

**April 30, 2020 | ᐱᐃᐅ 30, 2020**

# Baffinland Iron Mines Corporation

## Mary River Project

2019 QIKIQTANI INUIT ASSOCIATION AND NUNAVUT WATER BOARD  
ANNUAL REPORT FOR EXPLORATION AND GEOTECHNICAL ACTIVITIES

REV 0



2020-04-30	0		
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Date	Rev.	Prepared By	Reviewed and Approved By



**TABLE 0: REPORT SUBMISSION SUMMARY**

Year of Annual Report	2019
Annual Report Submission Date:	April 30, 2020
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## **2019 QIKIQTANI INUIT ASSOCIATION (QIA) AND NUNAVUT WATER BOARD (NWB) ANNUAL REPORT FOR GEOTECHNICAL ACTIVITIES**

### EXECUTIVE SUMMARY

This report to the Qikiqtani Inuit Association (QIA) and the Nunavut Water Board (NWB) has been prepared to summarize the 2019 exploration and geotechnical activities conducted under Baffinland Iron Mines Corporation's (Baffinland) Type 'B' Water Licence 2BE-MRY1421 (Type 'B' Water Licence) and the Commercial Lease No. Q13C301 (Commercial Lease) between the QIA and Baffinland for the Mary River Project (the Project). A separate annual report has been prepared for the QIA and NWB to summarize the 2019 Project activities and monitoring conducted under Baffinland's Type 'A' Water Licence 2AM-MRY1325 – Amendment No. 1 (Type 'A' Water Licence) and addresses the remaining annual reporting requirements set forth in the Commercial Lease. Additionally, a separate report has been prepared for the QIA and NWB to summarize the 2019 exploration activities conducted for the Ege Bay Exploration Program within the scope of Baffinland's Type 'B' Water Licence 2BE-EQE1926 and Land Use Licence QL2-1910.

The scope of the Type 'B' Water Licence focuses on exploration and geotechnical drilling activities associated with the Project, and includes provisions and conditions regarding water use, waste management, construction and operation of satellite camps, exploration and geotechnical drilling programs, spill contingency and environmental monitoring.

During 2019, activities carried out under the scope of the Type 'B' Water Licence involved continued geotechnical drilling programs and assessments to support ongoing design studies for future Project infrastructure, an exploration drilling program to increase mine pit model confidence at Deposit No. 1, further characterization of Deposit No. 3, and the continued exploration of prospects and Baffinland's mineral leases. No satellite camps were constructed or operated in 2019, with all personnel involved with the exploration and geotechnical activities being based out of the Mine Site and Milne Port accommodation camps.

Water withdrawn under the authorization of the Type 'B' Water Licence for the Project in 2019 was used solely to support exploration and geotechnical drilling operations. The daily water withdrawal limits stipulated in the Type 'B' Water Licence for the Project were not exceeded in 2019. In addition to tracking water use, environmental monitoring conducted in 2019 consisted of daily monitoring of drilling activities to ensure activities adhered to the practices outlined in the Project's Environmental Protection Plan (EPP). Reclamation works carried out under the Type 'B' Water Licence during 2019 involved the reclamation of borehole and geotechnical testing locations associated with the 2019 exploration and geotechnical activities.

As outlined in the 2020 Work Plan, exploration activities for 2020 have not yet been finalized however it is anticipated that activities at a minimum will include mapping, sampling and geophysical and geochemical surveys of prospects and Baffinland's mineral leases, and will include exploration drilling



programs on Deposit Nos. 1 and 3. It is anticipated that Baffinland will continue to conduct geotechnical assessments, including drilling programs, during 2020 to support on-going engineering design studies for future Project infrastructure. As additional details for the 2020 exploration and geotechnical programs become available, this information will be provided to the NWB, Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) and the QIA prior to the commencement of activities.

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## **RAPPORT ANNUEL 2019 DE QIKIQTANI INUIT ASSOCIATION (QIA) ET DE L'OFFICE DES EAUX DU NUNAVUT (OEN) POUR LES ACTIVITÉS D'EXPLORATION ET DE GÉOTECHNIQUE**

### SOMMAIRE EXÉCUTIF

Ce rapport destiné à la Qikiqtani Inuit Association (QIA) et à l'Office des eaux du Nunavut (OEN) a été préparé pour résumer les activités d'exploration et de géotechnique menées en 2019 dans le cadre du permis d'utilisation des eaux de type 'B' 2BE-MRY1421 de la Baffinland Iron Mines Corporation (Baffinland) et du bail commercial n° Q13C301 (bail commercial) entre la QIA et Baffinland pour le projet Mary River (le projet). Un rapport annuel distinct a été préparé pour la QIA et l'OEN afin de résumer les activités et la surveillance du projet de 2019 menées en vertu du permis d'utilisation des eaux de Baffinland de type 'A' 2AM-MRY1325 – amendement no 1 (permis d'utilisation des eaux de type 'A') et de répondre aux exigences de rapport annuel restantes énoncées dans le bail commercial. De plus, un rapport séparé a été préparé pour la QIA et l'OEN afin de résumer les activités d'exploration menées en 2019 pour le programme d'exploration d'Ege Bay dans le cadre du permis d'utilisation des eaux de Baffinland de type 'B' 2BE-EQE1926 et du permis d'utilisation des terres QL2-1910.

Le champ d'application du permis d'utilisation des eaux de type 'B' se concentre sur les activités d'exploration et de forage géotechnique associées au projet, et comprend des dispositions et des conditions concernant l'utilisation de l'eau, la gestion des déchets, la construction et l'exploitation de camps satellites, les programmes d'exploration et de forage géotechnique, les mesures d'urgence en cas de déversement et la surveillance de l'environnement.

En 2019, les activités menées dans le cadre du permis d'utilisation des eaux de type 'B' ont consisté à poursuivre les programmes de forage et les évaluations géotechniques pour soutenir les études de conception en cours pour les futures infrastructures du projet, un programme de forage d'exploration pour accroître la confiance dans le modèle de puits de mine du gisement n° 1, une caractérisation plus poussée du gisement n° 3 et la poursuite de l'exploration des prospectes et des baux miniers de Baffinland. Aucun camp satellite n'a été construit ou exploité en 2019, tout le personnel impliqué dans les activités d'exploration et de géotechnique étant basé dans les camps d'hébergement du site minier et du port de Milne.

L'eau prélevée en 2019 dans le cadre de l'autorisation du permis d'utilisation des eaux de type 'B' pour le projet a été utilisée uniquement pour soutenir les opérations d'exploration et de forage géotechnique. Les limites quotidiennes de prélèvement d'eau stipulées dans la licence de type 'B' pour le projet n'ont pas été dépassées en 2019. En plus du suivi de l'utilisation de l'eau, la surveillance environnementale effectuée en 2019 a consisté en un contrôle quotidien des activités de forage afin de s'assurer que les activités respectent les pratiques décrites dans le plan de protection de l'environnement (PPE) du projet. Les travaux de récupération réalisés dans le cadre du permis d'utilisation des eaux de type 'B' en 2019 ont impliqué la récupération de trous de forage et de sites d'essais géotechniques associés aux activités d'exploration et de géotechnique de 2019.



Comme indiqué dans le plan de travail 2020, les activités d'exploration pour 2020 n'ont pas encore été finalisées; toutefois, il est prévu que les activités comprennent au minimum la cartographie, l'échantillonnage et les levés géophysiques et géochimiques des prospects et des baux miniers de Baffinland, et qu'elles comprennent des programmes de forage d'exploration sur les gisements n° 1 et 3. Il est prévu que Baffinland continue à mener des évaluations géotechniques, y compris des programmes de forage, au cours de 2020 pour soutenir les études de conception technique en cours pour les futures infrastructures du projet. À mesure que des détails supplémentaires concernant les programmes d'exploration et de géotechnique pour 2020 seront disponibles, ces informations seront fournies à l'OEN, à Relations Couronne-Autochtones et Affaires du Nord Canada (RCAANC) et à la QIA avant le début des activités.

## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY (ENGLISH)</b>	<b>II</b>
<b>EXECUTIVE SUMMARY (INUKTITUT)</b>	<b>IV</b>
<b>EXECUTIVE SUMMARY (FRENCH)</b>	<b>VI</b>
<b>1 INTRODUCTION</b>	<b>1</b>
1.1 PURPOSE AND SCOPE	1
1.2 REGULATORY FRAMEWORK	1
<b>2 EXPLORATION AND GEOTECHNICAL ACTIVITIES</b>	<b>2</b>
2.1 EXPLORATION ACTIVITIES AND DRILLING PROGRAMS	2
2.2 GEOTECHNICAL ASSESSMENTS AND DRILLING PROGRAMS	2
<b>3 MODIFICATIONS, INFRASTRUCTURE CHANGES AND CONSTRUCTION</b>	<b>4</b>
<b>4 WATER USES</b>	
4.1 QUANTITIES OF FRESHWATER USED FOR DOMESTIC PURPOSES	5
4.2 QUANTITIES OF FRESHWATER USED FOR DRILLING ACTIVITIES	5
<b>5 ENVIRONMENTAL MONITORING</b>	<b>6</b>
5.1 ENVIRONMENTAL MONITORING FOR DRILLING/TESTING ACTIVITIES	6
5.2 2019 MARINE WATER QUALITY MONITORING PROGRAM – MILNE INLET	6
<b>6 WASTE MANAGEMENT</b>	<b>8</b>
<b>7 REPORTED INCIDENTS</b>	<b>9</b>
7.1 SPILLS	9
7.2 HEALTH & SAFETY INCIDENTS	9
<b>8 RECLAMATION, CLOSURE AND FINANCIAL SECURITY</b>	<b>10</b>
8.1 PROGRESSIVE AND FINAL RECLAMATION	10
8.2 CURRENT RESTORATION LIABILITY	10
<b>9 PLANS, REPORTS AND STUDIES</b>	<b>11</b>
9.1 SUMMARY OF STUDIES REQUESTED BY THE BOARD	11
9.2 REVISIONS TO PLANS, REPORTS AND MANUALS	11
9.3 SUMMARY OF FUEL STORAGE	11
9.4 INSPECTION AND COMPLIANCE REPORTS	12
9.4.1 CIRNAC Inspections	12
9.4.2 QIA Inspections	12
9.5 SUMMARY OF ARTESIAN FLOWS	12
9.6 SUMMARY OF GEOCHEMICAL ANALYSIS OF DRILL CORES	12
<b>10 PUBLIC CONSULTATIONS</b>	<b>13</b>
<b>11 2020 EXPLORATION AND GEOTECHNICAL ACTIVITIES</b>	<b>14</b>



**LIST OF TABLES**

Table 0	Report Submission Summary
Table 1.1	Current Approvals, Permits and Authorizations - 2019
Table 2.1	Exploration and Geotechnical Activities and Drilling Summary - 2019
Table 4.1	Annual Volumes of Water Used for Drilling Activities on Inuit-Owned and Crown Lands by Source - 2019
Table 4.2	Daily and Monthly Volumes of Water Used for Drilling Activities on Inuit-Owned and Crown Land by Source - 2019
Table 5.1	Exploration and Geotechnical Environmental Monitoring Logs - 2019
Table 5.2	Marine Water Quality Monitoring Results – Milne Inlet - 2019
Table 6.1	Drilling Wastes Managed and Deposited on Inuit-Owned and Crown Lands – 2019
Table 8.1	New Impacts Related to Exploration and Geotechnical Activities on Inuit-Owned and Crown Lands - 2019
Table 8.2	Reclamation Works Related to Exploration and Geotechnical Activities on Inuit-Owned and Crown Lands - 2019
Table 8.3	Mary River Project Total Closure and Reclamation Security Summary - 2019

**LIST OF FIGURES**

Figure 1.1	Baffinland Iron Mines Project Location
Figure 1.2	Mary River Project Activities Overview
Figure 2.1	Mine Site 2019 Geotechnical and Exploration Activities
Figure 2.2	Milne Port 2019 Geotechnical and Exploration Activities

**APPENDICES**

APPENDIX A	CONCORDANCE TABLES
APPENDIX B	NWB ANNUAL REPORT FORMS
APPENDIX C	2019 DRILLING NOTIFICATIONS
APPENDIX D	PHOTO JOURNAL
APPENDIX E	2019 PRE, DAILY AND POST ENVIRONMENTAL MONITORING LOGS

**ABBREVIATIONS**

Baffinland .....	Baffinland Iron Mines Corporation
CCME .....	Canadian Council of Ministers of the Environment
CIRNAC.....	Crown-Indigenous Relations and Northern Affairs Canada
Commercial Lease.....	Commercial Lease No. Q13C301
CPT .....	Cone Penetration Test
NTU .....	Nephelometric Turbidity Units
NWB.....	Nunavut Water Board
QIA .....	Qikiqtani Inuit Association
ROM.....	Run of Mine
the Project .....	Mary River Project
TSS .....	Total Suspended Solid
WSCC .....	Workers' Safety and Compensation Commission

## 1 INTRODUCTION

### 1.1 PURPOSE AND SCOPE

This report to the Qikiqtani Inuit Association (QIA) and the Nunavut Water Board (NWB) has been prepared to summarize the 2019 exploration and geotechnical drilling activities conducted under Baffinland Iron Mines Corporation's (Baffinland) Type 'B' Water Licence 2BE-MRY1421 (Type 'B' Water Licence) and the Commercial Lease No. Q13C301 (Commercial Lease) between the QIA and Baffinland for the Mary River Project (the Project). This report also addresses reporting requirements under the Crown Land Use permit for Steensby Port (N2019C0009). A separate annual report has been prepared for the QIA and NWB to summarize the 2019 Project activities and monitoring conducted under Baffinland's Type 'A' Water Licence 2AM-MRY1325 – Amendment No. 1 (Type 'A' Water Licence) and addresses the remaining annual reporting requirements set forth in the Commercial Lease. Concordance tables referencing where in this report annual reporting requirements outlined in the Commercial Lease and Type 'B' Water Licence have been met are presented in Appendix A. Additionally, a separate report has been prepared for the QIA and NWB to summarize the 2019 exploration activities conducted for the Ege Bay Exploration Program within the scope of Baffinland's Type 'B' Water Licence 2BE-EQE1926 and Land Use Licence QL2-1910.

The scope of the Type 'B' Water Licence focuses on exploration and geotechnical drilling activities and includes provisions and conditions regarding water use, waste management, construction and operation of satellite camps, exploration and geotechnical drilling programs, spill contingency and environmental monitoring. Activities and data discussed in this report are summarized and referenced in the completed NWB Annual Report Forms, included as Appendix B of this report.

Figures 1.1 and 1.2 present the locations of the key areas associated with the Project where activities in 2019 were undertaken. Key areas involved with exploration and geotechnical activities in 2019 included Milne Port, the Milne Inlet Tote Road (Tote Road), the Mary River Mine Site (Mine Site) and Steensby Port.

### 1.2 REGULATORY FRAMEWORK

Although the key regulatory and legal documents that relate to this report are the Commercial Lease and the Type 'B' Water Licence, this report is presented in the context of other applicable regulatory authorizations and schedules for the Project. A list of the key regulatory permits, approvals and authorizations that allowed for the work to be completed at the Project in 2019 is presented in Table 1.1 below.



## 2 EXPLORATION AND GEOTECHNICAL ACTIVITIES

### 2.1 EXPLORATION ACTIVITIES AND DRILLING PROGRAMS

During 2019, exploration activities were based out of the Mine Site and consisted of day trips by helicopter to prospects and Baffinland's mineral leases to conduct mapping, sampling and geophysical and geochemical surveys. No new satellite camps were constructed and/or operated to support exploration activities in 2019. Although Steensby Port was used as a refuelling location for helicopters transporting exploration field crews in 2019, the site remained closed throughout the year and was not used to house personnel.

In addition to the exploration activities described above, an exploration diamond drilling program was conducted from June to September 2019 to increase mine pit model confidence at Deposit No. 1 and further characterize ore bodies at Deposit No. 3. The drilling program consisted of nineteen (19) boreholes; twelve (12) on Deposit No. 1 and seven (7) on Deposit No. 3. Equipment used in the diamond drilling program was transported between borehole sites using helicopters, and consisted of non-skid mounted drill rigs, drill rods and other supplies. Borehole locations associated with the 2019 exploration drilling program are presented in Table 2.1 and Figure 2.1.

Prior to commencing exploration drilling activities, a notification was submitted to the NWB, Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) and the QIA to ensure compliance with the conditions set out in the Type 'B' Water Licence and Commercial Lease. Exploration activities and drilling program were consistent with the activities proposed in Section 4.1 of the 2019 Work Plan and the notifications submitted for the respective activities. Copies of the notifications are provided in Appendix C.

### 2.2 GEOTECHNICAL ASSESSMENTS AND DRILLING PROGRAMS

To support on-going engineering design studies for planned future infrastructure at the Project, Baffinland continued to conduct geotechnical assessments in 2019, including three (3) geotechnical programs.

During February 2019, a land-based geotechnical drilling program was completed at Mary River Aerodrome. The purpose of this program was to investigate geotechnical conditions and install ground temperature cables to support engineering designs for potential upgrades and resurfacing of the Mary River aerodrome runway. The program consisted of three (3) boreholes, and are presented in Figure 2.1 and detailed in Table 2.1.

A marine on-ice geotechnical program, consisting of nineteen (19) cone penetration tests (CPT), was conducted at Milne Inlet during April 2019, to evaluate the geotechnical conditions for the construction of the freight dock at Milne Port. Table 2.1 and Figure 2.2 present the CPT locations associated with the 2019 marine on-ice geotechnical program at Milne Inlet.

Between April and May 2019, a land-based geotechnical drilling program was completed at Mary River adjacent to the Mine Haul Road near KM 106 & 107. The purpose of this program was to examine the geotechnical conditions and conduct a slope stability analysis in order to support construction of the Run

of Mine (ROM) stockpile and Sedimentation Pond at KM 107. The initial land-based geotechnical drilling program consisted of six (6) boreholes adjacent to the Mine Haul Road near KM 107 and four (4) boreholes adjacent to the Mine Haul Road near KM 106. The equipment utilized for the land-based geotechnical drilling program consisted of a tracked drill rig capable of using both sonic and rotary coring drilling techniques. Other supporting equipment included a tracked flatbed vehicle for hauling water and other supplies as well as a skid steer for moving drill rods and other equipment/supplies. After an initial pre-construction geotechnical investigation, the KM 107 area was determined to be an unsuitable location for the proposed infrastructure. An alternative location was identified at KM 106 location. Revisions to drill plan borehole locations for the land-based geotechnical drilling program were required as a direct result of the findings of the initial drilling, and are presented in Figure 2.1 and detailed in Table 2.1.

Two (2) additional programs were proposed in 2019 and notifications submitted, consisting of a proposed quarry material verification program and the installation of test piles at Milne Port. This work was deferred until 2020, and no drilling was completed in 2019.

To ensure compliance with the relevant conditions outlined in the Type 'B' Water Licence and Commercial Lease, Baffinland submitted notifications to the NWB, CIRNAC and the QIA prior to commencement of activities. Copies of these notifications are provided in Appendix C of this report.

### **3 MODIFICATIONS, INFRASTRUCTURE CHANGES AND CONSTRUCTION**

No modifications, infrastructure changes or construction were conducted in 2019 under the Type 'B' Water Licence or Commercial Lease to support exploration and/or geotechnical activities.

## 4 WATER USE

### 4.1 QUANTITIES OF FRESHWATER USED FOR DOMESTIC PURPOSES

During 2019, water was not withdrawn under the authorization of the Type 'B' Water Licence for domestic (camp) purposes. No satellite camps were operated to support exploration and drilling activities in 2019.

### 4.2 QUANTITIES OF FRESHWATER USED FOR DRILLING ACTIVITIES

During 2019, water was withdrawn under the authorization of the Type 'B' Water Licence for drilling purposes.

During the 2019 land-based geotechnical drilling program for ROM stockpile investigation and the aerodrome investigation, no water was withdrawn for the purposes of drilling. The requirement for no water during drilling is attributed to the fact that all of the geotechnical boreholes were performed using a sonic drilling technique which requires minimal volumes of water to perform. Under ice drilling at Milne Port did not require the use of freshwater.

During the 2019 exploration drilling program at Deposit No. 1 and 3, approximately 6,958 m<sup>3</sup> of water was used to support exploration drilling activities. This was greater than the volume estimated in the drilling notification, and attributed to additional boreholes completed for the program. For boreholes at Deposit No. 1, water was sourced from Camp Lake via water truck and nearby water source KM 108.5 sump via water pumps. Water requirements for the drilling program at Deposit Nos. 3 were supplied by pumping water from one (1) location along the Mary River; MRP-3.

All water sources used to support 2019 drilling activities were identified by Baffinland as potential water sources in the drilling notifications submitted to the NWB, CIRNAC and QIA (refer to Appendix C).

Locations of the water sources used for the 2019 drilling programs are provided in Table 4.1 and are presented in Figures 2.1 and 2.2. Daily and monthly water use volumes for drilling activities by water source are detailed in Table 4.2. There were no exceedances of the daily water use limit for drilling activities (250 m<sup>3</sup>), stipulated in the Type 'B' Water Licence in 2019.



## 5 ENVIRONMENTAL MONITORING

### 5.1 ENVIRONMENTAL MONITORING FOR DRILLING/TESTING ACTIVITIES

Daily environmental monitoring, including the completion of pre, daily and post inspections, were performed at borehole and CPT locations by on-site Environment Department personnel. Protocols and mitigation measures consistent with the Project's Environmental Protection Plan (EPP; BAF-PH1-830-P16-0008) for the management of fuel, hazardous materials, and waste were employed during the 2019 drilling programs and associated activities. Copies of the environmental monitoring logs completed for the 2019 borehole and CPT locations are provided in Appendix E (refer to Table 5.1).

Areas that were drilled in 2019 were previously assessed for the presence of archaeological sites. To minimize the potential for disturbance of cultural heritage resources and prior to the commencement of drilling operations, identified archaeological sites near areas to be drilled in 2019 were staked off and their locations communicated to the appropriate drilling crews, as per the Project's Cultural Heritage Resource Protection Plan (BAF-PH1-830-P16-0006).

### 5.2 2019 MARINE WATER QUALITY MONITORING PROGRAM – MILNE INLET

During April 2019, a marine under-ice water quality monitoring program was conducted in Milne Inlet during the execution of the marine on-ice geotechnical program involving cone penetration tests (CPTs). The objective of the water quality monitoring program was to monitor total suspended solids (TSS) and turbidity levels within the immediate vicinity of the geotechnical testing activities.

The water quality monitoring program consisted of collecting under-ice, discrete water samples within 12 hours before the commencement of geotechnical activities, and within 12 hours following the completion of activities at select CPT locations. Pre and post water samples were generally collected at a depth of approximately one (1) metre above the bottom of the water column using a Kemmerer water sampler. Water samples were collected as described in the Project's Surface Water Sampling Program – Quality Assurance and Quality Control Plan (BAF-PH1-830-P16-0001) and analyzed for trace metals (total) and general parameters, including turbidity and TSS. Monitoring results for the water quality monitoring program are presented in Table 5.2.

Due to the transient and intermittent nature of the on-ice geotechnical activities, the Canadian Council of Ministers of the Environment (CCME) TSS and turbidity guidelines for short-term exposure in marine environments (clear flow) were the applicable criteria utilized for TSS and turbidity results collected during the marine under-ice water quality monitoring program. In comparing the CCME TSS guidelines with the changes in TSS concentrations documented between pre and post water quality samples at CPT locations, changes in TSS levels did not exceed the CCME TSS guideline of a maximum increase of 25 mg/L TSS from background (pre-testing) levels. Similarly, in comparing the CCME turbidity guidelines with the changes in turbidity levels documented between pre and post water samples at CPT locations, changes in turbidity levels did not exceed the CCME turbidity guideline of a maximum increase of 8 Nephelometric Turbidity Units (NTUs) from background (pre-testing) levels. The TSS and turbidity results from the marine under-

ice water quality monitoring program indicate that any re-suspension of sediments caused by the CPT activities was negligible.

## 6 WASTE MANAGEMENT

Satellite camps were not operated to support exploration and geotechnical drilling activities in 2019. Personnel associated with exploration and geotechnical drilling activities were based out of the Mary River Mine Site and Milne Port camps, operated under the Type 'A' Water Licence. As a result, the sewage, greywater and solid waste generated by the 2019 exploration and geotechnical drilling activities was captured under the Project's Type 'A' Water Licence. The reader is referred to the 2019 QIA and NWB Annual Report for Operations for additional details on sewage, greywater and waste generated and managed under the Type 'A' Water Licence during 2019.

Small amounts of drilling wastes (i.e. cuttings) generated from 2019 drilling programs were deposited in boreholes and/or sumps, as well as captured by sedimentation and erosion control measures (e.g. silt fencing) near exploration borehole locations. Table 6.1 details the approximate quantities and locations of drilling wastes deposited during the 2019 drilling programs. Locations of the sump used to support the exploration drilling program at Deposit No. 1 are presented in Figure 2.1.

## **7 REPORTED INCIDENTS**

### **7.1 SPILLS**

Under the Type 'B' Water Licence, there were no spills in 2019 that met or exceeded the reporting thresholds outlined in the Nunavut Spill Contingency Planning and Reporting Regulations. As a result, no spills were reported by Baffinland in 2019 under the Type 'B' Water Licence.

### **7.2 HEALTH & SAFETY INCIDENTS**

Under the Commercial Lease, no health & safety incidents were reported to the QIA and/or the Workers' Safety and Compensation Commission (WSCC) that pertained to the 2019 exploration and geotechnical activities.

## **8 RECLAMATION, CLOSURE AND FINANCIAL SECURITY**

### **8.1 PROGRESSIVE AND FINAL RECLAMATION**

New impacts from 2019 exploration and geotechnical activities were minimal and are summarized in Table 8.1.

Progressive and final reclamation works undertaken in 2019 are summarized in Table 8.2. As shown in Table 8.2, progressive and final reclamation works undertaken in 2018 solely consisted of reclaiming borehole and CPT locations associated with the 2018 exploration and geotechnical programs.

Following the completion of a borehole and/or CPT, as per Part I, Item 9 of the Type 'B' Water Licence, drilling equipment was removed and sites were restored to their natural condition. For exploration borehole locations, the borehole casing was cut off near ground surface. Anchoring rods used to secure the drill rig at the exploration borehole locations were left in place until the end of the field season, and were then cut off to near ground surface. For geotechnical borehole locations, all holes were backfilled using native material and reinstated to natural conditions. A routine inspection of 2019 boreholes will be completed during summer months of 2020.

To support exploration drilling activities at Deposit No. 1 and 3 in 2019, select supplies and a survival shelter were secured, winterized and left near borehole location MR3-19-256, and a survival shelter and pump shack were left at the MRP-3 water source location.

Available photographs of conditions before, during and after geotechnical and exploration drilling activities in 2019 are provided in Appendix D.

### **8.2 CURRENT RESTORATION LIABILITY**

The current status of restoration liability for the Project, including exploration and drilling activities conducted under the Type 'B' Water Licence, is summarized in Table 8.3.



## 9 PLANS, REPORTS AND STUDIES

### 9.1 SUMMARY OF STUDIES REQUESTED BY THE BOARD

In 2019, studies under the Type 'B' Water Licence were not requested by the NWB.

### 9.2 REVISIONS TO PLANS, REPORTS AND MANUALS

An annual review of the management plans developed under the Type 'B' Water Licence was completed in 2019. The current versions of the Exploration Spill Contingency Plan (BAF-PH1-830-P16-0037; Rev. 0; June 2014) and the Exploration Closure and Reclamation Plan (BAF-PH1-830-P16-0038; Rev. 1; July 2014) reflect current operations, protocols and procedures. The reader is referred to the 2019 QIA and NWB Annual Report for Operations for a complete list of the Project's current management and monitoring plans and the recent revisions undertaken during 2019 and early 2020.

### 9.3 SUMMARY OF FUEL STORAGE

Fuel storage and refueling facilities at the Mine Site, Milne Port and Steensby Port were used to support exploration and geotechnical drilling activities in 2019.

Fuel requirements for exploration activities in 2019 consisted of Jet-A1 fuel, for on-site helicopters transporting crews and equipment to prospects, mineral leases and borehole locations, and Arctic Diesel, for drill operations and support equipment (i.e. pick-up trucks). Jet-A1 fuel requirements for exploration activities were supplied using drummed Jet-A1 fuel stored in lined containment areas at the Mine Site and Steensby Port. Arctic Diesel requirements for exploration activities were supplied by the Mine Site and Milne Port bulk fuel storage facilities.

Fuel requirements for the 2019 geotechnical drilling programs consisted of Arctic Diesel supplied by the Mine Site and Milne Port bulk fuel storage facilities. The drill rig and supporting equipment (Nodwell flatdeck, skidsteer) were refueled using pick-up trucks equipped with double walled portable tanks (tidy tanks).

To safeguard impacts to freshwater bodies and mitigate fuel spills, fueling activities adhered to the protocols and mitigation measures (i.e. spill trays, spill kits) outlined in Baffinland's current Environmental Protection Plan and Exploration Spill Contingency Plan (BAF-PH1-830-P16-0037).

As of December 31, 2019, there were 1,004 drums (205 L) of fuel (624 Arctic Diesel and 380 Jet-A1) stored at Steensby Port, 775 drums (205 L) of fuel (427 Jet-A1 and 348 gasoline) at the Mine Site and 60 drums (205 L) of fuel (16 Jet-A1 and 44 gasoline) at Milne Port. No fuel was stored at the Mid-Rail camp in 2019. Drummed fuel at the Mine Site and Steensby Port are stored within lined secondary containment areas. End of year fuel inventories for the Mine Site and Milne Port bulk fuel storage facilities, operated under the Type 'A' Water Licence, are provided in the 2019 QIA and NWB Annual Report for Operations.

## 9.4 INSPECTION AND COMPLIANCE REPORTS

### 9.4.1 CIRNAC Inspections

During 2019, Baffinland did not receive any inspection and/or compliance reports from CIRNAC Water Resources Officers (the Inspector) outlining concerns pertaining to the scope of the Type 'B' Water Licence.

### 9.4.2 QIA Inspections

During 2019, the QIA conducted several inspections and an annual audit at the Project. During the annual audit in August 2019, it was identified that the exploration boreholes at Deposit No. 3 had not been backfilled with drill cuttings. Boreholes were restored to natural conditions by cutting of the borehole casing to near grade surface and/or removing the casing, consistent with the Exploration Closure and Reclamation Plan (BAF-PH1-830-P16-0038). QIA also noted concerns regarding the management of drill cuttings near watercourses. To improve the management drill cuttings, Baffinland implemented the use of sand bags at borehole locations, where feasible, to increase sump capacity and the settling time of drill water in sumps as well as support silt fences downstream.

## 9.5 SUMMARY OF ARTESIAN FLOWS

During the 2019 geotechnical and exploration drilling programs, artesian flows were not observed at any of the borehole locations.

## 9.6 SUMMARY OF GEOCHEMICAL ANALYSIS OF DRILL CORES

As of April 30, 2020, geochemical analysis of the geotechnical drill cores collected during 2019 has not been completed and is not planned at this time.

As of April 30, 2020, geochemical analysis of the drill cores collected during the exploration drilling programs at Deposit No. 1 and 3 has not been completed and is currently under review.

## **10 PUBLIC CONSULTATIONS**

Throughout 2019, Baffinland continued to consult with the North Baffin communities and organizations regarding; ongoing construction and operational activities at the Project, the 2019 shipping season, progress regarding employment from the North Baffin communities, environmental monitoring activities and results, exploration activities and future phases of the Project. Baffinland's senior management team continued to participate in these meetings.

The reader is referred to the 2019 QIA and NWB Annual Report for Operations for a complete list of consultations and meetings held with regulators, stakeholders and the public by Baffinland during 2019.

## 11 2020 EXPLORATION AND GEOTECHNICAL ACTIVITIES

The 2020 Work Plan was prepared and provided by Baffinland to relevant parties on November 1, 2019 as required under Section 6.1 of the Commercial Lease and under Part J, Item 3 of the Type 'A' Water Licence, for the purposes of an Annual Security Review (ASR) for activities undertaken on an annual basis. The 2020 Work Plan described the planned development and operation of the Project in 2020, including planned exploration and geotechnical drilling activities.

The scope of Baffinland's Type 'B' Water Licence and Commercial Lease allows for Baffinland to continue to undertake exploration activities and drilling programs at Project areas and Baffinland's mineral leases within the Qikiqtani Region of Nunavut. This includes exploration land use areas as defined in Section 2.2 of the Commercial Lease.

Exploration activities for 2020 have not yet been finalized however it is anticipated that activities at a minimum will include mapping, sampling and geophysical and geochemical surveys of prospects and Baffinland's mineral leases and will include additional exploration drilling programs on Deposit No. 1, 2 and 3. Notification will be provided to the NWB, CIRNAC and the QIA prior to the commencement of exploration drilling activities.

Geotechnical activities, including drilling programs, will be conducted during 2020 to support on-going engineering design studies for future Project infrastructure. Baffinland will provide notification to the NWB, CIRNAC and the QIA prior to commencement of the activities.

Operation of the Steensby and Mid Rail camps to support exploration and geotechnical activities are not anticipated to be required during 2020.

## TABLES

Table 1.1: Current Approvals, Permits and Authorizations - 2019

Permit or Licence No.	Licence Name	Status Update for 2019	Expiry
Nunavut Impact Review Board			
No. 005	Amended Project Certificate	All works and activities have been screened by the Nunavut Impact Review Board (NIRB) and have been considered in the Project Certificate amendments issued by the NIRB in May 2014 (ERP) and October 2018 (Production Increase). A NIRB Annual Report is submitted each year that summarizes the status of the Project relative to the conditions outlined in the Project Certificate.	N/A
Nunavut Water Board			
2AM-MRY1325	Type ‘A’ Water Licence – Amendment No. 1	In good standing; no amendments were issued by the NWB in 2019.	10-Jun-25
2BE-MRY1421	Type ‘B’ Water Licence	In good standing; no amendments were issued by the NWB in 2019.	16-Apr-21
Qikiqtani Inuit Association			
Q13C301	Inuit Owned Land Commercial Lease	Compliance with the lease is outlined in the <i>2019 QIA and NWB Annual Reports</i> submitted by March 31 <sup>st</sup> of each year.	31-Dec-43
-	Inuit Impact and Benefit Agreement (IIBA)	Compliance with the agreement is outlined in the Annual IIBA Implementation Report submitted by March 31 <sup>st</sup> of each year.	N/A
Crown Land Use Permits and Quarry Permits			
47H16-1-2	Foreshore Area for Milne Port Ore Dock Lease	In good standing. Amendment to the lease currently under review.	30-Jun-35
N2019Q0011	Tote Road and Borrow Area Land Use Permit	New lease issued in 2019, replaces prior permit N2014Q0016.	29-Jun-24
N2019C0009	Steensby Land Use Permit	New lease issued in 2019, replaces prior permit N2014C0013.	29-Jun-24
N2019J0010	Bruce Head Land Use Permit	New lease issued in 2019, replaces prior permit N2014J0011.	29-Jun-24
Authorizations under the Fisheries Act			
06-HCAA-CA7-0084	Crossings along the Milne Inlet Tote Road Authorization	The authorization remains valid and has been amended over the years. A monitoring report for the water crossings was submitted to DFO on December 31, 2019.	N/A
14-HCAA-00525	Fisheries Authorization – Milne Ore Dock	A monitoring report for the ore dock was submitted to DFO on December 31, 2019.	31-Dec-20
NU-06-0084	Fisheries Authorization – Tote Road	-	N/A
18-HCAA-00160	Fisheries Authorization – Freight Dock	-	N/A
Various Letter of Advice	Project crossings along Tote Road and at quarries, culvert extensions and replacements.	-	N/A
Approvals under the Navigable Waters Protection Act (Transport Canada)			
8200-07-10273, 10267, 10269, 10268, 10274, 10272, 10266, 10271	Construction of Watercourse Crossings (Bridges and Culverts)	In good standing, no changes from previous year.	Until complete
Licence under the Explosives Act			
F76068/E	Division 1 Factor Licence	Held by explosives contractor for the Project.	N/A



**Table 2.1: Exploration and Geotechnical Activities and Drilling Summary - 2019**

Property Section	Description of Activity	Description of Drilling Plan	ID	Location (UTM; NAD 83)	Status <sup>5</sup>	Results
Mine Site <sup>4</sup>	Land Geotechnical Drilling	Characterize geotechnical conditions and install ground temperature cables for potential runway resurfacing.	BH19-01	17 W 558544 7914472	Completed February 25, 2019	Geotechnical conditions characterized & ground temperature cables installed.
Mine Site <sup>4</sup>	Land Geotechnical Drilling	Characterize geotechnical conditions and install ground temperature cables for potential runway resurfacing.	BH19-02	17 W 559001 7914131	Completed February 26, 2019	Geotechnical conditions characterized & ground temperature cables installed.
Mine Site <sup>4</sup>	Land Geotechnical Drilling	Characterize geotechnical conditions and install ground temperature cables for potential runway resurfacing.	BH19-06	17 W 558561 7914492	Completed February 25, 2019	Geotechnical conditions characterized & ground temperature cables installed.
Milne Port <sup>1</sup>	Marine On-Ice Geotechnical (Cone Penetration Testing)	Characterize geotechnical conditions at potential locations for dock infrastructure in Milne Inlet.	BH19-CPT19-01	17 W 503987 7976698	Completed April 15, 2019	Geotechnical conditions characterized.
Milne Port <sup>1</sup>	Marine On-Ice Geotechnical (Cone Penetration Testing)	Characterize geotechnical conditions at locations for future freight dock infrastructure in Milne Inlet.	BH19-CPT19-02	17 W 503987 7976698	Completed April 16, 2019	Geotechnical conditions characterized.
Milne Port <sup>1</sup>	Marine On-Ice Geotechnical (Cone Penetration Testing)	Characterize geotechnical conditions at locations for future freight dock infrastructure in Milne Inlet.	BH19-CPT19-03	17 W 503987 7976762	Completed April 17, 2019	Geotechnical conditions characterized.
Milne Port <sup>1</sup>	Marine On-Ice Geotechnical (Cone Penetration Testing)	Characterize geotechnical conditions at locations for future freight dock infrastructure in Milne Inlet.	BH19-CPT19-03B	17 W 503988 7976761	Completed April 17, 2019	Geotechnical conditions characterized.
Milne Port <sup>1</sup>	Marine On-Ice Geotechnical (Cone Penetration Testing)	Characterize geotechnical conditions at locations for future freight dock infrastructure in Milne Inlet.	BH19-CPT19-03C	17 W 503989 7976762	Completed April 18, 2019	Geotechnical conditions characterized.
Milne Port <sup>1</sup>	Marine On-Ice Geotechnical (Cone Penetration Testing)	Characterize geotechnical conditions at locations for future freight dock infrastructure in Milne Inlet.	BH19-CPT19-04	17 W 503953 7976702	Completed April 19, 2019	Geotechnical conditions characterized.
Milne Port <sup>1</sup>	Marine On-Ice Geotechnical (Cone Penetration Testing)	Characterize geotechnical conditions at locations for future freight dock infrastructure in Milne Inlet.	BH19-CPT19-05	17 W 503945 7977110	Completed April 19, 2019	Geotechnical conditions characterized.
Milne Port <sup>1</sup>	Marine On-Ice Geotechnical (Cone Penetration Testing)	Characterize geotechnical conditions at locations for future freight dock infrastructure in Milne Inlet.	BH19-CPT19-06	17 W 503994 7977110	Completed April 21, 2019	Geotechnical conditions characterized.
Milne Port <sup>1</sup>	Marine On-Ice Geotechnical (Cone Penetration Testing)	Characterize geotechnical conditions at potential locations for dock infrastructure in Milne Inlet.	BH19-CPT19-07	17 W 503985 7977110	Completed April 21, 2019	Geotechnical conditions characterized.

**Notes:**

<sup>1</sup>Crown Lands - Foreshore - Milne Inlet.

<sup>2</sup>Inuit-Owned Lands - Parcel PI-19.

<sup>3</sup>Inuit-Owned Lands - Parcel PI-16.

<sup>4</sup>Inuit-Owned Lands - Parcel PI-17.

<sup>5</sup>In cases where a site's completion date is not available, the date of the site's final cleanup is provided.

**Table 2.1: Exploration and Geotechnical Activities and Drilling Summary - 2019**

Property Section	Description of Activity	Description of Drilling Plan	ID	Location (UTM; NAD 83)	Status <sup>5</sup>	Results
Milne Port <sup>1</sup>	Marine On-Ice Geotechnical (Cone Penetration Testing)	Characterize geotechnical conditions at potential locations for dock infrastructure in Milne Inlet.	BH19-CPT19-08	17 W 503995 7977120	Completed April 22, 2019	Geotechnical conditions characterized.
Milne Port <sup>1</sup>	Marine On-Ice Geotechnical (Cone Penetration Testing)	Characterize geotechnical conditions at potential locations for dock infrastructure in Milne Inlet.	BH19-CPT19-09	17 W 504005 7977110	Completed April 22, 2019	Geotechnical conditions characterized.
Milne Port <sup>1</sup>	Marine On-Ice Geotechnical (Cone Penetration Testing)	Characterize geotechnical conditions at potential locations for dock infrastructure in Milne Inlet.	BH19-CPT19-10	17 W 503995 7977100	Completed April 22, 2019	Geotechnical conditions characterized.
Milne Port <sup>1</sup>	Marine On-Ice Geotechnical (Cone Penetration Testing)	Characterize geotechnical conditions at potential locations for dock infrastructure in Milne Inlet.	BH19-CPT19-11	17 W 503955 7977110	Completed April 23, 2019	Geotechnical conditions characterized.
Milne Port <sup>1</sup>	Marine On-Ice Geotechnical (Cone Penetration Testing)	Characterize geotechnical conditions at potential locations for dock infrastructure in Milne Inlet.	BH19-CPT19-12	17 W 503945 7977100	Completed April 23, 2019	Geotechnical conditions characterized.
Milne Port <sup>1</sup>	Marine On-Ice Geotechnical (Cone Penetration Testing)	Characterize geotechnical conditions at potential locations for dock infrastructure in Milne Inlet.	BH19-CPT19-13	17 W 503935 7977109	Completed April 23, 2019	Geotechnical conditions characterized.
Milne Port <sup>1</sup>	Marine On-Ice Geotechnical (Cone Penetration Testing)	Characterize geotechnical conditions at potential locations for dock infrastructure in Milne Inlet.	BH19-CPT19-14	17 W 503945 7977120	Completed April 24, 2019	Geotechnical conditions characterized.
Milne Port <sup>1</sup>	Marine On-Ice Geotechnical (Cone Penetration Testing)	Characterize geotechnical conditions at potential locations for dock infrastructure in Milne Inlet.	BH19-CPT19-15	17 W 503944 7977085	Completed April 24, 2019	Geotechnical conditions characterized.
Milne Port <sup>1</sup>	Marine On-Ice Geotechnical (Cone Penetration Testing)	Characterize geotechnical conditions at potential locations for dock infrastructure in Milne Inlet.	BH19-CPT19-16	17 W 503920 7977110	Completed April 24, 2019	Geotechnical conditions characterized.
Milne Port <sup>1</sup>	Marine On-Ice Geotechnical (Cone Penetration Testing)	Characterize geotechnical conditions at potential locations for dock infrastructure in Milne Inlet.	BH19-CPT19-17	17 W 503945 7977135	Completed April 25, 2019	Geotechnical conditions characterized.
Mine Site <sup>4</sup>	Land Geotechnical Drilling	Characterize geotechnical conditions at potential locations for ore management facilities.	KM107-DH19-01	17 W 564115 7913113	Completed April 11, 2019	Geotechnical conditions characterized.
Mine Site <sup>4</sup>	Land Geotechnical Drilling	Characterize geotechnical conditions at potential locations for ore management facilities.	KM107-DH19-02	17 W 564219 7913502	Completed April 13, 2019	Geotechnical conditions characterized.
Mine Site <sup>4</sup>	Land Geotechnical Drilling	Characterize geotechnical conditions at potential location for new ore management infrastructure.	KM107-DH19-03	17 W 564385 7913556	Completed April 15, 2019	Geotechnical conditions characterized.
Mine Site <sup>4</sup>	Land Geotechnical Drilling	Characterize geotechnical conditions at potential location for new ore management infrastructure.	KM107-DH19-04	17 W 564351 7913721	Completed April 16, 2019	Geotechnical conditions characterized.
Mine Site <sup>4</sup>	Land Geotechnical Drilling	Characterize geotechnical conditions at potential locations for railway bridge abutments.	KM107-DH19-05	17 W 563874 7913618	Completed April 8, 2019	Geotechnical conditions characterized.

**Notes:**

<sup>1</sup>Crown Lands - Foreshore - Milne Inlet.

<sup>2</sup>Inuit-Owned Lands - Parcel PI-19.

<sup>3</sup>Inuit-Owned Lands - Parcel PI-16.

<sup>4</sup>Inuit-Owned Lands - Parcel PI-17.

<sup>5</sup>In cases where a site's completion date is not available, the date of the site's final cleanup is provided.

**Table 2.1: Exploration and Geotechnical Activities and Drilling Summary - 2019**

Property Section	Description of Activity	Description of Drilling Plan	ID	Location (UTM; NAD 83)	Status <sup>5</sup>	Results
Mine Site <sup>4</sup>	Land Geotechnical Drilling	Characterize geotechnical conditions at potential locations for railway bridge abutments.	KM107-DH19-06	17 W 564307 7913350	Completed April 12, 2019	Geotechnical conditions characterized.
Tote Road <sup>3</sup>	Land Geotechnical Drilling	Characterize geotechnical conditions at potential locations for railway bridge abutments.	KM106-DH19-01	17 W 563473 7913064	Completed May 16, 2019	Geotechnical conditions characterized.
Tote Road <sup>3</sup>	Land Geotechnical Drilling	Characterize geotechnical conditions at potential locations for railway bridge abutments.	KM106-DH19-02	17 W 563418 7913168	Completed May 16, 2019	Geotechnical conditions characterized.
Tote Road <sup>3</sup>	Land Geotechnical Drilling	Characterize geotechnical conditions at potential locations for railway bridge abutments.	KM106-DH19-03	17 W 563545 7913193	Completed May 16, 2019	Geotechnical conditions characterized.
Tote Road <sup>3</sup>	Land Geotechnical Drilling	Characterize geotechnical conditions at potential locations for railway bridge abutments.	KM106-DH19-04	17 W 563618 7913306	No drilling occurred at this proposed location	No drilling occurred at this proposed location
Mine Site <sup>4</sup>	Land Geotechnical Drilling	Characterize geotechnical conditions at potential locations for new Mine Site Bulk Fuel Facility.	KM106-DH19-05	17 W 563505 7913113	Completed May 16, 2019	Geotechnical conditions characterized.
Mine Site <sup>4</sup>	Exploration Diamond Drilling	Further characterize Deposit No. 3 ore body.	MR3-18-244	17 W 567244 7913520	Completed June 25, 2019	Deposit No. 3 ore body further characterized.
Mine Site <sup>4</sup>	Exploration Diamond Drilling	Further characterize Deposit No. 1 ore body.	MR1-19-251	17 W 563819 7915498	Completed June 26, 2019	Deposit No. 1 ore body further characterized.
Mine Site <sup>4</sup>	Exploration Diamond Drilling	Further characterize Deposit No. 3 ore body.	MR3-19-255	17 W 567296 7913560	Completed July 5, 2019	Deposit No. 3 ore body further characterized.
Mine Site <sup>4</sup>	Exploration Diamond Drilling	Further characterize Deposit No. 1 ore body.	MR1-19-254	17 W 563731 7915265	Completed July 7, 2019	Deposit No. 1 ore body further characterized.
Mine Site <sup>4</sup>	Exploration Diamond Drilling	Further characterize Deposit No. 1 ore body.	MR1-19-257	17 W 563948 7915652	Completed July 12, 2019	Deposit No. 1 ore body further characterized.
Mine Site <sup>4</sup>	Exploration Diamond Drilling	Further characterize Deposit No. 1 ore body.	MR1-19-253	17 W 563787 7915383	Completed July 16, 2019	Deposit No. 1 ore body further characterized.
Mine Site <sup>4</sup>	Exploration Diamond Drilling	Further characterize Deposit No. 1 ore body.	MR1-19-258	17 W 564020 7915718	Completed July 18, 2019	Deposit No. 1 ore body further characterized.
Mine Site <sup>4</sup>	Exploration Diamond Drilling	Further characterize Deposit No. 3 ore body.	MR3-19-256	17 W 567185 7913540	Completed July 19, 2019	Deposit No. 3 ore body further characterized.
Mine Site <sup>4</sup>	Exploration Diamond Drilling	Further characterize Deposit No. 1 ore body.	MR1-19-259	17 W 564020 7915718	Completed July 25, 2019	Deposit No. 1 ore body further characterized.

**Notes:**

<sup>1</sup>Crown Lands - Foreshore - Milne Inlet.

<sup>2</sup>Inuit-Owned Lands - Parcel PI-19.

<sup>3</sup>Inuit-Owned Lands - Parcel PI-16.

<sup>4</sup>Inuit-Owned Lands - Parcel PI-17.

<sup>5</sup>In cases where a site's completion date is not available, the date of the site's final cleanup is provided.

Table 2.1: Exploration and Geotechnical Activities and Drilling Summary - 2019

Property Section	Description of Activity	Description of Drilling Plan	ID	Location (UTM; NAD 83)	Status <sup>5</sup>	Results
Mine Site <sup>4</sup>	Exploration Diamond Drilling	Further characterize Deposit No. 3 ore body.	MR3-19-261	17 W 567406 7913604	Completed July 26, 2019	Deposit No. 3 ore body further characterized.
Mine Site <sup>4</sup>	Exploration Diamond Drilling	Further characterize Deposit No. 1 ore body.	MR1-19-260	17 W 563811 7915444	Completed July 31, 2019	Deposit No. 1 ore body further characterized.
Mine Site <sup>4</sup>	Exploration Diamond Drilling	Further characterize Deposit No. 3 ore body.	MR3-19-263	17 W 567532 7913625	Completed July 31, 2019	Deposit No. 3 ore body further characterized.
Mine Site <sup>4</sup>	Exploration Diamond Drilling	Further characterize Deposit No. 1 ore body.	MR1-19-262	17 W 564101 7915846	Completed August 1, 2019	Deposit No. 1 ore body further characterized.
Mine Site <sup>4</sup>	Exploration Diamond Drilling	Further characterize Deposit No. 1 ore body.	MR1-19-264	17 W 564188 7916001	Completed August 9, 2019	Deposit No. 1 ore body further characterized.
Mine Site <sup>4</sup>	Exploration Diamond Drilling	Further characterize Deposit No. 3 ore body.	MR3-19-265	17 W 567191 7913508	Completed August 14, 2019	Deposit No. 3 ore body further characterized.
Mine Site <sup>4</sup>	Exploration Diamond Drilling	Further characterize Deposit No. 1 ore body.	MR1-19-266	17 W 563182 7914313	Completed August 16, 2019	Deposit No. 1 ore body further characterized.
Mine Site <sup>4</sup>	Exploration Diamond Drilling	Further characterize Deposit No. 1 ore body.	MR1-19-268	17 W 563097 7914174	Completed August 22, 2019	Deposit No. 1 ore body further characterized.
Mine Site <sup>4</sup>	Exploration Diamond Drilling	Further characterize Deposit No. 3 ore body.	MR3-19-267	17 W 567306 7913517	Completed August 22, 2019	Deposit No. 3 ore body further characterized.
Mine Site <sup>4</sup>	Exploration Diamond Drilling	Further characterize Deposit No. 1 ore body.	MR1-19-269	17 W 562980 7913992	Completed August 30, 2019	Deposit No. 1 ore body further characterized.

**Notes:**

<sup>1</sup>Crown Lands - Foreshore - Milne Inlet.

<sup>2</sup>Inuit-Owned Lands - Parcel PI-19.

<sup>3</sup>Inuit-Owned Lands - Parcel PI-16.

<sup>4</sup>Inuit-Owned Lands - Parcel PI-17.

<sup>5</sup>In cases where a site's completion date is not available, the date of the site's final cleanup is provided.

**Table 4.1: Annual Volumes of Water Used for Drilling Activities on Inuit-Owned and Crown Lands by Source - 2019**

Property Section	Water Source ID	Water Source Location (UTM; NAD 83)	Annual Volume Used (m <sup>3</sup> ) <sup>a</sup>	Percent of Total Annual Volume Used (%)
Mine Site	Km 108 Sump	17 W 564006 7915693	3,681	52.90%
Mine Site	Camp Lake	17 W 557776 7914723	696	10.00%
Mine Site	MRP-3 (Mary River)	17 W 567769 7912761	2,581	37.10%
<b>TOTAL</b>			<b>6,958</b>	<b>100.00%</b>

**Notes:**

<sup>a</sup>Refer to Table 4.2 for 2019 daily and monthly water use volumes by water source.

Table 4.2: Daily and Monthly Volumes of Water Used for Drilling Activities on Inuit-Owned and Crown Lands by Source - 2019

Day	June		July		August		
	MRP-3 (Mary River)	KM 108.5 Sump	MRP-3 (Mary River)	KM 108.5 Sump	MRP-3 (Mary River)	KM 108.5 Sump	Camp Lake
1	-	-	54	114	-	74	-
2	-	-	54	114	-	22	-
3	-	-	54	94	-	6	-
4	-	-	54	86	11	52	-
5	-	-	27	114	54	61	-
6	-	-	-	86	57	64	-
7	-	-	61	57	63	59	-
8	-	-	54	29	65	61	-
9	-	-	54	53	31	19	-
10	-	-	54	75	67	-	-
11	-	-	27	57	74	-	29
12	-	-	54	43	85	-	57
13	-	-	54	57	52	-	29
14	-	-	54	86	27	-	57
15	-	-	54	114	-	-	43
16	-	-	54	122	27	-	24
17	20	-	54	67	45	-	29
18	13	13	27	57	51	-	69
19	24	57	14	29	54	-	67
20	17	59	-	114	48	-	81
21	18	57	47	116	51	-	45
22	21	40	55	115	19	-	15
23	42	48	30	136	-	-	-
24	81	59	46	75	-	-	-
25	62	58	52	57	-	-	-
26	-	-	-	80	-	-	32
27	-	-	34	118	-	-	27
28	-	29	53	113	-	-	37
29	54	86	52	134	-	-	57
30	54	114	41	73	-	-	-
31	-	-	27	61	-	-	-
TOTAL	405	620	1,295	2,644	881	417	696
MONTHLY TOTAL	1,025		3,939		1,994		

Notes:  
All volumes in cubic metres (m<sup>3</sup>).  
No exceedances of the daily drilling water use limit (250 m<sup>3</sup>/day) occurred in 2019.



Table 5.1: Exploration and Geotechnical Environmental Monitoring Logs - 2019

Property Section	ID	Location (UTM; NAD 83)	Environmental Monitoring Logs (Pre, Daily, Post)
Mine Site <sup>4</sup>	BH19-01	17 W 558544 7914472	BH19-01 - Appendix E.1.1
Mine Site <sup>4</sup>	BH19-02	17 W 559001 7914131	BH19-02 - Appendix E.1.2
Mine Site <sup>4</sup>	BH19-06	17 W 558561 7914492	BH19-06 - Appendix E.1.3
Milne Port <sup>1</sup>	BH19-CPT19-01	17 W 503987 7976698	BH19-CPT19-01 - Appendix E.1.4
Milne Port <sup>1</sup>	BH19-CPT19-02	17 W 503987 7976698	BH19-CPT19-02 - Appendix E.1.5
Milne Port <sup>1</sup>	BH19-CPT19-03	17 W 503987 7976762	BH19-CPT19-03 - Appendix E.1.6
Milne Port <sup>1</sup>	BH19-CPT19-03B	17 W 503988 7976761	BH19-CPT19-03B - Appendix E.1.7
Milne Port <sup>1</sup>	BH19-CPT19-03C	17 W 503989 7976762	BH19-CPT19-03C - Appendix E.1.8
Milne Port <sup>1</sup>	BH19-CPT19-04	17 W 503953 7976702	BH19-CPT19-04 - Appendix E.1.9
Milne Port <sup>1</sup>	BH19-CPT19-05	17 W 503945 7977110	BH19-CPT19-05 - Appendix E.1.10
Milne Port <sup>1</sup>	BH19-CPT19-06	17 W 503994 7977110	BH19-CPT19-06 - Appendix E.1.11
Milne Port <sup>1</sup>	BH19-CPT19-07	17 W 503985 7977110	BH19-CPT19-07 - Appendix E.1.12
Milne Port <sup>1</sup>	BH19-CPT19-08	17 W 503995 7977120	BH19-CPT19-08 - Appendix E.1.13
Milne Port <sup>1</sup>	BH19-CPT19-09	17 W 504005 7977110	BH19-CPT19-09 - Appendix E.1.14
Milne Port <sup>1</sup>	BH19-CPT19-10	17 W 503995 7977100	BH19-CPT19-10 - Appendix E.1.15
Milne Port <sup>1</sup>	BH19-CPT19-11	17 W 503955 7977110	BH19-CPT19-11 - Appendix E.1.16
Milne Port <sup>1</sup>	BH19-CPT19-12	17 W 503945 7977100	BH19-CPT19-12 - Appendix E.1.17
Milne Port <sup>1</sup>	BH19-CPT19-13	17 W 503935 7977109	BH19-CPT19-13- Appendix E.1.18
Milne Port <sup>1</sup>	BH19-CPT19-14	17 W 503945 7977120	BH19-CPT19-14 - Appendix E.1.19
Milne Port <sup>1</sup>	BH19-CPT19-15	17 W 503944 7977085	BH19-CPT19-15 - Appendix E.1.20
Milne Port <sup>1</sup>	BH19-CPT19-16	17 W 503920 7977110	BH19-CPT19-16- Appendix E.1.21
Milne Port <sup>1</sup>	BH19-CPT19-17	17 W 503945 7977135	BH19-CPT19-17 - Appendix E.1.22
Mine Site <sup>4</sup>	KM107-DH19-01	17 W 564115 7913113	KM107-DH19-01 - Appendix E.1.23
Mine Site <sup>4</sup>	KM107-DH19-02	17 W 564219 7913502	KM107-DH19-02 - Appendix E.1.24
Mine Site <sup>4</sup>	KM107-DH19-03	17 W 564385 7913556	KM107-DH19-03 - Appendix E.1.25
Mine Site <sup>4</sup>	KM107-DH19-04	17 W 564351 7913721	KM107-DH19-04 - Appendix E.1.26
Mine Site <sup>4</sup>	KM107-DH19-05	17 W 563874 7913618	KM107-DH19-05 - Appendix E.1.27
Mine Site <sup>4</sup>	KM107-DH19-06	17 W 564307 7913350	KM107-DH19-06 - Appendix E.1.28
Mine Site <sup>4</sup>	KM106-DH19-01	17 W 563473 7913064	KM106-DH19-01 - Appendix E.1.29
Mine Site <sup>4</sup>	KM106-DH19-02	17 W 563418 7913168	KM106-DH19-02 - Appendix E.1.30
Mine Site <sup>4</sup>	KM106-DH19-03	17 W 563545 7913193	KM106-DH19-03 - Appendix E.1.31
Mine Site <sup>4</sup>	KM106-DH19-04	17 W 563618 7913306	KM106-DH19-04- Appendix E.1.32
Mine Site <sup>4</sup>	KM106-DH19-05	17 W 563505 7913113	KM106-DH19-05 - Appendix E.1.33
Mine Site <sup>4</sup>	MR3-18-244	17 W 567244 7913520	MR3-18-244 - Appendix E.2.1
Mine Site <sup>4</sup>	MR1-19-251	17 W 563819 7915498	MR1-19-251 - Appendix E.2.2
Mine Site <sup>4</sup>	MR3-19-255	17 W 567296 7913560	MR3-19-255 - Appendix E.2.3
Mine Site <sup>4</sup>	MR1-19-254	17 W 563731 7915265	MR1-19-254 - Appendix E.2.4
Mine Site <sup>4</sup>	MR1-19-257	17 W 563948 7915652	MR1-19-257- Appendix E.2.5
Mine Site <sup>4</sup>	MR1-19-253	17 W 563787 7915383	MR1-19-253 - Appendix E.2.6
Mine Site <sup>4</sup>	MR1-19-258	17 W 564020 7915718	MR1-19-258 - Appendix E.2.7
Mine Site <sup>4</sup>	MR3-19-256	17 W 567185 7913540	MR3-19-256 - Appendix E.2.8
Mine Site <sup>4</sup>	MR1-19-259	17 W 564020 7915718	MR1-19-259 - Appendix E.2.9
Mine Site <sup>4</sup>	MR3-19-261	17 W 567406 7913604	MR3-19-261 - Appendix E.2.10
Mine Site <sup>4</sup>	MR1-19-260	17 W 563811 7915444	MR1-19-260 - Appendix E.2.11
Mine Site <sup>4</sup>	MR3-19-263	17 W 567532 7913625	MR3-19-263 - Appendix E.2.12
Mine Site <sup>4</sup>	MR1-19-262	17 W 564101 7915846	MR1-19-262 - Appendix E.2.13
Mine Site <sup>4</sup>	MR1-19-264	17 W 564188 7916001	MR1-19-264 - Appendix E.2.14
Mine Site <sup>4</sup>	MR3-19-265	17 W 567191 7913508	MR3-19-265- Appendix E.2.15
Mine Site <sup>4</sup>	MR1-19-266	17 W 563182 7914313	MR1-19-266 - Appendix E.2.16
Mine Site <sup>4</sup>	MR1-19-268	17 W 563097 7914174	MR1-19-268 - Appendix E.2.17
Mine Site <sup>4</sup>	MR3-19-267	17 W 567306 7913517	MR3-19-267- Appendix E.2.18
Mine Site <sup>4</sup>	MR1-19-269	17 W 562980 7913992	MR1-19-269 - Appendix E.2.19

Notes:

<sup>1</sup>Crown Lands - Foreshore - Milne Inlet.

<sup>2</sup>Inuit-Owned Lands - Parcel PI-19.

<sup>3</sup>Inuit-Owned Lands - Parcel PI-16.

<sup>4</sup>Inuit-Owned Lands - Parcel PI-17.



Table 5.2: Marine Water Quality Monitoring Results - Milne Inlet - 2019

	Drill Hole/CPT ID		BH19-CPT19-01		BH19-CPT19-02			BH19-CPT19-03A			BH19-CPT19-04		
	Date		4/15/2019	4/15/2019	4/16/2019	4/16/2019	4/16/2019	4/17/2019	4/17/2019	4/18/2019	4/19/2019	4/19/2019	4/19/2019
	Time		16:15	20:10	13:16	17:05	13:16	16:20	9:30	14:30	17:50	9:36	13:15
	Sample ID		BH19-CPT19-01-A	BH19-CPT19-01-B	BH19-CPT19-02-A	BH19-CPT19-02-B	BH19-CPT19-02-A01	BH19-CPT19-02-B04	BH19-CPT19-03A	BH19-CPT19-03B	BH19-CPT19-03-B	BH19-CPT19-04-A	BH19-CPT19-04-B
	ALS Laboratory ID		L2258894-1	L2258894-2	L2259287-1	L2259287-2	L2259287-3	L2259287-4	L2260218-1	L2260218-2	L2260699-1	L2260707-1	L2260707-2
	Sample Type		Pre-Drilling	Post-Drilling	Pre-Drilling	Post-Drilling	Duplicate	Equipment Blank	Pre-Drilling	Post-Drilling	Post-Drilling	Pre-Drilling	Post-Drilling
LABORATORY RESULTS													
General Parameters	Unit	MDL											
pH	pH Units	0.1	7.89	7.97	7.69	8.05	8.01	6.08	7.74	7.78	7.8	7.82	7.82
Total Suspended Solids (TSS)	mg/L	2	<2.0	<2.0	16	2	20.4	4.4	10.4	12.8	14.8	2.8	10.8
Total Dissolved Solids (TDS)	mg/L	20	33400	30600	32700	32300	32800	72	33300	30500	32200	32300	32400
Turbidity	NTU	0.1	0.49	0.69	0.27	0.15	0.35	0.17	0.27	0.17	0.12	0.35	0.4
Total Metals													
Aluminum (Al)-Total	mg/L	0.005		<0.50	<0.50	<0.50	<0.50	<0.0050	<0.50	<0.50	<0.50	<0.50	<0.50
Antimony (Sb)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010	<0.010	<0.010	<0.010
Arsenic (As)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010	<0.010	<0.010	<0.010
Barium (Ba)-Total	mg/L	0.0001	0.01	<0.010	<0.010	<0.010	<0.010	0.00029	<0.010	<0.010	<0.010	<0.010	<0.010
Beryllium (Be)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010	<0.010	<0.010	<0.010
Bismuth (Bi)-Total	mg/L	0.00005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.000050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Boron (B)-Total	mg/L	0.01	4.1	4.1	3.9	4.1	4.1	<0.010	3.7	4.2	4	4	4.1
Cadmium (Cd)-Total	mg/L	0.000005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.000050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Calcium (Ca)-Total	mg/L	0.05	379	377	368	371	372	0.518	372	401	382	382	388
Cesium (Cs)-Total	mg/L	0.00001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.000010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Chromium (Cr)-Total	mg/L	0.0005	<0.050	<0.050	<0.050	<0.050	<0.050	<0.00050	<0.050	<0.050	<0.050	<0.050	<0.050
Cobalt (Co)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010	<0.010	<0.010	<0.010
Copper (Cu)-Total	mg/L	0.001	<0.10	<0.10	<0.10	<0.10	<0.10	<0.0010	<0.10	<0.10	<0.10	<0.10	<0.10
Iron (Fe)-Total	mg/L	0.01	<1.0	<1.0	<1.0	<1.0	<1.0	<0.010	<1.0	<1.0	<1.0	<1.0	<1.0
Lead (Pb)-Total	mg/L	0.00005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.000050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Lithium (Li)-Total	mg/L	0.001	0.16	0.15	0.14	0.15	0.15	<0.0010	0.12	0.16	0.12	0.12	0.14
Magnesium (Mg)-Total	mg/L	0.005	1130	1140	1070	1100	1100	1.56	1120	1170	1230	1250	1220
Manganese (Mn)-Total	mg/L	0.0005	<0.050	<0.050	<0.050	<0.050	<0.050	<0.00050	<0.050	<0.050	<0.050	<0.050	<0.050
Mercury (Hg)-Total	mg/L	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Total	mg/L	0.00005	0.0101	0.0101	0.0099	0.0102	0.0095	<0.000050	0.009	0.0108	0.0104	0.0107	0.0106
Nickel (Ni)-Total	mg/L	0.0005	<0.050	<0.050	<0.050	<0.050	<0.050	<0.00050	<0.050	<0.050	<0.050	<0.050	<0.050
Phosphorus (P)-Total	mg/L	0.05	<5.0	<5.0	<5.0	<5.0	<5.0	<0.050	<5.0	<5.0	<5.0	<5.0	<5.0
Potassium (K)-Total	mg/L	0.05	367	380	351	366	362	0.486	387	380	368	371	363
Rubidium (Rb)-Total	mg/L	0.0002	0.103	0.107	0.103	0.1	0.101	<0.00020	0.098	0.109	0.1	0.107	0.106
Selenium (Se)-Total	mg/L	0.00005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.000050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Silicon (Si)-Total	mg/L	0.1	<10	<10	<10	<10	<10	<0.10	<10	<10	<10	<10	<10
Silver (Ag)-Total	mg/L	0.00005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.000050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Sodium (Na)-Total	mg/L	0.05	9500	9570	8890	9100	9240	13.2	9410	9710	10300	10700	10500
Strontium (Sr)-Total	mg/L	0.001	6.97	6.84	6.75	6.85	6.83	0.0101	6.92	7.55	7.28	7.17	7.15
Sulfur (S)-Total	mg/L	0.5	899	895	859	863	873	1.24	862	894	902	927	899
Tellurium (Te)-Total	mg/L	0.0002	<0.020	<0.020	<0.020	<0.020	<0.020	<0.00020	<0.020	<0.020	<0.020	<0.020	<0.020
Thallium (Tl)-Total	mg/L	0.00001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.000010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Thorium (Th)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010	<0.010	<0.010	<0.010
Tin (Sn)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010	<0.010	<0.010	<0.010
Titanium (Ti)-Total	mg/L	0.0003	<0.030	<0.030	<0.030	<0.030	<0.030	<0.00030	<0.030	<0.030	<0.030	<0.030	<0.030
Tungsten (W)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	0.00001	0.0029	0.0029	0.0027	0.0028	0.0028	<0.000010	0.0027	0.0029	0.0029	0.0029	0.0029
Vanadium (V)-Total	mg/L	0.0005	<0.050	<0.050	<0.050	<0.050	<0.050	<0.00050	<0.050	<0.050	<0.050	<0.050	<0.050
Zinc (Zn)-Total	mg/L	0.003	<0.30	<0.30	<0.30	<0.30	<0.30	<0.0030	<0.30	<0.30	<0.30	<0.30	<0.30
Zirconium (Zr)-Total	mg/L	0.0003	<0.030	<0.030	<0.030	<0.030	<0.030	<0.00030	<0.030	<0.030	<0.030	<0.030	<0.030

Notes:

<sup>1</sup>TSS criteria - 25 mg/L above background (pre-testing) levels (CCME, 2002).

<sup>2</sup>Turbidity criteria - 8 NTUs above background (pre-testing) levels (CCME, 2002).

Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

CPT-07 pre-testing sample not collected due to proximity to CPT-06.

Table 5.2: Marine Water Quality Monitoring Results - Milne Inlet - 2019

	Drill Hole/CPT ID		BH19-CPT19-05		BH19-CPT19-06			BH19-CPT19-07	BH19-CPT19-08-A			BH19-CPT19-10	
	Date		4/19/2019	4/19/2019	4/21/2019	4/21/2019	4/21/2019	4/21/2019	4/22/2019	4/22/2019	4/22/2019	4/22/2019	4/22/2019
	Time		12:45	16:35	10:30	10:30	14:25	17:30	9:10	13:55	8:20	14:30	17:15
	Sample ID		BH19-CPT19-05-A	BH19-CPT19-05-B	BH19-CPT19-06-A	BH19-CPT19-06-A02	BH19-CPT19-06-B	BH19-CPT19-07-B	BH19-CPT19-08-A	BH19-CPT19-08-B	BH19-CPT19-08-A03	BH19-CPT19-10-A	BH19-CPT19-10-B
	ALS Laboratory ID		L2260707-4	L2260707-5	L2261708-1	L2261708-2	L2261708-3	L2261708-4	L2261791-2	L2261791-4	L2261791-1	L2261791-3	L2261791-5
	Sample Type		Pre-Drilling	Post-Drilling	Pre-Drilling	Field Blank	Post-Drilling	Post-Drilling	Pre-Drilling	Post-Drilling	Travel Blank	Pre-Drilling	Post-Drilling
LABORATORY RESULTS													
General Parameters	Unit	MDL											
pH	pH Units	0.1	7.76	7.83	7.76	5.91	7.7	7.73	7.76	7.75	6.15	7.8	7.75
Total Suspended Solids (TSS)	mg/L	2	13.6	13.2	12.8	<2.0	11.6	12	9.2	9.2	<2.0	6.4	12.4
Total Dissolved Solids (TDS)	mg/L	20	33500	32400	33100	28	32700	32700	32800	32500	<20	32300	33700
Turbidity	NTU	0.1	0.32	0.28	<0.10	<0.10	0.12	0.15	0.21	0.11	<0.10	0.22	0.15
Total Metals													
Aluminum (Al)-Total	mg/L	0.005	<0.50	<0.50	2.23	<0.0050	<0.50	<0.50	<0.50	<0.50	<0.0050	<0.50	<0.50
Antimony (Sb)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010
Arsenic (As)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010
Barium (Ba)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010	0.01	<0.010	<0.00010	<0.010	<0.010
Beryllium (Be)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010
Bismuth (Bi)-Total	mg/L	0.00005	<0.0050	<0.0050	<0.0050	<0.000050	<0.0050	<0.0050	<0.0050	<0.0050	<0.000050	<0.0050	<0.0050
Boron (B)-Total	mg/L	0.01	4.3	4.2	4.1	<0.010	4.2	4.1	4.4	4.6	<0.010	4.5	4.6
Cadmium (Cd)-Total	mg/L	0.000005	<0.00050	<0.00050	<0.00050	<0.0000050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0000050	<0.00050	<0.00050
Calcium (Ca)-Total	mg/L	0.05	400	389	389	<0.050	395	387	403	428	<0.050	406	420
Cesium (Cs)-Total	mg/L	0.00001	<0.0010	<0.0010	<0.0010	<0.000010	<0.0010	<0.0010	<0.0010	<0.0010	<0.000010	<0.0010	<0.0010
Chromium (Cr)-Total	mg/L	0.0005	<0.050	<0.050	<0.050	<0.00050	<0.050	<0.050	<0.050	<0.050	<0.00050	<0.050	<0.050
Cobalt (Co)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010
Copper (Cu)-Total	mg/L	0.001	<0.10	<0.10	<0.10	<0.0010	<0.10	<0.10	<0.10	<0.10	<0.0010	<0.10	<0.10
Iron (Fe)-Total	mg/L	0.01	<1.0	<1.0	<1.0	<0.010	<1.0	<1.0	<1.0	<1.0	<0.010	<1.0	<1.0
Lead (Pb)-Total	mg/L	0.00005	<0.0050	<0.0050	<0.0050	<0.000050	<0.0050	<0.0050	<0.0050	<0.0050	<0.000050	<0.0050	<0.0050
Lithium (Li)-Total	mg/L	0.001	0.14	0.14	0.11	<0.0010	0.13	0.12	0.16	0.2	<0.0010	0.18	0.19
Magnesium (Mg)-Total	mg/L	0.005	1320	1290	1330	0.0363	1330	1290	1310	1350	<0.0050	1280	1280
Manganese (Mn)-Total	mg/L	0.0005	<0.050	<0.050	<0.050	<0.00050	<0.050	<0.050	<0.050	<0.050	<0.00050	<0.050	<0.050
Mercury (Hg)-Total	mg/L	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Total	mg/L	0.00005	0.0105	0.0104	0.0102	<0.000050	0.0108	0.0114	0.0101	0.011	<0.000050	0.0109	0.011
Nickel (Ni)-Total	mg/L	0.0005	<0.050	<0.050	<0.050	<0.00050	<0.050	<0.050	<0.050	<0.050	<0.00050	<0.050	<0.050
Phosphorus (P)-Total	mg/L	0.05	<5.0	<5.0	<5.0	<0.050	<5.0	<5.0	<5.0	<5.0	<0.050	<5.0	<5.0
Potassium (K)-Total	mg/L	0.05	383	368	382	<0.050	387	386	410	406	<0.050	406	414
Rubidium (Rb)-Total	mg/L	0.0002	0.107	0.108	0.11	<0.00020	0.114	0.105	0.108	0.102	<0.00020	0.11	0.105
Selenium (Se)-Total	mg/L	0.00005	<0.0050	<0.0050	<0.0050	<0.000050	<0.0050	<0.0050	<0.0050	<0.0050	<0.000050	<0.0050	<0.0050
Silicon (Si)-Total	mg/L	0.1	<10	<10	<10	<0.10	<10	<10	<10	<10	<0.10	<10	<10
Silver (Ag)-Total	mg/L	0.00005	<0.0050	<0.0050	<0.0050	0.000054	<0.0050	<0.0050	<0.0050	<0.0050	<0.000050	<0.0050	<0.0050
Sodium (Na)-Total	mg/L	0.05	10700	10800	10800	0.315	10900	11100	10600	10700	<0.050	9990	10800
Strontium (Sr)-Total	mg/L	0.001	7.34	7.18	7.32	<0.0010	7.37	7.29	7.01	7.37	<0.0010	7.17	7.27
Sulfur (S)-Total	mg/L	0.5	973	935	957	<0.50	956	961	981	987	<0.50	976	1010
Tellurium (Te)-Total	mg/L	0.0002	<0.020	<0.020	<0.020	<0.00020	<0.020	<0.020	<0.020	<0.020	<0.00020	<0.020	<0.020
Thallium (Tl)-Total	mg/L	0.00001	<0.0010	<0.0010	<0.0010	<0.000010	<0.0010	<0.0010	<0.0010	<0.0010	<0.000010	<0.0010	<0.0010
Thorium (Th)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010
Tin (Sn)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010	<0.010	<0.010	0.00013	<0.010	<0.010
Titanium (Ti)-Total	mg/L	0.0003	<0.030	<0.030	<0.030	<0.00030	<0.030	<0.030	<0.030	<0.030	<0.00030	<0.030	<0.030
Tungsten (W)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010	<0.010	<0.010	<0.00010	<0.010	<0.010
Uranium (U)-Total	mg/L	0.00001	0.0032	0.0029	0.0031	<0.000010	0.0031	0.0031	0.0029	0.0028	<0.000010	0.0027	0.0026
Vanadium (V)-Total	mg/L	0.0005	<0.050	<0.050	<0.050	<0.00050	<0.050	<0.050	<0.050	<0.050	<0.00050	<0.050	<0.050
Zinc (Zn)-Total	mg/L	0.003	<0.30	<0.30	<0.30	<0.0030	<0.30	<0.30	<0.30	<0.30	<0.0030	<0.30	<0.30
Zirconium (Zr)-Total	mg/L	0.0003	<0.030	<0.030	<0.030	<0.00030	<0.030	<0.030	<0.030	<0.030	<0.00030	<0.030	<0.030

Notes:

<sup>1</sup>TSS criteria - 25 mg/L above background (pre-testing) levels (CCME, 2002).

<sup>2</sup>Turbidity criteria - 8 NTUs above background (pre-testing) levels (CCME, 2002).

Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

CPT-07 pre-testing sample not collected due to proximity to CPT-06.

Table 5.2: Marine Water Quality Monitoring Results - Milne Inlet - 2019

	Drill Hole/CPT ID		BH19-CPT19-11			BH19-CPT19-12		BH19-CPT19-13		BH19-CPT19-14		BH19-CPT19-15	
	Date		4/23/2019	4/23/2019	4/23/2019	4/23/2019	4/23/2019	4/23/2019	4/23/2019	4/24/2019	4/24/2019	4/24/2019	4/24/2019
	Time		9:40	12:05	12:05	11:50	14:20	14:45	17:30	9:15	12:15	11:55	15:05
	Sample ID		BH19-CPT19-11-A	BH19-CPT19-11-B	BH19-CPT19-11-B01	BH19-CPT19-12-A	BH19-CPT19-12-B	BH19-CPT19-13-A	BH19-CPT19-13-B	BH19-CPT19-14-A	BH19-CPT19-14-B	BH19-CPT19-15-A	BH19-CPT19-15-B
	ALS Laboratory ID		L2261871-1	L2261871-2	L2261871-3	L2261871-4	L2261871-6	L2261871-5	L2261871-7	L2263001-1	L2263001-2	L2263001-3	L2263001-4
	Sample Type		Pre-Drilling	Post-Drilling	Duplicate	Pre-Drilling	Post-Drilling	Pre-Drilling	Post-Drilling	Pre-Drilling	Post-Drilling	Pre-Drilling	Post-Drilling
LABORATORY RESULTS													
General Parameters	Unit	MDL											
pH	pH Units	0.1	7.78	7.79	7.78	7.8	7.79	7.79	7.78	7.78	7.78	7.78	7.8
Total Suspended Solids (TSS)	mg/L	2	14	15.2	17.6	10.4	30.8	15.6	12.4	19.2	19.6	13.3	15.2
Total Dissolved Solids (TDS)	mg/L	20	32500	33600	33200	33300	32600	32100	33800	32700	33100	32600	33500
Turbidity	NTU	0.1	0.13	0.61	0.49	0.32	0.27	0.34	0.24	0.21	0.16	0.11	0.15
Total Metals													
Aluminum (Al)-Total	mg/L	0.005	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Antimony (Sb)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Arsenic (As)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Barium (Ba)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Beryllium (Be)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Bismuth (Bi)-Total	mg/L	0.00005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Boron (B)-Total	mg/L	0.01	4.5	4.3	4.3	4.6	4.6	4.5	4.6	4.5	4.5	4.6	4.4
Cadmium (Cd)-Total	mg/L	0.000005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00083	<0.00050	<0.00050	<0.00050
Calcium (Ca)-Total	mg/L	0.05	404	405	403	418	414	413	417	411	408	416	418
Cesium (Cs)-Total	mg/L	0.00001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	<0.0010	<0.0010	<0.0010
Chromium (Cr)-Total	mg/L	0.0005	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Cobalt (Co)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Copper (Cu)-Total	mg/L	0.001	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Iron (Fe)-Total	mg/L	0.01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead (Pb)-Total	mg/L	0.00005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Lithium (Li)-Total	mg/L	0.001	0.17	0.14	0.15	0.19	0.18	0.17	0.19	0.19	0.18	0.21	0.14
Magnesium (Mg)-Total	mg/L	0.005	1300	1310	1320	1290	1350	1330	1350	1320	1340	1280	1340
Manganese (Mn)-Total	mg/L	0.0005	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Mercury (Hg)-Total	mg/L	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Total	mg/L	0.00005	0.0104	0.0112	0.0104	0.011	0.011	0.0106	0.0116	0.0108	0.0098	0.0111	0.0109
Nickel (Ni)-Total	mg/L	0.0005	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phosphorus (P)-Total	mg/L	0.05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Potassium (K)-Total	mg/L	0.05	412	409	404	404	424	412	415	422	408	389	389
Rubidium (Rb)-Total	mg/L	0.0002	0.108	0.104	0.1	0.108	0.102	0.101	0.105	0.108	0.105	0.101	0.105
Selenium (Se)-Total	mg/L	0.00005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Silicon (Si)-Total	mg/L	0.1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Silver (Ag)-Total	mg/L	0.00005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Sodium (Na)-Total	mg/L	0.05	10600	10600	10700	10500	10600	11100	10800	11000	10800	10800	11100
Strontium (Sr)-Total	mg/L	0.001	7	7.02	7.02	7.23	7.13	7.19	7.2	7.04	7.04	7.14	7.27
Sulfur (S)-Total	mg/L	0.5	972	989	988	975	1000	979	981	1000	1010	986	987
Tellurium (Te)-Total	mg/L	0.0002	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Thallium (Tl)-Total	mg/L	0.00001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Thorium (Th)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Tin (Sn)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Titanium (Ti)-Total	mg/L	0.0003	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Tungsten (W)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	0.00001	0.0027	0.0029	0.0027	0.0029	0.0026	0.0029	0.0028	0.0037	0.0029	0.0024	0.0029
Vanadium (V)-Total	mg/L	0.0005	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Zinc (Zn)-Total	mg/L	0.003	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Zirconium (Zr)-Total	mg/L	0.0003	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030

Notes:

<sup>1</sup>TSS criteria - 25 mg/L above background (pre-testing) levels (CCME, 2002).

<sup>2</sup>Turbidity criteria - 8 NTUs above background (pre-testing) levels (CCME, 2002).

Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

CPT-07 pre-testing sample not collected due to proximity to CPT-06.

Table 5.2: Marine Water Quality Monitoring Results - Milne Inlet - 2019

	Drill Hole/CPT ID		BH19-CPT19-16		BH19-CPT19-17-A		
	Date		4/24/2019	4/24/2019	4/25/2019	4/25/2019	4/25/2019
	Time		14:40	17:45	9:45	13:48	13:48
	Sample ID		BH19-CPT19-16-A	BH19-CPT19-16-B	BH19-CPT19-17-A	BH19-CPT19-17-B	BH19-CPT19-17-B01
	ALS Laboratory ID		L2263001-5	L2263001-6	L2263402-1	L2263402-2	L2263402-3
	Sample Type		Pre-Drilling	Post-Drilling	Pre-Drilling	Post-Drilling	Duplicate
LABORATORY RESULTS							
General Parameters	Unit	MDL					
pH	pH Units	0.1	7.79	7.79	7.83	7.89	7.85
Total Suspended Solids (TSS)	mg/L	2	17.2	27.2	14.4	16	13.6
Total Dissolved Solids (TDS)	mg/L	20	34000	33300	33000	32300	32400
Turbidity	NTU	0.1	0.18	0.14	0.17	0.16	0.15
Total Metals							
Aluminum (Al)-Total	mg/L	0.005	<0.50	<0.50	<0.50	<0.50	<0.50
Antimony (Sb)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010
Arsenic (As)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010
Barium (Ba)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010
Beryllium (Be)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010
Bismuth (Bi)-Total	mg/L	0.00005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Boron (B)-Total	mg/L	0.01	4.5	4.5	4.1	4.3	4.1
Cadmium (Cd)-Total	mg/L	0.000005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Calcium (Ca)-Total	mg/L	0.05	422	417	406	410	389
Cesium (Cs)-Total	mg/L	0.00001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Chromium (Cr)-Total	mg/L	0.0005	<0.050	<0.050	<0.050	<0.050	<0.050
Cobalt (Co)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010
Copper (Cu)-Total	mg/L	0.001	<0.10	<0.10	<0.10	<0.10	<0.10
Iron (Fe)-Total	mg/L	0.01	<1.0	<1.0	<1.0	<1.0	<1.0
Lead (Pb)-Total	mg/L	0.00005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Lithium (Li)-Total	mg/L	0.001	0.16	0.15	0.13	0.15	0.13
Magnesium (Mg)-Total	mg/L	0.005	1280	1310	1220	1260	1270
Manganese (Mn)-Total	mg/L	0.0005	<0.050	<0.050	<0.050	<0.050	<0.050
Mercury (Hg)-Total	mg/L	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Total	mg/L	0.00005	0.0116	0.0105	0.0104	0.0107	0.0104
Nickel (Ni)-Total	mg/L	0.0005	<0.050	<0.050	<0.050	<0.050	<0.050
Phosphorus (P)-Total	mg/L	0.05	<5.0	<5.0	<5.0	<5.0	<5.0
Potassium (K)-Total	mg/L	0.05	397	384	373	390	388
Rubidium (Rb)-Total	mg/L	0.0002	0.109	0.107	0.098	0.105	0.106
Selenium (Se)-Total	mg/L	0.00005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Silicon (Si)-Total	mg/L	0.1	<10	<10	<10	<10	<10
Silver (Ag)-Total	mg/L	0.00005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Sodium (Na)-Total	mg/L	0.05	10400	10800	10400	10400	11000
Strontium (Sr)-Total	mg/L	0.001	7.22	7.1	7.21	7.45	6.89
Sulfur (S)-Total	mg/L	0.5	968	1000	957	915	943
Tellurium (Te)-Total	mg/L	0.0002	<0.020	<0.020	<0.020	<0.020	<0.020
Thallium (Tl)-Total	mg/L	0.00001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Thorium (Th)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010
Tin (Sn)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010
Titanium (Ti)-Total	mg/L	0.0003	<0.030	<0.030	<0.030	<0.030	<0.030
Tungsten (W)-Total	mg/L	0.0001	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	0.00001	0.0028	0.0027	0.003	0.0026	0.0029
Vanadium (V)-Total	mg/L	0.0005	<0.050	<0.050	<0.050	<0.050	<0.050
Zinc (Zn)-Total	mg/L	0.003	<0.30	<0.30	<0.30	<0.30	<0.30
Zirconium (Zr)-Total	mg/L	0.0003	<0.030	<0.030	<0.030	<0.030	<0.030

Notes:

<sup>1</sup>TSS criteria - 25 mg/L above background (pre-testing) levels (CCME, 2002).

<sup>2</sup>Turbidity criteria - 8 NTUs above background (pre-testing) levels (CCME, 2002).

Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

CPT-07 pre-testing sample not collected due to proximity to CPT-06.

**Table 6.1: Drilling Wastes Managed and Deposited on Inuit-Owned and Crown Lands - 2019<sup>1</sup>**

Property Section	Type of Drilling Waste Produced (e.g. drill cuttings, drill mud)	Waste Storage Area / Type <sup>2</sup>	Waste Storage Location (UTM; NAD83)	Annual Drilling Waste Deposited (m <sup>3</sup> ) <sup>3</sup>
Mine Site - Deposit No. 1 <sup>4</sup>	Drill Cuttings	In-Ground Sump - MR1-19-266	17 W 563195 7914315	0.84
Mine Site - Deposit No. 1 <sup>4</sup>	Drill Cuttings	In-Ground Sump - MR1-19-268	17 W 563111 7914176	0.72
Mine Site - Deposit No. 1 <sup>4</sup>	Drill Cuttings	In-Ground Sump - MR1-19-269	17 W 562994 7913994	0.45
<b>TOTAL</b>				<b>2.01</b>

**Notes:**

<sup>1</sup>Other small volumes of drill cuttings were deposited within or within close proximity to land based geotechnical and exploration boreholes (refer to Table 2.1 for borehole coordinates).

<sup>2</sup>In-Ground Sump IDs correspond to the exploration boreholes IDs that generated the deposited cuttings.

<sup>3</sup>Approximate volumes based on visual assessment.

<sup>4</sup>Inuit-Owned Lands - Parcel PI-17.

**Table 8.1: New Impacts Related to Exploration and Geotechnical Activities on Inuit-Owned and Crown Lands - 2019**

Property Section	Land Type / Parcel ID	Description of New Impact	Impact on Financial Security
Mine Site (Aerodrome)	Inuit-Owned Lands - Surface and Subsurface (PI-17)	The drilling program consisted of a total of three (3) boreholes on existing aerodrome area (disturbed) situated on Inuit-Owned Lands. Includes boreholes: BH19-01, BH19-02, BH19-06.	No impact on financial security. Boreholes promptly backfilled and equipment removed from site following completion of each borehole. No outstanding reclamation works.
Mine Site (Run of Mine Stockpile KM 106/107)	Inuit-Owned Lands - Surface and Subsurface (PI-17)	The drilling program consisted of a total of ten (10) boreholes at the Mine Site situated on Inuit-Owned Lands. Includes boreholes: KM107-DH19-02, KM107-DH19-03, KM107-DH19-04, KM107-DH19-05, KM107-DH19-06, KM106-DH19-01, KM106-DH19-02, KM106-DH19-03, KM106-DH19-04, KM106-DH19-05	No impact on financial security. Borehole promptly backfilled and equipment removed from site following completion. No outstanding reclamation works.
Milne Port (Foreshore - Milne Inlet)	Crown Lands	Nineteen (19) marine on-ice geotechnical cone penetration tests (CPT) on Milne Inlet (Crown Lands). Includes CPT locations: BH19-CPT19-01, BH19-CPT19-02, BH19-CPT19-03, BH19-CPT19-03B, BH19-CPT19-03C, BH19-CPT19-04, BH19-CPT19-05, BH19-CPT19-06, BH19-CPT19-07, BH19-CPT19-08, BH19-CPT19-09, BH19-CPT19-10, BH19-CPT19-11, BH19-CPT19-12, BH19-CPT19-13, BH19-CPT19-14, BH19-CPT19-15, BH19-CPT19-16, BH19-CPT19-17.	No impact on financial security. All equipment promptly removed from on-ice CPT locations following completion. Disturbance to the Milne Inlet sea floor from CPTs negligible.
Mine Site (Deposit Nos. 1 & 3)	Inuit-Owned Lands - Surface and Subsurface (PI-17)	The drilling program consisted of nineteen (19) boreholes; twelve (12) on Deposit No. 1 and seven (7) on Deposit No. 3. Includes boreholes: MR1-19-251, MR1-19-253, MR1-19-254, MR1-19-257, MR1-19-258, MR1-19-259, MR1-19-260, MR1-19-262, MR1-19-264, MR1-19-266, MR1-19-268, MR1-19-269, MR3-18-244, MR3-19-255, MR3-19-256, MR3-19-261, MR3-19-263, MR3-19-265, MR3-19-267. Drilling equipment at exploration borehole on Deposit No. 3 for 2019 exploration drilling activities, included a drill rig, drill platform, casing, drill rods, lumber and water tubs.	No impact on financial security. All equipment removed, with the exception of survival shelters and supplies remaining at borehole MR3-19-256 and water source MRP-3.

Table 8.2: Reclamation Works Related to Exploration and Geotechnical Activities on Inuit-Owned and Crown Lands - 2019

Property Section	Land Type / Parcel ID	Reclamation Objectives	Reclamation Principle	Description of Reclamation Works	Regulatory Authority	Impact on Financial Security
Mine Site (Aerodrome)	Inuit-Owned Lands - Surface and Subsurface (PI-17)	<ul style="list-style-type: none"><li>• Provide for the long term physical, biological and chemical stability of the Exploration Project areas so as to protect the public health and safety and ecosystem integrity.</li><li>• Allow for productive use of the land where exploration activities are undertaken and ensures all disturbed areas are restored to a pre-disturbed state upon completion of work.</li><li>• Ensure that the land is reclaimed in a manner that minimize or prevents erosion, and negates the requirement for long term maintenance and monitoring.</li></ul>	Progressive Reclamation	Boreholes backfilled and drilling equipment removed at the three (3) 2019 land-based geotechnical borehole locations at the aerodrome. .	CIRNAC	No impact on financial security held by the QIA. No reclamation works outstanding for 2019 activities.
Mine Site (ROM Stockpile KM 107 & 106)	Inuit-Owned Lands - Surface and Subsurface (PI-17)		Progressive Reclamation	Boreholes backfilled and drilling equipment removed at the ten (10) 2019 land-based geotechnical borehole locations adjacent to the Haul Road at KM 107 and KM 106.	QIA	No impact on financial security held by the QIA. No reclamation works outstanding for 2019 activities.
Milne Port (Foreshore - Milne Inlet)	Crown Lands		Progressive Reclamation	Removal of drilling equipment associated with the marine on-ice geotechnical program on Milne Inlet.	QIA	No change in financial security held by the Crown (CIRNAC). No reclamation works outstanding for 2019 activities.
Mine Site (Deposit No. 1 & 3)	Inuit-Owned Lands - Surface and Subsurface (PI-17)		Progressive Reclamation	Drilling equipment removed from the exploration boreholes at the Mine Site on Deposit No. 1 and 3, with the exception of survival shelters and supplies stored at borehole MR3-19-256 and water source MRP-3.	QIA	No impact on financial security held by QIA. Exploration boreholes are either situated within the disturbed active mining area limits or are within close proximity to the Mine Haul Road and active mining area, resulting in negligible costs to reclaim. Borehole casings and drill rig anchoring rods were cut to near ground surface.



