elders to introduce the B2Gold team and discuss the Back River Project

2023				
Date	**Community**	**Organization / Individual(s)**	**Type of Engagement**	**Description**
March 1, 2023	Kugluktuk	Kugluktuk HTO	Stakeholder meeting	Teleconference meeting to provide the Kugluktuk HTO with a general Project update, discuss plans for the 2023 fish out program, and update both parties on progress to move forward with Bernard Harbour project monitoring in 2023
March 2, 2023	Other (see 'Description')	Sam Kapolak	Other (see 'Description')	Joint KIA/Sabina teleconference to discuss potential candidacy on the IEAC.
March 9, 2023	Other (see 'Description')	George Hakongak	Other (see 'Description')	Joint KIA/Sabina teleconference to discuss potential candidacy on the IEAC.
March 9, 2023	Other (see 'Description')	Martina Kapolak	Other (see 'Description')	Joint KIA/Sabina teleconference to discuss potential candidacy on the IEAC.
March 9, 2023	Other (see 'Description')	Ryan Nivingalok	Other (see 'Description')	Joint KIA/Sabina teleconference to discuss potential candidacy on the IEAC.
March 10, 2023	Other (see 'Description')	Kevin Ongahak	Other (see 'Description')	Joint KIA/Sabina teleconference to discuss potential candidacy on the IEAC.
March 15, 2023	Other (see 'Description')	Alice Ayalik	Other (see 'Description')	Joint KIA/Sabina teleconference to discuss potential candidacy on the IEAC.
May 8, 2023	Cambridge Bay	Hon. Pamela Gross, MLA Cambridge Bay, Deputy Premier	Stakeholder meeting	Virtual meeting to provide an introduction to B2Gold as well as an update on the Back River Project
May 13, 2023	Bathurst Inlet and Bay Chimo	Umingmaktok and Burnside HTO	Correspondence	Informing board members of B2Gold and Sabina news
May 13, 2023	Multi-Community (see 'Description')	All Kitikmeot community Hamlets	Correspondence	Informing SAO/Council members of B2Gold and Sabina news
May 13, 2023	Multi-Community (see 'Description')	All Kitikmeot HTAs/HTOs	Correspondence	Informing board members of B2Gold and Sabina news
May 24, 2023	Kugluktuk	Hamlet of Kugluktuk	Stakeholder meeting	Project update meeting with Mayor Simon Kuliktana
May 24, 2023	Kugluktuk	Hamlet of Kugluktuk	Stakeholder meeting	Meeting to discuss IIBA Regional Wealth Creation with SAO
June 6, 2023	Cambridge Bay	Ekaluktutiak HTO	Stakeholder meeting	Virtual Back River Project update and introduction of 2023 fish out plan
June 12, 2023	Cambridge Bay	Multiple Participants (see 'Description')	Public meeting	NIRB hosted a Community Information Session to discuss the Back River Project Energy Centre
June 19, 2023	Kugaaruk	Community Tour 2023	Public meeting	Community Tour

2023				
Date	**Community**	**Organization / Individual(s)**	**Type of Engagement**	**Description**
June 19, 2023	Kugaaruk	Kugaaruk Hunters & Trappers Organization	Stakeholder meeting	In-person meeting to introduce the HTO to B2Gold, provide a Project update, share information about the Back River Energy Centre, and discuss career opportunities at the Project
June 20, 2023	Taloyoak	Community Tour 2023	Public meeting	Community Tour
June 21, 2023	Gjoa Haven	Community Tour 2023	Public meeting	Community Tour
June 22, 2023	Kugluktuk	Community Tour 2023	Public meeting	Community Tour
June 23, 2023	Cambridge Bay	Community Tour 2023	Public meeting	Community Tour
July 9, 2023	Cambridge Bay	Nunavut Day BBQ	Other (see 'Description')	B2Gold partnered with NTI to support and volunteer at Nunavut Day celebrations in Cambridge Bay
July 11, 2023	Other (see 'Description')	Back River Socio-Economic Monitoring Working Group	Stakeholder meeting	Annual Meeting of the SEMWG
July 15-17, 2023	Multi-Community (see 'Description')	Inuit Environmental Advisory Committee	Stakeholder meeting	Inaugural meeting and site visit with the IEAC
August 11, 2023	Bathurst Inlet	Families of Bathurst Inlet	Other (see 'Description')	Hosted families at MLA due to wildfires and evacuation order
August 12, 2023	Bathurst Inlet	Families of Bathurst Inlet	Other (see 'Description')	Meeting with families and Government of Nunavut to discuss wildfire situation
August 14, 2023	Multi-Community (see 'Description')	Kitikmeot Members of the Legislative Assembly of Nunavut & Sen. Dennis Patterson	Stakeholder meeting	Project update meeting and safety orientation in Yellowknife, NWT prior to a Back River Project site visit
August 15, 2023	Multi-Community (see 'Description')	Kitikmeot Members of the Legislative Assembly of Nunavut & Sen. Dennis Patterson	Stakeholder meeting	Back River Project site visit
October 3-5, 2023	Cambridge Bay	Multiple Participants (see 'Description')	Public meeting	NIRB Technical Meeting, Community Roundtable, and Pre-Hearing Conference for the Back River Energy Center
October 25, 2023	Multi-Community (see 'Description')	Kitikmeot Members of the Legislative Assembly of Nunavut	Stakeholder meeting	In-person meeting in Iqaluit to provide an update on Back River Project activities