Table 8.3: Mary River Project Total Closure and Reclamation Security Summary - 2019<sup>1</sup>

Authorization	Liability	Securities Held on 1 Jan 2019 (Actual) (\$)	Adjustment for 2019 ASR (Actual) (\$)	Securities Held on 31 Dec 2019 (Actual) (\$)
				<b>F-D</b>
Type 'A' Water Licence 2AM-MRY1325	IOL <sup>2</sup>	73,829,771	30,857,887	104,687,658
	Crown	1,298,555	150,246	1,448,801
<b>Subtotal Type 'A' Water Licence</b>		<b>75,128,326</b>	<b>31,008,133</b>	<b>106,136,459</b>
Type 'B' Water Licence 2BE-MRY1421	IOL <sup>2</sup>	-	-	-
	Crown	1,250,000	-	1,250,000
<b>Subtotal Type 'B' Water Licence</b>		<b>1,250,000</b>	<b>-</b>	<b>1,250,000</b>
<b>GRAND TOTAL</b>		<b>76,378,000</b>	<b>31,008,000</b>	<b>107,386,000</b>

**Notes:**
<sup>1</sup> Totals rounded to nearest '000 in CAD.

<sup>2</sup> All security relating to IOL held by Qikiqtani Inuit Association (QIA) under Commercial Lease No. Q13C301.

## FIGURES

















SAVED: C:\Users\katie.mcquillan\Documents\4 - Maps\Reporting\1 AnnualType B2019\BIM\_Fig 2.1 Mine Site Geotechnical.mxd: 28-Mar-20











SAVED: C:\Users\kalleng\Documents\4 - Maps\Reporting1\_AnnualType B(2019)BM\_Fig 2.2 MilnePort Geotechnical.mxd; 28-Mar-20

LEGEND

- Foreshore Lease Boundary
- Borrow Area
- Quarry Area
- Project Development Area
- Commercial Lease Boundary
- Current Infrastructure
- Marine Cone Penetration Test Location

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MARY RIVER PROJECT

Milne Port 2019 Geotechnical and Exploration Activities

Projection: NAD 1983 UTM ZONE 17N.  
Base Map: © 2019 Digital Global, Inc.  
Imagery and Infrastructure are representative  
as of August 2019.

0 25 50 100 150 200 Meters

Scale 1:9,000

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FIGURE 2.2







## APPENDIX A

### CONCORDANCE TABLES

**Table 1: Concordance Table Type ‘B’ Water Licence 2BE-MRY1421**

Type B Water Licence 2BE-MRY1421		2019 QIA and NWB Annual Report for Exploration and Geotechnical Activities	
Condition No.	Condition	Report Reference / Response	
Part B. General Conditions – The Annual Report referred to in Part B, Item 6 shall include:			
6	The Licensee shall file with the Board no later than March 31st of the year following the calendar year being reported, an Annual Report on the appurtenant undertaking, which shall contain the following information:	See below	Annual Report submission date extended by Nunavut Water Board to April 30, 2020. Baffinland submitted Annual Report April 30, 2020.
i	the monthly and annual volumes, in cubic metres, of freshwater used for all purposes under the Licence and obtained from sources located on, in or flowing through Crown Lands;	Section 4 Table 4.1 Table 4.2	Water Use Annual Volumes of Water Used for Drilling Activities on Inuit-Owned and Crown Lands by Source Daily and Monthly Volumes of Water Used for Drilling Activities on Inuit-Owned and Crown Lands by Source
ii	the monthly and annual volumes, in cubic metres, of freshwater used for all purposes under the Licence and obtained from sources located on, in or flowing through Inuit-owned lands;	Section 4 Table 4.1 Table 4.2	Water Use Annual Volumes of Water Used for Drilling Activities on Inuit-Owned and Crown Lands by Source Daily and Monthly Volumes of Water Used for Drilling Activities on Inuit-Owned and Crown Lands by Source
iii	A summary, including photographic records before, during and after any relevant construction activities or modifications and/or major maintenance work carried out on facilities under this Licence and an outline of any work anticipated for the next year;	Section 3	Modifications, Infrastructure Changes and Construction
iv	The geochemical analysis of drill cores as per Part F, Item 3;	Section 9.6	Summary of Geochemical Analysis of Drill Cores
v	Detailed discussion on the performance, installation, and evaluation, including the use of photographic record, of the primary and secondary containment functions used in fuel storage to safeguard impacts to freshwaters;	Section 9.3 Appendix D	Summary of Fuel Storage Photo Journal
vi	Report all artesian flow occurrences as required under Part F, Item 6;	Section 9.5	Summary of Artesian Flows
vii	A list of unauthorized discharges and a summary of follow-up action(s) taken;	Section 7.1	Spills
viii	A brief description of follow-up action(s) taken to address concerns presented within inspection and compliance reports prepared by the Inspector;	Section 9.4	Inspection and Compliance Reports
ix	Updates in the form of an addendum or revisions to the Abandonment and Restoration Plan, and Spill Contingency Plan;	Section 9.2	Revisions to Plans, Reports and Manuals
x	A description of all progressive and/or final reclamation work undertaken, including drill sites, presented with photographic records of site conditions before, during and after completion of operations;	Section 8 Table 8.2 Appendix D	Reclamation, Closure and Financial Security Reclamation Works Related to Exploration and Geotechnical Activities on Inuit-Owned and Crown Lands Photo Journal
xi	An updated estimate of the current restoration liability required under Part B, Item 2, based upon the results of restoration assessment, project development monitoring, and any changes or modifications to the project;	Section 8.2 Table 8.3	Current Restoration Liability Mary River Project Total Closure and Reclamation Security Summary

Type B Water Licence 2BE-MRY1421		2019 QIA and NWB Annual Report for Exploration and Geotechnical Activities	
Condition No.	Condition	Report Reference / Response	
xii	A summary of public consultation/participation, describing consultation with local organizations and residents of the nearby communities, if any were conducted;	Section 10	Public Consultations
xiii	A summary of any specific studies or reports requested by the Board, and a brief description of any future studies planned or proposed; and	Section 9.1	Summary of Studies Requested by the Board
xiv	Any other details on Water use or Waste disposal requested by the Board by November 1 of the year being reported.	N/A	No other details on water use or waste disposal was requested by the Board by November 1, 2019
<b>Section 6.4 – Annual Reporting Requirements</b>			
6.4	For informational purposes, by no later than March 31 in each Year during the Term, the Tenant shall deliver to the Landlord an Annual Report for the preceding Year which shall include the following:	See below	Annual Reports submission date extended by Nunavut Water Board to April 30, 2020. Baffinland submitted Annual Reports April 30, 2020.
a.	A report of activities conducted relative to what was described in the Work Plan submission for the Previous Year;	N/A	Refer to 2019 QIA and NWB Annual Report for Operations
b.	A description of construction and infrastructure changes, additions or removals located within the boundaries of all Land Use Areas;	N/A	Refer to 2019 QIA and NWB Annual Report for Operations
c.	All "As Built" reports available, signed and stamped by an Engineer, for all works completed as per (b) above;	N/A	Refer to 2019 QIA and NWB Annual Report for Operations
d.	Description of any and all mining and exploration activities, and the results and outcomes thereof including:	See below	
	i. exploration activity and drilling summary	Section 2.0	Exploration and Geotechnical Activities
	ii. amount and type of ore and waste mined in each month	N/A	Refer to 2019 QIA and NWB Annual Report for Operations
	iii. amount and type of ore shipped each month	N/A	Refer to 2019 QIA and NWB Annual Report for Operations
	iv. quantities of each Specified Substance including sand, gravel, construction stone, and ice, quarried each month, broken down by individual quarry site or borrow location	N/A	Refer to 2019 QIA and NWB Annual Report for Operations
e.	Quantities of waste deposited in the landfill, landfarm and or other approved waste storage areas each calendar quarter	N/A	Refer to 2019 QIA and NWB Annual Report for Operations
f.	Type and quantities of materials that were shipped off the Lands	N/A	Refer to 2019 QIA and NWB Annual Report for Operations
g.	Type and quantities of materials that were shipped to and stored on the Lands	N/A	Refer to 2019 QIA and NWB Annual Report for Operations
h.	A detailed description of any and all Reclamation Work on the Property	N/A	Refer to 2019 QIA and NWB Annual Report for Operations
i.	Any and all information related to a finding of non-compliance or breach of environmental standards as discovered by any Governmental Authority	N/A	Refer to 2019 QIA and NWB Annual Report for Operations

Type B Water Licence 2BE-MRY1421		2019 QIA and NWB Annual Report for Exploration and Geotechnical Activities	
Condition No.	Condition	Report Reference / Response	
j.	A listing and compilations of reports associated with any accident, spill, release of hazardous material in the environment, fire, emergency or loss of life	N/A	Refer to 2019 QIA and NWB Annual Report for Operations
k.	Information respecting the Tenant's compliance with the terms of this Lease and any permits or licenses required in respect of its Operations on the Property, together with details of any incidents of non-compliance, the results of any inspection reports or orders prepared or issued by or fines levied by any competent regulatory authority and any remedial action relating thereto	N/A	Refer to 2019 QIA and NWB Annual Report for Operations
l.	Any further reports, information or data reasonably requested by the Landlord from time to time, including Inuktitut language summary versions of such material at the request of the Landlord, acting reasonably.	N/A	No additional information or data was requested by the Landlord during 2019.
1	<p>Introduction</p> <ul style="list-style-type: none"> <li>a) The calendar year to which the Annual Report for Exploration and Geotechnical Drilling Activities refers to (example: 2015);</li> <li>b) The date of submission of the Annual Report for Exploration and Geotechnical Drilling Activities;</li> <li>c) The name and contact information of the BIMC representative(s) responsible for the preparation and approval of the Annual Report for Exploration and Geotechnical Drilling Activities; and</li> <li>d) The name and contact information of the BIMC representative(s) that QIA can contact should it have any questions or comments regarding the Annual Report for Exploration and Geotechnical Drilling Activities.</li> <li>e) Please use the Table 1 template outlined in the Excel workbook to provide this information.</li> <li>f) Forward guidance on the outlook on BIMC's exploration and geotechnical drilling for the current Year;</li> </ul>	Table 0 Section 11	Report Submission Summary 2020 Exploration and Geotechnical Activities
2	<p>Exploration and Drilling Summary</p> <ul style="list-style-type: none"> <li>a) An exploration activity and drilling summary for the Year. Please use the Table 2 template outlined in the Excel workbook to provide this information.</li> <li>b) A report on activities relative to what was described in the Annual Work Plan submission for the previous Year.</li> </ul>	Section 2 Table 2.1	Exploration and Geotechnical Activities Exploration and Geotechnical Activities and Drilling Summary

Type B Water Licence 2BE-MRY1421		2019 QIA and NWB Annual Report for Exploration and Geotechnical Activities	
Condition No.	Condition	Report Reference / Response	
3	<p>Infrastructure Changes and New Construction Related to Exploration and Drilling</p> <p>a) A description of the infrastructure changes and/or new construction associated with the Year's exploration and geotechnical drilling activities. Please use the Table 3 template outlined in the Excel workbook to provide this information.</p> <p>b) The description will be accompanied by relevant site surveys, pictures, and maps.</p> <p>c) A description of construction and infrastructure changes, additions or removals located within the boundaries of all Land Use Areas, including all "As-Built" reports available, signed and stamped by an Engineer, for all works completed.</p>	Section 3	Modifications, Infrastructure Changes and Construction
4	<p>Quantities of Water Used Related to Exploration and Drilling</p> <p>a) The quantities of water used from all water sources applicable to the drilling program, not including those quantities included under the Type 'A' Water Licence.</p> <p>b) Please use the Table 4 template outlined in the Excel workbook to provide this information.</p>	Section 4 Table 4.1 Table 4.2	Water Use Annual Volumes of Water Used for Drilling Activities on Inuit-Owned and Crown Lands by Source Daily and Monthly Volumes of Water Used for Drilling Activities on Inuit-Owned and Crown Lands by Source
5	<p>Pre and Post Drilling Conditions of Drill Holes Completed</p> <p>a) All environmental monitoring logs before, during and after drilling detailing the daily environmental monitoring at drill hole locations. The logs inform on the practices undertaken to limit environmental damage, and the post-activity land status and reclamation efforts.</p> <p>b) The logs will also be used to calculate reclamation security.</p> <p>c) Please use the Table 5 template outlined in the Excel workbook to provide this information.</p>	Section 5.1 Table 5.1 Appendix E	Environmental Monitoring for Drilling/Testing Activities Exploration and Geotechnical Environmental Monitoring Logs 2019 Pre, Daily and Post Environmental Monitoring Logs
6	<p>Volumes of Waste disposed of on IOL Related to Exploration and Drilling</p> <p>The types, volumes, and disposal/management location of all types of drilling waste produced in the Year being reported. Please use the Table 6 template outlined in the Excel workbook to provide this information.</p>	Section 6 Table 6.1	Waste Management Drilling Wastes Managed and Deposited On Inuit-Owned and Crown Lands
7	<p>List of Reported Spills and Health &amp; Safety Incidents</p> <p>A compilation of reports associated with any accident, spill, release of hazardous material in the environment, fire, emergency or loss of life related to exploration or drilling. This section of the Annual Report for Exploration and Geotechnical Drilling Activities will include a listing and compilations of reports associated with any accident or spill following the submittal guidelines of the Accidents and Incidents Operations Guide. (CPL Section 6.4. Annual Reporting Requirements - j)). Please use the Table 7.1 and 7.2 templates outlined in the Excel workbook to provide this information.</p>	Section 7	Reported Incidents

Type B Water Licence 2BE-MRY1421		2019 QIA and NWB Annual Report for Exploration and Geotechnical Activities	
Condition No.	Condition	Report Reference / Response	
8	Information Relevant to Financial Security BIMC will provide details on the results of all reclamation work performed on the Property in the previous Year as well as update QIA on all financial security that is to be adjusted based on the results of such reclamation work. Relevant information, including implications to financial security for exploration and drilling activities conducted on IOL. Please use the Table 8.1 and 8.2 templates outlined in the Excel workbook to provide this information.	Section 8 Table 8.1 Table 8.2 Table 8.3	Reclamation, Closure and Financial Security New Impacts Related to Exploration and Geotechnical Activities on Inuit-Owned and Crown Lands Reclamation Works Related to Exploration and Geotechnical Activities on Inuit-Owned and Crown Lands Mary River Project Total Closure and Reclamation Security Summary
9	Additional Report, information or Data This section of the Annual Report will include a list of any further reports, information or data reasonably requested by QIA from time to time, including Inuktitut language summary versions of such material at the request of QIA, acting reasonably.	N/A	No additional information or data was requested by the Landlord during 2019



## APPENDIX B

### NWB ANNUAL REPORT FORMS

## NWB Annual Report

Year being reported: 2019

License No: 2BE-MRY1421 Issued Date: April 17, 2014  
 Expiry Date: April 16, 2021

Project Name: Mary River Project

Licensee: Baffinland Iron Mines Corporation

Mailing Address: 2275 Upper Middle Road East, Suite 300  
 Oakville ON, Canada L6H 0C3

Name of Company filing Annual Report (if different from Name of Licensee please clarify relationship between the two entities, if applicable):

Baffinland Iron Mines Corporation

## General Background Information on the Project (\*optional):

Refer to Section 1.

Licence Requirements: the licensee must provide the following information in accordance with

Part B ▼ Select ▼

A summary report of water use and waste disposal activities, including, but not limited to: methods of obtaining water; sewage and greywater management; drill waste management; solid and hazardous waste management.

Water Source(s):	Refer to Section 4.	
Water Quantity:	17,885 cu.m/year	Quantity Allowable Domestic (cu.m)
	0	Actual Quantity Used Domestic (cu.m)
	91,250 cu.m/year	Quantity Allowable Drilling (cu.m)
	6,958	Total Quantity Used Drilling (cu.m)

## Waste Management and/or Disposal

- ☒ Solid Waste Disposal  
☒ Sewage  
☒ Drill Waste  
☒ Greywater  
☒ Hazardous  
☒ Other:

Additional Details:

Refer to Section 6.

### A list of unauthorized discharges and a summary of follow-up actions taken.

Spill No.:  (as reported to the Spill Hot-line)  
 Date of Spill:   
 Date of Notification to an Inspector:   
 Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

Refer to Section 7.1.

### Revisions to the Spill Contingency Plan

SCP submitted and approved - no revision required or proposed



Additional Details:

### Revisions to the Abandonment and Restoration Plan

AR plan submitted and approved - no revision required or proposed



Additional Details:

### Progressive Reclamation Work Undertaken

Additional Details (i.e., work completed and future works proposed)

Refer to Section 8.

### Results of the Monitoring Program including:

**The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;**

Details described below



Additional Details:

Refer to Table 4.1 and Figures 2.1 and 2.2.

**The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are deposited;**

Details described below



Additional Details:

Refer to Tables 2.1 and 6.1 and and Figures 2.1 and 2.2.

**Results of any additional sampling and/or analysis that was requested by an Inspector**

No additional sampling requested by an Inspector or the Board



Additional Details: (date of request, analysis of results, data attached, etc)

**Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.**

No additional sampling requested by an Inspector or the Board



Additional Details: (Attached or provided below)

**Any responses or follow-up actions on inspection/compliance reports**

No inspection and/or compliance report issued by INAC



Additional Details: (Dates of Report, Follow-up by the Licensee)

**Any additional comments or information for the Board to consider**

**Date Submitted:**  
**Submitted/Prepared by:**  
**Contact Information:**

Date Submitted:	April 30, 2020
Submitted/Prepared by:	Christopher Murray
Tel:	(416) 364-8820 ext. 5072
Fax:	-
email:	<a href="mailto:christopher.murray@baffinland.com">christopher.murray@baffinland.com</a>

## APPENDIX C

### 2019 DRILLING NOTIFICATIONS

## APPENDIX C.1

### Mary River Aerodrome Geotechnical Drilling Program – Feb 7, 2019



February 7, 2019

Jonathan Mesher  
Resource Management Officer  
Crown Indigenous Relations and Northern Affairs Canada (CIRNAC)  
Box 100  
Iqaluit, NU X0A 0H0

**Re:           2019 Geotechnical Drilling Program – Mary River Aerodrome  
Type 'B' Water Licence 2BE-MRY1421  
Commercial Lease No. Q13C301**

Baffinland Iron Mines Corporation (Baffinland) plans to commence a 2019 drilling program on the Mary River aerodrome for the purpose of geotechnical investigation and ground temperature cable installation, both required to support engineering design for potential upgrades and resurfacing of the Mary River runway, taxiway and apron. The proposed drilling locations and their proximity to surrounding water bodies are shown in Attachment 1. The drilling program is being managed by Tetra Tech Canada Inc. and performed by Boart Longyear. The program is scheduled to commence on February 20, 2019 and expected to be completed by February 27, 2019.

The drilling program consists of a total of fourteen (14) boreholes. Two (2) boreholes BH19-01 and BH19-02 are located on the runway and two (2) other boreholes BH19-09 and BH19-11 are located on the apron. BH19-14 and BH19-03 are in the vicinity of sheardown lake and camp lake respectively. All proposed borehole locations, including coordinates, are presented in Attachment 1. BH19-01 and BH19-02 on the runway, are both planned to be drilled to a depth of 15m each and utilized for ground temperature cable installation. BH19-09 and BH19-11 on the apron, are planned to be drilled to 8-10m depths. All other boreholes will be drilled to a maximum of 5m depths. It is intended that BH19-01 and BH19-02 will be approximately 15m from the edge of the runway.

This drilling program is not expected to use water as drilling will be executed using a sonic drill. Other supporting vehicles include a flatbed, survival shack and pick-up trucks for hauling personnel, equipment and supplies.

Environmental monitoring will be performed, including pre, during and post drilling inspections. Drill waste, if any due to no water being used, will be disposed of in natural depressions or sumps consistent with Part F, Item 4 of Baffinland's Type B Water Licence 2BE-MRY1421 (Type B Water Licence). Drill water runoff and siltation mitigation measures consistent with Baffinland's Environmental Protection Plan BAF-



PH1-830-P16-0008 r1 should not be required due to no water use and seasonal timing of the geotechnical program.

Despite best planning, it should be noted that unforeseen circumstances may necessitate some changes in planning as the program proceeds. Baffinland will endeavor to inform the Inspector and other relevant parties in such circumstances.

In accordance with the conditions of the Type B Water Licence, this letter and attachment provides Baffinland's notification for the drilling of a total fourteen (14) boreholes with proximity to nearby water bodies.

We trust that this information meets the various notification requirements for geotechnical drilling at the Project. Please do not hesitate to contact the undersigned, should you have any questions or comments.

Regards,

A handwritten signature in black ink, appearing to read "Chris Murray", written over the printed name.

Christopher Murray  
Environmental & Regulatory Compliance Manager

Attachments:

Attachment 1 Proposed Borehole Location Plan – Tank Farm and Truck Workshop

Cc: Timothy Ray Sewell, Megan Lord-Hoyle, William Bowden, Connor Devereaux, Steve Borcsok.  
Andrew Vermeer, Jude Orji (Baffinland)  
Assol Kubeisinova, Karén Kharatyan (NWB)  
Bridget Campbell, Ian Parsons, Wajid Daouda, Justin Hack (CIRNAC)  
Fai Ndofor, Sean Joseph (QIA)



## **Attachment 1**


### **Proposed Borehole Location Plan – Mary River Mine Airstrip Paving Evaluation**



Q:\Edmonton\Engineering\E141\Projects\EARC03156-01\_Mary River Airstrip\EARC03156-01\_001.dwg [FIGURE 1] February 01, 2019 - 2:03:33 pm (BY: SCHOEPP, ANTHONY)



**LEGEND:**

 PROPOSED BOREHOLES

0 500m

Scale: 1:10,000 @ 11"x17"

PROPOSED BOREHOLE LOCATIONS			
BOREHOLE IDS	NORTHING	EASTING	
BH19-01	7914472.34	558543.97	
BH19-02	7914156.46	559002.68	
BH19-03	7914729.50	558182.90	
BH19-04	7914542.06	558317.28	
BH19-05	7914575.64	558445.03	

PROPOSED BOREHOLE LOCATIONS			
BOREHOLE IDS	NORTHING	EASTING	
BH19-06	7914417.52	558513.86	
BH19-07	7914240.60	558778.05	
BH19-08	7914303.72	558871.64	
BH19-09	7914167.44	559151.45	
BH19-10	7914047.41	559106.68	

PROPOSED BOREHOLE LOCATIONS			
BOREHOLE IDS	NORTHING	EASTING	
BH19-11	7914191.71	559271.21	
BH19-12	7914040.91	559292.21	
BH19-13	7913897.68	559308.71	
BH19-14	7913711.44	559608.61	

CLIENT



MARY RIVER MINE AIRSTRIP PAVING EVALUATION				
BOREHOLE LOCATION PLAN				
PROJECT NO. ENG.EARC03156-01	DWN EL/AS	CKD EG	REV A	FIGURE 1
OFFICE EDMONTON	DATE FEBRUARY 1, 2019			



## APPENDIX C.2

### 2019 Geotechnical Drilling Program – Run of Mine Stockpile and Sedimentation Pond KM 107 – March 29, 2019



March 29, 2019

Jonathan Mesher  
Resource Management Officer  
Crown Indigenous Relations and Northern Affairs Canada (CIRNAC)  
Box 100  
Iqaluit, NU X0A 0H0

**Re: 2019 Geotechnical Drilling Program – Run of Mine Stockpile and Sedimentation Pond  
Type 'B' Water Licence 2BE-MRY1421  
Commercial Lease No. Q13C301**

Baffinland Iron Mines Corporation (Baffinland) plans to commence a 2019 drilling program at the Mary River Project (the Project) for the purpose of geotechnical investigation and slope stability analysis to support the construction of the Run of Mine (ROM) Stockpile and Sedimentation Pond located at KM107. The proposed drilling locations and their proximity to surrounding water bodies are shown in Attachment 1. The drilling program is being managed by Knight Piesold Inc. (KP) and performed by Boart Longyear. The program is scheduled to commence on April 5, 2019 and expected to be completed by April 14, 2019.

The drilling program consists of a total of five (5) boreholes. One (1) borehole (KM107-DH19-01) located at the proposed sediment pond berm, one (1) borehole (KM107-DH19-02) located at the proposed southern stockpile toe, one (1) borehole (KM107-DH19-03) located at the proposed eastern stockpile toe, one (1) borehole (KM107-DH19-04 located) at the proposed mid-northern stockpile core, and one (1) borehole (KM107-DH19-05) located at the proposed southern access road toe respectively. All proposed borehole locations, including coordinates, are presented in Attachment (1). All boreholes will be drilled to an approximate depth of 25m.

This drilling program is not expected to use water, as drilling will be executed using a sonic drill. Other supporting vehicles include a flatbed, survival shack and pick-up trucks for hauling personnel, equipment and supplies.

Environmental monitoring will be performed, including pre, during and post drilling inspections. Drill waste, if any due to no water being used, will be disposed of in natural depressions or sumps consistent with Part F, Item 4 of Baffinland's Type B Water Licence 2BE-MRY1421 (Type B Water Licence). Drill water runoff and siltation mitigation measures consistent with Baffinland's Environmental Protection Plan BAF-PH1-830-P16-0008 r1 should not be required due to no water use and seasonal timing of the geotechnical program.



Despite best planning, it should be noted that unforeseen circumstances may preclude some changes in plans as the program proceeds. Baffinland will endeavor to inform the Inspector and other relevant parties in such circumstances.

In accordance with the conditions of the Type B Water Licence, this letter and attachment provides Baffinland's notification for the drilling of a total five (5) boreholes with proximity to nearby water bodies (no water in proximity of drilling).

We trust that this information meets the various notification requirements for geotechnical drilling at the Project. Please do not hesitate to contact the undersigned, should you have any questions or comments.

Regards,

A handwritten signature in black ink, appearing to read "Chris Murray", written over the printed name and title.

Christopher Murray  
Environmental & Regulatory Compliance Manager

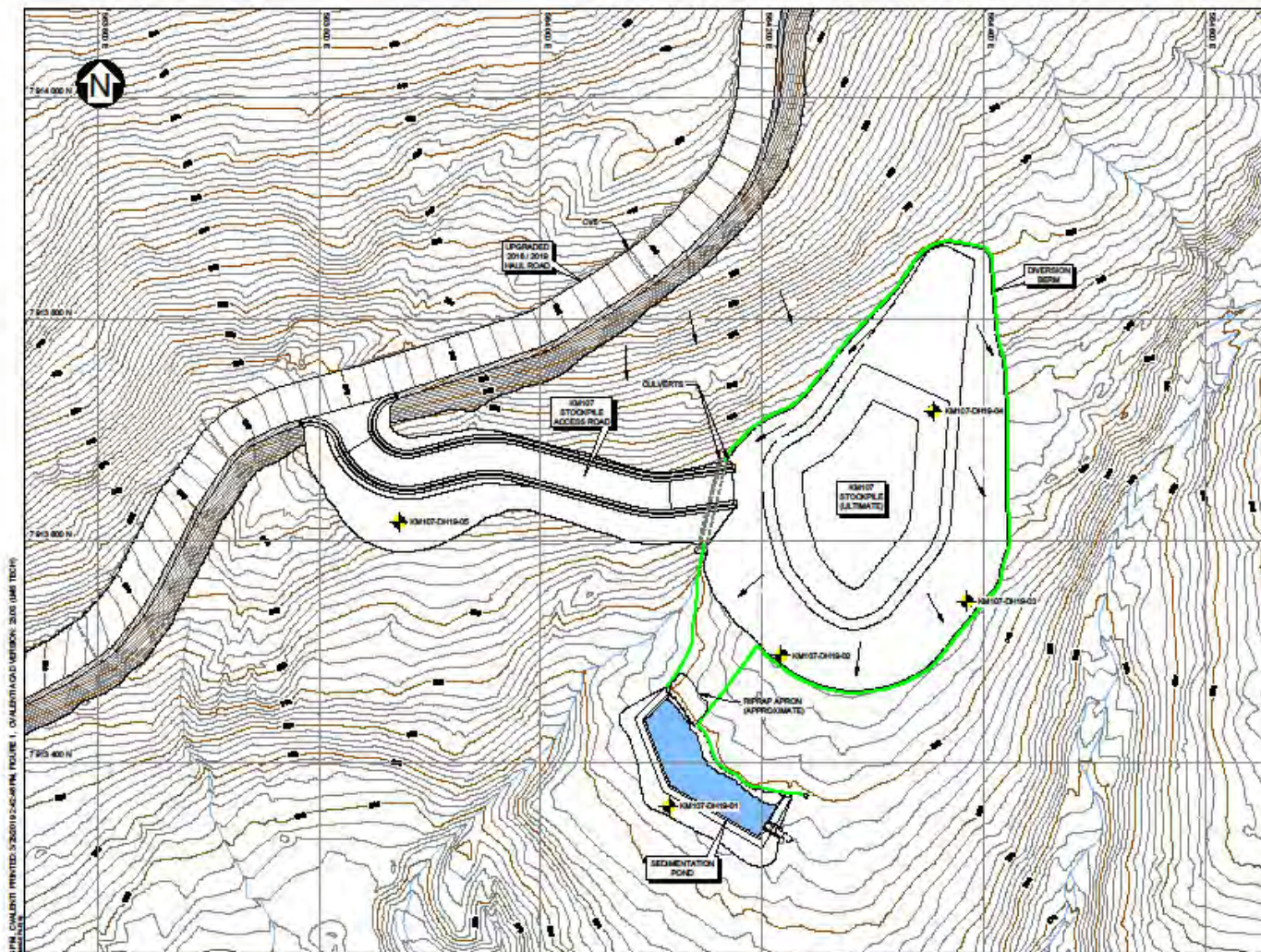
Attachments:

Attachment 1: Proposed Borehole Location Plan

Cc: Timothy Ray Sewell, Megan Lord-Hoyle, William Bowden, Connor Devereaux (Baffinland)  
Assol Kubeisinova, Karén Kharatyan (NWB)  
Ian Parsons, Bridget Campbell (CIRNAC)  
Jared Ottenhoff (QIA)

## **Attachment 1**

### **Proposed Borehole Location Plan**



2018 PROPOSED DRILLHOLES				
DESCRIPTION	NORTHING	EASTING	ELEVATION	ESTIMATED DEPTH
KM107-CH19-01	7,913,300	994,118	304.4 m	25 m
KM107-CH19-02	7,913,487	994,217	318.8 m	25 m
KM107-CH19-03	7,913,545	994,305	318.0 m	25 m
KM107-CH19-04	7,913,717	994,302	308.8 m	25 m
KM107-CH19-05	7,913,817	993,072	334.3 m	25 m

#### LEGEND:

- WATER
- CULVERT
- DIVERSION DITCH
- GENERAL FLOW DIRECTION
- PROPOSED DRILLHOLE

#### NOTES:

1. COORDINATE GRID IS UTM NAD83 ZONE 17.
2. TOPOGRAPHY BASED ON INFORMATION PROVIDED BY EAGLE MAPPING (2008).
3. ELEVATIONS ARE IN METRES. CONTOUR INTERVAL IS 2 m.
4. LOCATIONS OF CONSTRUCTION ITEMS MAY BE MODIFIED TO SUIT SITE CONDITIONS.
5. UPGRADED 2018 / 2019 WALK ROAD AND KM107 STOCKPILE PROVIDED BY BAFFINLAND.
6. ALL INFRASTRUCTURE SHOWN IS PROPOSED UNLESS NOTED OTHERWISE.

SCALE 1:50,000  
0 20 40 60 80 100 120 140 160 180 200 m

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

KM107 STOCKPILE  
SITE INVESTIGATION LOCATIONS



FIGURE 1



APPENDIX C.3

2019 Freight Dock Cone  
Penetration Testing Program –  
April 4, 2019





April 4, 2019

Jonathan Mesher  
Resource Management Officer  
Crown Indigenous Relations and Northern Affairs Canada (CIRNAC)  
P.O. Box 100  
Iqaluit, NU X0A 0H0

**Re: 2019 Freight Dock CPT Program – Mary River Project**  
**Type B Water License 2BE-MRY1421**  
**Commercial Lease No. Q13C301**

Baffinland Iron Mines Corporation (Baffinland) plans to commence a 2019 geotechnical program on the area for the future construction of the Freight Dock in Milne Inlet, for the purpose of cone penetration testing (CPT), sediment analysis and spud penetration assessment. The proposed locations are shown in Attachment 1. The program is being managed by Baffinland and Hatch, and performed by Conetec Investigation Inc. The program is scheduled to commence on April 12 2019.

A total of twenty-five (25) locations are planned to be tested by CPT at the mud line and on the sea bottom. One (1) CPT at each Spud location will be performed, at each of the three (3) locations for the Spuds. At each Anchor location, in a radius of 25m, eight (8) CPTs will be performed. Additionally, three (3) alternative CPTS will be performed at each Anchor location if preliminary data indicates existence of obstructions. A maximum total of twenty-two (22) CPTs will be performed at the Anchor locations. The Locations of the Anchor and Spud locations are provided in Attachment 1. The UTM coordinates for the main CPT test locations are listed below:

Anchor 1: E 503 995 - N 7 977 110  
Anchor 2: E 503 945 - N 7 977 110  
Spud PS AFT: E 503 987 - N 7 976 762  
Spud PS FWD: E 503 987 - N 7 976 698  
Spud STB FWD: E 503 953 - N 7 976 698

In accordance with Part F, Section 2, of the Type B Water Licence 2BE-MRY1421, this letter and attachments provides the notification for the drilling of twenty-five (25) boreholes on ice. Daily environmental monitoring will be performed, including pre, during and post drill inspections. Turbidity monitoring of the boreholes will also be performed pre and post.

This program will not require the use of water. Supporting equipment will include a portable Ramset with a hydraulic power pack, CPT, and sonic bathymetry. An RTK -Trimble survey equipment will be used to identify the locations. A skid steer will be used for carrying equipment and supplies.

Despite best planning, it should be noted that unforeseen circumstances may result in changes in plans as the program proceeds. Baffinland will endeavor to inform the Inspector and other relevant parties in such circumstances.



We trust that this information meets the notification requirements for the above program. Please do not hesitate to contact the undersigned, should you have any questions or comments.

Regards,

A handwritten signature in black ink, appearing to read "Chris Murray", written over a horizontal line.

Christopher Murray  
Environmental & Regulatory Compliance Manager

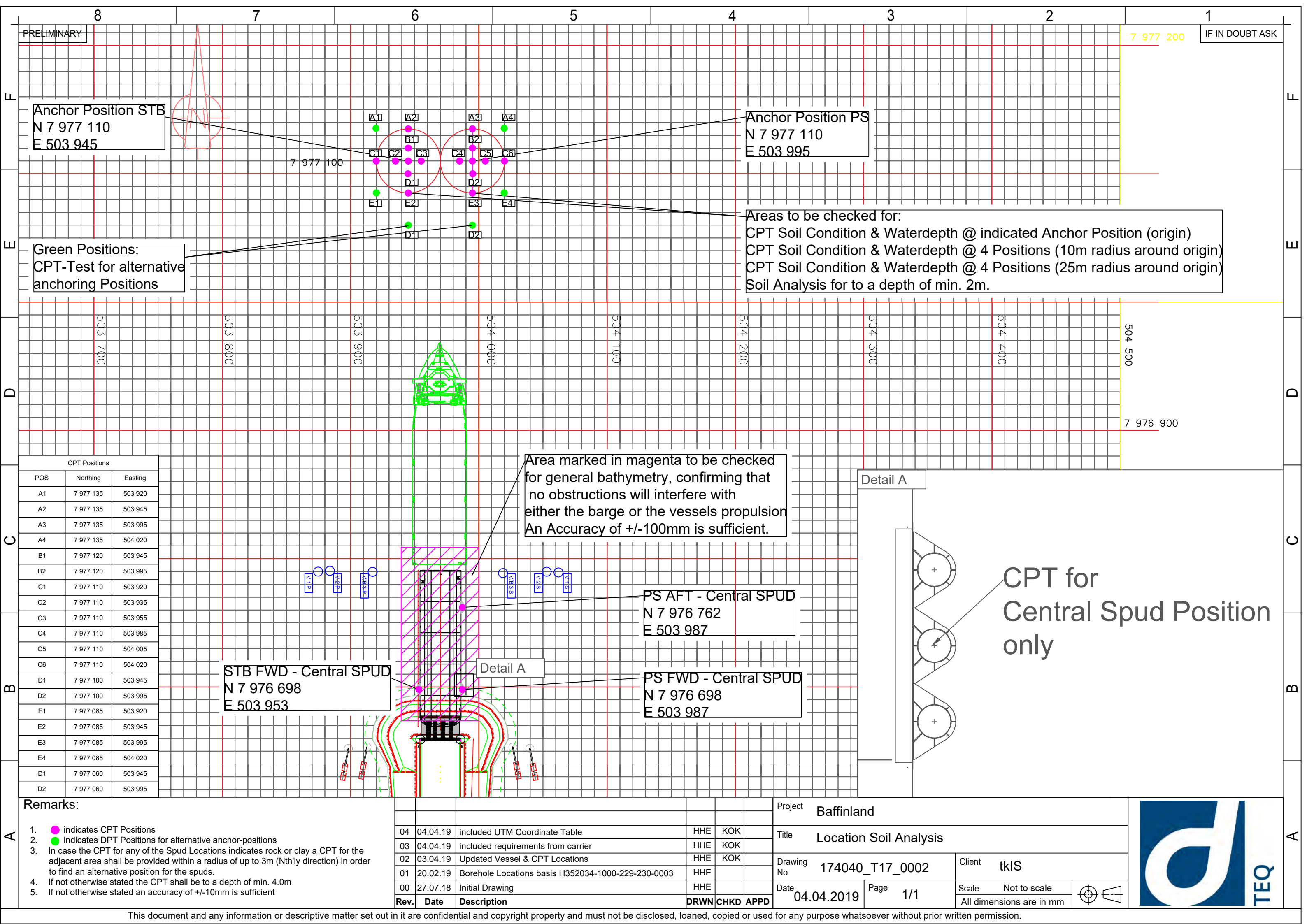
Attachments:

Attachment 1: Proposed Cone Penetration Test Locations Plan

Cc: Timothy Ray Sewell, Megan Lord-Hoyle, William Bowden, Connor Devereaux, Steve Borcsok, Lou Kamermans, Amanda McKenzie (Baffinland)  
Assol Kubeisinova, Karén Kharatyan (NWB)  
Justin Hack, Bridget Campbell, Godwin Okonkwo (CIRNAC)  
Jared Ottenhof (QIA)

## **Attachment 1**

### **Proposed Cone Penetration Test Locations Plan**



Anchor Position STB  
N 7 977 110  
E 503 945

Anchor Position PS  
N 7 977 110  
E 503 995

Green Positions:  
CPT-Test for alternative  
anchoring Positions

Areas to be checked for:  
CPT Soil Condition & Waterdepth @ indicated Anchor Position (origin)  
CPT Soil Condition & Waterdepth @ 4 Positions (10m radius around origin)  
CPT Soil Condition & Waterdepth @ 4 Positions (25m radius around origin)  
Soil Analysis for to a depth of min. 2m.

CPT Positions		
POS	Northing	Easting
A1	7 977 135	503 920
A2	7 977 135	503 945
A3	7 977 135	503 995
A4	7 977 135	504 020
B1	7 977 120	503 945
B2	7 977 120	503 995
C1	7 977 110	503 920
C2	7 977 110	503 935
C3	7 977 110	503 955
C4	7 977 110	503 985
C5	7 977 110	504 005
C6	7 977 110	504 020
D1	7 977 100	503 945
D2	7 977 100	503 995
E1	7 977 085	503 920
E2	7 977 085	503 945
E3	7 977 085	503 995
E4	7 977 085	504 020
D1	7 977 060	503 945
D2	7 977 060	503 995

STB FWD - Central SPUD  
N 7 976 698  
E 503 953

PS AFT - Central SPUD  
N 7 976 762  
E 503 987

PS FWD - Central SPUD  
N 7 976 698  
E 503 987

CPT for  
Central Spud Position  
only

- Remarks:
- indicates CPT Positions
  - indicates DPT Positions for alternative anchor-positions
  - In case the CPT for any of the Spud Locations indicates rock or clay a CPT for the adjacent area shall be provided within a radius of up to 3m (Nth'ly direction) in order to find an alternative position for the spuds.
  - If not otherwise stated the CPT shall be to a depth of min. 4.0m
  - If not otherwise stated an accuracy of +/-10mm is sufficient

Rev.	Date	Description	DRWN	CHKD	APPD
04	04.04.19	included UTM Coordinate Table	HHE	KOK	
03	04.04.19	included requirements from carrier	HHE	KOK	
02	03.04.19	Updated Vessel & CPT Locations	HHE	KOK	
01	20.02.19	Borehole Locations basis H352034-1000-229-230-0003	HHE		
00	27.07.18	Initial Drawing	HHE		

Project		Baffinland	
Title		Location Soil Analysis	
Drawing No	174040_T17_0002	Client	tkIS
Date	04.04.2019	Page	1/1
Scale		Not to scale	
		All dimensions are in mm	



## APPENDIX C.4

### 2019 Exploration Drilling Program Notification – May 25, 2019



May 25, 2019

Jonathan Mesher  
Resource Management Officer  
Indigenous and Northern Affairs Canada (INAC)  
P.O. Box 100  
Iqaluit, NU XOA 0H0

**Re: 2019 Exploration Drilling Program – Mary River Project**  
**Type B Water Licence 2BE-MRY1421**  
**Commercial Lease No. Q13C301**

Baffinland will be commencing an exploration diamond drilling program to extend and upgrade the resources at Deposits 1 and 3. The program is being managed by Baffinland's Exploration Department, and performed by Boart Longyear's coring division. The program is scheduled to commence on or about May 31, 2019, and end by mid- to late-September 2019. A total of fifteen (15) drill holes are planned, with depths ranging from approximately 160 to 400 metres (m) from surface. Drill holes will require water to support diamond drill coring techniques. Attachment 1 provides a map outlining the proposed drill hole collar locations and proposed water sources. UTM coordinates for the drill hole collar locations and new water sources, presented in Attachment 1, are provided in Attachments 2 and 3, respectively.

The equipment to be utilized for the program includes one (1) LM 55 and two (2) LF 70 rock coring drill rigs. The diameter of the holes to be advanced is approximately 61.1 mm. Supporting equipment will include two A-star B2 helicopters for moving drills, other supporting equipment/supplies and personnel between drill hole locations.

Under Part C, Item 1 of the Type B Water Licence 2BE-MRY1421 (Type B Water Licence), Baffinland is required to provide notification to the Nunavut Water Board (NWB) and the Inspector (INAC) of water sources to be used for drilling activities that are not currently identified. As shown in Attachment 1, there are eight (8) potential water sources (seven ponds and Mary River) that may be used to support the proposed drilling program. A table with the UTM coordinates for the water sources is provided in Attachment 3.

The estimated water usage rate for the drilling program is approximately 1.3 m<sup>3</sup> per linear meter drilled. Assuming 2,305 m and 1,100 m drilled at Deposits 1 and 3, respectively, the total water volume requirements for drilling operations at Deposits 1 and 3 are estimated to be 2,997 m<sup>3</sup> and 1,403 m<sup>3</sup>, respectively. Water use will be tracked using inline flowmeters to ensure compliance with the daily water withdraw limits for drilling activities (250 m<sup>3</sup>/day), stipulated in Part C, Item 1 of the Type B Water Licence.

Based upon visual assessment and knowledge from previous drilling programs in the area, Baffinland believes that the new water sources identified in Attachments 1 and 3 can sustain the required withdrawal volumes. Water sources prefixed with a 'WS' and the Mary River tributary highlighted in Attachment 1 are not believed to be fish habitat and will be visually monitored for drawdown during periods of withdrawal. The Mary River has been used as a water source in previous drilling programs at the Project and has sufficient flow volumes necessary to support the proposed water requirements for Deposits 1 and 3. Pumping stations along the Mary River, prefixed with a 'MRP' and shown in Attachment 1, will be utilized to support the program's drilling operations, as required. In accordance with the *Freshwater Intake End-of-Pipe Fish Screen Guideline* (DFO, 1995), water intake lines will be equipped with fish screens to prevent the entrapment of fish during periods of withdrawal from identified water sources.

In accordance with Part F, Item 2, of the Type B Water Licence, drill waste will be disposed of in sumps consistent with Part F, Item 4 of Type B Water Licence. Daily environmental monitoring will be performed at drilling operations, including pre-, during, and post-inspections. Drill water runoff and siltation mitigation measures consistent with Baffinland's Environmental Protection Plan (EPP; BAF-PH1-830-P16-0008, Rev. 1) will be employed, as required.

Despite best planning efforts, it should be noted that unforeseen circumstances may preclude some changes in plans as the program proceeds. Baffinland will endeavor to inform the Inspector (INAC) and other relevant parties in such circumstances.

We trust that this information meets the notification requirements. Please do not hesitate to contact the undersigned, should you have any question or comments.



William Bowden  
Environmental Superintendent

**Attachments:**

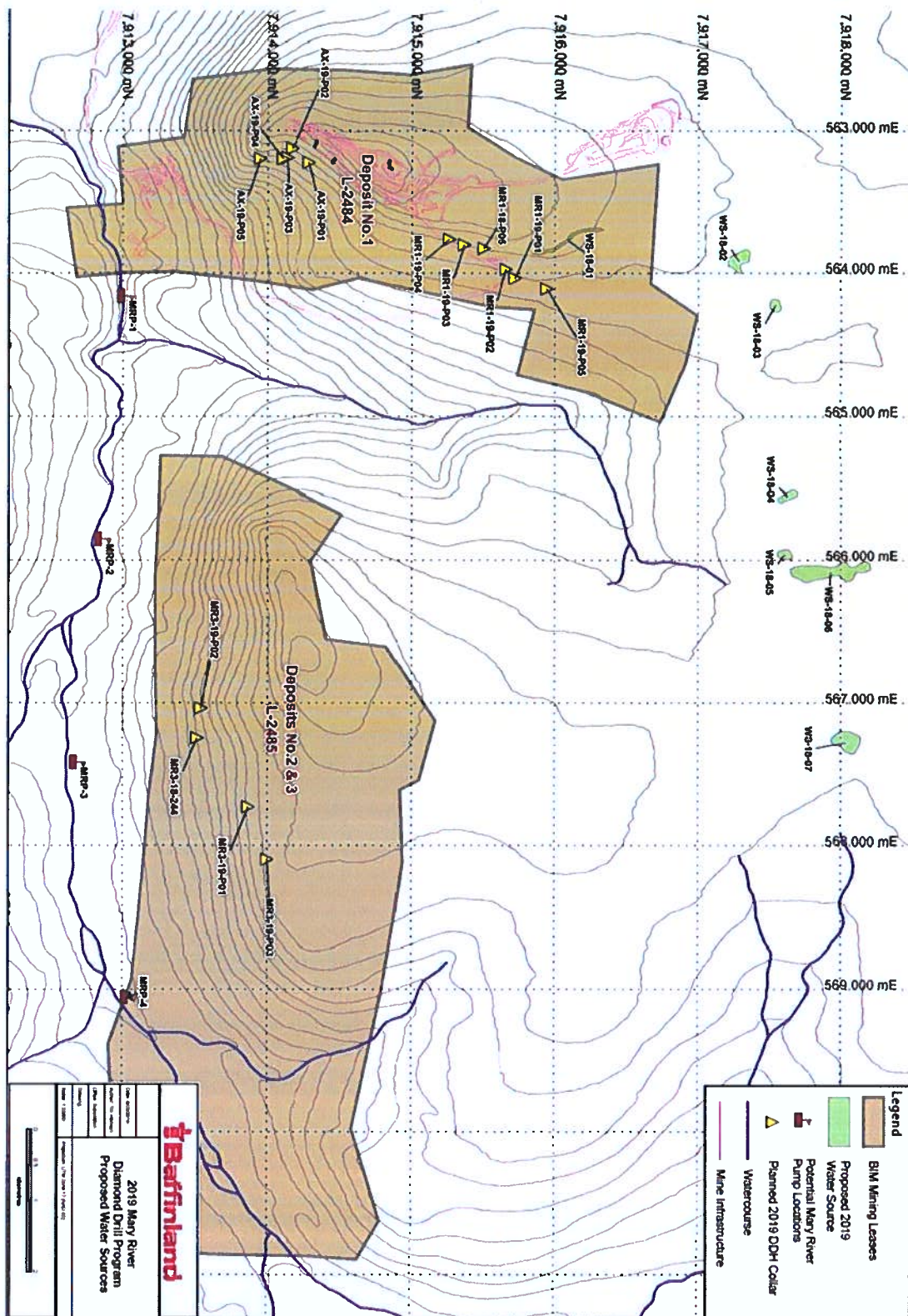
- Attachment 1 – 2019 Mary River Diamond Drilling Program
- Attachment 2 – UTM Coordinates of Proposed Drill Hole Locations
- Attachment 3 – UTM Coordinates of Proposed New Water Sources

Cc: Timothy Ray Sewell, Shawn Stevens, Megan Lord-Hoyle, Lou Kamermans,  
Amanda McKenzie, Christopher Murray, Steve Borcsok, Connor Devereaux,  
Dick Matthews, Thomas Iannelli, Massoud Robatian (Baffinland)  
Assol Kubeisinova, Karén Kharatyan (NWB)  
Justin Hack, Bridget Campbell, Godwin Okonkwo (CIRNAC)  
Jared Ottenhof (QIA)

## **Attachment 1 - 2019 Mary River Diamond Drilling Program**

2275 Upper Middle Road East, Suite 300 | Oakville, ON, Canada L6H 0C3  
Main: 416.364.8820 | Fax: 416.364.0193 | [www.baffinland.com](http://www.baffinland.com)





2275 Upper Middle Road East, Suite 300 | Oakville, ON, Canada L6H 0C3  
 Main: 416.364.8820 | Fax: 416.364.0193 | [www.baffinland.com](http://www.baffinland.com)

## **Attachment 2 - UTM Coordinates of Proposed Drill Hole Locations**

**Table A-2 – Proposed Drill Hole Locations and Depth from Surface**

<b>DEPOSIT 1 - NORTH LIMB EXTENSION</b>							
Hole ID	X	Y	Z	Length (m)	Azimuth	Dip	Comments
MR1-18-P05	563824	7915502	600	175	296	-45	Drill already in place from 2018, SW definition
MR1-19-P01	564034	7915723	569	250	296	-45	Definition hole, test NLE to 450 level
MR1-19-P02	563971	7915658	573	200	296	-45	test NE extent of north limb at depth/1960s mag trend
MR1-19-P03	563800	7915365	603	250	296	-45	test 1960s inferred HG zone, SW extent of North Limb north of section 1425N
MR1-19-P04	563762	7915262	609	250	296	-45	determine deposit geometry and extend south of section 1425N; determination of collar location and hole length to be finalized dependent upon results from MR1-19-P04
MR1-19-P05	564108	7915944	563	175	296	-45	Tentatively planned condemnation hole targeting northernmost magnetic anomaly in the vicinity of mapped BIF outcrop. To be drilled if time and budget allow.
<b>DEPOSIT 3 WEST</b>							
Hole ID	X	Y	Z	Length (m)	Azimuth	Dip	Comments
MR3-18-244	567244	7913520	466	100	350	-40	Complete frozen hole from 2018 season; Drill in place
MR3-19-P01	567728.1	7913867	528.7	300	170	-45	infill
MR3-19-P02	567035.7	7913546	460.14	300	350	-45	follow-up to MR3-06-108; define thickness and geometry of MR3 West
MR3-19-P03	568096.2	7914002	551.17	400	160	-45	1) infill 2) test south fold limb
<b>DEPOSIT 1 - AXIAL ZONE ORE CHARACTERIZATION</b>							
Hole ID	X	Y	Z	Length (m)	Azimuth	Dip	Zone Intersections
AX-19-P01	563220.65	7914293.39	577	195	296	-36	100 HW&FW
AX-19-P02	563122.08	7914175	595.25	165	296	-35	200 FW / 100 HW&FW
AX-19-P03	563187	7914140	568	235	296	-35	200 FW / 100 HW&FW
AX-19-P04	563195.7	7914109.31	561.5	285	260	-40	200 FW / 100 HW&FW
AX-19-P05	563193.87	7913949.26	560.5	125	224	-35	100 FW

*Table 1 - Proposed 2019 Drill Holes for Deposits 1 and 3*



### **Attachment 3 – UTM Coordinates of Proposed New Water Sources**

**Table A-3-1 – Proposed New Water Sources**

Name	Easting	Northing	Elevation (m)
WS-18-01	563750	7916100	592
WS-18-02	563900	7917290	567
WS-18-03	564220	7917540	565
WS-18-04	565560	7917630	560
WS-18-05	565970	7917610	560
WS-18-06	566080	7917910	560
WS-18-07	567270	7918050	565

**Notes:**

All coordinates in UTM, NAD 83, Zone 17.

**Table A-3-2 – Mary River Pumping Stations (MRPs)**

Name	Easting	Northing	Elevation (m)
MRP-1	564160	7913010	233
MRP-2	565849	7912852	290
MRP-3*	567415	7912675	307
MRP-4	569057	7913037	322

**Notes:**

All coordinates in UTM, NAD 83, Zone 17.

\*Pump already in place at location.

## APPENDIX C.5

### 2019 Geotechnical Drilling Program – Updated IFC Run of Mine Stockpile and Sedimentation Pond – KM 106 – June 24, 2019





24 June 2019

Assol Kubeisinova  
Technical Advisor, NWB  
P.O. Box 119  
Gjoa Haven, NU X0B 1J0

**RE: Issued for Construction Drawings Submission  
Revised Run of Mine Stockpile and Sedimentation Pond  
Mary River Project - Type 'A' Water Licence 2AM-MRY1325 - Amend. No. 1**

On behalf of Baffinland Iron Mines Corporation (Baffinland), please find attached transmission of the following drawings and documents in accordance with Part D, Item 2 of the Type 'A' Water Licence 2AM-MRY1325 (the Licence):

- Design Brief
  - Design Summary for the KM106 Stockpile Access Road and Runoff Management Designs
- Drawings
  - 300 – General Arrangement
  - 301 – Specifications
  - 310 – Access Road - Plan and Section
  - 320 – Sedimentation Pond and Runoff Management Measures – Plan, Sections and Details
  - 321 – Sedimentation Pond and Runoff Management Measures – Sections and Details
- Geotechnical Investigation
  - KM106 and KM107 Stockpile – 2019 Geotechnical Site Investigation

This submission is an update to the prior submitted drawings and design brief regarding the KM107 Stockpile. Following a pre-construction geotechnical investigation (attached), it was determined that the KM107 area was not a suitable location due to the presence of massive ice. An alternative location was identified at the KM106 location in the area of the former the D1Q2 Quarry, and the geotechnical investigation confirmed the location would be appropriate.

The change in location to KM106 constitutes a minor change and adaptive measure to address geotechnical concerns, and is considered to be within the scope of the approved project. The Run of Mine (ROM) Stockpile infrastructure was included in the Final Environmental Impact Statement (FEIS), and is already considered in the scope of the Licence. Within the Licence the sedimentation pond has been identified as 'MS-07'. Construction of this facility does not require a Modification to the Licence. Minor updates to the *Surface Water and Aquatic Ecosystems Management Plan* and the *Fresh Water Supply, Sewage, and Wastewater Management Plan* were completed and submitted with the QIA/NWB Annual



Report for Operations on March 31, 2019, and are posted on the Baffinland Document Portal. Implementation of the monitoring program associated with MS-07 will conform to the requirements of Schedule I of the Licence. Reclamation security for this specific activity was included in the 2019 Work Plan.

Baffinland will prepare a Construction Summary Report within ninety (90) days following completion of this work, in accordance with Part D, Item 17 of the Licence.

We trust that this information meets the requirements under Part D of the Licence.

Regards,

A handwritten signature in black ink, appearing to read 'Chris Murray', with a large, stylized loop at the end.

Christopher Murray  
Environmental & Regulatory Compliance Manager

Attachments:

Attachment 1: Design Brief & For-Construction Drawings

Attachment 2: Geotechnical Investigation

Cc:

Karén Kharatyan (Nunavut Water Board)

Chris Spencer, Jared Ottenhof (Qikiqtani Inuit Association)

Bridget Campbell, Godwin Okonkwo (Crown-Indigenous Relations and Northern Affairs Canada)

Solomon Amuno (Nunavut Impact Review Board)

Megan-Lord Hoyle, Lou Kamermans, Timothy Ray Sewell, Simon Fleury (Baffinland)

**Attachment No. 1**

**Design Brief & For Construction Drawings**



June 20, 2019

Mr. Allan Knowlton  
Project Manager  
Baffinland Iron Mines Corporation  
#300-2275 Upper Middle Road East  
Oakville, Ontario  
Canada, L6H 0C3

**Knight Piésold Ltd.**  
1650 Main Street West  
North Bay, Ontario  
Canada, P1B 8G5  
T +1 705 476 2165  
E northbay@knightpiesold.com  
www.knightpiesold.com

Dear Allan,

**Re: Design Summary for the KM106 Stockpile and Runoff Management Measures**

## **1.0 INTRODUCTION**

Baffinland Iron Mines Corporation (Baffinland) owns and operates the Mary River Project located on northern Baffin Island, Nunavut. As part of Baffinland's mining strategy, a long-term stockpile is required to stockpile run-of-mine ore material. Knight Piésold Ltd. (KP) has been retained to complete the design for the KM106 Stockpile Access Road and runoff management measures, including the Sedimentation Pond. This letter provides a summary of the detailed design for these structures.

## **2.0 SITE CONDITIONS, DESIGN CRITERIA AND MATERIALS**

### **2.1 GENERAL**

The design of the Stockpile Access Road, Sedimentation Pond and runoff management measures have been developed by KP based on the proposed KM106 Stockpile layout (Baffinland, 2019). The KM106 Stockpile area is shown in plan view on Drawing 300. Additional details are provided on other drawings and in the sections below.

### **2.2 SITE CONDITIONS**

KP completed a site investigation at the KM106 Stockpile from May 15 to 16, 2019 (KP, 2019). Baffinland provided topographical contours for the KM106 Stockpile location (Baffinland, 2019). The KM106 site generally consists of exposed bedrock or bedrock covered by shallow overburden up to 4 m thick.

### **2.3 DESIGN CRITERIA**

The project design criteria were previously developed for the KM107 design work (KP, 2018). The design criteria were developed based on the following documents:

- The RFP for the KM107 Design (Caserta, 2018)
- The Mary River Project Civil Design Philosophy and Criteria (Hatch, 2013 and 2018)
- The Crusher Pad Sedimentation Pond expansion design (Golder Associates (Golder), 2017)
- The Mary River Project Water License (NWB, 2014)
- The Nunavut *Mine Safety and Health Act* (MHSA, 2011)

- The *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and Nunavut Waters Regulations (NWNSTRA, 2018)
- The Metal and Diamond Mining Effluent Regulations (MDMER, 2018)
- The *Fisheries Act* (2016)

The design criteria are summarized in Table 1.

## 2.4 MATERIALS

Baffinland has indicated that the materials currently used (or proposed to be used) to construct other structures at site, including the Haul Road (Golder, 2018a), Waste Rock Dump Sedimentation Pond (Golder, 2018b) and the Crusher Pad Sedimentation Pond (Golder, 2017) will also be available for construction of the KM106 Stockpile Access Road and associated runoff management measures, including the Sedimentation Pond. In general, all fill materials shall meet the following requirements:

- Fill materials used for construction shall not be potentially acid generating (PAG) or metal leaching (ML).
- All materials shall consist of hard, durable fill material, free of clay, loam, tree stumps, roots and other deleterious materials or organic matter, and shall contain no ice.

The material specifications are described as follows:

- KM106 Stockpile Ore (blasted rock)
  - 500 mm minus blasted rock ore
  - Ore to be placed by truck and bulldozer in maximum 1000 mm lifts starting at the end of the Access Road.
  - Nominal compaction to be achieved by routing haulage traffic over the entire surface of the stockpile.
- 500 mm Minus Rockfill
  - To be used for the Access Road, safety berms, and downstream portion of the Sedimentation Pond perimeter berm.
  - Material shall consist of well graded, clean, durable and angular rockfill with a maximum particle size gradation of 500 mm.
  - To be placed in maximum 1000 mm lifts by truck and bulldozer; placement in the Access Road will start at the existing Haul Road.
  - Compaction to be achieved by routing haulage traffic and other construction equipment over the entire surface of the road.
  - Safety berm fill to be placed and nominally compacted to the dimensions shown on the Drawings.
- Berm Fill
  - To be used for the Collection/Diversion Berms and upstream slope of the Sedimentation Pond perimeter berm.
  - Material shall consist of well graded, clean, durable and angular rockfill with a maximum particle size of 150 mm.
  - Sedimentation Pond berm fill to be placed and spread in maximum 300 mm thick layers after compaction with a vibratory roller D9 dozer.
  - Collection/Diversion Berm fill to be placed and spread in maximum 200 mm layers after compaction. Compaction to be nominal.

- Intermediate Bedding
  - To be used for anchor trench backfill, anchor berms, and bedding material for geomembrane.
  - Material shall consist of well graded, clean, durable and angular sand and gravel with a maximum particle size gradation of 32 mm.
  - Material to be placed, spread and moisture conditioned in maximum 200 mm layer after compaction with a vibratory roller or plate packers.
- Fine and Coarse Riprap
  - To be used for Sedimentation Pond spillway inlet and channel, Collection/Diversion Berms, and riprap aprons.
  - Material shall consist of well graded, clean, durable and angular rockfill with a maximum particle size gradation not to exceed one and a half times the specified D50 value and minimal fines content.
  - Fine Riprap to have a D50 of 150 mm.
  - Coarse Riprap to have a D50 of 300 mm.
  - Material to be placed and spread in maximum 300 mm layer (Fine Riprap) or 600 mm layer (Coarse Riprap) and placed to form a tightly interlocking layer.

All materials shall be produced and sourced from an approved construction material source as required under Water License No. 2AM-MRY1325-Ammendment No. 1.

### 3.0 ACCESS ROAD DESIGN

#### 3.1 GENERAL

The Access Road will provide vehicular access from the main Haul Road to the new KM106 Stockpile. The general layout for the Access Road developed by Baffinland is shown on Drawing 310. The road embankment is planned to be constructed using Road Embankment Fill. The initial fill will be placed by dumping and pushing the material from the existing Haul Road. Subsequent fill will be dumped and pushed from the final design grade of the Access Road. Due to the required fill placement method, the side slopes will be developed at the angle of repose for the rockfill (approximately 1.3H:1V or 37 degrees).

#### 3.2 GEOMETRY

The Access Road is required to provide two-way access for Caterpillar 793 haul trucks (design vehicle) (CAT, 2017). The road cross section is shown on Drawing 310. The following design constraints have been incorporated in the road design:

- Road Width: The minimum width of the road surface between the safety berms is 25.5 m, equal to three times the width of the CAT 793 design vehicle (8.5 m) (Nunavut *Mine Health and Safety Act* (MHSA), 2011).
- Grade: The maximum grade is 10%.
- Radius: The minimum radius for horizontal curves is 50 m.

The connection to the existing Haul Road will be field fit at the time of construction. The portion of the Haul Road that is adjacent to and immediately upslope of the Access Road shall be graded with a minimum uphill cross slope of 3% (Hatch, 2013) to ensure that runoff water from the Haul Road is routed away from the KM106 Stockpile and Access Road.



Vehicle safety berms are included on each side of the road (where required by the MHSA (2011)). The geometry of the safety berms has been designed to meet the minimum requirements set by the MHSA (2011) and the project design criteria, and are described as follows:

- Height: 2.7 m
- Side Slopes: 1H:1V
- Crest Width: 1 m

The design criteria used for the Access Road are included in Table 1.

## 4.0 KM106 STOCKPILE DESIGN

The general layout for the KM106 Stockpile developed by Baffinland is shown on Drawing 300. The stockpile will be constructed by dumping and pushing the ore material from the Access Road. Due to the required fill placement method, the side slopes will be developed at the angle of repose for the material being placed in the stockpile (approximately 1.3H:1V or 37 degrees).

## 5.0 SEDIMENTATION POND DESIGN

### 5.1 GENERAL

The general layout for the Sedimentation Pond is shown on Drawings 300 and 320. The Sedimentation Pond will provide sediment control for runoff originating from the following catchment areas, shown on Figure 1:

- The KM106 Stockpile area.
- The pond itself.
- The localised area between the stockpile and the pond (where it can not be easily diverted around the pond).

This runoff will flow directly to the pond by gravity or be conveyed to the pond by perimeter Collection/Diversion Berms. Unimpacted runoff from upstream catchment areas will be diverted around the KM106 Stockpile and Sedimentation Pond.

### 5.2 PERIMETER BERM GEOMETRY AND LAYOUT

The Sedimentation Pond will be established by constructing a perimeter berm along the west, south and east sides of the basin, while the north side of the pond will be delineated by the existing ground slope (see Drawing 320).

The perimeter berm will be constructed using compacted 500 mm Minus Rockfill with a layer of compacted Berm Fill and a layer of compacted Intermediate Bedding placed over the upstream slope of the berm. The geometry of the perimeter berm is shown on Drawings 320 and 321 and is generally summarized as follows:

- Upstream Slope: 2.5H:1V
- Downstream Slope: 2H:1V
- Crest Width: 6 m

The Sedimentation Pond basin and upstream slopes of the perimeter berm will be lined with a geomembrane liner underlain by a non-woven geotextile as a cushion layer. The geomembrane liner and non-woven geotextile will extend up the interior (upstream) slope of the perimeter berm (where present) and will be anchored at the crest, as indicated on the Drawings. Where there is no perimeter berm, a mound

of Intermediate Bedding will be placed along the edge of the pond at approximate elevation 268.5 m and the geomembrane and non-woven geotextile placed over the fill. Additional Intermediate Bedding will be placed over the edge of the geomembrane and non-woven geotextile to anchor it in place. Fine riprap will be placed over the Intermediate Bedding to minimize erosion where runoff from the stockpile area reports to the pond.

Where a Diversion Berm is present along the upstream edge of the pond, the Diversion Berm will be constructed on top of the Intermediate Bedding as shown on the Drawings.

### 5.3 DAM CLASSIFICATION

The Sedimentation Pond is classified as a LOW consequence structure (CDA, 2007) based on the following criteria:

- There is no downstream population at risk.
- There is no potential for loss of life.
- The potential environmental losses are considered to be short term and include erosion and sedimentation of downstream waterways (i.e. the Mary River).
- The potential economic losses are considered to be limited. There is no mine site infrastructure downstream of the Sedimentation Pond. Economic losses are likely to be limited to repairs of the affected structure.

The CDA recommends that LOW consequence dams be designed based on an annual exceedance frequency of 1 in 100 years for flood and earthquake hazards.

The 1 in 200-year design storm event (72 mm of rainfall in 24 hours) has been adopted for the design of the runoff management measures, including the Sedimentation Pond spillway and the Collection/Diversion Berms based on the project design criteria.

The peak ground acceleration for the 1 in 100-year earthquake event is 0.019g (NRC, 2015). The PGA is specified for Site Class C (NRCC, 2010) corresponding to firm ground with an average shear wave velocity of 450 m/s in the upper 30 m.

### 5.4 STORAGE CAPACITY

The Sedimentation Pond capacity has been developed for the following (from bottom to top):

- Temporary sediment storage up to a depth of approximately 0.5 m.
- An operating water pond capacity of approximately 3,500 m<sup>3</sup> to temporarily store runoff collected from the contributing catchment areas resulting from the 1 in 10 year, 24-hour rainfall event (Hatch, 2013). This runoff volume was estimated by multiplying the total contributing catchment area by the rainfall depth by the relevant runoff coefficient of 0.9 for all contributing areas except the pond itself which has a runoff coefficient of 1.0.
- A flow depth of 0.3 m through the Emergency Overflow Spillway which has been sized to safely convey the runoff resulting from the 1 in 200 year, 24-hour rainfall event.
- A freeboard depth of 0.3 m.

Based on the information provided, the 1 in 10 year, 24-hour rainfall event of 41 mm is larger than the 1 in 10 year, one day freshet runoff depth of 32 mm which includes rainfall and snowmelt (Golder, 2018c). The Sedimentation Pond configuration has been developed assuming that the pond is empty when the 1 in 10 year, 24-hour rainfall event occurs.

The Sedimentation Pond has been designed to allow for some settling of total suspended solids (TSS) prior to the runoff being removed from the pond. The pond is sized to temporarily contain runoff resulting from the 1 in 10 year, 24-hour rainfall event, and has a L:W ratio of approximately 5:1 which aids in settling of suspended solids by reducing the potential for short-circuiting (British Columbia Ministry of Environment (BCMOE), 2015). The sedimentation pond should be maintained empty during normal operating conditions. Baffinland will be responsible for implementing appropriate de-watering measures and procedures to remove runoff collected in the Sedimentation Pond. Continuous pumping may be necessary in order to manage potentially higher inflows during freshet.

## 5.5 LINER

It is understood that Baffinland has purchased geomembrane liner and non-woven geotextile for the pond from Western Tank and Lining Ltd. (Western). The previous design for the KM107 Stockpile Sedimentation Pond (KP, 2018) included 40 mil Atarfil Linear Low Density (LLD) liner above a 10 oz/yd<sup>2</sup> non-woven geotextile liner based on recommendations by Western. The technical specifications for the LLD liner and the non-woven geotextile are provided in Appendix A. KP understands that Western has recent experience installing the Atarfil LLD liner in cold conditions, as cold as -36 °C, and that the liner has cold crack resistance to -40 °C (C. Powell, Western Tank and Lining Ltd, personal communication, August 13, 2018). Based on Baffinland's previous experience with this lining system, the recommendations provided by Western are judged to be suitable for the Sedimentation Pond.

A 0.2 m thick layer of Intermediate Bedding will be placed along the upstream slopes of the perimeter berm and over the basin to act as a cushion layer for the geomembrane liner. It will be necessary to closely monitor the geomembrane liner for holes, tears and other leaks, and to complete any necessary repairs promptly.

It is recommended that all geomembrane liners and non-woven geotextile be stored indoors at temperatures above 0 °C prior to installation in order to maintain maximum workability. The geosynthetics specifications are provided on Drawing 301.

The design provided herein assumes that the upper surface of the geomembrane liner is exposed, consistent with our understanding of other sedimentation ponds on site. When a liner is left exposed, there is potential for physical damage from ice in the pond. As such, the pond should only be drained when there is no ice present. In addition, regular monitoring and maintenance of the liner will be performed consistent with the requirements of the Type A Water License 2AM-MRY1325 for physical damage or degradation.

## 5.6 SPILLWAY DESIGN

The Sedimentation Pond's Emergency Overflow Spillway has been sized to safely convey the peak flow resulting from the 1 in 200 year, 24-hour rainfall event following the project design criteria (Hatch, 2013). The peak flow resulting from this event was estimated by applying an SCS Type I distribution to the design rainfall depth of 72 mm in HydroCAD® (2015). The peak runoff flow was estimated as 1.22 m<sup>3</sup>/s. In order to pass this flow, the spillway is required to have a minimum base width of 5 m and an inlet depth of 0.3 m.

The spillway will consist of a trapezoidal shaped inlet and channel to be constructed through the crest of the perimeter berm, at the location shown on Drawing 320. The spillway inlet and channel on the downstream slope of the perimeter berm will be lined with Riprap. Details are provided on Drawings 320 and 321. A riprap apron will be installed at the base of the spillway outlet channel to dissipate energy as the runoff leaves the spillway. The peak flow estimated from HydroCAD® (2015) was used, with the



Sedimentation Pond spillway section geometry developed in the flood routing model, to estimate the median particle size ( $D_{50}$ ) of the riprap lining required to resist berm erosion and scour (Smith and Kells, 1995).

## 5.7 COLLECTION/DIVERSION BERMS

In order to direct runoff originating within the KM106 Stockpile area to the Sedimentation Pond, a series of berms will be constructed around the perimeter of the stockpile, except where the stockpile is directly adjacent to the existing haul road. Additional berms will be constructed between the Sedimentation Pond and undisturbed upstream areas in order to divert runoff from those areas around the pond and to the environment. Construction of each berm will result in the formation of a channel between the berm and the stockpile, or the berm and the natural ground slope. Where existing ground conditions permit, natural overburden material may be excavated to form part of the channel and any suitable excavated material used to form the berm.

The Collection/Diversion Berms were sized for a 1 in 200 year, 24-hour rainfall event by treating the space between the berm's upstream slope and the stockpile slope (or the natural ground) as the two sides of a trapezoidal channel, with a base width of approximately 2.5 m. A freeboard depth of 0.3 m was included in the berm sizing to account for minor variations in the berm cross section and grade following construction.

The peak flows estimated from HydroCAD® (2015) were used in the flood routing model, with the typical Collection/Diversion Berm section details, to estimate the median particle size ( $D_{50}$ ) of the riprap lining required to resist berm erosion and scour (Smith and Kells, 1995).

A v-shaped channel will be formed between the existing Haul Road and the west side of the KM106 stockpile. Coarser material is expected to collect in this channel due to gravity separation during end dumping activities. This coarser material will partially armour this channel during storm events. There is potential for some erosion of this channel to occur during the design storm event. The erosion, if any, can be repaired by placing additional material in this area during normal dumping activities.

## 6.0 STABILITY

### 6.1 GENERAL

Infinite slope and limit equilibrium stability modelling was completed to evaluate the stability of the KM106 Stockpile (including the Access Road) and the Sedimentation Pond berm under the expected loading and foundation conditions. Limit Equilibrium stability analyses were completed using SLOPE/W®, a two-dimensional Limit-Equilibrium slope stability program (Geo-Slope, 2018). The stability models incorporated the proposed embankment/berm configurations and the estimated strength of the foundation and fill materials. Three representative cross sections including two cross sections through the KM106 Stockpile and one cross section through the Sedimentation Pond, shown on Figure 2, were evaluated based on the embankment/berm height and foundation conditions.

The following sections describe the loading conditions, materials and results of the stability analyses.

### 6.2 LOADING CONDITIONS AND TARGET FACTORS OF SAFETY

The stability models evaluated the following loading conditions:

- **Long-Term, Static Loading**
  - KM106 Stockpile and Access Road - The stability models for the KM106 Stockpile and Access Road incorporated the full weight of the Stockpile and Access Road fill and a fully loaded

and stationary CAT 793 truck. The rear axle of the CAT 793 truck was modelled as a surcharge load 9 m wide and 1 m deep with an effective pressure of 265 kN/m<sup>3</sup>. The location of the truck load was evaluated at 3 m from the edge of the stockpile based on the Combined Dump Procedures (Baffinland, 2013).

- Sedimentation Pond - The upstream slopes were evaluated with the pond empty. The downstream slopes were evaluated with the water level at El. 267.9 m corresponding to the maximum filling elevation.
- **Pseudo-Static Loading** - A horizontal seismic coefficient equal to the full PGA of 0.019g corresponding to the 1 in 100-year event was applied for the pseudo-static loading condition. Using this method, a FoS greater than 1.0 indicates that the slope is not sensitive to seismic loading. The water levels and surcharge loads applied to the long-term, static loading analyses were adopted for the pseudo-static loading analyses.
- **Post-Earthquake Loading** - Any strength reduction in the fill and foundation materials following an earthquake event is expected to be negligible. As such, post-earthquake loading conditions were not evaluated and are considered to be identical to the long-term, static loading conditions.

The KM106 Stockpile and Access Road will be constructed on a natural slope using material that is end dumped in thick lifts with minimal compaction. This method of fill placement will produce slopes that are at the angle of repose for the material and have a corresponding Factor of Safety (FoS) of 1.0 for surficial slope movement. As such, the slopes are expected to deform over time, and may exhibit surface sloughing and cracking. Winter construction will encourage aggregation of the permafrost into the fill and enhance the overall stability, provided snow and ice are not encapsulated in the fill.

The minimum FoS targets developed for the analysis are summarized in Table 2.

**Table 2 Target Minimum FoS for the KM106 Stockpile and Access Road**

Loading Condition	FoS
Long-Term, Static Loading	1.2
Pseudo-Static	1.0

The Sedimentation Pond is classified as a dam following the Canadian Dam Association Dam Safety Guidelines (CDA, 2007 and 2013). The recommended minimum FoS for embankment dams following the CDA Guidelines are summarized in Table 3:

**Table 3 Recommended Minimum FoS for the Sedimentation Pond (CDA, 2007)**

Loading Condition	FoS
Long-Term, Static Loading	1.5
Pseudo-Static	1.0
Post-Earthquake	1.2

### 6.3 MATERIALS AND PARAMETERS

Site investigations consisting of geotechnical drilling were completed in the area of the proposed KM106 Stockpile and Sedimentation Pond (KP, 2019). The stratigraphy generally consists of

the following geotechnical units:

- Glacial Till - consisting of gravelly SAND, some silt, trace clay with cobbles and boulders. The surficial soils are generally well-graded, non-plastic, medium greyish brown, massive, and moist.
- Bedrock - consisting of very strong and fresh to slightly weathered gneiss.

The Glacial Till was observed to be discontinuous across the site, varying in thickness from less than 0.5 m below the KM106 Stockpile to 4 m in areas south of the proposed stockpile. Bedrock outcrops were observed at surface across the site. Massive ice was not encountered during the drilling. The stability analyses incorporate a foundation consisting of 0.5 m of Glacial Till overlying competent bedrock.

The material parameters for the fill and foundation units were estimated based on typical correlations (Carter and Bentley, 2016) and are summarized in Table 4. The Rockfill for the KM106 Stockpile was modelled using a relationship between the shear strength of rockfill and the applied shear stress following Leps (1970) and modification recommended by Yamaguchi et al (2009). The material parameters are estimated based on thawed conditions and do not include the potential strength contribution of the aggrading permafrost, if any.

## 6.4 RESULTS

The results of the stability analyses are summarized in Table 5 and illustrated on Figures 3 to 6. The results indicate the following:

- KM106 Stockpile and Access Road (Figures 3 and 4):
  - The target FoS is achieved.
  - The material will be end dumped at the angle of repose with a FoS equal to unity at the edge of the slope. As such, sloughing and cracking may develop in this area and regular monitoring is required. Trimming of the outer slope of the Stockpile and Access Road may be necessary to maintain the design geometry and grading of the Access Road to maintain access.
- Sedimentation Pond (Figures 5 and 6) - The computed FoS exceed the recommended values for all cases.

## 7.0 CONSTRUCTION DETAILS

### 7.1 GENERAL

All construction materials must be maintained free of visible ice, snow and other deleterious materials prior to placement. Geotextiles and geomembranes must be protected from UV exposure, and stored and handled in accordance with the manufacturer's recommendations. Snow and ice must be removed from the footprint of the proposed structures prior to construction.

The locations and configurations of the KM106 Stockpile, Access Road, Sedimentation Pond and associated runoff management measures may change based on actual encountered site conditions.

The following sections provide general construction requirements and recommendations related to the Access Road, Sedimentation Pond and associated runoff management measures. Details, including material specifications and compaction requirements, are provided on the Drawings.

### 7.2 EROSION AND SEDIMENT CONTROL

Baffinland will employ a combination of sediment and erosion control measures as outlined in Baffinland's

Environmental Protection Plan (Baffinland, 2016a), and Surface Water and Aquatic Ecosystems Management Plan (Baffinland, 2016b), to address and manage sedimentation concerns during construction of the KM106 Stockpile, Access Road, Collection/Diversion Berms and Sedimentation Pond.

### **7.3 SURVEYING**

Setting out details are provided on the Drawings for each of the structures. The structures will be located using suitably accurate surveying methods.

As-built surveys will be required following construction of each of the structures. The surveys will be sufficiently detailed to properly document the completed construction.

### **7.4 FOUNDATION PREPARATION**

The site investigation results suggest that overburden soils located in the foundation areas are not ice rich, and that significant layers of organics or other unsuitable materials are not present. As such, disturbance to the original ground (excavation, scarifying, etc.) should be minimized so as to not impact current permafrost conditions. The foundations must be maintained clear of snow, ponded water and ice.

### **7.5 KM106 STOCKPILE AND ACCESS ROAD**

The stockpile and access road will be constructed starting from the edge of the existing Haul Road. The fill material will be dumped and pushed with a bulldozer. The stockpile dumping face will be monitored by Baffinland site personnel and operators working in the area according to standard dumping procedures (Baffinland, 2013). Any potential settlement and cracking of the access road and/or stockpile dump face will be monitored and addressed as necessary with additional fill placement and/or grading.

### **7.6 SEDIMENTATION POND**

Following foundation preparation, 500 mm Minus Rockfill and Berm Fill will be placed and compacted to construct the Sedimentation Pond perimeter berm (Drawings 320 and 321). Intermediate Bedding will be placed over the compacted Berm Fill, along the upstream slope, and over the floor of the pond. The integrated geomembrane and non-woven geotextile will be installed over the Intermediate Bedding layer. Specifications for the geosynthetics installation are shown on Drawing 301.

The Emergency Overflow Spillway will be constructed as part of the pond perimeter berm construction. For the spillway, 12 oz/yd<sup>2</sup> non-woven geotextile (or approved equivalent) will be placed over the prepared foundation of the spillway inlet and channel invert and side slopes. Fine Riprap will be tightly placed over the geotextile along the spillway inlet invert and side slopes. Coarse Riprap will be tightly placed over the geotextile along the spillway channel invert and side slopes, and a Coarse Riprap apron will be tightly placed over the geotextile at the outlet of the spillway channel. Typical sections and details are provided on Drawings 320 and 321.

Prior to placement of the Intermediate Bedding layer, care must be taken to ensure that the final surface of the underlying prepared foundation is smooth and uniform. No angular particles or voids may be present.

### **7.7 COLLECTION/DIVERSION BERMS**

Berm Fill will be placed and compacted to construct the Collection/Diversion Berms. Non-woven geotextile will be placed over the upstream slope of the berm and the crest to provide a barrier against the migration of finer materials. Fine Riprap will be placed over the non-woven geotextile to form a tightly interlocking layer. A typical Collection/Diversion Berm section is provided on Drawing 320.



## 7.8 MATERIALS AND QUANTITIES

A summary of materials and quantity estimates for the Access Road, Sedimentation Pond and runoff management measures is presented in Table 6. The materials and quantities are based on the drawings included herein. In general, quantities have been estimated using neat line measurements from the Drawings and are based on the typical sections and details provided on the Drawings. No contingencies have been included.

## 7.9 CONSTRUCTION QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

Construction Quality Assurance/Quality Control (QA/QC) shall be completed in general accordance with the specifications for the Waste Rock Facility Pond Expansion (Golder, 2018c). Technical specifications specific to the KM106 Stockpile and runoff management measures have been provided as notes and details on the attached drawings. The following general comments are provided relative to the QA/QC requirements

- It is assumed that a qualified Engineer will oversee and document construction of the Access Road, Sedimentation Pond and associated runoff management measures.
- Daily inspections should be carried out during construction to verify the suitability of the fill materials.
- The foundation must be approved and documented by the supervising Engineer prior to fill placement.
- Geosynthetic materials shall be installed as per the manufacturer's specifications and recommendations. The geosynthetics contractor will be responsible for performing and documenting the geosynthetics QC program.
- Qualified personnel will be responsible for conducting the QC testing and inspections required on all placed and compacted fill materials.
- A qualified Engineer that is licensed in Nunavut will be responsible for preparing and sealing as-built documentation for the completed work.

## 8.0 INSPECTIONS AND MAINTENANCE

Material placement and runoff management for the KM106 Stockpile will need to be closely monitored during operation of the stockpile area, including use of the Access Road, and operation of the Sedimentation Pond and runoff management measures. The Sedimentation Pond will need to be emptied in a timely manner following a runoff event or during freshet such that the pond is empty during normal operating conditions. Ongoing inspections and maintenance will be required to ensure that each of these structures are being operated as designed and that the Collection/Diversion Berms and Sedimentation Pond water removal system and Emergency Overflow Spillway are performing as designed. The recommended inspections are described below:

- As required, based on Baffinland's standard operating procedures (In progress)
  - Inspect the Access Road for any cracks, settlement or rutting of the road surface.
  - Inspect the Safety Berms along the Access Road to ensure they are in good condition and have the design configuration.
  - Inspect the water removal system from the Sedimentation Pond to ensure each component is performing as designed.
  - Inspect the Sedimentation Pond to ensure the liner is in good condition, there are no visible holes or leaks, there is no erosion of the berms, and the berms and spillway are performing as designed


- Inspect the Collection/Diversion Berms to ensure there is no erosion of the berms and that no material is blocking flow along the Collection/Diversion Berms.
- Prior to Freshet, Following Freshet and After Any Large Storm Event
  - Inspect Access Road to ensure there is no erosion of fill materials.
  - Inspect the Collection/Diversion Berms to ensure there is no erosion of the berms and that no material is blocking flow along the Collection/Diversion Berms.
  - Inspect the Sedimentation Pond to ensure the liner is in good condition, there are no visible holes or leaks, there is no erosion of the berms, and the berms and spillway are performing as designed.
- Biannually
  - In accordance with Part D., Clause 18 of the Mary River Project Water License (NWB, 2014), "inspections of earthworks and geological and hydrological regimes of the Project" will be conducted "biannually during the summer or as otherwise approved by the Board in writing. These inspections shall be conducted by a Geotechnical Engineer..."

## 9.0 CLOSING


We trust that this letter provides you with the information you require at this time. Please feel free to contact us if you require any additional information.

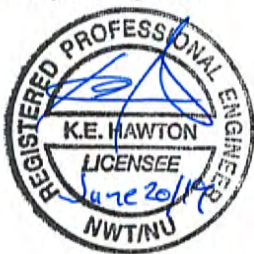
Yours truly,  
**Knight Piésold Ltd.**

Prepared:

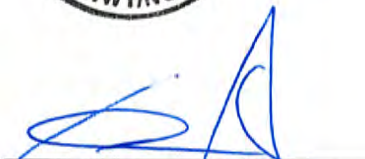
  
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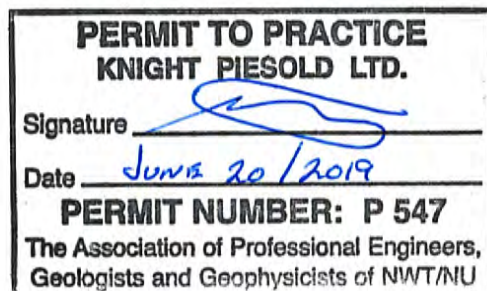
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Reviewed:

  
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Specialist Engineer | Associate



Approval that this document adheres to Knight Piésold Quality Systems: 

#### Attachments:

Table 1 Rev 0	Design Criteria
Table 4 Rev 0	Summary of Material Parameters for Slope Stability Analyses
Table 5 Rev 0	Summary of Slope Stability Results
Table 6 Rev 0	Schedule of Materials and Estimated Quantities
Figure 1 Rev 0	Estimated Catchment Areas
Figure 2 Rev 0	Slope Stability Section Locations
Figure 3 Rev 0	Slope Stability Results - KM106 Stockpile - Section 1
Figure 4 Rev 0	Slope Stability Results - KM106 Stockpile - Section 2
Figure 5 Rev 0	Slope Stability Results - Sedimentation Pond - Static, Long-Term Loading
Figure 6 Rev 0	Slope Stability Results - Sedimentation Pond - Pseudo-Static Loading
Drawing 300 Rev 0	General Arrangement
Drawing 301 Rev 0	Specifications
Drawing 310 Rev 0	Access Road - Plan and Sections
Drawing 320 Rev 0	Sedimentation Pond and Runoff Management Measures - Plan, Section and Details
Drawing 321 Rev 0	Sedimentation Pond and Runoff Management Measures - Sections and Detail
Appendix A	Geomembrane and Non-Woven Geotextile Information

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TABLE 1

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

DESIGN SUMMARY FOR THE KM106 STOCKPILE AND RUNOFF MANAGEMENT MEASURES

DESIGN CRITERIA

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Item No.	Item	Design Criteria	Reference
1.0 GENERAL			
1.1	Regulatory	• Water Licence No. 2AM-MRY1325 Amendment No. 1	NWB, 2014
		• Nunavut Mine Health and Safety Act and Regulations	MHSA, 2011
		• Nunavut Waters and Surface Rights Tribunal Act and Nunavut Waters Regulations	NWNSRTA, 2018
		• Metal and Diamond Mining Effluent Regulations (MDMER)	MDMER, 2018
		• Fisheries Act	Fisheries Act, 2016
1.2	Guidelines and Reference	• Civil Design Criteria	Hatch, 2013 and 2018
		• Canadian Dam Association Dam Safety Guidelines (2007, 2013)	CDA, 2007 and 2013
2.0 WATER MANAGEMENT			
2.1	General	• Runoff from the upstream catchment areas will be diverted around the KM106 Stockpile and Access Road, and around the Sedimentation Pond	-
		• Meteoric water reporting to the KM106 Stockpile will be collected and temporarily stored in the Sedimentation Pond	-
		• A spillway in the Sedimentation Pond will convey excess runoff from the KM106 Stockpile	-
2.2	Design Storm Events	• Sedimentation Pond designed to provide temporary storage for runoff resulting from the 1 in 10 year, 24-hour rainfall event	Hatch, 2013 and 2018
		• Ditches and berms sized to convey flows resulting from the 1 in 200 year, 24-hour rainfall event	KP (based on Hatch, 2013)
		• Emergency overflow spillway (Sedimentation Pond) sized to convey flows resulting from the 1 in 200 year, 24-hour rainfall event	Hatch, 2013
		• Storm events are rain only events; no snowfall or snowmelt is included	KP Estimate
2.3	Hydrological Parameters	• Catchment Areas:	
		o KM106 Stockpile: approximately 7.4 ha	Estimated from mapping provided by Baffinland
		o Sedimentation Pond: approximately 0.7 ha	Estimated from mapping provided by Baffinland
		o Upstream of Sedimentation Pond: approximately 0.6 ha	Estimated from mapping provided by Baffinland
		• Runoff Coefficients:	
		o KM106 Stockpile: 0.9	Hatch, 2013
		• Time of Concentration Method:	KP Estimate
		o KM106 Stockpile: Kirpich (1940)	-
		o Upstream Areas: Kirpich (1940)	-
		• Rainfall Distribution: SCS Type I	KP Estimate
2.4	Meteorological Parameters	• SCS Curve Number:	
		o KM106 Stockpile: 89	KP Estimate
		o Undisturbed/Upstream: 86	KP Estimate
2.5	Ditch Parameters	• Return Period Rainfall Events:	
		o 1 in 10 year, 24-hour rainfall event: 41 mm	Hatch, 2013
		o 1 in 200 year, 24-hour rainfall event: 72 mm	Hatch, 2013
2.6	Diversion Berms	• Shape: Trapezoidal cross section	Hatch, 2013
		• Base Width: 0.5 m minimum	Hatch, 2013
		• Side Slopes: 2H:1V (soil)	Hatch, 2013 and 2018
		• Grade: 0.2% minimum	Hatch, 2018
		• Depth: 0.3 m minimum	Hatch, 2013
		• Freeboard: 0.3 m	Hatch, 2013
		• Manning's "n" Value: 0.040 (riprap)	Hatch, 2013
3.0	Construction Materials	• Shape: Trapezoidal cross section	Hatch, 2013
		• Side slopes: 2H:1V	Hatch, 2018
		• Freeboard: 0.3 m	Hatch, 2018
		• Height: 1 m minimum (including 0.3 m freeboard)	Hatch, 2013
		• Top Width: 0.5 m	Hatch, 2013 and 2018
3.0 Construction Materials			
3.1	Source	• Approved sources following Water Licence No. 2AM-MRY1325 Amendment No. 1	NWB, 2014
3.2	Quality	• Clean, free of debris and organics (see Drawing 301)	KP Estimate
3.3	Description	• 500 mm Minus Rockfill: Well graded; consisting of hard, durable, fresh rockfill	KP Estimate
		• Berm Fill: Well graded, 150 mm minus processed rockfill	KP Estimate
		• Intermediate Bedding: 32 mm minus sand and gravel, gradation as per Golder, 2018a	Golder, 2018a
		• Riprap: Maximum particle diameter not exceeding one and a half times the specified D <sub>50</sub> value, well graded, with a fines content not exceeding 5%	KP Estimate (based on Golder, 2018a)
		o Fine Riprap: D <sub>50</sub> of 150 mm	
o Coarse Riprap: D <sub>50</sub> of 300 mm			
4.0 KM106 STOCKPILE			
4.1	Geometry	• Footprint Area: 7.1 ha	Estimated from mapping provided by Baffinland
4.2	Condition	• Not lined; constructed on existing ground after clearing	Baffinland
5.0 ACCESS ROAD			
5.1	Design Vehicle	• Caterpillar (CAT) 793F Mining Truck	Baffinland
		• Truck Width: 8.6 m	Caterpillar, 2017
		• Tire Size: 50/80 R57	Colorado OTR, 2019
		• Tire Diameter: 3.6 m	Michelin, 2018
		• Turning Circle Clearance Diameter: 33 m (radius: 16.5 m)	Caterpillar, 2017
5.2	Road Geometry	• Road Width: 3 times width of CAT 793 haul truck (one-way traffic)	Baffinland
		• Design Speed: 30 km/h	Hatch, 2013
		• Posted Speed: 20 km/h	Hatch, 2013
		• Minimum Horizontal Curve C/L Radius: 50 m	Hatch, 2013
		• Minimum Intersection Inner Radius: 30 m	Hatch, 2013
		• Minimum Cross Slope: 3%	Hatch, 2013
		• Maximum Road Grade: 10%	Hatch, 2013
5.3	Vehicle Safety Berms	• Berm Height: 3/4 of the diameter of the largest wheeled vehicle (CAT 793)	Nunavut Mine Health and Safety Regulations, Surface Haulage Roads, Section 1.143
		• Berm Locations: All areas where drop off is greater than 3 m	Nunavut Mine Health and Safety Regulations, Surface Haulage Roads, Section 1.143
		• Side Slopes: 1H:1V	Hatch, 2013
5.4	Stability	• Factors of Safety:	
		o Static: 1.2	KP
		o Pseudo-Static: 1.0	KP
6.0 SEDIMENTATION POND			
6.1	Function	• Function: Runoff management and sedimentation control	Baffinland
6.2	Geometry	• Shape: Rectangular; L:W = approximately 5:1	KP Estimate; BCMOE (2015)
		• Pond Depth: 5 m maximum	Hatch, 2013
		• Berm Side Slopes: 2.5H:1V (upstream); 2H:1V (downstream)	KP Estimate
		• Berm Crest: 6 m	Golder, 2017
		• Freeboard: 0.3 m	Golder, 2017
		• Sediment Storage: approximately 0.5 m deep	KP Estimate
6.3	Liner	• Liner: required	Baffinland
		• Liner installation: Liner to be pre-welded in large panels by Western Tank and Lining Ltd.	Baffinland
		• Geomembrane Liner: Atarfil LLD, 40 mil	Baffinland
		• Non-Geotextile: Texel 100P, 10 oz/yd <sup>2</sup>	Western Tank and Lining Ltd.
6.4	Dam Hazard Classification	• Potential Loss of Life: None - no downstream population	KP Estimate
		• Potential Loss to Environmental and Cultural Values:	KP Estimate
		o Short Term - Slope erosion and sedimentation of the Mary River	
		o Long Term - None	
		• Potential Economic Loss: Minimal, associated with repairs to the Sedimentation Pond itself	KP Estimate
6.5	Stability	• Dam Hazard Classification: LOW	KP Estimate; CDA, 2013
		• Factors of Safety:	
		o Static: 1.5	CDA, 2007 & 2013
		o Pseudo-Static: 1.0	CDA, 2007 & 2013
		o Post-Earthquake: 1.2	CDA, 2007 & 2013
6.6	Seismic Design Criteria	• 1 in 100 year event: 0.019g (based on Section 6.4)	CDA, 2013 & NRC, 2015

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**TABLE 4**

**BAFFINLAND IRON MINES CORPORATION  
MARY RIVER PROJECT**

**DESIGN SUMMARY FOR THE KM106 STOCKPILE AND RUNOFF MANAGEMENT MEASURES  
SUMMARY OF MATERIAL PARAMETERS FOR SLOPE STABILITY ANALYSES**

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Material Description	Unit Weight	Cohesion	Effective Friction Angle
	(kN/m <sup>3</sup> )	(kPa)	(°)
Road Embankment Fill	21	0	37
Berm Fill	21	0	37
Rock Fill	21	0	Shear Normal Function <sup>[1]</sup>
Glacial Till	19	0	34
Bedrock	Impenetrable		

I:\1\02\00181\57\A\Data\Workfiles\WF06 - Updated Stability for KM106 Stockpile\[Summary Tables and Figures -20190618.xlsm]Table 4

**NOTES:**

1. A SHEAR NORMAL FUNCTION BASED ON AVERAGE VALUES (LEPS, 1970; MODIFIED BY YAMAGUCHI ET AL., 2009) WAS USED TO MODEL THE SHEAR STRENGTH OF THE ROCKFILL.

0	20JUN'19	ISSUED WITH LETTER NB19-00443	AB	ALA
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**TABLE 5**
**BAFFINLAND IRON MINES CORPORATION  
 MARY RIVER PROJECT**
**DESIGN SUMMARY FOR THE KM106 STOCKPILE AND RUNOFF MANAGEMENT MEASURES  
 SUMMARY OF SLOPE STABILITY RESULTS**

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Section	Factor of Safety (FoS)			
	Static (Required)	Static (Achieved)	Pseudo-Static (Required)	Pseudo-Static (Achieved)
<b>Stockpile</b>				
Section 1	1.2	1.5	1.0	1.4
Section 2	1.2	1.5	1.0	1.4
<b>Sedimentation Pond</b>				
Upstream	1.5	2.6	1.0	2.4
Downstream	1.5	1.7	1.0	1.6

I:\1\02\00181\57\A\Data\Workfiles\WF06 - Updated Stability for KM106 Stockpile\[Summary Tables and Figures -20190618.xlsm]Table 5

**NOTES:**

1. STABILITY ANALYSES COMPLETED USING SLOPE/W® (GEO-SLOPE, 2019).
2. STOCKPILE SLOPES ARE 1.3H:1.0V BASED ON THE DESIGN PROVIDED BY BAFFINLAND.
3. DESIGN HAUL TRUCK LOAD ON THE ACCESS ROAD IS THE REAR AXLE OF A FULLY LOADED CAT 793. MODELLED AS A SURCHARGE LOAD 9 m WIDE, 1 m HIGH AT 265 kN/m<sup>3</sup>.
4. SEDIMENTATION POND EMBANKMENT SIDE SLOPES ARE 2.5H:1.0V UPSTREAM AND 2.0H:1.0V DOWNSTREAM, CREST WIDTH IS 6 m.
5. MAXIMUM DEAD STORAGE ELEVATION OF SEDIMENTS IN SEDIMENTATION POND IS 265 m, MAXIMUM POND ELEVATION IS 268.5 m.
6. A HORIZONTAL SEISMIC COEFFICIENT OF 0.019 g IS APPLIED TO ALL PSEUDO-STATIC ANALYSES (NRCAN, 2015).

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**TABLE 6**
**BAFFINLAND IRON MINES CORPORATION  
MARY RIVER PROJECT**
**DESIGN SUMMARY FOR THE KM106 STOCKPILE AND RUNOFF MANAGEMENT MEASURES  
SCHEDULE OF MATERIALS AND ESTIMATED QUANTITIES**

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Item No.	Description	Unit	Estimated Quantity
<b>SEDIMENTATION POND</b>			
<b>1.0</b>	<b>Earthworks</b>		
<b>1.1</b>	<b>Sedimentation Pond Embankment and Basin</b>		
1.1.1	Prepare Foundation Area	m <sup>2</sup>	10,700
1.1.2	Supply, Haul, Place and Compact - 500mm Minus Rockfill	m <sup>3</sup>	15,500
1.1.3	Supply, Haul, Place and Compact - Berm Fill	m <sup>3</sup>	1,900
1.1.4	Supply, Haul, Place and Compact - Intermediate Bedding	m <sup>3</sup>	1,200
<b>1.2</b>	<b>Emergency Overflow Spillway</b>		
1.2.1	Supply, Haul, Place - Fine Riprap - Inlet	m <sup>3</sup>	12
1.2.2	Supply, Haul and Place - Coarse Riprap - Channel and Apron	m <sup>3</sup>	200
<b>1.3</b>	<b>Diversion Berms</b>		
1.3.1	Prepare Foundation Areas	m <sup>2</sup>	4,300
1.3.2	Supply, Haul and Place - Berm Fill - Diversion Berms	m <sup>3</sup>	2,400
1.3.3	Supply, Haul and Place - Fine Riprap - Diversion Berms	m <sup>3</sup>	2,310
<b>Subtotal Item 1.0</b>			
<b>2.0</b>	<b>Geosynthetics</b>		
<b>2.1</b>	<b>Pond Lining</b>		
2.1.1	Supply and Install - 40 mil Atarfil LLD Geomembrane	m <sup>2</sup>	7,500
2.1.2	Supply and Install - Texel 100 P 10 oz/yd <sup>2</sup> Non-Woven Geotextile	m <sup>2</sup>	7,500
2.1.3	Supply and Install - 12 oz/yd <sup>2</sup> Non-Woven Geotextile	m <sup>2</sup>	3,300
<b>Subtotal Item 2.0</b>			
<b>ACCESS ROAD</b>			
<b>3.0</b>	<b>Earthworks</b>		
<b>3.1</b>	<b>Road Fill</b>		
3.1.1	Supply, Haul and Place - Road Embankment Fill or Rockfill	m <sup>3</sup>	0 <sup>[2]</sup>
<b>3.2</b>	<b>Safety Berms</b>		
3.2.1	Supply, Haul and Place - Road Embankment Fill or Rockfill <sup>[2]</sup>	m <sup>3</sup>	2,000
<b>3.3</b>	<b>Haul Road Culverts</b>		
3.3.1	Supply, Haul, and Place - Coarse Riprap - Apron	m <sup>3</sup>	300
<b>Subtotal Item 3.0</b>			

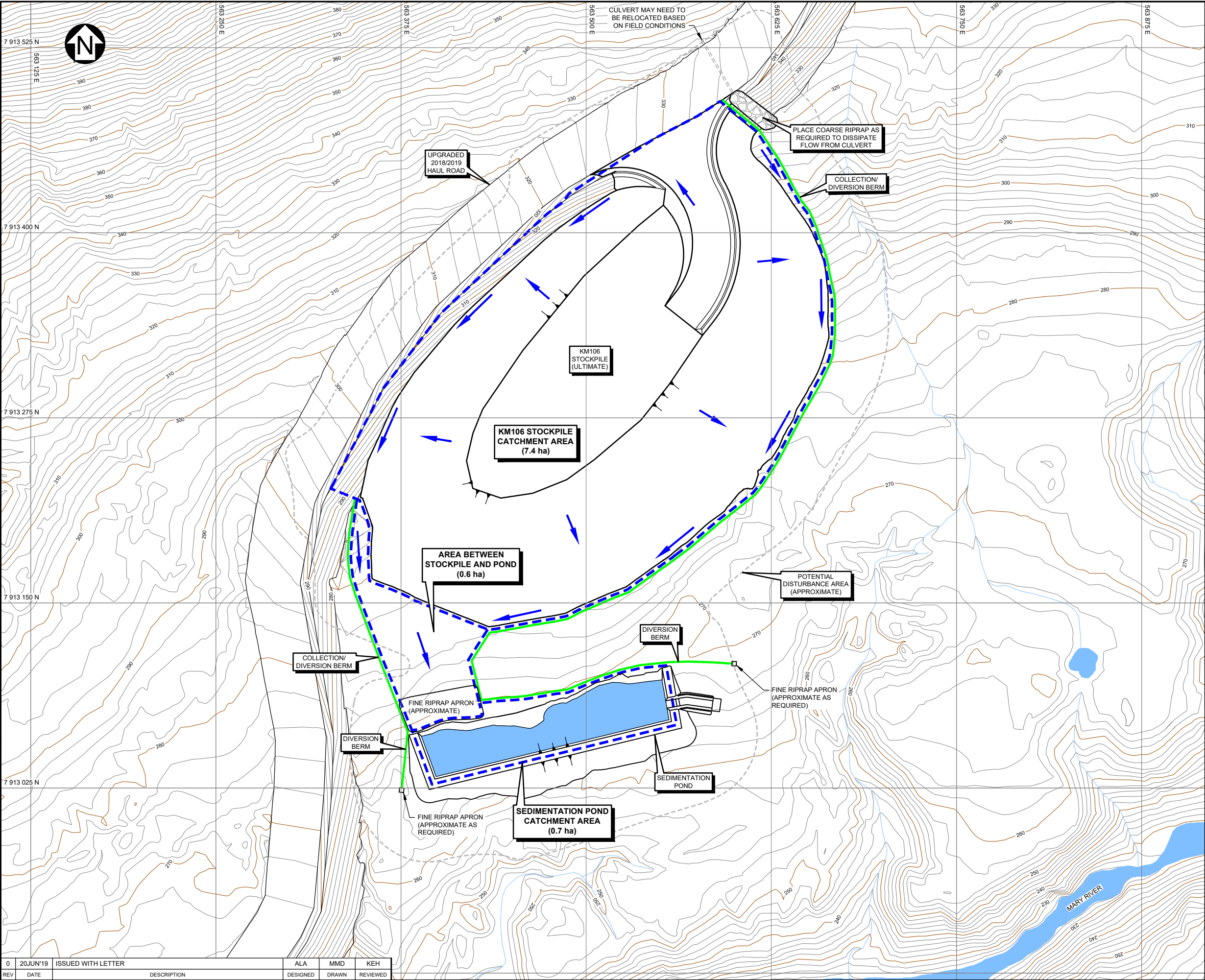
I:\1102\00181\57\A\Data\Workfiles\WF07 - Updated Materials and Quantities\Materials and Quantities Table - SM - 19JUN'19.xlsm]Table 6

**NOTES:**

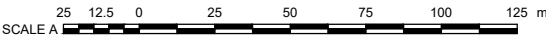
1. MATERIAL QUANTITIES ARE BASED ON NEAT LINE MEASUREMENTS OF THE DRAWINGS AND DO NOT INCLUDE ANY CONTINGENCIES.
2. IT IS ASSUMED THAT THE ACCESS ROAD AND SAFETY BERMS WILL BE CONSTRUCTED USING STOCKPILE MATERIALS (ROCKFILL).

0	20JUN'19	ISSUED WITH LETTER NB19-00443	SM	ALA
REV	DATE	DESCRIPTION	PREP'D	RVWD

SAVED: I:\11020018157\A\Acad\FIGS\B02.RD, 6/20/2019 1:24:37 PM, MDEMERS PRINTED: 6/20/2019 1:25:08 PM, FIGURE 1, MDEMERS ACAD VERSION: 23.05 (LMS TECH)



- LEGEND:**
- WATER
  - COARSE RIPRAP
  - CULVERT
  - COLLECTION/DIVERSION BERM
  - ESTIMATED CATCHMENT AREA BOUNDARY
  - POTENTIAL DISTURBANCE AREA (APPROXIMATE)
  - FLOW DIRECTION
- NOTES:**
- COORDINATE GRID IS UTM (NAD83) ZONE 17.
  - TOPOGRAPHY BASED ON INFORMATION PROVIDED BY EAGLE MAPPING (2008).
  - CONTOURS ARE IN METRES. CONTOUR INTERVAL IS 2 m.
  - DIMENSIONS AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
  - LOCATIONS AND DETAILS OF CONSTRUCTION ITEMS MAY BE MODIFIED TO SUIT ACTUAL SITE CONDITIONS.
  - UPGRADED 2018/2019 HAUL ROAD AND KM106 STOCKPILE PROVIDED BY BAFFINLAND.
  - ALL INFRASTRUCTURE SHOWN IS PROPOSED UNLESS NOTED OTHERWISE.



BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

**KM106 STOCKPILE  
ESTIMATED CATCHMENT AREAS**



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NB102-181/57

REF NO.  
NB19-00443

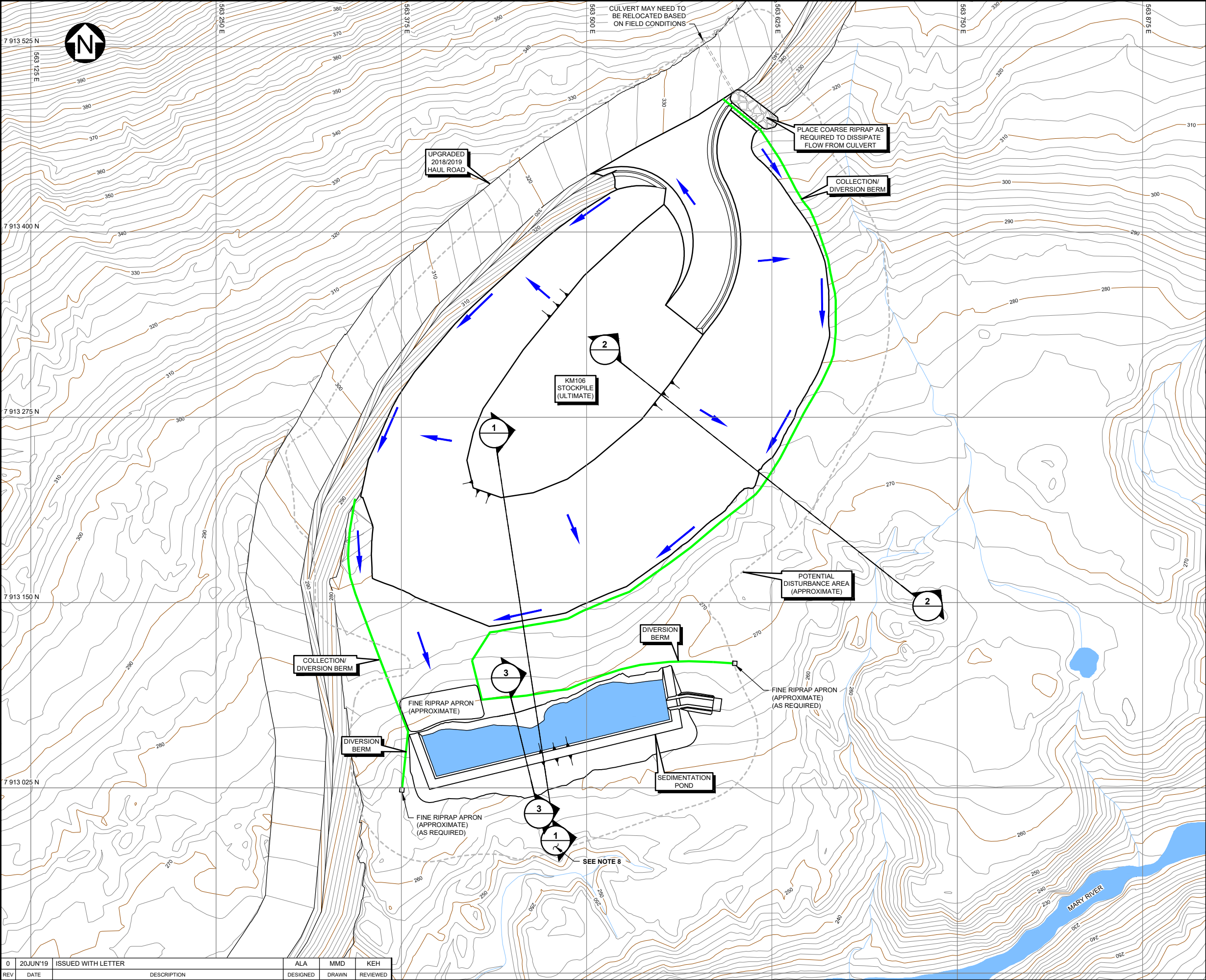
**FIGURE 1**

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REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
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SAVED: I:\110200181\7\A\Acad\FIGS\B02 R0\_6/20/2019 1:25:24 PM .MDEMERS PRINTED: 6/20/2019 1:25:39 PM, FIGURE 2. MDEMERS ACAD VERSION: 23.05 (LMS TECH)



- LEGEND:**
- WATER
  - COARSE RIPRAP
  - CULVERT
  - COLLECTION/DIVERSION BERM
  - POTENTIAL DISTURBANCE AREA (APPROXIMATE)
  - FLOW DIRECTION

- NOTES:**
- COORDINATE GRID IS UTM (NAD83) ZONE 17.
  - TOPOGRAPHY BASED ON INFORMATION PROVIDED BY EAGLE MAPPING (2008).
  - CONTOURS ARE IN METRES. CONTOUR INTERVAL IS 2 m.
  - DIMENSIONS AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
  - LOCATIONS AND DETAILS OF CONSTRUCTION ITEMS MAY BE MODIFIED TO SUIT SITE CONDITIONS.
  - UPGRADED 2018/2019 HAUL ROAD AND KM106 STOCKPILE PROVIDED BY BAFFINLAND.
  - ALL INFRASTRUCTURE SHOWN IS PROPOSED UNLESS NOTED OTHERWISE.
  - STABILITY SECTION NO. 1 DOES NOT INCLUDE THE SEDIMENTATION POND.

SCALE A 25 12.5 0 25 50 75 100 125 m

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

KM106 STOCKPILE  
SLOPE STABILITY SECTION LOCATIONS



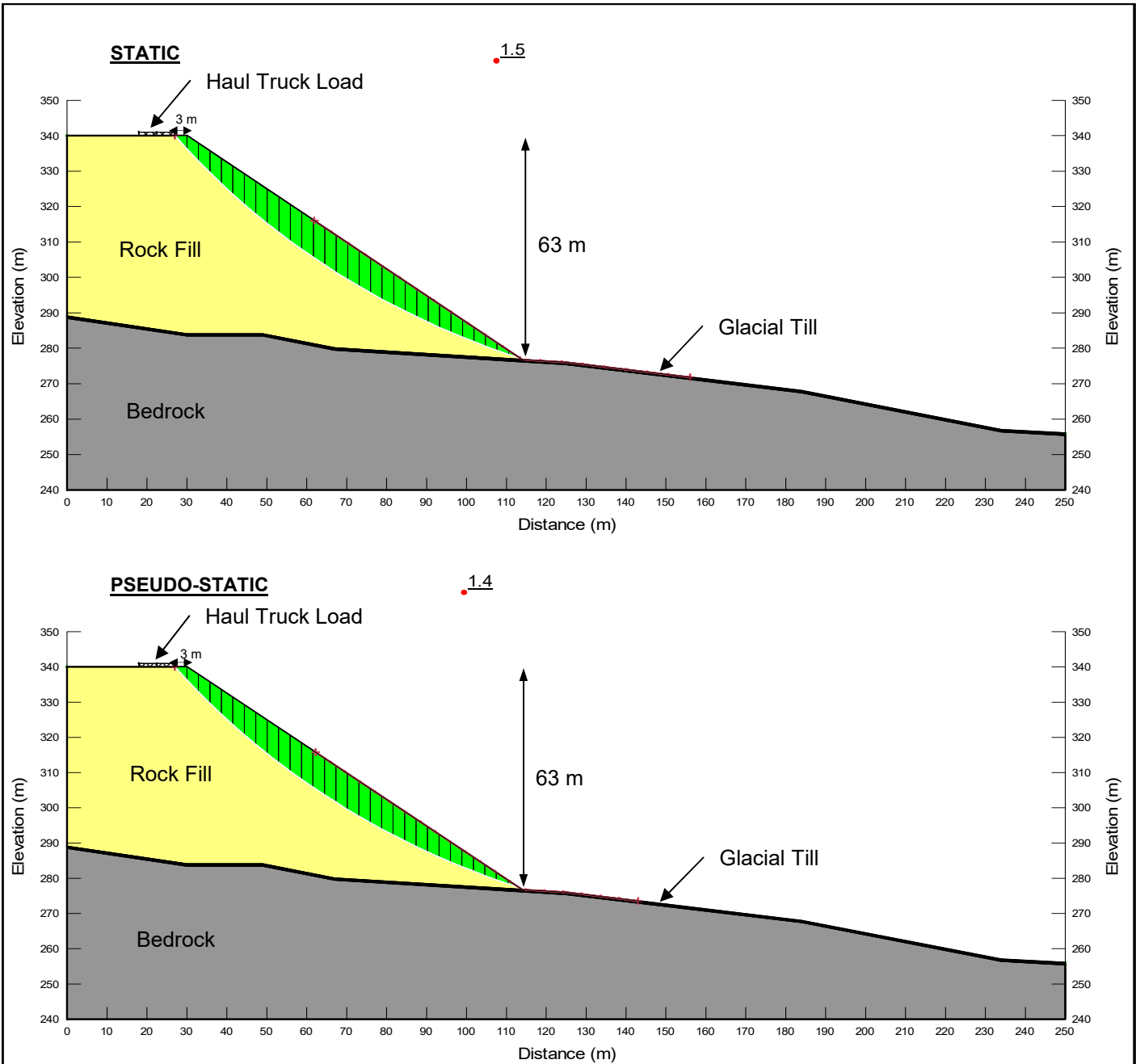
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FIGURE 2

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**NOTES:**

1. STOCKPILE SLOPES ARE 1.3H:1.0V AND ARE BASED ON THE DESIGN PROVIDED BY BAFFINLAND.
2. MINIMUM DISTANCE BETWEEN THE EDGE OF THE HAUL TRUCK AND THE EDGE OF THE STOCKPILE IS 3 m.
3. A HORIZONTAL SEISMIC COEFFICIENT CORRESPONDING TO A PGA OF 0.019g WAS APPLIED TO ALL PSEUDO-STATIC ANALYSES (NRCAN, 2015).
4. DESIGN HAUL TRUCK LOAD IS THE REAR AXLE OF A FULLY LOADED CAT 793. MODELLED AS A SURCHARGE LOAD 9 m WIDE, 1 m HIGH AT 265 kN/m<sup>3</sup>.
5. MODEL INCLUDES 0.5 m OF GLACIAL TILL OVERLYING BEDROCK.

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

**SLOPE STABILITY RESULTS**  
**KM106 STOCKPILE**  
**SECTION 1**



**Knight Piésold**  
 CONSULTING

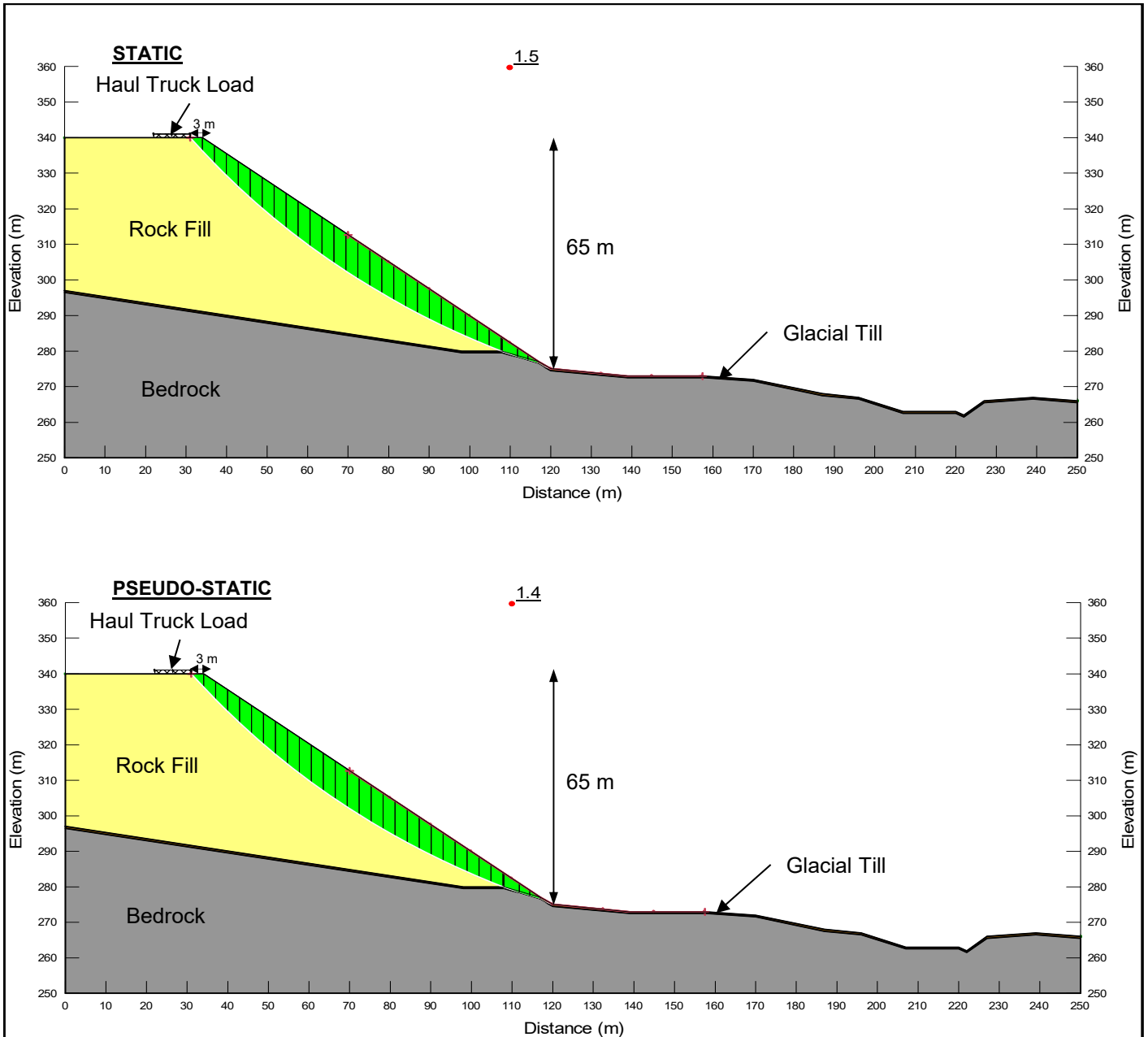
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**FIGURE 3**REV  
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**NOTES:**

1. STOCKPILE SLOPES ARE 1.3H:1.0V.
2. HAUL TRUCK TO MAINTAIN A DISTANCE OF 3 m FROM EDGE OF STOCKPILE.
3. A HORIZONTAL SEISMIC ACCELERATION CORRESPONDING TO A PGA OF 0.019g WAS APPLIED TO ALL PSEUDO-STATIC ANALYSES (NRCAN, 2015).
4. DESIGN HAUL TRUCK LOAD IS THE REAR AXLE OF A FULLY LOADED CAT 793. MODELLED AS A SURCHARGE LOAD 9 m WIDE, 1 m HIGH AT 265 kN/m<sup>3</sup>.
5. MODEL INCLUDES 0.5 m OF GLACIAL TILL OVERLYING BEDROCK.

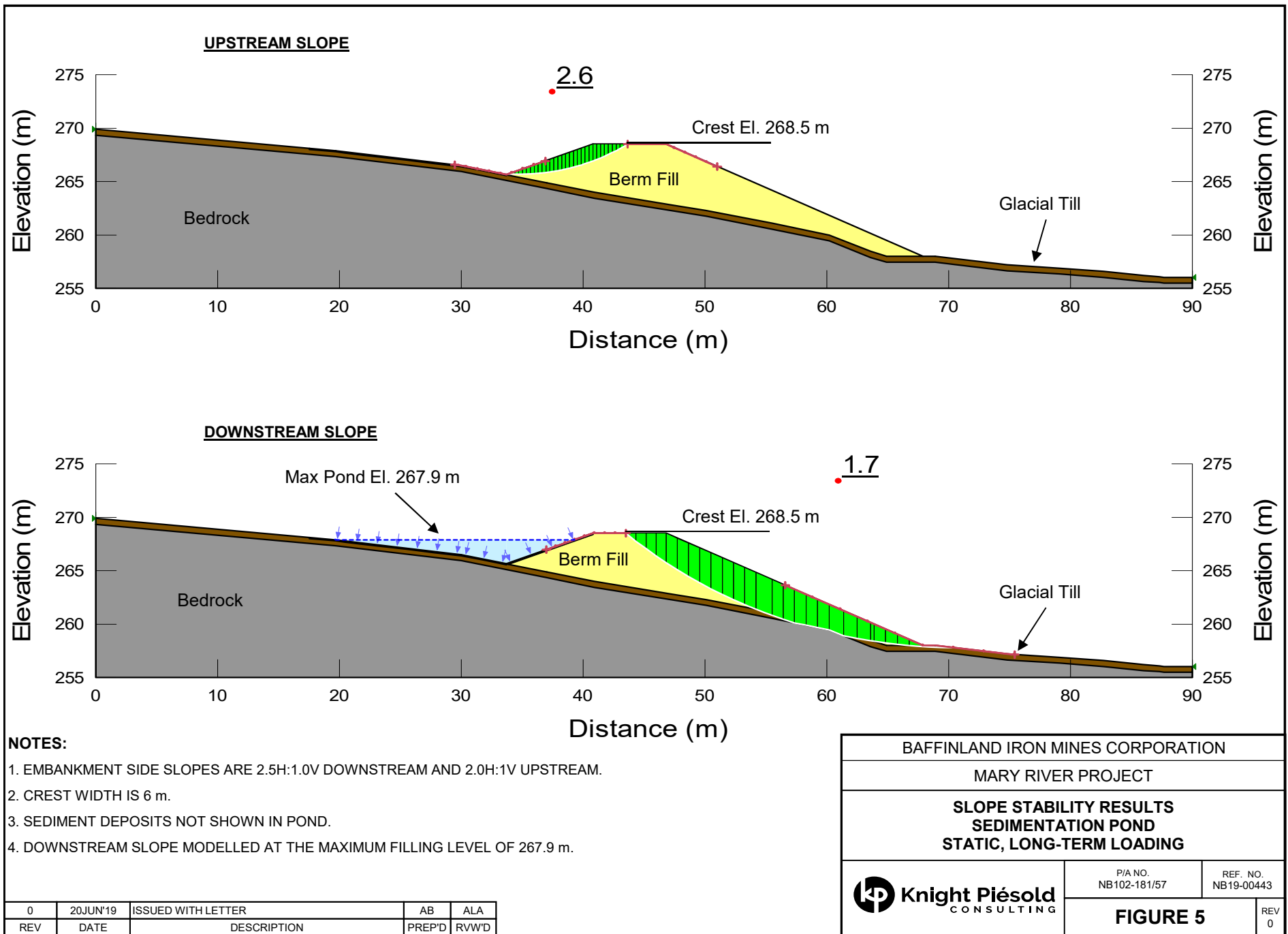
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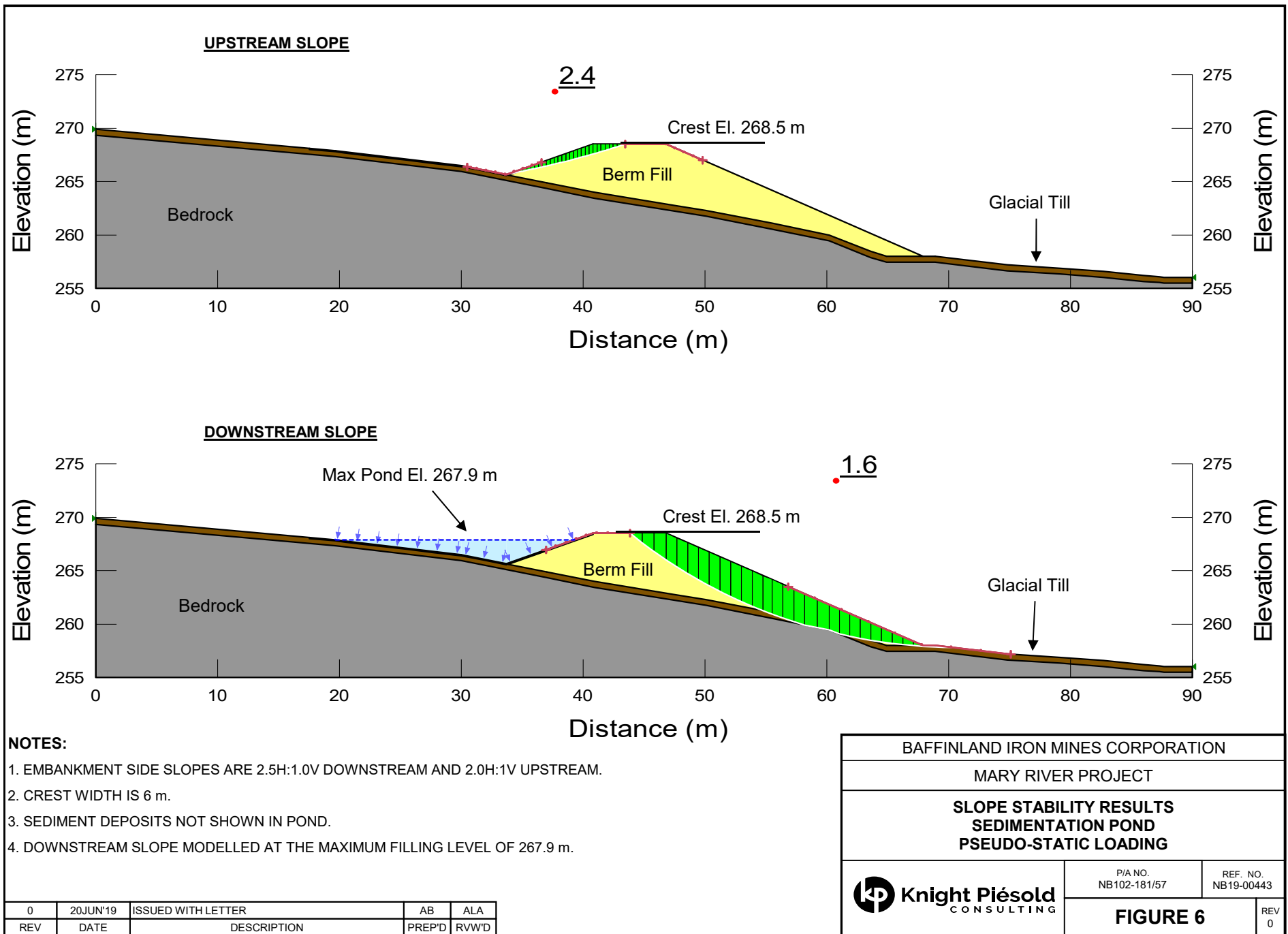
MARY RIVER PROJECT

**SLOPE STABILITY RESULTS**  
**KM106 STOCKPILE**  
**SECTION 2**

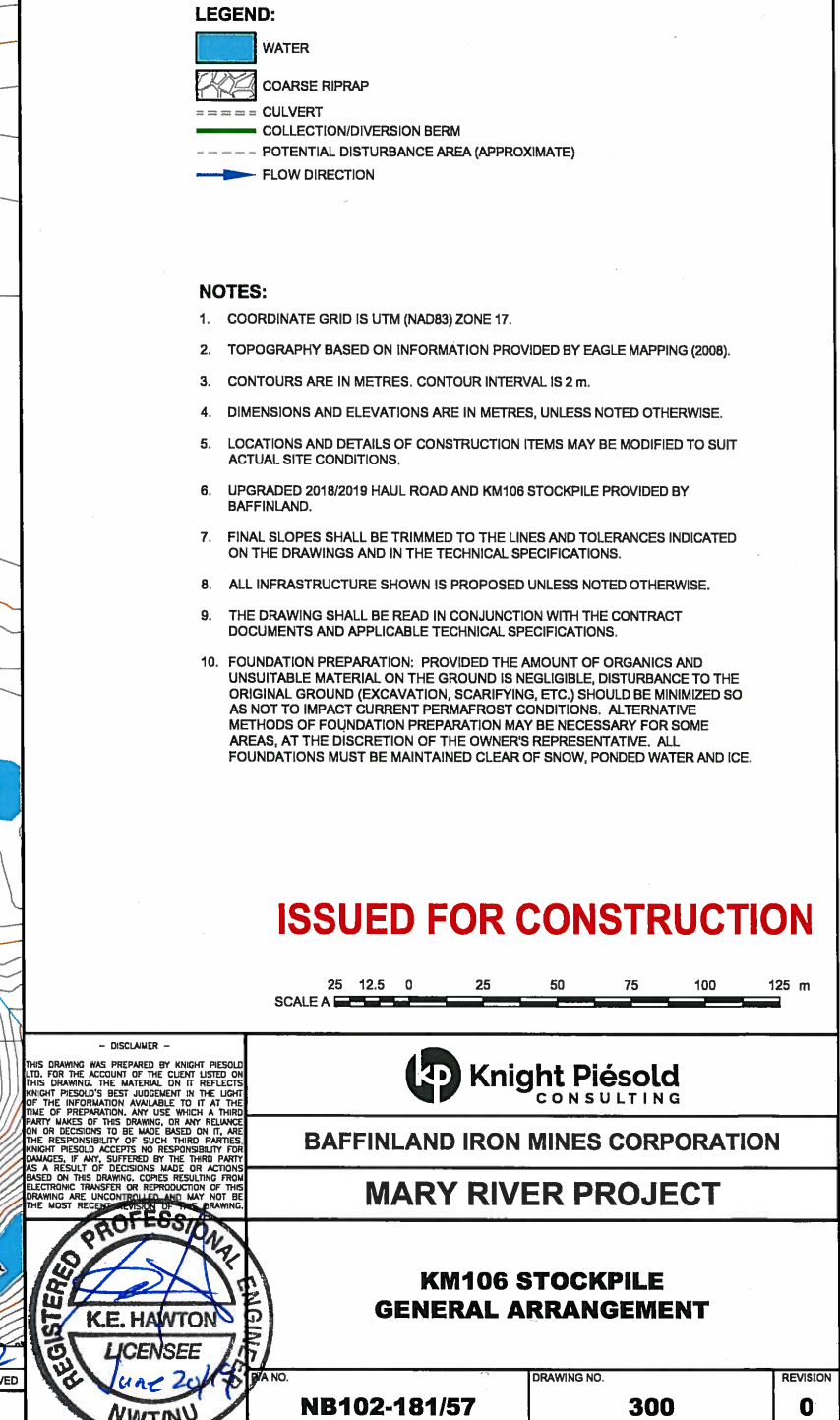
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NB19-00443**FIGURE 4**REV  
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## CO-ORDINATION BETWEEN OWNER, ENGINEER AND CONTRACTOR

1. AFTER THE CONTRACTOR HAS COMPLETED PREPARING THE SUBGRADE SURFACE WHICH WILL LIE DIRECTLY BELOW THE GEOSYNTHETICS, THE CONTRACTOR, ENGINEER AND OWNER WILL VERIFY ACCEPTANCE BY SIGNING A FORM WHICH DESCRIBES THE EXTENT OF THE AREA. AT THAT TIME, THE CONTRACTOR ASSUMES RESPONSIBILITY OF PROTECTING THE APPROVED SURFACE, UNTIL IT IS COVERED WITH GEOSYNTHETICS.
2. ANY DAMAGE BY MECHANICAL MEANS CAUSED BY THE CONTRACTOR TO APPROVED SUBGRADE AREAS SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT THE EXPENSE OF THE CONTRACTOR. ANY DAMAGE CAUSED BY WEATHER TO APPROVED SUBGRADE AREAS SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT THE EXPENSE OF THE OWNER. ANY DAMAGE CAUSED BY WEATHER TO APPROVED SUBGRADE AREAS RESULTING FROM WIND EROSION OR POOR SURFACE RUNOFF CONTROL (E.G. ALLOWING SURFACE RUNOFF ONTO APPROVED AREAS) AS A RESULT OF OPERATIONS OF THE CONTRACTOR SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT THE EXPENSE OF THE CONTRACTOR.
3. AFTER INSTALLATION OF THE GEOSYNTHETICS AND FINAL QUALITY CONTROL MEASURES ARE COMPLETED BY THE CONTRACTOR, AREAS RECEIVING COVER MATERIAL SHALL BE CLEARLY IDENTIFIED AND THE ENGINEER SHALL BE NOTIFIED FOR GEOSYNTHETICS INSPECTION. UPON SIGNED ACCEPTANCE BY THE ENGINEER THAT THE GEOSYNTHETICS HAVE BEEN INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS, IT WILL BE AVAILABLE TO THE CONTRACTOR FOR PLACING THE COVER MATERIAL, WHERE APPLICABLE. AT THAT TIME THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR MAINTAINING THE CONDITION OF THE PORTION OF THE GEOSYNTHETICS UNTIL IT IS ADEQUATELY COVERED.
4. ANY DAMAGE TO PREVIOUSLY ACCEPTED GEOSYNTHETICS AS A RESULT OF THE CONTRACTOR'S OPERATION WILL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
5. IN THE EVENT OF CONTRADICTION OR CONFLICT BETWEEN PARTIES MENTIONED ABOVE, QUESTIONS WILL BE TAKEN TO THE ENGINEER AND OWNER FOR FINAL DECISION.

## SUBGRADE PREPARATION

1. SUBGRADE PREPARATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND INSTALLATION GUIDELINES.
2. SUBGRADE PREPARATION OVER ROCK SURFACES SHALL REQUIRE THE REMOVAL OF ANY PROTRUDING OBJECT SUCH THAT A SMOOTH GEOMEMBRANE SURFACE IS PROVIDED. NO OVERHANGS, PROTRUSIONS, OR LEDGES OF MORE THAN 0.1 m IN HEIGHT SHALL BE ACCEPTED.
3. PLACEMENT AND COMPACTION OF BEDDING OVER EXPOSED BEDROCK SURFACES SHALL BE CONDUCTED USING PLACEMENT AND COMPACTION METHODS TO SUIT THE SPECIFIC FIELD CONDITIONS. WHERE COMPACTION WITH A STANDARD VIBRATORY ROLLER IS NOT POSSIBLE, ALTERNATIVE COMPACTION EQUIPMENT MAY BE ACCEPTED. THE PLACEMENT AND COMPACTION METHODS MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO THEIR IMPLEMENTATION.

## DELIVERY, HANDLING AND STORAGE

1. DELIVERY, HANDLING AND STORAGE OF GEOSYNTHETICS MATERIAL SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.

## GEOSYNTHETICS INSTALLATION

1. THE GEOMEMBRANE SHALL BE ATARFIL LLD, 40 mil, or APPROVED EQUIVALENT. THE GEOTEXTILE SHALL BE TEXEL 100 P, 10 oz/yd², or APPROVED EQUIVALENT AND SHALL BE INSTALLED IN INTIMATE CONTACT WITH THE GEOMEMBRANE.
2. THE GEOTEXTILE AND GEOMEMBRANE SHALL BE HANDLED IN SUCH A MANNER AS TO ENSURE THAT IT IS NOT DAMAGED IN ANY WAY. THE MATERIALS SHALL BE STORED INDOORS AT TEMPERATURES ABOVE 0 DEGREES CELSIUS PRIOR TO PLACEMENT. SHOULD THE CONTRACTOR DAMAGE THE GEOTEXTILE TO THE EXTENT THAT IT IS NO LONGER USABLE AS DETERMINED BY THESE SPECIFICATIONS OR BY THE ENGINEER, THE CONTRACTOR SHALL REPLACE THE GEOTEXTILE AT THEIR EXPENSE.
3. THE SUBGRADE UNDERLYING THE GEOTEXTILE SHALL BE APPROVED BY THE ENGINEER AND SHALL BE SMOOTH AND FREE OF RUTS OR PROTRUSIONS WHICH COULD DAMAGE THE GEOTEXTILE. THE GEOTEXTILE AND GEOMEMBRANE SHALL BE LAID FLAT AND SMOOTH SO THAT IT IS IN DIRECT CONTACT WITH THE SUBGRADE. THE GEOTEXTILE SHALL BE FREE OF TENSILE STRESSES, FOLDS AND WRINKLES SO THAT THE OVERLYING MATERIALS WILL NOT EXCESSIVELY STRETCH OR TEAR THE FABRIC. ON SLOPES STEEPER THAN 10H:1V, THE GEOTEXTILE SHALL BE LAID WITH THE MACHINE DIRECTION OF THE FABRIC PARALLEL TO THE SLOPE DIRECTION. ANCHORING OF THE TERMINAL ENDS OF THE GEOTEXTILE SHALL BE ACCOMPLISHED THROUGH THE USE OF ANCHOR TRENCHES, ANCHOR BERMS OR APRONS AT THE CREST AND TOE OF THE SLOPE. THE GEOTEXTILE SHALL BE PLACED DIRECTLY ON THE PREPARED SUBGRADE WITH SEAMS UPWARD AND SHALL EXTEND FOR A MINIMUM OF 0.9 m PAST THE DESIGNED SLOPE TOE.
4. UNLESS OTHERWISE NOTED INSTALLATION OF GEOSYNTHETICS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
  - INTERNATIONAL ASSOCIATION OF GEOSYNTHETICS INSTALLERS - "GUIDELINES FOR INSTALLATION OF FACTORY FABRICATED HEAVY WEIGHT >0.64 mm (25 mil) THICKNESS FABRIC - SUPPORTED GEOMEMBRANES" (MARCH 2014)
  - APPLICABLE GEOSYNTHETICS RESEARCH INSTITUTE STANDARDS, AND THE MANUFACTURER'S "QUALITY CONTROL MANUAL." (JANUARY 2017)
  - GUIDELINES FOR INSTALLATION OF "FACTORY FABRIC SUPPORTED GEOMEMBRANES" (MARCH 2014)

- THE CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE COVERING MATERIALS AND WORKMANSHIP AS WELL AS DEGRADATION DUE TO ULTRAVIOLET LIGHT FOR EXPOSED AREAS. THE MATERIAL SHALL BE WARRANTED AGAINST MANUFACTURER'S DEFECTS FOR A PERIOD OF 5 YEARS FROM THE DATE OF INSTALLATION. THE INSTALLATION SHALL BE WARRANTED AGAINST DEFECTS IN WORKMANSHIP FOR A PERIOD OF 2 YEARS FROM THE DATE OF INSTALLATION.
6. THE GEOSYNTHETICS SHALL BE INSTALLED ON THE AREA SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
7. PRIOR TO DEPLOYMENT OF THE GEOSYNTHETICS, THE CONTRACTOR, WITH THE OWNER AND ENGINEER, SHALL INSPECT, CERTIFY, AND ACCEPT ALL SURFACES ON WHICH THE GEOTEXTILE AND GEOMEMBRANE IS TO BE PLACED TO ENSURE CONFORMANCE WITH THE DESIGN AND SPECIFICATIONS. SURFACES NOT IN COMPLIANCE WITH THE SPECIFICATIONS SHALL BE RECTIFIED BY THE CONTRACTOR. ACCEPTANCE OF THE ANCHOR TRENCHES FOR PLACEMENT OF THE GEOMEMBRANE SHALL BE INCLUDED IN THE SURFACE PREPARATION ACCEPTANCE.
8. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A FINAL PANEL LAYOUT DRAWING, AND HARDCOPY FORMATS, AT LEAST ONE WEEK PRIOR TO PLACING THE GEOMEMBRANE. NO HORIZONTAL SEAMS ON A SLOPE WILL BE ACCEPTED. NO GEOSYNTHETICS SHALL BE INSTALLED WITHOUT PRIOR APPROVAL BY THE ENGINEER OF THE PROPOSED LAYOUT.
9. THE GEOSYNTHETICS WILL BE PLACED USING METHODS AND PROCEDURES THAT ENSURE A MINIMUM OF HANDLING. THE INSTALLER SHALL PROVIDE ADEQUATE TEMPORARY ANCHORING DEVICES TO PREVENT DAMAGE DUE TO WINDS.
10. THE GEOSYNTHETICS SHALL BE INSTALLED IN A RELAXED CONDITION AND SHALL BE FREE OF TENSION OR STRESS UPON COMPLETION OF THE INSTALLATION. ALL NECESSARY PRECAUTIONS, INCLUDING PROVISIONS FOR INSTALLING EXTRA MATERIAL, SHALL BE TAKEN TO AVOID TRAMPOILING OF ANY GEOMEMBRANE WHICH MAY REMAIN EXPOSED.
11. SEAMS SHALL BE MADE BY LAPPING THE UPSLOPE MATERIAL OVER THE DOWNSLOPE MATERIAL WITH SUFFICIENT OVERLAP. A MINIMUM OF 1 m IS REQUIRED FROM THE TOE OF THE SLOPE TO ANY HORIZONTAL SEAM ON FLAT AREAS.
12. EXTREME CARE SHALL BE TAKEN BY THE CONTRACTOR IN THE PREPARATION OF THE AREAS TO BE WELDED. THE AREAS TO BE WELDED SHALL BE CLEANED AND PREPARED ACCORDING TO THE APPROVED PROCEDURES, AND ALL SHEETING SHALL BE WELDED TOGETHER BY THERMAL METHODS.
13. THE WELDING EQUIPMENT USED SHALL BE CAPABLE OF CONTINUOUSLY MONITORING AND CONTROLLING THE TEMPERATURES IN THE ZONE OF CONTACT WHERE THE MACHINE IS ACTUALLY FUSING THE GEOMEMBRANE MATERIAL, TO ENSURE CHANGES IN WEATHER CONDITIONS WILL NOT AFFECT THE INTEGRITY OF THE WELD.
14. NO "FISH MOUTHS" SHALL BE ALLOWED WITHIN THE SEAM AREA, WHERE "FISH MOUTHS" OCCUR, THE MATERIAL SHALL BE CUT, OVERLAPPED, AND EXTRUSION WELDED. ALL WELDS ON COMPLETION OF THE WORK SHALL BE TIGHTLY BONDED. ANY GEOMEMBRANE AREA SHOWING DISTRESS DUE TO EXCESSIVE SCUFFING OR PUNCTURE DURING INSTALLATION BE REPLACED OR REPAIRED AT THE CONTRACTOR'S EXPENSE.
15. THE CONTRACTOR SHALL TAKE INTO ACCOUNT THAT RAPID WEATHER CHANGES ARE VERY POSSIBLE, RESULTING IN DELAYS IN CONSTRUCTION OF FIELD SEAMS. JOINTING OF PANELS AND REPAIRS WILL ONLY BE PERMITTED UNDER WEATHER CONDITIONS ALLOWING SUCH WORK WITHIN THE WARRANTY LIMITS IMPOSED BY THE GEOMEMBRANE MANUFACTURER.

## FIELD SEAM INSPECTION AND TESTING

1. A MAXIMUM EFFORT SHALL BE MADE TO INSTALL A PERFECT LINER SYSTEM. THIS MEANS THAT ALL SEAMS COMPLETED IN THE FIELD, PATCHES AND EXTRUSIONS SHALL BE INSPECTED, TESTED AND RECORDED.
2. A QUALITY CONTROL TECHNICIAN SHALL INSPECT EACH SEAM, MARKING HIS/HER INITIALS. AND THE DATE INSPECTED AT THE END OF EACH PANEL. ANY AREA SHOWING A DEFECT SHALL BE MARKED AND REPAIRED IN ACCORDANCE WITH APPLICABLE GEOMEMBRANE REPAIR PROCEDURES.
3. ALL FIELD SAMPLING AND TESTING SHALL BE DONE BY THE CONTRACTOR AS APPROVED BY THE ENGINEER.
4. THE FIELD INSTALLATION TESTING PROGRAM SHALL CONSIST OF PERIODIC VISUAL OBSERVATIONS, CONTINUITY, AND STRENGTH TESTS. THESE INSPECTIONS AND TESTS ARE TO BE MADE ROUTINELY AND ARE REQUIRED REGARDLESS OF OTHER TYPES OF TESTING THAT MAY BE COMPLETED. THE INSTALLER SHALL PERFORM QUALITY CONTROL TESTING ACCORDING TO THE TYPES AND FREQUENCY INDICATED BELOW.
  - VISUAL OBSERVATIONS ARE TO BE MADE ROUTINELY AND SHALL INCLUDE THE FOLLOWING:
    - VISUALLY CHECK FIELD SEAMS FOR SQUEEZE OUT, FOOT PRINT, MELT AND OVERLAP
    - CHECK MACHINES FOR CLEANNESS, TEMPERATURE AND RELATED ITEMS.
    - ANY AREA OF THE SEAM OR PANEL SHOWING A DEFECT SHALL BE MARKED AND REPAIRED IN ACCORDANCE WITH THE APPLICABLE REPAIR PROCEDURES.
  - CONTINUITY TESTING IS REQUIRED FOR ALL FIELD SEAMS AND REPAIRED AREAS. INTER-SEAM PRESSURE OR "AIR TESTING" AND TESTING USING VACUUM BOX ARE CONSIDERED ACCEPTABLE METHODS FOR CONTINUITY TESTING. THE TEST PROCEDURE FOR INTER-SEAM PRESSURE OR AIR TESTING IS AS FOLLOWS:
    - SEAL BOTH ENDS OF THE SEAM TO BE TESTED BY APPLYING HEAT TO THE END OF THE SEAM UNTIL FLOW TEMPERATURE IS ACHIEVED. CLAMP OFF THE ENDS AND LET COOL.
    - INSERT A PRESSURE GAUGE/NEEDLE ASSEMBLY INTO THE END OF THE SEAM AND

SEAL

- THE SEAM SHALL BE PRESSURIZED TO AN INITIAL START PRESSURE, MINIMUM 28 psf AND MAXIMUM 30 psf.
  - THE INITIAL START PRESSURE IS READ AFTER A 2-MINUTE RELAXING PERIOD, WHICH ALLOWS THE AIR TO REACH AMBIENT GEOMEMBRANE TEMPERATURE; THE ENDING PRESSURE IS READ AFTER 5 MINUTES.
  - THE ALLOWABLE PRESSURE DROP IS 3 psf LESS THAN THE INITIAL START PRESSURE.
  - THE RESULTS OF THE AIR TEST SHALL BE MARKED AT THE TEST LOCATION AND SHALL BE RECORDED BY THE CONTRACTOR. IF THE TEST FAILS, THE LOCATION OF THE LEAK SHALL BE FOUND AND REPAIRED AND RETESTED OR THE ENTIRE SEAM SHALL BE REPAIRED AND RETESTED.
- THE TEST PROCEDURE FOR VACUUM BOX TESTING IS AS FOLLOWS:
- MIX A SOLUTION OF LIQUID DETERGENT AND WATER AND APPLY AN AMPLE AMOUNT TO THE AREA TO BE TESTED. IF A SEAM CONTAINS EXCESS OVERLAP OR LOOSE EDGES IT IS TO BE TRIMMED BEFORE TESTING.
  - PLACE A TRANSLUCENT VACUUM BOX OVER THE AREA AND APPLY A SLIGHT AMOUNT OF DOWNWARD PRESSURE TO THE BOX TO THE SEAL TO THE GEOMEMBRANE.
  - APPLY A VACUUM (3 psf to 5 psf) TO THE AREA. ANY LEAKS WILL BECOME VISIBLE BY LARGE BUBBLES AND SHALL BE REPAIRED.
- STRENGTH TESTS ON SEAMS SHALL BE CARRIED OUT ON SAMPLE COUPONS CUT FROM THE INSTALLED GEOMEMBRANE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS AND THE INTERNATIONAL ASSOCIATION OF GEOSYNTHETICS INSTALLERS "GUIDELINES FOR INSTALLATION OF FACTORY FABRICATED HEAVYWEIGHT > 0.64 mm (25 mil) THICKNESS FABRIC-SUPPORTED GEOMEMBRANES" (MARCH, 2014), APPLICABLE GEOSYNTHETICS RESEARCH INSTITUTE STANDARDS AND THE MANUFACTURERS QUALITY CONTROL MANUAL.

## AS-BUILT DOCUMENTATION


1. THE CONTRACTOR SHALL PROVIDE THE OWNER AND ENGINEER WITH COPIES OF ALL THE FABRICATION AND INSTALLATION TEST LOGS AND CONFORMANCE DATA INCLUDING:
  - GEOSYNTHETIC CERTIFICATION
  - DAILY PANEL PLACEMENT LOGS
  - AS-BUILT PANEL LAYOUT DRAWINGS
  - SEAM CONTROL LOGS
  - CONSTRUCTION REPAIR REPORT
2. IN ADDITION, THE CONTRACTOR SHALL SUBMIT AS-BUILT DRAWINGS SHOWING THE INSTALLED GEOMEMBRANE PANEL LAYOUT WITH EACH PANEL OR PORTION OF PANEL IDENTIFIED BY THE MANUFACTURER'S IDENTIFICATION NUMBER. THE EXTENT OF THE INSTALLED GEOSYNTHETICS AND LOCATIONS OF ALL TESTS SHALL BE IDENTIFIED ALONG WITH LOCATIONS OF ANY REPAIRS. THE AS-BUILT DRAWINGS SHALL BE MADE AVAILABLE ELECTRONICALLY TO THE OWNER AND ENGINEER IN A TIMELY FASHION AFTER THE WORK IS COMPLETE.

MATERIAL PLACEMENT AND COMPACTION REQUIREMENTS	
ZONE AND MATERIAL TYPE	PLACING AND COMPACTION REQUIREMENTS
500 mm MINUS ROCKFILL	<p>MATERIAL SHALL BE WELL GRADED AND CONSIST OF HARD, DURABLE FRESH ROCKFILL FREE OF DELETERIOUS MATERIALS.</p> <p><u>ACCESS ROAD:</u> MATERIAL TO BE PLACED BY TRUCK AND BULLDOZER STARTING AT THE EXISTING HAUL ROAD. COMPACTION TO BE ACHIEVED BY ROUTING HAULAGE TRAFFIC OVER THE ENTIRE SURFACE OF THE ROAD.</p> <p><u>SAFETY BERMS:</u> MATERIAL TO BE PLACED AND NOMINALLY COMPACTED TO THE DIMENSIONS SHOWN ON THE DRAWINGS.</p> <p><u>SEDIMENTATION POND:</u> MATERIAL TO BE PLACED AND SPREAD IN MAXIMUM 1000 mm LAYERS AFTER COMPACTION. COMPACTION TO CONSIST OF MINIMUM 6 PASSES BY A D9 DOZER.</p>
RIPRAP	<p>RIPRAP SHALL BE WELL GRADED AND CLEAN, DURABLE AND ANGULAR IN SHAPE. FINE RIPRAP <math>D_{90} = 150</math> mm; COARSE RIPRAP <math>D_{90} = 300</math> mm. MATERIAL TO BE PLACED AND SPREAD IN MAXIMUM 300 mm LAYER (FINE RIPRAP) OR 600 mm LAYER (COARSE RIPRAP). PLACED TO FORM A TIGHTLY INTERLOCKING LAYER.</p>
INTERMEDIATE BEDDING	<p>MATERIAL SHALL CONSIST OF 32 mm MINUS CLEAN SAND AND GRAVEL FREE OF CLAY, LOAM, ORGANICS, AND OTHER DELETERIOUS MATERIAL.</p> <p>MATERIAL SHALL BE PLACED, SPREAD AND MOISTURE CONDITIONED IN MAXIMUM 200 mm LAYER AFTER COMPACTION FROM A VIBRATORY COMPACTOR OR PLATE COMPACTORS.</p>
BERM FILL	<p>MATERIAL SHALL CONSIST OF CLEAN, WELL GRADED, 150 mm MINUS PROCESSED ROCKFILL AND SHALL BE FREE OF CLAY, LOAM, ORGANICS, AND OTHER DELETERIOUS MATERIALS.</p> <p><u>SEDIMENTATION POND:</u> PLACED AND SPREAD IN MAXIMUM 300 mm LAYERS AFTER COMPACTION FROM A VIBRATORY COMPACTOR.</p> <p><u>COLLECTION/DIVERSION BERMS:</u> PLACED AND SPREAD IN MAXIMUM 200 mm LAYERS AFTER COMPACTION. NOMINAL COMPACTION.</p>

**NOTES:**

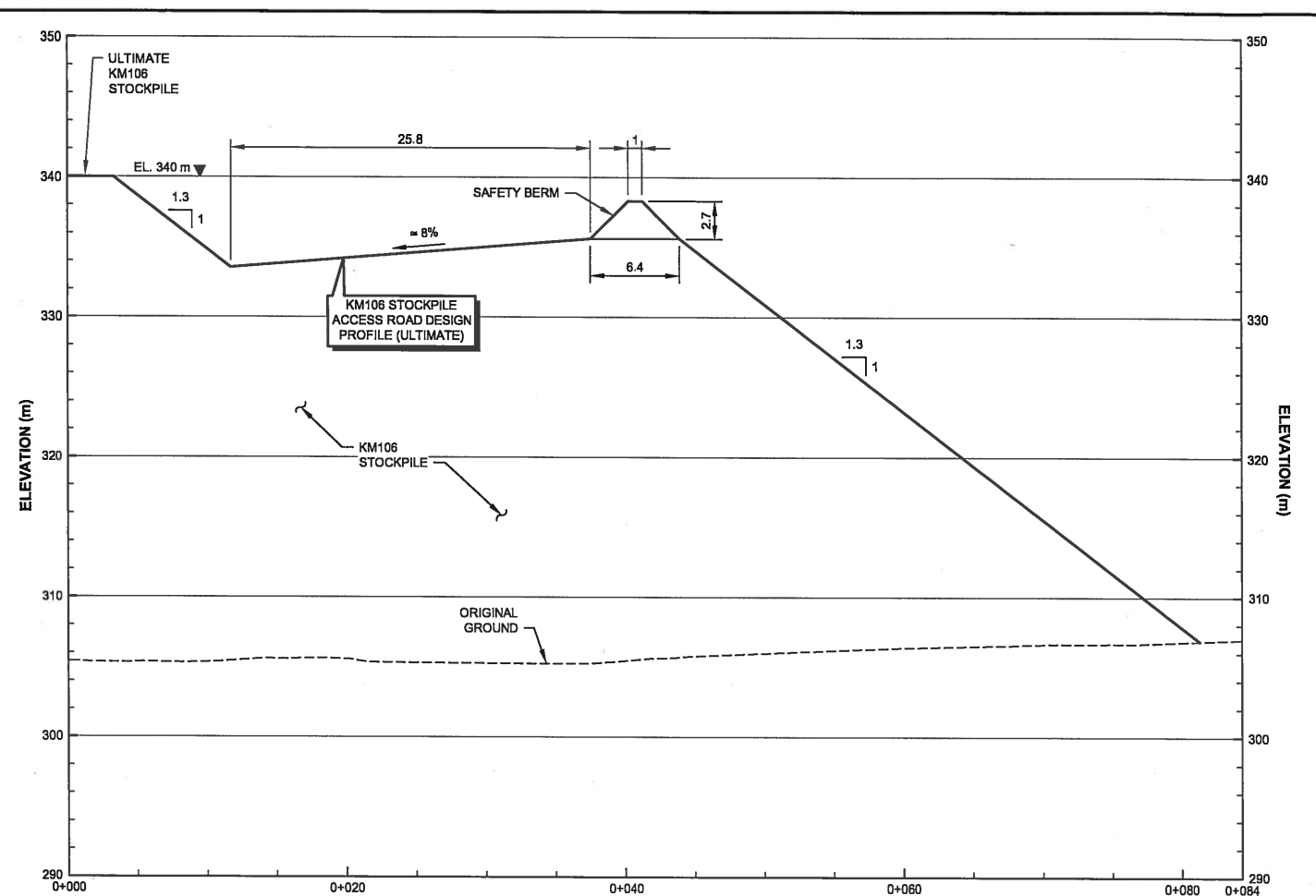
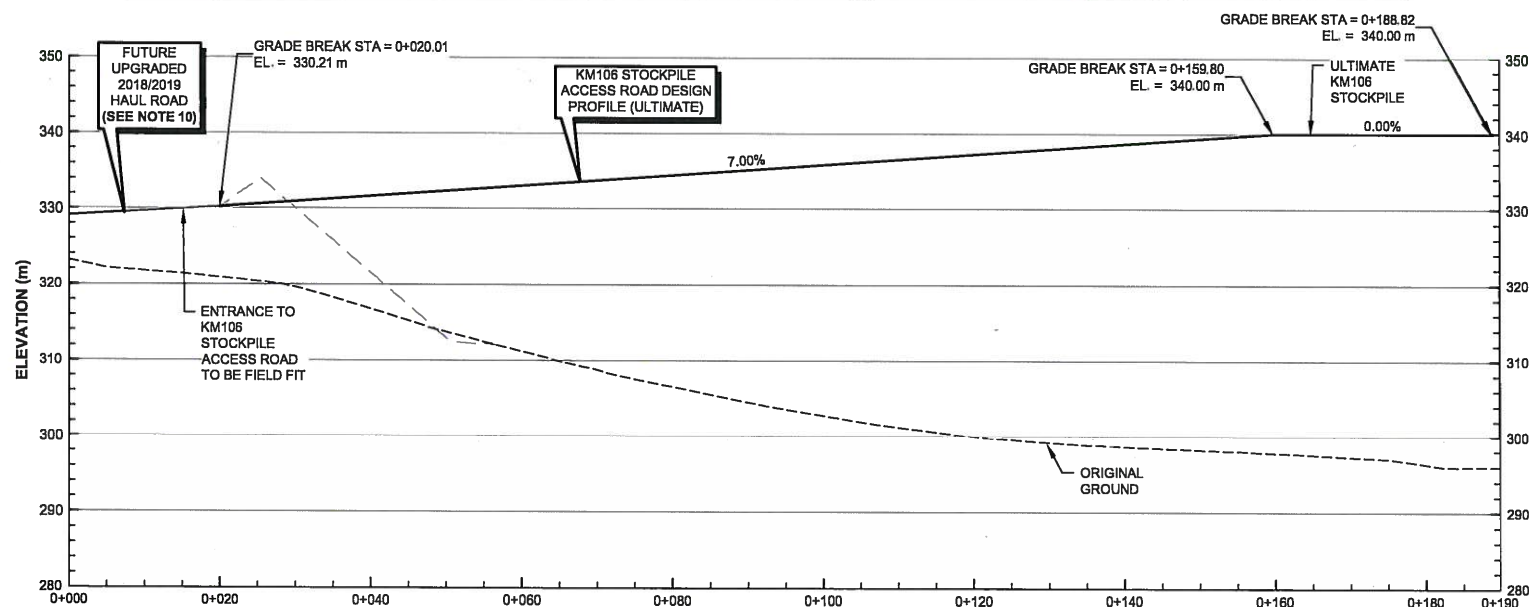
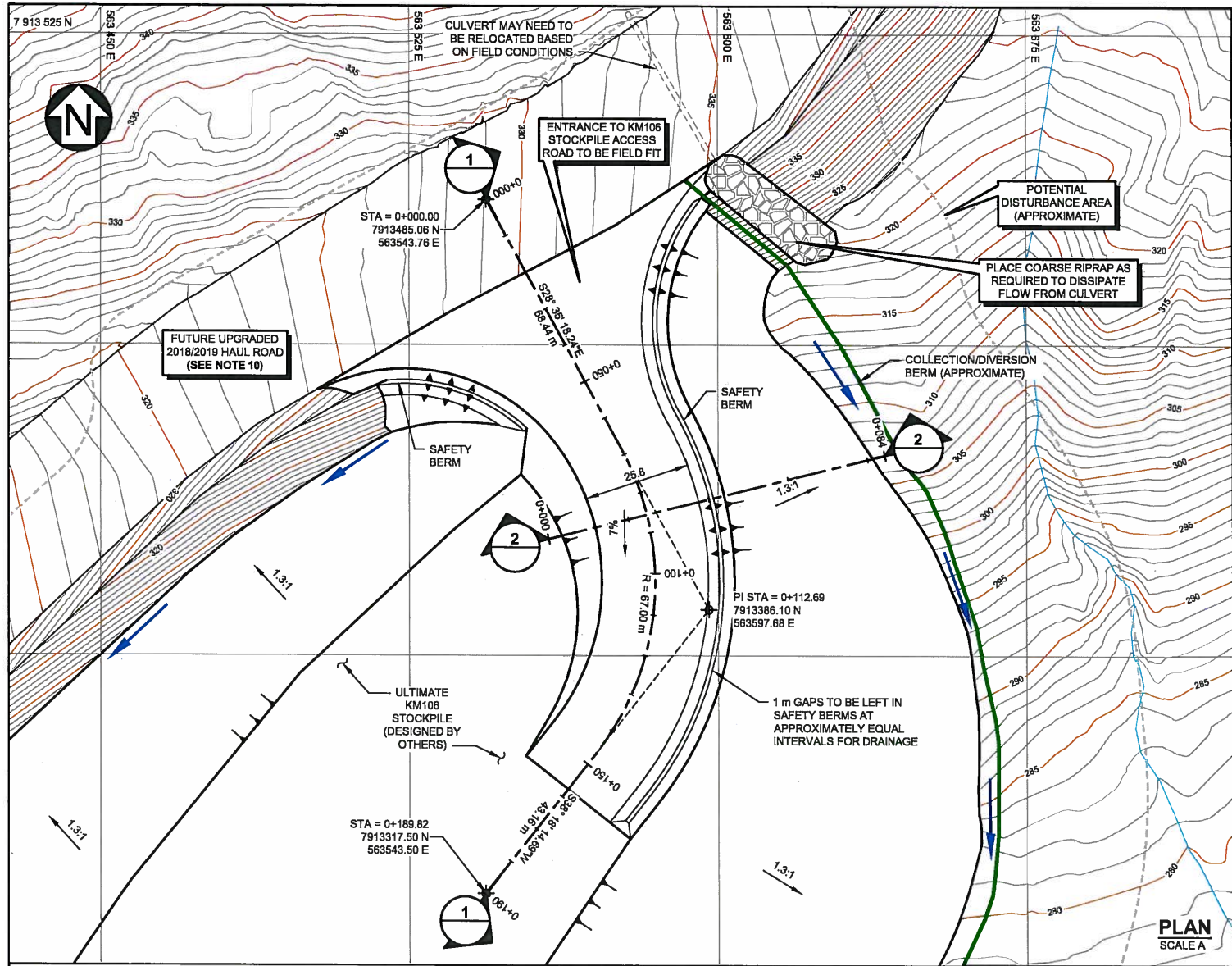
1. THE DRAWING SHALL BE READ IN CONJUNCTION WITH THE ACCOMPANYING CONTRACT DOCUMENTS AND APPLICABLE TECHNICAL SPECIFICATIONS.
2. 500 mm MINUS ROCKFILL TO BE USED FOR THE ACCESS ROAD, SAFETY BERMS AND THE SEDIMENTATION POND BERMS.
3. FINE RIPRAP TO BE USED FOR THE SEDIMENTATION POND SPILLWAY INLET, COLLECTION/DIVERSION BERMS AND APRONS AS NOTED ON THE DRAWINGS. COARSE RIPRAP TO BE USED FOR EXISTING CULVERT OUTLET AND SEDIMENTATION POND SPILLWAY CHANNEL AND APRON.
4. INTERMEDIATE BEDDING TO BE USED FOR ANCHOR TRENCH BACKFILL AND ANCHOR BERMS; BEDDING MATERIAL FOR GEOMEMBRANE, AND BEDDING AND BACKFILL FOR CULVERTS AND PIPES.
5. BERM FILL TO BE USED FOR THE SEDIMENTATION POND BERMS AND COLLECTION/DIVERSION BERMS.
6. FILL MATERIALS USED FOR CONSTRUCTION SHALL NOT BE POTENTIALLY ACID GENERATING (PAG) OR METAL LEACHING (ML). THROUGHOUT CONSTRUCTION, ADEQUATE INSPECTION AND PERIODIC TESTING SHOULD BE CARRIED OUT TO DEMONSTRATE THE SUITABILITY OF THE FILL MATERIALS.
7. UNLESS OTHERWISE NOTED ALL MATERIALS SHALL CONSIST OF HARD, DURABLE FILL MATERIAL, FREE OF CLAY, LOAM, TREE STUMPS, ROOTS AND OTHER DELETERIOUS MATERIALS OR ORGANIC MATTER, AND CONTAIN NO MASSIVE ICE.

**ISSUED FOR CONSTRUCTION**

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**2 SECTION**  
**KM106 STOCKPILE ACCESS ROAD**  
SCALE C

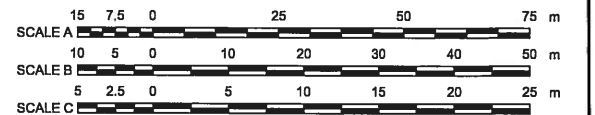
**LEGEND:**

- COARSE RIPRAP
- CULVERT
- COLLECTION/DIVERSION BERM
- ORIGINAL GROUND
- POTENTIAL DISTURBANCE AREA (APPROXIMATE)
- FLOW DIRECTION

**NOTES:**

- COORDINATE GRID IS UTM (NAD83) ZONE 17.
- TOPOGRAPHY BASED ON INFORMATION PROVIDED BY EAGLE MAPPING (2008).
- CONTOURS ARE IN METRES. CONTOUR INTERVAL IS 1 m.
- DIMENSIONS AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
- ALL INFRASTRUCTURE SHOWN IS PROPOSED UNLESS NOTED OTHERWISE.
- THE DRAWING SHALL BE READ IN CONJUNCTION WITH THE CONTRACT DOCUMENTS AND APPLICABLE TECHNICAL SPECIFICATIONS.
- FOUNDATION PREPARATION: PROVIDED THE AMOUNT OF ORGANICS AND UNSUITABLE MATERIAL ON THE GROUND IS NEGLIGIBLE, DISTURBANCE TO THE ORIGINAL GROUND (EXCAVATION, SCARIFYING, ETC.) SHOULD BE MINIMIZED SO AS NOT TO IMPACT CURRENT PERMAFROST CONDITIONS. ALTERNATIVE METHODS OF FOUNDATION PREPARATION MAY BE NECESSARY FOR SOME AREAS, AT THE DISCRETION OF THE OWNER'S REPRESENTATIVE. ALL FOUNDATIONS MUST BE MAINTAINED CLEAR OF SNOW, PONDED WATER AND ICE.
- FINAL SLOPES SHALL BE TRIMMED TO THE LINES AND TOLERANCES INDICATED ON THE DRAWINGS AND IN THE TECHNICAL SPECIFICATIONS.
- LOCATIONS AND DETAILS OF CONSTRUCTION ITEMS MAY BE MODIFIED TO SUIT ACTUAL SITE CONDITIONS.
- FUTURE UPGRADED 2018/2019 HAUL ROAD PROVIDED BY BAFFINLAND AUGUST 2018.
- ACCESS ROAD FILL SLOPES TO BE AT ANGLE OF REPOSE FOR ROAD EMBANKMENT FILL. 1.3H:1V HAS BEEN ASSUMED BASED ON MATERIAL PROPERTIES.

**ISSUED FOR CONSTRUCTION**

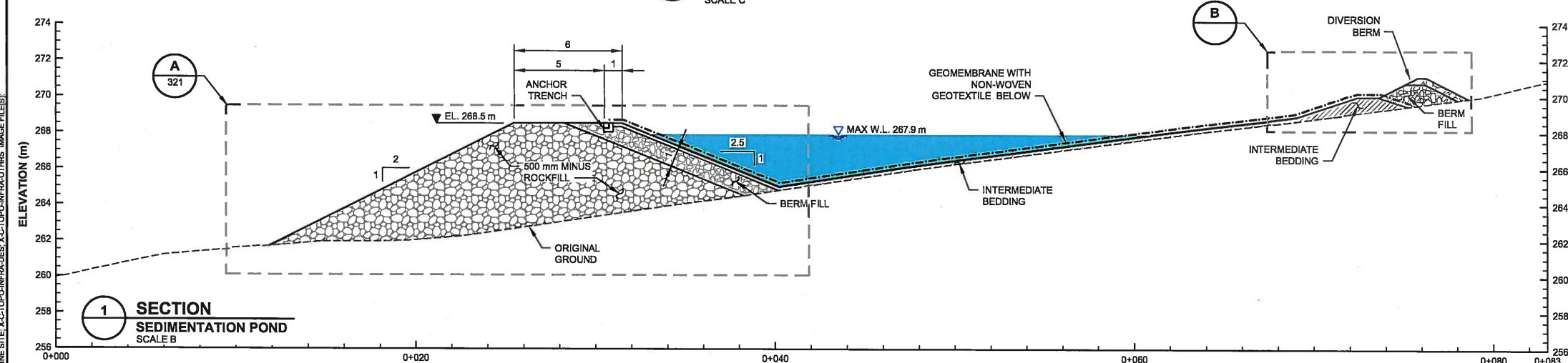
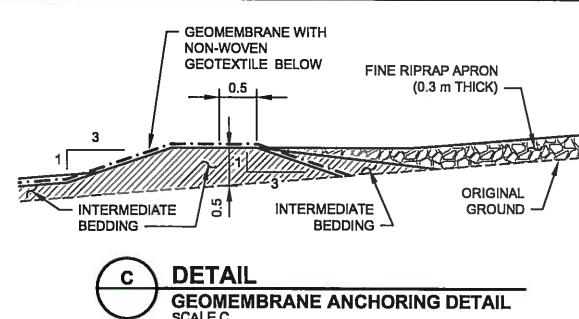
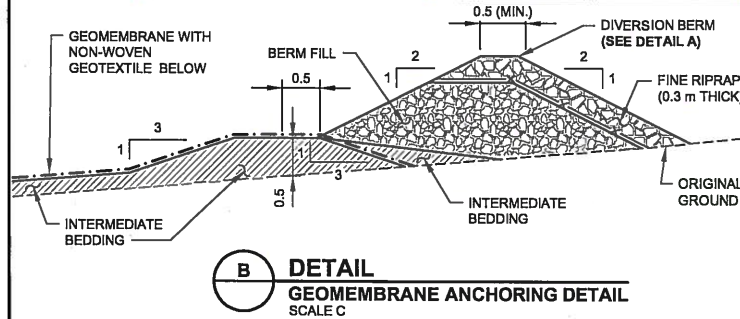
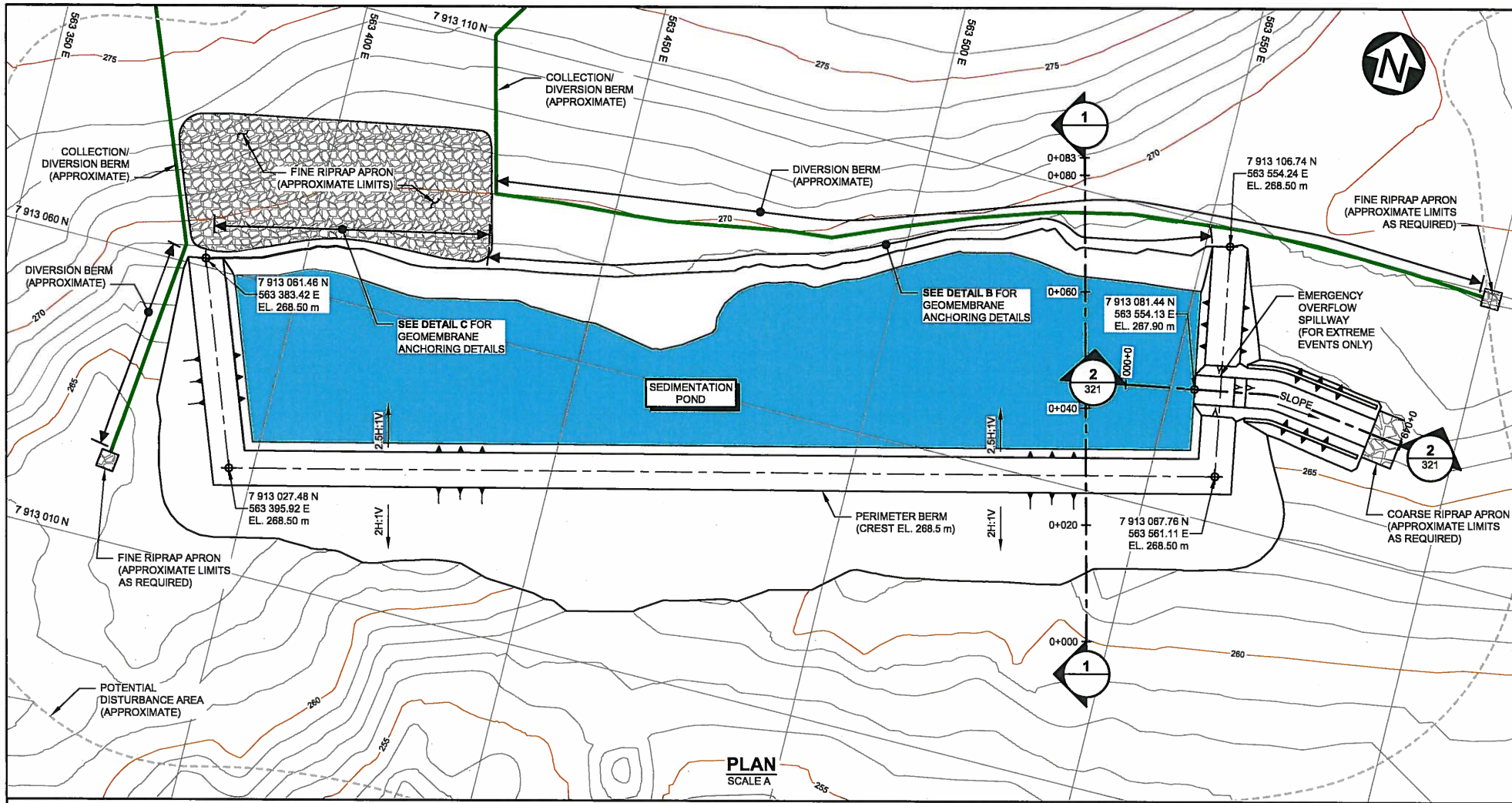


<b>DISCLAIMER</b> THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE LIGHT OF THE INFORMATION AVAILABLE TO IT AT THE TIME OF PREPARATION. ANY USE WHICH A THIRD PARTY MAKES OF THIS DRAWING, OR ANY RELIANCE ON OR DECISIONS TO BE MADE BASED ON IT, ARE THE RESPONSIBILITY OF SUCH THIRD PARTIES. KNIGHT PIESOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT VERSION OF THE DRAWING.		<b>KNIGHT PIESOLD CONSULTING</b>	
<b>BAFFINLAND IRON MINES CORPORATION</b>		<b>MARY RIVER PROJECT</b>	
<b>KM106 STOCKPILE ACCESS ROAD PLAN AND SECTIONS</b>		<b>REGISTERED PROFESSIONAL ENGINEER</b> <b>K.E. HAWTON</b> <b>LICENSEE</b> <b>JUNE 2014</b> <b>NWTNU</b>	
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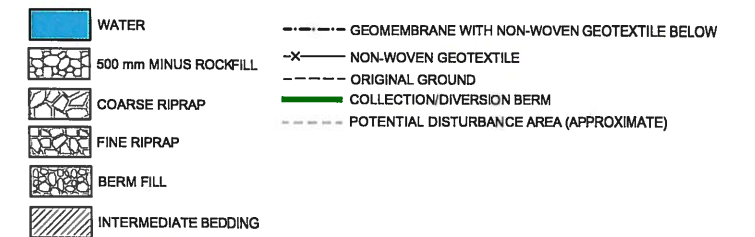


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**A** **DETAIL**  
**TYPICAL COLLECTION/DIVERSION BERM**  
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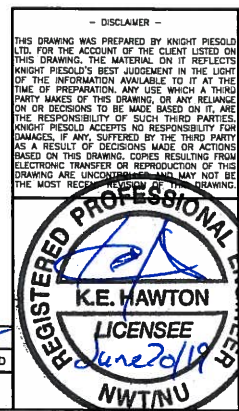
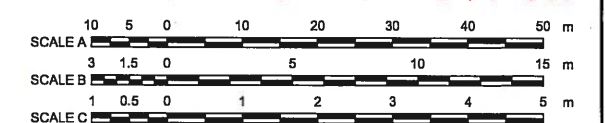
**LEGEND:**



**NOTES:**

- COORDINATE GRID IS UTM (NAD83) ZONE 17.
- TOPOGRAPHY BASED ON INFORMATION PROVIDED BY EAGLE MAPPING (2008).
- CONTOURS ARE IN METRES. CONTOUR INTERVAL IS 1 m.
- ALL INFRASTRUCTURE SHOWN IS PROPOSED UNLESS OTHERWISE NOTED.
- DIMENSIONS AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
- LOCATIONS AND DETAILS OF CONSTRUCTION ITEMS MAY BE MODIFIED TO SUIT ACTUAL SITE CONDITIONS.
- FOR MATERIAL AND GEOSYNTHETIC SPECIFICATIONS SEE DRG 301.
- GEOMEMBRANE TO BE 40 mil ATARFIL LINEAR LOW DENSITY TEXTURED GEOMEMBRANE OR APPROVED EQUIVALENT AND TO BE INSTALLED AS PER THE MANUFACTURER'S SPECIFICATIONS.
- NON-WOVEN GEOTEXTILE TO BE TEXEL 100P OR APPROVED EQUIVALENT WHEN PLACED ADJACENT TO GEOMEMBRANE. NON-WOVEN GEOTEXTILE TO BE 12 oz/yd<sup>2</sup> FOR ALL OTHER LOCATIONS. NON-WOVEN GEOTEXTILE TO BE INSTALLED AS PER THE MANUFACTURER'S SPECIFICATIONS.
- ANCHOR TRENCH TO BE EXCAVATED TO THE APPROXIMATE LIMITS SHOWN (0.5 m x 0.5 m IN SECTION). FOLLOWING GEOTEXTILE AND GEOMEMBRANE INSTALLATION, TRENCH TO BE BACKFILLED WITH COMPACTED INTERMEDIATE BEDDING MATERIAL.
- DOWNSLOPE SLOPE OF BERM TO BE TRIMMED AND NOMINALLY COMPACTED. UPSLOPE SLOPE OF BERM TO BE PREPARED FOR GEOSYNTHETICS INSTALLATION AS PER THE TECHNICAL SPECIFICATIONS.
- EXCAVATION SLOPES ARE THE CONTRACTOR'S RESPONSIBILITY.
- COLLECTION/DIVERSION BERMS TO BE GRADED AT 1% (MINIMUM) IN DIRECTION OF FLOW.
- FOUNDATION PREPARATION: PROVIDED THE AMOUNT OF ORGANICS AND UNSUITABLE MATERIAL ON THE GROUND IS NEGLIGIBLE, DISTURBANCE TO THE ORIGINAL GROUND (EXCAVATION, SCARPING, ETC.) SHOULD BE MINIMIZED SO AS NOT TO IMPACT CURRENT PERMAFROST CONDITIONS. ALTERNATIVE METHODS OF FOUNDATION PREPARATION MAY BE NECESSARY FOR SOME AREAS, AT THE DISCRETION OF THE OWNER'S REPRESENTATIVE. ALL FOUNDATIONS MUST BE MAINTAINED CLEAR OF SNOW, PONDED WATER AND ICE.
- THE DRAWING SHALL BE READ IN CONJUNCTION WITH THE CONTRACT DOCUMENTS AND APPLICABLE TECHNICAL SPECIFICATIONS.
- FINAL SLOPES SHALL BE TRIMMED TO THE LINES AND TOLERANCES INDICATED ON THE DRAWINGS AND IN THE TECHNICAL SPECIFICATIONS.
- RIPRAP TO BE CLEAN, DURABLE AND ANGULAR. RIPRAP TO BE TIGHTLY PLACED AND SPREAD IN MAXIMUM LAYERS AS NOTED ON DRG 301.

**ISSUED FOR CONSTRUCTION**



**Knight Piésold**  
CONSULTING

**BAFFINLAND IRON MINES CORPORATION**

**MARY RIVER PROJECT**

**KM106 STOCKPILE  
SEDIMENTATION POND AND RUNOFF  
MANAGEMENT MEASURES  
PLAN, SECTION AND DETAILS**

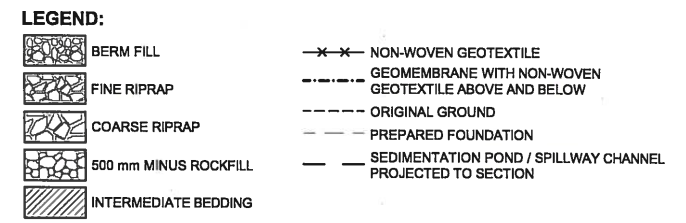
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301	KM106 STOCKPILE - SPECIFICATIONS						
REFERENCE DRAWINGS				REVISIONS			
				REVISIONS			
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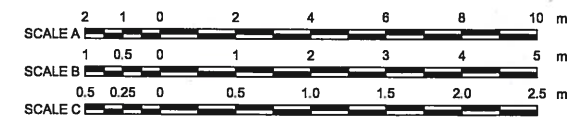


## NOTES:

1. DIMENSIONS AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
2. LOCATION AND DETAILS OF CONSTRUCTION ITEMS MAY BE MODIFIED TO SUIT SITE CONDITIONS.
3. FOR MATERIAL AND GEOSYNTHETIC SPECIFICATIONS SEE DRG 301.
4. GEOMEMBRANE TO BE 40 ml ATARFIL LINEAR LOW DENSITY TEXTURED GEOMEMBRANE OR APPROVED EQUIVALENT AND TO BE INSTALLED AS PER THE MANUFACTURER'S SPECIFICATIONS.
5. ANCHOR TRENCH TO BE EXCAVATED TO THE APPROXIMATE LIMITS SHOWN (0.5 m x 0.5 m IN SECTION). FOLLOWING GEOTEXTILE AND GEOMEMBRANE INSTALLATION, TRENCH TO BE BACKFILLED WITH COMPACTED INTERMEDIATE BEDDING MATERIAL.
6. DOWNSTREAM SLOPE OF BERM TO BE TRIMMED AND NOMINALLY COMPACTED. UPSTREAM SLOPE OF BERM TO BE PREPARED FOR GEOSYNTHETICS INSTALLATION AS PER THE TECHNICAL SPECIFICATIONS.
7. EXCAVATION SLOPES ARE THE CONTRACTOR'S RESPONSIBILITY.
8. FOUNDATION PREPARATION: PROVIDED THE AMOUNT OF ORGANICS AND UNSUITABLE MATERIAL ON THE GROUND IS NEGLECTIBLE, DISTURBANCE TO THE ORIGINAL GROUND (EXCAVATION, SCARIFYING, ETC.) SHOULD BE MINIMIZED SO AS NOT TO IMPACT CURRENT PERMAFROST CONDITIONS. ALTERNATIVE METHODS OF FOUNDATION PREPARATION MAY BE NECESSARY FOR SOME AREAS, AT THE DISCRETION OF THE OWNER'S REPRESENTATIVE. ALL FOUNDATIONS MUST BE MAINTAINED CLEAR OF SNOW, PONDED WATER AND ICE.
9. THE DRAWING SHALL BE READ IN CONJUNCTION WITH THE CONTRACT DOCUMENTS AND APPLICABLE TECHNICAL SPECIFICATIONS.
10. NON-WOVEN GEOTEXTILE TO BE TEXEL 100P OR APPROVED EQUIVALENT WHEN PLACED ADJACENT TO GEOMEMBRANE. NON-WOVEN GEOTEXTILE TO BE 12 oz/yd<sup>2</sup> FOR OTHER LOCATIONS. NON-WOVEN GEOTEXTILE TO BE INSTALLED AS PER MANUFACTURER'S SPECIFICATIONS.
11. FINAL SLOPES SHALL BE TRIMMED TO THE LINES AND TOLERANCES INDICATED ON THE DRAWINGS AND IN THE TECHNICAL SPECIFICATIONS.
12. RIPRAP TO BE CLEAN, DURABLE AND ANGULAR. RIPRAP TO BE TIGHTLY PLACED AND SPREAD IN MAXIMUM LAYERS, AS NOTED ON DRG 301.