2023				
Date	**Community**	**Organization / Individual(s)**	**Type of Engagement**	**Description**
November 24, 2023	Bathurst Inlet	Sam Kapolak	Stakeholder meeting	Phone call to discuss the outcomes of the Technical Meeting and Community Roundtable on the Back River Renewable Energy Centre and comments raised by the Bathurst Inlet HTO
December 4, 2023	Kugluktuk	Kugluktuk Hunter & Trappers Organization	Stakeholder meeting	In-person meeting to provide a Project update, discuss the Bernard Harbour project, and discuss potential other opportunities for the Project and HTO to possibly collaborate on in future
December 5, 2023	Kugluktuk	Kugluktuk Hamlet Council	Stakeholder meeting	In person meeting to provide a Project update, discuss Project programming, and potential opportunities for the Project and Council to collaborate on in future
December 18, 2023	Kugluktuk	Kugluktuk Hunter & Trappers Organization	Stakeholder meeting	Discussion of potential partnership opportunities in future between B2Gold Nunavut and the Kugluktuk HTO
December 20, 2023	Cambridge Bay	Cambridge Bay HTO	Stakeholder meeting	Back River Renewable Energy Centre, Winter Ice Road, and fuel donations

Appendix G Spill Records

Back River Project Reportable Spills for 2023

Date (M-DD-YYYY)	Product Spilled	Quantity	Spill Description	Site	Approximate Location	NT-NU Spill #	Mitigation (how was the spill cleaned up)
1/22/2023	Petroleum, lubricating oil	5 m3	other transporation, breakage	WIR	Geolocation is 65.632778, -106.868889	2023023	snow recovered and incinerated; spill pads used to absorb free product
1/26/2023	Hydraulic Fluid	20 Litres	Blew Hydraulic hose off fitting, lost tank contents of hydraulic	MLA	Ice road KM 39	2023025	contaminated snow/ice cleaned up and incinerated
1/27/2023	Gear Oil	150 Litres	Valve Left open on Tote	Goose	North Quonset		snow shovelled up and incinerated.
2/7/2023	Fuel Oil	3 litres	other transporation, breakage	WIR	Geolocation is 65.681111, -107.040556	2023044	snow shovelled up and incinerated.
2/9/2023	Hydraulic Fluid	12 litres	other transporation, breakage	WIR	Geolocation is 65.755556, -107.167778	2023045	sorbent pads deployed; material shovelled and incinerated
3/13/2023	Transmission fluid	1 Litre	Case drain line came loose	MLA	Lake 27	2023095	contaminated snow/ice cleaned up and incinerated
3/14/2023	other	300 kg	breakage	WIR	Geolocation is 62.5375, -106.4525	2023098	material cleaned up with equipment and hand tools; placed in lined megabags and dissposed of off-site.
3/14/2023	other	250 kg	breakage	WIR	Geolocation is 62.5375, -106.4525	2023099	material cleaned up with equipment and hand tools; placed in lined megabags and dissposed of off-site.
3/15/2023	Hydraulic Fluid	4 litres	truck breakage	WIR	Geolocation is 65.894167, -107.151944	2023101	material shovelled into megabag and incinerated
3/18/2023	Engine Oil	15 Litres	Crankcase pressure	MLA	19.8 Km on WIR	2023105	contaminated snow/ice cleaned up and incinerated
4/20/2023	Diesel	354 Litres	Tank vent on truck	MLA	Fuelling Station		contaminated snow/ice cleaned up and incinerated
5/1/2023	Sediment	unknown	sedimentation occurred during the construction of the Rascal stream culvert	Goose	Rascal Stream		To mitigate potential effects, pump outlets were re-positioned to allow sediment to settle prior to entering Goose Lake, additional silt fences were installed, and heavy mobile equipment was moved to reduce sedimentation into the watercourse. However, construction was halted and commenced during late summer/fall when it was completed in the dry within the isolated sections of the watercourse.
6/10/2023	petroleum, lube, hydraulic	20 Litres	truck breakage	Goose	Goose Lake	2023251	material shovelled and incinerated
8/7/2023	Diesel	150 Litres	Fuel Tank Rupture	MLA	Quarry	2023342	contaminated soil/rock/snow shovelled into lined megabag; disposed off-site (KBL)
9/13/2023	hydrocarbons	<1 Litres	Major Drilling all-track exploration vehicle travelled unoccupied and drove itself from the exploration drill rig site and ultimately into Umwelt Lake and was subsequently retrieved. Possible contamination related to exposure to grease on equipment. No release from fuel tank.	Goose	Umwelt Lake	2023394	Samples were collected, containment boom was installed around the equipment, follow up samples indicated no detectable quantities of VOCs, oil and grease, or glycols (see analytical results in Appendix G)
9/17/2023	Ammonium Nitrate	0.25m3	Improperly secured megabag fell off trailer	Goose	Road around single lane	2023404	cleaned up what was recoverable; disposed of contaminated material off-site (KBL)
9/27/2023	Raw Sewage	3140 Litres	Equipment Failure causing overflow	Goose	Sewage Treatment Plant	2023419	material shovelled and incinerated
10/2/2023	Raw Sewage	110 Litres	Equipment Failure causing overflow	Goose	Sewage Treatment Plant	2023425	material shovelled and incinerated