**ISSUED FOR CONSTRUCTION**



- DISCLAIMER -

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**BAFFINLAND IRON MINES CORPORATION**

## MARY RIVER PROJECT

## KM106 STOCKPILE SEDIMENTATION POND AND RUNOFF MANAGEMENT MEASURES SECTIONS AND DETAIL

320	KM106 STOCKPILE - SEDIMENTATION POND AND RUNOFF MANAGEMENT MEASURES - PLAN, SECTION AND DETAILS										0 20JUN'19 ISSUED FOR CONSTRUCTION										DMMD	MMD	AIA		K.E. HAWTON LICENSEE June 20/19		MANAGEMENT MEASURES SECTIONS AND DETAIL									
301	KM106 STOCKPILE - SPECIFICATIONS																																			
DRG. NO.	DESCRIPTION										REV	DATE	DESCRIPTION				DESIGNED	DRAWN	REVIEWED	APPROVED	REV	DATE	DESCRIPTION				DESIGNED	DRAWN	REVIEWED	APPROVED	ITA NO.	DRAWING NO.		REVISION		
REFERENCE DRAWINGS											REVISIONS										REVISIONS										NB102-181/57		321		0	



## **APPENDIX A**

### **Geomembrane and Non-Woven Geotextile Information**

(Pages A-1 to A-29)

**Raw Material**
**Linear Low Density Polyethylene**

**ATARFIL LLD** is a geomembrane manufactured from maximum quality linear low density polyethylene LLDPE resins, duly contrasted, that comply with the most rigorous requirements established for their use.

**ATARFIL LLD** contains 97,5% of pure polymer, and approximately 2,5% of Carbon Black, antioxidants and thermal stabilizers. The product does not contain plasticizers or fillers that can migrate over time.

The geomembrane **ATARFIL LLD** is manufactured under permanent quality controls.

<b>Surface</b>	<b>Smooth</b>	<b>Colour</b>	<b>Black</b>
		<b>RAL Code</b>	-

	Tested Property	Unit	Test Method	Value		Tested Property	Unit	Test Method	Value
<b>Raw Material Identification</b>	Density of Raw Material	g/cm <sup>3</sup>	ASTM D 792	0.915-0.926	<b>Functional Properties</b>	Low Temperature Brittleness (t <sup>-</sup> : -40°C)	-	ASTM D 746	No cracks
	Density of Geomembrane	g/cm <sup>3</sup>	ASTM D 792	0.925-0.939		Water Permeability	m <sup>3</sup> /m <sup>2</sup> ·day	EN 14150	< 1·10 <sup>-6</sup>
	Melt Flow Index	g/10 min	ASTM D 1238 (190°C/2,16 Kg)	< 1,0		Coefficient of Linear Thermal Expansion	1/K	ASTM D 696	2,15·10 <sup>-4</sup>
	Carbon Black Content	%	ASTM D 4218	2,0 - 2,5		Water Absorption	%	ASTM D 570 (24h)	≤ 0,2
	Carbon Black Dispersion	-	ASTM D 5596	Note (3)				ASTM D 570 (6 days)	≤ 1
<b>Durability</b>	Oxidative Induction Time (OIT) Standard OIT	min	ASTM D 3895 (200°C)	≥ 100					
	High Pressure OIT		ASTM D 5885	≥ 400					
	Oven aging at 85°C HP O.I.T. % retained after 90 days	%	ASTM D 5721 ASTM D 5885	≥ 60					
	UV Resistance. HP OIT, % retained after 1600 hrs	%	ASTM D 5885	≥ 35					

Tested Property		Unit	Test Method	Value					
Strength Characteristics Quality of Final Product	Thickness	mils	ASTM D 5199	30	40	60	80	100	120
	Tolerance	%		-10					
	Mechanical Properties								
	Tensile strength at Break <sup>(1)</sup>	lb/in	ASTM D 6693 (Type IV), lo 2 in	125 (108)	171 (148)	256 (222)	342 (296)	428 (371)	513 (445)
	Elongation at Break	%		≥ 800					
	Tear Resistance	lb	ASTM D 1004	≥ 15	≥ 21	≥ 32	≥ 43	≥ 53	≥ 64
	Puncture Resistance	lb	ASTM D 4833	≥ 42	≥ 56	≥ 84	≥ 112	≥ 140	≥ 168
	2% Modulus	lb/in	ASTM D 5323	≤ 1800	≤ 2400	≤ 3600	≤ 4800	≤ 6000	≤ 7200
	Axi-Symmetric Break Resistance Strain	%	ASTM D 5617	≥ 30					
	Dimensional Stability	%	ASTM D 1204 (100°C, 1h)	± 1.5					

	Parameter	Units	30	40	60	80	100	120
<b>PRESENTATION (Standard Sizes)</b>	Roll width <sup>(4)</sup>	ft	19.7					
	Roll Length <sup>(4)</sup>	ft	1,332	999	666	498	399	333
	Surface	ft <sup>2</sup>	26,240.4	19,680.3	13,120.2	9,810.6	7,860.3	6,560.1

<sup>(1)</sup> Values indicated are medium. In brackets minimum values.

<sup>(2)</sup> Certificates belonging to the Environmental and Quality Integrated System of Atarfil.

<sup>(3)</sup> Carbon black dispersion (only near spherical agglomerates) for 10 different views: 9 in Categories 1 or 2 and 1 in Category 3.

<sup>(4)</sup> Roll lengths and widths have a tolerance of ±1%.

# TEXEL 100P

## TECHNICAL DATASHEET

<b>Product</b>	Needle-punched nonwoven, short staple fibers
<b>Composition</b>	Polyester
<b>Main function</b>	Protection

Property	Test Method	Metric	Imperial
<b>Physical</b>			
Weight (typical)	ASTM D5261	339 g/m <sup>2</sup>	10 oz/yd <sup>2</sup>
Thickness	ASTM D5199	2.4 mm	94.5 mils
<b>Mechanical</b>			
Trapezoid Tear	ASTM D4533	170 N	38 lbs
Grab Tensile	ASTM D4632	505 N	114 lbs
Grab Elongation	ASTM D4632	50 %	50 %
CBR Puncture	ASTM D6241	1 355 N	305 lbs
<b>Dimensions</b>			
Width	-	4.57 m	15 ft
Length	-	91.44 m	300 ft

All values are MARV.

Our quality management system is certified by ISO-9001 standard.

Our internal laboratory is certified by the Geosynthetic Accreditation Institute - Laboratory Accreditation Program (GAI-LAP).

According to our fibers suppliers, Polyester in general is considered highly UV resistant and much better than other fibers such as, nylon or polypropylene. Polyester is commonly used for UV exposure such as awnings or boat sails or rope. According once again to one of our fibers suppliers, it is generally known that polyester loses 10% of strength after two years of light exposure.

Please note this statement is only based on polyester fiber, not the needlepunched nonwoven structure which influences the residual tensile strength of the material. If this characteristic is critical, we highly recommend to perform a recognized UV exposure test based on ASTM-D4355 standard to estimate and validate the proposed material resistance to UV exposure.

*Texel reserves the right to modify existing properties contingent on the evolution of technical knowledge. Each user is invited to verify if this document represents the most recent update. Texel offers no guarantee and assumes no responsibility regarding usage, installation and/or convenience of usage. Texel must be informed of all product defects or product nonconformity prior to installation. Responsibility is limited to replacement of non-compliant or defective product.*





# QUALITY CONTROL MANUAL

## P.E. GEOMEMBRANE INSTALLATION

(Geo Textile)  
( Draintube)  
(Geo Composite)  
(Geo Net)  
(GCL)  
(Petrogard 6)

## TABLE OF CONTENTS

<b>INTRODUCTION .....</b>	<b>3</b>
<b>1. SUBGRADE PREPARATION .....</b>	<b>4</b>
<b>2. PLACING COVER SOILS ON TOP OF PE GEOMEMBRANES .....</b>	<b>5</b>
<b>3. LAYOUT PLAN &amp; RECORD DRAWINGS .....</b>	<b>6</b>
<b>4. LINER DEPLOYMENT .....</b>	<b>6</b>
<b>5. SEAM WELDING .....</b>	<b>7</b>
<b>6. WELD TEST PROCEDURES .....</b>	<b>8</b>
<b>7. MINIMUM ACCEPTANCE CRITERIA .....</b>	<b>11</b>
<b>8. MINIMUM TEST FREQUENCIES .....</b>	<b>12</b>
<b>9. FAILED TEST PROCEUDRES .....</b>	<b>13</b>
<b>10. PENETRATIONS .....</b>	<b>14</b>
<b>11. SLACK INCORPORATION .....</b>	<b>15</b>
<b>12. QUALITY CONTROL REPORT .....</b>	<b>15</b>
<b>13. STANDARD INSTALLATION WARRANTY .....</b>	<b>17</b>
<b><u>APPENDIX "A" .....</u></b>	<b>18</b>
<b><u>APPENDIX "B" .....</u></b>	<b>19</b>
<b><u>APPENDIX "C" .....</u></b>	<b>20</b>
<b><u>APPENDIX "D" .....</u></b>	<b>21</b>
<b><u>APPENDIX "E" .....</u></b>	<b>23</b>
<b><u>APPENDIX "F" .....</u></b>	<b>25</b>

## **INTRODUCTION**

This manual details the practices and procedures used by Western Tank and Lining Ltd.'s crews during installation of PE liners to ensure a quality installation and to produce the quality control report. We also included Geotextile, Geonet, Geocomposite, and DRAINTUBE manual.

## 1. SUBGRADE PREPARATION

### 1.1 Requirements for Soil Subgrade

The Owner, General Contractor, or Earthworks Contractor shall be responsible for preparing and maintaining the subgrade in a condition suitable for installation of the liner unless specifically agreed otherwise. WTL and others install geosynthetic lining materials on earth surfaces prepared for liner installation by others. No liner shall be placed on surfaces not previously found acceptable by the WTL site supervisor. On projects installed by WTL, it is our practice to require written "Subgrade Surface Acceptance" documentation.

Surfaces to be lined shall be smooth and free of all rocks, stones, sticks, roots, sharp objects, or debris of any kind. No stones or other hard objects that will not pass through a 3/8" screen shall be present in the top 4" of the surfaces to be covered. All fill shall consist of well-graded material free of organics, trash, clay balls, sharp stones or any other deleterious material that may cause damage to the liner.

The surface should provide a firm, unyielding foundation for the membrane with no sudden, sharp or abrupt changes or break in grade.

The subgrade shall be compacted in accordance with design specifications but in no event below the minimum required to provide a firm unyielding foundation sufficient to permit the movement of vehicles and welding equipment over the subgrade without causing rutting or other deleterious effects. The subgrade shall have no sudden sharp or abrupt changes in grade, especially at pipes or concrete structures.

Typical preparation sequence involves trimming of the compacted excavation as smooth as possible with heavy equipment, hand raking and rock picking, and rolling of the surface with a smooth drum compactor. Rule of thumb for acceptable surface is "ready to lay sod". Under no circumstances will the integrity of the liner be compromised due to the presence of rocks, lumps, or incomplete subgrade preparation.

- |                                |  |
|--------------------------------|--|
| (1) <b>Surface Acceptance:</b> | Upon request, Western Tank and Lining shall provide the Owner/Inspector with a written acceptance of the surface to be lined that day. |
|--------------------------------|--|

### 1.2 Geotextile Liner Cushion

In the event that suitable soils are not readily available at the construction site, soils containing smooth rocks up to 1-1/2 inches in diameter or angular rocks up to 3/4 inches may be utilized if covered with geotextile cushion having a minimum weight of 8 oz/yd<sup>2</sup>. The weight of geotextile selected will depend on the actual soil used, thickness of liner, and service life or design considerations, but may be as high as 16 oz/yd<sup>2</sup>.

See Appendix A for installation procedures.

### 1.3 Geonet Drainage Layer

See Appendix B for installation procedures.



## 2. PLACING COVER SOILS ON TOP OF PE GEOMEMBRANES

Cover soils deployed over synthetic liners should be free of all sharp objects--sharp rocks, and sharp sticks. The stones present in the soil should be rounded and smooth and no larger than 3/4 inch in diameter. Cover materials should be deployed using bulldozers separated from the membrane by at least one foot of cover soil for the smallest size dozers, and at least 18 inches of cover soil separation for the larger size dozers. The spreading operation should begin with placement of a mound of soil such that as the dirt covers the liner, it must ascend up the mound and then down the mound suppressing the formation of wrinkles. The movement of the soil must have this vertical descent to it as the dirt is spread over the membrane, rather than be pushed horizontally across the membrane. This type of action will suppress the formation of wrinkles in the path of the cover soil as it is being spread over the membrane and avoid burying wrinkles in the liner. Alternatively, a front-end loader can be used to place the cover soil out ahead of the path of the dozer to minimize spreading of the dirt and suppress wrinkle formation. If these procedures are followed, there should be no threat of puncture to the membrane due to cover soil operations, and buried wrinkles should be minimized.

In the event that suitable soils are not readily available at the construction site, soils containing smooth rocks up to 1-1/2 inches in diameter or angular rocks up to 3/4 inches may be utilized if a cushion geotextile having a minimum weight of 8 oz/yd<sup>2</sup>. The weight of geotextile selected will depend on the actual soil used, thickness of liner, and service life or design considerations, but may be as high as 16 oz/yd<sup>2</sup>.

The following are recommended procedures for placing of soil cover layers on top of HDPE Geomembrane liners using heavy equipment:

### 2.1 Liner Temperature

The liner must always be covered during the coolest portion of the day. As HDPE geomembrane is black and has a high coefficient of thermal expansion many "slack wrinkles" will form during sunlight hours. If the membrane is covered when it is warm these slack wrinkles will fold over or the slack will be displaced causing undue stresses on the liner.

### 2.2 Anchor Trenches

Anchor trenches should only be backfilled after the liner has undergone at least one nighttime contraction cycle after deployment and welding. The backfilling must take place when the membrane temperature is at its lowest - i.e. not at midday with the sun causing solar heating and expansion of the material.

### 2.3 Covering Sequence

When covering sloped areas, the covering must always proceed from the bottom of the slope to the top of the slope. This will avoid "dragging" the liner down the slope, which will stress the liner, of "sloughing" of the cover soils and heavy equipment.

### 2.4 Ground Pressure

No vehicles except balloon tire UTV's are allowed directly on the liner. Only low ground pressure equipment can be used near the leading edge of the soil cover. The depth of soil cover required under high ground pressure equipment will depend on the subbase, types of soils, and type of liner protection and must be determined by the project engineer.

### 2.5 Dozers

Dozers can be used to spread the cover material but cannot be the only method used at the leading edge of the cover material. Pushing with a dozer pushes membrane slack in front of the leading edge into a slack wave which will accumulate causing stresses in the liner. To avoid this an excavator or similar must be used to dump material in front of the leading edge and trap the liner slack before it accumulates.

## 2.6 Inspection

A responsible person must inspect the liner as the cover material is placed. If damage to the liner is noted it must be marked and cleaned by hand using a plastic shovel for repair.

# 3. LAYOUT PLAN & RECORD DRAWINGS

## 3.1 Layout Plan

Wherever possible a proposed layout plan will be prepared before mobilizing to the site. The layout plan will show:

- (1) slope lines
- (2) seams
- (3) panel numbers and dimensions
- (4) pipes of other penetration locations

## 3.2 Record Drawing

As installation progresses the following information will be recorded for the record drawing.

- (1) changes to the layout plan's panels, seams and penetrations
- (2) roll number for each panel
- (3) locations and extrusion #'s of destructive tests, patches, repairs and extrusion beads
- (4) seam numbers
- (5) the approximate length of main panels

**NOTE:** The intent of the record drawing is to show the correct number and orientation of panels, seams and details and their approximate location. The locations are not surveyed as would be done for a true "asbuilt" drawing.

# 4. LINER DEPLOYMENT

Unloading, handling and deployment of the liner is completed using slings and axles without contacting the roll directly with heavy equipment to minimize the potential for damage to the liner.

Panels and seams are oriented parallel to the slope unless approved otherwise by Western Tank and Linings' design department for that particular application. The only vehicles allowed on the liner are low ground pressure ATV's.

As the liner is deployed the following quality control procedures will be performed:

- (1) The roll number used is marked on the panel by the rollout crew.

- (2) The panel number corresponding to the layout plan is marked on the panel by the rollout or Q.C. crews.
- (3) A general visual inspection of the panel laid is performed by the rollout crew. A detailed visual inspection is performed by the Q.C. crew within 24 hrs. of deployment. Any defects in the sheet are circled with a permanent marker. A final visual inspection is performed at the completion of the installation.
- (4) Any changes to the layout plan and any sheet defects are recorded on record drawings. Each sheet defect will also receive an extrusion number.
- (5) No geomembrane materials shall be deployed if the material temperatures are lower than 0 degrees C (32 degrees F) unless otherwise approved by the Owners Represented. The specified minimum temperature for material deployment may be adjusted by the Owners Representative. Temperature limitations should be defined in the preconstruction meeting. Typically, only the quantity of geomembrane that will be anchored and seamed together in one day should be deployed

## 5. SEAM WELDING

### 5.1 Wedge Welding

To the maximum point practical all main seams will be produced using Western Tank and Linings' hot wedge welders. Once a wedge welder has passed a qualification weld (see 6.3) production seaming can proceed with the following quality control procedures performed and recorded on the attached wedge welder seamlog:

- (1) The date, welder number, operator initials, welder speed, and sheet temperature will be recorded on the liner next to each seam with a permanent marker by the operator.
- (2) The above information is recorded by a Q.C. technician.
- (3) The operator cuts one specimen from the end of the weld and performs a "vice-grip peel test" (see 6.1.1) on both weld tracks at the end of each seam. The specimen must pass on both tracks before proceeding to the next seam. The tested specimen is left at the end of the seam for inspection by the Q.C. technician who records the result.
- (4) The Q.C. technician cuts one specimen from the end of the seam and performs a tensometer peel test (see 6.1.2) on both tracks within 24 hrs. and records both values.
- (5) The Q.C. technician performs the "Air Test" (see 6.2.2) on the completed seam as soon as possible and records the pressures and start and finish times.
- (6) Any defects such as burnouts, single seams, etc. are marked on the liner by the operator and recorded and numbered on record drawings for extrusion repair.
- (7) No geomembrane material shall be seamed when liner temperatures are less than 0 degrees C (32 degrees F) unless the following conditions are complied with:
  1. Seaming of the geomembrane at material temperature below 0 degrees C (32 degrees F) if allowed if the Geomembrane installer can demonstrate to the Owner's Representative, using pre-qualification test seams, that field seams comply with the project specifications, the safety of the crew is ensured, and the geomembrane material can be fabricated (i.e. pipeboots, penetrations, repairs. etc.) at subfreezing temperatures
  2. The Geomembrane Installer shall submit to the Owner Presentative for approval, detailed procedures for seaming.

## 5.2 Extrusion Welding

Extrusion welding is used for penetration seals, detail welding, patches, butt seam "T" intersections and nip folds, capstrips, seam defects, and sheet defects or damage. Once an extrusion welder/operator combination has passed a qualification weld (see 6.3) extrusion welding can proceed with the following quality control procedures performed and recorded on the extrusion welding log.

- (1) Each extrusion weld is given an identification number which is marked on the liner with a permanent marker and recorded on the record drawings. The section of extruding done on a butt seam may be marked using a single identification number from start to finish of that section.
- (2) The date, operator and welder number is marked on the liner with a permanent marker by the extrusion crew and recorded by a QC technician.
- (3) Each \*extrusion weld is leak tested by vacuum testing (see 6.2.4) or in the case of butt seams (see 5.3) air tested or vacuum tested.  
**\*NOTE:** Some extrusion welds cannot be leak tested due to the geometry; i.e. pipe boot sleeves or plate to pipe welds.
- (4) Each extrusion weld is "pik tested" (see 6.2.5) to evaluate bond strength.
- (5) Each extrusion weld is visually inspected for overgrind, heat distortion, thin bead, etc.
- (6) Any welding defects found are marked and recorded for repair and retesting.

## 5.3 Butt Seams

Butt Seams (also known as "Tie-In Seams") are used to join main sections of liner that have seams oriented in more than one direction. Butt seams require a combination of wedge welding and extrusion welding to be leak free.

In general butt seams are not welded until the main sections of liner have undergone at least one thermal contraction cycle. Often additional slack is "built in" at the butt seams during wedge welding by using more than 6" of overlap. The overlap is measured and trimmed at cool times of the day.

A qualified wedge welder is used to weld the seam which is tested and documented according to 5.1 except that the "Air Test" must be performed after the extrusion welding is complete. A qualified extrusion welder is used to reinforce and seal the wedge weld at the nip folds and the "T" intersections on both tracks. Extrusion testing and documentation is as per 5.2 except that extrusion beads that pass the high pressure test are not vacuum tested. To the maximum point practical all butt seams will be high pressure air tested. If a section of seam is not high pressure tested it is vacuum tested for leaks.

## 6. **WELD TEST PROCEDURES**

### 6.1 Destructive Test Procedures

Destructive tests require cutting "coupons" from a trial weld or production weld or from the parent material for strength testing. If the coupon is cut from a production weld within the finished seam length or installed liner it requires a patch using extrusion welding. Western tank and Linings' philosophy is to minimize coupon cutouts requiring extrusion weld patches by using data from non-destructive testing, especially our "High Pressure Air Test", qualification weld destructive testing, and gathering production seam destructive test data from small coupons that are outside



the finished seam length (i.e. in the anchor trench or at the tie-in seams excess overlap).

#### 6.1.1 Vice Grip Peel Test

Weld specimens cut perpendicular to the weld track(s) approximately 1 inch wide are tested for peel adhesion by placing one flap from each sheet of the weld into two vice grip sheet metal pliers and applying peel stress by levering the backs of the pliers against each other until break occurs. A Film Tear Bond and good visual appearance are the criterion for a pass. A Film Tear Bond indicates good fusion. Visually the break should be ductile with a consistent clean appearance; i.e. no unfused spots.

#### 6.1.2 Tensometer Peel Test

Weld specimens are cut using a coupon cutter with 1" x 8" die. Care must be taken to cut the specimens perpendicular and centred on to the weld tracks. Specimens are placed in a field tensometer in the peel mode with the grips approximately 2 from either side of the weld and the specimen perpendicular to the jaws. Specimens are pulled at 2"/minute until break occurs (for both weld tracks for wedge welds). The peak load in pounds is displayed on the tensometer and recorded for determining acceptance. A Film Tear Bond is also required on all specimens. If some peel separation should occur the % incursion is determined by dividing the area of separation by the total weld area (nominally 2" x 1" = 2 in5) x 100.

**NOTE:** The peel strength is related to parent material break strength and should not be compared to parent material yield strength.

#### 6.1.3 Tensiometer Tensile Test

Parent material tensile yield strength as well as weld tensile strength (also known as the shear test) and elongation are determined using a tensiometer. Specimens are cut using a coupon cutter with a 1" x 8" die.

The purpose of testing the parent material is to gauge the effects of field testing temperature (strengths will be higher at less than 20°C and lower at higher than 20°C). Parent material specimens are pulled at a speed of 2"/minute and an initial grip separation of 2" with the specimen perpendicular to the jaws. The initial peak load is recorded. The test is terminated after the initial peak load is reached. This test is only performed if the temperature effects on the test results are deemed significant.

When testing weld specimens the specimens must be cut perpendicular to the weld track(s) and placed in the tensometer square to the jaws. Also note that nicks in the cutter die can cause premature breaks. The specimens are marked at 1" outside the weld edge on both sides of the weld for grip placement. Testing speed is 2"/minute. The initial peak load is recorded and the distance the grips travel after the grips first pull tight is monitored. The % elongation is defined as the grip travel/1" x 100 (as almost all the elongation occurs on one side of the weld the initial gauge length is defined as 1" = the distance from the grip to the edge of the weld). The test is terminated after the minimum elongation specified has been achieved.

## 6.2 Non-destructive Testing

The following tests are performed to evaluate the continuity and bond strength of completed seams and detail welds in a non-destructive manner. The "High Pressure Air Test" and "Pick Test" can become destructive tests only if the weld bond strength is inferior. These tests can detect areas of poor strength that would not be located by other test procedures.

### 6.2.1 Visual Inspection

Visual inspections are performed by both the welder operators and the QC technicians. Wedge welds are inspected for burnouts, spinouts, single seams, inclusions, etc. Extrusion welds are inspected for overgrind, excessive heat distortion, thin bead, etc. Any welding defects found are marked on the liner and recorded on record drawings for repair and testing.

### 6.2.2 High Pressure Air Test

**Purpose** The air test was developed to provide a non destructive test to evaluate the bond strength of double wedge welded seams.

**Description** The pressurized air channel forms a tube which is then visually inspected. Areas of the seam with partial fusion will show up as a bulge or widening of the air channel, or a weld separation resulting in a complete loss of pressure.

#### **Specification**

- (1) Pressurize the seam to a minimum of 30 psi
- (2) Allow the pressure to stabilize for 5 minutes while performing a visual inspection.
- (3) Record the pressure at the beginning and the end of the next 5 minutes. There should be no more than a 10% pressure drop.

#### **Test Procedure**

- (1) Seal off both ends of the seam.
- (2) Connect the WTL pressure gauge assembly to the air channel.
- (3) Pressurize the air channel with a compressor to a minimum pressure of 30 psi
- (4) Allow the pressure to stabilize in the air channel for 5 minutes. While the seam is pressurized perform a visual inspection of the air channel to look for bulges which would indicate incomplete fusion.

- (5) There should be no more than 10% pressure drop for a period of 5 minutes.
- (6) If a rapid pressure drop occurs, perform a visual inspection of the seam. If a flaw is detected in the seam, pressure test the seam on either side of the flaw. Record and repair the flaw using extrusion welding and test the extrusion weld using the vacuum test. If the entire weld is suspect, replace the weld.
- (7) Record the results of the test on the seam log.

#### 6.2.3 Vacuum Box Soap Test

The vacuum box test is used to check extrusion welds (or wedge welds that cannot be practically tested using the High Pressure Test) for leaks.

##### **Vacuum Test Procedure**

- (1) Trim off any flaps on the wedge weld and coat the seam with a strong soap solution.
- (2) Place the vacuum chamber over the test area and depressurize to 5 inches of mercury.
- (3) Observe the weld inside the vacuum chamber. Any leaks will allow atmospheric pressure air from beneath the liner to enter the vacuum chamber. Soap bubbles will form at the leak.
- (4) Mark any leaks that are found, repair and retest.
- (5) Record the results of the test.

**NOTE:** Some extrusion welds such as at boots, etc. cannot be vacuum tested due to the geometry involved.

#### 6.2.4 Pick Test

The pick test is used to evaluate the bond strength of extrusion welds. The test is performed by welder operators and QC technicians by prying at the edges of an extrusion weld using a blunt screwdriver. Areas of weakly bonded extrudate can be pried off the parent material. Any flaws are marked and recorded for repair and testing.

#### 6.3 Welder Qualification Seams

Each welding machine for wedge welders, and each welder/operator combination for extrusion welding, produces qualification seams each day before starting production welding. Qualification seams are made using strips of material approximately 300 mm wide and are a minimum of 1 m long for extrusion welding and 3 m long for wedge welding. These seams are destructively tested and the results recorded on the welder qualification data sheets attached.

## 7. **MINIMUM ACCEPTANCE CRITERIA**

The following limits are the minimum acceptable for a completed installation.

## 7.1 Destructive Weld Testing

TEST		MINIMUM ACCEPTANCE CRITERIA				
Thermally Bonded Smooth and Textured High Density Polyethylene (HDPE) Geomembranes						
Vice Grip Peel Test		FTB (on both tracks for wedge welds)				
Material Thickness		30 mils	40 mils	60 mils	80 mils	100 mils
Peel Strength, lb/in	Wedge	45	60	91	121	151
	Extrusion	39	52	78	104	130
Peel Separation (Incursion)		<ul style="list-style-type: none"><li>- FTB for all specimens</li><li>- Avg of 5 must be less than 25%</li><li>- Single specimen test for production end coupon – less than 10%</li></ul>				
Shear Strength, lb/in (Wedge/Extrude)		57	80	120	160	200
Shear Elongation at break, %		50	50	50	50	50
Thermally Bonded Smooth and Textured Linear Low Density Polyethylene (LLDPE) Geomembranes						
Vice Grip Peel Test		FTB (on both tracks for wedge welds)				
Material Thickness		30 mils	40 mils	60 mils	80 mils	100 mils
Peel Strength, lb/in	Wedge	38	50	75	100	125
	Extrusion	34	44	66	88	114
Peel Separation (Incursion)		<ul style="list-style-type: none"><li>- FTB for all specimens</li><li>- Avg of 5 must be less than 25%</li><li>- Single specimen test for production end coupon – less than 10%</li></ul>				
Shear Strength, lb/in (Wedge/Extrude)		45	60	90	120	150
Shear Elongation at break, %		50	50	50	50	50

## 7.2 Non-Destructive Weld Testing

TEST	MINIMUM ACCEPTANCE CRITERIA
Visual Inspection	No unrepaired flaws.
Air Lance	Produce a stream of continuous air along the flap of the weld edge
High Pressure Air Test	No more than 10% pressure drop for 5 minutes at 1.0 PSI/mil thickness/inch of air channel width.
Vacuum Box Test	Produce up to 4 inches of Hg (2psi)
Pick Test	Non unbonded areas.
Each welder will produce a minimum of 1 qualification seam for each day that welder is used for production.	

## 8. MINIMUM TEST FREQUENCIES

The following test frequencies are the minimum required for a complete installation.

### 8.1 Wedge Weld Qualification Seams

TEST	FREQUENCY
Vice Grip Peel	2 specimens / qualification tested on both tracks
Tensiometer Peel	5 specimens / qualification tested on both tracks
Weld Tensile (Shear)	2 specimens / qualification



Each welder will produce a minimum of 1 qualification seam for each day that welder is used for production.
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## 8.2 Extrusion Welder / Operator Qualification Seams

TEST	FREQUENCY
Vice Grip Peel	2 specimens / qualification
Tensiometer Peel	5 specimens / qualification
Weld Tensile (Shear)	2 specimens / qualification
Each welder will produce a minimum of 1 qualification seam for each day that welder is used for production.	

## 8.3 Wedge Weld Production Seams

TEST	FREQUENCY
Vice Grip Peel	1 specimen tested on both tracks / seam (except panel width cross seams). Specimen to be taken from the end of the seam – no repair patch required.
Visual Inspection	Full seam length.
Air Lance	Only used when the seam is welded with a full wedge assembly
High Pressure Air Test	Full length of all seams to the maximum point practical.
Vacuum Test	Only used where High Pressure Testing is impractical.

## 8.4 Extrusion Weld Seams or Beads

TEST	FREQUENCY
Visual Inspection	Full seam length.
Vacuum Test	Full seam length except for beads previously pressure tested which are not vacuum tested.
Pick Test	1 pick / lineal foot of seam.
High Pressure Air Test	Only applies to butt seam, "T's".

## 9. FAILED TEST PROCEUDRES

If a weld or seam fails one or more of the required tests the following procedures are performed.

TEST	FREQUENCY
Welder Qualification Seam	Adjust welder, reweld, and retest.

(wedge or extrusion)	
Visual Inspection and Vacuum Box Test	Mark liner, record defect, repair and retest. If the defect already has an extrusion number renumber as 47A (initial extrusion #47) for records.
Pick Test	Mark, record and repair as above. If the weld is suspect due to many flaws, cap or replace the weld.
High Pressure Air Test	Retest on either side of the defect. Mark, record and repair as above. If there are more bulges than 1/20' of seam length (average) replace the weld.
Production Wedge Weld Vice Grip Peel Test or Tensiometer Peel Test	If single specimen fails track along the seam and retest using 3 specimens. If 1 (or more) of the 3 specimens fail track along the seam and retest using 5 specimens (or replace the seam). If the 5 specimens test fails the acceptance criteria track to obtain a 5 specimen coupon that passes the acceptance criteria and repair the area to the passing sample or place the seam and retest.

## 10. PENETRATIONS

Any structures such as pipes, sumps, concrete, etc. that penetrate the liner require mechanical attachment and/or welding are an anchor point and can result in stresses on the liner under some conditions. For stress considerations and possibilities of leakage the number of penetrations should be minimized where practical. In addition, the final liner penetration detail should be considered during design and construction of the earthworks and piping. Please consult Western Tank and Lining during the design phase to optimize the end product. Attention to compaction around pipes or structures is a must to avoid shear or tensile forces on the liner due to subsidence. Western Tank and Lining takes careful consideration of penetration location during panel layout design, panel deployment, and slack incorporation.

### 10.1 HDPE Pipe

Where possible HDPE piping should be used for pipelines, or for the last section of pipe, penetrating the liner. For all but the highest molecular weight pipe resins (Drisco 8600), geomembrane and pipe resins are compatible for welding. Typical methods include cutting the HDPE pipe flush with the side slope and welding geomembrane or HDPE plate, directly to the pipe.

The resulting weld is more reliable than boots and does not require any steel banding or rubber gaskets. Pump out sumps can also be constructed of HDPE pipe or plate and welded directly to the liner.

### 10.2 Concrete

Sealing to concrete structures of pipe collars are accomplished with anchor bolts, clamping bar, and rubber gaskets. Clamping to vertical surfaces is not recommended. To ensure a complete seal, using horizontal (or flush with slope) concrete surfaces which are smooth and stringline flat. Rebar should be located away from the anchor bolt line or more than 4 inches below the surface. Concrete pipe collars should include anchor rings and/or waterstops on the pipe. Satisfactory pipe seals for many applications can be constructed using a concrete collar with waterstop and a liner to concrete clamp seal. Some applications involving new concrete are best handled using cast-in HDPE inserts.

### 10.3 Pipe Boots

Pipe boots can be field or factory fabricated from HDPE geomembrane and sealed to piping or round pilings using stainless steel bands and neoprene gaskets. A 90degree pipe boot is always preferred to a slope angle boot for a pipe entering near the bottom of a reservoir. Pipe boots should be avoided for horizontal pipes penetrating the sideslopes.

### 10.4 Corrugated Culverts

Corrugated Culverts should be avoided as the only method of sealing is a concrete collar with waterstop, but the waterstop is very difficult to construct.

### 10.5 Pipe Support Pilings

Pipe Support Pilings should be cylindrical concrete or pipe to facilitate boot seals. Rectangular or "I" beam shapes pose serious sealing problems and should be avoided.

## 11. **SLACK INCORPORATION**

Most HDPE liner installations require some slack incorporation due to the materials high coefficient of thermal expansion (approximately 1% / 75°C), solar heating that takes place during construction due to its black colour, and the minimum temperature the liner will see during its service life.

In general, exposed liners will require more slack than buried applications. In all cases slack incorporation is a compromise between too little slack which will result in bridging at corners or toes of slopes, or excessive stresses at fixed points during cold temperatures, and too much slack resulting in slack "wrinkles" that will fold over when covered with soils or fluids, with resultant stresses at the folds. Covered applications should be built to fit the subgrade at the temperature that the liner will be covered at. Exposed applications should be built so that no significant stresses are developed at the minimum service temperature.

The following techniques are used to "size" the liner:

- (1) The main sections of liner must be allowed to undergo at least one thermal contraction cycle before the anchor trench is backfilled or the butt seams are welded or liner is covered.
- (2) The butt seam(s) overlaps are measured and trimmed at the cool times (early morning or evening) of the day.
- (3) If additional slack is required it can be placed at the anchor trench before backfilling or at the butt seams (or seams between fixed points) by using extra overlap.
- (4) The project superintendent determines the amount of slack to be incorporated based on field experience, calculations, and the expected service life of the liner.

## 12. **QUALITY CONTROL REPORT**

A quality control report is produced after the project is completed. The report contains the following information:

- (1) The manufacturing material certifications.
- (2) The wedge welder and extrusion welder / operator qualification data sheets.
- (3) The wedge welding and extrusion welding seam logs.

- (4) The record drawing showing:
- a. approximate location of all panels and seams;
  - b. the panel numbers;
  - c. the seam numbers;
  - d. the roll number used for each panel;
  - e. the approximate lengths of main panels;
  - f. the approximate location of all penetrations; and
  - g. the extrusion weld number and approximate location of all extrusion weld patches, beads, and repairs.



### 13. STANDARD INSTALLATION WARRANTY

## WESTERN TANK & LINING LTD.

12180 Vickers Way  
Richmond, B.C., V6V-1H9  
**PHONE (604) 241-9487**  
**FAX (604) 241-9485**

### WORKMANSHIP WARRANTY

**PURCHASER/USER**

**LOCATION OF INSTALLATION**

**DESCRIPTION OF  
INTENDED USE**

WESTERN TANK & LINING LTD. (the "Installer") warrants to the party named above as the Purchaser/User ("Purchaser") that the tank and/or lining membrane system ("the Liner System") as installed by the Installer will be free from installation-related defects for normal use in approved applications, on the terms and conditions set forth in this Workmanship Warranty (the "Warranty"). This Warranty shall be in effect from the above noted **Acceptance Date** for the above noted **Warranty Period**.

The term "normal use" means uses reasonably consistent with the above noted Description of Intended Use, and does not include, among other things, the exposure of the Liner System to harmful chemicals; abuse of the Liner System by machinery, equipment or people; excessive pressures or stresses from any source; subsurface or overburdened soil conditions; and total or differential soil settlements and the effect those settlements may have on the Liner System. The Purchaser acknowledges that the sale of the Liner System is for commercial or industrial use only.

This Warranty does **not** include damages or defects in the Liner System resulting from: (i) acts of God, casualty or catastrophe, including earthquakes, floods, weather, tornadoes, explosion, war, acts of any public authority, or any other cause beyond the Installer's reasonable control; (ii) faulty materials, or any defects in the workmanship, design or manufacturing of the materials comprising the Liner System; (iii) defects arising on account of third party action; (iv) defects arising from improper maintenance, use, repair, replacement or alteration of the Liner System by the Purchaser; (v) subsidence of the land around the Liner System; or (vi) surface defects in workmanship and materials apparent and accepted by the Purchaser at the date of delivery.

Any claim for an alleged breach of this *Warranty* must be made in writing, by registered mail or fax, to the President of the Installer at the address above within thirty (30) days of the Purchaser becoming aware of the alleged defect. If the Purchaser fails to deliver notice as required under this Warranty, the defect and all warranties shall be deemed to have been waived and the Purchaser will have no right of recovery against the Installer. Should defects within the scope of the above Warranty occur, the Installer will, at its option, repair or replace the Liner System or defective portion thereof. The Installer will have the right to inspect and determine the cause of any alleged defect in the Liner System and to take appropriate steps to repair or replace the Liner System if a defect exists for which the Installer is liable under the terms of this Warranty. The Installer will not be required to make such repairs and/or replacements until the Purchaser has ensured that the area surrounding the Liner System is clean, dry, and in an unencumbered condition, including without limitation free from all water, dirt, sludge, residuals, and liquids of any kind.

The Installer's liability under this Warranty shall in no event exceed the lesser of: (i) the replacement cost of the Liner System or defective portion thereof; or (ii) the total amount paid by the Purchaser to the Installer in respect of the Liner System. Further, under no circumstances shall the Installer be liable to the Purchaser or any other party for any special, direct, indirect, or consequential damages arising from any defect in the installation of the Liner System. This Warranty is given in lieu of all other possible warranties by the Installer in respect of the Liner System and by accepting delivery of the Liner System, the Purchaser waives all other such possible warranties, except those specifically given.

*THE INSTALLER MAKES NO WARRANTY OF ANY KIND OTHER THAN AS EXPRESSLY SET OUT HEREIN, AND HEREBY DISCLAIMS ALL OTHER WARRANTIES, BOTH EXPRESSED AND IMPLIED, OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THIS WARRANTY IS NOT EFFECTIVE AND THE INSTALLER IS NOT BOUND BY THE TERMS HEREOF UNTIL RECEIPT OF FULL AND FINAL PAYMENT FOR THE LINER SYSTEM FROM THE PURCHASER.*

**I hereby state I have read and understand the above and foregoing Warranty and agree to such by signing hereunder.**

	PURCHASER/USER	WESTERN TANK & LINING LTD.
NAME		
SIGNATURE		
TITLE		
DATE (dd/mm/yy)		

## **APPENDIX "A"**

### **GEOTEXTILES**

#### **Handling and Placement**

All geotextiles shall be handled in a manner to ensure they are not damaged. The following special handling requirements shall be adhered to:

- On slopes, the geotextiles shall be secured in the anchor trench and then rolled down the slope when practical. In any event it should be deployed in such a manner as to continually keep the geotextile sheet in sufficient tension to reduce folds and wrinkles.
- In presence of wind, all geotextiles shall be weighted with sandbags or the equivalent.
- Geotextiles shall be cut using an approved cutter. If the material is being cut in place, special care must be taken to protect other geosynthetic materials from damage.
- Care shall be taken not to entrap stones or excessive dust that could damage the geomembrane, or generate clogging of drains or filters.

#### **Seams and Overlaps**

Geotextiles may be seamed by thermal bonding or by sewing.

- On slopes steeper than ten (10) horizontal to one (1) vertical, it is recommend that geotextiles be continuously seamed along the entire length of the panel. Geotextiles shall be overlapped approximately four (4") inches prior to seaming.
- On bottoms and slopes shallower than ten (10) horizontal to one (1) vertical, geotextiles can be either seamed, as indicated above or overlapped. If not thermally bonded the geotextile shall be overlapped a minimum of twelve (12") inches prior to seaming.

#### **Repairs**

Any holes or tears in the geotextile shall be repaired as follows:

- On Slopes - a patch made from the same geotextile shall be seamed into place.
- Horizontal Areas - a patch made from the same geotextile shall be spot seamed in place with a minimum of twelve (12") inches overlap in all directions.

## **APPENDIX "B"**

### **GEONET**

#### **Handling and Placement**

The geonets shall be handled in such a manner as to ensure the geonets are not damaged in any way.

- On slopes, the geonets shall be secured in the anchor trench and then rolled down the slope in such a manner as to continually keep the geonet sheet in tension. If necessary, the geonet shall be positioned by hand after being unrolled to minimize wrinkles. Geonets can be placed in the horizontal direction (i.e. across the slope) in some special locations (i.e. where extra layers are required or where slope is less than 10:1).
- Such locations shall be identified by the Design Engineer in the project drawings.
- Geonets shall not be welded to geomembranes. Geonets shall be cut using approved cutters, i.e. hook blade, scissors, etc. Care should be taken to prevent damage to underlying layers.
- Care must be taken not to entrap dirt in the geonet that could cause clogging of the drainage system, and/or stones that could damage the adjacent geomembrane.

#### **Layering and Tying of Geonet**

When several layers of geonets are installed, care should be taken to prevent the strands of one layer from penetrating the channels of the next layer. Adjacent geonets shall be joined according to the following requirements.

- Adjacent rolls shall be overlapped by at least four (4") inches and securely tied.
- Tying can be achieved by plastic fasteners. Tying devices shall be white or yellow for easy inspection. Metallic devices are not allowed.
- Tying shall be five (5') feet to ten (10') feet along the bottom, every five (5') feet along the slope every two (2') feet across the slope and at top of berm and into anchor trench at least with one (1') foot intervals.
- In the corners of the side slopes where overlaps between perpendicular geonet strips are required, an extra layer of geonet shall be unrolled along the slope, on top of the previously installed geonets, from top to bottom of the slope.
- When more than one layer of geonet is installed, overlaps must be staggered and layers tied together.

#### **Repairs**

Any holes or tears in the geonet shall be repaired by placing a patch extending two (2') feet beyond edges of the hole or tear. The patch shall be secured to the original geonet by tying every twelve (12") inches. If the hole or tear width across the roll is more than 50% the width of the roll, the damaged area shall be cut out and the two (2) portions of the geonet shall be joined.

## **APPENDIX "C"**

### **GEOCOMPOSITE**

#### **Handling and Placement**

All geocomposite shall be handled in a manner to ensure they are not damaged.

- On slopes, the geocomposite can be secured in the anchor trench and then rolled down the slope when practical. The geocomposite shall be deployed in a manner to continually keep the geocomposite sheet in sufficient tension to reduce folds and wrinkles.
- In the presence of high wind, all geocomposite shall be weighted with sandbags or the equivalent.
- Geocomposite shall be cut using an approved cutter. If material is being cut in place, special care should be taken to protect other geosynthetic materials from damage.
- Care should be taken not to entrap stones or excessive dust that could damage the geomembrane, or generate clogging of drains or filters.

#### **Seams and overlaps**

- Geocomposite shall be seamed by thermal bonding or by sewing.
- No horizontal seams shall be allowed on side slopes greater than 4H:1V. Owners Represented. The horizontal seams on side slopes greater than 4H:1V can be adjusted by the Owners Representative to utilize material to its entirety.
- Tying of the geonet shall be with plastic fasteners. Tying devices shall be white or yellow for easy inspection. Metallic devices are not allowed.
- Tying shall be every 1.5 m across the cell floor, every 1.5 m along the side slopes and every 750 mm at the top of berms and into anchor trenches. End to end joints on the cell floor shall be overlapped 600 mm. Tying shall be every 0.3 m across the end to end joint. All tying shall be covered with geotextile, sewn or heat bonded.

#### **Repairs**

The damage shall be observed, and if smaller than one (1) m by one (1) m, the geocomposite shall be repaired. If the tear or hole is larger, then the roll shall be cut to remove the damaged area, fasteners shall be used to attach the geonet with the geotextile being heat seamed. Minimum overlaps to be as specified.

- If the geonet is undamaged, and the geotextile is damaged, a patch of geotextile shall be placed. The geotextile patch shall be thermally bonded in place with a minimum of 300 mm overlap in all directions.
- If the geonet is damaged, the geonet shall be removed. A section of geonet shall be cut to replace the removed section. The geonet shall be tied to the existing geonet using plastic fasteners placed at least every 150 mm. A geotextile patch shall be placed over the repaired geonet section. The geotextile patch shall be thermally bonded in place with a minimum of 300 mm overlap in all directions.



## **APPENDIX "D"**

### **GEOSYNTHETIC CLAY LINER (GCL)**

#### **Handling and Placement**

All rolls GCL shall be handled in a manner to ensure they are not damaged.

- GCL rolls should be delivered to the working area of the site in their original packaging. Immediately prior to deployment, the packaging should be carefully removed without damaging the GCL. The orientation of the GCL should be in accordance with the Engineer's or manufacturer's recommendations.
- Proper equipment, spreader-bar and core-bar assembly and/or a forklift with stinger attachment shall be used during handling and deployment as per manufacturer's recommendations.
- Equipment which could damage the GCL shall not be allowed to travel directly on it. If the installation equipment causes rutting of the sub-grade, the sub-grade must be restored to its originally accepted condition before placement continues.
- The GCL shall be placed so that seams are parallel to the direction of the slope. Seams should be located at least 1 m from the toe and crest of slopes steeper than 4H:1V. The horizontal seams on side slopes greater than 4H:1V can be adjusted by the Owners Representative to utilize material to its entirety.
- Placement shall be from highest elevation to the lowest elevation to facilitate drainage in the event of precipitation unless the Engineer and or the Owners Representative assure that the subgrade is porous and free draining.
- All GCL panels should lie flat on the underlying surface, with minimal wrinkles and no folds, especially at the exposed edges of the panels. Panels shall be placed with non-woven side up.
- Only as much GCL shall be deployed as can be covered with soil, a geomembrane, or a temporary waterproof tarpaulin at the end of the working day.
- The GCL shall be placed in an anchor trench at the top of the slope as per the drawings. The front edge of the trench should be rounded so as to eliminate any sharp corners. Loose soil should be removed from the floor of the trench. The GCL should cover the entire trench floor, but not the rear trench wall.

#### **Field Seams**

- The GCL seams are constructed by overlapping their adjacent edges. Care should be taken to ensure that the overlap zone is not contaminated with loose soil or other debris. Supplemental bentonite is required in the overlap zone.
- The minimum dimension of the longitudinal overlap should be 225 mm. End-of-roll overlapped seams should be similarly constructed, but the minimum overlap should measure 600 mm.
- Seams at the ends of the panels should be constructed such that they are shingled in the direction of the grade to prevent the potential for runoff flow to enter the overlap zone.
- Where the GCL product requires bentonite-enhanced seams as recommended by the GCL manufacturer, bentonite-enhanced seams shall be constructed by overlapping adjacent panels as instructed above, exposing the underlying edge and then applying a continuous bead of granular sodium bentonite along a zone defined by the edge of the

underlying panel and the 150 mm line. The bentonite shall be applied at a minimum application rate of 0.4 kg/m. Where bentonite-enhanced seams are not required by the GCL product as recommended by the GCL manufacturer, GCL installer shall receive approval from the Engineer.

- GCL may be seamed by thermal bonding to prevent the movement of material while covering it with a geomembrane, covering it with soil or a temporary waterproof tarpaulin

#### Detail Work

- The GCL shall be sealed around penetrations and embedded structures embedded in accordance with the drawings.
- Cutting the GCL should be performed using a sharp utility knife. Frequent blade changes are required to avoid damage to the geotextile components of the GCL during the cutting process.

#### Repair

- If the GCL is damaged (torn, puncture, perforated, etc.) during installation, it may be possible to repair it by cutting a patch to fit over the damaged area. The patch shall be obtained from a new GCL roll or scrape peice and shall be cut to size such that minimum overlap of 300 mm (12 inches) is achieved around all of the damaged area. Dry bentonite or bentonite mastic should be applied around the damaged area prior to placement of the patch. It may be desirable to use an adhesive or heat bonded to affix the patch in place so it is not displaced during cover placement.
- Any solvent or adhesive in contact with the GCL must be approved by the Manufacturer.

## **APPENDIX "E"**

### **DRAIN TUBE**

#### **Handling and Placement**

Rolls of Drintube shall be handled in a manner to ensure they are not damaged.

- Drintube Drainage Geocomposite shall not be placed, seamed/joined, or repaired during periods of heavy precipitation, excessively high winds, or in areas of ponded water or excessive moisture.
- Drintube Drainage Geocomposite shall be installed in accordance with manufacturer's recommendations, and as shown on the Drawings and specified herein.
- Drintube Drainage Geocomposite shall be installed in the direction of the slope such that the pipe components are oriented with the intended flow direction (typically perpendicular to the contours) unless otherwise specified by the ENGINEER.
- The Drintube Drainage Geocomposite shall be kept clean prior to and during installation.
- Folds or excessive wrinkling of deployed Drintube Drainage Geocomposite shall be removed to the extent practicable.
- Installs shall exercise care not to entrap stones, excessive dust, or foreign objects in the material.
- Drintube Drainage Geocomposite shall be adequately weighted, using sand bags or equivalent until the subsequent soil or geosynthetic layer is placed. In the presence of wind, the sandbags or the equivalent shall be placed along the leading edge and removed once cover material is placed.
- If the project contains slopes steeper than 5 horizontal to 1 vertical, special care should be taken to use full length rolls from the top of the slope. If the roll length cannot cover entire slope, then the next roll should be situated towards the toe of the slope. The locations of horizontal connections of adjacent panels should be staggered at least 10 feet apart.
- Overlaps shall be singled down the slope and/or in the direction that backfilling will occur.
- If the project includes an anchor trench to secure the Drintube Drainage Geocomposite, then the panels shall be secured in the anchor trench as indicated on the Drawings.

#### **Field Seams**

Adjacent sheets of Drintube Drainage Geocomposite shall be overlapped as described below.

- Connections at along the side of the Drintube Drainage Geocomposite roll shall be overlapped 4 inches, and shall be secured using sewn seams, additional overlap, or welds (hot air or flame) [*ENGINEER to select one or more alternatives*].

- Connection at the leading or terminating edge of the Drintube Drainage Geocomposite shall be overlapped such that the upper geotextile layer can be rolled back 12 to 18 inches and the end of the next roll inserted into the opening. Pipes shall be connected either using a snap coupler fitting supplied by the geocomposite manufacturer or by overlapping the pipes by 12 to 18 inches [*ENGINEER to select the alternative*].

Connections to an interceptor drain and/or vacuum pipe shall conform to the Drawings and be at the direction of ENGINEER.

#### Repair

Prior to covering the deployed Drintube Drainage Geocomposite, each roll shall be inspected for damage.

- Any rips, tears or damaged areas on the geocomposite shall be removed and patched.
- If a section of pipe is damaged during installation, add a piece of undamaged pipe of the same diameter next to the damaged pipe, extending a minimum of 8 inches beyond each end of the damaged section of pipe.
- If the geotextile is ripped or torn, install an undamaged piece of the same material under the hole that extends a minimum of 6 inches beyond the hole in all directions to insure that protection of the geomembrane is maintained.
- If the area to be repaired is more than 50 percent of the width of the panel, then the damaged area shall be cut out and replaced with undamaged material. Damaged geotextile shall be replaced by the same type of geotextile.



## **APPENDIX "F"**

### **PETROGARD VI**

#### **Preparation**

- Ensure subgrade is compacted and surface finished to not impair installed membrane.
- Subgrade to provide firm, unyielding surface with no sharp changes or abrupt breaks in grade. A smooth drum rolled surface is preferable.
- Ensure surfaces to be lined are smooth, free of foreign and organic material, sharp objects, or debris of any kind.
- If a suitable sub-grade is not available, then a cushion layer of clean sand or non woven geotextile shall be placed prior to liner placement.
- Excavate anchor trench to line, grade, and width indicated on drawings, prior to liner placement. Provide slightly rounded corners in the trench to avoid sharp bends in the geomembrane.
- Prepare mechanical attachments according to ASTM D6497 Standard Guide for Mechanical Attachment of Geomembrane to Penetrations or Structures.
- All concrete surfaces to which the liner will attach shall have "smooth trowel" finish. All the corners should have radius to a minimum 25mm as per the drawing.
- Compaction at pipe penetrations and areas of mechanical attachment will be inspected carefully as these are areas where differential settlement can occur.
- A certificate of subgrade acceptance will be prepared by the liner installation contractor prior to liner installation.

#### **Handling and Placement**

- Installation of the geomembrane shall be performed in a logical sequence.
- Place panels according to the drawings, the panel layout, and the label on each panel.
- Sufficient thermal slack shall be incorporated during placement to ensure that harmful stresses do not occur in service.
- Ensure personnel working on geomembrane do not use damaging footwear.
- Protect completed panels from damage; handle carefully to avoid damaging the liner.
- Equipment and methods used to unroll liner panels should not damage the prepared subgrade.
- Ballast used to prevent uplift by wind must not damage the geomembrane. A continuous load is recommended along the edges of panels to eliminate the risk of wind uplift.

#### **Weather Conditions at Time of Installation**

- Site welding may proceed at any temperature providing a suitable qualification weld can

be prepared at site conditions using the operator, equipment, and materials intended for the project.

- Installation of membrane in winds above 20 km/h can proceed only if the installer can demonstrate that the liner will not be at risk of damage.
- Do not install membrane during precipitation or in the presence of excessive moisture.
- Do not install in weather conditions that may be detrimental to the function of the membrane.

#### Qualification

- A qualification seam will be run prior to any field seams.
- A qualification seam is made with separate pieces of geomembrane using the same material and equipment that will be used for production welding.
- Machine conditions, and operator used for welding must be the same as those used for the qualification weld.
- Qualification seam must be tested in shear and peel, and meet the specified requirements for the material.
- A qualification seam must be rerun whenever the operator is changed, the equipment adjusted, or at least every 4 hours.

#### Seaming

- Cleaning solvents shall not be used unless product is approved by membrane manufacturer.
- Use water and rags for all cleaning. If soap is used for cleaning rinse with clean water and dry before welding.
- Over lap of a seam shall be a minimum of 150mm
- Technician shall record the machine number, date, technician initials and start the time of every wedge weld.

#### Destructive and Seam Testing

- Field seams will be sampled for testing in a way that does not compromise the installed liner One sample to be tested for every 150m of field seam
- Test samples are to be removed from the ends of seams, from the anchor trench, or other location that does not introduce a defect into the liner.
- Samples to be approximately 100 mm long to permit testing of one shear and two peel specimens (ASTM D6392).
- Test samples shall be taken with in 24hrs after seaming
  - Record date, location and pass/fail description
- Field seams must meet the specified requirements in peel and shear for the material.
- A written record will be maintained for all field seam tests.

\*All completed field seams will be 100% non-destructively tested using an air lance test (ASTM D4437 method 7.2).\*

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- Destructive Test Failure:
  - Cut out seam and re-weld; or,
  - Retrace welding path to <3 m> <<10 feet>> from location of failed test. Take sample for additional test. If passed - cap strip or extrusion weld between failed location and original failed location.

### Repairs

- Inspect seams and non-seam areas for defects, holes, blisters, undispersed raw materials.
- Identify any sign of foreign matter contamination.
- Repair all through-thickness defects.
- Defective Seams: Cap strip or replace.
- Tears: Patch and seal round sharp ends of tears on slope or stressed area prior to patching.
- Repair blisters, large cuts and undispersed raw materials with patch.
- Secure Patches by Hot Air Welding:
  - Hot Air Welding
    - Hand hot air welding is permitted for patching liner.
    - Clean area to be patched.
    - Hand weld the patch with a hot air gun and suitable roller.
- Patches: Round or oval, of same geomembrane. Extend minimum 75 mm beyond the edge of the defect.
- Verification of Repairs: All repairs to be non-destructively tested using
  - Air Lance Test, ASTM D4437 Method 7.2
  - Vacuum Box Test ASTM D5641
- Redo failed repairs and re-test.
- Keep records of all repairs and the results of repair testing.

Cleaning solvents shall not be used unless product is approved by membrane manufacturer. Use water and rags for all cleaning. If soap is used for cleaning rinse with clean water and dry before welding.

**Attachment No. 2**  
**Geotechnical Investigation**



**May 31, 2019**

Mr. Allan Knowlton  
Project Manager  
Baffinland Iron Mines Corporation  
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Canada, L6H 0C3

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Dear Allan,

**RE: KM106 and KM107 Stockpile - 2019 Geotechnical Site Investigation  
Summary**

## **1.0 INTRODUCTION**

Baffinland Iron Mines Corporation (Baffinland) is developing a new stockpile at the Mary River Project, located on northern Baffin Island, Nunavut. Knight Piésold Ltd. (KP) completed geotechnical site investigations (SI) for the proposed KM106 and KM107 stockpiles in April and May 2019. This letter describes the 2019 SI programs and provides the SI results.

## **2.0 SI PROGRAM**

### **2.1 GENERAL**

The 2019 SI program was completed in two phases. The SI at the KM107 area was completed from April 4 to April 16, 2019. The SI at the KM106 area was completed from May 15 to May 16, 2019. All geotechnical field work was carried out under the oversight and full-time presence of a KP engineer. KP responsibilities included the following:

- Monitoring of all drilling activities
- Sample collection and geotechnical logging of all recovered material, including overburden and bedrock
- Selection of samples for laboratory testing and specification of the required testing
- Delivery of selected samples to the Baffinland on-site lab
- Delivery of selected samples to an external lab

The locations of the 2019 drillholes are shown on Figure 1.

## 2.2 SONIC DRILLING

A total of 113.8 metres of sonic drilling was completed in 10 drillholes. Sonic drilling is a rotary vibratory drilling method used to core and recover nearly continuous, disturbed soil samples. Boart Longyear completed the drilling using a 130C mini track-mounted sonic drill rig. Sonic drilling was completed using a 4-inch core barrel without the use of water or steel casing downhole. Upon completion, all drillholes were backfilled with sand to ground surface.

A summary of all 2019 drillholes is provided in Table 1. The geotechnical drillhole logs are provided in Appendix A. Photographs from each drill location are provided in Appendix B and core box photographs are provided in Appendix C.

## 2.3 GEOTECHNICAL LOGGING

Geotechnical logging of recovered materials was completed to assess the soil characteristics within the study areas. Materials recovered during drilling were characterized according to KP soil logging procedures, which combine elements from the Canadian Foundation Engineering Manual (CGS, 2006) and the Unified Soil Classification System (USCS) (ASTM D2488). Frozen soils were logged according to the procedures outlined in ASTM D4083.

Recovered materials were described based on the following characteristics.

- Soil type based on particle size
- Particle shape and angularity
- Gradation
- Plasticity
- Colour and odour
- Soil fabric and structure
- Compactness (for cohesionless soils) or consistency (for fine grained soils)
- Moisture content, and
- Presence of ice and habit of any segregated formations

The sonic drilling for the 2019 SI program was completed without the injection of drilling fluids, therefore, the measured moisture content is judged to be representative of the in situ conditions.

## 2.4 LABORATORY TESTING

Samples were collected by the KP site engineer for laboratory index testing. The index testing was completed by on-site and off-site laboratories as follows:

- On site testwork was completed by KP and Baffinland personnel and included the following:
  - Natural Moisture Content (ASTM D2216) - 58 tests were completed at the on-site laboratory to assess how in situ moisture content varies across the study area.
  - In situ Density - 4 estimates of in situ density were conducted by KP on intact sonic core.

- Off-site testwork was completed by the Golder Laboratory in Vancouver, British Columbia and included the following:
  - Natural Moisture Content (ASTM D2216) - 6 tests were completed to assess in situ moisture.
  - Particle Size Distribution (PSD) with Hydrometer Analysis (ASTM D6913/D7928) - 6 tests were completed to assess the gradation characteristics of the recovered materials. Hydrometer analyses were performed on all PSD samples.
  - Atterberg Limits (ASTM D4318) - 6 tests were completed to assess material plasticity and determine USCS classification.
  - Specific Gravity (ASTM D854) - 6 tests were completed to assess particle density.

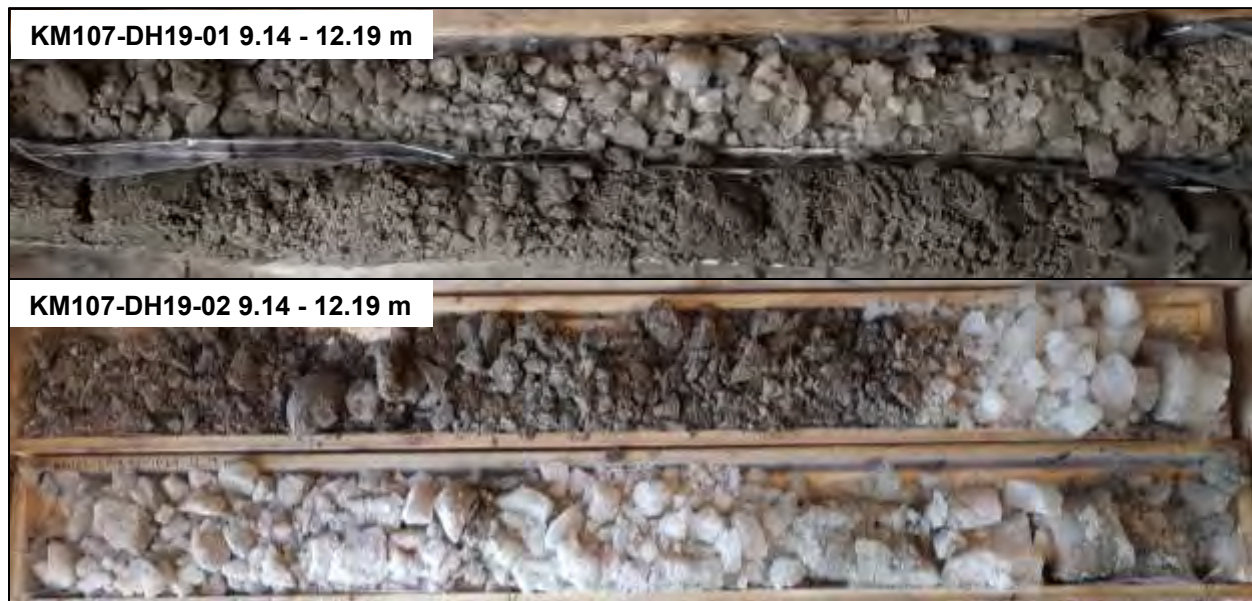
A summary of the laboratory testing results is provided in Table 2. Plots of the moisture content, particle size, and plasticity results are included in Appendix D1. The detailed laboratory reports are provided in Appendix D2.

## 3.0 GEOTECHNICAL CHARACTERIZATION

### 3.1 KM107 AREA

Six sonic drillholes were completed in the KM107 area. The encountered surficial deposits ranged in depth from 0.6 mbgs in KM107-DH19-04 to 21.1 mbgs in KM107-DH19-06, with the shallower deposits on the hillsides and the deeper deposits on the gentler topography.

The overburden consists of a thin organic-rich topsoil overlying glacial deposits typically comprising SAND, some silt and gravel, trace to some clay, with cobbles and boulders. The surficial soils are generally well graded, non-plastic, medium greyish brown, massive, and frozen. The sandy materials were typically well-bonded with minor excess ice crystals (Nbe/Vx). Sections of massive ICE as well as ICE + SAND were encountered in four of the drillholes and were observed in thicknesses of up to 14 m (KM107-DH19-06). The encountered ice was dominantly hard with some soft and crumbly sections, clear to white in colour, and massive with some stratified sandy sections. Typical examples of ice rich layers are provided on Figure 2. The encountered bedrock was a very strong and fresh to slightly weathered gneiss. A 2.5 m thick weathered bedrock horizon with iron oxidation was encountered in drillhole KM107-DH19-04.



**Figure 1 KM107 - Massive Ice Examples**

Four (4) overburden samples from the KM107 area were sent off-site for laboratory index testing and 58 samples were tested for moisture content at the on-site laboratory. Cobbles and boulders (material greater than 76 mm diameter) were excluded from the samples. Field logging of recovered sonic core confirms the presence of cobbles and boulders in varying concentrations as indicated in the drillhole logs. An additional 4 samples were used to estimate in situ density in the field during drilling.

The moisture content, particle size, and plasticity results are provided in Appendix D1. The results indicate that the soil materials within the overburden consists of SAND, some silt, some gravel, trace to some clay material with the following geotechnical properties:

- Natural Moisture Content: Average of 38% (range of 4 to 100%)
- Specific Gravity: Average of 2.69 (range of 2.68 to 2.69)
- In situ Density: Average of 1.15 g/cm<sup>3</sup> (range of 0.92 to 1.56 g/cm<sup>3</sup>)
- Particle Size Distribution:
  - Gravel: Average of 17% (range of 6 to 33%)
  - Sand: Average of 55% (range of 44 to 61%)
  - Silt: Average of 19% (range of 17 to 22%)
  - Clay: Average of 9% (range of 5 to 12%)
- Plasticity: non-plastic to low plasticity
- USCS Classification: silty sand (SM)

The overall geotechnical characteristics of the KM107 site will be dominated by the presence of ice rich soils and massive ice.



### 3.2 KM106 AREA

Four sonic drillholes were completed in the KM106 area. The encountered surficial deposits ranged in depth from 0.0 to 4.2 mbgs, but the area is generally characterized by shallow bedrock with many surface outcroppings and large boulders. The deepest overburden deposit was encountered in KM106-DH19-05 and appears to be isolated to a relatively small area, as outlined on Figure 3. The depth to the bedrock surface outside of the area illustrated on Figure 3 was observed at less than 1 mbgs.

The overburden consists of a 20 cm organic-rich topsoil overlying a glacial till comprising gravelly SAND, some silt, trace clay with cobbles and boulders. The surficial soils are generally well-graded, non-plastic, medium greyish brown, massive, and moist. Encountered bedrock was a very strong and fresh to slightly weathered gneiss. Frozen ground was not encountered in the KM106 area drillholes, however it is possible that the frozen ground was thawed by drilling activities .



**Figure 2 KM106 Area - Overburden Distribution**

Two overburden samples from the KM106 area were sent off-site for laboratory index testing. Cobbles and boulders (material greater than 76 mm diameter) were excluded from the samples. Field logging of recovered sonic core confirms the presence of cobbles and boulders in varying concentrations.

The moisture content, particle size, and plasticity results are provided in Appendix D1. The results indicate that the overburden consists of a gravelly SAND, some silt, trace clay material with the following geotechnical properties:

- Natural Moisture Content: Average of 9% (range of 8 to 10%)
- Specific Gravity: Average of 2.72 (range of 2.71 to 2.72)

- Particle Size Distribution:
  - Gravel: Average of 28% (range of 26 to 29%)
  - Sand: Average of 50% (range of 43 to 57%)
  - Silt: Average of 17% (range of 13 to 20%)
  - Clay: Average of 5% (range of 3 to 7%)
- Plasticity: low plasticity
- USCS Classification: silty sand (SM)

## 4.0 CLOSURE

The KM106 location is recommended for construction of a stockpile based on the absence of massive ice and the presence of near-surface bedrock in the foundations.

We trust that the information contained herein meets your needs at this time. Should additional information be required please do not hesitate to contact the undersigned.

## 5.0 REFERENCES

ASTM D854. *Standard Test Methods for Specific Gravity of Soil Solids by Water Pycnometer*. ASTM International. West Conshohocken, PA. [www.astm.org](http://www.astm.org)

ASTM D2216. *Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass*. ASTM International. West Conshohocken, PA. [www.astm.org](http://www.astm.org)

ASTM D2487. *Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)*. ASTM International. West Conshohocken, PA. [www.astm.org](http://www.astm.org)

ASTM D2488. *Standard Practice for Description of Frozen Soils (Visual-Manual Procedure)*. ASTM International. West Conshohocken, PA. [www.astm.org](http://www.astm.org)

ASTM D4083. *Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)*. ASTM International. West Conshohocken, PA. [www.astm.org](http://www.astm.org)

ASTM D4318. *Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils*. ASTM International. West Conshohocken, PA. [www.astm.org](http://www.astm.org)

ASTM D6913. *Standard Test Method for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis*. ASTM International. West Conshohocken, PA. [www.astm.org](http://www.astm.org)

ASTM D7928. *Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis*. ASTM International. West Conshohocken, PA. [www.astm.org](http://www.astm.org)

Canadian Geotechnical Society (CGS), 2006. *Canadian Foundation Engineering Manual*. Fourth Edition.

Knight Piésold Ltd. (KP), 2019a. Letter to: Allan Knowlton, Baffinland Iron Mines Corporation. Re: *KM107 Stockpile - Site Investigations Technical Specifications*. March 25. North Bay, Ontario.  
Ref. No. NB19-00219 (NB102-181/55).

Yours truly,  
**Knight Piésold Ltd.**

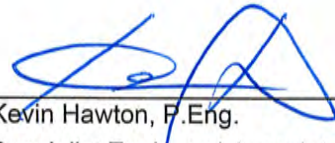


Prepared:



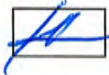
Jessica Galavan, P.Eng.  
Project Engineer

Reviewed:



Kevin Hawton, P.Eng.  
Specialist Engineer | Associate

Approval that this document adheres to the Knight Piésold Quality System:

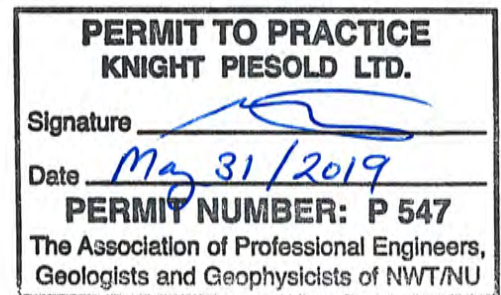


**Attachments:**

Table 1 Rev 0	Drillhole Summary
Table 2 Rev 0	Laboratory Testing Summary
Figure 1 Rev 0	KM106 and KM107 Stockpiles - Site Investigation Locations
Appendix A	Geotechnical Drillhole Logs
Appendix B	Drill Site Photographs
Appendix C	Core Box Photographs
Appendix D	Laboratory Data
Appendix D1	Laboratory Data Summary Plots
Appendix D2	Laboratory Data Reports

Copy To: Roger Doyle, Baffinland Iron Mines Corporation  
Trevor Brisco, Baffinland Iron Mines Corporation  
Simon Fleury, Baffinland Iron Mines Corporation  
Matt Brown, Baffinland Iron Mines Corporation  
Kevin Hawton, Knight Piésold Ltd.

/jg



May 31, 2019

NB19-00431

**TABLE 1**
**BAFFINLAND IRON MINES CORPORATION  
 MARY RIVER PROJECT**
**KM106 AND KM107 STOCKPILE - 2019 GEOTECHNICAL SITE INVESTIGATION SUMMARY  
 DRILLHOLE SUMMARY**

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Drillhole ID	Location	UTM Coordinates			Total Depth (m)	Depth to Bedrock (m)	Start Date	Completion Date	Notes
		Easting (m)	Northing (m)	Elevation (masl)					
KM106-DH19-01	KM106 Sedimentation Pond	563,473	7,913,064	264	1.52	0.5	2019-05-16	2019-05-16	Backfilled with sand to surface
KM106-DH19-02	KM106 Stockpile	563,418	7,913,168	278	1.52	0.3	2019-05-16	2019-05-16	Backfilled with sand to surface
KM106-DH19-03	KM106 Stockpile	563,545	7,913,193	279	1.83	0.4	2019-05-16	2019-05-16	Backfilled with sand to surface
KM106-DH19-04	KM106 Stockpile	563,618	7,913,306	285	0.00	0.0	2019-05-16	2019-05-16	Drillhole not completed due to difficult access and bedrock outcrops at surface.
KM106-DH19-05	KM106 Sedimentation Pond	563,505	7,913,113	268	4.57	4.4	2019-05-16	2019-05-16	Backfilled with sand to surface
KM107-DH19-01	KM107 Sedimentation Pond	564,115	7,913,358	304	22.86	21.0	2019-04-08	2019-04-11	Backfilled with sand to surface
KM107-DH19-02	KM107 Stockpile	564,219	7,913,502	319	21.33	20.0	2019-04-12	2019-04-13	Backfilled with sand to surface
KM107-DH19-03	KM107 Stockpile	564,385	7,913,556	318	22.08	21.0	2019-04-15	2019-04-15	Backfilled with sand to surface
KM107-DH19-04	KM107 Stockpile	564,351	7,913,721	330	3.66	0.6	2019-04-15	2019-04-16	Backfilled with sand to surface
KM107-DH19-05	KM107 Access Road	563,874	7,913,618	334	11.58	9.4	2019-04-07	2019-04-08	Backfilled with sand to surface
KM107-DH19-06	KM107 Sedimentation Pond	564,307	7,913,350	308	22.86	21.1	2019-04-11	2019-04-12	Backfilled with sand to surface

I:\1102\00181\57\A\Correspondence\NB19-00431 - 2019 KM106 and KM107 Stockpile Geotechnical SI\Tables and Figures\Tables and Figures.xlsx]Table 1

**NOTES:**

- COORDINATE SYSTEM IS UTM NAD83, ZONE 17W. COORDINATES WERE TAKEN WITH A HANDHELD GARMIN GPS WITH AN ACCURACY OF +/- 4 m.
- REPORTED DEPTHS REFER TO VERTICAL DISTANCE BELOW GROUND SURFACE.
- ALL HOLES DRILLED VERTICAL WITH SONIC CORING METHODS.

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REV	DATE	DESCRIPTION	PREP'D	RVW'D



TABLE 2

BAFFINLAND IRON MINES CORPORATION  
MARY RIVER PROJECT

KM106 AND KM107 STOCKPILE - 2019 GEOTECHNICAL SITE INVESTIGATION SUMMARY  
LABORATORY TESTING SUMMARY

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Drillhole ID	Sample ID	Depth From (m)	Depth To (m)	Elevation (m)	In-Situ Density (g/cm³)	Moisture Content (ASTM D2216) (%)	Particle Size Analysis (ASTM D6913/D7928)				Atterberg Limits (ASTM D4318)			Specific Gravity (ASTM D854) (%)	USCS Classification (ASTM D2487) (-)	Material Description
							Gravel (>4.75 mm)	Sand (4.75 to 0.75 mm)	Silt (0.075 to 0.002 mm)	Clay ( $<0.002$ mm)	Liquid Limit	Plastic Limit	Plasticity Index			
							(%)	(%)	(%)	(%)	(%)	(%)	(%)			
KM106 Stockpile																
KM106-DH19-01	01-BU-01	0.3	0.5	263.60		10.0	26.3	57.4	13.4	2.9	19	16	3	2.72	SM	Gravelly SAND, some silt, trace clay
KM106-DH19-05	05-BU-01	1.6	1.8	266.30		8.2	29.0	43.2	20.4	7.4	17	14	3	2.71	SM	Silty, gravelly SAND, trace clay
KM107 Stockpile																
KM107-DH19-01	01-MC-01	0.6	0.9	303.25		12.5										
KM107-DH19-01	01-MC-02	2.2	2.5	301.65		87.1										
KM107-DH19-01	01-MC-03 / 01-DE-01	4.5	4.6	299.49	1.15	70.3										
KM107-DH19-01	01-MC-04	4.8	5.1	299.05		52.9										
KM107-DH19-01	01-MC-05	6.7	7.0	297.15		40.0										
KM107-DH19-01	01-MC-06	8.5	8.6	295.45		14.6										
KM107-DH19-01	01-MC-07	9.1	9.3	294.78		78.6										
KM107-DH19-01	01-MC-08	13.0	13.3	290.85		8.5										
KM107-DH19-01	01-MC-09	13.9	14.2	289.95		15.3										
KM107-DH19-01	01-MC-10	15.9	16.2	287.95		8.2										
KM107-DH19-01	01-MC-11	17.8	18.1	286.05		10.6										
KM107-DH19-01	01-MC-12	18.5	18.9	285.30		9.1										
KM107-DH19-01	01-MC-13	20.3	20.6	283.55		17.0										
KM107-DH19-01	01-EMC-01	10.9	11.3	292.90		100.0										
KM107-DH19-02	02-MC-01	0.6	0.8	318.30		8.6										
KM107-DH19-02	02-MC-02 / 02-DE-01	1.6	1.7	317.35	1.56	17.0										
KM107-DH19-02	02-MC-03	3.6	3.8	315.30		57.6										
KM107-DH19-02	02-MC-04	7.1	7.3	311.80		69.0										
KM107-DH19-02	02-MC-05	9.6	9.8	309.30		55.9										
KM107-DH19-02	02-MC-06	12.3	12.5	306.60		40.0										
KM107-DH19-02	02-MC-07	14.9	15.1	304.00		18.1										
KM107-DH19-02	02-MC-08	16.0	16.1	302.95		18.0										
KM107-DH19-02	02-MC-09	17.6	17.7	301.35		13.0										
KM107-DH19-02	02-MC-10	18.7	18.9	300.20		11.3										
KM107-DH19-02	02-EMC-01	4.7	5.1	314.10		100.0										
KM107-DH19-02	02-EMC-02	7.8	8.2	311.00		100.0										
KM107-DH19-02	02-EMC-03	11.0	11.5	307.75		100.0										
KM107-DH19-02	02-BU-01	1.2	1.5	317.65		9.5	6.2	60.1	22.2	11.5	12	9	3	2.68	SM	Silty SAND, some clay, trace gravel
KM107-DH19-03	03-MC-01	0.9	1.1	317.00		10.8										
KM107-DH19-03	03-MC-02	2.4	2.6	315.50		60.6										
KM107-DH19-03	03-MC-03 / 03-DE-01	4.4	4.6	313.51	0.96	77.9										
KM107-DH19-03	03-MC-04	5.3	5.5	312.60		69.0										
KM107-DH19-03	03-MC-05	6.8	7.0	311.10		68.8										
KM107-DH19-03	03-MC-06	8.4	8.6	309.50		56.8										
KM107-DH19-03	03-MC-07	10.1	10.3	307.80		75.8										
KM107-DH19-03	03-MC-08	11.6	11.8	306.30		80.0										
KM107-DH19-03	03-MC-09	13.3	13.5	304.60		12.8										
KM107-DH19-03	03-MC-10	14.7	14.9	303.20		16.9										
KM107-DH19-03	03-MC-11	16.1	16.2	301.85		7.6										
KM107-DH19-03	03-MC-12	17.6	17.8	300.30		9.5										
KM107-DH19-03	03-MC-13	19.3	19.5	298.60		11.0										
KM107-DH19-03	03-MC-14	20.8	21.0	297.10		10.7										
KM107-DH19-03	03-BU-01	1.0	1.3	316.85		9.5	13.5	61.2	16.8	8.5	NP	NP	NP	2.69	SM	SAND, some silt, some gravel, trace clay
KM107-DH19-04	04-MC-01	0.3	0.4	329.65		46.7										
KM107-DH19-04	04-MC-02	1.7	1.9	328.20		8.8										
KM107-DH19-05	05-MC-01	0.4	0.7	333.45		4.1										
KM107-DH19-05	05-MC-02	2.1	2.4	331.75		11.0										
KM107-DH19-05	05-MC-03	3.6	3.9	330.25		14.9										
KM107-DH19-05	05-MC-04	4.9	5.3	328.90		13.6										
KM107-DH19-05	05-MC-05	6.8	7.1	327.05		9.9										
KM107-DH19-05	05-MC-06	8.3	8.6	325.55		12.5										
KM107-DH19-05	05-MC-07	9.2	9.4	324.70		11.0										
KM107-DH19-05	05-BU-01	1.9	2.3	331.90		8.9	32.6	44.4	18.2	4.8	NP	NP	NP	2.69	SM	Gravelly SAND, some silt, trace clay

TABLE 2

 BAFFINLAND IRON MINES CORPORATION  
 MARY RIVER PROJECT

 KM106 AND KM107 STOCKPILE - 2019 GEOTECHNICAL SITE INVESTIGATION SUMMARY  
 LABORATORY TESTING SUMMARY

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Drillhole ID	Sample ID	Depth From (m)	Depth To (m)	Elevation (m)	In-Situ Density (g/cm <sup>3</sup> )	Moisture Content (ASTM D2216) (%)	Particle Size Analysis (ASTM D6913/D7928)				Atterberg Limits (ASTM D4318)			Specific Gravity (ASTM D854) (%)	USCS Classification (ASTM D2487) (4) (-)	Material Description
							Gravel (>4.75 mm)	Sand (4.75 to 0.75 mm)	Silt (0.075 to 0.002 mm)	Clay (<0.002 mm)	Liquid Limit	Plastic Limit	Plasticity Index			
							(%)	(%)	(%)	(%)	(%)	(%)	(%)			
KM107-DH19-06	06-MC-01	0.3	0.5	307.60		17.5										
KM107-DH19-06	06-MC-02	1.0	1.2	306.9		15.0										
KM107-DH19-06	06-MC-03	3.5	3.8	304.4		40.0										
KM107-DH19-06	06-MC-04 / 04-DE-01	5.9	6.1	302.00	0.92	79.5										
KM107-DH19-06	06-MC-05	6.8	7.0	301.1		80.0										
KM107-DH19-06	06-MC-06	8.3	8.6	299.6		25.0										
KM107-DH19-06	06-MC-07	9.2	9.4	298.7		81.3										
KM107-DH19-06	06-MC-08	14.0	14.3	293.9		20.0										
KM107-DH19-06	06-MC-09	16.3	16.5	291.6		63.0										
KM107-DH19-06	06-MC-10	17.1	17.3	290.8		38.9										
KM107-DH19-06	06-MC-11	19.3	19.5	288.6		12.2										
KM107-DH19-06	06-MC-12	20.4	20.6	287.5		14.3										
KM107-DH19-06	06-EMC-01	11.0	11.5	296.8		100.0										
KM107-DH19-06	06-EMC-02	12.5	12.9	295.3		100.0										
KM107-DH19-06	06-BU-01	0.8	1.1	307.1		7.1	15.1	53.2	20.5	11.2	14	10	4	2.68	SC-SM	Silty SAND, some clay, some gravel

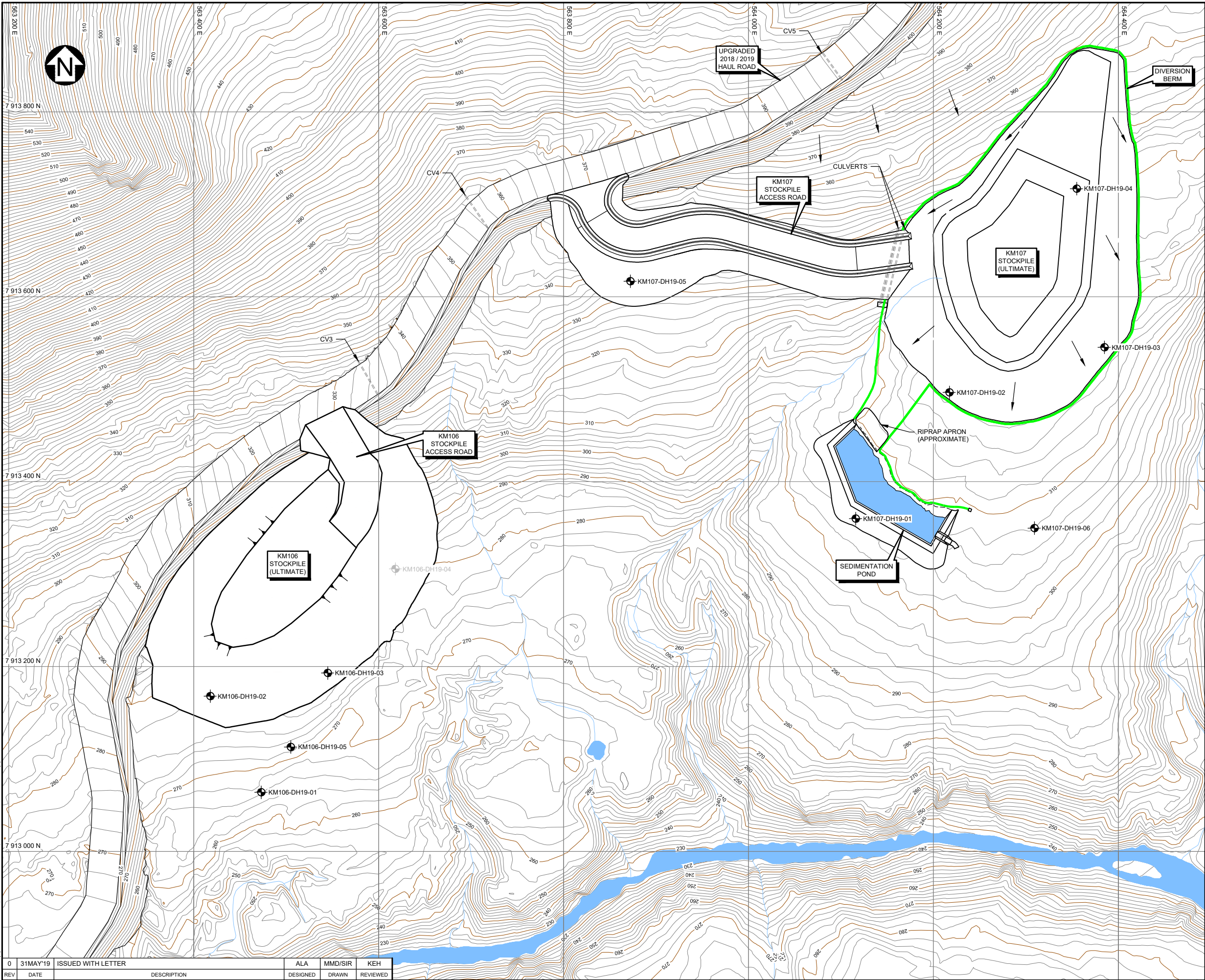
I:\1102\00181\57A\Correspondence\NB19-00431 - 2019 KM106 and KM107 Stockpile Geotechnical SI\Tables and Figures\Tables and Figures.xlsx\Table 2

## NOTES:

1. MEASUREMENTS FOR SAMPLES WITH MOISTURE CONTENT, PARTICLE SIZE DISTRIBUTION, PLASTICITY, AND SPECIFIC GRAVITY TESTS WERE COMPLETED BY THE GOLDBER LABORATORY IN VANCOUVER, BC.
2. MEASUREMENTS FOR SAMPLES WITH ONLY MOISTURE CONTENT TESTS WERE COMPLETED BY BAFFINLAND THROUGH THE MARY RIVER ON-SITE LABORATORY.
3. IN SITU DENSITY ESTIMATES WERE MEASURED BY KP PERSONNEL WHILE ON SITE.
4. SOIL CLASSIFICATION BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM (USCS) (ASTM D2487).

0	31MAY19	ISSUED WITH LETTER NB19-00431	JAG	ALA
REV	DATE	DESCRIPTION	PREP'D	RW'D

SAVED: I:\1020018157\A\Acad\FG5B01.RD, 5/31/2019 11:19:44 AM, MDEMERS PRINTED: 5/31/2019 11:21:51 AM, FIGURE 1, MDEMERS ACAD VERSION: 23.05 (LMS TECH)



KM106 STOCKPILE TABLE OF DRILLHOLE LOCATIONS			
DESCRIPITON	NORTHING	EASTING	ELEVATION (m)
KM106-DH19-01	7,913,064.0	563,473.0	264.0
KM106-DH19-02	7,913,168.0	563,418.0	278.0
KM106-DH19-03	7,913,193.0	563,545.0	279.0
KM106-DH19-04	7,913,305.6	563,618.2	285.3
KM106-DH19-05	7,913,113.0	563,505.0	268.0

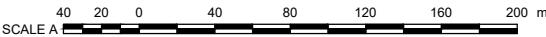
KM107 STOCKPILE TABLE OF DRILLHOLE LOCATIONS			
DESCRIPITON	NORTHING	EASTING	ELEVATION (m)
KM107-DH19-01	7,913,360.0	564,116.0	304.4
KM107-DH19-02	7,913,496.5	564,217.3	318.8
KM107-DH19-03	7,913,545.3	564,384.9	318.0
KM107-DH19-04	7,913,716.9	564,355.0	329.6
KM107-DH19-05	7,913,616.8	563,872.3	334.2
KM107-DH19-06	7,913,349.8	564,309.3	308.0

LEGEND:

- WATER
- CULVERT
- DIVERSION BERM
- GENERAL FLOW DIRECTION
- COMPLETED DRILLHOLE
- DRILLHOLE NOT COMPLETED

NOTES:

- COORDINATE GRID IS UTM NAD83 ZONE 17.
- TOPOGRAPHY BASED ON INFORMATION PROVIDED BY EAGLE MAPPING (2008).
- ELEVATIONS ARE IN METRES. CONTOUR INTERVAL IS 2 m.
- UPGRADED 2018 / 2019 HAUL ROAD, KM106 STOCKPILE, KM107 STOCKPILE AND ACCESS ROAD PROVIDED BY BAFFINLAND.
- ALL INFRASTRUCTURE SHOWN IS PROPOSED UNLESS NOTED OTHERWISE.



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KM106 AND KM107 STOCKPILES  
SITE INVESTIGATION LOCATIONS



P/A NO.  
NB102-181/57

REF NO.  
NB19-00431

FIGURE 1

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## **APPENDIX A**

### **Geotechnical Drillhole Logs**

(Pages A-1 to A-19)



<b>Contractor</b>	Boart Longyear	<b>Drillhole No</b>	KM106-DH19-01	<b>Page</b>	1 of 1
<b>Location</b>	KM106 Stockpile	<b>Drill Type</b>	Mini Sonic 130C	<b>Date Started</b>	16/May/2019
<b>Coordinates</b>	563473E, 7913064N	<b>Total Depth</b>	1.52 m	<b>Date Completed</b>	16/May/2019
<b>Coordinate System</b>	17 W NAD83	<b>Elevation</b>	264 m	<b>Logged By</b>	JAG
<b>Hole Size</b>	4 IN	<b>Azimuth, Inclination</b>	0°, -90°	<b>Reviewed By</b>	ALA

DEPTH - (M)	ELEVATION - (M)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO	SAMPLE REC. (%)	SAMPLE TYPE	NOTES	PARTICLE SIZE DISTRIBUTION (%)					
									COARSE	GRAVEL	SAND	FINES		MC (%)
												SILT	CLAY	
1	263		<b>TOPSOIL</b> (0 to 0.1 m) Peat and organics.	100										
			<b>GRAVELLY SAND</b> (0.1 to 0.5 m) Gravelly, fine to coarse, subangular; SAND, fine to coarse; some silt; well graded, medium orangish brown, loose, massive, moist.		01-BU-01	100	GB		0.0	26.3	57.4	13.4	2.9	10.0
			<b>BEDROCK</b> (0.5 to 1.52 m) Bedrock. Very strong, fresh, dark bluish/greenish grey, dry.	100										
2	262		End of Drillhole: 1.52 m Confirmed bedrock											
3	261													
4	260													

**GENERAL REMARKS:**

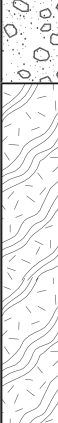
Drillhole located in proposed KM106 stockpile seepage collection pond area. Sonic drilling without water injection. No casing used.  
Drillhole backfilled with sand to surface.

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P/A NO. NB102-00181/57	REF. NO. NB19-00431	REV 0
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**FIGURE A.1**

<b>Contractor</b>	Boart Longyear	<b>Drillhole No</b>	KM106-DH19-02	<b>Page</b>	1 of 1
<b>Location</b>	KM106 Stockpile	<b>Drill Type</b>	Mini Sonic 130C	<b>Date Started</b>	16/May/2019
<b>Coordinates</b>	563418E, 7913168N	<b>Total Depth</b>	1.52 m	<b>Date Completed</b>	16/May/2019
<b>Coordinate System</b>	17 W NAD83	<b>Elevation</b>	278 m	<b>Logged By</b>	JAG
<b>Hole Size</b>	4 IN	<b>Azimuth, Inclination</b>	0°, -90°	<b>Reviewed By</b>	ALA

DEPTH - (M)	ELEVATION - (M)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO	SAMPLE REC. (%)	SAMPLE TYPE	NOTES	PARTICLE SIZE DISTRIBUTION (%)					MC (%)
									COARSE	GRAVEL	SAND	SILT	CLAY	
1	277		<b>GRAVELLY SAND</b> (0 to 0.3 m) Gravelly, fine to coarse, angular to subangular; SAND, fine to coarse; some silt; some cobbles; well graded, dark reddish brown, loose to compact, massive, wet at surface then moist below 10 cm .  <b>BEDROCK</b> (0.3 to 1.52 m) Bedrock. Very strong, fresh, dark bluish/greenish grey, dry.	92										
				100										
2	276		End of Drillhole: 1.52 m Confirmed bedrock											
3	275													
4	274													

**GENERAL REMARKS:**

Drillhole located at southwest toe of proposed KM106 stockpile area. Sonic drilling without water injection. No casing used. Drillhole backfilled with sand to surface.

**BAFFINLAND IRON MINES CORPORATION  
MARY RIVER PROJECT**


**Knight Piésold**  
CONSULTING

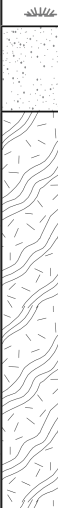
P/A NO.  
NB102-00181/57

REF. NO.  
NB19-00431

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**FIGURE A.2**

<b>Contractor</b>	Boart Longyear	<b>Drillhole No</b>	KM106-DH19-03	<b>Page</b>	1 of 1
<b>Location</b>	KM106 Stockpile	<b>Drill Type</b>	Mini Sonic 130C	<b>Date Started</b>	16/May/2019
<b>Coordinates</b>	563545E, 7913193N	<b>Total Depth</b>	1.83 m	<b>Date Completed</b>	16/May/2019
<b>Coordinate System</b>	17 W NAD83	<b>Elevation</b>	279 m	<b>Logged By</b>	JAG
<b>Hole Size</b>	4 IN	<b>Azimuth, Inclination</b>	0°, -90°	<b>Reviewed By</b>	ALA

DEPTH - (M)	ELEVATION - (M)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO	SAMPLE REC. (%)	SAMPLE TYPE	NOTES	PARTICLE SIZE DISTRIBUTION (%)					MC (%)
									COARSE	GRAVEL	SAND	FINES	CLAY	
1	278		<b>TOPSOIL</b> (0 to 0.1 m) Peat and organics.  <b>SAND</b> (0.1 to 0.4 m) SAND, fine to coarse; some gravel, fine to coarse, subangular; some cobbles; trace silt; well graded; dark orangish brown, loose, massive, moist to wet.  <b>BEDROCK</b> (0.4 to 1.83 m) Bedrock. Very strong, fresh, dark bluish/greenish grey, dry.	99										
				100										
2	277		End of Drillhole: 1.83 m Confirmed bedrock											
3	276													
4	275													

**GENERAL REMARKS:**

Drillhole located at south toe of proposed KM106 stockpile area. Sonic drilling without water injection. No casing used. Drillhole backfilled with sand to surface.

**BAFFINLAND IRON MINES CORPORATION  
MARY RIVER PROJECT**


**Knight Piésold**  
CONSULTING

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NB102-00181/57

REF. NO.  
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**FIGURE A.3**

<b>Contractor</b>	Boart Longyear	<b>Drillhole No</b>	KM106-DH19-05	<b>Page</b>	1 of 1
<b>Location</b>	KM106 Stockpile	<b>Drill Type</b>	Mini Sonic 130C	<b>Date Started</b>	16/May/2019
<b>Coordinates</b>	563505E, 7913113N	<b>Total Depth</b>	4.57 m	<b>Date Completed</b>	16/May/2019
<b>Coordinate System</b>	17 W NAD83	<b>Elevation</b>	268 m	<b>Logged By</b>	JAG
<b>Hole Size</b>	4 IN	<b>Azimuth, Inclination</b>	0°, -90°	<b>Reviewed By</b>	ALA

DEPTH - (M)	ELEVATION - (M)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO	SAMPLE REC. (%)	SAMPLE TYPE	NOTES	PARTICLE SIZE DISTRIBUTION (%)					MC (%)
									COARSE	GRAVEL	SAND	SILT	CLAY	
1	267		<b>TOPSOIL</b> (0 to 0.2 m) Peat and organics.	100										
			<b>GRAVELLY SAND</b> (0.2 to 1.3 m) Gravelly, fine to coarse, angular to subangular; SAND, fine to coarse; some silt, trace boulders; well graded, dark orangish brown, compact, massive, moist.											
2	266		<b>SILTY, GRAVELLY SAND</b> (1.3 to 4.4 m) Silty; gravelly, fine to coarse, angular to subrounded; SAND, fine to coarse; some cobbles, trace clay; trace boulders; well graded, non-plastic to low plasticity, medium brown, dense, massive, moist to wet.	100	05-BU-01	100	GB	Driller notes material is dense and drills like rock.	0.0	29.0	43.2	20.4	7.4	8.2
3	265			100										
4	264			100										
			<b>BEDROCK</b> (4.4 to 4.57 m) Bedrock. Very strong, fresh, dark bluish/greenish grey, dry.	100				Water downhole causing sloughing, can not advance without casing.						
			End of Drillhole: 4.57 m Confirmed bedrock											

#### GENERAL REMARKS:

Drillhole located in proposed KM106 stockpile seepage collection pond area. Sonic drilling without water injection. No casing used.  
Drillhole backfilled with sand to surface.

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


P/A NO. NB102-00181/57	REF. NO. NB19-00431	REV 0
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FIGURE A.4



<b>Contractor</b>	Boart Longyear	<b>Drillhole No</b>	KM107-DH19-01	<b>Page</b>	1 of 3
<b>Location</b>	KM107 Stockpile	<b>Drill Type</b>	Mini Sonic 130C	<b>Date Started</b>	08/Apr/2019
<b>Coordinates</b>	564115E, 7913358N	<b>Total Depth</b>	22.86 m	<b>Date Completed</b>	11/Apr/2019
<b>Coordinate System</b>	17 W NAD83	<b>Elevation</b>	304 m	<b>Logged By</b>	JAG
<b>Hole Size</b>	4 IN	<b>Azimuth, Inclination</b>	0°, -90°	<b>Reviewed By</b>	ALA

DEPTH - (M)	ELEVATION - (M)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO	SAMPLE REC. (%)	SAMPLE TYPE	NOTES	PARTICLE SIZE DISTRIBUTION (%)					MC (%)	
									COARSE	GRAVEL	SAND	FINES			
												SILT	CLAY		
1	303		<b>GRAVELLY SAND</b> (0 to 0.3 m) Gravelly, fine to coarse, subangular to angular; SAND, fine to coarse; some silt; trace cobbles; subangular to angular; well graded, medium greyish brown, compact, massive, moist to wet. Surface frost layer of ice, weakly bonded (Nf).	100	01-MC-01	100	GB	Core is warm from drilling cobbles.							12.5
2	302		<b>SAND (VX)</b> (0.3 to 1.7 m) SAND, fine to coarse; trace silt; trace gravel, fine to coarse, angular to subangular; trace cobbles; trace boulders, angular to subangular; poorly graded, non-plastic, reddish brown, dense, massive, frozen. Well bonded, very few visible ice crystals <1 mm diameter (Nbn/Vx).	100	01-MC-02	100	GB								87.1
3	301		<b>ICE + SAND</b> (1.7 to 3.6 m) ICE + SAND, fine to coarse; some silt; medium greyish brown, horizontally stratified. Ice layers are 0.5 cm thick, very hard, clear to white. Approximately 70 to 90% ice.	100											
4	300		<b>ICE + SAND</b> (3.6 to 4.8 m) ICE + silty; SAND, fine to coarse; medium greenish grey, stratified, organic sent. Ice is hard, granular, cloudy white to grey. Approximately 85% excess ice to 3.9 m, then reducing to 70 to 80% ice.		01-MC-03	100	GB								70.3
5	299		<b>ICE</b> (4.8 to 5.5 m) ICE, friable, granular, cloudy light yellowish brown turning to white at 5.2 m. Approximately 95% ice.	95	01-MC-04	100	GB								82.9
6	298		<b>ICE + SILTY SAND</b> (5.5 to 6.6 m) ICE + silty; SAND, fine to coarse; medium greenish grey, stratified. Ice is hard, granular, cloudy white to grey. Approximately 85% ice.												
7	297		<b>ICE + SAND</b> (6.6 to 7.2 m) ICE + SAND, fine to medium; some silt; poorly graded, medium brownish grey, stratified in 1 to 2 cm thick layers. Ice is hard, clear to grey. Approximately 40% ice.	93	01-MC-05	100	GB								40.0
8	296		<b>ICE</b> (7.2 to 8.4 m) ICE, hard, granular, cloudy to clear, colourless to grey. 100% ice.	100											
9	295		<b>SAND (VR)</b> (8.4 to 8.6 m) SAND, fine to coarse; poorly graded, reddish brown, dense, massive, frozen. Well bonded, with excess ice crystals < 3mm diameter and 1 mm thick and randomly oriented ice lenses, very hard, clear (Nbe/VX/Vr).		01-MC-06	100	GB	9.14-10.67 m: Driller notes harder ground. 01-EMC-01: Moisture content estimated in field.							14.6
			<b>ICE</b>	100	01-MC-07	100	GB								

#### GENERAL REMARKS:

Drillhole located in proposed KM107 stockpile seepage collection pond area. Sonic drilling without water injection. No casing used.  
Drillhole backfilled with sand to surface.

#### BAFFINLAND IRON MINES CORPORATION MARY RIVER PROJECT



P/A NO. NB102-00181/57	REF. NO. NB19-00431	REV 0
FIGURE A.5		

<b>Contractor</b>	Boart Longyear	<b>Drillhole No</b>	KM107-DH19-01	<b>Page</b>	2 of 3
<b>Location</b>	KM107 Stockpile	<b>Drill Type</b>	Mini Sonic 130C	<b>Date Started</b>	08/Apr/2019
<b>Coordinates</b>	564115E, 7913358N	<b>Total Depth</b>	22.86 m	<b>Date Completed</b>	11/Apr/2019
<b>Coordinate System</b>	17 W NAD83	<b>Elevation</b>	304 m	<b>Logged By</b>	JAG
<b>Hole Size</b>	4 IN	<b>Azimuth, Inclination</b>	0°, -90°	<b>Reviewed By</b>	ALA

DEPTH - (M)	ELEVATION - (M)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO	SAMPLE REC. (%)	SAMPLE TYPE	NOTES	PARTICLE SIZE DISTRIBUTION (%)					MC (%)	
									COARSE	GRAVEL	SAND	FINES			
												SILT	CLAY		
11	293		ICE (8.6 to 12.2 m) ICE, trace sand, fine to coarse; grey. Ice is hard, shattered, granular, mostly cloudy, colourless to grey. Approximately 95% ice. Few short (<10 cm) zones with 10% sand.	100				9.14-10.67 m: Driller notes harder ground. 01-EMC-01: Moisture content estimated in field.							100.0
12	292			01-EMC-01	50	GB									
13	291		ICE + SAND (12.2 to 13 m) ICE + SAND, fine to medium; some silt; poorly graded, medium greyish brown, massive. Ice is soft, friable, granular, greyish brown. Approximately 35% ice.	98											9.5
14	290			SILTY SAND (13 to 13.9 m) Silty; SAND, fine to coarse; some gravel, fine to coarse, subangular; some cobbles; trace boulders; well graded, non-plastic to low plasticity, medium brownish grey, compact, massive, wet to saturated, not frozen.											
15	289		SAND (VX) (13.9 to 19.81 m) SAND, fine to coarse; trace gravel, fine to coarse, angular to subangular; trace silt; poorly graded, medium reddish brown, light beige from 18.0 to 19.2 m, dense, massive, frozen. Well bonded with excess ice, crystals < 2 mm diameter (Vx).	97				14.48-16.76 m: Driller says ground feels frozen, but heat of drilling is melting ice.							15.3
16	288				01-MC-09	100	GB								
17	287			97											8.2
18	286				01-MC-10	100	GB								
19	285			100											10.6
					01-MC-11	100	GB								
				100											9.1
					01-MC-12	100	GB								
			ICE + SAND (19.81 to 20 m) ICE + SAND, fine to coarse; some silt; some gravel, fine to coarse; medium greyish brown. Ice is hard. Approximately 50% ice.	100											

#### GENERAL REMARKS:

Drillhole located in proposed KM107 stockpile seepage collection pond area. Sonic drilling without water injection. No casing used.  
Drillhole backfilled with sand to surface.


#### BAFFINLAND IRON MINES CORPORATION MARY RIVER PROJECT



P/A NO. NB102-00181/57	REF. NO. NB19-00431	REV 0
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FIGURE A.5

<b>Contractor</b>	Boart Longyear	<b>Drillhole No</b>	KM107-DH19-01	<b>Page</b>	3 of 3
<b>Location</b>	KM107 Stockpile	<b>Drill Type</b>	Mini Sonic 130C	<b>Date Started</b>	08/Apr/2019
<b>Coordinates</b>	564115E, 7913358N	<b>Total Depth</b>	22.86 m	<b>Date Completed</b>	11/Apr/2019
<b>Coordinate System</b>	17 W NAD83	<b>Elevation</b>	304 m	<b>Logged By</b>	JAG
<b>Hole Size</b>	4 IN	<b>Azimuth, Inclination</b>	0°, -90°	<b>Reviewed By</b>	ALA

DEPTH - (M)	ELEVATION - (M)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO	SAMPLE REC. (%)	SAMPLE TYPE	NOTES	PARTICLE SIZE DISTRIBUTION (%)					MC (%)
									COARSE	GRAVEL	SAND	SILT	CLAY	
21	283		<b>SANDY SILT</b> (20 to 21 m) Sandy, fine to coarse; SILT; some clay; some gravel, fine to coarse; well graded, angular to subangular, medium plasticity, medium greenish grey, stiff, massive, wet, not frozen.	100	01-MC-13	100	GB	Very soft to drill.						17.0
22	282		<b>BEDROCK</b> (21 to 22.86 m) Bedrock. Strong to very strong, fresh, dark bluish/greenish grey.	100										
23	281		End of Drillhole: 22.86 m Confirmed bedrock											
24	280													
25	279													
26	278													
27	277													
28	276													
29	275													

**GENERAL REMARKS:**










Drillhole located in proposed KM107 stockpile seepage collection pond area. Sonic drilling without water injection. No casing used.  
Drillhole backfilled with sand to surface.

**BAFFINLAND IRON MINES CORPORATION  
MARY RIVER PROJECT**


P/A NO. NB102-00181/57	REF. NO. NB19-00431	REV 0
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**FIGURE A.5**

<b>Contractor</b>	Boart Longyear	<b>Drillhole No</b>	KM107-DH19-02	<b>Page</b>	1 of 3
<b>Location</b>	KM107 Stockpile	<b>Drill Type</b>	Mini Sonic 130C	<b>Date Started</b>	12/Apr/2019
<b>Coordinates</b>	564217E, 7913497N	<b>Total Depth</b>	21.33 m	<b>Date Completed</b>	13/Apr/2019
<b>Coordinate System</b>	17 W NAD83	<b>Elevation</b>	319 m	<b>Logged By</b>	JAG
<b>Hole Size</b>	4 IN	<b>Azimuth, Inclination</b>	0°, -90°	<b>Reviewed By</b>	ALA

DEPTH - (M)	ELEVATION - (M)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO	SAMPLE REC. (%)	SAMPLE TYPE	NOTES	PARTICLE SIZE DISTRIBUTION (%)					MC (%)
									COARSE	GRAVEL	SAND	SILT	CLAY	
1	318		<b>SILTY SAND (VX)</b> (0 to 2 m) Silty; SAND, fine to coarse; some gravel, fine to medium, angular to subangular; trace to some clay; well graded, reddish brown, compact, massive, partly frozen (possibly melted from drilling). Well bonded, very small amounts of excess ice, clear crystals up to 1 mm diameter (Nbe/Vx).	92	02-MC-01	100	GB	Partially melted from drilling.						8.6
					02-BU-01	100	GB		0.0	6.2	60.1	22.2	11.5	9.5
2	317		<b>ICE</b> (2 to 2.7 m) ICE, granular, stratified layers 0.5 - 1.0 cm thick, clear to white. 100% ice.	85	02-MC-02	100	GB							17.0
3	316		<b>SAND (VX)</b> (2.7 to 3 m) SAND, fine to coarse; some silt; some gravel, fine to medium, angular to subangular; well graded, reddish brown, compact, massive, partly frozen (possibly melted from drilling). Well bonded, very small amounts of excess ice, clear crystals up to 1 mm diameter (Nbe/Vx).	92	02-MC-03	100	GB							57.6
4	315		<b>ICE + SAND</b> (3 to 4.6 m) ICE + SAND, fine to coarse; some silt; brownish grey. Ice is crumbly, granular, stratified with 0.5 - 1.0 cm thick layers, white to clear with brownish grey colour, organic smell. Approximately 70% ice.		02-EMC-01	50	GB							100.0
5	314		<b>ICE</b> (4.6 to 6.1 m) ICE, hard to crumbly, granular, stratified layers 0.5 - 1.0 cm thick, clear to white, 100% ice.	98										
6	313		<b>ICE + SAND</b> (6.1 to 10.3 m) ICE + SAND, fine to coarse grained; some silt; medium greyish brown. Ice is crumbly to hard, granular, stratified layers 0.5 - 1.0 cm thick, clear to brownish grey, approximately 70% ice. Light yellowish brown from 8.2 to 9.1 m.	104	02-MC-04	100	GB							69.0
7	312				02-EMC-02	50	GB							100.0
8	311			95										
9	310			101	02-MC-05	100	GB							55.9

#### GENERAL REMARKS:

Drillhole located at south toe of proposed KM107 stockpile area. Sonic drilling without water injection. No casing used. Drillhole backfilled with sand to surface.

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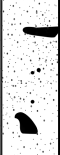

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**FIGURE A.6**



Contractor	Boart Longyear	Drillhole No	KM107-DH19-02	Page	2 of 3
Location	KM107 Stockpile	Drill Type	Mini Sonic 130C	Date Started	12/Apr/2019
Coordinates	564217E, 7913497N	Total Depth	21.33 m	Date Completed	13/Apr/2019
Coordinate System	17 W NAD83	Elevation	319 m	Logged By	JAG
Hole Size	4 IN	Azimuth, Inclination	0°, -90°	Reviewed By	ALA

DEPTH - (M)	ELEVATION - (M)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO	SAMPLE REC. (%)	SAMPLE TYPE	NOTES	PARTICLE SIZE DISTRIBUTION (%)					MC (%)	
									COARSE	GRAVEL	SAND	FINES			
												SILT	CLAY		
11	308		ICE + SAND (6.1 to 10.3 m) ICE + SAND, fine to coarse grained; some silt; medium greyish brown. Ice is crumbly to hard, granular, stratified layers 0.5 - 1.0 cm thick, clear to brownish grey, approximately 70% ice. Light yellowish brown from 8.2 to 9.1 m.	101				02-EMC-01: Moisture content estimated in field.							
				02-EMC-03	60	GB								100.0	
12	307		ICE (10.3 to 12.2 m) ICE, hard, clear to white, stratified layers 0.5-1.0 cm thick, 100% ice, with small air bubbles. No soil.	99											
13	306		ICE + SAND (12.2 to 13.7 m) ICE + SAND, fine to coarse; some silt; poorly graded, medium grey, massive to stratified, frozen. Ice is hard to crumbly in zones, granular, stratified with more soil-rich layers, clear to grey, approximately 90% ice.	101	02-MC-06	100	GB								40.0
14	305		ICE (13.7 to 14.2 m) ICE, hard to crumbly, granular, white to clear, 100% ice.	102				14.2-15.2 m: Ice appears melted due to heat generated from drilling cobbles. 18.3-19.8 m: Partially melted from drilling.							
15	304		SAND (VX) (14.2 to 19.8 m) SAND, fine to coarse; some silt; some gravel, fine to coarse, angular to subangular; some cobbles; well graded, medium reddish brown to black, compact, massive, wet to frozen (likely melted from drilling cobbles. Well bonded with clear excess ice crystals <1cm diameter (Nbe/Vx).			02-MC-07	100		GB						
16	303			99	02-MC-08	100	GB								18.0
17	302			98											
					02-MC-09	100	GB							13.0	
18	301														
19	300		SANDY SILT (19.8 to 20 m) Sandy, fine to coarse; SILT; some gravel, fine to coarse, subangular to subrounded; well graded, low plasticity, medium greenish grey, stiff, massive, moist, not frozen.	86	02-MC-10	100	GB								11.3
				99											

#### GENERAL REMARKS:

Drillhole located at south toe of proposed KM107 stockpile area. Sonic drilling without water injection. No casing used. Drillhole backfilled with sand to surface.

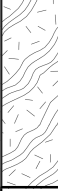
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FIGURE A.6

<b>Contractor</b>	Boart Longyear	<b>Drillhole No</b>	KM107-DH19-02	<b>Page</b>	3 of 3
<b>Location</b>	KM107 Stockpile	<b>Drill Type</b>	Mini Sonic 130C	<b>Date Started</b>	12/Apr/2019
<b>Coordinates</b>	564217E, 7913497N	<b>Total Depth</b>	21.33 m	<b>Date Completed</b>	13/Apr/2019
<b>Coordinate System</b>	17 W NAD83	<b>Elevation</b>	319 m	<b>Logged By</b>	JAG
<b>Hole Size</b>	4 IN	<b>Azimuth, Inclination</b>	0°, -90°	<b>Reviewed By</b>	ALA

DEPTH - (M)	ELEVATION - (M)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO	SAMPLE REC. (%)	SAMPLE TYPE	NOTES	PARTICLE SIZE DISTRIBUTION (%)					MC (%)
									COARSE	GRAVEL	SAND	FINES	CLAY	
21	298		<b>BEDROCK</b> (20 to 21.33 m) Bedrock. Strong to very strong, fresh, dark bluish/greenish grey.	99										
22	297		End of Drillhole: 21.33 m Confirmed bedrock											
23	296													
24	295													
25	294													
26	293													
27	292													
28	291													
29	290													

**GENERAL REMARKS:**

Drillhole located at south toe of proposed KM107 stockpile area. Sonic drilling without water injection. No casing used. Drillhole backfilled with sand to surface.

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REF. NO.  
NB19-00431

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**FIGURE A.6**

Contractor	Boart Longyear	Drillhole No	KM107-DH19-03	Page	1 of 3
Location	KM107 Stockpile	Drill Type	Mini Sonic 130C	Date Started	15/Apr/2019
Coordinates	564385E, 7913556N	Total Depth	22.08 m	Date Completed	15/Apr/2019
Coordinate System	17 W NAD83	Elevation	318 m	Logged By	JAG
Hole Size	4 IN	Azimuth, Inclination	0°, -90°	Reviewed By	ALA

DEPTH - (M)	ELEVATION - (M)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO	SAMPLE REC. (%)	SAMPLE TYPE	NOTES	PARTICLE SIZE DISTRIBUTION (%)					MC (%)
									COARSE	GRAVEL	SAND	FINES	CLAY	
1	317		<b>SAND</b> (0 to 1.5 m) SAND, fine to coarse; some silt; some gravel; trace clay; fine to medium, angular; well graded, medium orangish brown, loose, massive, dry to moist to 0.3m, then frozen. After 0.3m is well bonded, no excess ice (Nbn).	92	03-MC-01 03-BU-01	100 100	GB GB	Driller notes very hard ground, causing drill to overheat.	0.0	13.5	61.2	16.8	8.5	10.8 9.5
2	316		<b>ICE + SAND</b> (1.5 to 4.6 m) ICE + SAND, fine to coarse; some silt; trace gravel, fine to medium, angular; well graded, medium brown, compact, stratified with 0.5 - 1.0 cm ice layers. Ice is white, soft/crumbly, with some hard layers, approximately 70% ice.	97	03-MC-02	100	GB							60.6
3	315													
4	314			99										
5	313		<b>ICE + SAND</b> (4.6 to 10.9 m) As above, dark greyish brown, frozen with sand and ice intermixed. Ice is hard, shattered, sand-rich, massive, dark brown, approximately 60% ice.		03-MC-03	100	GB							77.9
6	312			97	03-MC-04	100	GB							69.0
7	311			100	03-MC-05	100	GB							68.8
8	310			100	03-MC-06	100	GB							56.8
9	309			100										

**GENERAL REMARKS:**

Drillhole located at southeast toe of proposed KM107 stockpile area. Sonic drilling without water injection. No casing used. Drillhole backfilled with sand to surface.

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P/A NO. NB102-00181/57	REF. NO. NB19-00431	REV 0
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**FIGURE A.7**

Contractor	Boart Longyear	Drillhole No	KM107-DH19-03	Page	2 of 3
Location	KM107 Stockpile	Drill Type	Mini Sonic 130C	Date Started	15/Apr/2019
Coordinates	564385E, 7913556N	Total Depth	22.08 m	Date Completed	15/Apr/2019
Coordinate System	17 W NAD83	Elevation	318 m	Logged By	JAG
Hole Size	4 IN	Azimuth, Inclination	0°, -90°	Reviewed By	ALA

DEPTH - (M)	ELEVATION - (M)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO	SAMPLE REC. (%)	SAMPLE TYPE	NOTES	PARTICLE SIZE DISTRIBUTION (%)					MC (%)
									COARSE	GRAVEL	SAND	SILT	CLAY	
11	307		<b>ICE + SAND</b> (4.6 to 10.9 m) As above, dark greyish brown, frozen with sand and ice intermixed. Ice is hard, shattered, sand-rich, massive, dark brown, approximately 60% ice.	100	03-MC-07	100	GB							75.8
12	306		<b>SAND (VX)</b> (10.9 to 15.2 m) SAND, fine to coarse; some silt; some gravel, fine to medium, angular; well graded, dark brownish grey, becoming medium brown at 13.7 m, massive, frozen. Well bonded, crumbly, granular, clear to grey, approximately 15% ice (Nbe/Vx).	100	03-MC-08	100	GB							80.0
13	305			98										
					03-MC-09	100	GB							12.8
14	304													
				99										
					03-MC-10	100	GB							16.9
15	303													
16	302		<b>SAND</b> (15.2 to 21 m) As above, medium orangish brown, compact, massive, wet, not frozen.	100	03-MC-11	100	GB							7.6
17	301													
				100										
					03-MC-12	100	GB							9.5
18	300													
19	299			100										
					03-MC-13	100	GB							11.0
				84										

#### GENERAL REMARKS:

Drillhole located at southeast toe of proposed KM107 stockpile area. Sonic drilling without water injection. No casing used. Drillhole backfilled with sand to surface.

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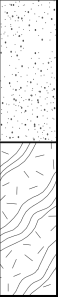


P/A NO. NB102-00181/57	REF. NO. NB19-00431	REV 0
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FIGURE A.7



<b>Contractor</b>	Boart Longyear	<b>Drillhole No</b>	KM107-DH19-03	<b>Page</b>	3 of 3
<b>Location</b>	KM107 Stockpile	<b>Drill Type</b>	Mini Sonic 130C	<b>Date Started</b>	15/Apr/2019
<b>Coordinates</b>	564385E, 7913556N	<b>Total Depth</b>	22.08 m	<b>Date Completed</b>	15/Apr/2019
<b>Coordinate System</b>	17 W NAD83	<b>Elevation</b>	318 m	<b>Logged By</b>	JAG
<b>Hole Size</b>	4 IN	<b>Azimuth, Inclination</b>	0°, -90°	<b>Reviewed By</b>	ALA

DEPTH - (M)	ELEVATION - (M)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO	SAMPLE REC. (%)	SAMPLE TYPE	NOTES	PARTICLE SIZE DISTRIBUTION (%)					MC (%)
									COARSE	GRAVEL	SAND	SILT	CLAY	
21	297		<b>SAND</b> (15.2 to 21 m) As above, medium orangish brown, compact, massive, wet, not frozen.	84				Recovered core is very hot with burning smell. Used 2 drill bits to complete last 1 m of drillhole.						
			<b>BEDROCK</b> (21 to 22.08 m) Bedrock. Strong, moderately weathered, medium orangish brown, burning smell when drilled.		03-MC-14	100	GB							10.7
22	296			100										
23	295		End of Drillhole: 22.08 m Confirmed bedrock											
24	294													
25	293													
26	292													
27	291													
28	290													
29	289													

**GENERAL REMARKS:**

Drillhole located at southeast toe of proposed KM107 stockpile area. Sonic drilling without water injection. No casing used. Drillhole backfilled with sand to surface.

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
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NB102-00181/57

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NB19-00431

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**FIGURE A.7**

<b>Contractor</b>	Boart Longyear	<b>Drillhole No</b>	KM107-DH19-04	<b>Page</b>	1 of 1
<b>Location</b>	KM107 Stockpile	<b>Drill Type</b>	Mini Sonic 130C	<b>Date Started</b>	15/Apr/2019
<b>Coordinates</b>	564355E, 7913717N	<b>Total Depth</b>	3.66 m	<b>Date Completed</b>	16/Apr/2019
<b>Coordinate System</b>	17 W NAD83	<b>Elevation</b>	330 m	<b>Logged By</b>	JAG
<b>Hole Size</b>	4 IN	<b>Azimuth, Inclination</b>	0°, -90°	<b>Reviewed By</b>	ALA

DEPTH - (M)	ELEVATION - (M)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO	SAMPLE REC. (%)	SAMPLE TYPE	NOTES	PARTICLE SIZE DISTRIBUTION (%)					MC (%)
									COARSE	GRAVEL	SAND	FINES		
												SILT	CLAY	
1	329		<b>SILTY, GRAVELLY SAND</b> (0 to 0.6 m) Silty; gravelly, fine to coarse, angular; SAND, fine to coarse; well graded, non-plastic, medium brown, loose, massive, frozen. Well bonded, partly melted from drilling, minor excess ice (Nbn). <b>WEATHERED BEDROCK</b> (0.6 to 3 m) Weathered bedrock. Strong with weak friable zones, moderately to highly weathered, medium orangish brown with cream, dry.	100	04-MC-01	100	GB	Recovered core has burnt smell, very hard to drill.						46.7
2	328			99	04-MC-02	100	GB							8.8
3	327		<b>BEDROCK</b> (3 to 3.66 m) Bedrock. Very strong, fresh, dark bluish/greenish grey.	98										
4	326		End of Drillhole: 3.66 m Confirmed bedrock											
5	325													
6	324													
7	323													
8	322													
9	321													

#### GENERAL REMARKS:

Drillhole located northcentral in proposed KM107 stockpile area. Sonic drilling without water injection. No casing used. Drillhole backfilled with sand to surface.

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**FIGURE A.8**

<b>Contractor</b>	Boart Longyear	<b>Drillhole No</b>	KM107-DH19-05	<b>Page</b>	1 of 2
<b>Location</b>	KM107 Stockpile	<b>Drill Type</b>	Mini Sonic 130C	<b>Date Started</b>	07/Apr/2019
<b>Coordinates</b>	563874E, 7913618N	<b>Total Depth</b>	11.58 m	<b>Date Completed</b>	08/Apr/2019
<b>Coordinate System</b>	17 W NAD83	<b>Elevation</b>	341 m	<b>Logged By</b>	JAG
<b>Hole Size</b>	4 IN	<b>Azimuth, Inclination</b>	0°, 90°	<b>Reviewed By</b>	ALA

DEPTH - (M)	ELEVATION - (M)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO	SAMPLE REC. (%)	SAMPLE TYPE	NOTES	PARTICLE SIZE DISTRIBUTION (%)					MC (%)	
									COARSE	GRAVEL	SAND	FINES			
												SILT	CLAY		
1	340		GRAVELLY SAND (0 to 3 m) Gravelly, fine to coarse; angular to subangular; SAND, fine to coarse; some silt; some cobbles; trace boulders up to 40 cm; well graded, non-plastic, light brownish orange to medium brownish grey with depth, loose to compact, massive, moist becoming saturated below 1.5 m, partly frozen. No visible ice, poorly bonded, possibly melted (Nf).	92	05-MC-01	100	GB	6.1-7.6 m: Driller notes lenses of frozen material within unfrozen mass. 7.6-9.4 m: Possibly melted from drilling.	0.0	32.6	44.4	18.2	4.8	4.1	
2	339		92	05-BU-01	300	GB	05-MC-02		100	GB	11.0				
3	338		ICE + SAND (3 to 3.26 m) ICE + SAND, fine to coarse; poorly graded, medium greyish brown, massive, frozen. Ice is hard, clear, porous, and massive, approximately 30% ice.	100	05-MC-03	100	GB		14.9						
4	337									SAND (VX) (3.26 to 6.1 m) SAND, fine to coarse; some silt; some gravel, fine to coarse, angular; some cobbles; well graded, non-plastic, medium brownish to greenish grey, massive, saturated, frozen. Well bonded, with excess ice crystals up to 0.5 cm diameter (Nbe/Vx).	98	05-MC-04	100	GB	13.6
5	336														
6	335														
7	334		SAND (6.1 to 9.4 m) SAND, fine to coarse; trace silt, trace gravel; poorly graded, non-plastic, medium brownish grey with lenses of orangish brown, loose, massive, wet to saturated, partly frozen. 5-10 cm lenses of frozen material (Nbn) alternating with non-frozen.	99	05-MC-05	100	GB		9.9						
8	333									100	05-MC-06	100	GB	12.5	
9	332														
		BEDROCK (9.4 to 11.58 m) Bedrock. Strong to very strong, fresh, dark bluish grey, dense.	100	05-MC-07	100	GB	11.0								

#### GENERAL REMARKS:

Drillhole located in proposed KM107 stockpile access road area, below haul road to the west of stockpile. Sonic drilling without water injection. No casing used. Drillhole backfilled with sand to surface.

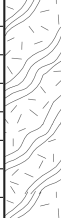
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FIGURE A.9

<b>Contractor</b>	Boart Longyear	<b>Drillhole No</b>	KM107-DH19-05	<b>Page</b>	2 of 2
<b>Location</b>	KM107 Stockpile	<b>Drill Type</b>	Mini Sonic 130C	<b>Date Started</b>	07/Apr/2019
<b>Coordinates</b>	563874E, 7913618N	<b>Total Depth</b>	11.58 m	<b>Date Completed</b>	08/Apr/2019
<b>Coordinate System</b>	17 W NAD83	<b>Elevation</b>	341 m	<b>Logged By</b>	JAG
<b>Hole Size</b>	4 IN	<b>Azimuth, Inclination</b>	0°, 90°	<b>Reviewed By</b>	ALA

DEPTH - (M)	ELEVATION - (M)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO	SAMPLE REC. (%)	SAMPLE TYPE	NOTES	PARTICLE SIZE DISTRIBUTION (%)					MC (%)
									COARSE	GRAVEL	SAND	FINES	CLAY	
11	330		<b>BEDROCK</b> (9.4 to 11.58 m) Bedrock. Strong to very strong, fresh, dark bluish grey, dense.	100										
				100										
12	329		End of Drillhole: 11.58 m Confirmed bedrock											
13	328													
14	327													
15	326													
16	325													
17	324													
18	323													
19	322													

**GENERAL REMARKS:**

Drillhole located in proposed KM107 stockpile access road area, below haul road to the west of stockpile. Sonic drilling without water injection. No casing used. Drillhole backfilled with sand to surface.

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**FIGURE A.9**



Contractor	Boart Longyear	Drillhole No	KM107-DH19-06	Page	1 of 3
Location	KM107 Stockpile	Drill Type	Mini Sonic 130C	Date Started	11/Apr/2019
Coordinates	564308E, 7913350N	Total Depth	22.86 m	Date Completed	12/Apr/2019
Coordinate System	17 W NAD83	Elevation	305 m	Logged By	JAG
Hole Size	4 IN	Azimuth, Inclination	0°, -90°	Reviewed By	ALA

DEPTH - (M)	ELEVATION - (M)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO	SAMPLE REC. (%)	SAMPLE TYPE	NOTES	PARTICLE SIZE DISTRIBUTION (%)					MC (%)
									COARSE	GRAVEL	SAND	SILT	CLAY	
1	304		<b>SILTY SAND</b> (0 to 3 m) Silty; SAND, fine to coarse; some clay; some gravel, fine to coarse, subangular to angular; medium reddish brown to dark greyish brown, dense, massive, dry to moist, frozen. Well bonded, no excess ice (Nbn). Friable (Nf) from 0.9-1.2 m, low moisture content.	99	06-MC-01	100	GB							17.5
					06-BU-01	100	GB		0.0	15.1	53.2	20.5	11.2	7.1
					06-MC-02	100	GB							15.0
2	303			99										
3	302		<b>SILTY SAND (VS)</b> (3 to 4.6 m) As above, dark brown, compact, frozen, organic scent. Stratified ice and soil layers approximately 1.0 cm thick, ice is white to brown, friable, approximately 40% ice (Vs).											
4	301			100	06-MC-03	100	GB							40.0
5	300		<b>ICE</b> (4.6 to 7.6 m) ICE, hard, clear to greyish brown, shattered, with <1mm laminations in some zones, bubbles throughout, organic smell. Trace sand giving brown colour, approximately 80% ice.	100				Ice has a rainbow sheen.						
6	299				06-MC-04	100	GB							79.5
7	298			97	06-MC-05	100	GB							80.0
8	297		<b>ICE + SAND</b> (7.6 to 10.7 m) ICE + SAND, fine to coarse; some silt; some gravel, fine to coarse, angular to subangular; dark brown, organic smell. Ice is hard, stratified with more sand-rich layers, dark brown to clear, shattered, approximately 30% ice to 9.1 m then 80% ice.	97	06-MC-06	100	GB							25.0
9	296			93	06-MC-07	100	GB							81.3

#### GENERAL REMARKS:


Drillhole located in proposed KM107 stockpile alternative seepage collection pond area. Sonic drilling without water injection. No casing used. Drillhole backfilled with sand to surface.

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NB102-00181/57	NB19-00431	0
FIGURE A.10		

<b>Contractor</b>	Boart Longyear	<b>Drillhole No</b>	KM107-DH19-06	<b>Page</b>	2 of 3
<b>Location</b>	KM107 Stockpile	<b>Drill Type</b>	Mini Sonic 130C	<b>Date Started</b>	11/Apr/2019
<b>Coordinates</b>	564308E, 7913350N	<b>Total Depth</b>	22.86 m	<b>Date Completed</b>	12/Apr/2019
<b>Coordinate System</b>	17 W NAD83	<b>Elevation</b>	305 m	<b>Logged By</b>	JAG
<b>Hole Size</b>	4 IN	<b>Azimuth, Inclination</b>	0°, -90°	<b>Reviewed By</b>	ALA

DEPTH - (M)	ELEVATION - (M)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO	SAMPLE REC. (%)	SAMPLE TYPE	NOTES	PARTICLE SIZE DISTRIBUTION (%)					MC (%)			
									COARSE	GRAVEL	SAND	FINES					
												SILT	CLAY				
11	294		<b>ICE + SAND</b> (7.6 to 10.7 m) ICE + SAND, fine to coarse; some silt; some gravel, fine to coarse, angular to subangular; dark brown, organic smell. Ice is hard, stratified with more sand-rich layers, dark brown to clear, shattered, approximately 30% ice to 9.1 m then 80% ice.	93				Driller notes ground is soft, very easy to drill.							100.0		
12	293			92	06-EMC-01	60	GB										
13	292																
14	291			<b>ICE</b> (10.7 to 12.1 m) ICE, hard, shattered, clear to grey, trace sand, with small air bubbles. 100% clear/white ice from 11.4 - 11.6 m.												100.0	
15	290			<b>ICE + SAND</b> (12.1 to 12.4 m) ICE + SAND, fine to coarse; some silt; dark brown. Stratified alternating layers of clear ICE + SAND, approximately 0.7 cm thick.													
16	289			<b>ICE</b> (12.4 to 13.8 m) ICE, hard, cloudy, stratified layers 0.5 cm thick, slight red tinge, trace reddish brown sand, approximately 95% ice.													
17	288			<b>ICE + SAND</b> (13.8 to 18.3 m) ICE + SAND, fine to coarse; some silt; trace gravel, fine to coarse, angular to subangular; dark brown to brownish grey. Hard, stratified clear ICE + SAND-rich layers, approximately 95% ice to 15.2 m then reduces to 60% ice.													
18	287				91												
19	286					06-MC-08	100	GB									20.0
20	285				100												
21	284																
22	283				06-MC-09	100	GB								63.0		
23	282																
24	281				06-MC-10	100	GB								38.9		
25	280																
26	279																
27	278																
28	277																
29	276																
30	275																
31	274																
32	273																
33	272																
34	271																
35	270																
36	269																
37	268																
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72	233																
73	232																
74	231																
75	230																
76	229																

#### GENERAL REMARKS:

Drillhole located in proposed KM107 stockpile alternative seepage collection pond area. Sonic drilling without water injection. No casing used. Drillhole backfilled with sand to surface.

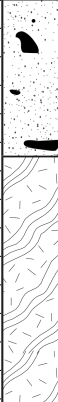
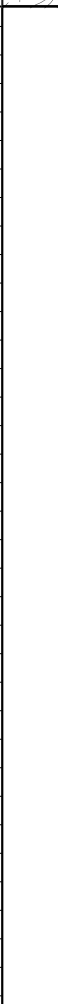
#### BAFFINLAND IRON MINES CORPORATION MARY RIVER PROJECT



P/A NO. NB102-00181/57	REF. NO. NB19-00431	REV 0
---------------------------	------------------------	----------

FIGURE A.10

<b>Contractor</b>	Boart Longyear	<b>Drillhole No</b>	KM107-DH19-06	<b>Page</b>	3 of 3
<b>Location</b>	KM107 Stockpile	<b>Drill Type</b>	Mini Sonic 130C	<b>Date Started</b>	11/Apr/2019
<b>Coordinates</b>	564308E, 7913350N	<b>Total Depth</b>	22.86 m	<b>Date Completed</b>	12/Apr/2019
<b>Coordinate System</b>	17 W NAD83	<b>Elevation</b>	305 m	<b>Logged By</b>	JAG
<b>Hole Size</b>	4 IN	<b>Azimuth, Inclination</b>	0°, -90°	<b>Reviewed By</b>	ALA

DEPTH - (M)	ELEVATION - (M)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO	SAMPLE REC. (%)	SAMPLE TYPE	NOTES	PARTICLE SIZE DISTRIBUTION (%)					MC (%)
									COARSE	GRAVEL	SAND	FINES		
												SILT	CLAY	
21	284		<b>SAND (VX)</b> (18.3 to 21.1 m) SAND, fine to coarse; some silt; some gravel, fine to coarse, subangular to subrounded; well graded, dark greyish brown, compact, massive, frozen. Well bonded with some excess ice crystals ~1mm diameter, hard, clear, approximately 25% ice (Nbe/Vx).  <b>BEDROCK</b> (21.1 to 22.86 m) Bedrock. Strong to very strong, fresh, dark grey with pink (Gneiss).	100	06-MC-12	100	GB	Driller notes very hard rock.						14.3
22	283		98											
23	282		End of Drillhole: 22.86 m Confirmed bedrock											
24	281													
25	280													
26	279													
27	278													
28	277													
29	276													

#### GENERAL REMARKS:

Drillhole located in proposed KM107 stockpile alternative seepage collection pond area. Sonic drilling without water injection. No casing used. Drillhole backfilled with sand to surface.

#### BAFFINLAND IRON MINES CORPORATION MARY RIVER PROJECT



**Knight Piésold**  
CONSULTING

P/A NO.  
NB102-00181/57

REF. NO.  
NB19-00431

REV  
0

**FIGURE A.10**

## **APPENDIX B**

### **Drill Site Photographs**

(Pages B-1 to B-22)





**PHOTO 1 - KM106-DH19-01 Looking East During Drilling**



**PHOTO 2 - KM106-DH19-01 Looking North During Drilling**

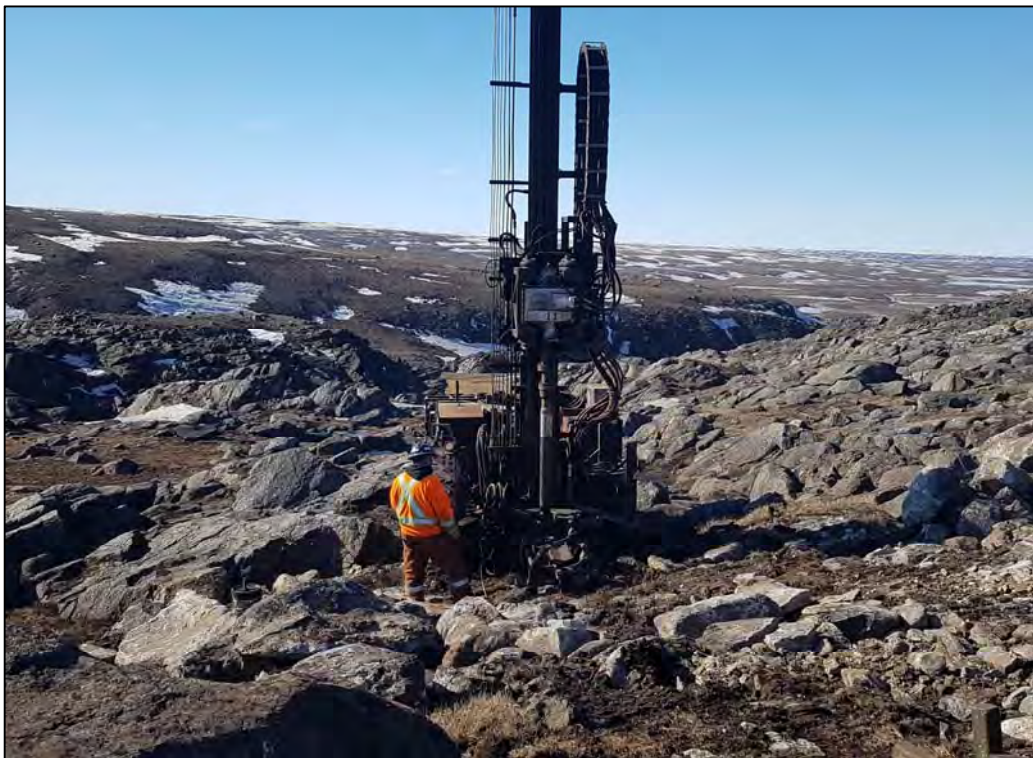
**BAFFINLAND IRON MINES CORPORATION  
MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 3 - KM106-DH19-01 Looking South During Drilling**



**PHOTO 4 - KM106-DH19-01 Looking West During Drilling**

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MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 5 - KM106-DH19-02 Looking East During Drilling**



**PHOTO 6 - KM106-DH19-02 Looking North During Drilling**

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Rev 0  
31MAY'19





**PHOTO 7 - KM106-DH19-02 Looking South During Drilling**



**PHOTO 8 - KM106-DH19-02 Looking West During Drilling**

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NB19-00431  
Rev 0  
31MAY'19





**PHOTO 9** - KM106-DH19-03 Looking East During Drilling



**PHOTO 10** - KM106-DH19-03 Looking North During Drilling

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NB19-00431  
Rev 0  
31MAY'19



**PHOTO 11 - KM106-DH19-03 Looking South During Drilling**



**PHOTO 12 - KM106-DH19-03 Looking West During Drilling**

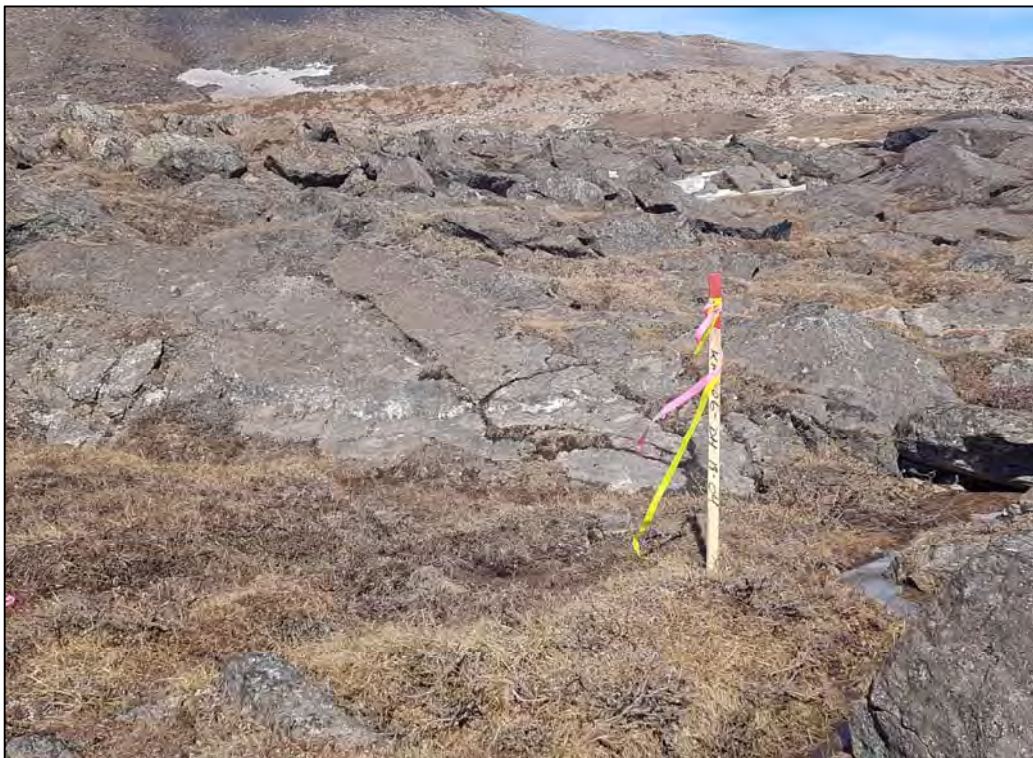
**BAFFINLAND IRON MINES CORPORATION  
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Rev 0  
31MAY'19





**PHOTO 13 - KM106-DH19-04 Looking East Before Drilling**



**PHOTO 14 - KM106-DH19-04 Looking North Before Drilling**

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MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 15 - KM106-DH19-04 Looking South Before Drilling**



**PHOTO 16 - KM106-DH19-04 Looking West Before Drilling**

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NB19-00431  
Rev 0  
31MAY'19





**PHOTO 17 - KM106-DH19-05 Looking East During Drilling**



**PHOTO 18 - KM106-DH19-05 Looking North During Drilling**

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NB19-00431  
Rev 0  
31MAY'19





**PHOTO 19 - KM106-DH19-05 Looking South During Drilling**



**PHOTO 20 - KM106-DH19-05 Looking West During Drilling**

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NB19-00431  
Rev 0  
31MAY'19



**PHOTO 21 - KM107-DH19-01 Looking East During Drilling**



**PHOTO 22 - KM107-DH19-01 Looking North During Drilling**

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NB19-00431  
Rev 0  
31MAY'19





**PHOTO 23 - KM107-DH19-01 Looking South During Drilling**



**PHOTO 24 - KM107-DH19-01 Looking West During Drilling**

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Rev 0  
31MAY'19





**PHOTO 25 - KM107-DH19-02 Looking East During Drilling**



**PHOTO 26 - KM107-DH19-02 Looking North During Drilling**

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Rev 0  
31MAY'19



**PHOTO 27 - KM107-DH19-02 Looking South During Drilling**



**PHOTO 28 - KM107-DH19-02 Looking West During Drilling**

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MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19



**PHOTO 29** - KM107-DH19-03 Looking East During Drilling



**PHOTO 30** - KM107-DH19-03 Looking North During Drilling

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NB19-00431  
Rev 0  
31MAY'19





**PHOTO 31 - KM107-DH19-03 Looking South During Drilling**



**PHOTO 32 - KM107-DH19-03 Looking West During Drilling**

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MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 33 - KM107-DH19-04 Looking East During Drilling**



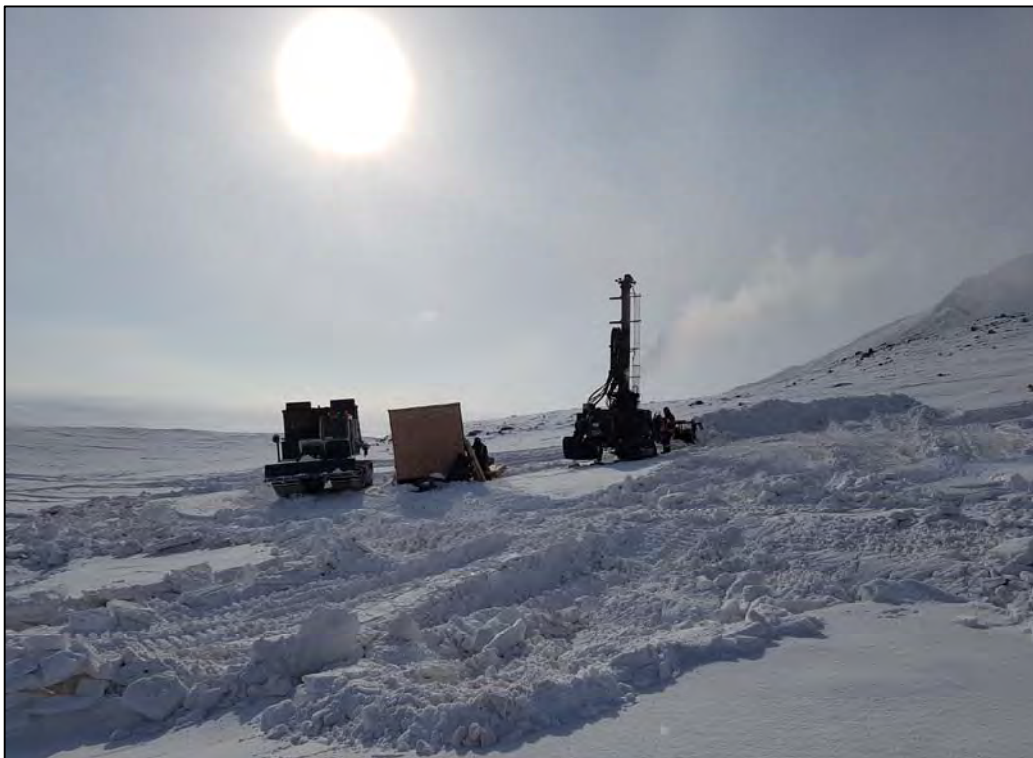
**PHOTO 34 - KM107-DH19-04 Looking North During Drilling**

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MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19



**PHOTO 35 - KM107-DH19-04 Looking South During Drilling**



**PHOTO 36 - KM107-DH19-04 Looking West During Drilling**

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Rev 0  
31MAY'19





**PHOTO 37 - KM107-DH19-05 Looking East During Drilling**



**PHOTO 38 - KM107-DH19-05 Looking North During Drilling**

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MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19



**PHOTO 39 - KM107-DH19-05 Looking South During Drilling**



**PHOTO 40 - KM107-DH19-05 Looking West During Drilling**

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Rev 0  
31MAY'19





**PHOTO 41 - KM107-DH19-06 Looking East During Drilling**



**PHOTO 42 - KM107-DH19-06 Looking North During Drilling**

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Rev 0  
31MAY'19



**PHOTO 43** - KM107-DH19-06 Looking South During Drilling



**PHOTO 44** - KM107-DH19-06 Looking West During Drilling

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MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19

## **APPENDIX C**

### **Core Box Photographs**

(Pages C-1 to C-22)



**PHOTO 1 - KM106-DH19-01 0.00 - 1.52 m (EOH)**



**PHOTO 2 - KM106-DH19-02 0.00 - 1.52 m (EOH)**

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Rev 0  
31MAY'19





**PHOTO 3 - KM106-DH19-03 0.00 - 1.83 m (EOH)**



**PHOTO 4 - KM106-DH19-05 0.00 - 2.13 m**

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MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 5 - KM106-DH19-05 2.13 - 4.00 m**



**PHOTO 6 - KM106-DH19-05 4.00 - 4.57 m (EOH)**

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MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 7 - KM107-DH19-01 0.00 - 3.05 m**



**PHOTO 8 - KM107-DH19-01 3.05 - 6.10 m**

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NB19-00431  
Rev 0  
31MAY'19





**PHOTO 9 - KM107-DH19-01 6.10 - 9.14 m**



**PHOTO 10 - KM107-DH19-01 9.14 - 12.19 m**

**BAFFINLAND IRON MINES CORPORATION  
MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 11 - KM107-DH19-01 12.19 - 14.48 m**



**PHOTO 12 - KM107-DH19-01 14.48 - 18.29 m**

**BAFFINLAND IRON MINES CORPORATION  
MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 13 - KM107-DH19-01 18.29 - 21.33 m**



**PHOTO 14 - KM107-DH19-01 21.33 - 22.86 m (EOH)**

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MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 15 - KM107-DH19-02 0.00 - 3.05 m**



**PHOTO 16 - KM107-DH19-02 3.05 - 6.10 m**

**BAFFINLAND IRON MINES CORPORATION  
MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 17 - KM107-DH19-02 6.10 - 9.14 m**



**PHOTO 18 - KM107-DH19-02 9.14 - 12.19 m**

**BAFFINLAND IRON MINES CORPORATION  
MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 19 - KM107-DH19-02 12.19 - 15.24 m**



**PHOTO 20 - KM107-DH19-02 15.24 - 18.29 m**

**BAFFINLAND IRON MINES CORPORATION  
MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 21 - KM107-DH19-02 18.29 - 21.33 m (EOH)**



**PHOTO 22 - KM107-DH19-03 0.00 - 3.05 m**

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MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 23 - KM107-DH19-03 3.05 - 6.10 m**



**PHOTO 24 - KM107-DH19-03 6.10 - 9.14 m**

**BAFFINLAND IRON MINES CORPORATION  
MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 25 - KM107-DH19-03 9.14 - 12.19 m**



**PHOTO 26 - KM107-DH19-03 12.19 - 15.24 m**

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MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 27 - KM107-DH19-03 15.24 - 18.29 m**



**PHOTO 28 - KM107-DH19-03 18.29 - 21.33 m**

**BAFFINLAND IRON MINES CORPORATION  
MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 29 - KM107-DH19-03 21.33 - 22.08 (EOH)**



**PHOTO 30 - KM107-DH19-04 0.00 - 3.66 m (EOH)**

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MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 31 - KM107-DH19-05 0.00 - 1.68 m**



**PHOTO 32 - KM107-DH19-05 1.68 - 3.05 m**

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MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 33 - KM107-DH19-05 3.05 - 6.10 m**



**PHOTO 34 - KM107-DH19-05 6.10 - 9.14 m**

**BAFFINLAND IRON MINES CORPORATION  
MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 35 - KM107-DH19-05 9.14 - 10.67 m**



**PHOTO 36 - KM107-DH19-05 10.67 - 11.58 m (EOH)**

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MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 37 - KM107-DH19-06 0.00 - 3.05 m**



**PHOTO 38 - KM107-DH19-06 3.05 - 6.10 m**

**BAFFINLAND IRON MINES CORPORATION  
MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 39 - KM107-DH19-06 6.10 - 9.14 m**



**PHOTO 40 - KM107-DH19-06 9.14 - 12.19 m**

**BAFFINLAND IRON MINES CORPORATION  
MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 41 - KM107-DH19-06 12.19 - 15.24 m**



**PHOTO 42 - KM107-DH19-06 15.24 - 18.29 m**

**BAFFINLAND IRON MINES CORPORATION  
MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19





**PHOTO 43 - KM107-DH19-06 18.29 - 21.33 m**



**PHOTO 44 - KM107-DH19-06 21.33 - 22.86 m (EOH)**

**BAFFINLAND IRON MINES CORPORATION  
MARY RIVER PROJECT**

NB19-00431  
Rev 0  
31MAY'19

## APPENDIX D

### Laboratory Data

Appendix D1

Laboratory Data Summary Plots

Appendix D2

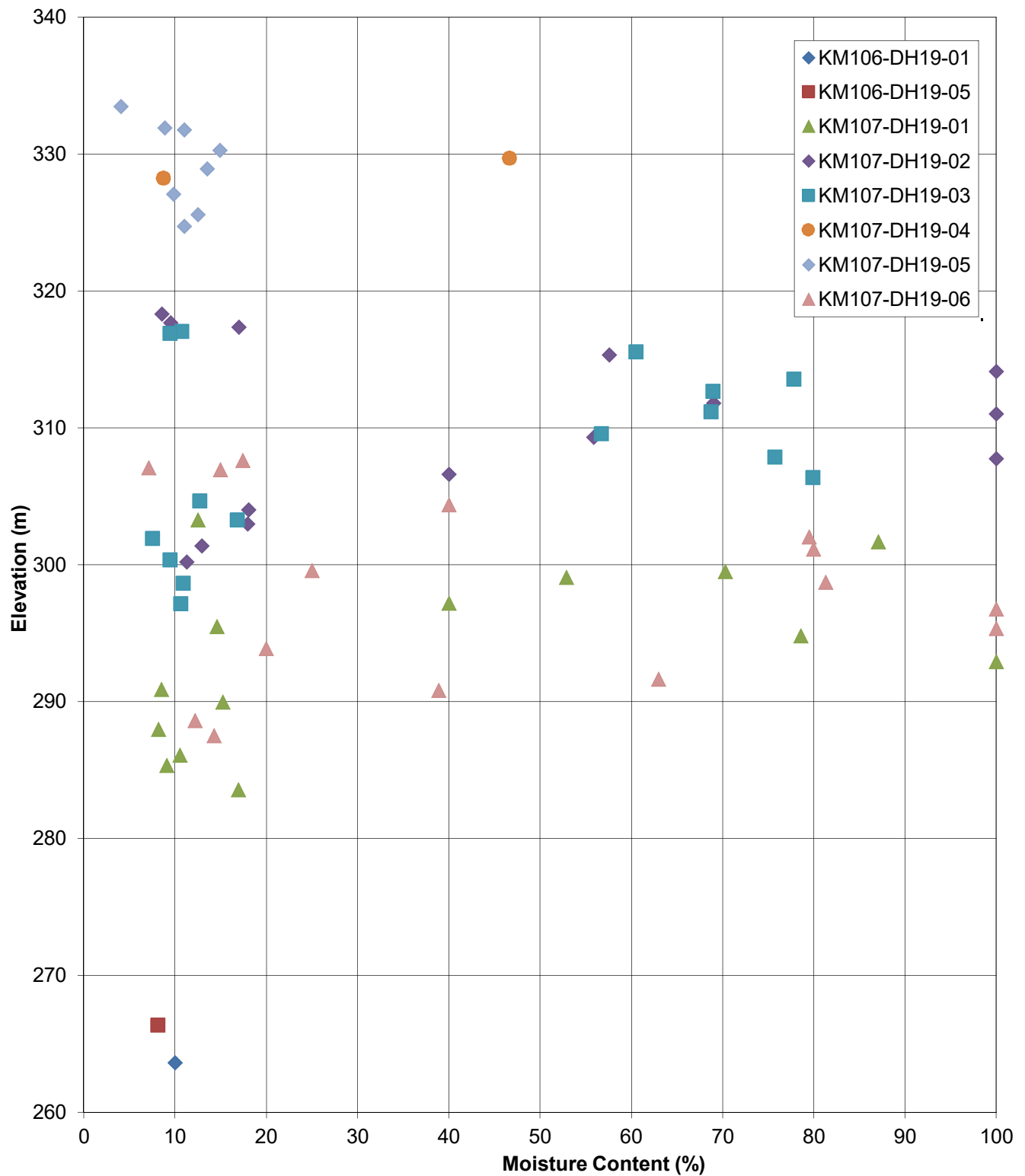
Laboratory Data Reports



## **APPENDIX D1**

### **Laboratory Data Summary Plots**

(Pages D1-1 to D1-3)



BAFFINLAND IRON MINES CORPORATION

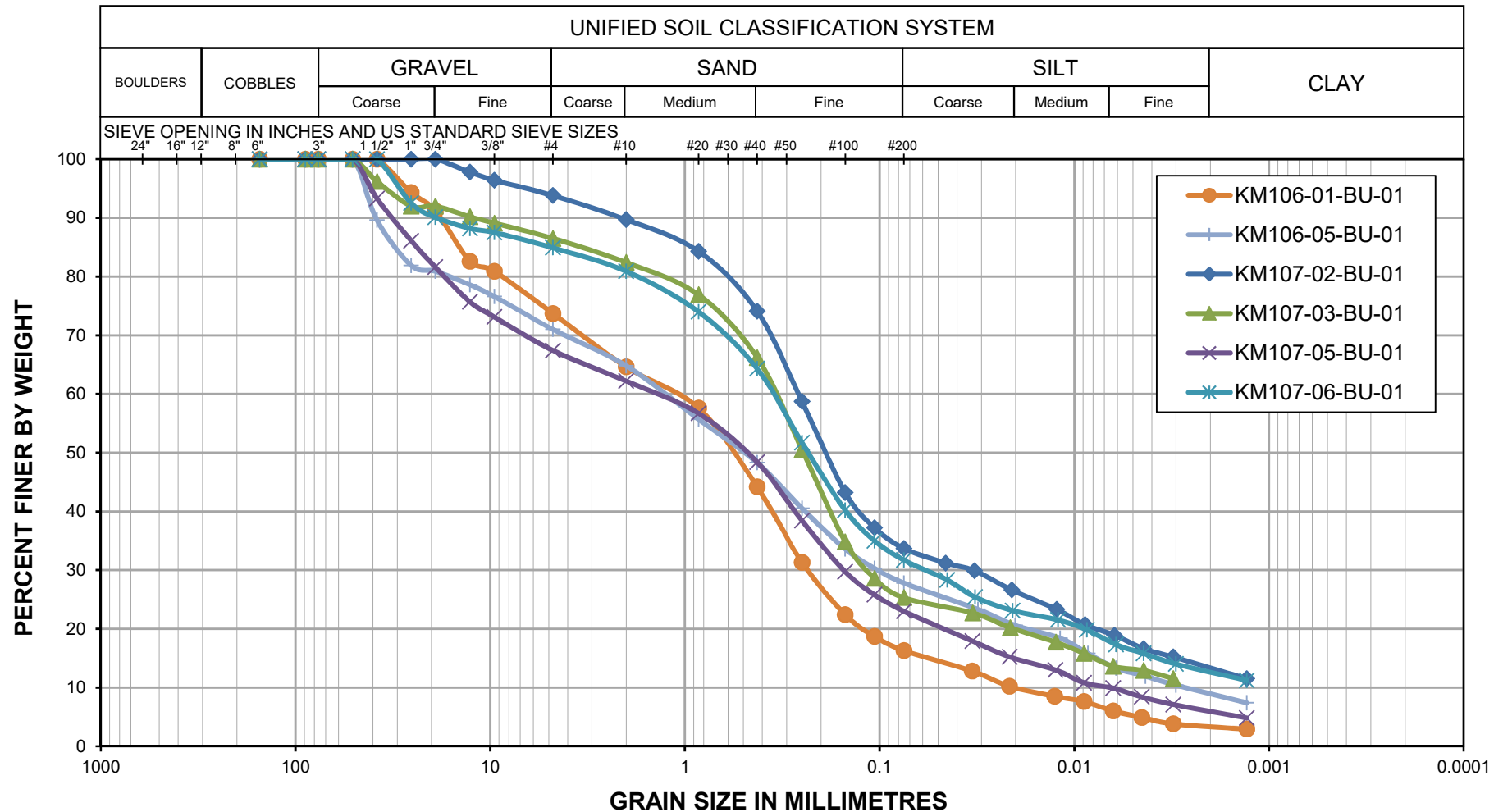
MARY RIVER PROJECT

KM106 AND KM107 STOCKPILE  
MOISTURE CONTENTP/A NO.  
NB102-181/57REF. NO.  
NB19-00431

0	31MAY19	ISSUED WITH LETTER	JAG	ALA
REV	DATE	DESCRIPTION	PREP'D	RVW'D

FIGURE D1.1

REV  
0



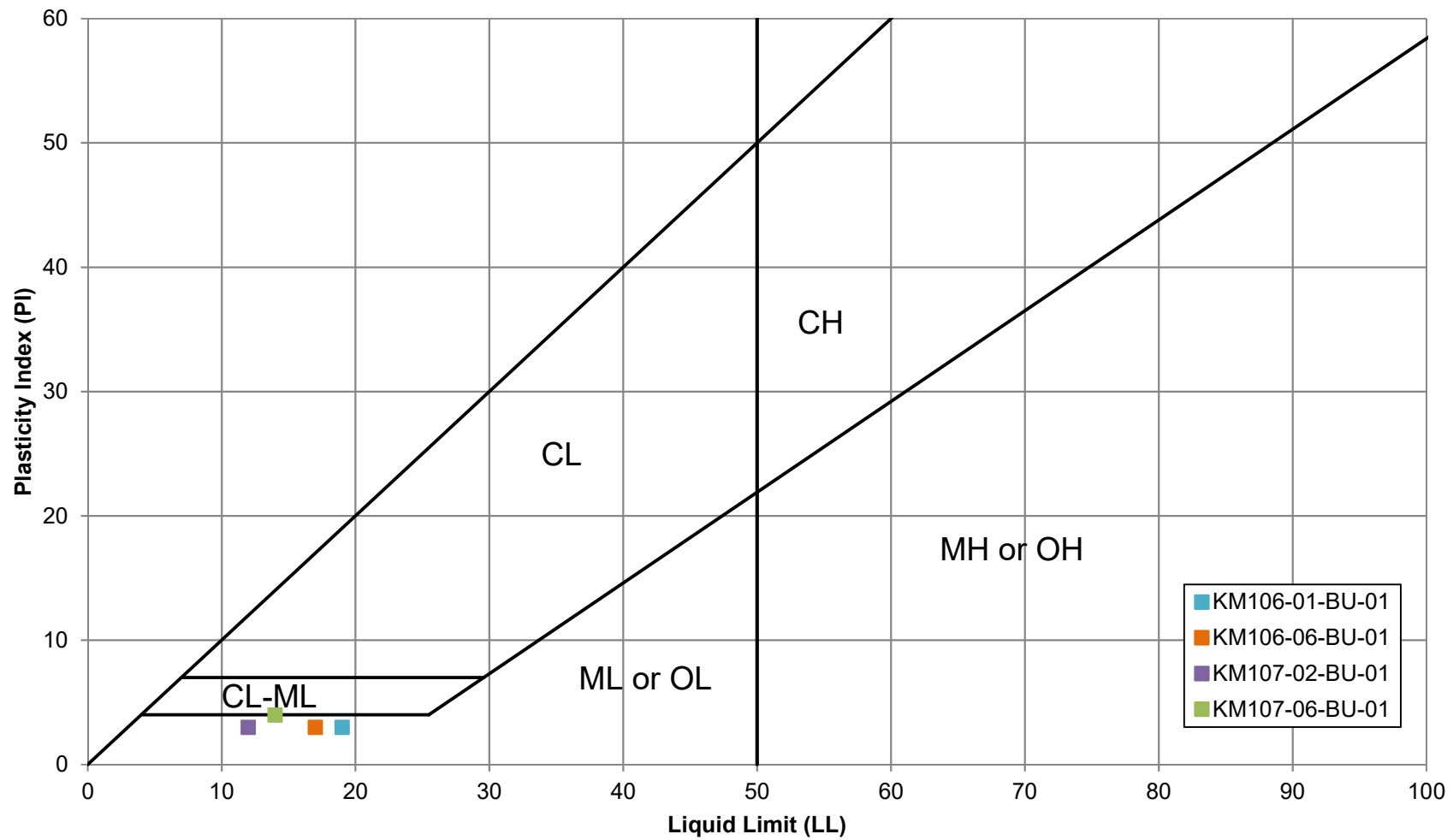
BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

**KM106 AND KM107 STOCKPILE  
PARTICLE SIZE DISTRIBUTION**
P/A NO.  
NB102-181/57REF. NO.  
NB19-00431**FIGURE D1.2**REV  
0

0	31MAY'19	ISSUED WITH LETTER	JAG	ALA
REV	DATE	DESCRIPTION	PREP'D	REV'D



**NOTES:**

1. KM107-03-BU-01 AND KM107-05-BU-01 TESTED AS NON-PLASTIC (NP).

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

**KM106 AND KM107 STOCKPILE  
PLASTICITY CHART**



P/A NO.  
NB102-181/57

REF NO.  
NB19-00431

**FIGURE D1.3**

REV  
0

0	31MAY'19	ISSUED WITH LETTER	JAG	ALA
REV	DATE	DESCRIPTION	PREP'D	RVW'D

## **APPENDIX D2**

### **Laboratory Data Reports**

(Pages D2-1 to D2-24)

# Standard Test Methods for Specific Gravity of Soil Solids by Water Pycnometer

ASTM D854

<b>Project No.:</b>	19122781-2000	<b>Borehole:</b>	KM106-DH19-01
<b>Project:</b>	KM106 Stockpile 2019 Geotechnical Site Investiga	<b>Sample Number:</b>	01-BU-01
<b>Location:</b>	Mary River	<b>Depth (m):</b>	0.3 - 0.5
<b>Client:</b>	Knight Piesold Ltd.	<b>Lab Sch. No:</b>	B19-151

<b>Visual Description:</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;"><b>% Passing 4.75 mm</b></td> <td style="width: 50%; padding: 5px;">73.66</td> </tr> <tr> <td style="width: 50%; padding: 5px;"><b>Excluded Material Description</b></td> <td style="width: 50%; padding: 5px;"></td> </tr> </table>	<b>% Passing 4.75 mm</b>	73.66	<b>Excluded Material Description</b>	
<b>% Passing 4.75 mm</b>	73.66				
<b>Excluded Material Description</b>					

## Specific Gravity of Fine Fraction Method B - Oven Dried Samples

		Trial 1	Trial 2
Flask Number		5	6
Air Removal Method	$M_p$	Vacuum	Vacuum
Mass of Flask (g)		174.62	173.28
Mass of Flask + Dry Soil (g)		275.11	273.73
Mass of Flask + Soil + Water (g)	$M_{rws,t}$	736.28	734.51
Test Temperature (°C)	$T_t$	22.30	22.40
Mass of Flask + Water (g)	$M_{rw,t}$	672.66	671.07
Tare Number		11D	12D
Mass of Tare + Dry Soil (g)		285.97	283.60
Mass of Tare (g)		185.49	183.17
Mass of Oven Dry Soil (g)	$M_s$	100.48	100.43
Temperature Coefficient	$K$	1.00	1.00
Specific Gravity at Test Temperature	$G_t$	2.73	2.72
Specific Gravity at 20°C	$G_{20^{\circ}C}$	2.72	2.71

<b>AVERAGE SPECIFIC GRAVITY OF TRIALS</b>	2.72
---	------

*The test data given herein pertain to the sample provided only. This report constitutes a testing service only.*

DC	May 29, 2019	SJ	May 30, 2019
TESTED BY	DATE	CHECKED BY	DATE



# Standard Test Methods for Specific Gravity of Soil Solids by Water Pycnometer

ASTM D854

<b>Project No.:</b> 19122781-2000	<b>Borehole:</b> KM106-DH19-05	
<b>Project:</b> KM106 Stockpile 2019 Geotechnical Site Investiga	<b>Sample Number:</b> 05-BU-01	
<b>Location:</b> Mary River	<b>Depth (m):</b> 1.6 - 1.8	
<b>Client:</b> Knight Piesold Ltd.	<b>Lab Sch. No:</b> B19-151	

<b>Visual Description:</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;"><b>% Passing 4.75 mm</b></td> <td style="width: 50%; padding: 5px;">70.97</td> </tr> <tr> <td style="width: 50%; padding: 5px;"><b>Excluded Material Description</b></td> <td style="width: 50%; padding: 5px;"></td> </tr> </table>	<b>% Passing 4.75 mm</b>	70.97	<b>Excluded Material Description</b>	
<b>% Passing 4.75 mm</b>	70.97				
<b>Excluded Material Description</b>					

## Specific Gravity of Fine Fraction Method B - Oven Dried Samples

		Trial 1	Trial 2
Flask Number		3	4
Air Removal Method	$M_p$	Vacuum	Vacuum
Mass of Flask (g)		173.63	172.34
Mass of Flask + Dry Soil (g)		273.85	272.70
Mass of Flask + Soil + Water (g)	$M_{rws,t}$	734.96	734.06
Test Temperature (°C)	$T_t$	22.20	22.50
Mass of Flask + Water (g)	$M_{rw,t}$	671.74	670.50
Tare Number		1D	2D
Mass of Tare + Dry Soil (g)		281.87	285.33
Mass of Tare (g)		181.58	184.95
Mass of Oven Dry Soil (g)	$M_s$	100.29	100.38
Temperature Coefficient	$K$	1.00	1.00
Specific Gravity at Test Temperature	$G_t$	2.71	2.73
Specific Gravity at 20°C	$G_{20^\circ C}$	2.70	2.72

<b>AVERAGE SPECIFIC GRAVITY OF TRIALS</b>	2.71
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*The test data given herein pertain to the sample provided only. This report constitutes a testing service only.*

DC	May 29, 2019	SJ	May 30, 2019
TESTED BY	DATE	CHECKED BY	DATE

# Standard Test Methods for Specific Gravity of Soil Solids by Water Pycnometer

**ASTM D854**

<b>Project No.:</b>	19122781-1000	<b>Borehole:</b>	KM107-DH19-02
<b>Project:</b>	KM107 Stockpile 2019 Geotechnical Site Investiga	<b>Sample Number:</b>	02-BU-01
<b>Location:</b>	Mary River	<b>Depth (m):</b>	1.2 - 1.5
<b>Client:</b>	Knight Piesold Ltd.	<b>Lab Sch. No:</b>	B19-112

<b>Visual Description:</b>	<b>% Passing 4.75 mm</b>	93.76
	<b>Excluded Material Description</b>	

## Specific Gravity of Fine Fraction Method B - Oven Dried Samples

		Trial 1	Trial 2
Flask Number		C	D
Air Removal Method	$M_p$	Vacuum	Vacuum
Mass of Flask (g)		90.20	90.43
Mass of Flask + Dry Soil (g)		160.23	161.02
Mass of Flask + Soil + Water (g)	$M_{rws,t}$	383.24	383.78
Test Temperature (°C)	$T_t$	24.50	23.70
Mass of Flask + Water (g)	$M_{rw,t}$	339.30	339.54
Tare Number		1D	2D
Mass of Tare + Dry Soil (g)		251.58	255.44
Mass of Tare (g)		181.55	184.90
Mass of Oven Dry Soil (g)	$M_s$	70.03	70.54
Temperature Coefficient	$K$	1.00	1.00
Specific Gravity at Test Temperature	$G_t$	2.68	2.68
Specific Gravity at 20°C	$G_{20^{\circ}C}$	2.68	2.68

<b>AVERAGE SPECIFIC GRAVITY OF TRIALS</b>	<b>2.68</b>
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*The test data given herein pertain to the sample provided only. This report constitutes a testing service only.*

DC	May 8, 2019	LH	May 13, 2019
TESTED BY	DATE	CHECKED BY	DATE

# Standard Test Methods for Specific Gravity of Soil Solids by Water Pycnometer

**ASTM D854**

<b>Project No.:</b>	19122781-1000	<b>Borehole:</b>	KM107-DH19-03
<b>Project:</b>	KM107 Stockpile 2019 Geotechnical Site Investiga	<b>Sample Number:</b>	03-BU-01
<b>Location:</b>	Mary River	<b>Depth (m):</b>	1.0 - 1.3
<b>Client:</b>	Knight Piesold Ltd.	<b>Lab Sch. No:</b>	B19-112

<b>Visual Description:</b>	<b>% Passing 4.75 mm</b>	86.48
	<b>Excluded Material Description</b>	

## Specific Gravity of Fine Fraction Method B - Oven Dried Samples

		Trial 1	Trial 2
Flask Number		G	H
Air Removal Method	$M_p$	Vacuum	Vacuum
Mass of Flask (g)		88.91	89.31
Mass of Flask + Dry Soil (g)		159.27	159.82
Mass of Flask + Soil + Water (g)	$M_{rws,t}$	381.87	382.30
Test Temperature (°C)	$T_t$	24.40	24.80
Mass of Flask + Water (g)	$M_{rw,t}$	337.58	337.93
Tare Number		5D	6D
Mass of Tare + Dry Soil (g)		253.55	251.05
Mass of Tare (g)		183.19	180.46
Mass of Oven Dry Soil (g)	$M_s$	70.36	70.59
Temperature Coefficient	$K$	1.00	1.00
Specific Gravity at Test Temperature	$G_t$	2.70	2.69
Specific Gravity at 20°C	$G_{20^{\circ}C}$	2.70	2.69

<b>AVERAGE SPECIFIC GRAVITY OF TRIALS</b>	2.69
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*The test data given herein pertain to the sample provided only. This report constitutes a testing service only.*

DC	May 8, 2019	LH	May 13, 2019
TESTED BY	DATE	CHECKED BY	DATE



# Standard Test Methods for Specific Gravity of Soil Solids by Water Pycnometer

ASTM D854

<b>Project No.:</b> 19122781-1000	<b>Borehole:</b> KM107-DH19-05	
<b>Project:</b> KM107 Stockpile 2019 Geotechnical Site Investiga	<b>Sample Number:</b> 05-BU-01	
<b>Location:</b> Mary River	<b>Depth (m):</b> 1.9 - 2.3	
<b>Client:</b> Knight Piesold Ltd.	<b>Lab Sch. No:</b> B19-112	

<b>Visual Description:</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;"><b>% Passing 4.75 mm</b></td> <td style="width: 50%; padding: 5px;">67.37</td> </tr> <tr> <td style="width: 50%; padding: 5px;"><b>Excluded Material Description</b></td> <td style="width: 50%; padding: 5px;"></td> </tr> </table>	<b>% Passing 4.75 mm</b>	67.37	<b>Excluded Material Description</b>	
<b>% Passing 4.75 mm</b>	67.37				
<b>Excluded Material Description</b>					

## Specific Gravity of Fine Fraction Method B - Oven Dried Samples

		Trial 1	Trial 2
Flask Number		K	L
Air Removal Method	$M_p$	Vacuum	Vacuum
Mass of Flask (g)		88.07	90.13
Mass of Flask + Dry Soil (g)		198.17	160.28
Mass of Flask + Soil + Water (g)	$M_{rws,t}$	380.95	383.02
Test Temperature (°C)	$T_t$	24.20	23.60
Mass of Flask + Water (g)	$M_{rw,t}$	336.98	338.84
Tare Number		3D	4D
Mass of Tare + Dry Soil (g)		249.89	251.28
Mass of Tare (g)		179.83	181.12
Mass of Oven Dry Soil (g)	$M_s$	70.06	70.16
Temperature Coefficient	$K$	1.00	1.00
Specific Gravity at Test Temperature	$G_t$	2.68	2.70
Specific Gravity at 20°C	$G_{20^\circ C}$	2.68	2.70

<b>AVERAGE SPECIFIC GRAVITY OF TRIALS</b>	2.69
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*The test data given herein pertain to the sample provided only. This report constitutes a testing service only.*

DC	May 8, 2019	LH	May 13, 2019
TESTED BY	DATE	CHECKED BY	DATE

# Standard Test Methods for Specific Gravity of Soil Solids by Water Pycnometer

ASTM D854

<b>Project No.:</b> 19122781-1000	<b>Borehole:</b> KM107-DH19-06	
<b>Project:</b> KM107 Stockpile 2019 Geotechnical Site Investiga	<b>Sample Number:</b> 06-BU-01	
<b>Location:</b> Mary River	<b>Depth (m):</b> 0.8 - 1.1	
<b>Client:</b> Knight Piesold Ltd.	<b>Lab Sch. No:</b> B19-112	

<b>Visual Description:</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;"><b>% Passing 4.75 mm</b></td> <td style="width: 50%; padding: 5px;">84.86</td> </tr> <tr> <td style="width: 50%; padding: 5px;"><b>Excluded Material Description</b></td> <td style="width: 50%; padding: 5px;"></td> </tr> </table>	<b>% Passing 4.75 mm</b>	84.86	<b>Excluded Material Description</b>	
<b>% Passing 4.75 mm</b>	84.86				
<b>Excluded Material Description</b>					

## Specific Gravity of Fine Fraction Method B - Oven Dried Samples

		Trial 1	Trial 2
Flask Number		7	8
Air Removal Method	$M_p$	Vacuum	Vacuum
Mass of Flask (g)		169.28	171.06
Mass of Flask + Dry Soil (g)		269.45	271.62
Mass of Flask + Soil + Water (g)	$M_{rws,t}$	730.43	732.20
Test Temperature (°C)	$T_t$	21.10	21.10
Mass of Flask + Water (g)	$M_{rw,t}$	667.48	669.08
Tare Number		7D	8D
Mass of Tare + Dry Soil (g)		281.93	285.17
Mass of Tare (g)		181.62	184.47
Mass of Oven Dry Soil (g)	$M_s$	100.31	100.70
Temperature Coefficient	$K$	1.00	1.00
Specific Gravity at Test Temperature	$G_t$	2.69	2.68
Specific Gravity at 20°C	$G_{20^\circ C}$	2.68	2.68

<b>AVERAGE SPECIFIC GRAVITY OF TRIALS</b>	2.68
---	------

*The test data given herein pertain to the sample provided only. This report constitutes a testing service only.*

DC	May 9, 2019	LH	May 13, 2019
TESTED BY	DATE	CHECKED BY	DATE



# WATER CONTENT DETERMINATION

ASTM D 2216

**Client:** Knight Piesold Ltd. **Lab Schedule No.:** B19-151  
**Project:** KM106 Sockpile 2019 Geotechnical Site Investigation  
**Location:** Mary River  
**Project No.:** 19122781 **Phase:** 2000

Sample Location	Sample No.	Specimen No.	Depth Interval		Water Content (%)
			Depth (m)	Bottom (m)	
KM106-DH19-01	01-BU-01		0.30	0.50	10.0
KM106-DH19-05	05-BU-01		1.60	1.80	8.2

National IM Server GINT\_GAL\_NATIONALIM Unique Project ID: Output Form: LAB\_WATER CONTENT (REPORT) 2018 SJohm 30/5/19

SJ 5/30/2019  
 Checked Date





# WATER CONTENT DETERMINATION

ASTM D 2216

**Client:** Knight Piesold Ltd. **Lab Schedule No.:** B19-112  
**Project:** KM107 Stockpile 2019 Geotechnical Site Investigation  
**Location:** Mary River  
**Project No.:** 19122781 **Phase:** 1000

Sample Location	Sample No.	Specimen No.	Depth Interval		Water Content (%)
			Depth (m)	Bottom (m)	
KM107-DH19-02	02-BU-01		1.20	1.50	9.5
KM107-DH19-03	03-BU-01		1.00	1.30	9.5
KM107-DH19-05	05-BU-01		1.90	2.30	8.9
KM107-DH19-06	06-BU-01		0.80	1.10	7.1

National IM Server GINT\_GAL\_NATIONALIM Unique Project ID: Output Form: LAB\_WATER CONTENT (REPORT) 2018 LHu 14/5/19

LH 5/13/2019  
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2275 UPPER MIDDLE ROAD EAST  
SUITE 300  
OAKVILLE ON L6H 0C3

Page: 1  
Total # Pages: 3 (A)  
Plus Appendix Pages  
Finalized Date: 18-APR-2019  
Account: BIMCIO

## CERTIFICATE BF19091683

Project: Moisture Testing

P.O. No.: 4500060218

This report is for 58 Drill Chip samples submitted to our lab in Baffinland, NU, Canada on 17-APR-2019.

The following have access to data associated with this certificate:

TREVOR BRISCO  
JORDON MARSH  
HAYLEY POTHIER  
LOUELL UY

SIMON FLEURY  
FRANK PILECKI  
JACOB PRINCE  
WARRICK WILLIAMS

ELEANOR GRANT  
DALE PITTMAN  
MATTHEW TRACEY

## SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
WEI-22	Dry Weight

## ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION
OA-GRA05BF	Moisture in Iron ore samples

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

\*\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*\*

Signature:

Colin Ramshaw, Vancouver Laboratory Manager



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 Plus Appendix Pages  
 Finalized Date: 18-APR-2019  
 Account: BIMCIO

Project: Moisture Testing

**CERTIFICATE OF ANALYSIS BF19091683**

Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	WEI-22 Dry Wt. kg 0.02	OA-GRA05BF Moisture % 0.01
Sample Description			
16/Apr/19-01-MC-01-R804101	0.64	0.56	12.50
16/Apr/19-01-MC-02-R804102	0.31	0.04	87.1
16/Apr/19-01-MC-03-R804103	1.11	0.33	70.3
16/Apr/19-01-MC-04-R804104	0.41	0.07	82.9
16/Apr/19-01-MC-05-R804105	0.25	0.15	40.0
16/Apr/19-01-MC-06-R804106	0.48	0.41	14.60
16/Apr/19-01-MC-07-R804107	0.28	0.06	78.6
16/Apr/19-01-MC-08-R804108	0.63	0.57	9.52
16/Apr/19-01-MC-09-R804109	0.59	0.50	15.25
16/Apr/19-01-MC-10-R804110	0.61	0.56	8.20
16/Apr/19-01-MC-11-R804111	0.95	0.85	10.55
16/Apr/19-01-MC-12-R804112	0.77	0.70	9.09
16/Apr/19-01-MC-13-R804113	0.59	0.49	16.95
16/Apr/19-02-MC-01-R804114	0.70	0.64	8.57
16/Apr/19-02-MC-02-R804115	0.53	0.44	17.00
16/Apr/19-02-MC-03-R804116	0.33	0.14	57.6
16/Apr/19-02-MC-04-R804117	0.29	0.09	69.0
16/Apr/19-02-MC-05-R804118	0.34	0.15	55.9
16/Apr/19-02-MC-06-R804119	0.05	0.03	40.0
16/Apr/19-02-MC-07-R804120	0.72	0.59	18.05
16/Apr/19-02-MC-08-R804121	0.39	0.32	17.95
16/Apr/19-02-MC-09-R804122	0.54	0.47	12.95
16/Apr/19-02-MC-10-R804123	0.53	0.47	11.30
16/Apr/19-03-MC-01-R804124	0.74	0.66	10.80
16/Apr/19-03-MC-02-R804125	0.33	0.13	60.6
16/Apr/19-03-MC-03-R804126	1.04	0.23	77.9
16/Apr/19-03-MC-04-R804127	0.29	0.09	69.0
16/Apr/19-03-MC-05-R804128	0.32	0.10	68.8
16/Apr/19-03-MC-06-R804129	0.37	0.16	56.8
16/Apr/19-03-MC-07-R804130	0.33	0.08	75.8
16/Apr/19-03-MC-08-R804131	0.30	0.06	80.0
16/Apr/19-03-MC-09-R804132	0.78	0.68	12.80
16/Apr/19-03-MC-10-R804133	0.65	0.54	16.90
16/Apr/19-03-MC-11-R804134	0.66	0.61	7.58
16/Apr/19-03-MC-12-R804135	0.63	0.57	9.52
16/Apr/19-03-MC-13-R804136	0.64	0.57	10.95
16/Apr/19-03-MC-14-R804137	0.84	0.75	10.70
16/Apr/19-04-MC-01-R804138	0.30	0.16	46.7
16/Apr/19-04-MC-02-R804139	0.57	0.52	8.77
16/Apr/19-05-MC-01-R804140	0.74	0.71	4.05





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Page: 3 - A  
Total # Pages: 3 (A)  
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Finalized Date: 18-APR-2019  
Account: BIMCIO

Project: Moisture Testing

**CERTIFICATE OF ANALYSIS BF19091683**

Sample Description	Method Analyte Units LOD	WEI-21	WEI-22	OA-GRA05BF
		Recvd Wt. kg 0.02	Dry Wt. kg 0.02	Moisture % 0.01
16/Apr/19-05-MC-02-R804141		0.82	0.73	11.00
16/Apr/19-05-MC-03-R804142		1.68	1.43	14.90
16/Apr/19-05-MC-04-R804143		1.18	1.02	13.55
16/Apr/19-05-MC-05-R804144		1.42	1.28	9.86
16/Apr/19-05-MC-06-R804145		1.44	1.26	12.50
16/Apr/19-05-MC-07-R804146		1.00	0.89	11.00
16/Apr/19-06-MC-01-R804147		0.63	0.52	17.45
16/Apr/19-06-MC-02-R804148		0.67	0.57	14.95
16/Apr/19-06-MC-03-R804149		0.30	0.18	40.0
16/Apr/19-06-MC-04-R804150		0.73	0.15	79.5
16/Apr/19-06-MC-05-R804151		0.45	0.09	80.0
16/Apr/19-06-MC-06-R804152		0.20	0.15	25.0
16/Apr/19-06-MC-07-R804153		0.16	0.03	81.3
16/Apr/19-06-MC-08-R804154		0.15	0.12	20.0
16/Apr/19-06-MC-09-R804155		0.27	0.10	63.0
16/Apr/19-06-MC-10-R804156		0.18	0.11	38.9
16/Apr/19-06-MC-11-R804157		0.41	0.36	12.20
16/Apr/19-06-MC-12-R804158		0.56	0.48	14.30



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Page: Appendix 1  
Total # Appendix Pages: 1  
Finalized Date: 18-APR-2019  
Account: BIMCIO

Project: Moisture Testing

**CERTIFICATE OF ANALYSIS BF19091683**

**CERTIFICATE COMMENTS**

**LABORATORY ADDRESSES**

Applies to Method:

Processed at ALS Baffinland, Mary River, Baffin Island, Nunavut, Canada  
OA-GRA05BF

WEI-21

WEI-22



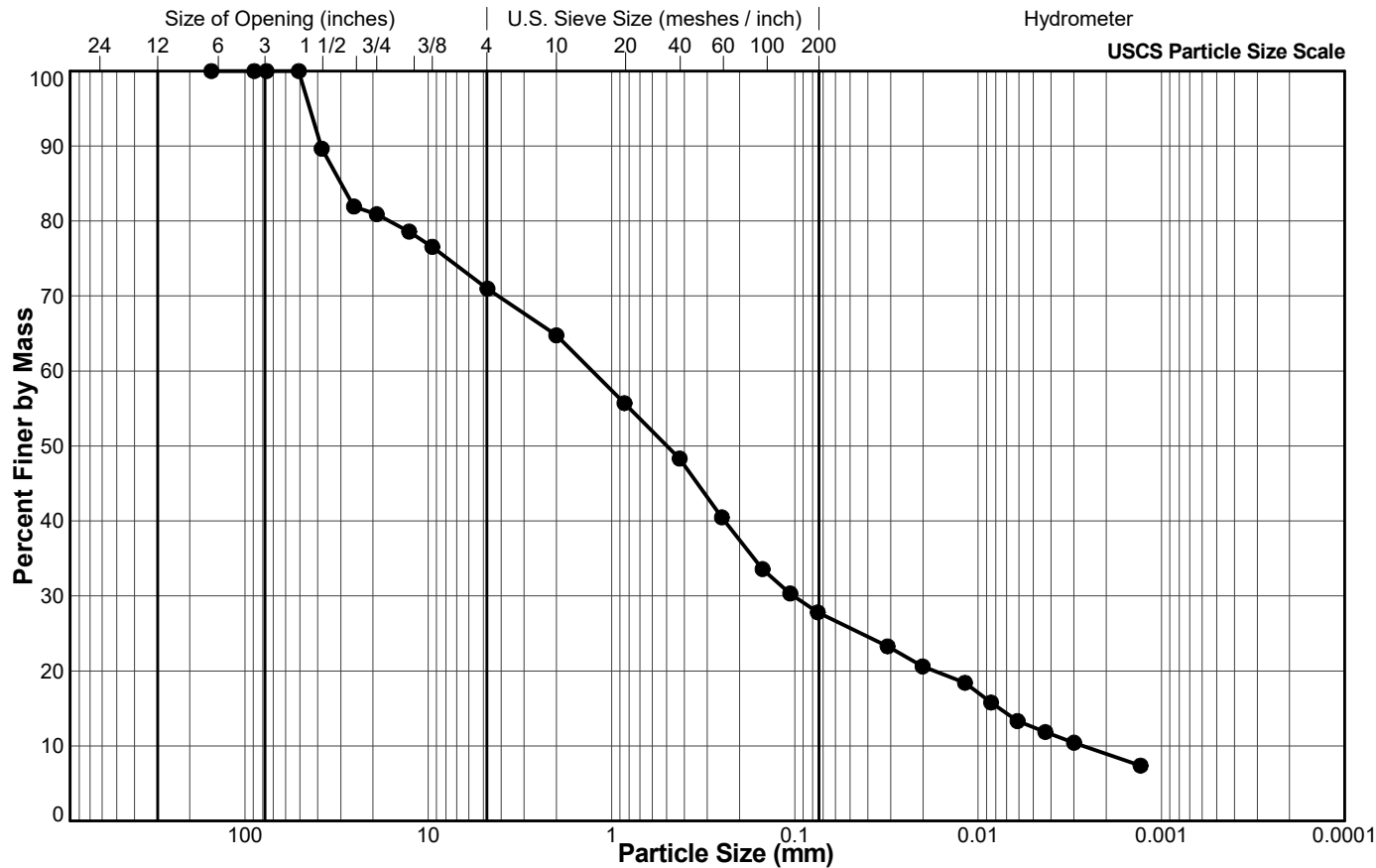


# SUMMARY OF PARTICLE SIZE DISTRIBUTION

ASTM D 422

**Client:** Knight Piesold Ltd.  
**Project:** KM106 Sockpile 2019 Geotechnical Site Investigation  
**Location:** Mary River  
**Project No.:** 19122781 **Phase:** 2000

**Sample Location:** KM106-DH19-05  
**Sample No.:** 05-BU-01  
**Depth Interval (m):** 1.60 to 1.80  
**Lab Schedule No.:** B19-151



## Legend

Sieve Size (USS)	Particle Size (mm)	Percent Passing
6"	152.4	100.0
3.5"	88.9	100.0
3"	76.2	100.0
2"	50.8	100.0
1 1/2"	38.1	89.6
1"	25.4	81.9
3/4"	19.1	80.9
1/2"	12.7	78.6
3/8"	9.5	76.6
#4 US MESH	4.75	71.0
#10 US MESH	2	64.8
#20 US MESH	0.85	55.7
#40 US MESH	0.425	48.3
#60 US MESH	0.25	40.5
#100 US MESH	0.15	33.6
#140 US MESH	0.106	30.3
#200 US MESH	0.075	27.8
	0.0312	23.3
	0.0201	20.6
	0.0118	18.4
	0.0085	15.8
	0.0061	13.3
	0.0043	11.9
	0.0030	10.4
	0.0013	7.4

BOULDER	COBBLE	GRAVEL		SAND			FINES (Silt, Clay)
		Coarse	Fine	Coarse	Medium	Fine	

FF/DC

5/27/2019

SJ

5/30/2019

Tech

Date

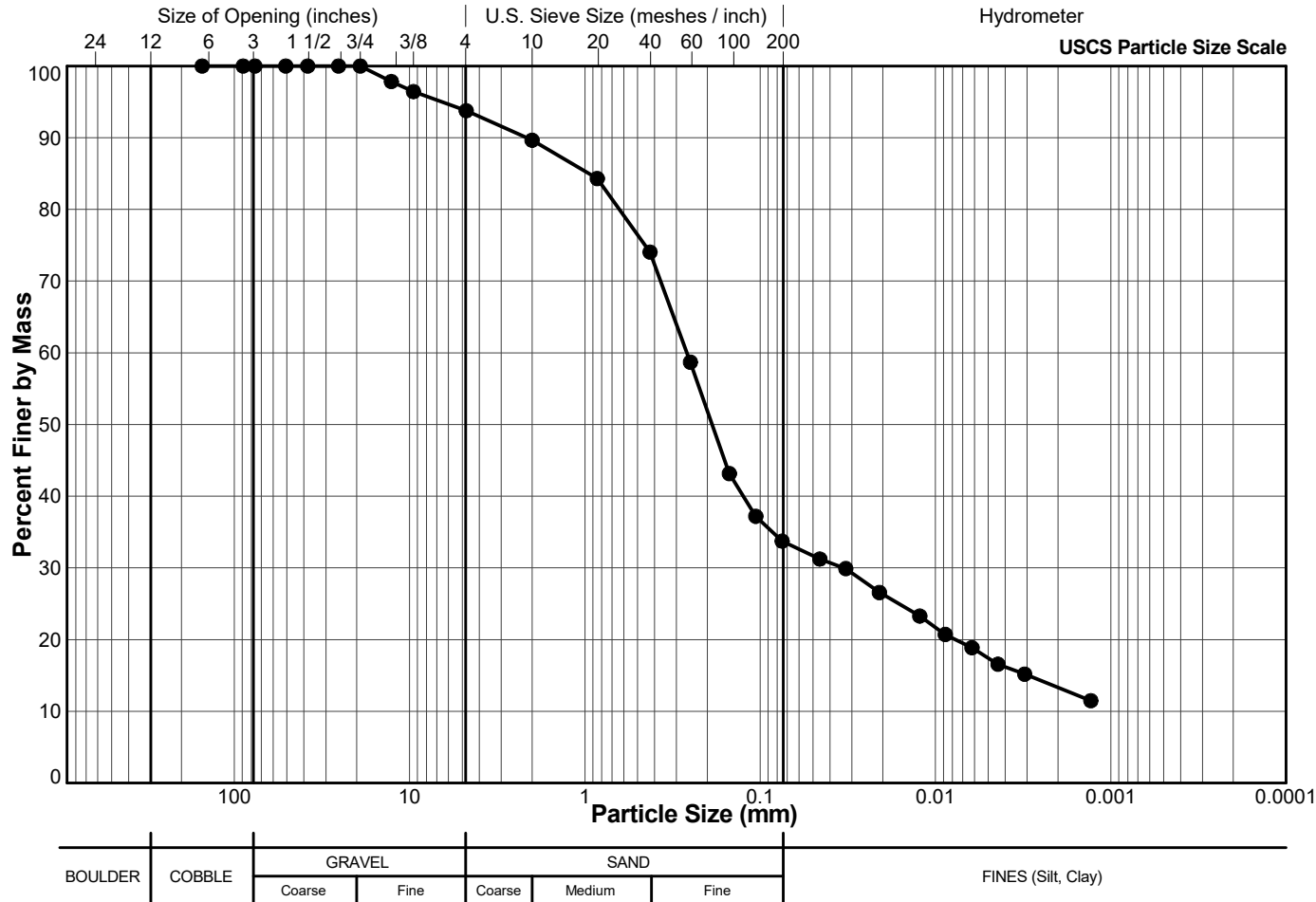
Checked

Date



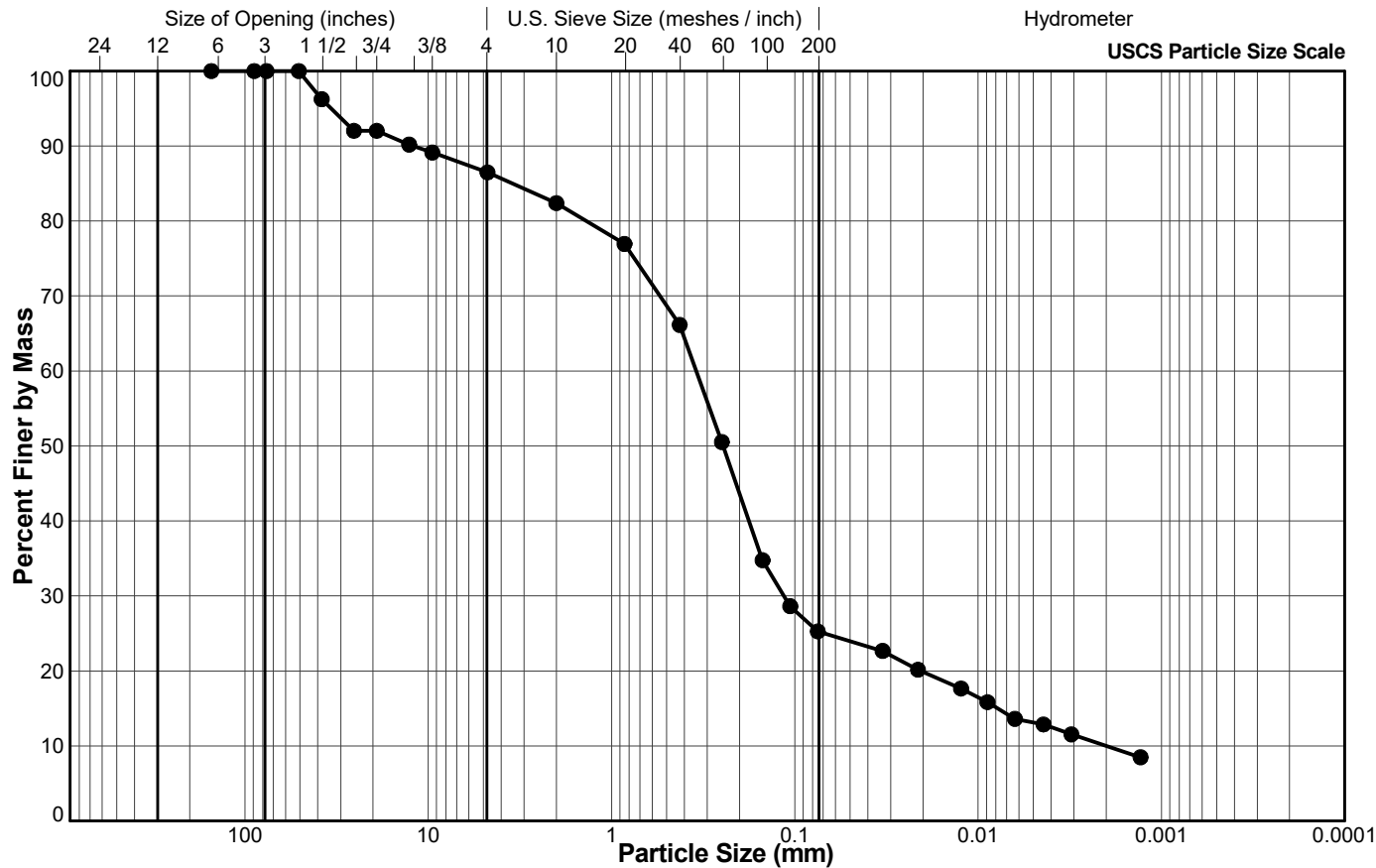
**Client:** Knight Piesold Ltd.  
**Project:** KM107 Stockpile 2019 Geotechnical Site Investigation  
**Location:** Mary River  
**Project No.:** 19122781 **Phase:** 1000

**Sample Location:** KM107-DH19-02  
**Sample No.:** 02-BU-01  
**Depth Interval (m):** 1.20 to 1.50  
**Lab Schedule No.:** B19-112



**Client:** Knight Piesold Ltd.  
**Project:** KM107 Stockpile 2019 Geotechnical Site Investigation  
**Location:** Mary River  
**Project No.:** 19122781 **Phase:** 1000

**Sample Location:** KM107-DH19-03  
**Sample No.:** 03-BU-01  
**Depth Interval (m):** 1.00 to 1.30  
**Lab Schedule No.:** B19-112



## Legend

Sieve Size (USS)	Particle Size (mm)	Percent Passing
6"	152.4	100.0
3.5"	88.9	100.0
3"	76.2	100.0
2"	50.8	100.0
1 1/2"	38.1	96.2
1"	25.4	92.0
3/4"	19.1	92.0
1/2"	12.7	90.2
3/8"	9.5	89.1
#4 US MESH	4.75	86.5
#10 US MESH	2	82.4
#20 US MESH	0.85	76.9
#40 US MESH	0.425	66.2
#60 US MESH	0.25	50.5
#100 US MESH	0.15	34.8
#140 US MESH	0.106	28.6
#200 US MESH	0.075	25.3
	0.0332	22.7
	0.0213	20.2
	0.0124	17.7
	0.0089	15.8
	0.0063	13.6
	0.0044	12.9
	0.0031	11.5
	0.0013	8.5

BOULDER		COBBLE		GRAVEL		SAND			FINES (Silt, Clay)
				Coarse	Fine	Coarse	Medium	Fine	

DC/GM

5/9/2019

LH

5/13/2019

Tech

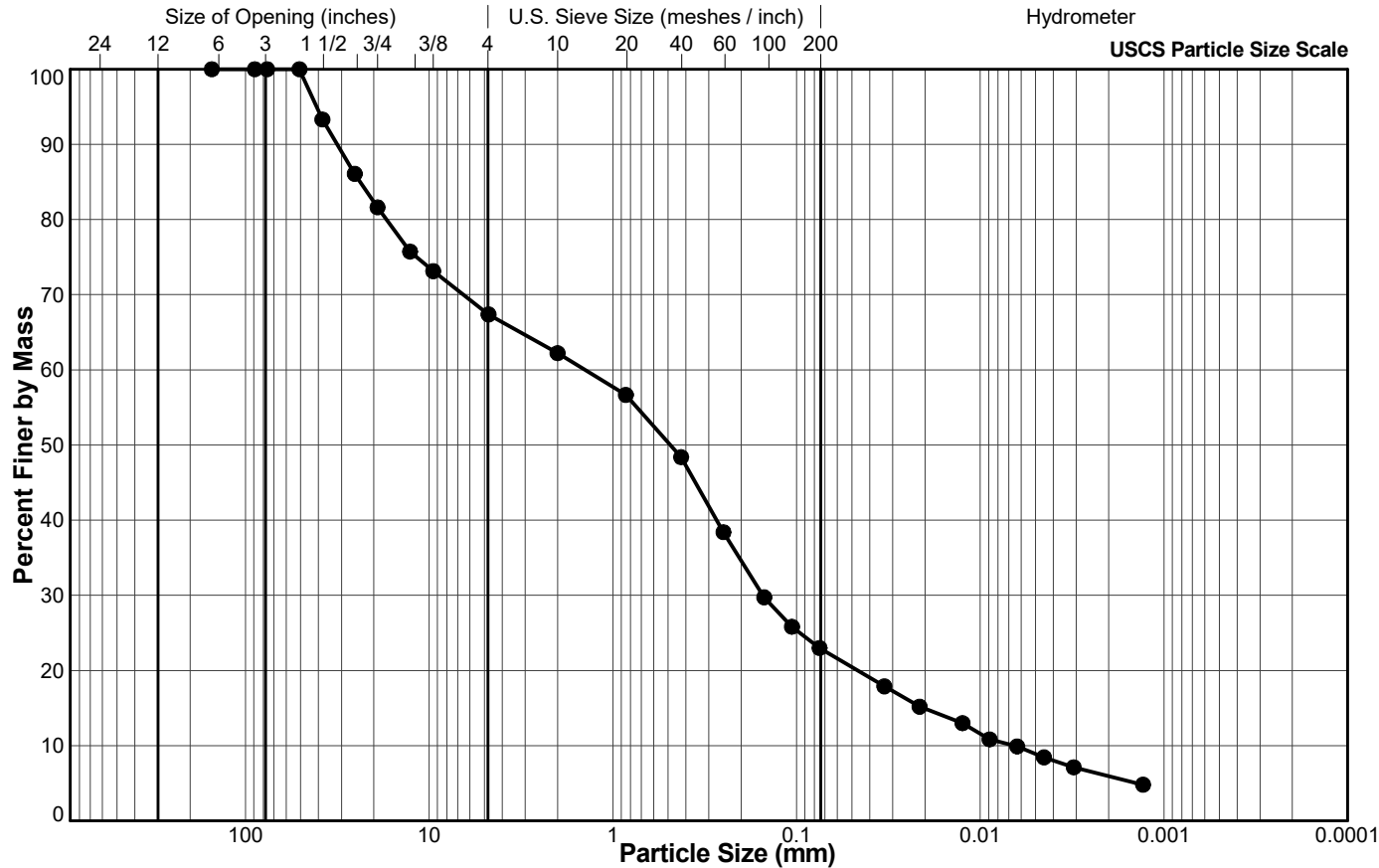
Date

Checked

Date

**Client:** Knight Piesold Ltd.  
**Project:** KM107 Stockpile 2019 Geotechnical Site Investigation  
**Location:** Mary River  
**Project No.:** 19122781 **Phase:** 1000

**Sample Location:** KM107-DH19-05  
**Sample No.:** 05-BU-01  
**Depth Interval (m):** 1.90 to 2.30  
**Lab Schedule No.:** B19-112



## Legend

Sieve Size (USS)	Particle Size (mm)	Percent Passing
6"	152.4	100.0
3.5"	88.9	100.0
3"	76.2	100.0
2"	50.8	100.0
1 1/2"	38.1	93.3
1"	25.4	86.1
3/4"	19.1	81.6
1/2"	12.7	75.7
3/8"	9.5	73.1
#4 US MESH	4.75	67.4
#10 US MESH	2	62.2
#20 US MESH	0.85	56.7
#40 US MESH	0.425	48.4
#60 US MESH	0.25	38.4
#100 US MESH	0.15	29.7
#140 US MESH	0.106	25.8
#200 US MESH	0.075	23.0
	0.0333	17.9
	0.0214	15.2
	0.0125	13.0
	0.0089	10.8
	0.0063	9.9
	0.0045	8.4
	0.0031	7.1
	0.0013	4.8

BOULDER	COBBLE	GRAVEL		SAND			FINES (Silt, Clay)
		Coarse	Fine	Coarse	Medium	Fine	

DC/GM

5/9/2019

LH

5/13/2019

Tech

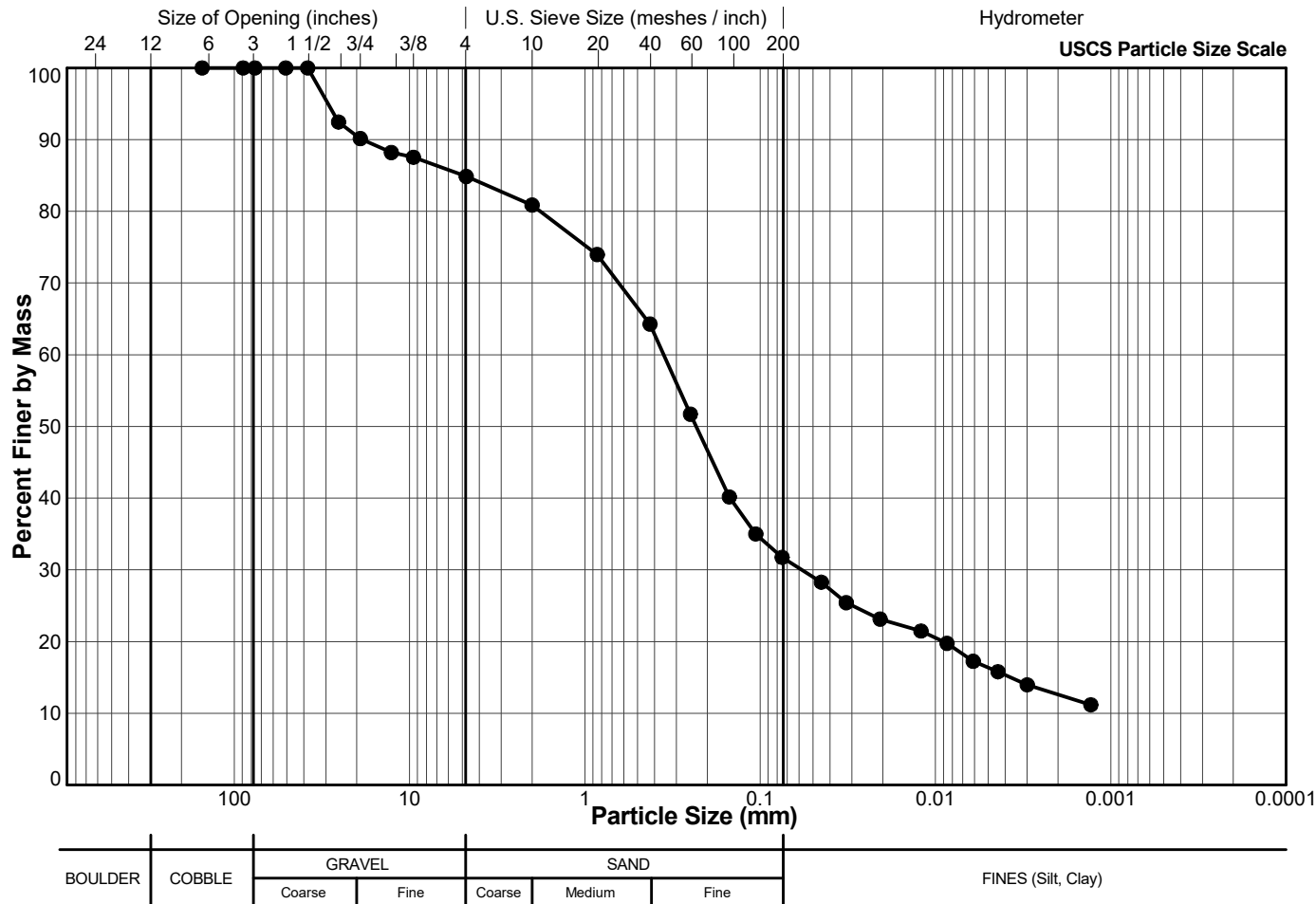
Date

Checked

Date

**Client:** Knight Piesold Ltd.  
**Project:** KM107 Stockpile 2019 Geotechnical Site Investigation  
**Location:** Mary River  
**Project No.:** 19122781 **Phase:** 1000

**Sample Location:** KM107-DH19-06  
**Sample No.:** 06-BU-01  
**Depth Interval (m):** 0.80 to 1.10  
**Lab Schedule No.:** B19-112





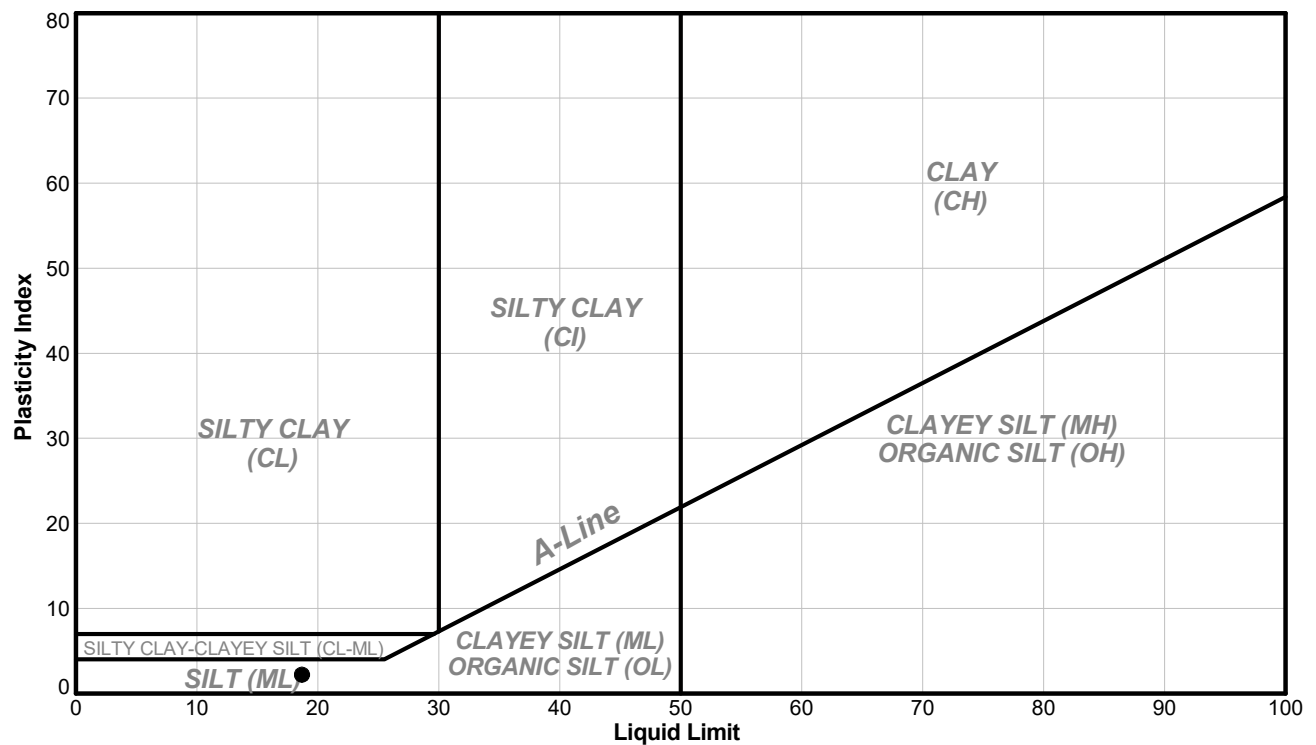
<b>Client:</b> Knight Piesold Ltd.	<b>ID:</b> KM106-DH19-01
<b>Project:</b> KM106 Sockpile 2019 Geotechnical Site Investigation	<b>Sample No.:</b> 01-BU-01
<b>Location:</b> Mary River	<b>Depth Interval (m):</b> 0.30 to 0.50
<b>Project No.:</b> 19122781 <b>Phase:</b> 2000	<b>Lab Schedule No.:</b> B19-151

**Other Remarks:** N/A

**Test Method:** A-Multi Point

**Preparation Method:** Air Dried

**PLASTICITY CHART**



Sym.	Sample Location	Sample / Specimen Number	Depth (m)	Bottom (m)	Percent Passing #40 Sieve (%)	Liquid Limit	Plastic Limit	Plasticity Index	Natural Water Content (%)	Liquidity Index
●	KM106-DH19-01	01-BU-01	0.30	0.50	44	19	16	3.0	10.0	-2.0

NP - NON-PLASTIC RESULT ND - NOT DETERMINED

**Note:** The test data given herein pertain to the sample provided only. This report constitutes a testing service only.

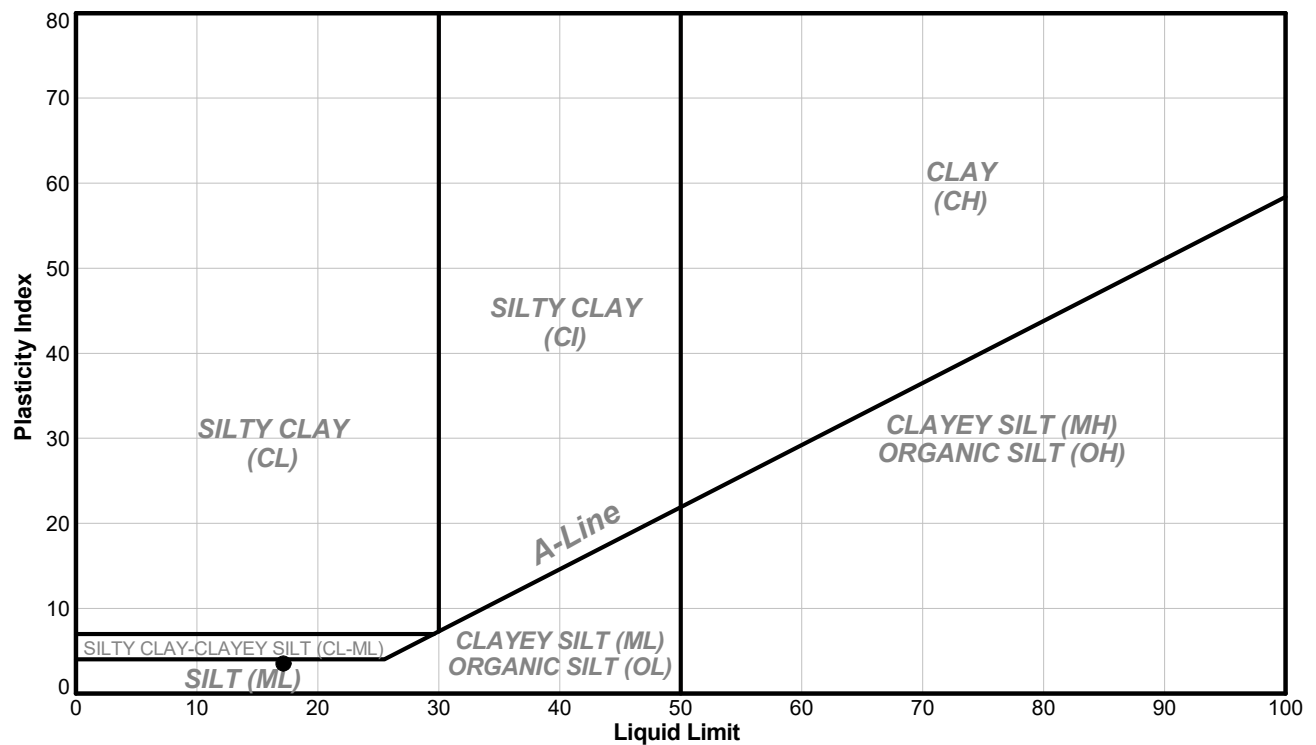
<b>FF</b>	<b>5/29/2019</b>	<b>SJ</b>	<b>5/30/2019</b>
Tech	Date	Checked	Date

<b>Client:</b> Knight Piesold Ltd.	<b>ID:</b> KM106-DH19-05
<b>Project:</b> KM106 Sockpile 2019 Geotechnical Site Investigation	<b>Sample No.:</b> 05-BU-01
<b>Location:</b> Mary River	<b>Depth Interval (m):</b> 1.60 to 1.80
<b>Project No.:</b> 19122781 <b>Phase:</b> 2000	<b>Lab Schedule No.:</b> B19-151

**Other Remarks:** N/A

**Test Method:** A-Multi Point

**Preparation Method:** Air Dried

**PLASTICITY CHART**


Sym.	Sample Location	Sample / Specimen Number	Depth (m)	Bottom (m)	Percent Passing #40 Sieve (%)	Liquid Limit	Plastic Limit	Plasticity Index	Natural Water Content (%)	Liquidity Index
●	KM106-DH19-05	05-BU-01	1.60	1.80	48	17	14	3.0	8.2	-1.9

NP - NON-PLASTIC RESULT ND - NOT DETERMINED

**Note: The test data given herein pertain to the sample provided only. This report constitutes a testing service only.**

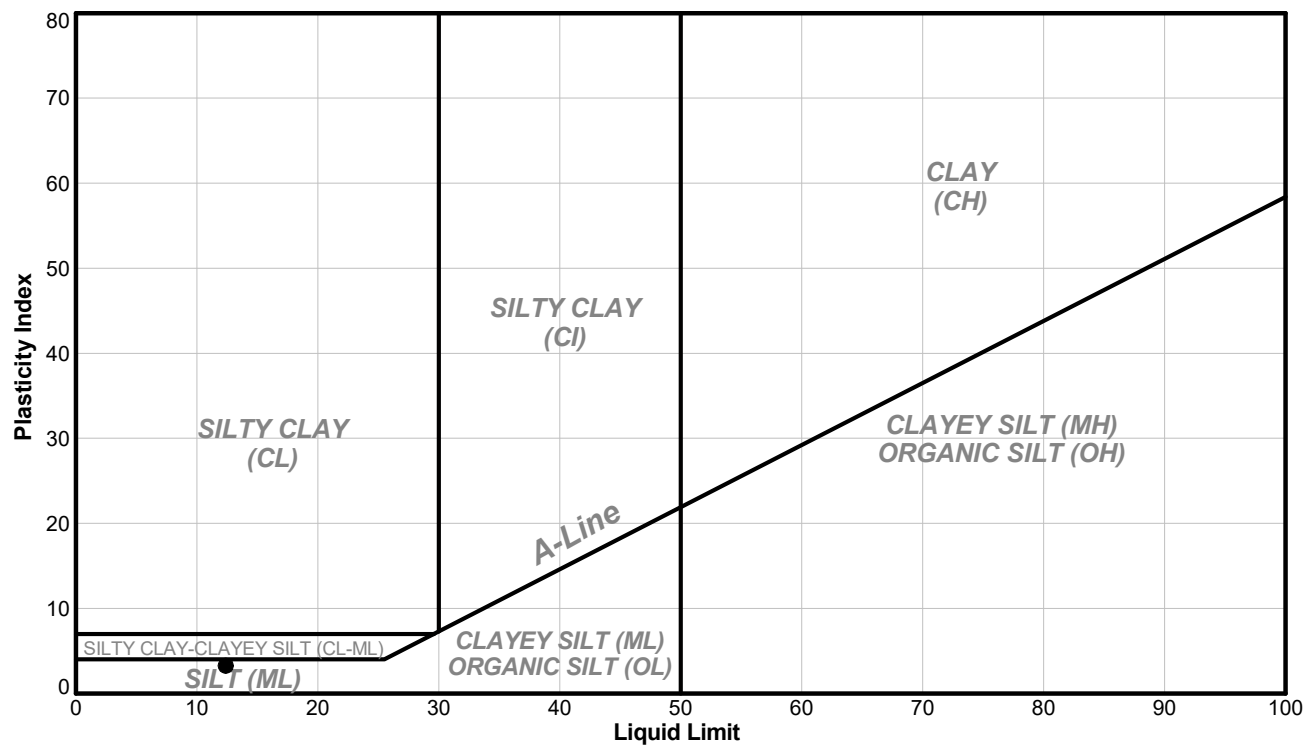
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Tech	Date	Checked	Date

<b>Client:</b> Knight Piesold Ltd.	<b>ID:</b> KM107-DH19-02
<b>Project:</b> KM107 Stockpile 2019 Geotechnical Site Investigation	<b>Sample No.:</b> 02-BU-01
<b>Location:</b> Mary River	<b>Depth Interval (m):</b> 1.20 to 1.50
<b>Project No.:</b> 19122781 <b>Phase:</b> 1000	<b>Lab Schedule No.:</b> B19-112

**Other Remarks:** N/A

**Test Method:** A-Multi Point

**Preparation Method:** Air Dried

**PLASTICITY CHART**


Sym.	Sample Location	Sample / Specimen Number	Depth (m)	Bottom (m)	Percent Passing #40 Sieve (%)	Liquid Limit	Plastic Limit	Plasticity Index	Natural Water Content (%)	Liquidity Index
●	KM107-DH19-02	02-BU-01	1.20	1.50	74	12	9	3.0	9.5	0.2

NP - NON-PLASTIC RESULT ND - NOT DETERMINED

**Note: The test data given herein pertain to the sample provided only. This report constitutes a testing service only.**

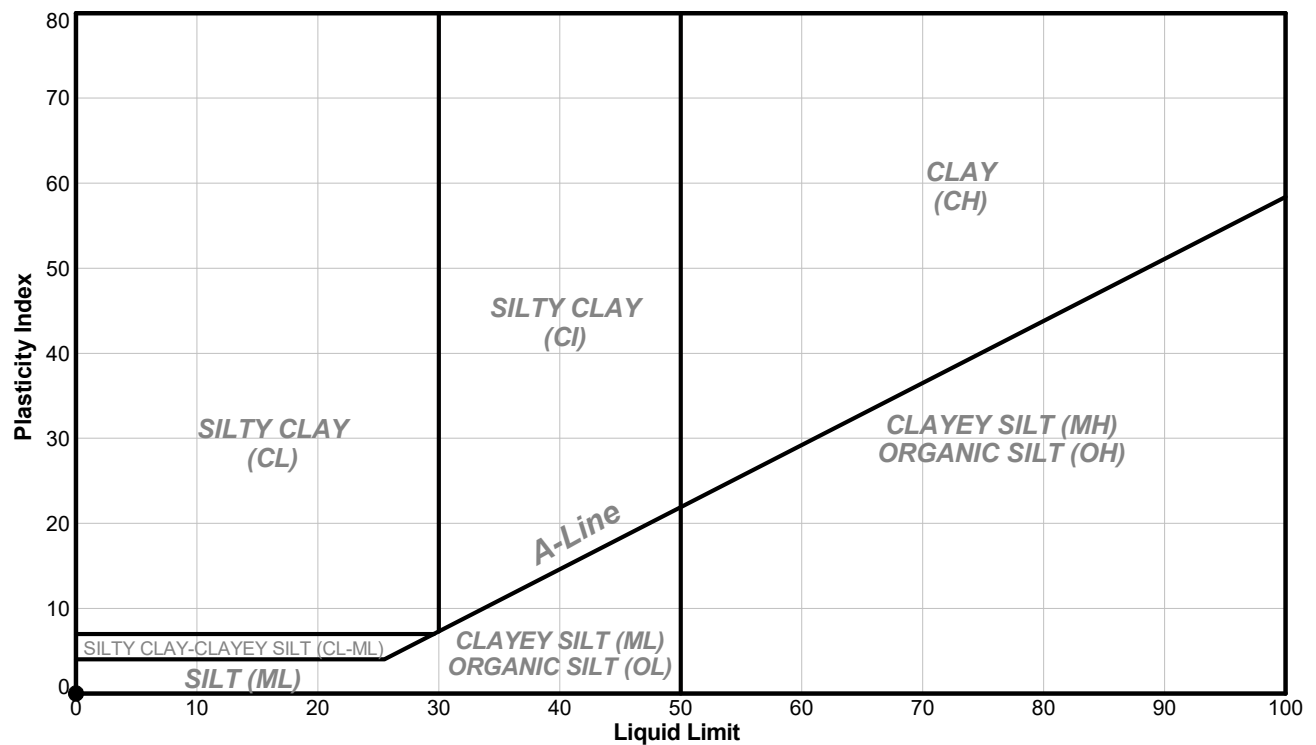
<b>BJ</b>	<b>5/9/2019</b>	<b>LH</b>	<b>5/13/2019</b>
Tech	Date	Checked	Date

<b>Client:</b> Knight Piesold Ltd. <b>Project:</b> KM107 Stockpile 2019 Geotechnical Site Investigation <b>Location:</b> Mary River <b>Project No.:</b> 19122781 <b>Phase:</b> 1000	<b>ID:</b> KM107-DH19-03 <b>Sample No.:</b> 03-BU-01 <b>Depth Interval (m):</b> 1.00 to 1.30 <b>Lab Schedule No.:</b> B19-112
--	--

**Other Remarks:** N/A

**Test Method:** A-Multi Point

**Preparation Method:** Air Dried

**PLASTICITY CHART**


Sym.	Sample Location	Sample / Specimen Number	Depth (m)	Bottom (m)	Percent Passing #40 Sieve (%)	Liquid Limit	Plastic Limit	Plasticity Index	Natural Water Content (%)	Liquidity Index
●	KM107-DH19-03	03-BU-01	1.00	1.30	66	NP	NP	NP	9.5	NP

NP - NON-PLASTIC RESULT ND - NOT DETERMINED

**Note:** The test data given herein pertain to the sample provided only. This report constitutes a testing service only.

<b>BJ</b>	<b>5/10/2019</b>	<b>LH</b>	<b>5/13/2019</b>
Tech	Date	Checked	Date

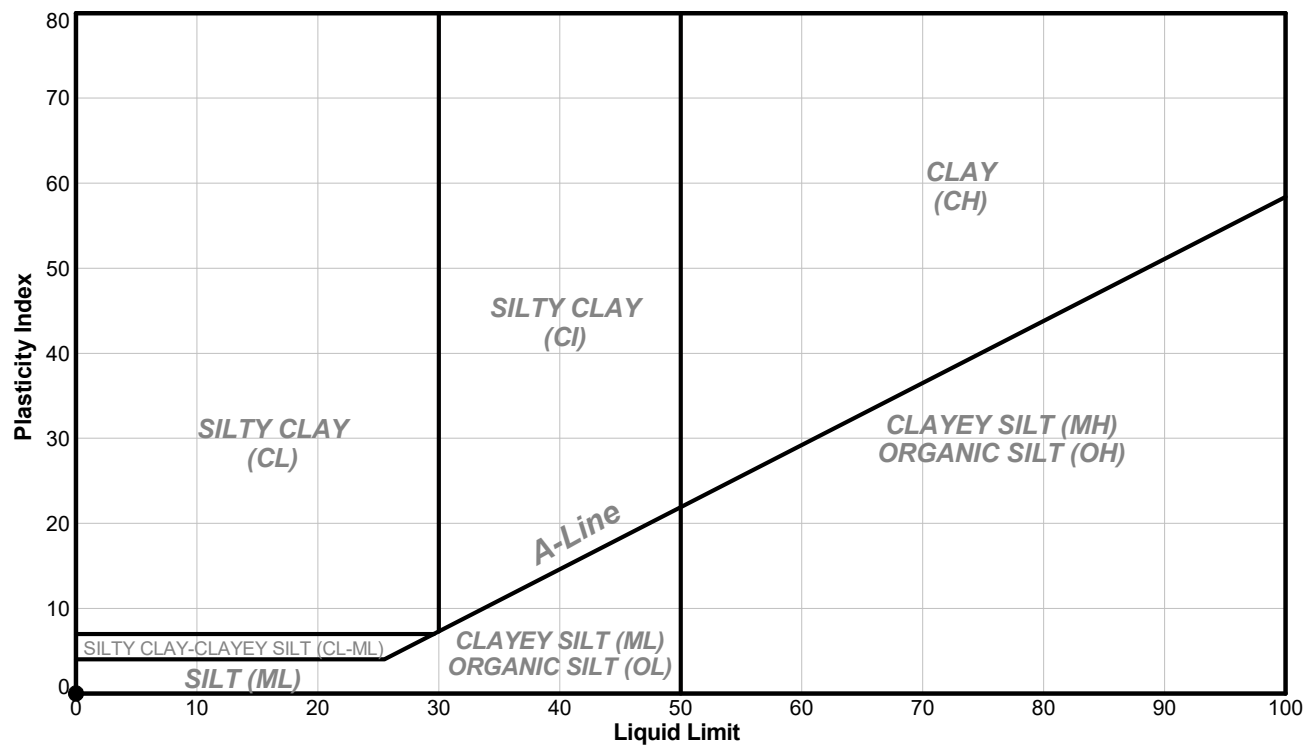


<b>Client:</b> Knight Piesold Ltd. <b>Project:</b> KM107 Stockpile 2019 Geotechnical Site Investigation <b>Location:</b> Mary River <b>Project No.:</b> 19122781 <b>Phase:</b> 1000	<b>ID:</b> KM107-DH19-05 <b>Sample No.:</b> 05-BU-01 <b>Depth Interval (m):</b> 1.90 to 2.30 <b>Lab Schedule No.:</b> B19-112
--	--

**Other Remarks:** N/A

**Test Method:** A-Multi Point

**Preparation Method:** Air Dried

**PLASTICITY CHART**


Sym.	Sample Location	Sample / Specimen Number	Depth (m)	Bottom (m)	Percent Passing #40 Sieve (%)	Liquid Limit	Plastic Limit	Plasticity Index	Natural Water Content (%)	Liquidity Index
●	KM107-DH19-05	05-BU-01	1.90	2.30	48	NP	NP	NP	8.9	NP

NP - NON-PLASTIC RESULT ND - NOT DETERMINED

**Note:** The test data given herein pertain to the sample provided only. This report constitutes a testing service only.

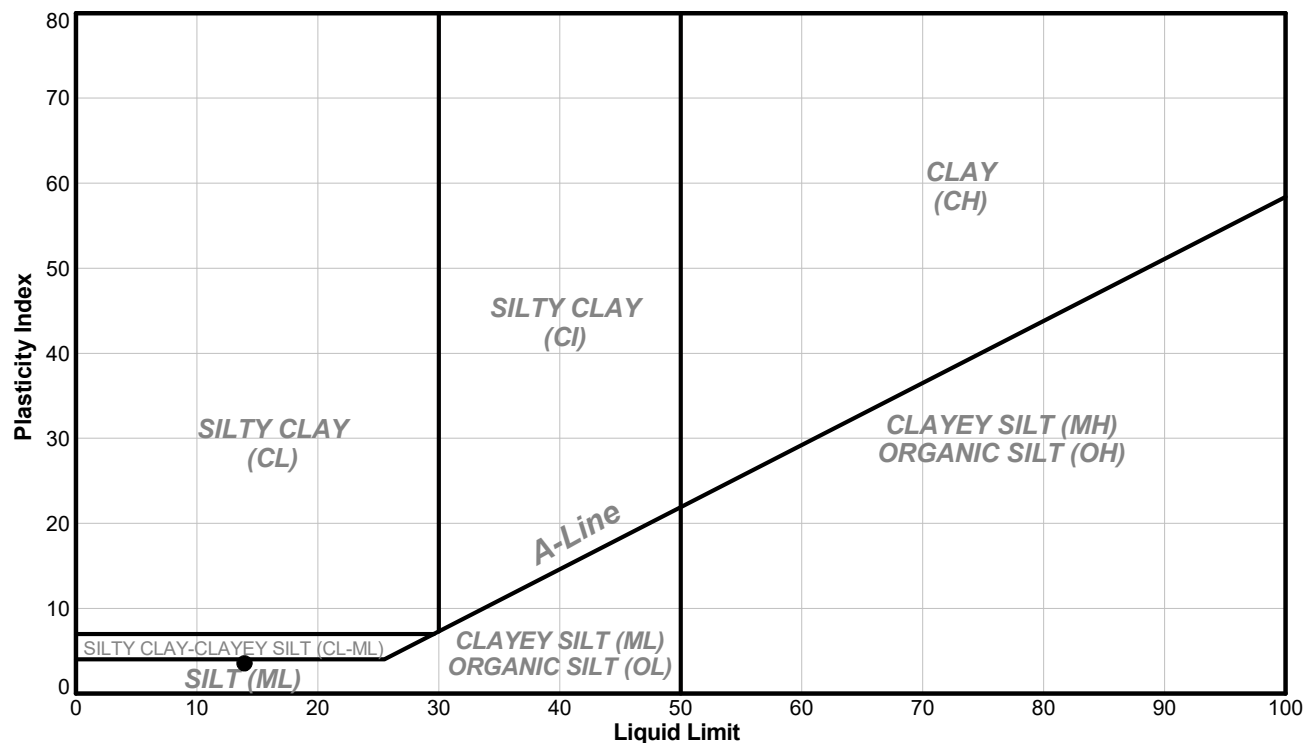
<b>BJ</b>	<b>5/10/2019</b>	<b>LH</b>	<b>5/13/2019</b>
Tech	Date	Checked	Date

<b>Client:</b> Knight Piesold Ltd.	<b>ID:</b> KM107-DH19-06
<b>Project:</b> KM107 Stockpile 2019 Geotechnical Site Investigation	<b>Sample No.:</b> 06-BU-01
<b>Location:</b> Mary River	<b>Depth Interval (m):</b> 0.80 to 1.10
<b>Project No.:</b> 19122781 <b>Phase:</b> 1000	<b>Lab Schedule No.:</b> B19-112

**Other Remarks:** N/A

**Test Method:** A-Multi Point

**Preparation Method:** Air Dried

**PLASTICITY CHART**


Sym.	Sample Location	Sample / Specimen Number	Depth (m)	Bottom (m)	Percent Passing #40 Sieve (%)	Liquid Limit	Plastic Limit	Plasticity Index	Natural Water Content (%)	Liquidity Index
●	KM107-DH19-06	06-BU-01	0.80	1.10	64	14	10	4.0	7.1	-0.7

NP - NON-PLASTIC RESULT ND - NOT DETERMINED

**Note:** The test data given herein pertain to the sample provided only. This report constitutes a testing service only.

<b>BJ</b>	<b>5/9/2019</b>	<b>LH</b>	<b>5/13/2019</b>
Tech	Date	Checked	Date

APPENDIX C.6

2019/20 Geotechnical Drilling  
Program – Quarry Verification –  
October 11, 2019



October 11, 2019

Jonathan Mesher  
Resource Management Officer  
Crown Indigenous Relations and Northern Affairs (CIRNA)  
Box 100  
Iqaluit, NU X0A 0H0

**Re:           2019/2020 Geotechnical Drilling Program – Quarry Verification  
Type 'B' Water Licence 2BE-MRY1421  
Commercial Lease No. Q13C301**

Baffinland Iron Mines Corporation (Baffinland) plans to commence a 2019 drilling program at the Mary River Project site for the purpose of geotechnical boreholes at potential quarry sites to assess the suitability of bedrock for use on the Project. The drilling program is being managed by Hatch Ltd. and performed by Nuna East Ltd. The program is scheduled to commence on October 21, 2019 and expected to be completed by April 30, 2020.

The drilling program will be completed within twenty-two (22) proposed quarries along the proposed Northern Transportation Corridor, listed in Table 1 below. The quarry locations are shown on the figures in Attachment 1. Proposed borehole locations and their proximity to surrounding water bodies are shown on the figures in Attachment 1. A 100 m x 100m grid was used within the limits of each proposed quarry to establish drilling locations. A total of four hundred seventy-three (473) boreholes are proposed across the 22 proposed quarries, as shown on the Drill Hole Grid figures in Attachment 2. Borehole locations will be laid and out and surveyed by a surveyor.

This drilling program is not expected to use water as drilling will be executed using a top hammer drill. Other supporting vehicles include pickup trucks, a float trailer, an excavator, grader and dozer to provide temporary winter access roads to the quarry locations. Winter access routes will be cleaned of any debris and inspected following use for any potential impacts to tundra. Boreholes will be drilled to depths of approximately 11 m below ground surface (mbgs).



**Table 1: Quarry Locations**

Route Chainage (km)	Quarry Name	Easting	Northing	Area (ha)	Material	# of Boreholes Proposed
22.0	PQ2B	517663	7961972	23.66	Limestone	25
28.9	PQ2A	521827.4	7955356	24.68	Limestone	30
41.6	PQ4A	523645.9	7942900	11.39	Limestone	15
42.5	PA4B	523627.7	7941891	12.95	Limestone	15
45.7	PQ5A	525359.3	7938861	22.95	Limestone	24
46.8	PQ5B	525986.2	7937814	57.06	Limestone	54
56.2	PQ6A	528498.8	7929786	23.98	Limestone	36
57.1	PQ6B	528900.5	7928993	22.72	Limestone	25
61.0	PQ2	527843.2	7926119	18.77	Limestone	24
63.4	Q27	527160.1	7923196	10.60	Limestone	13
66.0	PQ9A	527511.6	7920451	7.00	Limestone	16
66.0	PQ9B	527651.5	7920446	2.30	Limestone	6
73.1	PQ10A	531565.2	7917528	12.13	Limestone	16
74.2	PQ10B	531977	7917633	9.33	Limestone	13
84.5	PQ12A	539072.8	7921197	25.98	Sandstone	29
84.5	PQ12B	539876	7921782	19.31	Sandstone	26
85.7	PQ13	542583.7	7923675	46.03	Sandstone	50
96.0	PQ14B	550987.7	7917407	10.73	Sandstone	14
96.7	PQ14A	550825.2	7917828	4.69	Sandstone	6
101.5	PQ15A	555855.6	7915621	8.70	Diorite/Diabase	12
102.3	PQ15B	555270.3	7915580	6.17	Diorite/Diabase	12
109.0	Q42	561672.2	7912660	6.87	Diorite/Diabase	12

Environmental monitoring will be performed, including pre, during and post drilling inspections. Drill cuttings will be disposed of in natural depressions or used for backfill of boreholes consistent with Part F, Item 4 of Baffinland's Type B Water Licence 2BE-MRY1421 (Type B Water Licence). Drill water runoff and siltation mitigation measures consistent with Baffinland's Environmental Protection Plan BAF-PH1-830-P16-0008 r1 should not be required due to no water use and seasonal timing of the geotechnical program.

Despite best planning, it should be noted that unforeseen circumstances may necessitate some changes in planning as the program proceeds. Baffinland will endeavor to inform the Inspector and other relevant parties in such circumstances.

In accordance with the conditions of the Type B Water Licence, this letter and attachment provides Baffinland's notification for the drilling of a total of four hundred seventy-three (473) boreholes with proximity to nearby water bodies.



We trust that this information meets the various notification requirements for geotechnical drilling at the Project. Please do not hesitate to contact the undersigned, should you have any questions or comments.

Regards,

A handwritten signature in black ink, appearing to read "Chris Murray", with a large, stylized loop at the end.

Christopher Murray  
Environmental & Regulatory Compliance Manager

Attachments:

Attachment 1 Northern Transportation Corridor Proposed Quarry Locations

Attachment 2 Proposed Drill Hole Grid Figures

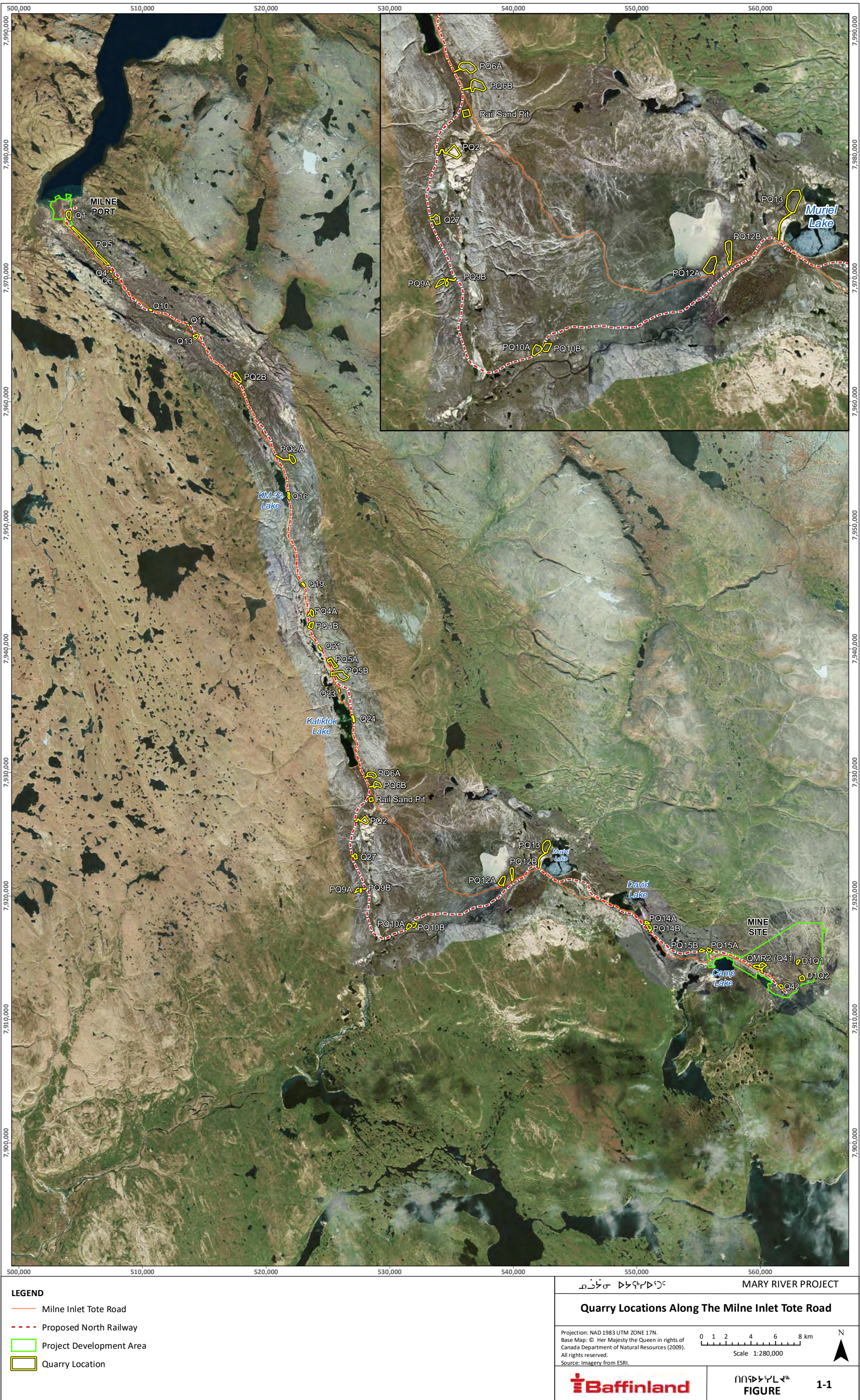
Cc: Timothy Ray Sewell, Megan Lord-Hoyle, Lou Kamermans, Shawn Stevens, Connor Devereaux,  
Steve Borcsok  
Assol Kubeisinova, Karén Kharatyan (NWB)  
Bridget Campbell, Godwin Okonkwo, Justin Hack (CIRNA)  
Chris Spencer (QIA)

## **Attachment 1**

### **Northern Transportation Corridor Proposed Quarry Locations**



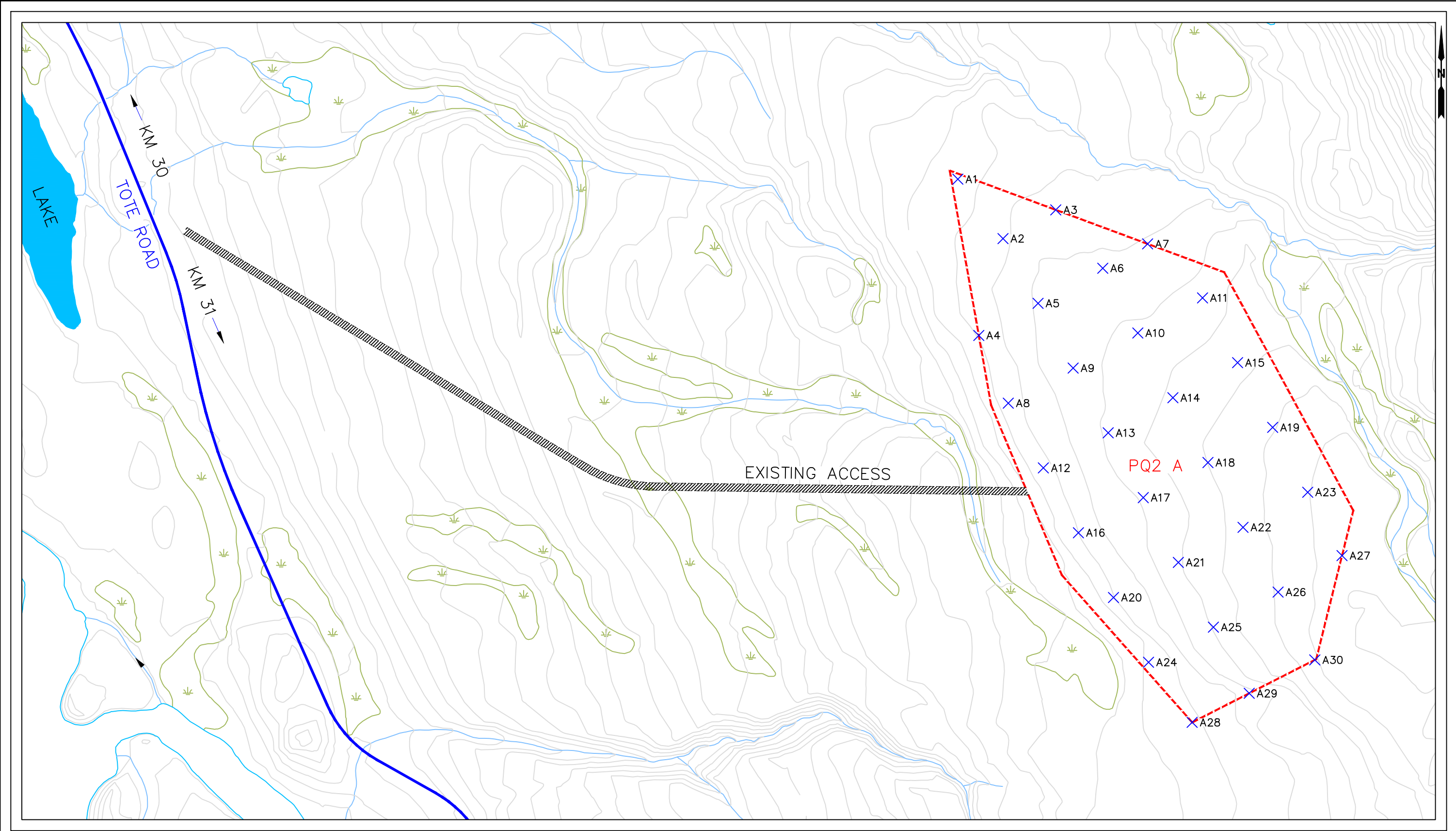
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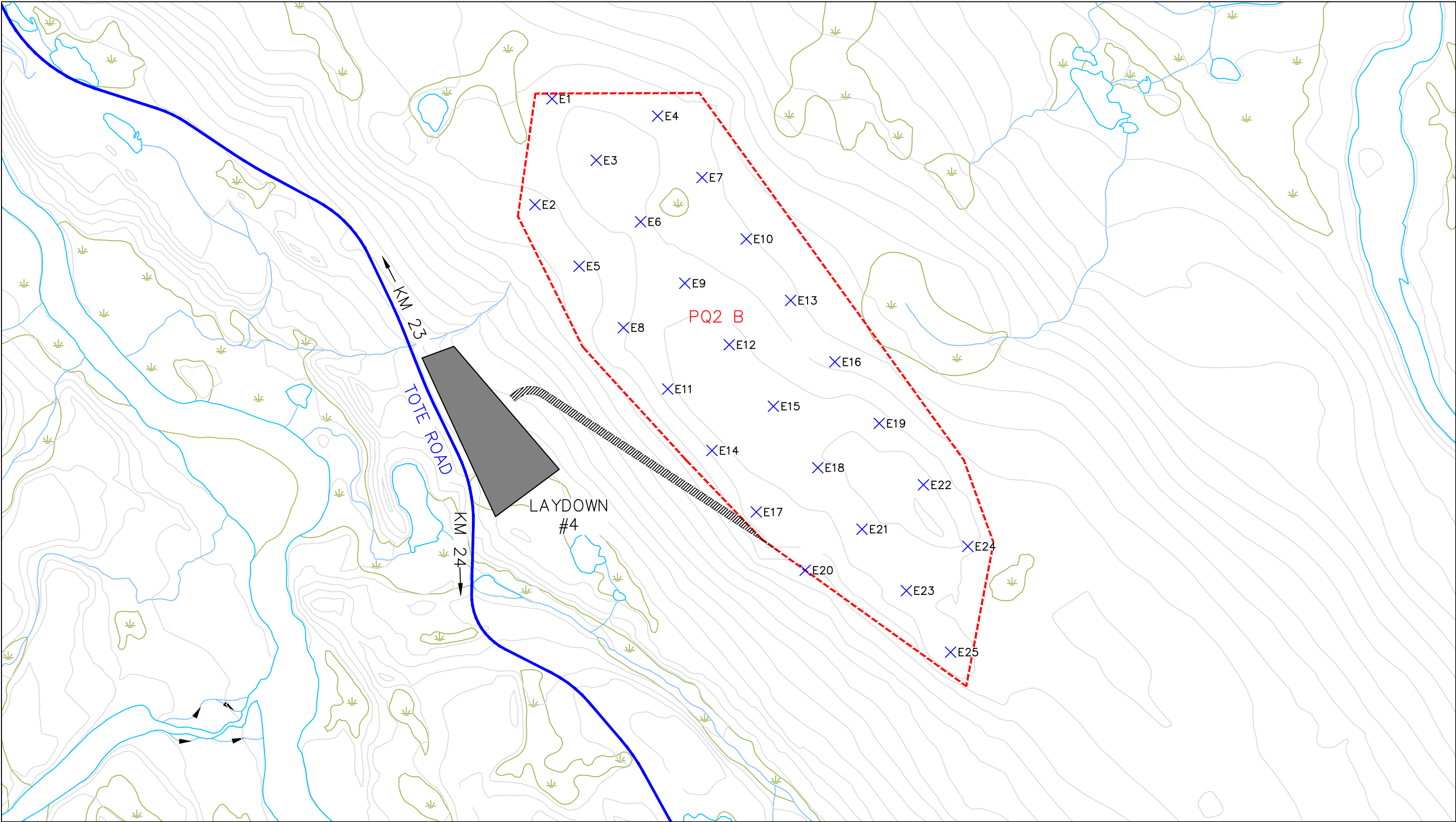


## **Attachment 2**

### **Proposed Drill Hole Grid Figures**



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OWNER:

BAFFINLAND IRON MINES LP

PROJECT:

BIM RAIL

PREPARED BY:

NUNA EAST LTD.  
PO Box 370  
Pond Inlet, NU  
X0A 0X0

DRAWN BY:

M. GOREHAM



SCALE:

1:5,000

DATE:

May 29, 2019

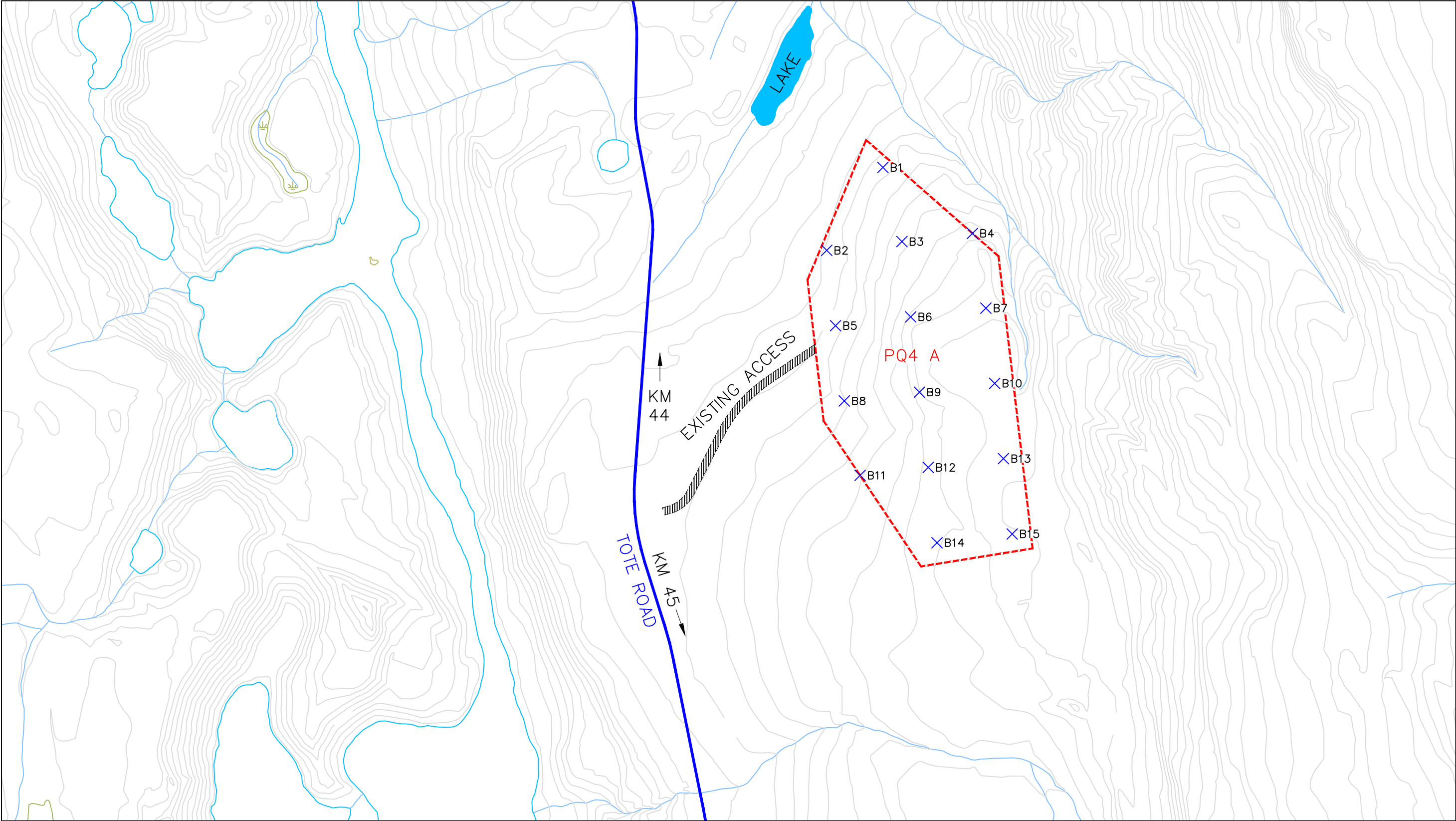
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PQ2 B

DRAWING NAME (YYMMDD):

190529 PQ2 B DRILL HOLE GRID.dwg





OWNER:

BAFFINLAND IRON MINES LP

PROJECT:

BIM RAIL

PREPARED BY:

NUNA EAST LTD.  
PO Box 370  
Pond Inlet, NU  
X0A 0X0

DRAWN BY:

M. GOREHAM



SCALE:

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DATE:

May 29, 2019

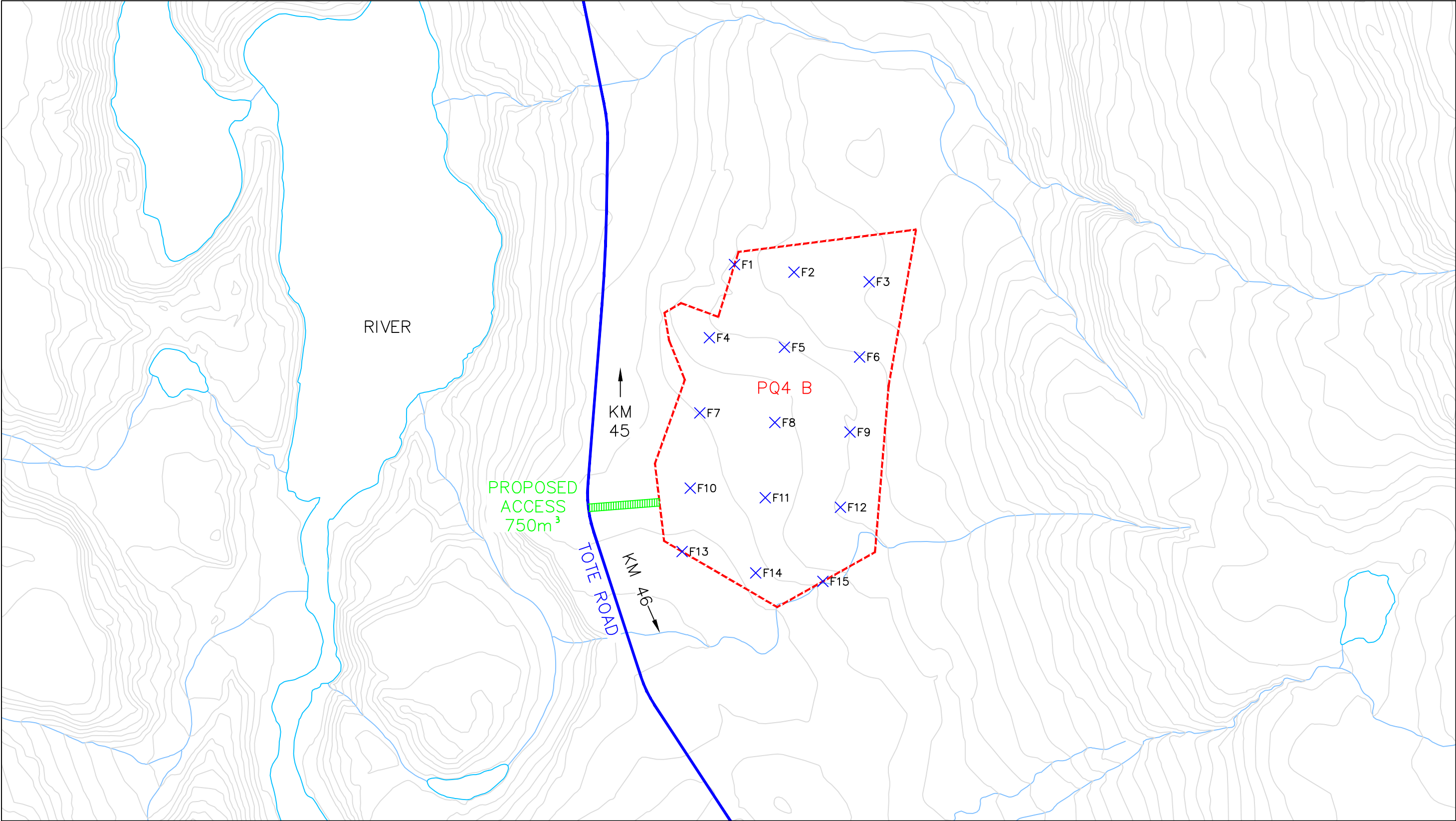
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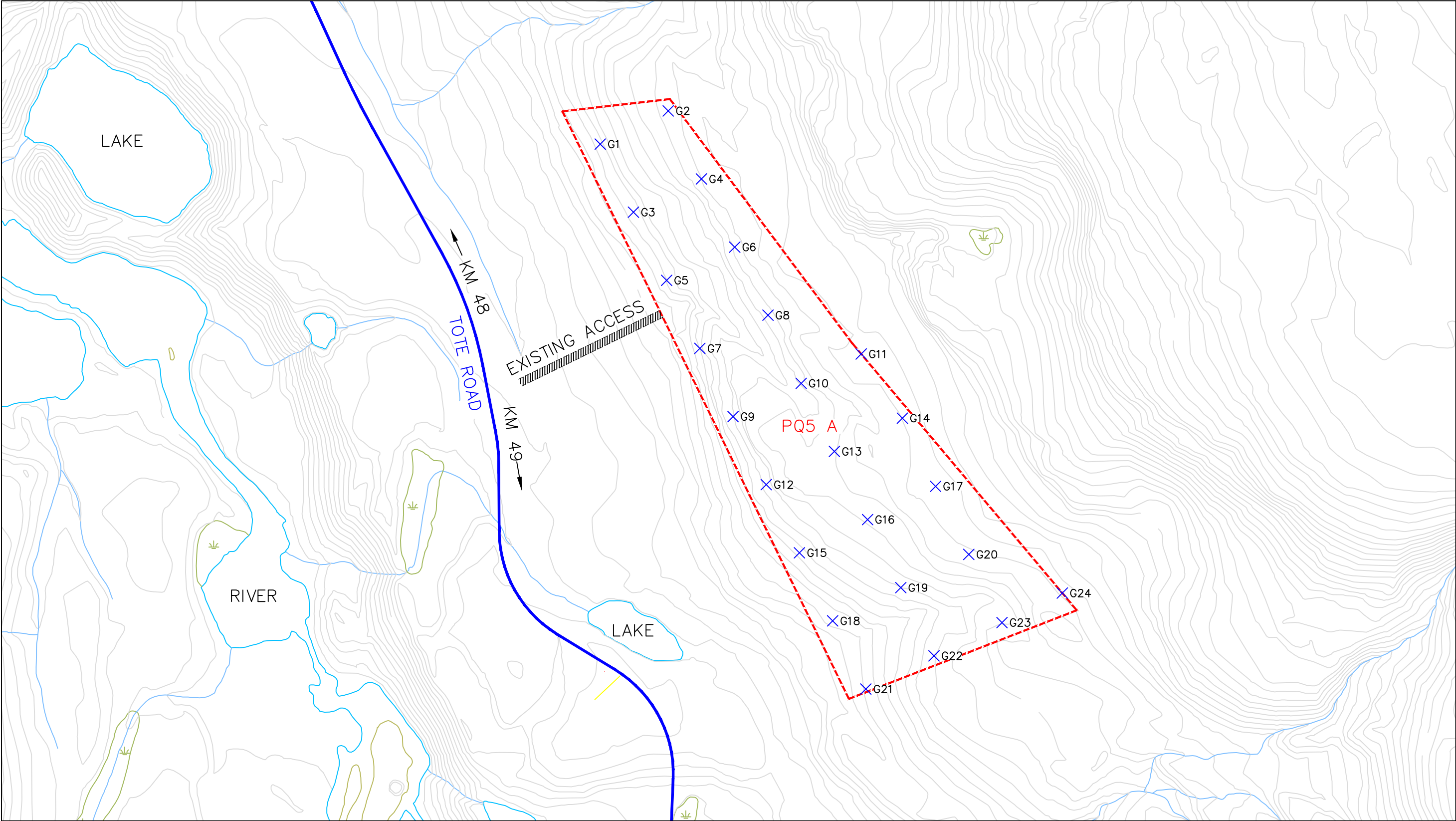
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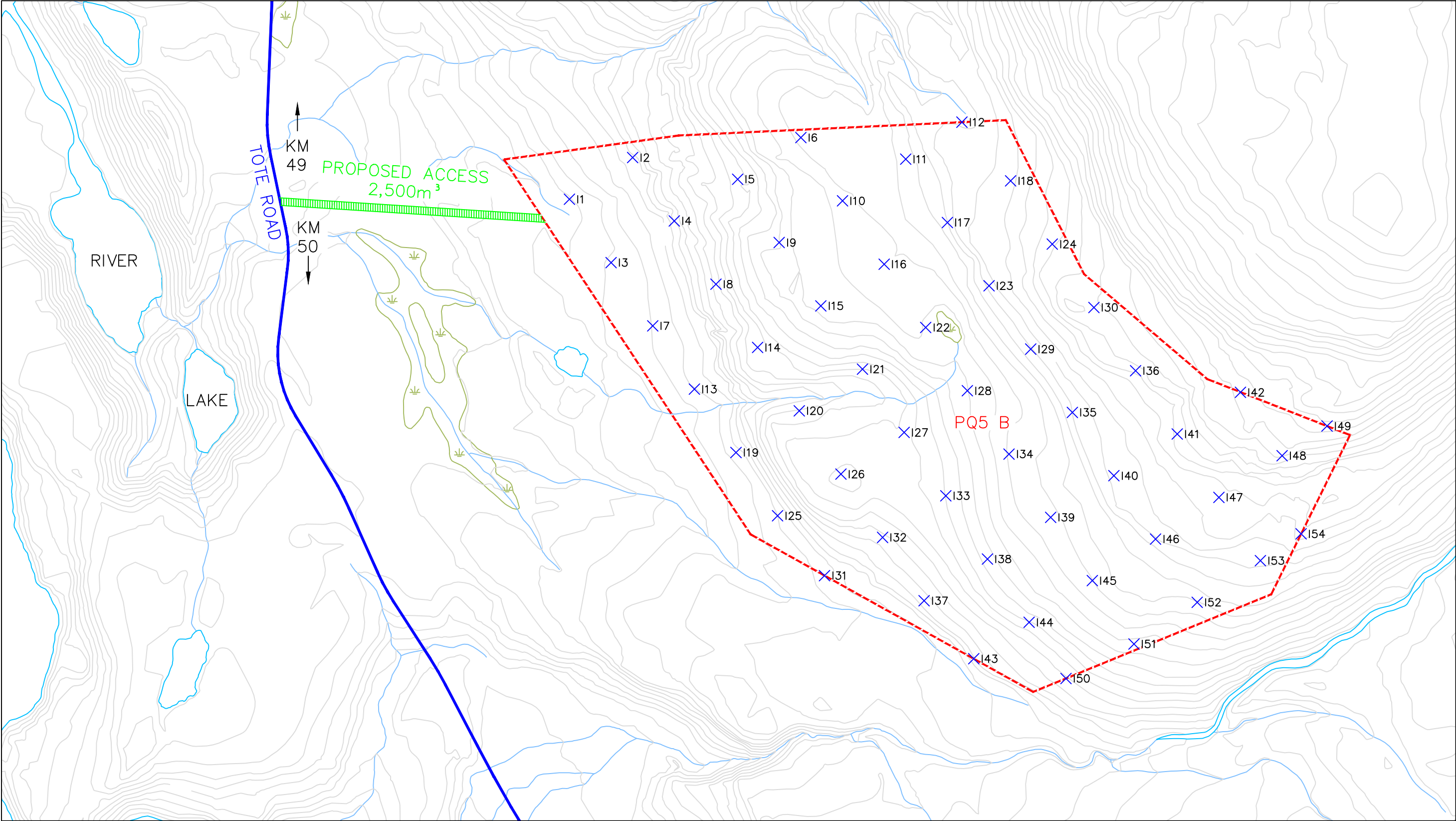



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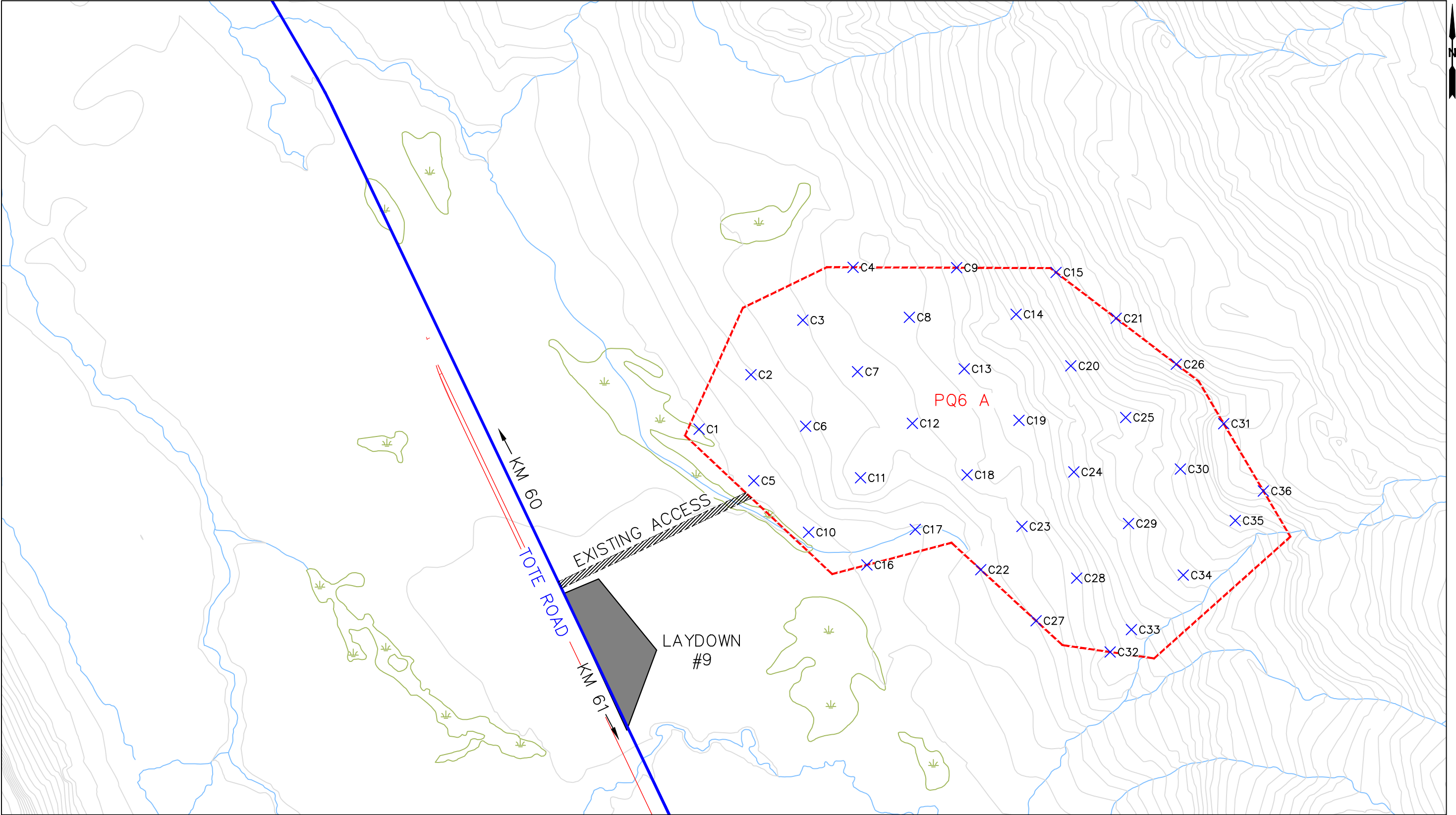


OWNER: <b>BAFFINLAND IRON MINES LP</b>		PREPARED BY: <b>NUNA EAST LTD.</b> PO Box 370 Pond Inlet, NU X0A 0X0				DRAWING TITLE:	
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PROJECT: <b>BIM RAIL</b>		DRAWN BY: <b>M. GOREHAM</b>		SCALE: <b>1:5,000</b>	DATE: <b>May 29, 2019</b>	DRAWING NAME (YYMMDD): <b>190529 PQ5 A DRILL HOLE GRID.dwg</b>	





	OWNER:  BAFFINLAND IRON MINES LP	PREPARED BY:  NUNA EAST LTD. PO Box 370 Pond Inlet, NU X0A 0X0				DRAWING TITLE:  DRILL HOLE GRID PQ5 B
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OWNER:

BAFFINLAND IRON MINES LP

PROJECT:

BIM RAIL

PREPARED BY:

NUNA EAST LTD.  
PO Box 370  
Pond Inlet, NU  
X0A 0X0

DRAWN BY:

M. GOREHAM



SCALE:

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DATE:

May 29, 2019

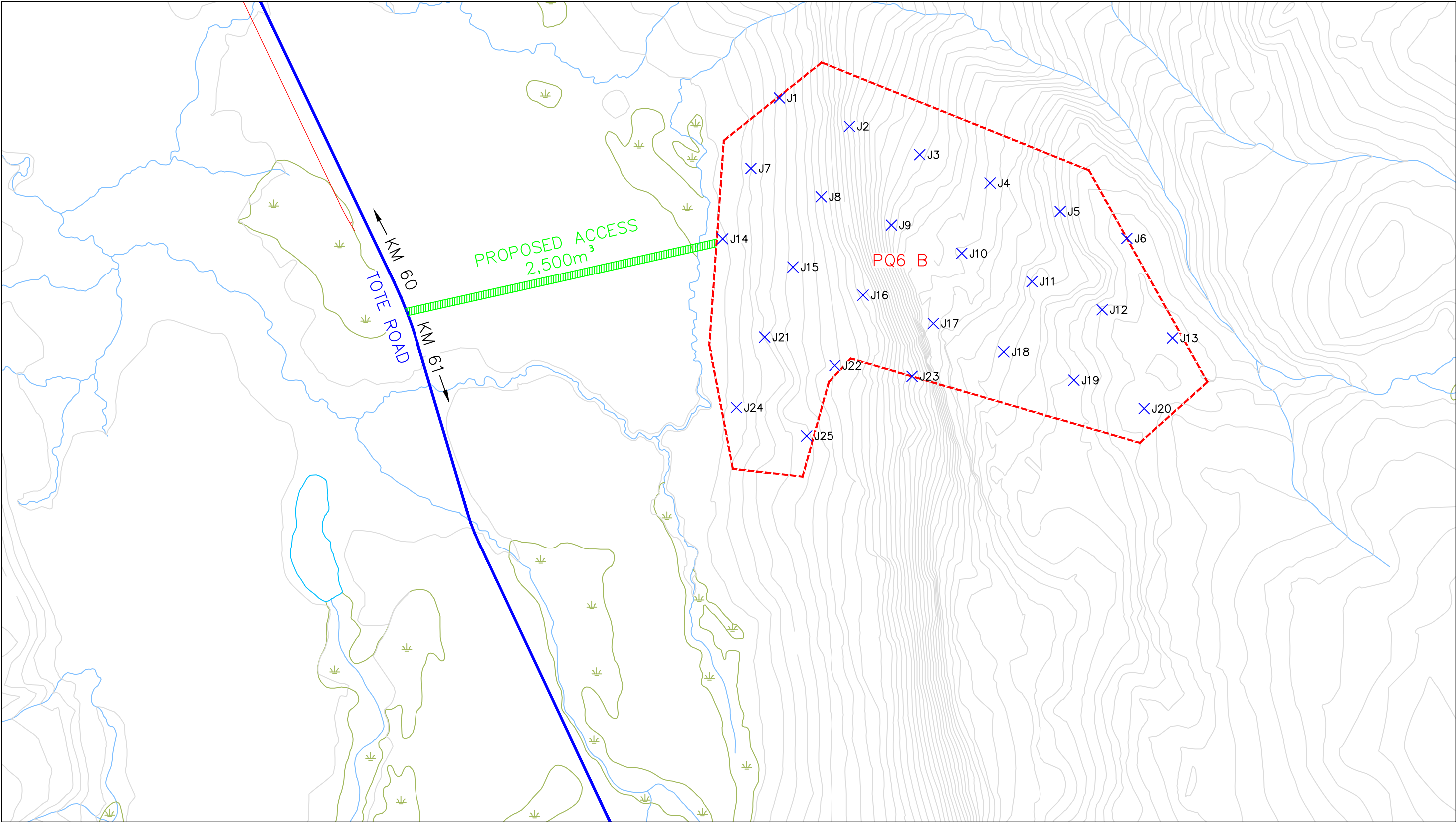
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OWNER:

BAFFINLAND IRON MINES LP

PROJECT:

BIM RAIL

PREPARED BY:

NUNA EAST LTD.  
PO Box 370  
Pond Inlet, NU  
X0A 0X0

DRAWN BY:

M. GOREHAM



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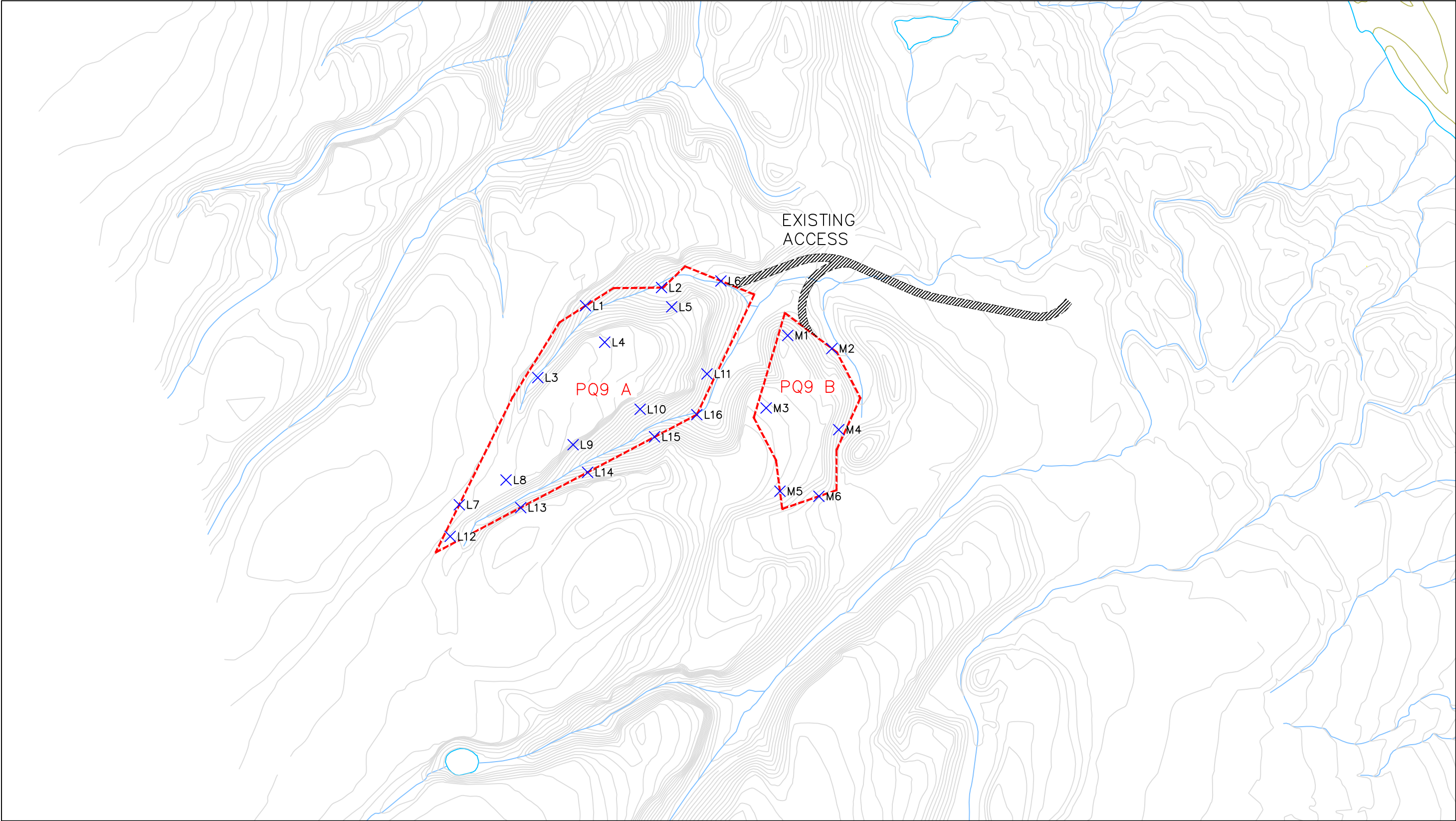
May 29, 2019


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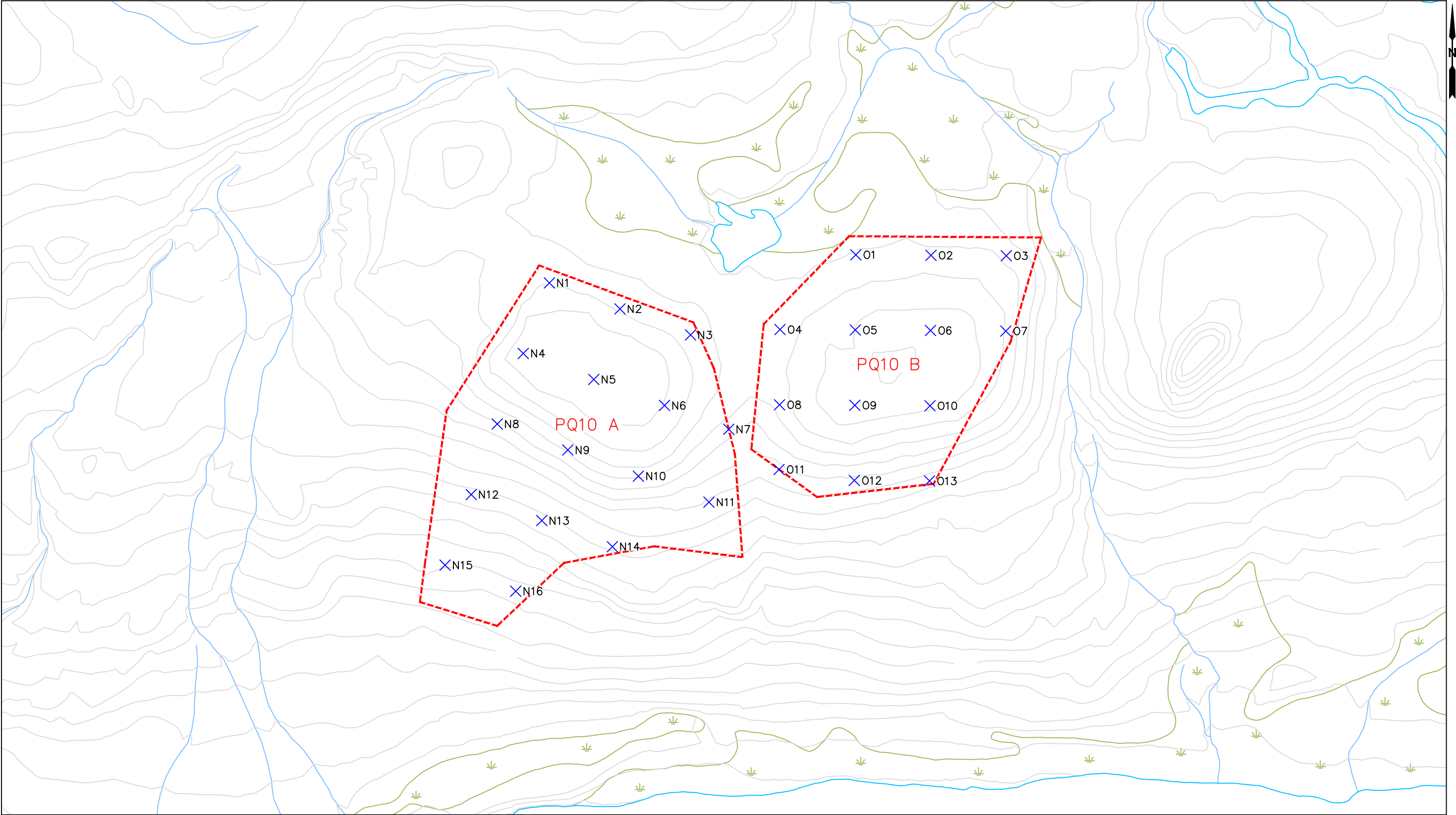
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		SCALE: 1:5,000	DATE: May 29, 2019		



OWNER:

BAFFINLAND IRON MINES LP

PROJECT:

BIM RAIL

PREPARED BY:

NUNA EAST LTD.  
PO Box 370  
Pond Inlet, NU  
X0A 0X0

DRAWN BY:

M. GOREHAM



SCALE:

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DATE:

May 29, 2019

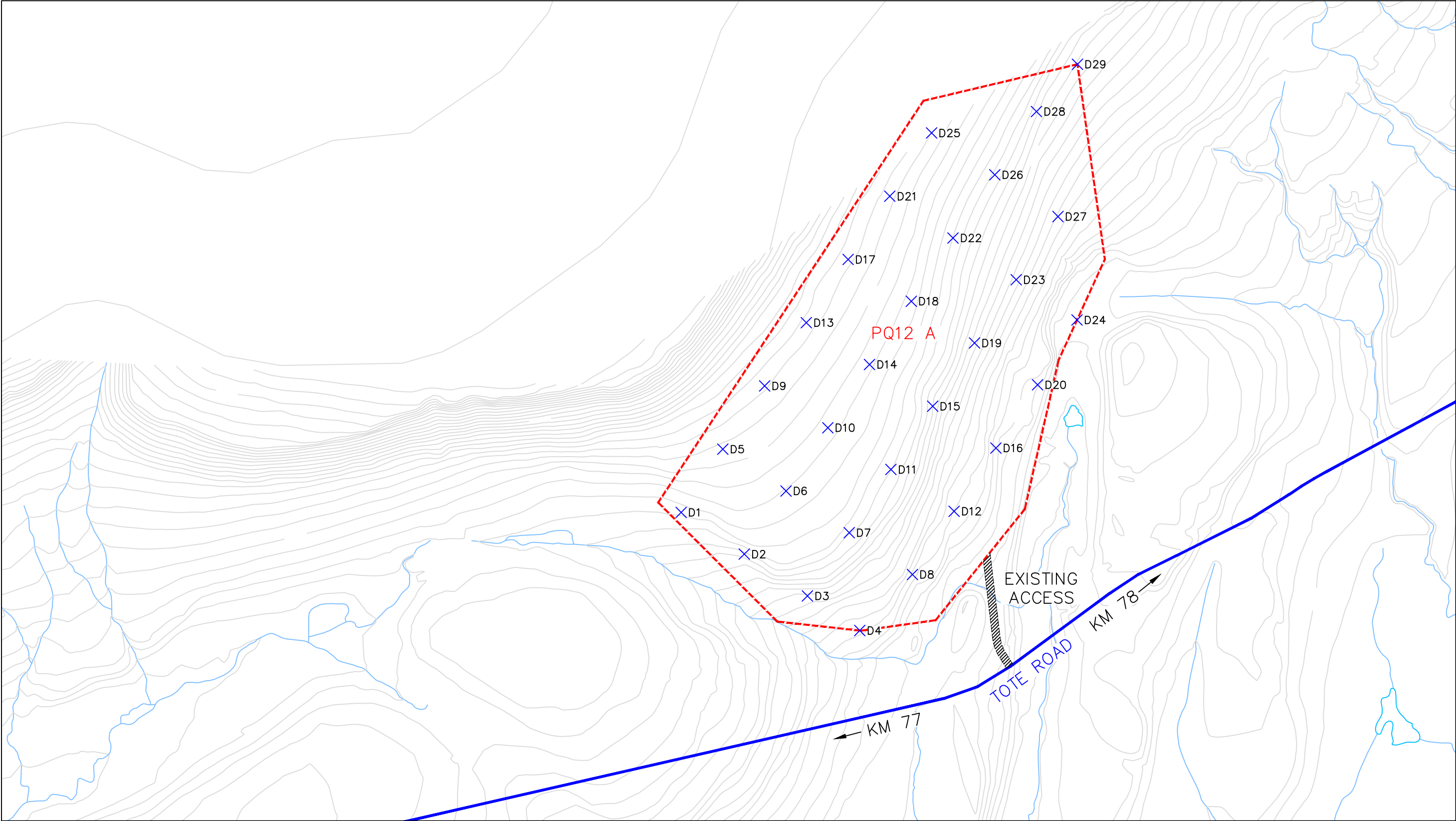
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OWNER:

BAFFINLAND IRON MINES LP

PROJECT:

BIM RAIL

PREPARED BY:

NUNA EAST LTD.  
PO Box 370  
Pond Inlet, NU  
X0A 0X0

DRAWN BY:

M. GOREHAM



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DATE:

May 29, 2019

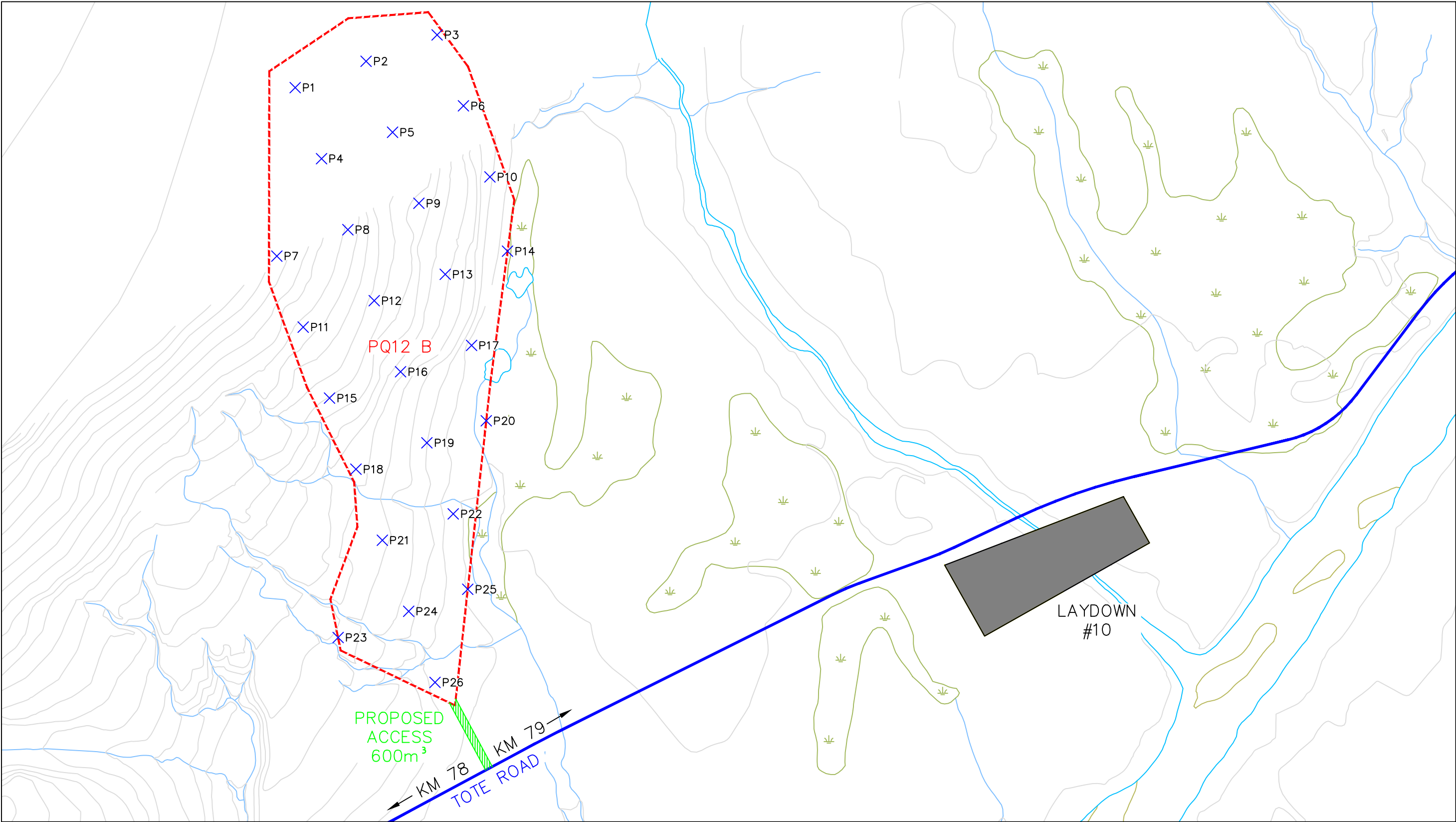
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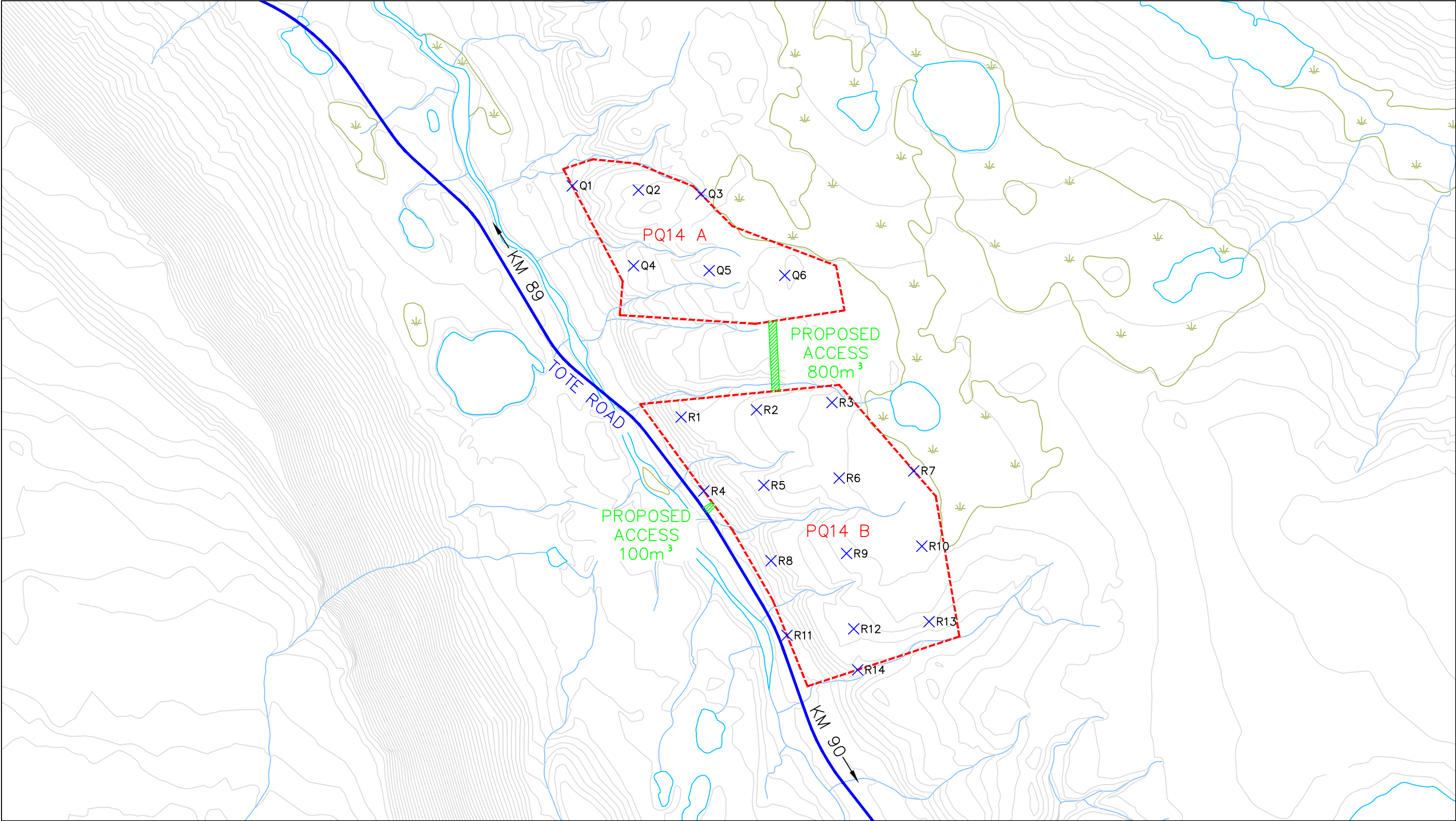
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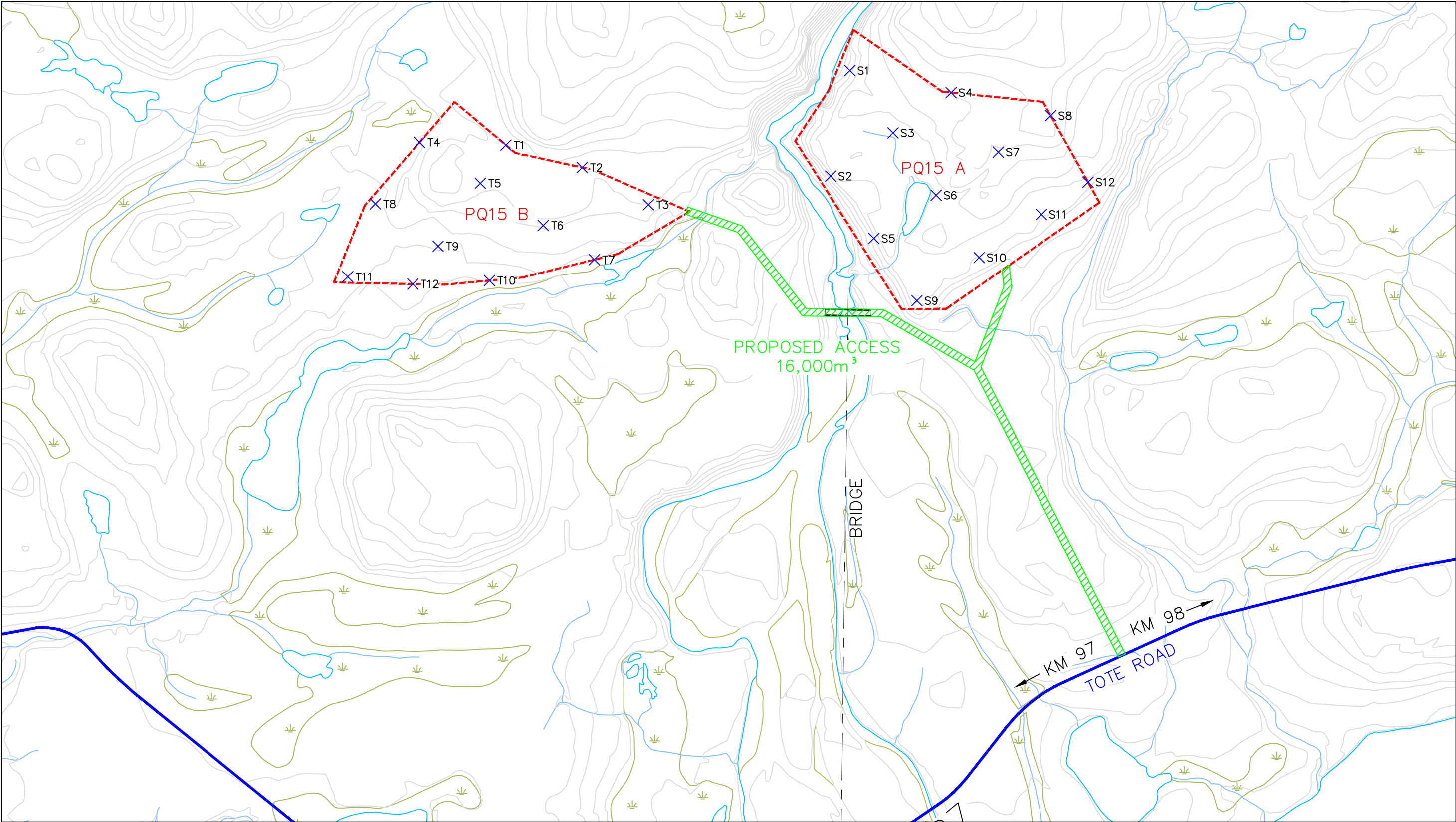


	OWNER:  BAFFINLAND IRON MINES LP	PREPARED BY: NUNA EAST LTD. PO Box 370 Pond Inlet, NU X0A 0X0				
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OWNER:

BAFFINLAND IRON MINES LP

PROJECT:

BIM RAIL

PREPARED BY:

NUNA EAST LTD.  
PO Box 370  
Pond Inlet, NU  
X0A 0X0

DRAWN BY:

M. GOREHAM



SCALE:

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DATE:

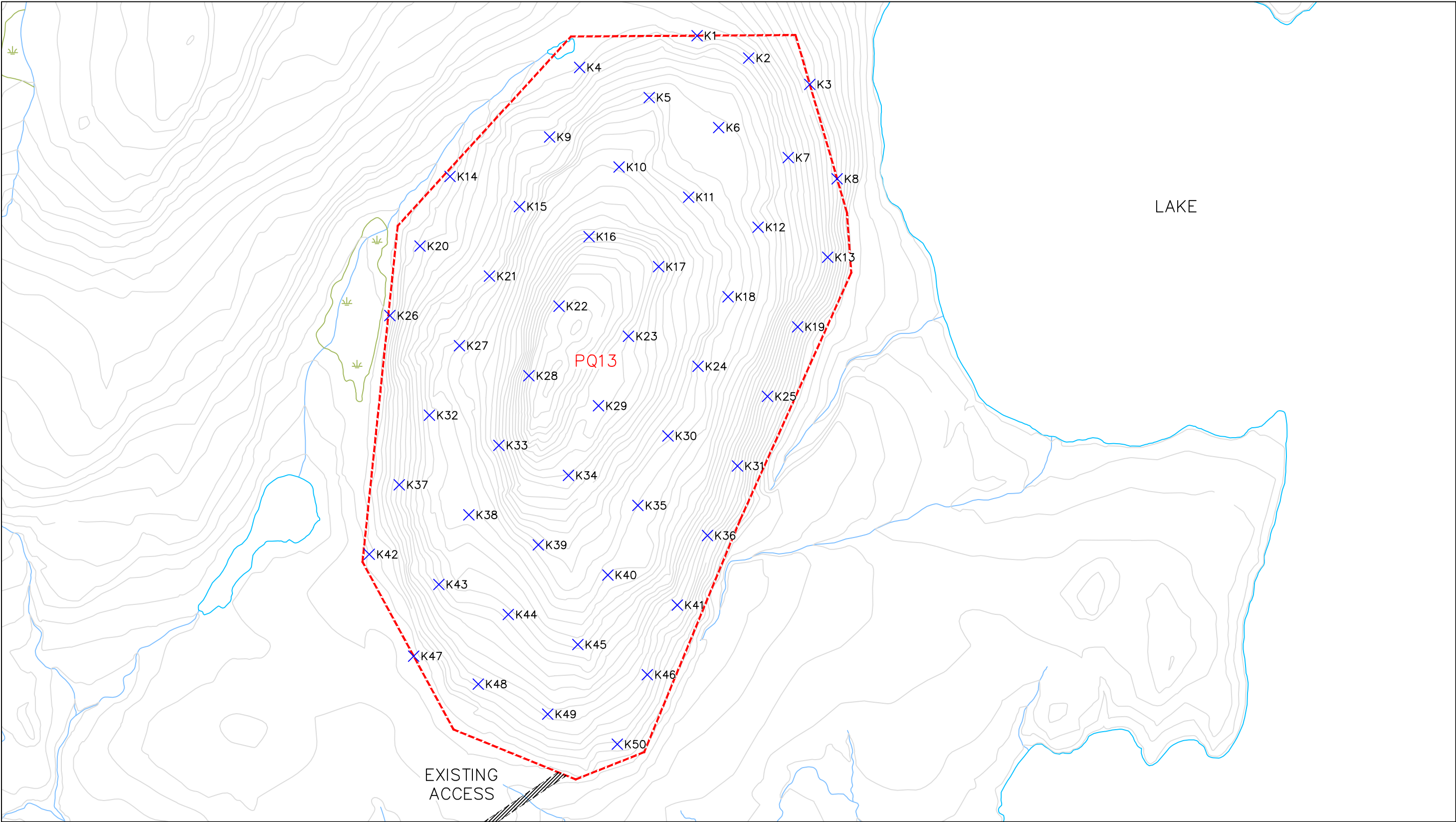
May 29, 2019


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PQ15 A & B

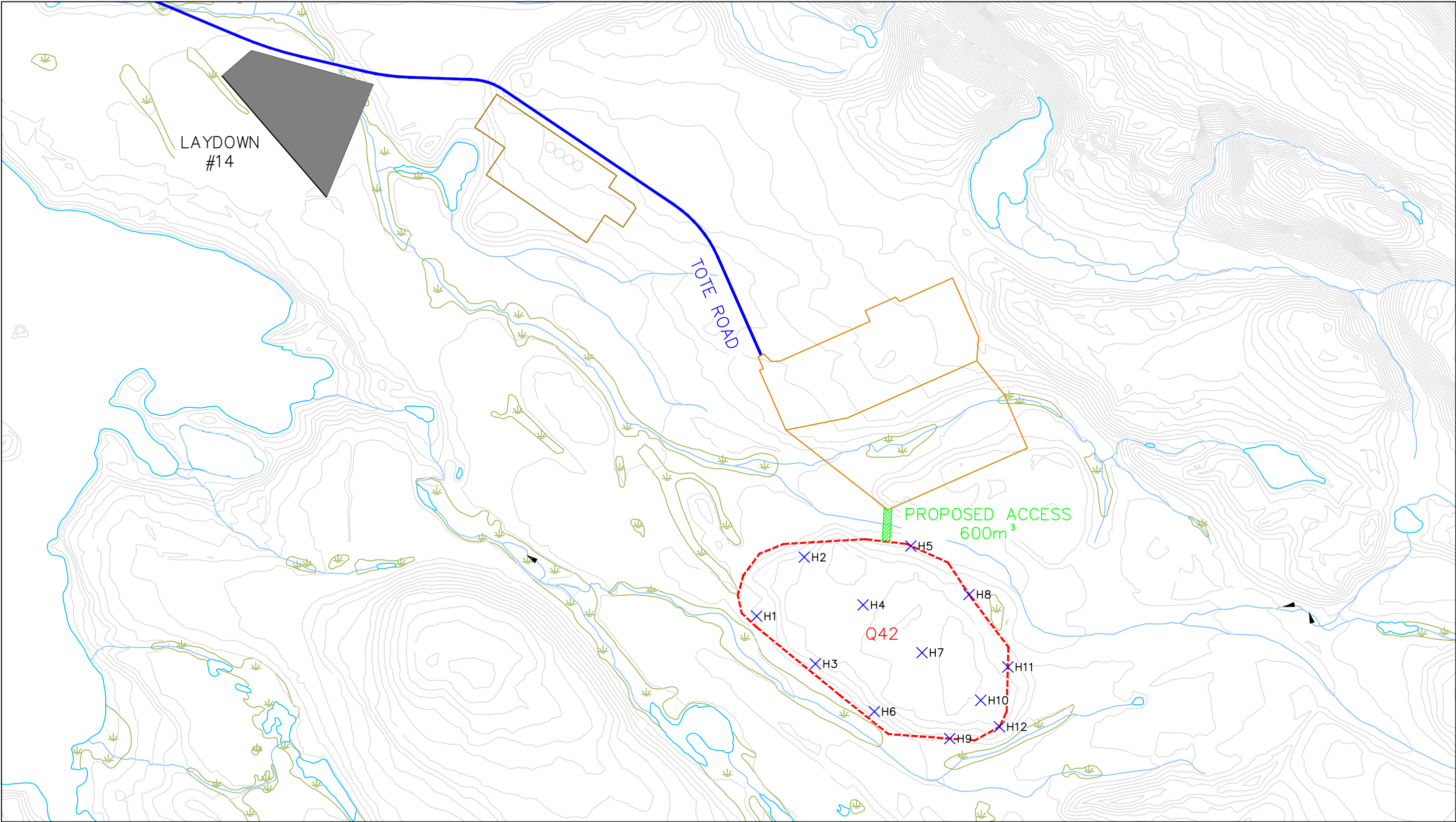
DRAWING NAME (YYMMDD):


190529 PQ15 A & B DRILL HOLE GRID.dwg

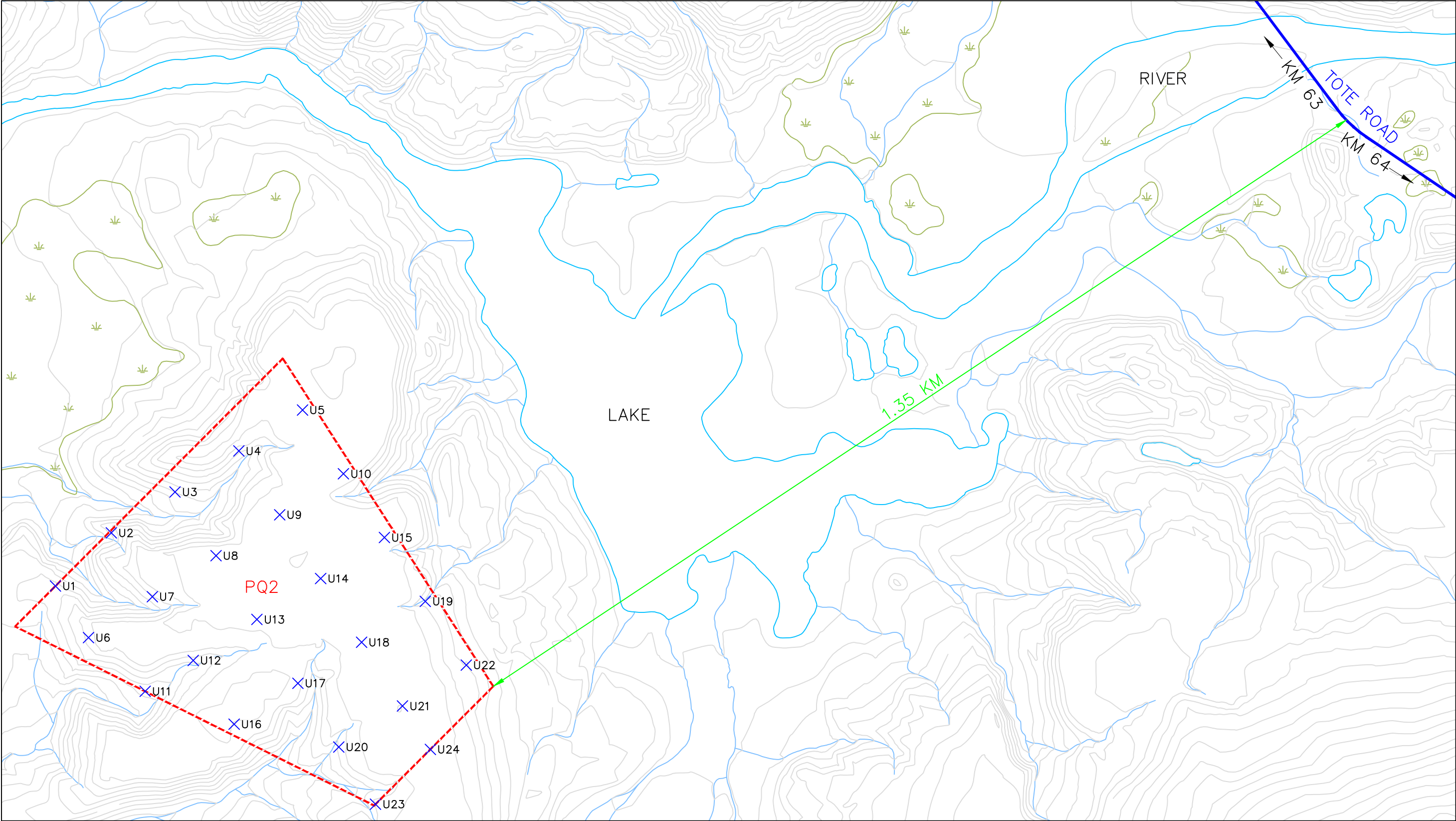



OWNER: BAFFINLAND IRON MINES LP		PREPARED BY: NUNA EAST LTD. PO Box 370 Pond Inlet, NU X0A 0X0		DRAWING TITLE: DRILL HOLE GRID PQ13	
PROJECT: BIM RAIL		DRAWN BY: M. GOREHAM		SCALE: 1:5,000	DATE: May 29, 2019
				DRAWING NAME (YYMMDD): 190529 PQ13 DRILL HOLE GRID.dwg	



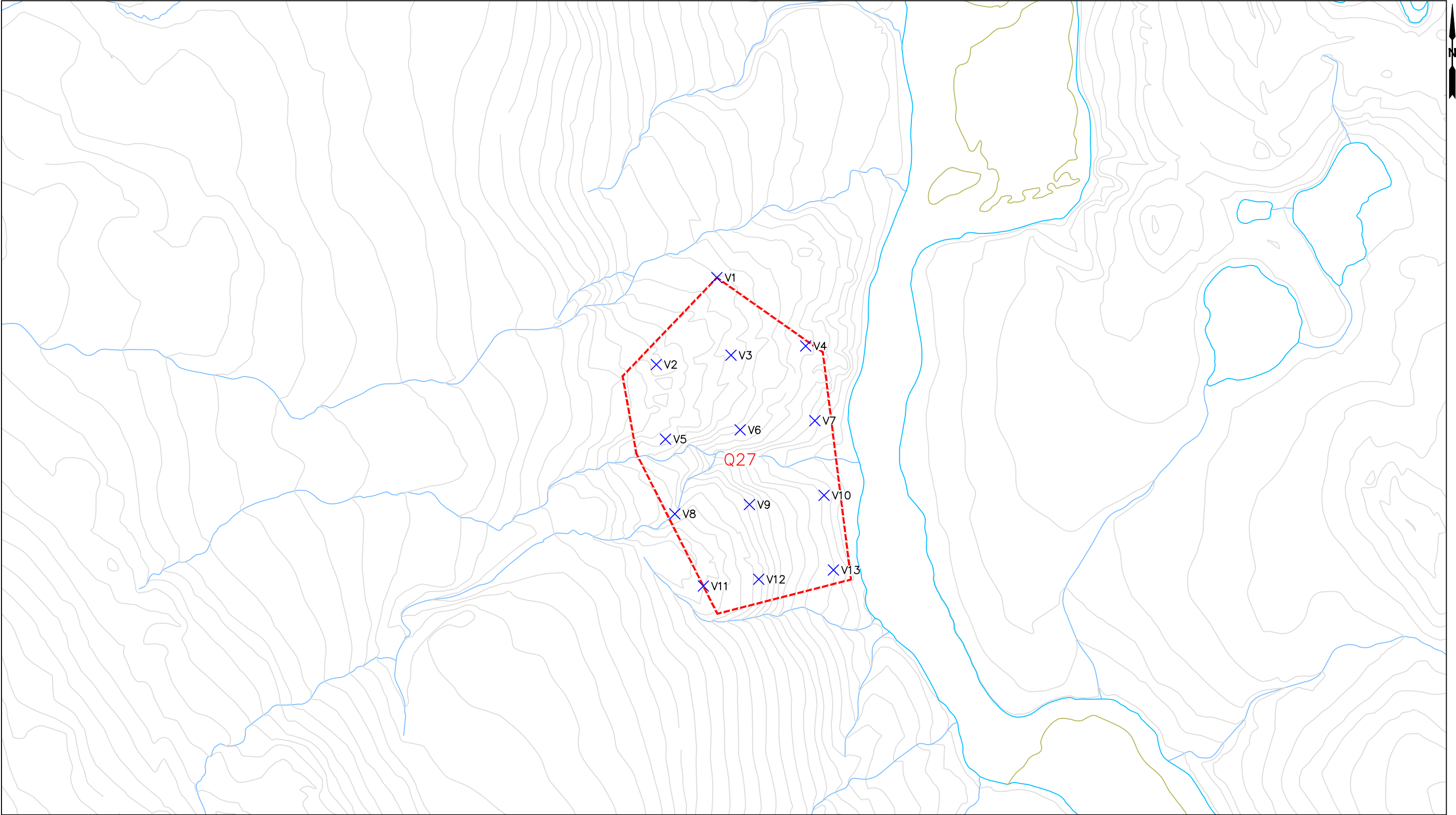



	OWNER:  BAFFINLAND IRON MINES LP	PREPARED BY:  NUNA EAST LTD. PO Box 370 Pond Inlet, NU X0A 0X0				
	PROJECT:  BIM RAIL	DRAWN BY: M. GOREHAM				SCALE: 1:5,000
						DRAWING NAME (YYMMDD): 190529 Q42 DRILL HOLE GRID.dwg



OWNER:  BAFFINLAND IRON MINES LP		PREPARED BY: NUNA EAST LTD. PO Box 370 Pond Inlet, NU X0A 0X0				DRAWING TITLE:  DRILL HOLE GRID PQ2	
PROJECT:  BIM RAIL		DRAWN BY: M. GOREHAM				DRAWING NAME (YYMMDD): 190530 PQ2 DRILL HOLE GRID.dwg	
				SCALE: 1:5,000	DATE: May 30, 2019		





OWNER:  BAFFINLAND IRON MINES LP		PREPARED BY:  NUNA EAST LTD. PO Box 370 Pond Inlet, NU X0A 0X0				DRAWING TITLE:	
PROJECT:  BIM RAIL		DRAWN BY:  M. GOREHAM				DRILL HOLE GRID Q27	
				SCALE:  1:5,000	DATE:  May 30, 2019	DRAWING NAME (YYMMDD):  190530 Q27 DRILL HOLE GRID.dwg	

## APPENDIX C.7

### 2019/20- Milne Port Test Piles – October 21, 2019





October 21, 2019

Jonathan Mesher  
Resource Management Officer  
Crown Indigenous Relations and Northern Affairs Canada (CIRNAC)  
Box 100  
Iqaluit, NU X0A 0H0

**Re: 2019/2020 Geotechnical Drilling Program – Milne Port Test Piles**  
**Type 'B' Water Licence 2BE-MRY1421**  
**Commercial Lease No. Q13C301**

Baffinland Iron Mines Corporation (Baffinland) plans to commence a 2019 drilling program at the Milne Port Site for the purpose of geotechnical boreholes and test pile installations. The Program is required to support engineering designs for proposed Phase 2 infrastructure. The proposed test pile locations and their proximity to surrounding water bodies are shown in Attachment 1. The drilling program is being managed by Hatch Ltd. and will be performed by Aecon Group Inc. The program is scheduled to commence on November 1, 2019.

The drilling program consists of three (3) test piles. Test Pile P1 is located at the north end of Milne Port in the vicinity of Milne Inlet. Test Piles PTC1 and PLC3 are located at the south end of Milne Port. The proposed test pile locations, including coordinates, are presented in Attachment 1 and in the below table with the applicable start dates.

ID	Easting	Northing	Start Date
PLC3	503059	7974797	November 1, 2019
PCT1	503482	7974898	April 1, 2020
P1	503549	7976353	May 1, 2020

Test piles will be installed in boreholes drilled using an air rotary drill. No water will be used to drill the boreholes. Once the borehole is drilled, the pile will be placed and the borehole backfilled with a sand/water slurry using a chute or tremie pipe. Heated water and the slurry mixer/pump will be provided from a truck-mounted unit. Other supporting vehicles include pick-up trucks for personnel, equipment and supplies, a crane for pile installation, compressors to provide power for the drills, light towers, a heated shelter, and a small generator. Test piles will be installed to depths of 20 to 25.3 m.



Environmental monitoring will be performed, including pre, during and post drilling inspections. Drill cuttings will be disposed of in accordance with Part F, Item 4 of Baffinland's Type B Water Licence 2BE-MRY1421 (Type B Water Licence). Runoff and siltation mitigation measures consistent with Baffinland's Environmental Protection Plan BAF-PH1-830-P16-0008r1 will be implemented during backfilling of the test piles with the water/sand slurry.

Despite best planning, it should be noted that unforeseen circumstances may necessitate some changes in planning as the program proceeds. Baffinland will endeavor to inform the Inspector and other relevant parties in such circumstances.

In accordance with the conditions of the Type B Water Licence, this letter and attachment provides Baffinland's notification for the drilling of a total of three (3) boreholes with proximity to nearby water bodies.

We trust that this information meets the various notification requirements for geotechnical drilling at the Project. Please do not hesitate to contact the undersigned, should you have any questions or comments.

Regards,

A handwritten signature in black ink, appearing to read "Chris Murray", with a large, stylized loop at the end.

Christopher Murray  
Environmental & Regulatory Compliance Manager

Attachments:

Attachment 1: Milne Port Test Pile Locations

Cc: Timothy Ray Sewell, Shawn Stevens, Connor Devereaux, Megan Lord-Hoyle, Lou Kamermans,  
Steve Borcsok (Baffinland)  
Assol Kubeisinova, Karén Kharatyan (NWB)  
Bridget Campbell, Godwin Okonkwo, Justin Hack (CIRNAC)  
Chris Spencer (QIA)

## **Attachment 1**

### **Milne Port Test Pile Locations**







## APPENDIX D

### PHOTO JOURNAL

## APPENDIX D.1

### Geotechnical Drilling Photo Sheet

**APPENDIX D.1.1**

**2019 Geotechnical Location –**

**BH19-01**



**PHOTO 1** - Pre-Drilling Conditions at BH19-01, February 2019



**PHOTO 2** - Drilling Conditions at BH19-01, February 2019





**PHOTO 3** - Post-Drilling Conditions at BH19-01, February 2019

**APPENDIX D.1.2**

**2019 Geotechnical Location –**

**BH19-02**



**PHOTO 4** - Pre-Drilling Conditions at BH19-02, February 2019



**PHOTO 5** - Drilling Conditions at BH19-02, February 2019





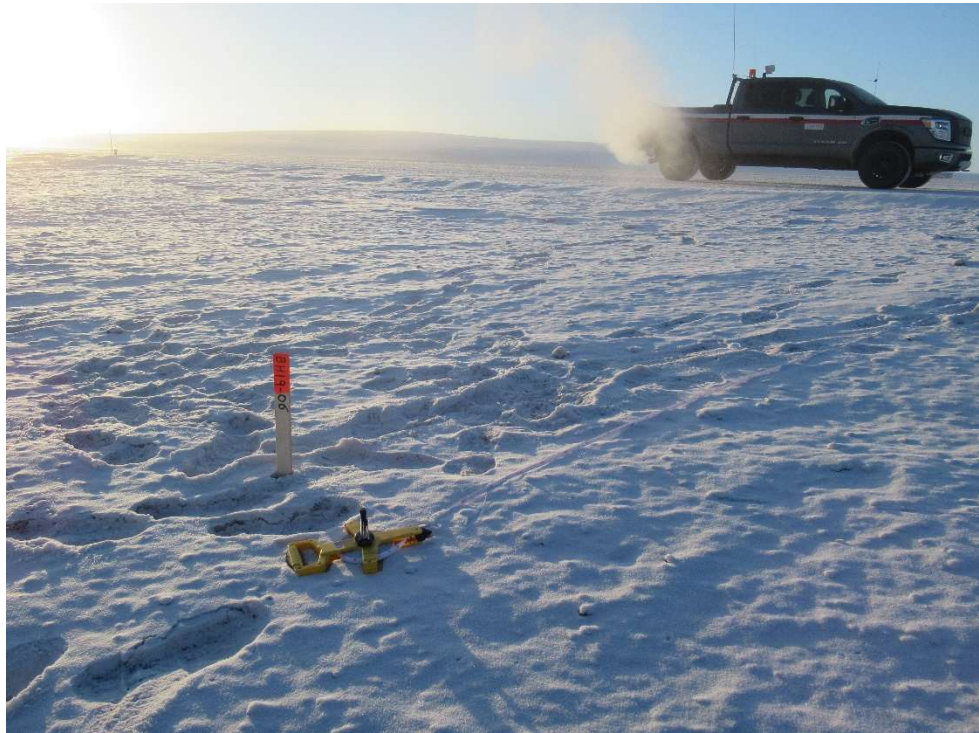
**PHOTO 6** - Post-Drilling Conditions at BH19-02, February 2019



**APPENDIX D.1.3**

**2019 Geotechnical Location –**

**BH19-06**



**PHOTO 7** - Pre-Drilling Conditions at BH19-06, February 2019



**PHOTO 8** - Drilling Conditions at BH19-06, February 2019



**PHOTO 9** – Post-Drilling Conditions at BH19-06, February 2019

**APPENDIX D.1.4**

**2019 Geotechnical Location –**  
**BH19-CPT19-01**





**PHOTO 10** – Pre-Drilling Conditions at BH19-CPT19-01, April 2019



**PHOTO 11** – Drilling Conditions at BH19-CPT19-01, April 2019



**PHOTO 12** – Post-Drilling Conditions at BH19-CPT19-01, April 2019

APPENDIX D.1.5

2019 Geotechnical Location –  
BH19-CPT19-02





**PHOTO 13** - Pre-Drilling Conditions at BH19-CPT19-02, April 2019



**PHOTO 14** - Drilling Conditions at BH19-CPT19-02, April 2019





**PHOTO 15** – Post-Drilling Conditions at BH19-CPT19-02, April 2019

**APPENDIX D.1.6**

**2019 Geotechnical Location –**

**BH19-CPT19-03**



**PHOTO 16** - Pre-Drilling Conditions at BH19-CPT19-03, April 2019



**PHOTO 17** - Drilling Conditions at BH19-CPT19-03, April 2019





**PHOTO 18** - Post-Drilling Conditions at BH19-CPT19-03, April 2019



**APPENDIX D.1.7**

**2019 Geotechnical Location –**  
**BH19-CPT19-04**



**PHOTO 19** – Pre-Drilling Conditions at BH19-CPT19-04, April 2019



**PHOTO 20** - Drilling Conditions at BH19-CPT19-04, April 2019



**PHOTO 21** – Post-Drilling Conditions at BH19-CPT19-04, April 2019

**APPENDIX D.1.8**

**2019 Geotechnical Location –**  
**BH19-CPT19-05**





**PHOTO 22** – Pre-Drilling Conditions at BH19-CPT19-05, April 2019



**PHOTO 23** – Drilling Conditions at BH19-CPT19-05, April 2019



**PHOTO 24** – Post-Drilling Conditions at BH19-CPT19-05, April 2019

**APPENDIX D.1.9**

**2019 Geotechnical Location –**  
**BH19-CPT19-06**





**PHOTO 25** – Pre-Drilling Conditions at BH19-CPT19-06, April 2019



**PHOTO 26** - Drilling Conditions at BH19-CPT19-06, April 2019





**PHOTO 27** – Post-Drilling Conditions at BH19-CPT19-06, April 2019

**APPENDIX D.1.10**

**2019 Geotechnical Location –**  
**BH19-CPT19-07**



**PHOTO 28** – Pre-Drilling Conditions at BH19-CPT19-07, April 2019



**PHOTO 29** – Drilling Conditions at BH19-CPT19-07, April 2019





**PHOTO 30** – Post-Drilling Conditions at BH19-CPT19-07, April 2019



APPENDIX D.1.11

2019 Geotechnical Location –  
BH19-CPT19-08



**PHOTO 31** - Pre-Drilling Conditions BH19-CPT19-08, April 2019



**PHOTO 32** - Drilling Conditions at BH19-CPT19-08, April 2019



**PHOTO 33** - Post-Drilling Conditions at BH19-CPT19-08, April 2019

APPENDIX D.1.12

2019 Geotechnical Location –  
BH19-CPT19-09





**PHOTO 34** - Pre-Drilling Conditions BH19-CPT19-08 and BH19-CPT19-09, April 2019



**PHOTO 35** - Drilling Conditions BH19-CPT19-09, April 2019



**PHOTO 36** – Post-Drilling Conditions BH19-CPT19-09, April 2019

APPENDIX D.1.13

2019 Geotechnical Location –  
BH19-CPT19-10



**PHOTO 37** – Pre-Drilling Conditions at BH19-CPT19-10, April 2019



**PHOTO 38** – Drilling Conditions BH19-CPT19-10, April 2019





**PHOTO 39** – Post-Drilling Conditions at BH19-CPT19-10, April 2019

APPENDIX D.1.14

2019 Geotechnical Location –  
BH19-CPT19-11



**PHOTO 40** - Pre-Drilling Conditions at BH19-CPT19-11 and BH19-CPT19-13, April 2019



**PHOTO 41** - Drilling Conditions at BH19-CPT19-11, April 2019



**PHOTO 42** – Post-Drilling Conditions at BH19-CPT19-11, April 2019



APPENDIX D.1.15

2019 Geotechnical Location –  
BH19-CPT19-12



**PHOTO 43** - Pre-Drilling Conditions at BH19-CPT19-12, April 2019



**PHOTO 44** - Drilling Conditions at BH19-CPT19-12, April 2019



**PHOTO 45** – Post-Drilling Conditions at BH19-CPT19-12, April 2019

APPENDIX D.1.16

2019 Geotechnical Location –  
BH19-CPT19-13





**PHOTO 46** – Pre-Drilling Conditions at BH19-CPT19-11 and BH19-CPT19-13, April 2019



**PHOTO 47** – Drilling Conditions at BH19-CPT19-13, April 2019



**PHOTO 48** – Post-Drilling Conditions at BH19-CPT19-13, April 2019

APPENDIX D.1.17

2019 Geotechnical Location –  
BH19-CPT19-14





**PHOTO 49** – Pre-Drilling Conditions at BH19-CPT19-14, April 2019



**PHOTO 50** – Drilling Conditions at BH19-CPT19-14, April 2019





**PHOTO 51** – Post-Drilling Conditions at BH19-CPT19-14, April 2019

APPENDIX D.1.18

2019 Geotechnical Location –  
BH19-CPT19-15



**PHOTO 52** – Pre-Drilling Conditions at BH19-CPT19-15, April 2019



**PHOTO 53** – Drilling Conditions at BH19-CPT19-15, April 2019



**PHOTO 54** – Post-Drilling Conditions at BH19-CPT19-15, April 2019

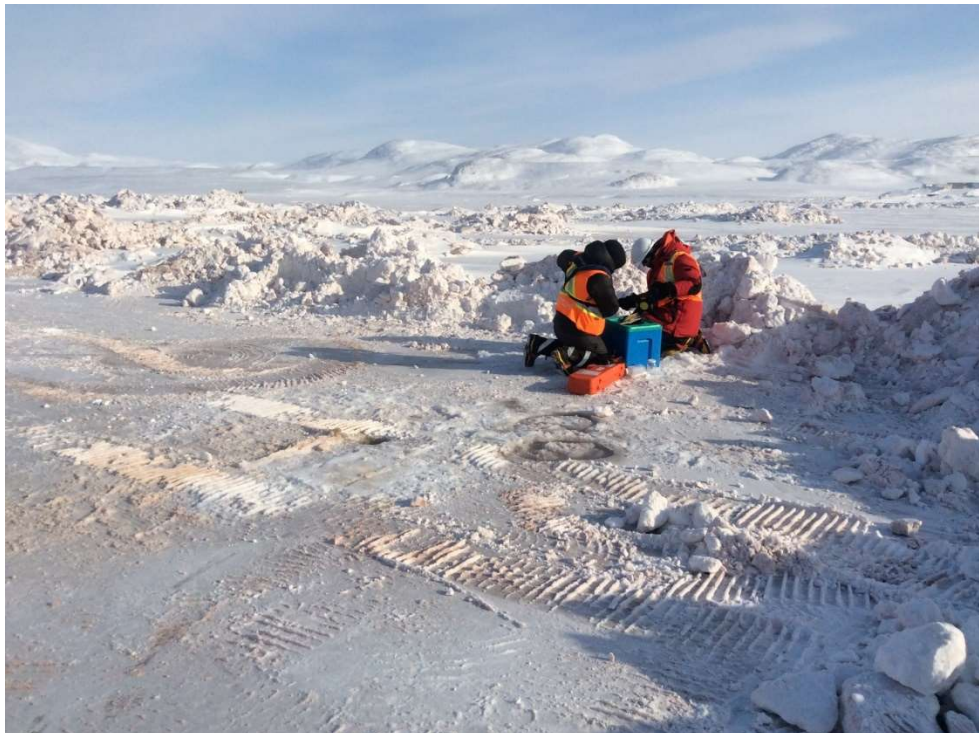


APPENDIX D.1.19

2019 Geotechnical Location –  
BH19-CPT19-16



**PHOTO 55** – Drilling Conditions at BH19-CPT19-16, April 2019



**PHOTO 56** – Post-Drilling Conditions at BH19-CPT19-16, April 2019

APPENDIX D.1.20

2019 Geotechnical Location –  
BH19-CPT19-17



**PHOTO 57** – Drilling Conditions at BH19-CPT19-17, April 2019



**PHOTO 58** – Post-Drilling Conditions at BH19-CPT19-17, April 2019



APPENDIX D.1.21

2019 Geotechnical Location –  
KM107-DH19-01



**PHOTO 59** – Drilling Conditions at KM107-DH19-01, April 2019

APPENDIX D.1.22

2019 Geotechnical Location –  
KM107-DH19-02



**PHOTO 60** – Drilling Conditions at KM107-DH19-02, April 2019



APPENDIX D.1.23

2019 Geotechnical Location –  
KM107-DH19-03



**PHOTO 61** – Drilling Conditions at KM107-DH19-03, April 2019

APPENDIX D.1.24

2019 Geotechnical Location –  
KM107-DH19-04



**PHOTO 62** – Drilling Conditions at KM107-DH19-04, April 2019



APPENDIX D.1.25

2019 Geotechnical Location –  
KM107-DH19-05



**PHOTO 63** – Drilling Conditions at KM107-DH19-05, April 2019

APPENDIX D.1.26

2019 Geotechnical Location –  
KM107-DH19-06



**PHOTO 64** – Drilling Conditions at KM107-DH19-06, April 2019



APPENDIX D.1.27

2019 Geotechnical Location –  
KM106-DH19-01



**PHOTO 65** – Drilling Conditions at KM106-DH19-01, May 2019



**PHOTO 66** – Post Drilling Conditions at KM106-DH19-01, May 2019

APPENDIX D.1.28

2019 Geotechnical Location –  
KM106-DH19-02





**PHOTO 67** – Drilling Conditions at KM106-DH19-02, May 2019



**PHOTO 68** – Post Drilling Conditions at KM106-DH19-02, May 2019



APPENDIX D.1.29

2019 Geotechnical Location –  
KM106-DH19-03



**PHOTO 69** – Drilling Conditions at KM106-DH19-03, May 2019



**PHOTO 70** – Post Drilling Conditions at KM106-DH19-03, May 2019

APPENDIX D.1.30

2019 Geotechnical Location –  
KM106-DH19-04



**PHOTO 71** – Pre-Drilling Conditions at KM106-DH19-04, May 2019



APPENDIX D.1.31

2019 Geotechnical Location –  
KM106-DH19-05



**PHOTO 72** – Drilling Conditions at KM106-DH19-05, May 2019



**PHOTO 73** – Post Drilling Conditions at KM106-DH19-05, May 2019

## APPENDIX D.2

### Exploration Drilling Photo Sheet

APPENDIX D.2.1

2019 Exploration Location -  
MR1-19-251





**PHOTO 1** - Pre-Drilling Conditions at MR1-19-251, June 2019



**PHOTO 2** - Drilling Conditions at MR1-19-251, June 2019



**PHOTO 3** - Post-Drilling Conditions at MR1-19-251, August 2019

APPENDIX D.2.2

2019 Exploration Location-  
MR1-19-253





**PHOTO 4** - Pre-Drilling Conditions at MR1-19-253, June 2019



**PHOTO 5** - Drilling Conditions at MR1-19-253, July 2019





**PHOTO 6** - Post-Drilling Conditions at MR1-19-253, September 2019

APPENDIX D.2.3

2019 Exploration Location -  
MR1-19-254





**PHOTO 7** - Pre-Drilling Conditions at MR1-19-254, June 2019



**PHOTO 8** - Drilling Conditions at MR1-19-254, June 2019



**PHOTO 9 – Post-Drilling Conditions at MR1-19-254, August 2019**



APPENDIX D.2.4

2019 Exploration Location -  
MR1-19-258



**PHOTO 10** – Pre-Drilling Conditions at MR1-19-258, July 2019



**PHOTO 11** - Drilling Conditions at MR1-19-258, July 2019



**PHOTO 12** - Post-Drilling Conditions at MR1-19-258, September 2019

APPENDIX D.2.5

2019 Exploration Location -  
MR1-19-259





**PHOTO 13** - Pre-Drilling Conditions at MR1-19-259, July 2019



**PHOTO 14** - Drilling Conditions at MR1-19-259, July 2019



**PHOTO 15** - Post-Drilling Conditions at MR1-19-259, August 2019

APPENDIX D.2.6

2019 Exploration Location -  
MR1-19-260





**PHOTO 16** - Pre-Drilling Conditions at MR1-19-260, July 2019



**PHOTO 17** - Drilling Conditions at MR1-19-260, July 2019





**PHOTO 18** - Post-Drilling Conditions at MR1-19-260, August 2019

APPENDIX D.2.7

2019 Exploration Location -  
MR1-19-262



**PHOTO 19** – Pre-Drilling Conditions at MR1-19-262, July 2019



**PHOTO 20** – Drilling Conditions at MR1-19-262, July 2019





**PHOTO 21** – Post-Drilling Conditions at MR1-19-262, August 2019



APPENDIX D.2.8

2019 Exploration Location -  
MR1-19-264



**PHOTO 22** – Pre-Drilling Conditions at MR1-19-264, July 2019



**PHOTO 23** - Drilling Conditions at MR1-19-264, August 2019



**PHOTO 24** - Post-Drilling Conditions at MR1-19-264, August 2019

APPENDIX D.2.9

2019 Exploration Location -  
MR1-19-266





**PHOTO 25** - Pre-Drilling Conditions at MR1-19-266, August 2019



**PHOTO 26** - Drilling Conditions at MR1-19-266, August 2019



**PHOTO 27** – Post-Drilling Conditions at MR1-19-266, September 2019

APPENDIX D.2.10

2019 Exploration Location -  
MR1-19-268





**PHOTO 28** - Pre-Drilling Conditions at MR1-19-268, August 2019



**PHOTO 29** - Drilling Conditions at MR1-19-268, August 2019





**PHOTO 30** - Post-Drilling Conditions at MR1-19-268, September 2019

APPENDIX D.2.11

2019 Exploration Location -  
MR1-19-269



**PHOTO 31** – Pre-Drilling Conditions at MR1-19-269, August 2019



**PHOTO 32** - Drilling Conditions at MR1-19-269, August 2019



**PHOTO 33** – Post-Drilling Conditions at MR1-19-269, September 2019



APPENDIX D.2.12

2019 Exploration Location -  
MR3-18-244



**PHOTO 34** – Pre-Drilling Conditions at MR3-18-244, June 2019



**PHOTO 35** - Drilling Conditions at MR3-18-244, June 2019



**PHOTO 36** - Post-Drilling Conditions at MR3-18-244, September 2019

APPENDIX D.2.13

2019 Exploration Location -  
MR3-19-255





**PHOTO 37** - Pre-Drilling Conditions at MR3-19-255, July 2019



**PHOTO 38** - Drilling Conditions at MR3-19-255, July 2019



**PHOTO 39** - Post-Drilling Conditions at MR3-19-255, August 2019

APPENDIX D.2.14

2019 Exploration Location -  
MR3-19-256





**PHOTO 40** - Pre-Drilling Conditions at MR3-19-256, August 2019



**PHOTO 41** - Drilling Conditions at MR3-19-256, July 2019





**PHOTO 42** – Post-Drilling Conditions at MR3-19-256, August 2019

APPENDIX D.2.15

2019 Exploration Location -  
MR3-19-261



**PHOTO 43** – Pre-Drilling Conditions at MR3-19-261, July 2019



**PHOTO 44** – Drilling Conditions at MR3-19-261, July 2019





**PHOTO 45** – Post-Drilling Conditions at MR3-19-261, August 2019



APPENDIX D.2.16

2019 Exploration Location -  
MR3-19-263



**PHOTO 46** – Pre-Drilling Conditions at MR3-19-263, July 2019



**PHOTO 47** – Drilling Conditions at MR3-19-263, July 2019



**PHOTO 48** – Post-Drilling Conditions at MR3-19-263, August 2019



APPENDIX D.2.17

2019 Exploration Location -  
MR3-19-265





**PHOTO 49** – Pre-Drilling Conditions at MR3-19-265, August 2019



**PHOTO 50** – Drilling Conditions at MR3-19-265, August 2019



**PHOTO 51** – Post-Drilling Conditions at MR3-19-265, August 2019

APPENDIX D.2.18

2019 Exploration Location -  
MR3-19-267



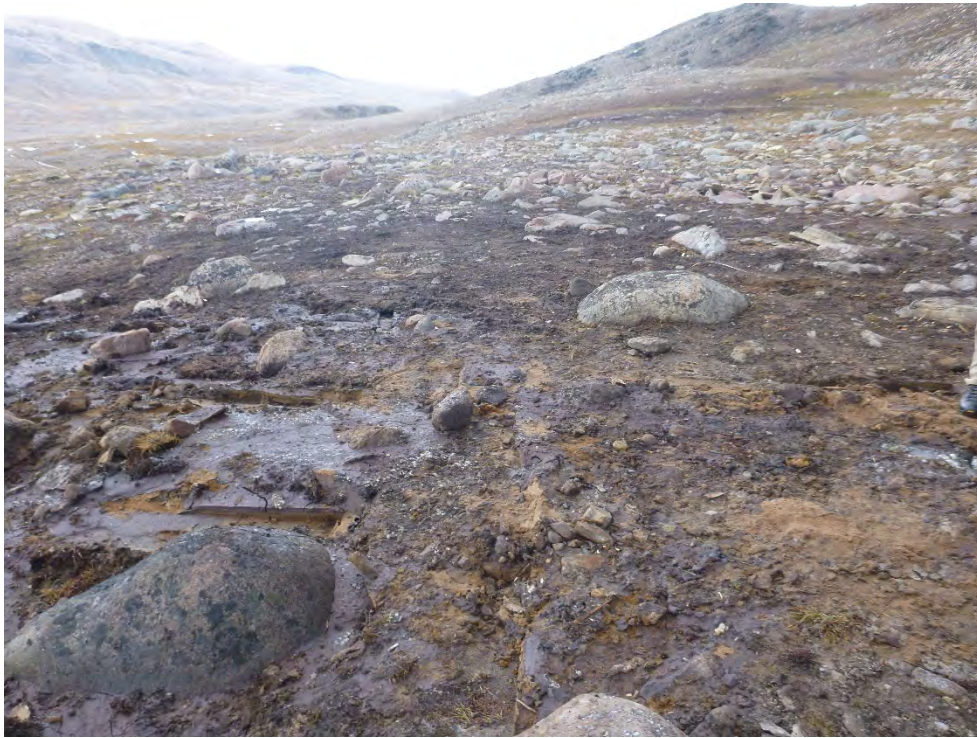


**PHOTO 52** – Pre-Drilling Conditions at MR3-19-267, August 2019



**PHOTO 53** – Drilling Conditions at MR3-19-267, August 2019





**PHOTO 54** – Drilling Conditions at MR3-19-267, August 2019

APPENDIX E

2019 PRE, DAILY AND POST  
ENVIRONMENTAL MONITORING  
LOGS

APPENDIX E.1

Geotechnical Drilling Inspection  
Logs 2019

**APPENDIX E.1.1**

**2019 Geotechnical Location –**

**BH19-01**



**PRE-DRILLING INSPECTION REPORT 2019**

<b>BIM personnel:</b>	Massoud Robatian
<b>Date:</b>	24/2/2019
<b>Time:</b>	5:10 PM
<b>Proposed hole ID:</b>	BH19-01
<b>Final hole ID:</b>	BH19-01

**PROPOSED HOLE INFORMATION:**

<b>Location:</b> Mary River Airstrip	<b>Collar location:</b> E: 558544
<b>Project:</b> MARY RIVER	(UTM NAD 83 17W) N: 7914472
<b>Area:</b> BAFFIN ISLAND	<b>Dip: °</b> 90
<b>NTS:</b> 37G/5	<b>Azimuth:</b> —
<b>Elevation:</b> 172m	<b>Target depth:</b> m 15
<b>Description of drillhole location:</b> Mary River Airstrip	
<b>Purpose of drillhole:</b> Mary River Airstrip Geotechnical Investigation and install Ground Temperature Cable	

**DRILLING INFORMATION:**

<b>Has site been approved by drill foreman?:</b>	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<b>Foreman:</b> Verdon Bigelow
<b>Drill contractor:</b> Boart Longyear		
<b>Drill #:</b>	1403	
<b>Expected start of drilling:</b>	24/2/2019	
<b>Is moving of drillhole required?:</b>	Yes	
<b>If yes, provide reason:</b>	As per electrician's recommendations, relocated the proposed sonic drill hole collar location, to be clear of any obstacles.	
<b>New Collar Location</b>	E: 558529	N: 7914442

**Environment Assessment**

<b>Water source:</b>	No water used		
<b>Pump Station #:</b>	N/A	<b>Portable Tanks:</b>	Yes / <input checked="" type="radio"/> No
<b>Natural depression/ drainage evident?:</b>	Yes / <input checked="" type="radio"/> No	(Photo required)	
<b>Manual drainage constructed?:</b>	Yes / <input checked="" type="radio"/> No	(Photo required)	
<b>Silt fence(s) constructed?:</b>	Yes / <input checked="" type="radio"/> No	(Photo required)	
<b>Silt Bag Used:</b>	Yes / <input checked="" type="radio"/> No	(Photo required)	

**SITE ASSESSMENTS:**

**Are wildlife present?:** No (if yes, record in log)

**Is site safe for drilling?:** Yes

**Safety concerns/issues:** None

**Environmental concerns?:** None

**PHOTOGRAPHIC RECORD:**

<b>Photo of drillhole location prior to setup?</b>	<input checked="" type="radio"/> Yes / <input type="radio"/> No
<b>Location of photos:</b>	Y Drive 2019 Sonic Drilling Program

**COMMENTS:**

None

**INSPECTION COMPLETED BY:**

<b>Name:</b>	<b>Signature:</b>
Massoud Robatian	<i>Massoud Robatian</i>

**DATE:** 25/2/2019

**DAILY DRILL INSPECTION REPORT 2019****BIM personnel:**

Massoud Robatian

**Date:**

25/2/2019

**Time:**

4:30 PM

**Hole ID:**

BH19-01

**HOLE INFORMATION:**

**Location:** Mary River Airstrip **Collar location:** (UTM NAD 83 17W) **E:** 558529 **N:** 7914442

**DRILLING INFORMATION****Drill contractor:** Boart Longyear **Drill Type:** Sonic**Drill personnel:** Verdon Bigelow, Francis Brideau and Val Bairamov**Drill #:** 1403**DRILLING PROGRESS:****Any rods/casing/tools lost in the drill hole?** No If yes, what was lost?:**Delays/Problems:**

Drilling was on hold between 12:15 and 13:15 due to aircraft landing

**ENVIRONMENT ASSESSMENT:****Sediment control measures in place:** N/A**Assessment of effectiveness:****Salt usage per day:** No salt used**Flow Meter Reading:** N/A End of N/S End of D/S**Has wildlife been present?: (check log for previous wildlife activity)**

No

**Environmental Concerns:**

None

**SAFETY ASSESSMENT:**

Stable platform	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	Fall prevention system if platform is over 1.8m	N/A	Yes / No
First Aid kit	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	Fire Extinguisher(2)	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	
PPE	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	Eye Wash (2)	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	
(Safety glasses/steal toe boots/ear plugs/Hard Hats)		Spill Kits (2)	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	
		Lined Berms	N/A	Yes / No
		Survival Shack:	N/A	Yes / No

**Safety concerns/issues:**

None

**Corrective action required?:** No**Action plan (if required):** N/A**Responsible party:** N/A**Date to be completed:** 25/2/2019**Photograph (only required to document problems and corrective actions):****PHOTOGRAPHIC RECORD:****Photo of drill hole during drilling?** ☒ Yes / ☐ No **Photo of sediment control measures?** N/A **Yes / No****Location of photos:** Y Drive 2019 Sonic Drilling Program**COMMENTS:**

None

**INSPECTION COMPLETED BY:****Name:**

Massoud Robatian

**Signature:***Massoud Robatian***DATE:** 25/2/2019

**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

<b>BIM personnel:</b>	Massoud Robatian
<b>Date:</b>	25/2/2019
<b>Time:</b>	5:10 PM
<b>Hole ID:</b>	BH19-01

**HOLE INFORMATION:**

<b>Location:</b> Mary River Airstrip	<b>Collar location:</b>	E:	558529
<b>Project:</b> MARY RIVER	(UTM NAD 83 17W)	N:	7914442
<b>Area:</b> BAFFIN ISLAND	<b>Final Depth: m</b>		15
<b>NTS:</b> 37G/5			
<b>Description of drillhole location:</b> Mary River Airstrip			
<b>Purpose of drillhole:</b> Mary River Airstrip Geotechnical Investigation and instal Ground Temperature Cable			

**DRILLING INFORMATION:**

<b>Drill Contractor:</b>	Boart Longyear
<b>Drill #:</b>	1403
<b>End Date of drilling:</b>	25/2/2019

**ENVIRONMENT ASSESSMENT:**

<b>All materials and debris removed from site?</b>	<input checked="" type="radio"/> Yes <input type="radio"/> No	
<b>Casing left?:</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No	
<b>Has Casing left been cut to ground level?</b>	N/A	<input type="radio"/> Yes / <input type="radio"/> No
<b>Any drill rods lost in the drillhole?</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No	If yes, how many?:
<b>Has hole been properly marked?</b>	<input checked="" type="radio"/> Yes <input type="radio"/> No	
<b>Any environmental concerns?</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No	If yes, please describe below:
<b>Any additional work required?</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No	If yes, please describe below:
<b>Corrective action:</b>	None	

**PHOTOGRAPHIC RECORD:**

<b>Photo of drillhole location following demobilization and clean up?</b>	<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>Location of photos:</b> Y Drive 2019 Sonic Drilling Program	

**COMMENTS:**

Placed Ground Temperature Cable inside the plastic pipe, while its' housing box sits on top of the pipe 0.5 metres above the ground.

**INSPECTION COMPLETED BY:**

<b>BIM signature:</b> Massoud Robatian Date: 25/2/2019	<b>Boart Foreman signature:</b> Verdon Bigelow Date: 25/2/2019
--	--

APPENDIX E.1.2

2019 Geotechnical Location –  
BH19-02



**PRE-DRILLING INSPECTION REPORT 2019**

<b>BIM personnel:</b>	Massoud Robatian
<b>Date:</b>	25/2/2019
<b>Time:</b>	5:10 PM
<b>Proposed hole ID:</b>	BH19-02
<b>Final hole ID:</b>	BH19-02

**PROPOSED HOLE INFORMATION:**

<b>Location:</b> Mary River Airstrip	<b>Collar location:</b>	E:	559003
<b>Project:</b> MARY RIVER	(UTM NAD 83 17W)	N:	7914156
<b>Area:</b> BAFFIN ISLAND	<b>Dip: °</b>		90
<b>NTS:</b> 37G/5	<b>Azimuth:</b>		—
<b>Elevation:</b> 168m	<b>Target depth: m</b>		15
<b>Description of drillhole location:</b> Mary River Airstrip			
<b>Purpose of drillhole:</b> Mary River Airstrip Geotechnical Investigation and install Ground Temperature Cable			

**DRILLING INFORMATION:**

<b>Has site been approved by drill foreman?:</b>	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<b>Foreman:</b> Verdon Bigelow
<b>Drill contractor:</b> Boart Longyear		
<b>Drill #:</b>	1403	
<b>Expected start of drilling:</b>	25/2/2019	
<b>Is moving of drillhole required?:</b>	Yes	
<b>If yes, provide reason:</b>	As per electrician's recommendations, relocated the proposed sonic drill hole collar location, to be clear of any obstacles.	
<b>New Collar Location</b>	E: 559001	N: 7914131

**Environment Assessment**

<b>Water source:</b>	No water used		
<b>Pump Station #:</b>	N/A	<b>Portable Tanks:</b>	Yes / <input checked="" type="radio"/> No
<b>Natural depression/ drainage evident?:</b>	Yes / <input checked="" type="radio"/> No	(Photo required)	
<b>Manual drainage constructed?:</b>	Yes / <input checked="" type="radio"/> No	(Photo required)	
<b>Silt fence(s) constructed?:</b>	Yes / <input checked="" type="radio"/> No	(Photo required)	
<b>Silt Bag Used:</b>	Yes / <input checked="" type="radio"/> No	(Photo required)	

**SITE ASSESSMENTS:**

**Are wildlife present?:** No (if yes, record in log)

**Is site safe for drilling?:** Yes

**Safety concerns/issues:** None

**Environmental concerns?:** None

**PHOTOGRAPHIC RECORD:**

<b>Photo of drillhole location prior to setup?</b>	<input checked="" type="radio"/> Yes / <input type="radio"/> No
<b>Location of photos:</b> Y Drive 2019 Sonic Drilling Program	

**COMMENTS:**

None

**INSPECTION COMPLETED BY:**

<b>Name:</b>	<b>Signature:</b>
Massoud Robatian	<i>Massoud Robatian</i>

**DATE:** 25/2/2019

**DAILY DRILL INSPECTION REPORT 2019****BIM personnel:** Massoud Robatian**Date:** 26/2/2019**Time:** 4:10 PM**Hole ID:** BH19-02**HOLE INFORMATION:****Location:** Mary River Airstrip  
**Collar location:** (UTM NAD 83 17W) E: 559001 N: 7914131**DRILLING INFORMATION****Drill contractor:** Boart Longyear **Drill Type:** Sonic**Drill personnel:** Verdon Bigelow, Francis Brideau and Val Bairamov**Drill #:** 1403**DRILLING PROGRESS:****Any rods/casing/tools lost in the drill hole?** No If yes, what was lost?:**Delays/Problems:**

Drilling was on hold between 11:30 and 13:30 due to aircraft activity

**ENVIRONMENT ASSESSMENT:****Sediment control measures in place:** N/A**Assessment of effectiveness:****Salt usage per day:** No salt used**Flow Meter Reading:** N/A End of N/S End of D/S**Has wildlife been present?: (check log for previous wildlife activity)**

No

**Environmental Concerns:**

None

**SAFETY ASSESSMENT:**

Stable platform	<input checked="" type="checkbox"/> Yes / No	Fall prevention system if platform is over 1.8m	N/A	Yes / No
First Aid kit	<input checked="" type="checkbox"/> Yes / No	Fire Extinguisher(2)	<input checked="" type="checkbox"/> Yes / No	
PPE	<input checked="" type="checkbox"/> Yes / No	Eye Wash (2)	<input checked="" type="checkbox"/> Yes / No	
(Safety glasses/steal toe boots/ear plugs/Hard Hats)		Spill Kits (2)	<input checked="" type="checkbox"/> Yes / No	
		Lined Berms	N/A	Yes / No
		Survival Shack:	N/A	Yes / No

**Safety concerns/issues:**

None

**Corrective action required?:** No**Action plan (if required):** N/A**Responsible party:** N/A **Date to be completed:** 26/2/2019**Photograph (only required to document problems and corrective actions):****PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling?	<input checked="" type="checkbox"/> Yes / No	Photo of sediment control measures?	N/A	Yes / No
Location of photos: Y Drive 2019 Sonic Drilling Program				

**COMMENTS:**

None

**INSPECTION COMPLETED BY:**

Name:	Signature:
Massoud Robatian	<i>Massoud Robatian</i>

**DATE:** 26/2/2019

**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

<b>BIM personnel:</b>	Massoud Robatian
<b>Date:</b>	26/2/2019
<b>Time:</b>	6:10 PM
<b>Hole ID:</b>	BH19-02

**HOLE INFORMATION:**

<b>Location:</b> Mary River Airstrip	<b>Collar location:</b>	E:	559001
<b>Project:</b> MARY RIVER	(UTM NAD 83 17W)	N:	7914131
<b>Area:</b> BAFFIN ISLAND	<b>Final Depth:</b> m		15
<b>NTS:</b> 37G/5			
<b>Description of drillhole location:</b> Mary River Airstrip			
<b>Purpose of drillhole:</b> Mary River Airstrip Geotechnical Investigation and instal Ground Temperature Cable			

**DRILLING INFORMATION:**

<b>Drill Contractor:</b>	Boart Longyear
<b>Drill #:</b>	1403
<b>End Date of drilling:</b>	25/2/2019

**ENVIRONMENT ASSESSMENT:**

<b>All materials and debris removed from site?</b>	<input checked="" type="radio"/> Yes <input type="radio"/> No	
<b>Casing left?:</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No	
<b>Has Casing left been cut to ground level?</b>	N/A	<input type="radio"/> Yes / <input type="radio"/> No
<b>Any drill rods lost in the drillhole?</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No	If yes, how many?:
<b>Has hole been properly marked?</b>	<input checked="" type="radio"/> Yes <input type="radio"/> No	
<b>Any environmental concerns?</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No	If yes, please describe below:
<b>Any additional work required?</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No	If yes, please describe below:
<b>Corrective action:</b>	None	

**PHOTOGRAPHIC RECORD:**

<b>Photo of drillhole location following demobilization and clean up?</b>	<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>Location of photos:</b> Y Drive 2019 Sonic Drilling Program	

**COMMENTS:**

Placed Ground Temperature Cable inside the plastic pipe, while its' housing box sits on top of the pipe 0.5 metres above the ground.

**INSPECTION COMPLETED BY:**

<b>BIM signature:</b> Massoud Robatian Date: 26/2/2019	<i>Massoud Robatian</i>	<b>Boart Foreman signature:</b> Verdon Bigelow Date: 26/2/2019
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**APPENDIX E.1.3**

**2019 Geotechnical Location –**

**BH19-06**



**PRE-DRILLING INSPECTION REPORT 2019**

<b>BIM personnel:</b>	Massoud Robatian
<b>Date:</b>	24/2/2019
<b>Time:</b>	5:00 PM
<b>Proposed hole ID:</b>	BH19-06
<b>Final hole ID:</b>	BH19-06

**PROPOSED HOLE INFORMATION:**

<b>Location:</b> Mary River Airstrip	<b>Collar location:</b> E: 558514
<b>Project:</b> MARY RIVER	(UTM NAD 83 17W) N: 7914417
<b>Area:</b> BAFFIN ISLAND	<b>Dip: °</b> 90
<b>NTS:</b> 37G/5	<b>Azimuth:</b> —
<b>Elevation:</b> 172m	<b>Target depth:</b> m 6
<b>Description of drillhole location:</b> Mary River Airstrip	
<b>Purpose of drillhole:</b> Mary River Airstrip Geotechnical Investigation and instal Ground Temperature Cable	

**DRILLING INFORMATION:**

<b>Has site been approved by drill foreman?:</b>	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<b>Foreman:</b> Verdon Bigelow
<b>Drill contractor:</b> Boart Longyear		
<b>Drill #:</b>	1403	
<b>Expected start of drilling:</b>	24/2/2019	
<b>Is moving of drillhole required?:</b>	Yes	
<b>If yes, provide reason:</b>	As per electrician's recommendations, relocated the proposed sonic drill hole collar location, to be clear of any obstacles.	
<b>New Collar Location</b>	E 558561	N 7914492

**Environment Assessment**

<b>Water source:</b>	No water used		
<b>Pump Station #:</b>	N/A	<b>Portable Tanks:</b>	Yes / <input checked="" type="radio"/> No
<b>Natural depression/ drainage evident?:</b>	Yes / <input checked="" type="radio"/> No	(Photo required)	
<b>Manual drainage constructed?:</b>	Yes / <input checked="" type="radio"/> No	(Photo required)	
<b>Silt fence(s) constructed?:</b>	Yes / <input checked="" type="radio"/> No	(Photo required)	
<b>Silt Bag Used:</b>	Yes / <input checked="" type="radio"/> No	(Photo required)	

**SITE ASSESSMENTS:**

**Are wildlife present?:** No (if yes, record in log)

**Is site safe for drilling?:** Yes

**Safety concerns/issues:** None

**Environmental concerns?:** None

**PHOTOGRAPHIC RECORD:**

<b>Photo of drillhole location prior to setup?</b>	<input checked="" type="radio"/> Yes / <input type="radio"/> No
<b>Location of photos:</b>	Y Drive 2019 Sonic Drilling Program



**COMMENTS:**

None

**INSPECTION COMPLETED BY:**

<b>Name:</b>	<b>Signature:</b>
Massoud Robatian	<i>Massoud Robatian</i>

**DATE:** 25/2/2019

	DAILY DRILL INSPECTION REPORT 2019		
	BIM personnel:	Massoud Robatian	
	Date:	25/2/2019	
	Time:	11:30 AM	
	Hole ID:	BH19-06	
<b>HOLE INFORMATION:</b>			
Location: Mary River Airstrip		Collar location: (UTM NAD 83 17W)	E: 558561 N: 7914492
<b>DRILLING INFORMATION</b>			
Drill contractor:	Boart Longyear		Drill Type: Sonic
Drill personnel:	Verdon Bigelow, Francis Brideau and Val Bairamov		
Drill #:	1403		
<b>DRILLING PROGRESS:</b>			
Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:			
Delays/Problems:			
None			
<b>ENVIRONMENT ASSESSMENT:</b>			
Sediment control measures in place:		N/A	
Assessment of effectiveness:			
Salt usage per day: No salt used			
Flow Meter Reading: N/A		End of N/S	End of D/S
Has wildlife been present?: (check log for previous wildlife activity)			
No			
Environmental Concerns:			
None			
<b>SAFETY ASSESSMENT:</b>			
Stable platform	<input checked="" type="radio"/> Yes / No	Fall prevention system if platform is over 1.8m	N/A      Yes / No
First Aid kit	<input checked="" type="radio"/> Yes / No	Fire Extinguisher(2)	<input checked="" type="radio"/> Yes / No
PPE	<input checked="" type="radio"/> Yes / No	Eye Wash (2)	<input checked="" type="radio"/> Yes / No
(Safety glasses/steal toe boots/ear plugs/Hard Hats)		Spill Kits (2)	<input checked="" type="radio"/> Yes / No
		Lined Berms	N/A      Yes / No
		Survival Shack:	N/A      Yes / No
Safety concerns/issues:			
None			
Corrective action required?:		No	
Action plan (if required):		N/A	
Responsible party:		N/A      Date to be completed: 25/2/2019	
Photograph (only required to document problems and corrective actions):			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling?	<input checked="" type="radio"/> Yes / No	Photo of sediment control measures?	N/A      Yes / No
Location of photos: Y Drive 2019 Sonic Drilling Program			
<b>COMMENTS:</b>			
None			
<b>INSPECTION COMPLETED BY:</b>			
Name:		Signature:	
Massoud Robatian			
<b>DATE:</b> 25/2/2019			

**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

<b>BIM personnel:</b>	Massoud Robatian
<b>Date:</b>	25/2/2019
<b>Time:</b>	5:00 PM
<b>Hole ID:</b>	BH19-06

**HOLE INFORMATION:**

<b>Location:</b> Mary River Airstrip	<b>Collar location:</b>	E:	558561
<b>Project:</b> MARY RIVER	(UTM NAD 83 17W)	N:	7914492
<b>Area:</b> BAFFIN ISLAND	<b>Final Depth:</b> m		6
<b>NTS:</b> 37G/5			
<b>Description of drillhole location:</b> Mary River Airstrip			
<b>Purpose of drillhole:</b> Mary River Airstrip Geotechnical Investigation			

**DRILLING INFORMATION:**

<b>Drill Contractor:</b>	Boart Longyear
<b>Drill #:</b>	1403
<b>End Date of drilling:</b>	25/2/2019

**ENVIRONMENT ASSESSMENT:**

<b>All materials and debris removed from site?</b>	<input checked="" type="radio"/> Yes / <input type="radio"/> No	
<b>Casing left?:</b>	Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Has Casing left been cut to ground level?</b>	N/A	Yes / No
<b>Any drill rods lost in the drillhole?</b>	Yes <input checked="" type="radio"/> No <input type="radio"/>	If yes, how many?:
<b>Has hole been properly marked?</b>	N/A	Yes / No
<b>Any environmental concerns?</b>	Yes <input checked="" type="radio"/> No <input type="radio"/>	If yes, please describe below:
<b>Any additional work required?</b>	Yes <input checked="" type="radio"/> No <input type="radio"/>	If yes, please describe below:
<b>Corrective action:</b>	None	

**PHOTOGRAPHIC RECORD:**

<b>Photo of drillhole location following demobilization and clean up?</b>	<input checked="" type="radio"/> Yes / <input type="radio"/> No
<b>Location of photos:</b>	Y Drive 2019 Sonic Drilling Program

**COMMENTS:**

None


**INSPECTION COMPLETED BY:**

<b>BIM signature:</b>	<b>Boart Foreman signature:</b>
Massoud Robatian	Verdon Bigelow
Date: 25/2/2019	Date: 25/2/2019

APPENDIX E.1.4

2019 Geotechnical Location –  
BH19-CPT19-01




	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### 3.5 DRILL INSPECTION FORMS BH19-CPT19-01


SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT


	<b>PRE-DRILLING INSPECTION REPORT</b> Baffinland personnel: <input checked="" type="checkbox"/> J. Knox, I. Bacon, Chris Macdonald Date: April 15, 2019 Time: 15:30 Proposed hole ID: <del>LPT-01</del> / BH19-CPT19-01 Final hole ID: <del>LPT-01</del> / BH19-CPT19-01	
	<b>PROPOSED HOLE INFORMATION:</b> Deposit #: N/A Project: Mine Port Expansion Area: Mine Inlet NTS: 37615 Elevation: -0.9m Description of drill hole location: End of proposed freight dock Purpose of drill hole: Geotechnical classification of drill hole Collar location: E 7976698 (NAD 83) N 503987 Dip: N/A Azimuth: N/A Target depth: N/A	
<b>DRILLING INFORMATION:</b> Has site been approved by drill foreman? <input checked="" type="checkbox"/> Yes Drill contractor: Drill personnel: Drill #: Corbett, J. Knox, I. Bacon, C. Macdonald, drill #1 Expected start of drilling: April 15, 2019 Is moving of drill hole required? <input checked="" type="checkbox"/> No If yes, provide reason: New collar location: E N		
<b>WATER MANAGEMENT:</b> Water source: No water used Pump Station #: Sump location identified and constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N		
<b>SITE ASSESSMENTS:</b> Are wildlife present?: (If yes, record in log) Is site safe for drilling? Stable platform <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No Fire Extinguisher <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No First Aid kit <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No Eye Wash <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No PPE <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No Spill Kits <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No Safety concerns/issues: <input checked="" type="checkbox"/> No Environmental concerns? <input checked="" type="checkbox"/> No		
<b>PHOTOGRAPHIC RECORD:</b> Photo of drill hole location prior to setup? <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No Name: <input checked="" type="checkbox"/> TT Folder: TT Uploaded to hard drive?		
<b>COMMENTS:</b> Photo sent along with inspection report TT		

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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 105 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008


### DAILY DRILLING INSPECTION REPORT

		DAILY DRILL INSPECTION REPORT	
		Baffinland personnel: Joe Knox, Isaac Breen, Chris Macdonald Date: April 15, 2014 Time: 15:30 Hole ID: <del>BAF-PH1-830-P16-0008</del> CPT-01 / <del>BAF-PH1-830-P16-0008</del> BAF-PH1-830-P16-0008	
<b>HOLE INFORMATION:</b>			
Deposit #:	1	Collar location:	E 7476698
Location:		(NAD 83)	N 503487
<b>DRILLING INFORMATION</b>			
Drill contractor: Lonetec			
Drill personnel: Joe Knox, Isaac Breen, Chris Macdonald			
Drill #: 1			
<b>DRILLING PROGRESS:</b>			
<b>Day Shift</b>		<b>Night Shift</b>	
Start depth: 0		Start depth:	
End depth: 33m		End depth: N/A	
Total depth drilled: 33m		Total depth drilled:	
Casing installed: 0		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? No			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate Nine			
<b>WATER USE ASSESSMENT:</b> No water used			
<b>Sediment control measures in place:</b>		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:		Water samples collected by Golder & Trish Tomliens and Alanna Umphrey. Samples analyzed for TSS, TDS, pH, Total Metals (incl. arsenic), Total Mercury	
Color of runoff?			
Conductivity readings?:			
Station # <del>BAF-PH1-830-P16-0008</del> A Reading 21720 u/cm			
Station # <del>BAF-PH1-830-P16-0008</del> B Reading 51012 u/cm			
Turbidity sample(s) taken?:			
Sample # CPT19-01-A Reading 1.33 NTU			
Sample # CPT19-01-B Reading 0.46 NTU			
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity) No			
Is site safe for drilling?			
Stable platform	Yes / No	Fire Extinguisher	Yes / No
First Aid kit	Yes / No	Eye Wash	Yes / No
PPE	Yes / No	Spill Kits	Yes / No
Lined Berms	Yes / No		
Safety concerns/issues: None			
Environmental concerns? None			
Corrective action required?: Action plan (if required): —			
Responsible party: Lonetec			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling?		Photo of water management measures?	
Name:		Folder:	
Uploaded to hard drive?			
COMMENTS: Photo sent along with inspection report			



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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 106 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### POST-DRILLING INSPECTION REPORT

	<b>POST-DRILLING INSPECTION REPORT</b>	
	Baffinland personnel: Joe Knox, Isaac Bacon, Chris Macdonald Date: April 15, 2019 Time: Final hole ID: BH19-CPT19-01	
<b>HOLE INFORMATION:</b>		
Deposit #: Project: MARY RIVER Area: BAFFIN ISLAND NTS: 37G/5 Elevation: -0.9m Description of drill hole location: CPT Purpose of drill hole: Geotechnical classification	Collar location: E 79° 66' 98" (NAD 83) N 50° 39' 87" Dip: N/A Azimuth: N/A EOH: 3.3m	
<b>DRILLING INFORMATION:</b>		
Drill contractor: Coretec Drill personnel: Joe Knox, Isaac Bacon, Chris Macdonald Drill #: 1 End of drilling: 3.3m Casing: None Any rods/casing/tools lost in the drill hole? If yes, what was lost? None		
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? Yes <input checked="" type="radio"/> No		
Next set-up collar location: E N		
<b>WATER USE ASSESSMENT:</b>		
Water source: Mary River Pump station #: Total amount of hours water was pumped from pump station: No water used		
<b>SITE ASSESSMENT:</b>		
All materials and debris removed from site? <input checked="" type="radio"/> Yes / No Any environmental concerns? Yes / <input checked="" type="radio"/> No If yes, please describe below:		
Any additional work required? Yes / <input checked="" type="radio"/> No If yes, please describe below:		
Corrective action: Responsible party: Date to be completed by:		
<b>PHOTOGRAPHIC RECORD:</b>		
Photo of drill hole location following demobilization and clean up? TT <input checked="" type="radio"/> Yes / <input checked="" type="radio"/> No Name: Folder:		
Uploaded to hard drive?		
<b>COMMENTS:</b>		
Photo sent along with inspection report		
<b>INSPECTION COMPLETED BY:</b>		
Baffinland signature: Drill contractor signature: 		


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APPENDIX E.1.5

2019 Geotechnical Location –  
BH19-CPT19-02




	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### 3.5 DRILL INSPECTION FORMS

BH19-CPT19-02

SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009


#### PRE-DRILLING INSPECTION REPORT

	<b>PRE-DRILLING INSPECTION REPORT</b> Baffinland personnel: Date: <i>April 16, 2014</i> Time: <i>2:30</i> Proposed hole ID: <i>CPT19-02</i> Final hole ID: <i>CPT19-02</i>	
	<b>PROPOSED HOLE INFORMATION:</b> Deposit #: <i>—</i> Project: <i>Milne Port Expansion</i> Area: <i>Milne Inlet - Freight dock</i> NTS: <i>32615</i> Elevation: <i>—</i> Description of drill hole location: <i>Milne Inlet</i> Purpose of drill hole: <i>Geotechnical Site Classification</i> Collar location: <i>17N E 7976647.83</i> (NAD 83) <i>N 503986.96</i> Dip: <i>N/A</i> Azimuth: <i>N/A</i> Target depth: <i>N/A</i>	
<b>DRILLING INFORMATION:</b> Has site been approved by drill foreman? <i>Yes</i> Drill contractor: <i>Loxtec, J. Knox, L. Macdonald, E. Brown</i> Drill personnel: <i>—</i> Expected start of drilling: <i>April 16</i> Is moving of drill hole required? <i>No</i> If yes, provide reason: <i>—</i> New collar location: E <i>—</i> N <i>—</i>		
<b>WATER MANAGEMENT:</b> Water source: <i>No water used</i> Pump Station #: <i>—</i> Sump location identified and constructed?: Yes/No (Photo required) Corner 1: E <i>—</i> N <i>—</i> Corner 2: E <i>—</i> N <i>—</i> Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: E <i>—</i> N <i>—</i> Corner 2: E <i>—</i> N <i>—</i>		
<b>SITE ASSESSMENTS:</b> Are wildlife present?: (If yes, record in log) <i>No</i> Is site safe for drilling? Stable platform: <i>Yes/No</i> Fire Extinguisher: <i>Yes/No</i> First Aid kit: <i>Yes/No</i> Eye Wash: <i>Yes/No</i> PPE: <i>Yes/No</i> Spill Kits: <i>Yes/No</i> Safety concerns/issues: <i>None</i> Environmental concerns: <i>None</i>		
<b>PHOTOGRAPHIC RECORD:</b> Photo of drill hole location prior to setup? <i>(Yes/No)</i> Name: <i>—</i> Folder: <i>—</i> Uploaded to hard drive? <i>—</i>		
<b>COMMENTS:</b> <i>Photo included in photo appendix sent with inspection report</i>		

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DAILY DRILLING INSPECTION REPORT *BH19-CPT19-02*


		DAILY DRILL INSPECTION REPORT	
		Baffinland personnel: Date: <i>April 16, 2019</i> Time: Hole ID: <i>BH19-CPT19-02</i>	
HOLE INFORMATION:			
Deposit #:	<i>1</i>	Collar location:	<i>E 7476007.83</i>
Location:	<i>Mile Inlet</i>	(NAD 83)	<i>N 503486.46</i>
DRILLING INFORMATION			
Drill contractor: <i>Conterra</i>			
Drill personnel: <i>J. Kroy, L. Macdonald, I. Buer</i>			
Drill #: <i>1</i>			
DRILLING PROGRESS:			
Day Shift		Night Shift	
Start depth: <i>0</i>		Start depth:	
End depth: <i>2.025</i>		End depth: <i>N/A</i>	
Total depth drilled: <i>2.025m</i>		Total depth drilled:	
Casing installed: <i>0</i>		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? <i>None</i>			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate <i>None</i>			
WATER USE ASSESSMENT:			
Sediment control measures in place:		DAILY WATER USE MONITORING:	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump: <i>no water used</i>		Water meter reading (end of day):	
Color of water in sump:		Water meter reading (end of day):	
Color of runoff:		Water meter reading (end of day):	
Conductivity readings?:		Station # <i>CPT19-02-A</i> Reading <i>20233 µS/cm</i>	
		Station # <i>CPT19-02-B</i> Reading <i>21542 µS/cm</i>	
		Station # Reading	
Turbidity sample(s) taken?:		Sample # <i>CPT19-02-A</i> Reading <i>0.67 NTU</i>	
		Sample # <i>CPT19-02-B</i> Reading <i>0.23 NTU</i>	
<i>Goldier conducted in-situ and water sampling. Trish Tamliens and Hanna Umphrey. Additional info sent with drilling report</i>			
SITE ASSESSMENT:			
Are wildlife present?: (check log for previous wildlife activity) <i>None</i>			
Is site safe for drilling?			
Stable platform	<i>Yes</i> / No	Fire Extinguisher	<i>Yes</i> / No
First Aid kit	<i>Yes</i> / No	Eye Wash	<i>Yes</i> / No
PPE	<i>Yes</i> / No	Spill Kits	<i>Yes</i> / No
Lined Berms	<i>Yes</i> / <i>No</i>		
Safety concerns/issues: <i>None</i>			
Environmental concerns? <i>None</i>			
Corrective action required?: Action plan (if required):			
Responsible party:			
Date to be completed: Photograph (only required to document problems and corrective actions)			
PHOTOGRAPHIC RECORD:			
Photo of drill hole during drilling? Photo of water management measures? <i>Yes</i> / <i>No</i>			
Name:		Folder:	
Uploaded to hard drive?			
COMMENTS:			
<i>Photo included in photo appendix</i>			

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## POST-DRILLING INSPECTION REPORT BH19-CPT19-02

		POST-DRILLING INSPECTION REPORT	
		Baffinland personnel: Date: April 15, 2019 Time: 5:30 - Rods out 16:30 Final hole ID: CPT19-02	
<b>HOLE INFORMATION:</b>			
Deposit #:		Collar location:	E 247647.85
Project: MARY RIVER		(NAD 83)	N 503486.46
Area: BAFFIN ISLAND		Dip: N/A	
NTS: 37G/5		Azimuth: N/A	
Elevation:		EOH: 2.025 m	
Description of drill hole location: Mine Inlet			
Purpose of drill hole: Geotechnical Classification			
<b>DRILLING INFORMATION:</b>			
Drill contractor: Conker J. Knott, E. Bacon, L. Macdonald			
Drill personnel:			
Drill #: 1			
End of drilling: 2.025 m			
Casing: None			
Any rods/casing/tools lost in the drill hole? If yes, what was lost? None			
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? Yes/No N/A			
Next set-up collar location: E N			
<b>WATER USE ASSESSMENT:</b>			
Water source: Mary River No water used			
Pump station #:			
Total amount of hours water was pumped from pump station:			
<b>SITE ASSESSMENT:</b>			
All materials and debris removed from site? Yes/No			
Any environmental concerns?		Yes/No	If yes, please describe below:
Any additional work required?		Yes/No	If yes, please describe below:
Corrective action:			
Responsible party:			
Date to be completed by:			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole location following demobilization and clean up? Yes/No			
Name:		Folder:	
Uploaded to hard drive?			
<b>COMMENTS:</b>			
Photo included in photo appendix			
<b>INSPECTION COMPLETED BY:</b>			
Baffinland signature:		Drill contractor signature:	


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APPENDIX E.1.6

2019 Geotechnical Location –  
BH19-CPT19-03



	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### 3.5 DRILL INSPECTION FORMS

BH19-CPT19-03 ~~BH19-CPT19-03~~

SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009


#### PRE-DRILLING INSPECTION REPORT

	<b>PRE-DRILLING INSPECTION REPORT</b> Baffinland personnel: Date: Apr 17, 2019 Time: 15:30 Proposed hole ID: CPT19-05 Final hole ID: CPT19-03	
	<b>PROPOSED HOLE INFORMATION:</b> Deposit #: Project: Milne Port Expansion Area: Milne Inlet - Freight dock NTS: Elevation: Description of drill hole location: Milne Inlet Purpose of drill hole: Geotechnical soil Classification:	
<b>DRILLING INFORMATION:</b> Has site been approved by drill foreman? Yes Drill contractor: Drill personnel: Drill #: Contee J. Knox, I. Bacon, C. Macdonald Expected start of drilling: Apr 17 Is moving of drill hole required? No If yes, provide reason: New collar location: E — N —		
<b>WATER MANAGEMENT:</b> Water source: No water source Pump Station #: Sump location identified and constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N		
<b>SITE ASSESSMENTS:</b> Are wildlife present?: (If yes, record in log) Is site safe for drilling? Stable platform Yes/No First Aid kit Yes/No PPE Yes/No Fire Extinguisher Yes/No Eye Wash Yes/No Spill Kits Yes/No Safety concerns/issues: None Environmental concerns? None		
<b>PHOTOGRAPHIC RECORD:</b> Photo of drill hole location prior to setup? Yes/No Name: Uploaded to hard drive? Folder:		
<b>COMMENTS:</b>		

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## DAILY DRILLING INSPECTION REPORT

		DAILY DRILL INSPECTION REPORT	
		Baffinland personnel: Date: <i>Apr 17, 2019</i> Time: Hole ID: <i>BH19-CPT19-03</i>	
<b>HOLE INFORMATION:</b>			
Deposit #: <i>1</i>		Collar location: <i>E 5059456.94</i>	
Location: <i>Mine Inlet</i>		(NAD 83) <i>N 7476762.36</i>	
<b>DRILLING INFORMATION</b>			
Drill contractor: <i>Conotec</i>			
Drill personnel: <i>J. Kow, I. Bacon, C. Macdonald</i>			
Drill #: <i>1</i>			
<b>DRILLING PROGRESS:</b>			
Day Shift		Night Shift	
Start depth: <i>0</i>		Start depth:	
End depth: <i>6.075</i>		End depth:	
Total depth drilled: <i>6.075</i>		Total depth drilled: <i>N/A</i>	
Casing installed: <i>0</i>		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? <i>None</i>			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate <i>None</i>			
<b>WATER USE ASSESSMENT:</b>			
Sediment control measures in place:		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness: <i>No water used</i>		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:		<i>Water samples collected by Golder</i>	
Color of runoff?		<i>(TT/Au). Samples analyzed for</i>	
Conductivity readings?:		<i>TSS, TDS, pH, Total metals (incl. arsenic),</i>	
Station # <i>CPT19-03A</i>	Reading <i>44437</i>	<i>Total mercury</i>	
Station #	Reading		
Station #	Reading		
Turbidity sample(s) taken?:	Sample # <i>CPT19-03A</i>	Reading <i>0.46</i>	
	Sample #	Reading	
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity)			
Is site safe for drilling?			
Stable platform	<i>Yes</i> / No	Fire Extinguisher	<i>Yes</i> / No
First Aid kit	<i>Yes</i> / No	Eye Wash	<i>Yes</i> / No
PPE	<i>Yes</i> / No	Spill Kits	<i>Yes</i> / No
Lined Berms	<i>Yes</i> / <i>No</i>		
Safety concerns/issues: <i>None</i>			
Environmental concerns? <i>None</i>			
Corrective action required?: Action plan (if required):			
Responsible party:			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling? Photo of water management measures?		<i>Yes</i> / No	
Name:		Folder:	
Uploaded to hard drive?			
<b>COMMENTS:</b>			
<i>Photo included in photo appendix</i>			


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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 106 of 135
	Environment	Revision: 1	
		Document #: BAF-PH1-830-P16-0008	

### POST-DRILLING INSPECTION REPORT

	POST-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: <i>Apr 17, 2014</i> Time: <i>15:30</i> Final hole ID: <i>BH19-CPT19-03</i>	
<b>HOLE INFORMATION:</b>		
Deposit #: Project: MARY RIVER Area: BAFFIN ISLAND NTS: 37G/5 Elevation: Description of drill hole location: Purpose of drill hole: <i>Geotechnical Classification</i>	Collar location: (NAD 83) E <i>503 956.94</i> N <i>79 76762.36</i> Dip: Azimuth: EOH: <i>6.075</i>	
<b>DRILLING INFORMATION:</b>		
Drill contractor: <i>ConTec</i> Drill personnel: <i>J. Knox, I. Bacon, C. Macdonald</i> Drill #: <i>1</i> End of drilling: <i>6.075</i> Casing: <i>0</i> Any rods/casing/tools lost in the drill hole? If yes, what was lost? <i>None</i>		
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? Yes <input checked="" type="checkbox"/> No		
Next set-up collar location: E N		
<b>WATER USE ASSESSMENT:</b>		
Water source: Mary River Pump station #: Total amount of hours water was pumped from pump station: <i>No water used</i>		
<b>SITE ASSESSMENT:</b>		
All materials and debris removed from site? <i>Yes</i> / No		
Any environmental concerns? Yes <input checked="" type="checkbox"/> No	If yes, please describe below:	
Any additional work required? Yes <input checked="" type="checkbox"/> No	If yes, please describe below:	
Corrective action: Responsible party: Date to be completed by:		
<b>PHOTOGRAPHIC RECORD:</b>		
Photo of drill hole location following demobilization and clean up? <input checked="" type="checkbox"/> Yes No		
Name: Uploaded to hard drive?	Folder:	
<b>COMMENTS:</b>		
<i>Photo included in appendix.</i>		
<b>INSPECTION COMPLETED BY:</b>		
Baffinland signature: Drill contractor signature:		


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**APPENDIX E.1.7**

**2019 Geotechnical Location –**  
**BH19-CPT19-03B**




	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### 3.5 DRILL INSPECTION FORMS *BH19-CPT19-03 (1st deviation)*


SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT

	<b>PRE-DRILLING INSPECTION REPORT</b> Baffinland personnel: Date: <i>Apr 17, 2014</i> Time: <i>14:00</i> Proposed hole ID: <i>CPT19-03B</i> Final hole ID: <i>CPT19-03j3</i>	
	<b>PROPOSED HOLE INFORMATION:</b> Deposit #: _____ Project: <i>M: Ine Port Expansion</i> Area: <i>M: Ine Port</i> NTS: _____ Elevation: _____ Description of drill hole location: _____ Purpose of drill hole: <i>Geotech</i>	
<b>DRILLING INFORMATION:</b> Has site been approved by drill foreman? _____ Drill contractor: Drill personnel: <i>ConTel J. Knox, L. Bacon, C. Macdonald</i> Expected start of drilling: <i>Apr 17, 2014</i> Is moving of drill hole required? _____ If yes, provide reason: _____ New collar location: E _____ N _____		Collar location: <i>17</i> E <i>503967.72</i> (NAD 83) N <i>7986761.42</i> Dip: _____ Azimuth: _____ Target depth: _____
<b>WATER MANAGEMENT:</b> Water source: _____ Pump Station #: <i>No</i> <i>water source</i> Sump location identified and constructed?: Yes/No (Photo required) Corner 1: E _____ N _____ Corner 2: E _____ N _____ Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: E _____ N _____ Corner 2: E _____ N _____		
<b>SITE ASSESSMENTS:</b> Are wildlife present?: (If yes, record in log) _____ Is site safe for drilling? _____ Stable platform <i>Yes/No</i> Fire Extinguisher <i>Yes/No</i> First Aid kit <i>Yes/No</i> Eye Wash <i>Yes/No</i> PPE <i>Yes/No</i> Spill Kits <i>Yes/No</i> Safety concerns/issues: <i>None</i> Environmental concerns: <i>None</i>		
<b>PHOTOGRAPHIC RECORD:</b> Photo of drill hole location prior to setup? Yes <i>No</i> Name: _____ Folder: _____ Uploaded to hard drive? _____		
<b>COMMENTS:</b>  		

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	<b>Environmental Protection Plan</b>	Issue Date: August 30, 2016	Page 105 of 135
	<b>Environment</b>	Revision: 1	Document #: BAF-PH1-830-P16-0008

### DAILY DRILLING INSPECTION REPORT



		<b>DAILY DRILL INSPECTION REPORT</b>	
		Baffinland personnel: Date: Apr 17, 2019 Time: 1400 Hole ID: CPT19-03B	
<b>HOLE INFORMATION:</b>			
Deposit #:	1	Collar location:	E 603487.72
Location:		(NAD 83)	N 7176761.42
<b>DRILLING INFORMATION</b>			
Drill contractor: CoreTec			
Drill personnel: J. Kner, Bacon, C. Macdonald			
Drill #: 1			
<b>DRILLING PROGRESS:</b>			
<b>Day Shift</b>		<b>Night Shift</b>	
Start depth: 0		Start depth:	
End depth: 7.675		End depth: N/A	
Total depth drilled: 7.675		Total depth drilled:	
Casing installed: 0		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? N/A			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate			
<b>WATER USE ASSESSMENT:</b>			
Sediment control measures in place:		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump: N/A		Water meter reading (end of day):	
Color of water in sump:		Readings reported on first drill inspection form for this location. Post water sample conducted and submitted (17 April 2019)	
Color of runoff?			
Conductivity readings?:	Station #      Reading Station #      Reading Station #      Reading		
Turbidity sample(s) taken?:	Sample #      Reading Sample #      Reading		
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity)			
Is site safe for drilling?			
Stable platform	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	Fire Extinguisher	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
First Aid kit	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	Eye Wash	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
PPE	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	Spill Kits	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Lined Berms	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No		
Safety concerns/issues: None			
Environmental concerns? None			
Corrective action required?: Action plan (if required):			
Responsible party:			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling? Photo of water management measures?			<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Name:		Folder:	
Uploaded to hard drive?			
<b>COMMENTS:</b>			

Photo included in photo appendix


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	<b>Environmental Protection Plan</b>	Issue Date: August 30, 2016	Page 106 of 135
	<b>Environment</b>	Revision: 1	Document #: BAF-PH1-830-P16-0008

### POST-DRILLING INSPECTION REPORT

	<b>POST-DRILLING INSPECTION REPORT</b>	
	Baffinland personnel: Date: Apr 17, 2019 Time: 14:00 Final hole ID: CPT19-03B	
<b>HOLE INFORMATION:</b>		
Deposit #: Project: MARY RIVER Area: BAFFIN ISLAND NTS: 37G/5 Elevation: Description of drill hole location: CPT Purpose of drill hole: Geotechnical Classification	Collar location: E 503987.72 (NAD 83) N 7976761.42 Dip: Azimuth: EOH:	
<b>DRILLING INFORMATION:</b>		
Drill contractor: Contee Drill personnel: J. Kury, I. Bacon, C. Macdonald Drill #: 1 End of drilling: Casing: <input checked="" type="checkbox"/> Any rods/casing/tools lost in the drill hole? If yes, what was lost?		
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? Yes / No Next set-up collar location: E N		
<b>WATER USE ASSESSMENT:</b>		
Water source: Mary River Pump station #: N/A Total amount of hours water was pumped from pump station:		
<b>SITE ASSESSMENT:</b>		
All materials and debris removed from site? <input checked="" type="checkbox"/> Yes / No Any environmental concerns? Yes <input checked="" type="checkbox"/> No If yes, please describe below:		
Any additional work required? Yes <input checked="" type="checkbox"/> No If yes, please describe below:		
Corrective action: Responsible party: Date to be completed by:		
<b>PHOTOGRAPHIC RECORD:</b>		
Photo of drill hole location following demobilization and clean up? <input checked="" type="checkbox"/> Yes / No Name: Folder:		
Uploaded to hard drive?		
<b>COMMENTS:</b>		
Photo included in photo appendix		
<b>INSPECTION COMPLETED BY:</b>		
Baffinland signature: Drill contractor signature:		

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APPENDIX E.1.8

2019 Geotechnical Location –  
BH19-CPT19-03C



### 3.5 DRILL INSPECTION FORMS

SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

## PRE-DRILLING INSPECTION REPORT

<span style="font-size: 24px; font-weight: bold; vertical-align: middle;">Baffinland</span>		PRE-DRILLING INSPECTION REPORT			
<b>Baffinland personnel:</b> Date: Apr 15, 2014 Time: 10:00 Proposed hole ID: CPT14-03C Final hole ID: CPT19-03C					
<b>PROPOSED HOLE INFORMATION:</b>					
Deposit #: Project: Milne Port Expansion Area: Milne Port NTS: Elevation: Description of drill hole location: CPT Purpose of drill hole: Geotechnical Classification	Collar location: 17 E 5039489.26 (NAD 83) N 7976761.66 Dip: Azimuth: Target depth:				
<b>DRILLING INFORMATION:</b>					
Has site been approved by drill foreman? Drill contractor: Drill personnel: Drill #: ConTec: I. Bacon, J. Knox, C. Macdonald Expected start of drilling: Apr 15, 2014 Is moving of drill hole required? No If yes, provide reason: New collar location: E N					
<b>WATER MANAGEMENT:</b>					
Water source: Pump Station #: No water source Sump location identified and constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N					
<b>SITE ASSESSMENTS:</b>					
Are wildlife present?: (If yes, record in log) Is site safe for drilling? <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;">           Stable platform <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No            First Aid kit <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No            PPE <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No            Safety concerns/issues:            Environmental concerns?         </td> <td style="width: 50%; vertical-align: top;">           Fire Extinguisher <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No            Eye Wash <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No            Spill Kits <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No         </td> </tr> </table>				Stable platform <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No First Aid kit <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No PPE <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No Safety concerns/issues: Environmental concerns?	Fire Extinguisher <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No Eye Wash <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No Spill Kits <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Stable platform <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No First Aid kit <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No PPE <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No Safety concerns/issues: Environmental concerns?	Fire Extinguisher <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No Eye Wash <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No Spill Kits <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No				
<b>PHOTOGRAPHIC RECORD:</b>					
Photo of drill hole location prior to setup? Yes <input checked="" type="checkbox"/> No Name: Folder: Uploaded to hard drive?					
<b>COMMENTS:</b>					

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## DAILY DRILLING INSPECTION REPORT



		DAILY DRILL INSPECTION REPORT	
		Baffinland personnel:	
		Date:	
		Time:	
		Hole ID:	
<b>HOLE INFORMATION:</b>			
Deposit #: 1		Collar location: E 503 954.26	
Location: Milne Pt		(NAD 83) N 79 76 761.66	
<b>DRILLING INFORMATION</b>			
Drill contractor: ConTec			
Drill personnel: I. Bacon, J. Knox, C. Macdonald			
Drill #: 1			
<b>DRILLING PROGRESS:</b>			
<b>Day Shift</b>		<b>Night Shift</b>	
Start depth: 0		Start depth: N/A	
End depth: 13.5		End depth: N/A	
Total depth drilled: 13.5		Total depth drilled:	
Casing installed: 0		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost?			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate			
<b>WATER USE ASSESSMENT:</b>			
Sediment control measures in place:		DAILY WATER USE MONITORING:	
Assessment of effectiveness: N/A		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:		Readings reported on first drill inspection form for this location.	
Color of runoff:		Post water sample conducted and submitted (18 April 2019).	
Conductivity readings?:	Station #	Reading	
	Station #	Reading	
	Station #	Reading	
Turbidity sample(s) taken?:	Sample #	Reading	
	Sample #	Reading	
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity)			
Is site safe for drilling?			
Stable platform	Yes / No	Fire Extinguisher	Yes / No
First Aid kit	Yes / No	Eye Wash	Yes / No
PPE	Yes / No	Spill Kits	Yes / No
Lined Berms	Yes (No)		
Safety concerns/issues: None			
Environmental concerns? None			
Corrective action required?: Action plan (if required):			
Responsible party:			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling? Photo of water management measures?		Yes / No	
Name:		Folder:	
Uploaded to hard drive?			
<b>COMMENTS:</b>			

Photo included in photo appendix


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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 106 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

## POST-DRILLING INSPECTION REPORT

		POST-DRILLING INSPECTION REPORT	
		Baffinland personnel:	
		Date: Apr 18	
		Time: 10:00	
		Final hole ID: CPT19-03C	
<b>HOLE INFORMATION:</b>			
Deposit #:		Collar location:	17 E 503949.28
Project: MARY RIVER		(NAD 83)	N 7976761.66
Area: BAFFIN ISLAND		Dip:	
NTS: 37G/5		Azimuth:	
Elevation:		EOH:	
Description of drill hole location:	CPT		
Purpose of drill hole:	Geotechnical Classification		
<b>DRILLING INFORMATION:</b>			
Drill contractor:	CoreTec		
Drill personnel:	J. Knox, I. Bacon, C. Macdonald		
Drill #:	1		
End of drilling:	13:45		
Casing:	0		
Any rods/casing/tools lost in the drill hole? If yes, what was lost?			
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? Yes / No			
Next set-up collar location:	E N		
<b>WATER USE ASSESSMENT:</b>			
Water source:	Mary River N/A		
Pump station #:			
Total amount of hours water was pumped from pump station:			
<b>SITE ASSESSMENT:</b>			
All materials and debris removed from site? <input checked="" type="radio"/> Yes / <input type="radio"/> No			
Any environmental concerns?		Yes <input type="radio"/> No <input checked="" type="radio"/>	If yes, please describe below:
Any additional work required?		Yes <input type="radio"/> No <input checked="" type="radio"/>	If yes, please describe below:
Corrective action:			
Responsible party:			
Date to be completed by:			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole location following demobilization and clean up? <input checked="" type="radio"/> Yes / <input type="radio"/> No			
Name:		Folder:	
Uploaded to hard drive?			
<b>COMMENTS:</b>			
Photo included in photo appendix			
<b>INSPECTION COMPLETED BY:</b>			
Baffinland signature:		Drill contractor signature:	


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APPENDIX E.1.9

2019 Geotechnical Location –  
BH19-CPT19-04




	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### 3.5 DRILL INSPECTION FORMS BH19-CPT19-04


SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT


	PRE-DRILLING INSPECTION REPORT													
	Baffinland personnel: Date: <u>April 19, 2019</u> Time: <u>9:00</u> Proposed hole ID: <u>CPT 19-04</u> Final hole ID: <u>CPT19-04</u>													
<b>PROPOSED HOLE INFORMATION:</b>														
Deposit #: _____ Project: <u>Milne Port Expansion</u> Area: <u>Milne Inlet - Freight Dock</u> NTS: _____ Elevation: _____ Description of drill hole location: <u>Milne Inlet</u> Purpose of drill hole: <u>Geotechnical Soil Classification</u>		Collar location: <u>17</u> <u>E 503952.84</u> (NAD 83) <u>N 7976701.82</u> Dip: _____ Azimuth: _____ Target depth: _____												
<b>DRILLING INFORMATION:</b>														
Has site been approved by drill foreman? <u>Yes</u> Drill contractor: Drill personnel: <u>Coretec J. Knox, I. Bacon, C. MacDonald.</u> Expected start of drilling: <u>April 19, 2019</u> Is moving of drill hole required? <u>No</u> If yes, provide reason: _____ New collar location: <u>E —</u> <u>N —</u>														
<b>WATER MANAGEMENT:</b>														
Water source: <u>No water source</u> Pump Station #: _____ Sump location identified and constructed?: <u>Yes/No (Photo required)</u> Corner 1: <u>E</u> <u>N</u> Corner 2: <u>E</u> <u>N</u> Silt fence(s) constructed?: <u>Yes/No (Photo required)</u> Corner 1: <u>E</u> <u>N</u> Corner 2: <u>E</u> <u>N</u>														
<b>SITE ASSESSMENTS:</b>														
Are wildlife present?: (If yes, record in log) _____ Is site safe for drilling? _____ <table border="0"> <tr> <td>Stable platform</td> <td><u>Yes</u> / No</td> <td>Fire Extinguisher</td> <td><u>Yes</u> / No</td> </tr> <tr> <td>First Aid kit</td> <td><u>Yes</u> / No</td> <td>Eye Wash</td> <td><u>Yes</u> / No</td> </tr> <tr> <td>PPE</td> <td><u>Yes</u> / No</td> <td>Spill Kits</td> <td><u>Yes</u> / No</td> </tr> </table> Safety concerns/issues: <u>None</u> Environmental concerns? <u>None</u>			Stable platform	<u>Yes</u> / No	Fire Extinguisher	<u>Yes</u> / No	First Aid kit	<u>Yes</u> / No	Eye Wash	<u>Yes</u> / No	PPE	<u>Yes</u> / No	Spill Kits	<u>Yes</u> / No
Stable platform	<u>Yes</u> / No	Fire Extinguisher	<u>Yes</u> / No											
First Aid kit	<u>Yes</u> / No	Eye Wash	<u>Yes</u> / No											
PPE	<u>Yes</u> / No	Spill Kits	<u>Yes</u> / No											
<b>PHOTOGRAPHIC RECORD:</b>														
Photo of drill hole location prior to setup? <u>Yes</u> / No Name: _____ Folder: _____ Uploaded to hard drive? _____														
<b>COMMENTS:</b> <u>Photo included in photo appendix</u>														

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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 105 of 135
	Environment	Revision: 1	
		Document #: BAF-PH1-830-P16-0008	


### DAILY DRILLING INSPECTION REPORT

		DAILY DRILL INSPECTION REPORT	
		Baffinland personnel: Date: April 19, 2019 Time: Hole ID: BHA-CPT19-04	
<b>HOLE INFORMATION:</b>			
Deposit #: 1	Collar location: 17	E 503952.84	
Location: Milne Inlet	(NAD 83)	N 7976701.52	
<b>DRILLING INFORMATION</b>			
Drill contractor: Conotec			
Drill personnel: J. Knox, J. Bacon, C. MacDonald.			
Drill #: 1			
<b>DRILLING PROGRESS:</b>			
<b>Day Shift</b>		<b>Night Shift</b>	
Start depth: 0		Start depth:	
End depth: 1.63		End depth:	
Total depth drilled: 1.63		Total depth drilled: N/A	
Casing installed: 0		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? None			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate None			
<b>WATER USE ASSESSMENT:</b>			
Sediment control measures in place:		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness: NO water used.		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:		Water samples collected by Golder (TT/Au). Samples analyzed for TSS, TDS, pH, Total metals (incl. arsenic), Total mercury	
Color of runoff?			
Conductivity readings?:			
Station # CPT19-04-A Reading 20702 uS/cm Station # CPT19-04-B Reading 20049 uS/cm Station # Reading Sample # CPT19-04-A Reading 0.06 NTU Sample # CPT19-04-B Reading 0.17 NTU			
Turbidity sample(s) taken?:			
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity)			
Is site safe for drilling?			
Stable platform	Yes / No	Fire Extinguisher	Yes / No
First Aid kit	Yes / No	Eye Wash	Yes / No
PPE	Yes / No	Spill Kits	Yes / No
Lined Berms	Yes / No		
Safety concerns/issues: None			
Environmental concerns? None			
Corrective action required?: Action plan (if required):			
Responsible party:			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling? Photo of water management measures?		Yes / No	
Name:		Folder:	
Uploaded to hard drive?			
<b>COMMENTS:</b>			
Photo included in photo appendix			



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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 106 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

## POST-DRILLING INSPECTION REPORT

	POST-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: April 19, 2019 Time: 9:00 Final hole ID: BHP-CRT-04	
<b>HOLE INFORMATION:</b>		
Deposit #: _____ Project: MARY RIVER Area: BAFFIN ISLAND NTS: 37G/5 Elevation: _____ Description of drill hole location: _____ Purpose of drill hole: geotechnical Classification	Collar location: 17 (NAD 83) Dip: _____ Azimuth: _____ EOH: _____	E 608952.84 N 7916701.72
<b>DRILLING INFORMATION:</b>		
Drill contractor: Coretec Drill personnel: J. Knox, I. Bacon, C. MacDonald Drill #: 1 End of drilling: 1:63 Casing: 0 Any rods/casing/tools lost in the drill hole? If yes, what was lost? None		
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? Yes / <input checked="" type="checkbox"/> No Next set-up collar location: E N		
<b>WATER USE ASSESSMENT:</b>		
Water source: Mary River Pump station #: _____ Total amount of hours water was pumped from pump station: No water used		
<b>SITE ASSESSMENT:</b>		
All materials and debris removed from site? <input checked="" type="checkbox"/> Yes / No Any environmental concerns? Yes <input checked="" type="checkbox"/> No If yes, please describe below:		
Any additional work required? Yes <input checked="" type="checkbox"/> No If yes, please describe below:		
Corrective action: _____ Responsible party: _____ Date to be completed by: _____		
<b>PHOTOGRAPHIC RECORD:</b>		
Photo of drill hole location following demobilization and clean up? <input checked="" type="checkbox"/> Yes / No Name: _____ Folder: _____ Uploaded to hard drive? _____		
<b>COMMENTS:</b>		
Photo included in photo appendix.		
<b>INSPECTION COMPLETED BY:</b>		
Baffinland signature: _____ Drill contractor signature: 		


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APPENDIX E.1.10

2019 Geotechnical Location –  
BH19-CPT19-05




	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### 3.5 DRILL INSPECTION FORMS *BH19-CPT19-05*


SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT

	<b>PRE-DRILLING INSPECTION REPORT</b> Baffinland personnel: Date: <i>April 19, 2014</i> Time: <i>12:00 PM</i> Proposed hole ID: <i>LPT19-05</i> Final hole ID: <i>LPT19-05</i>	
	<b>PROPOSED HOLE INFORMATION:</b> Deposit #: <i>1</i> Project: <i>Mine Port Expansion</i> Area: <i>Mine Inlet</i> NTS: <i>37G15</i> Elevation: <i>Sea-level</i> Description of drill hole location: <i>Freight Dock Expansion</i> Purpose of drill hole: <i>Geotechnical Soil Classification</i> Collar location: <i>17N E 503944.98</i> (NAD 83) <i>N-7777100.68</i> Dip: <i>N/A</i> Azimuth: <i>N/A</i> Target depth: <i>N/A</i>	
<b>DRILLING INFORMATION:</b> Has site been approved by drill foreman? <i>Yes</i> Drill contractor: Drill personnel: <i>Corey J. Knox, J. Buxton, L. MacDonald</i> Expected start of drilling: <i>April 19, 2014 - Afternoon</i> Is moving of drill hole required? <i>No</i> If yes, provide reason: New collar location: <i>E N</i>		
<b>WATER MANAGEMENT:</b> Water source: <i>No water used</i> Pump Station #: Sump location identified and constructed?: <i>Yes/No (Photo required)</i> Corner 1: <i>E N</i> Corner 2: <i>E N</i> Silt fence(s) constructed?: <i>Yes/No (Photo required)</i> Corner 1: <i>E N</i> Corner 2: <i>E N</i>		
<b>SITE ASSESSMENTS:</b> Are wildlife present?: (If yes, record in log) <i>No</i> Is site safe for drilling? <i>Yes</i> Stable platform: <i>Yes/No</i> Fire Extinguisher: <i>Yes/No</i> First Aid kit: <i>Yes/No</i> Eye Wash: <i>Yes/No</i> PPE: <i>Yes/No</i> Spill Kits: <i>Yes/No</i> Safety concerns/issues: <i>No</i> Environmental concerns? <i>No</i>		
<b>PHOTOGRAPHIC RECORD:</b> Photo of drill hole location prior to setup? <i>Yes/No</i> Name: <i>Folder:</i> Uploaded to hard drive?		
<b>COMMENTS:</b> <i>Photo included in photo appendix</i>		

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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 105 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### DAILY DRILLING INSPECTION REPORT



		DAILY DRILL INSPECTION REPORT	
		Baffinland personnel: Date: <u>April 19, 2019</u> Time: Hole ID: <u>BH19-CPT19-05</u>	
<b>HOLE INFORMATION:</b>			
Deposit #:	1	Collar location:	E 503 944.96
Location:		(NAD 83)	N 7477109.68
<b>DRILLING INFORMATION</b>			
Drill contractor: <u>ConeTec</u>			
Drill personnel: <u>S. Knox, I. Bacon, L. MacDonald</u>			
Drill #: <u>1</u>			
<b>DRILLING PROGRESS:</b>			
<b>Day Shift</b>		<b>Night Shift</b>	
Start depth: <u>0</u>		Start depth:	
End depth: <u>1.4</u>		End depth:	
Total depth drilled: <u>1.4</u>		Total depth drilled:	
Casing installed: <u>None</u>		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? <u>no steel lost</u>			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate <u>None</u>			
<b>WATER USE ASSESSMENT:</b>			
Sediment control measures in place:		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump: <u>No water used</u>		Water meter reading (end of day):	
Color of water in sump:		<u>Water samples collected by</u> <u>Goldier (TT/AU). Samples analyzed</u> <u>for TSS, TDS, pH, Total metals</u> <u>(incl. arsenic), Total mercury</u>	
Color of runoff:			
Conductivity readings?:			
Station # <u>CPT19-05-A</u> Reading <u>20179 uS/cm</u> Station # <u>CPT19-05-B</u> Reading <u>20502 uS/cm</u> Station # _____ Reading _____ Sample # <u>CPT19-05-A</u> Reading <u>0.18 NTU</u> Sample # <u>CPT19-05-B</u> Reading <u>0.09 NTU</u>			
Turbidity sample(s) taken?:			
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity) <u>No wildlife present</u>			
Is site safe for drilling?			
Stable platform	<u>Yes</u> /No	Fire Extinguisher	<u>Yes</u> /No
First Aid kit	<u>Yes</u> /No	Eye Wash	<u>Yes</u> /No
PPE	<u>Yes</u> /No	Spill Kits	<u>Yes</u> /No
Lined Berms	<u>Yes</u> /No		
Safety concerns/issues: <u>None</u>			
Environmental concerns? <u>None</u>			
Corrective action required?: Action plan (if required):			
Responsible party:			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling?		Photo of water management measures? <u>(Yes)/No</u>	
Name:		Folder:	
Uploaded to hard drive?			
<b>COMMENTS:</b>			

Photo included in photo appendix.


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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 106 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

## POST-DRILLING INSPECTION REPORT

	POST-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: April 19, 2019 Time: 12:00 Final hole ID: CPT 19-05	
<b>HOLE INFORMATION:</b>		
Deposit #: _____ Project: MARY RIVER Area: BAFFIN ISLAND NTS: 37G/5 Elevation: _____ Description of drill hole location: _____ Purpose of drill hole: <i>geotechnical Classification</i>	Collar location: 17N E 508944.96 (NAD 83) N 777109.68 Dip: _____ Azimuth: _____ EOH: _____	
<b>DRILLING INFORMATION:</b>		
Drill contractor: <i>Cometec</i> Drill personnel: <i>J. Knox, J. Bacon, C. MacDonald</i> Drill #: 1 End of drilling: 1.4 Casing: 0 Any rods/casing/tools lost in the drill hole? If yes, what was lost? <i>None</i>		
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? Yes / <i>No</i> Next set-up collar location: E N		
<b>WATER USE ASSESSMENT:</b>		
Water source: Mary River Pump station #: _____ Total amount of hours water was pumped from pump station: <i>NO water used.</i>		
<b>SITE ASSESSMENT:</b>		
All materials and debris removed from site? <i>Yes</i> / No Any environmental concerns? Yes / <i>No</i> If yes, please describe below:		
Any additional work required? Yes / <i>No</i> If yes, please describe below:		
Corrective action: Responsible party: Date to be completed by:		
<b>PHOTOGRAPHIC RECORD:</b>		
Photo of drill hole location following demobilization and clean up? <i>Yes</i> / No Name: _____ Folder: _____ Uploaded to hard drive?		
<b>COMMENTS:</b>		
<i>Photo included in photo appendix</i>		
<b>INSPECTION COMPLETED BY:</b>		
Baffinland signature: _____		Drill contractor signature: <i>[Signature]</i>


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APPENDIX E.1.11

2019 Geotechnical Location –  
BH19-CPT19-06




	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### 3.5 DRILL INSPECTION FORMS BH19-CPT19-06

SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT

	PRE-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: <i>April 21, 2019</i> Time: <i>9:00 AM</i> Proposed hole ID: <i>CH19-06</i> Final hole ID: <i>CH19-06</i>	
PROPOSED HOLE INFORMATION:		
Deposit #: <i>1</i> Project: <i>Mike Port Expansion</i> Area: <i>Mike Inlet</i> NTS: <i>37615</i> Elevation: <i>Sea Level</i> Description of drill hole location: <i>Freight Dock Expansion</i> Purpose of drill hole: <i>Geotechnical soil classification</i>		Collar location: <i>17</i> E <i>503994.48</i> (NAD 83) N <i>7977101.84</i> Dip: <i>N/A</i> Azimuth: <i>N/A</i> Target depth: <i>N/A</i>
DRILLING INFORMATION:		
Has site been approved by drill foreman? <i>Yes</i> Drill contractor: <i>Comsec</i> Drill personnel: <i>J. Knox, E. Bacon, C. MacDonald</i> Expected start of drilling: <i>Morning April 21</i> Is moving of drill hole required? <i>No</i> If yes, provide reason: New collar location: E N		
WATER MANAGEMENT:		
Water source: <i>No water used</i> Pump Station #: Sump location identified and constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N		
SITE ASSESSMENTS:		
Are wildlife present?: (If yes, record in log) <i>No</i> Is site safe for drilling? Stable platform: <i>Yes</i> / No First Aid kit: <i>Yes</i> / No PPE: <i>Yes</i> / No Fire Extinguisher: <i>Yes</i> / No Eye Wash: <i>Yes</i> / No Spill Kits: <i>Yes</i> / No Safety concerns/issues: <i>No</i> Environmental concerns: <i>No</i>		
PHOTOGRAPHIC RECORD:		
Photo of drill hole location prior to setup? <i>Yes</i> / No Name: Folder: Uploaded to hard drive?		
COMMENTS: <i>Photo included in photo appendix</i>		

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## DAILY DRILLING INSPECTION REPORT


		DAILY DRILL INSPECTION REPORT	
		Baffinland personnel: Date: April 21, 2019 Time: 1000 AM Hole ID: LPT14-06	
HOLE INFORMATION:			
Deposit #:	1	Collar location:	E 503944.48
Location:		(NAD 83)	N 9977102.84
DRILLING INFORMATION			
Drill contractor: CamSec			
Drill personnel: J. Knox, E. Bacon, L. MacDonald			
Drill #: 1			
DRILLING PROGRESS:			
Day Shift		Night Shift	
Start depth: 0		Start depth:	
End depth: 2m		End depth:	
Total depth drilled: 2m		Total depth drilled: /	
Casing installed: None		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? No steel lost			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate			
WATER USE ASSESSMENT:			
Sediment control measures in place:		DAILY WATER USE MONITORING:	
Assessment of effectiveness: No water used		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:		Water samples collected by	
Color of runoff?		Golder (TT/Au) samples	
Conductivity readings?:		analyzed for TSS, TDS, pH,	
Station #LPT-06-A Reading 17252 µS/cm		Total metals (incl. arsenic),	
Station #LPT-06-B Reading 20027 µS/cm		Total mercury	
Station # Reading			
Sample #CPT-06-A Reading -0.05 NTU			
Sample #CPT-06-B Reading -0.08 NTU			
Turbidity sample(s) taken?:			
SITE ASSESSMENT:			
Are wildlife present?: (check log for previous wildlife activity) No			
Is site safe for drilling?			
Stable platform	Yes/No	Fire Extinguisher	Yes/No
First Aid kit	Yes/No	Eye Wash	Yes/No
PPE	Yes/No	Spill Kits	Yes/No
Lined Berms	Yes/No		
Safety concerns/issues: None			
Environmental concerns? None			
Corrective action required?: Action plan (if required):			
Responsible party:			
Date to be completed: Photograph (only required to document problems and corrective actions)			
PHOTOGRAPHIC RECORD:			
Photo of drill hole during drilling? Photo of water management measures?		Yes/No	
Name:		Folder:	
Uploaded to hard drive?			
COMMENTS:			


Photo included in photo appendix

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# POST-DRILLING INSPECTION REPORT

		POST-DRILLING INSPECTION REPORT	
		Baffinland personnel: Date: <i>April 21, 2019</i> Time: <i>12:00 AM</i> Final hole ID: <i>BAF-PH1-830-P16-0008</i>	
<b>HOLE INFORMATION:</b>			
Deposit #: Project: MARY RIVER Area: BAFFIN ISLAND NTS: 37G/5 Elevation: <i>Sea level</i> Description of drill hole location: <i>CPT sounding</i> Purpose of drill hole: <i>Geotechnical Soil Classification</i>	Collar location: (NAD 83) Dip: <i>N/A</i> Azimuth: <i>N/A</i> EOH: <i>2 m</i>	E <i>503944.98</i> N <i>7477109.84</i>	
<b>DRILLING INFORMATION:</b>			
Drill contractor: <i>Coretek</i> Drill personnel: <i>J. Knox, I. Bacon, C. MacDonald</i> Drill #: <i>1</i> End of drilling: <i>2m</i> Casing: <i>None</i> Any rods/casing/tools lost in the drill hole? If yes, what was lost? <i>No steel lost</i>			
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? <i>(Yes)</i> No			
Next set-up collar location: E N			
<b>WATER USE ASSESSMENT:</b>			
Water source: Mary River <i>No water used</i> Pump station #: Total amount of hours water was pumped from pump station:			
<b>SITE ASSESSMENT:</b>			
All materials and debris removed from site? <i>(Yes)</i> No Any environmental concerns? Yes <i>(No)</i> If yes, please describe below: Any additional work required? Yes <i>(No)</i> If yes, please describe below: Corrective action: Responsible party: Date to be completed by:			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole location following demobilization and clean up? <i>(Yes)</i> No Name: Folder: Uploaded to hard drive?			
<b>COMMENTS:</b>			
<i>Photo included in photo appendix</i>			
<b>INSPECTION COMPLETED BY:</b>			
Baffinland signature:		Drill contractor signature: <i>[Signature]</i>	


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APPENDIX E.1.12

2019 Geotechnical Location –  
BH19-CPT19-07




	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	
		Document #: BAF-PH1-830-P16-0008	

### 3.5 DRILL INSPECTION FORMS BH19-CPT19-07


SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT

	PRE-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: <u>April 24, 2019</u> Time: <u>13:00</u> Proposed hole ID: <u>CPT19-07</u> Final hole ID: <u>CPT19-07</u>	
PROPOSED HOLE INFORMATION:		
Deposit #: _____ Project: <u>Milne Port Expansion</u> Area: <u>Milne Inlet + Freight Dock</u> NTS: _____ Elevation: _____ Description of drill hole location: <u>Milne Inlet</u> Purpose of drill hole: <u>Geotechnical Soil Classification</u>	Collar location: 17 E <u>505984.94</u> (NAD 83) N <u>1977104.88</u> Dip: _____ Azimuth: _____ Target depth: _____	
DRILLING INFORMATION:		
Has site been approved by drill foreman? <u>yes</u> Drill contractor: Drill personnel: <u>Drill #: Contee, J Knox, I Bacon, C MacDonald</u> Expected start of drilling: <u>April 21, 2019</u> Is moving of drill hole required? <u>No</u> If yes, provide reason: _____ New collar location: E — N —		
WATER MANAGEMENT: <u>No water used</u>		
Water source: _____ Pump Station #: _____ Sump location identified and constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N		
SITE ASSESSMENTS:		
Are wildlife present?: (If yes, record in log) Is site safe for drilling? Stable platform <u>Yes</u> /No First Aid kit <u>Yes</u> /No PPE <u>Yes</u> /No Fire Extinguisher <u>Yes</u> /No Eye Wash <u>Yes</u> /No Spill Kits <u>Yes</u> /No Safety concerns/issues: Environmental concerns?		
PHOTOGRAPHIC RECORD:		
Photo of drill hole location prior to setup? <u>Yes</u> /No Name: _____ Folder: _____ Uploaded to hard drive?		
COMMENTS: <u>Photo included in photo appendix</u>		

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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 105 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### DAILY DRILLING INSPECTION REPORT


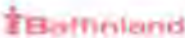
		<b>DAILY DRILL INSPECTION REPORT</b> Baffinland personnel: Date: April 21, 2019 Time: 13:00 Hole ID: CPT-19-07	
<b>HOLE INFORMATION:</b>			
Deposit #: 1	Collar location: 17	E 503984.97	
Location: Milne Inlet	(NAD 83)	N 871109.88	
<b>DRILLING INFORMATION</b>			
Drill contractor: Conetec			
Drill personnel: J. Knox, I. Bacon, C. MacDonald			
Drill #: 1			
<b>DRILLING PROGRESS:</b>			
<b>Day Shift</b>		<b>Night Shift</b>	
Start depth: 0		Start depth:	
End depth: 2.0		End depth:	
Total depth drilled: 2.0		Total depth drilled: 4A	
Casing installed: 0		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? None			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate None			
<b>WATER USE ASSESSMENT: No water used.</b>			
<b>Sediment control measures in place:</b>		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:		Water sample collected by Golder (TTI Au). Samples analyzed for TSS, TDS, pH, Total metals (incl. arsenic), Total mercury	
Color of runoff?			
Conductivity readings?:			
Station #CPT-06-A Reading 17252 µS/cm Station #CPT-07-B Reading 1999 µS/cm Station # Reading Sample #CPT-06-A Reading -0.05 NTU Sample #CPT-07-B Reading 0.08 NTU			
Turbidity sample(s) taken?:			
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity)			
Is site safe for drilling?			
Stable platform	Yes / No	Fire Extinguisher	Yes / No
First Aid kit	Yes / No	Eye Wash	Yes / No
PPE	Yes / No	Spill Kits	Yes / No
Lined Berms	Yes / No		
Safety concerns/issues: None			
Environmental concerns? None			
Corrective action required?: Action plan (if required):			
Responsible party:			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling? Photo of water management measures?		Yes / No	
Name:		Folder:	
Uploaded to hard drive?			
<b>COMMENTS:</b>			

Photo included in photo appendix



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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 106 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

## POST-DRILLING INSPECTION REPORT

	POST-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: April 21, 2019 Time: 13:00 Final hole ID: CPT19-07	
<b>HOLE INFORMATION:</b>		
Deposit #: _____ Project: MARY RIVER Area: BAFFIN ISLAND NTS: 37G/5 Elevation: _____ Description of drill hole location: _____ Purpose of drill hole: <u>Geotechnical Classification</u>	Collar location: 17 (NAD 83) Dip: _____ Azimuth: _____ EOH: 20	E 503984.97 N 7977104.98
<b>DRILLING INFORMATION:</b>		
Drill contractor: <u>Coretec</u> Drill personnel: <u>J. Knox, I. Bacon, C. MacDonald</u> Drill #: 1 End of drilling: 2.0 Casing: 0 Any rods/casing/tools lost in the drill hole? If yes, what was lost? <u>None</u>		
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? Yes / <u>NO</u> Next set-up collar location: E — N —		
<b>WATER USE ASSESSMENT:</b> <u>No water used.</u>		
Water source: Mary River Pump station #: _____ Total amount of hours water was pumped from pump station: _____		
<b>SITE ASSESSMENT:</b>		
All materials and debris removed from site? <u>Yes</u> / No Any environmental concerns? Yes <u>NO</u> If yes, please describe below: _____		
Any additional work required? Yes <u>NO</u> If yes, please describe below: _____		
Corrective action: _____ Responsible party: _____ Date to be completed by: _____		
<b>PHOTOGRAPHIC RECORD:</b>		
Photo of drill hole location following demobilization and clean up? <u>Yes</u> / No Name: _____ Folder: _____ Uploaded to hard drive? _____		
<b>COMMENTS:</b>		
<u>Photo included in photo appendix.</u>		
<b>INSPECTION COMPLETED BY:</b>		
<div style="display: flex; justify-content: space-between;"> <div>Baffinland signature: _____</div> <div>Drill contractor signature: </div> </div>		


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APPENDIX E.1.13

2019 Geotechnical Location –  
BH19-CPT19-08




	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	
		Document #: BAF-PH1-830-P16-0008	

### 3.5 DRILL INSPECTION FORMS *BH19-CPT19-08*


SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT

	PRE-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: <i>Apr. 12, 2019</i> Time: <i>8:00 AM</i> Proposed hole ID: <i>LPT19-08</i> Final hole ID: <i>LPT19-08</i>	
PROPOSED HOLE INFORMATION:		
Deposit #: <i>1</i> Project: <i>Mine Port Expansion</i> Area: <i>Mine Inlet</i> NTS: <i>37 G/S</i> Elevation: <i>Sea-Level</i> Description of drill hole location: <i>Freight Dock Expansion</i> Purpose of drill hole: <i>Geotechnical Soil Classification</i>	Collar location: E <i>777777.57</i> <i>503495.25</i> (NAD 83) N <i>503495.25</i> <i>747119.57</i> Dip: <i>N/A</i> Azimuth: <i>N/A</i> Target depth: <i>N/A</i>	
DRILLING INFORMATION:		
Has site been approved by drill foreman? <i>Yes</i> Drill contractor: Drill personnel: Drill #: <i>Leahy, J. Know, E. Baxon, L. MacDonald, #1</i> Expected start of drilling: <i>April 22 - planning</i> Is moving of drill hole required? <i>No</i> If yes, provide reason: New collar location: E — N —		
WATER MANAGEMENT:		
Water source: <i>No water used</i> Pump Station #: <i>No water used</i> Sump location identified and constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N		
SITE ASSESSMENTS:		
Are wildlife present?: (If yes, record in log) <i>No</i> Is site safe for drilling? Stable platform <i>Yes/No</i> Fire Extinguisher <i>Yes/No</i> First Aid kit <i>Yes/No</i> Eye Wash <i>Yes/No</i> PPE <i>Yes/No</i> Spill Kits <i>Yes/No</i> Safety concerns/issues: <i>None</i> Environmental concerns? <i>None</i>		
PHOTOGRAPHIC RECORD:		
Photo of drill hole location prior to setup? <i>Yes/No</i> Name: Folder: Uploaded to hard drive?		
COMMENTS: <i>Photo included in photo appendix</i>		

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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 105 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### DAILY DRILLING INSPECTION REPORT


		DAILY DRILL INSPECTION REPORT	
Baffinland personnel:			
Date: April 22, 2014			
Time: 10:00			
Hole ID: <del>CPT14-08</del> CPT14-08			
<b>HOLE INFORMATION:</b>			
Deposit #: 1	Collar location: E 717709.57		
Location: Mine Inlet	(NAD 83) N 503995.25		
<b>DRILLING INFORMATION</b>			
Drill contractor: ConSec			
Drill personnel: J. Knox, F. Bacon, L. MacDonald			
Drill #: 1			
<b>DRILLING PROGRESS:</b>			
<b>Day Shift</b>		<b>Night Shift</b>	
Start depth: 0		Start depth:	
End depth: ~ 2 m		End depth:	
Total depth drilled: ~ 2 m		Total depth drilled: /	
Casing installed: none		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost?			
No steel lost			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate			
<b>WATER USE ASSESSMENT:</b>			
Sediment control measures in place:		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump: No water used			
Color of water in sump:		Water meter reading (end of day):	
Color of runoff:		Water sample collected by	
Conductivity readings?:		Golder (IT/AV). Samples	
Station # <del>CPT14-A</del>	Reading	analyzed for TSS, TDS,	
Station # <del>CPT14-B</del>	Reading	pH, Total metals (incl,	
Station # <del>CPT14-08-A</del>	Reading	arsenic), total mercury	
Station # <del>CPT14-08-B</del>	Reading		
Turbidity sample(s) taken?:	Sample # <del>CPT14-A</del> Reading	CPT14-08-A 0.09 NTU	
	Sample # <del>CPT14-B</del> Reading	CPT14-08-B 0.0 NTU	
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity)			
No wildlife			
Is site safe for drilling?			
Stable platform	Yes/No	Fire Extinguisher	Yes/No
First Aid kit	Yes/No	Eye Wash	Yes/No
PPE	Yes/No	Spill Kits	Yes/No
Lined Berms	Yes/No		
Safety concerns/issues: None			
Environmental concerns? None			
Corrective action required?: Action plan (if required):			
Responsible party:			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling?		Photo of water management measures?	
Name:		Folder:	
Uploaded to hard drive?			
<b>COMMENTS:</b>			

Photo included in photo appendix



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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 106 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### POST-DRILLING INSPECTION REPORT

	POST-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: <i>April 22nd, 2014</i> Time: <i>11:00 AM</i> Final hole ID: <i>CAF14-05 CPT19-09</i>	
<b>HOLE INFORMATION:</b>		
Deposit #: Project: MARY RIVER Area: BAFFIN ISLAND NTS: 37G/5 Elevation: Description of drill hole location: Purpose of drill hole:	Collar location: E <i>503495.25</i> (NAD 83) N <i>7977119.57</i> Dip: <i>W1A</i> Azimuth: <i>NA</i> EOH: <i>~2m</i>	
<b>DRILLING INFORMATION:</b>		
Drill contractor: <i>Contee</i> Drill personnel: <i>J. Kuor, E. Bacon, L. MacDonald</i> Drill #: <i>1</i> End of drilling: <i>2m</i> Casing: <i>None</i> Any rods/casing/tools lost in the drill hole? If yes, what was lost? <i>No steel lost</i>		
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? <i>(Yes)</i> No Next set-up collar location: E N		
<b>WATER USE ASSESSMENT:</b>		
Water source: Mary River Pump station #: <i>No water used</i> Total amount of hours water was pumped from pump station:		
<b>SITE ASSESSMENT:</b>		
All materials and debris removed from site? <i>(Yes)</i> No Any environmental concerns? Yes <i>(No)</i> If yes, please describe below:		
Any additional work required? Yes <i>(No)</i> If yes, please describe below:		
Corrective action: Responsible party: Date to be completed by:		
<b>PHOTOGRAPHIC RECORD:</b>		
Photo of drill hole location following demobilization and clean up? <i>(Yes)</i> No Name: Folder:		
Uploaded to hard drive?		
<b>COMMENTS:</b>		
<i>photo included in photo appendix</i>		
<b>INSPECTION COMPLETED BY:</b>		
Baffinland signature: Drill contractor signature: 		


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APPENDIX E.1.14

2019 Geotechnical Location –  
BH19-CPT19-09




	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### 3.5 DRILL INSPECTION FORMS *BH19-CPT19-09*


SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT

	PRE-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: <i>April 22nd, 2019</i> Time: <i>11:00 AM</i> Proposed hole ID: <i>CPT19-09</i> Final hole ID: <i>CPT19-09</i>	
PROPOSED HOLE INFORMATION:		
Deposit #: <i>1</i> Project: <i>Milne Port Expansion</i> Area: <i>Milne Inlet</i> NTS: <i>37615</i> Elevation: <i>Sealevel</i> Description of drill hole location: <i>Milne Inlet</i> Purpose of drill hole: <i>Geotechnical Sed Classification</i>	Collar location: (NAD 83) Dip: <i>N/A</i> Azimuth: <i>N/A</i> Target depth: <i>N/A</i>	E <i>504005.04</i> N <i>7977110.22</i>
DRILLING INFORMATION:		
Has site been approved by drill foreman? <i>Yes</i> Drill contractor: Drill personnel: Drill #: <i>Louise, J. Knox, E. Bacon, C. MacDonald</i> Expected start of drilling: <i>April 22nd - Monday</i> Is moving of drill hole required? If yes, provide reason: New collar location: E N		
WATER MANAGEMENT:		
Water source: <i>No water used</i> Pump Station #: Sump location identified and constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N		
SITE ASSESSMENTS:		
Are wildlife present?: (If yes, record in log) <i>No</i> Is site safe for drilling? <i>Yes</i> Stable platform: <i>Yes</i> /No First Aid kit: <i>Yes</i> /No PPE: <i>Yes</i> /No Safety concerns/issues: <i>none</i> Environmental concerns: <i>none</i> Fire Extinguisher: <i>Yes</i> /No Eye Wash: <i>Yes</i> /No Spill Kits: <i>Yes</i> /No		
PHOTOGRAPHIC RECORD:		
Photo of drill hole location prior to setup? <i>Yes</i> /No Name: Folder: Uploaded to hard drive?		
COMMENTS: <i>Photo included in photo appendix</i>		

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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 105 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### DAILY DRILLING INSPECTION REPORT


		DAILY DRILL INSPECTION REPORT	
		Baffinland personnel: Date: <i>April 22nd, 2019</i> Time: <i>12:00 PM</i> Hole ID: <i>CPT9-09</i>	
<b>HOLE INFORMATION:</b>			
Deposit #:	1	Collar location:	E <i>504005.04</i>
Location:	<i>mine Inlet</i>	(NAD 83)	N <i>797716.22</i>
<b>DRILLING INFORMATION</b>			
Drill contractor: <i>ComTec</i>			
Drill personnel: <i>J. Knox, I. Bacon, C. MacDonald</i>			
Drill #: <i>1</i>			
<b>DRILLING PROGRESS:</b>			
Day Shift		Night Shift	
Start depth: <i>0</i>		Start depth:	
End depth: <i>2m</i>		End depth: <i>/</i>	
Total depth drilled: <i>2m</i>		Total depth drilled:	
Casing installed: <i>None</i>		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? <i>No steel lost</i>			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate <i>None</i>			
<b>WATER USE ASSESSMENT:</b>			
Sediment control measures in place:		DAILY WATER USE MONITORING:	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump: <i>No water used.</i>			
Color of water in sump:		Water meter reading (end of day):	
Color of runoff?			
Conductivity readings?:	Station #	<i>Pre and post water samples collected from CPT9-08 due to close proximity (~10m apart)</i>	
	Station #		
	Station #		
	Station #		
Turbidity sample(s) taken?:	Sample #	Reading	
	Sample #	Reading	
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity) <i>None</i>			
Is site safe for drilling?			
Stable platform	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	Fire Extinguisher	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
First Aid kit	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	Eye Wash	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
PPE	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	Spill Kits	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Lined Berms	Yes / <input checked="" type="checkbox"/> No		
Safety concerns/issues: <i>None</i>			
Environmental concerns? <i>None</i>			
Corrective action required?: Action plan (if required):			
Responsible party:			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling? Photo of water management measures?		(Yes/No)	
Name:	Folder:		
Uploaded to hard drive?			
<b>COMMENTS:</b>			

Photo included in photo appendix

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APPENDIX E.1.15

2019 Geotechnical Location –  
BH19-CPT19-10




	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### 3.5 DRILL INSPECTION FORMS *BH19-CPT19-10*


SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT

	PRE-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: <i>Apr 22, 2019</i> Time: <i>14:00</i> Proposed hole ID: <i>CPT19-10</i> Final hole ID: <i>CPT19-10</i>	
PROPOSED HOLE INFORMATION:		
Deposit #: Project: <i>Milne Port Expansion</i> Area: <i>Milne Port</i> NTS: Elevation: Description of drill hole location: <i>CPT</i> Purpose of drill hole: <i>Geotechnical soil classification</i>		Collar location: <i>17</i> E <i>503445.15</i> (NAD 83) N <i>7971100.04</i> Dip: Azimuth: Target depth:
DRILLING INFORMATION:		
Has site been approved by drill foreman? <i>Yes</i> Drill contractor: Drill personnel: Drill #: <i>Contec I. Beran, J. Knox, C. Macdonald</i> Expected start of drilling: <i>Apr 22, 2019</i> Is moving of drill hole required? <i>No</i> If yes, provide reason: New collar location: E N		
WATER MANAGEMENT:		
Water source: Pump Station #: <i>No water source</i> Sump location identified and constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N		
SITE ASSESSMENTS:		
Are wildlife present?: (If yes, record in log) Is site safe for drilling? Stable platform: <i>Yes</i> / No First Aid kit: <i>Yes</i> / No PPE: <i>Yes</i> / No Fire Extinguisher: <i>Yes</i> / No Eye Wash: <i>Yes</i> / No Spill Kits: <i>Yes</i> / No Safety concerns/issues: <i>None</i> Environmental concerns: <i>None</i>		
PHOTOGRAPHIC RECORD:		
Photo of drill hole location prior to setup? <i>No</i> Name: Folder: Uploaded to hard drive?		
COMMENTS: <i>Photo included in photo appendix</i> <i>DD</i> <i>Pre photo not taken</i>		

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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 105 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### DAILY DRILLING INSPECTION REPORT


		DAILY DRILL INSPECTION REPORT	
		Baffinland personnel: Date: Apr 22, 2017 Time: 19:06 Hole ID: CPT19-10	
<b>HOLE INFORMATION:</b>			
Deposit #:	1	Collar location:	E 503995.15 N 7977100.04
Location:		(NAD 83)	
<b>DRILLING INFORMATION</b>			
Drill contractor: ConTel			
Drill personnel: I. Bacon, J. Knox, C. Macdonald			
Drill #: 1			
<b>DRILLING PROGRESS:</b>			
<b>Day Shift</b>		<b>Night Shift</b>	
Start depth: 0		Start depth: N/A	
End depth: 1.5		End depth: N/A	
Total depth drilled: 1.5		Total depth drilled:	
Casing installed: 0		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? N/A			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate			
<b>WATER USE ASSESSMENT:</b>			
Sediment control measures in place:		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump: N/A		Water meter reading (end of day):	
Color of water in sump:		Water sample collected by Golder (JT/AU). Samples analyzed for TSS, TDS, pH, total metals (incl arsenic), total mercury.	
Color of runoff?			
Conductivity readings?:	Station #CPT10-A Reading 34046 µS/cm Station #CPT10-B Reading 91220 µS/cm Station # Reading Sample #CPT10-A Reading 0.09 NTU Sample #CPT10-B Reading 0.08 NTU		
Turbidity sample(s) taken?:			
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity)			
Is site safe for drilling?			
Stable platform	Yes / No	Fire Extinguisher	Yes / No
First Aid kit	Yes / No	Eye Wash	Yes / No
PPE	Yes / No	Spill Kits	Yes / No
Lined Berms	Yes / No		
Safety concerns/issues: None			
Environmental concerns? None			
Corrective action required?: Action plan (if required):			
Responsible party:			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling? Photo of water management measures?		Yes / No	
Name:	Folder:		
Uploaded to hard drive?			
<b>COMMENTS:</b>			

Photo included in photo appendix.


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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 106 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

## POST-DRILLING INSPECTION REPORT

	POST-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: Time: Final hole ID:	
<b>HOLE INFORMATION:</b>		
Deposit #: Project: MARY RIVER Area: BAFFIN ISLAND NTS: 37G/5 Elevation: Description of drill hole location: <i>CPT</i> Purpose of drill hole: <i>Geotechnical Soil Classification</i>	Collar location: <i>47</i> E <i>503995.15</i> (NAD 83) N <i>7977100.04</i> Dip: Azimuth: EOH:	
<b>DRILLING INFORMATION:</b>		
Drill contractor: <i>Conitec</i> Drill personnel: <i>I. Bacon, J. Knox, C. Macdonald</i> Drill #: <i>1</i> End of drilling: <i>16:50</i> Casing: <i>0</i> Any rods/casing/tools lost in the drill hole? If yes, what was lost?  Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? Yes / No Next set-up collar location: <i>E</i> <i>N</i>		
<b>WATER USE ASSESSMENT:</b>		
Water source: <i>Mary River</i> <i>the water source</i> Pump station #: <i>1</i> Total amount of hours water was pumped from pump station:		
<b>SITE ASSESSMENT:</b>		
All materials and debris removed from site? Yes / No Any environmental concerns? Yes <i>NO</i> If yes, please describe below:  Any additional work required? Yes <i>NO</i> If yes, please describe below:  Corrective action: Responsible party: Date to be completed by:		
<b>PHOTOGRAPHIC RECORD:</b>		
Photo of drill hole location following demobilization and clean up? <i>Yes</i> /No Name: Folder: Uploaded to hard drive?		
<b>COMMENTS:</b>		
<i>Photo included in photo appendix</i>		
<b>INSPECTION COMPLETED BY:</b>		
Baffinland signature:		Drill contractor signature:


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APPENDIX E.1.16

2019 Geotechnical Location –  
BH19-CPT19-11




	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### 3.5 DRILL INSPECTION FORMS *BH19-CPT19-11*


SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT


	<b>PRE-DRILLING INSPECTION REPORT</b>	
	Baffinland personnel: Date: <i>April 23, 2019</i> Time: <i>4:00</i> Proposed hole ID: <i>CPT19-11</i> Final hole ID: <i>CPT19-11</i>	
<b>PROPOSED HOLE INFORMATION:</b>		
Deposit #: <i>1</i> Project: <i>Freight Dock Expansion</i> Area: <i>Milne Inlet</i> NTS: <i>31G15</i> Elevation: <i>Sea Level</i> Description of drill hole location: <i>Milne Inlet</i> Purpose of drill hole: <i>Geotechnical Soil Classification</i>		Collar location: <i>17</i> (NAD 83) Dip: <i>N/A</i> Azimuth: <i>N/A</i> Target depth: <i>N/A</i>
<b>DRILLING INFORMATION:</b>		
Has site been approved by drill foreman? <i>Yes</i> Drill contractor: Drill personnel: <i>Conotec. J. Knox, I. Bacon, C. MacDonald.</i> Expected start of drilling: <i>April 23, 2019</i> Is moving of drill hole required? <i>NO</i> If yes, provide reason: New collar location: <i>E —</i> <i>N —</i>		
<b>WATER MANAGEMENT:</b>		
<i>No water used.</i>		
Water source: Pump Station #: Sump location identified and constructed?: Yes/No (Photo required) Corner 1: <i>E</i> <i>N</i> Corner 2: <i>E</i> <i>N</i> Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: <i>E</i> <i>N</i> Corner 2: <i>E</i> <i>N</i>		
<b>SITE ASSESSMENTS:</b>		
Are wildlife present?: (If yes, record in log) Is site safe for drilling? Stable platform <i>(Yes)/No</i> Fire Extinguisher <i>(Yes)/No</i> First Aid kit <i>(Yes)/No</i> Eye Wash <i>(Yes)/No</i> PPE <i>(Yes)/No</i> Spill Kits <i>(Yes)/No</i> Safety concerns/issues: <i>None</i> Environmental concerns? <i>None</i>		
<b>PHOTOGRAPHIC RECORD:</b>		
Photo of drill hole location prior to setup? <i>(Yes)/No</i> Name:                      Folder: Uploaded to hard drive?		
<b>COMMENTS:</b> <i>photo included in photo appendix</i>		

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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 105 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008


### DAILY DRILLING INSPECTION REPORT

		DAILY DRILL INSPECTION REPORT	
		Baffinland personnel: Date: <u>April 23, 2019</u> Time: <u>9:00</u> Hole ID: <u>CPT 19-11</u>	
<b>HOLE INFORMATION:</b>			
Deposit #: <u>1</u>		Collar location: <u>17</u>	E <u>503954.78</u>
Location: <u>Misne Inlet</u>		(NAD 83)	N <u>7977110.00</u>
<b>DRILLING INFORMATION</b>			
Drill contractor: <u>Conotec</u>			
Drill personnel: <u>J. Knox, I. Bacon, C. MacDonald</u>			
Drill #: <u>1</u>			
<b>DRILLING PROGRESS:</b>			
Day Shift		Night Shift	
Start depth: <u>0</u>		Start depth:	
End depth: <u>0.6</u>		End depth:	
Total depth drilled: <u>0.6</u>		Total depth drilled:	
Casing installed: <u>0</u>		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? <u>None</u>			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate <u>None</u>			
<b>WATER USE ASSESSMENT:</b> <u>NO water used.</u>			
Sediment control measures in place:		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:		<u>Water sample collected by Golder (TT/AU). Samples analyzed for TSS, TDS, pH, total metals (incl. arsenic), total mercury</u>	
Color of runoff?			
Conductivity readings?:			
Station # <u>CPT11-A</u>	Reading <u>44297 uS/cm</u>		
Station # <u>CPT11-B</u>	Reading <u>89174 uS/cm</u>		
Turbidity sample(s) taken?:			
Sample # <u>CPT11-A</u>	Reading <u>0.02 NTU</u>		
Sample # <u>CPT11-B</u>	Reading <u>0.41 NTU</u>		
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity)			
Is site safe for drilling?			
Stable platform	<input checked="" type="radio"/> Yes / <input type="radio"/> No	Fire Extinguisher	<input checked="" type="radio"/> Yes / <input type="radio"/> No
First Aid kit	<input checked="" type="radio"/> Yes / <input type="radio"/> No	Eye Wash	<input checked="" type="radio"/> Yes / <input type="radio"/> No
PPE	<input checked="" type="radio"/> Yes / <input type="radio"/> No	Spill Kits	<input checked="" type="radio"/> Yes / <input type="radio"/> No
Lined Berms	Yes / <input checked="" type="radio"/> No		
Safety concerns/issues: <u>None</u>			
Environmental concerns? <u>None</u>			
Corrective action required?: Action plan (if required):			
Responsible party:			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling? Photo of water management measures?		<input checked="" type="radio"/> Yes / <input type="radio"/> No	
Name:		Folder:	
Uploaded to hard drive?			
<b>COMMENTS:</b>			
<u>Photo included in photo appendix</u>			



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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 106 of 135
	Environment	Revision: 1	
		Document #: BAF-PH1-830-P16-0008	

### POST-DRILLING INSPECTION REPORT

	POST-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: April 23, 2019 Time: 9:00 Final hole ID: CPT19-11	
<b>HOLE INFORMATION:</b>		
Deposit #: _____ Project: MARY RIVER Area: BAFFIN ISLAND NTS: 37G/5 Elevation: Sea Level Description of drill hole location: Mine Inlet Purpose of drill hole: <u>Geotechnical Soil Classification</u>	Collar location: 17 (NAD 83) Dip: N/A Azimuth: N/A EOH: N/A	E 503954.78 N 797110.00
<b>DRILLING INFORMATION:</b>		
Drill contractor: Coretec Drill personnel: J. Knox, I. Bacon, C. MacDonald Drill #: 1 End of drilling: 0.6 Casing: 0 Any rods/casing/tools lost in the drill hole? If yes, what was lost? <u>None</u>		
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? Yes / No Next set-up collar location: E — N —		
<b>WATER USE ASSESSMENT:</b> <u>NO water used.</u>		
Water source: Mary River Pump station #: _____ Total amount of hours water was pumped from pump station: _____		
<b>SITE ASSESSMENT:</b>		
All materials and debris removed from site? <u>Yes</u> / No Any environmental concerns? Yes / <u>No</u> If yes, please describe below:		
Any additional work required? Yes / <u>No</u> If yes, please describe below:		
Corrective action: Responsible party: Date to be completed by:		
<b>PHOTOGRAPHIC RECORD:</b>		
Photo of drill hole location following demobilization and clean up? <u>Yes</u> / No Name: _____ Folder: _____ Uploaded to hard drive?		
<b>COMMENTS:</b>		
<u>Photo included in photo appendix</u>		
<b>INSPECTION COMPLETED BY:</b>		
Baffinland signature: _____ Drill contractor signature: 		


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APPENDIX E.1.17

2019 Geotechnical Location –  
BH19-CPT19-12




	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	
		Document #: BAF-PH1-830-P16-0008	

### 3.5 DRILL INSPECTION FORMS

BH19-CPT19-12


SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT

	<b>PRE-DRILLING INSPECTION REPORT</b> Baffinland personnel: Date: April 23, 2019 Time: 11:00 Proposed hole ID: CPT19-12 Final hole ID: CPT19-12	
	<b>PROPOSED HOLE INFORMATION:</b> Deposit #: 1 Project: Freight Dock Expansion Area: Mine Inlet NTS: 37015 Elevation: Sea level Description of drill hole location: Mine Inlet Purpose of drill hole: Geotechnical Soil Classification	
<b>DRILLING INFORMATION:</b> Has site been approved by drill foreman? YES Drill contractor: Drill personnel: Drill #: Conetec, J. Knox, I. Bacon, C. MacDonald. Expected start of drilling: April 23, 2019. Is moving of drill hole required? NO If yes, provide reason: New collar location: E — N —		
<b>WATER MANAGEMENT:</b> No water used. Water source: Pump Station #: Sump location identified and constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N		
<b>SITE ASSESSMENTS:</b> Are wildlife present?: (If yes, record in log) Is site safe for drilling? Stable platform: Yes/No First Aid kit: Yes/No PPE: Yes/No Fire Extinguisher: Yes/No Eye Wash: Yes/No Spill Kits: Yes/No Safety concerns/issues: None Environmental concerns: None		
<b>PHOTOGRAPHIC RECORD:</b> Photo of drill hole location prior to setup? Yes/No Name: Folder: Uploaded to hard drive?		
<b>COMMENTS:</b> photo included in photo appendix		

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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 105 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### DAILY DRILLING INSPECTION REPORT



		<b>DAILY DRILL INSPECTION REPORT</b> Baffinland personnel: Date: April 23, 2019 Time: 11:00 Hole ID: CPT19-12	
<b>HOLE INFORMATION:</b>			
Deposit #: 1	Collar location: 17	E 503945.09	
Location: Milne Inlet	(NAD 83)	N 7977099.66	
<b>DRILLING INFORMATION</b>			
Drill contractor: Conetec			
Drill personnel: J. Knox, I. Bacon, C. MacDonald			
Drill #: 1			
<b>DRILLING PROGRESS:</b>			
<b>Day Shift</b>		<b>Night Shift</b>	
Start depth: 0		Start depth:	
End depth: 0.2		End depth:	
Total depth drilled: 0.2		Total depth drilled:	
Casing installed: 0		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? None.			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate None.			
<b>WATER USE ASSESSMENT: NO water used.</b>			
<b>Sediment control measures in place:</b>		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:		Water sample collected by Golder (TT/AU). Samples analyzed for TSS, TDS, pH, total metals (incl. arsenic), total mercury	
Color of runoff?			
Conductivity readings?:	Station # CPT12-A Reading 35760 µS/cm Station # CPT12-B Reading 41974 µS/cm Station # Reading Sample # CPT12-A Reading 0.08 NTU Sample # CPT12-B Reading 0.91 NTU		
Turbidity sample(s) taken?:			
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity)			
Is site safe for drilling?			
Stable platform	<input checked="" type="checkbox"/> Yes / No	Fire Extinguisher	<input checked="" type="checkbox"/> Yes / No
First Aid kit	<input checked="" type="checkbox"/> Yes / No	Eye Wash	<input checked="" type="checkbox"/> Yes / No
PPE	<input checked="" type="checkbox"/> Yes / No	Spill Kits	<input checked="" type="checkbox"/> Yes / No
Lined Berms	Yes / <input checked="" type="checkbox"/> No		
Safety concerns/issues: None			
Environmental concerns? None.			
Corrective action required?: Action plan (if required):			
Responsible party:			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling?		Photo of water management measures?	
Name:		Folder:	<input checked="" type="checkbox"/> Yes / No
Uploaded to hard drive?			
<b>COMMENTS:</b>			

photo included in photo appendix


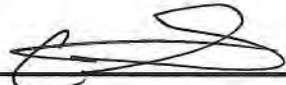
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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 106 of 135
	Environment	Revision: 1	
		Document #: BAF-PH1-830-P16-0008	

### POST-DRILLING INSPECTION REPORT

	POST-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: April 23, 2019 Time: 11:00 Final hole ID: CPT 19-12.	
<b>HOLE INFORMATION:</b>		
Deposit #: 1 Project: MARY RIVER Area: BAFFIN ISLAND NTS: 37G/5 Elevation: Sea Level Description of drill hole location: Mine Inlet Purpose of drill hole: <u>Geotechnical Soil Classification.</u>		
Collar location: 17 E 503945.09 (NAD 83) N 7971099.66 Dip: Azimuth: EOH:		
<b>DRILLING INFORMATION:</b>		
Drill contractor: <u>Canbec</u> Drill personnel: <u>J. Knox, I. Bacon, C. MacDonald.</u> Drill #: 1 End of drilling: 6.2 Casing: <input checked="" type="radio"/> Any rods/casing/tools lost in the drill hole? If yes, what was lost? <u>None.</u>		
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? Yes / No Next set-up collar location: E — N —		
<b>WATER USE ASSESSMENT:</b> <u>No water used.</u>		
Water source: Mary River Pump station #: Total amount of hours water was pumped from pump station:		
<b>SITE ASSESSMENT:</b>		
All materials and debris removed from site? <input checked="" type="radio"/> Yes / No Any environmental concerns? Yes / <input checked="" type="radio"/> No If yes, please describe below:		
Any additional work required? Yes / <input checked="" type="radio"/> No If yes, please describe below:		
Corrective action: Responsible party: Date to be completed by:		
<b>PHOTOGRAPHIC RECORD:</b>		
Photo of drill hole location following demobilization and clean up? <input checked="" type="radio"/> Yes / No Name: Folder:		
Uploaded to hard drive?		
<b>COMMENTS:</b>		
<u>Photo included in photo appendix</u>		
<b>INSPECTION COMPLETED BY:</b>		
Baffinland signature: Drill contractor signature: 		


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APPENDIX E.1.18

2019 Geotechnical Location –  
BH19-CPT19-13




	<b>Environmental Protection Plan</b>	<b>Issue Date:</b> August 30, 2016 <b>Revision:</b> 1	Page 104 of 135
	<b>Environment</b>	<b>Document #:</b> BAF-PH1-830-P16-0008	

### 3.5 DRILL INSPECTION FORMS BH19-CPT19-13

SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT

	<b>PRE-DRILLING INSPECTION REPORT</b> Baffinland personnel: Date: <span style="color: blue;">April 23, 2019</span> Time: 15:00 Proposed hole ID: <span style="color: blue;">CPT19-13</span> Final hole ID: <span style="color: blue;">CPT19-13</span>
<b>PROPOSED HOLE INFORMATION:</b>	
Deposit #: 1 Project: <span style="color: blue;">Freight Dock Expansion</span> Area: <span style="color: blue;">Mine Inlet</span> NTS: <span style="color: blue;">37G, 15</span> Elevation: <span style="color: blue;">Sea Level</span> Description of drill hole location: <span style="color: blue;">Mine Inlet</span> Purpose of drill hole: <span style="color: blue;">Geotechnical Soil Classification</span>	Collar location: 17 E503984.61 (NAD 83) N 7977109.45 Dip: NA Azimuth: NA Target depth: NA
<b>DRILLING INFORMATION:</b>	
Has site been approved by drill foreman? <span style="color: blue;">yes</span> Drill contractor: Drill personnel: Drill #: <span style="color: blue;">Canetec. J. Knox, I. Bacon, C. MacDonald.</span> Expected start of drilling: <span style="color: blue;">April 23, 2019.</span> Is moving of drill hole required? <span style="color: blue;">no</span> If yes, provide reason: New collar location: E <span style="color: blue;">—</span> N <span style="color: blue;">—</span>	
<b>WATER MANAGEMENT:</b> <span style="color: blue;">No water used.</span>	
Water source: Pump Station #: Sump location identified and constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N	
<b>SITE ASSESSMENTS:</b>	
Are wildlife present?: (If yes, record in log) Is site safe for drilling? Stable platform <span style="color: blue;">Yes</span> /No First Aid kit <span style="color: blue;">Yes</span> /No PPE <span style="color: blue;">Yes</span> /No Fire Extinguisher <span style="color: blue;">Yes</span> /No Eye Wash <span style="color: blue;">Yes</span> /No Spill Kits <span style="color: blue;">Yes</span> /No Safety concerns/issues: <span style="color: blue;">None</span> Environmental concerns? <span style="color: blue;">None</span>	
<b>PHOTOGRAPHIC RECORD:</b>	
Photo of drill hole location prior to setup? <span style="color: blue;">Yes</span> /No Name: Folder: Uploaded to hard drive?	
<b>COMMENTS:</b> <span style="color: blue;">Photo included in photo appendix</span>	

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Baffinland	Environmental Protection Plan	Issue Date: August 30, 2016	Page 105 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### DAILY DRILLING INSPECTION REPORT



		DAILY DRILL INSPECTION REPORT	
		Baffinland personnel: Date: April 23, 2019 Time: 15:00 Hole ID: CPT19-13	
<b>HOLE INFORMATION:</b>			
Deposit #: 1	Collar location: 17.	E 503984.61	
Location: Milne Inlet	(NAD 83)	N 7977109.45	
<b>DRILLING INFORMATION</b>			
Drill contractor: Conotec			
Drill personnel: J. Knox, J. Bacon, C. MacDonald.			
Drill #: 1			
<b>DRILLING PROGRESS:</b>			
Day Shift		Night Shift	
Start depth: 0		Start depth:	
End depth: 0.2		End depth:	
Total depth drilled: 0.2		Total depth drilled:	
Casing installed: 0		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? None			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate			
<b>WATER USE ASSESSMENT:</b> No water used			
Sediment control measures in place:		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:		Water samples collected by Golder (TT/AU). Samples analyzed for TSS, TDS, PH, total metals (including arsenic), total mercury	
Color of runoff?			
Conductivity readings?:	Station # CPT13-A Reading 94035 µS/cm		
	Station # CPT13-B Reading 90157 µS/cm		
	Station # Reading		
Turbidity sample(s) taken?:	Sample # CPT13-A Reading 0.43 NTU		
	Sample # CPT13-B Reading 0.05 NTU		
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity)			
Is site safe for drilling?			
Stable platform	Yes/No	Fire Extinguisher	Yes/No
First Aid kit	Yes/No	Eye Wash	Yes/No
PPE	Yes/No	Spill Kits	Yes/No
Lined Berms	Yes/No		
Safety concerns/issues: None			
Environmental concerns? None.			
Corrective action required?: Action plan (if required):			
Responsible party:			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling? Photo of water management measures?		Yes/No	
Name:	Folder:		
Uploaded to hard drive?			
<b>COMMENTS:</b>			

Photo included in photo appendix



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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 106 of 135
	Environment	Revision: 1	
		Document #: BAF-PH1-830-P16-0008	

### POST-DRILLING INSPECTION REPORT

	POST-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: April 23, 2019. Time: 15:00 Final hole ID: <del>087-13</del> CPT19-13	
<b>HOLE INFORMATION:</b>		
Deposit #: Project: MARY RIVER Area: BAFFIN ISLAND NTS: 37G/5 Elevation: Sea Level Description of drill hole location: Milne Inlet. Purpose of drill hole: Geotechnical Soil Classification	Collar location: 17 E 503934.61 (NAD 83) N 7977709.45 Dip: NA Azimuth: NA EOH: NA	
<b>DRILLING INFORMATION:</b>		
Drill contractor: Coretec. Drill personnel: J. Knox, I. Bacon, C. MacDonald. Drill #: 1 End of drilling: 0-2 Casing: 0 Any rods/casing/tools lost in the drill hole? If yes, what was lost? None		
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? Yes / No Next set-up collar location: E ——— N ———		
<b>WATER USE ASSESSMENT:</b> <del>none</del> No water used.		
Water source: Mary River Pump station #: Total amount of hours water was pumped from pump station:		
<b>SITE ASSESSMENT:</b>		
All materials and debris removed from site? <input checked="" type="checkbox"/> Yes / No Any environmental concerns? Yes / <input checked="" type="checkbox"/> No If yes, please describe below:		
Any additional work required? Yes / <input checked="" type="checkbox"/> No If yes, please describe below:		
Corrective action: Responsible party: Date to be completed by:		
<b>PHOTOGRAPHIC RECORD:</b>		
Photo of drill hole location following demobilization and clean up? <input checked="" type="checkbox"/> Yes / No Name: Folder:		
Uploaded to hard drive?		
<b>COMMENTS:</b>		
Photo included in photo appendix		
<b>INSPECTION COMPLETED BY:</b>		
Baffinland signature: Drill contractor signature: 		


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APPENDIX E.1.19

2019 Geotechnical Location –  
BH19-CPT19-14




	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### 3.5 DRILL INSPECTION FORMS *BH19-CPT19-14*


SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT

	PRE-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: <i>April 24, 2019</i> Time: <i>9:00</i> Proposed hole ID: <i>CPT19-14</i> Final hole ID: <i>CPT19-14</i>	
PROPOSED HOLE INFORMATION:		
Deposit #: <i>1</i> Project: <i>Freight Dock Expansion</i> Area: <i>Milne Inlet</i> NTS: <i>37415</i> Elevation: <i>Sea Level</i> Description of drill hole location: <i>Milne Inlet</i> Purpose of drill hole: <i>Geotechnical Soil Classification</i>	Collar location: <i>17</i> (NAD 83) Dip: <i>NA</i> Azimuth: <i>NA</i> Target depth: <i>NA</i>	<i>E 503945.01</i> <i>N 797720.3</i>
DRILLING INFORMATION:		
Has site been approved by drill foreman? <i>YES</i> Drill contractor: <i>Drill personnel: Drill #: Conetec - J. Knox, I. Bacon, C. MacDonald.</i> Expected start of drilling: <i>April 24, 2019.</i> Is moving of drill hole required? <i>NO</i> If yes, provide reason: New collar location: <i>E — N —</i>		
WATER MANAGEMENT: <i>No water used.</i>		
Water source: Pump Station #: Sump location identified and constructed?: Yes/No (Photo required) Corner 1: <i>E N</i> Corner 2: <i>E N</i> Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: <i>E N</i> Corner 2: <i>E N</i>		
SITE ASSESSMENTS:		
Are wildlife present?: (If yes, record in log) Is site safe for drilling? Stable platform: <i>Yes/No</i> First Aid kit: <i>Yes/No</i> PPE: <i>Yes/No</i> Fire Extinguisher: <i>Yes/No</i> Eye Wash: <i>Yes/No</i> Spill Kits: <i>Yes/No</i> Safety concerns/issues: <i>None</i> Environmental concerns: <i>None</i>		
PHOTOGRAPHIC RECORD:		
Photo of drill hole location prior to setup? <i>Yes/No</i> Name: <i>Folder:</i> Uploaded to hard drive?		
COMMENTS: <i>Photo included in photo appendix.</i>		

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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 105 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### DAILY DRILLING INSPECTION REPORT



		<b>DAILY DRILL INSPECTION REPORT</b> Baffinland personnel: Date: April 24, 2019 Time: 9:00 Hole ID: CPT 19-14	
<b>HOLE INFORMATION:</b>			
Deposit #: 1	Collar location: 17	E 503 945 .01	
Location: Mine Inlet	(NAD 83)	N 1977120.3	
<b>DRILLING INFORMATION</b>			
Drill contractor: Conotec			
Drill personnel: J. Knox, I. Bacon, C. MacDonald			
Drill #: 1			
<b>DRILLING PROGRESS:</b>			
Day Shift		Night Shift	
Start depth: 0		Start depth:	
End depth: 1.8		End depth:	
Total depth drilled: 1.8		Total depth drilled:	
Casing installed: 0		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? None			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate			
<b>WATER USE ASSESSMENT:</b> No water used.			
Sediment control measures in place:		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:		Water sample collected by Golder (TT/DD/DM). Samples analyzed for TSS/TDS, pH, total metals (incl. arsenic), total mercury.	
Color of runoff?			
Conductivity readings?:	Station # CPT19-14A Reading 41235 uS/cm Station # CPT19-14B Reading 95245 uS/cm Station # Reading Sample # CPT19-14A Reading 0.6 NTU Sample # CPT19-14B Reading 0.32 NTU		
Turbidity sample(s) taken?:			
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity)			
Is site safe for drilling?			
Stable platform	Yes / No	Fire Extinguisher	Yes / No
First Aid kit	Yes / No	Eye Wash	Yes / No
PPE	Yes / No	Spill Kits	Yes / No
Lined Berms	Yes / No		
Safety concerns/issues:			
Environmental concerns?			
Corrective action required?: Action plan (if required):			
Responsible party:			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling?		Photo of water management measures?	
Name:		Folder:	
Uploaded to hard drive?			
<b>COMMENTS:</b>			

Photo included in photo appendix.



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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 106 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### POST-DRILLING INSPECTION REPORT

	POST-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: April 24, 2019 Time: 0900 Final hole ID: <del>00-100</del> CPT10-14	
<b>HOLE INFORMATION:</b>		
Deposit #: _____ Project: MARY RIVER Area: BAFFIN ISLAND NTS: 37G/5 Elevation: Sea Level Description of drill hole location: Purpose of drill hole:	Collar location: 17 (NAD 83) Dip: NA Azimuth: NA EOH: NA	E 503448.01 N 7917120.3
<b>DRILLING INFORMATION:</b>		
Drill contractor: Conetec Drill personnel: J. Jones, I. Bacon, C. MacDonald Drill #: 1 End of drilling: 1-8 Casing: 0 Any rods/casing/tools lost in the drill hole? If yes, what was lost? None		
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? Yes / <u>NO</u> Next set-up collar location: E — N —		
<b>WATER USE ASSESSMENT:</b> <u>No water used.</u>		
Water source: Mary River Pump station #: _____ Total amount of hours water was pumped from pump station: _____		
<b>SITE ASSESSMENT:</b>		
All materials and debris removed from site? <u>Yes</u> / No Any environmental concerns? Yes / <u>NO</u> If yes, please describe below:		
Any additional work required? Yes / <u>NO</u> If yes, please describe below:		
Corrective action: Responsible party: Date to be completed by:		
<b>PHOTOGRAPHIC RECORD:</b>		
Photo of drill hole location following demobilization and clean up? <u>Yes</u> / No Name: _____ Folder: _____ Uploaded to hard drive?		
<b>COMMENTS:</b>		
<u>Photo included in photo appendix</u>		
<b>INSPECTION COMPLETED BY:</b>		
Baffinland signature: _____ Drill contractor signature: 		


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APPENDIX E.1.20

2019 Geotechnical Location –  
BH19-CPT19-15





	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### 3.5 DRILL INSPECTION FORMS

BH19-CPT19-15

SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT

	PRE-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: April 24, 2019 Time: 11:00 Proposed hole ID: CPT19-15 Final hole ID: CPT19-15	
PROPOSED HOLE INFORMATION:		
Deposit #:   Project: Freight Dock Expansion Area: Mine inlet NTS: 370.15 Elevation: Sea Level Description of drill hole location: Mine Inlet Purpose of drill hole: Geotechnical Soil Classification		Collar location: 17 E 503944.2 (NAD 83) N 7977034.8 Dip: NA Azimuth: NA Target depth: NA
DRILLING INFORMATION:		
Has site been approved by drill foreman? YES Drill contractor: Drill personnel: Drill #: Comelec. J. Knox, I. Bacon, C. MacDonald Expected start of drilling: April 24, 2019 Is moving of drill hole required? NO If yes, provide reason: New collar location: E _____ N _____		
WATER MANAGEMENT: No water used.		
Water source: Pump Station #: Sump location identified and constructed?: Yes/No (Photo required) Corner 1: E _____ N _____ Corner 2: E _____ N _____ Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: E _____ N _____ Corner 2: E _____ N _____		
SITE ASSESSMENTS:		
Are wildlife present?: (If yes, record in log) Is site safe for drilling? Stable platform <input checked="" type="checkbox"/> Yes / No First Aid kit <input checked="" type="checkbox"/> Yes / No PPE <input checked="" type="checkbox"/> Yes / No Safety concerns/issues: None Environmental concerns: None Fire Extinguisher <input checked="" type="checkbox"/> Yes / No Eye Wash <input checked="" type="checkbox"/> Yes / No Spill Kits <input checked="" type="checkbox"/> Yes / No		
PHOTOGRAPHIC RECORD:		
Photo of drill hole location prior to setup? <input checked="" type="checkbox"/> No Name: _____ Folder: _____ Uploaded to hard drive?		
COMMENTS:		
Photo included in photo appendix  Pre photo not taken		

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## DAILY DRILLING INSPECTION REPORT



		DAILY DRILL INSPECTION REPORT	
		Baffinland personnel: Date: April 24, 2019 Time: 08:00 Hole ID: CPT19-15	
<b>HOLE INFORMATION:</b>			
Deposit #: 1	Collar location: 17	E 603944.2	
Location: Mine Inlet	(NAD 83)	N 7977084.6	
<b>DRILLING INFORMATION</b>			
Drill contractor: Conetec			
Drill personnel: J. Knox, I. Bacon, C. MacDonald.			
Drill #: (			
<b>DRILLING PROGRESS:</b>			
Day Shift		Night Shift	
Start depth: 0		Start depth:	
End depth: 0.2		End depth:	
Total depth drilled: 0.2		Total depth drilled:	
Casing installed: 0		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? None			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate			
<b>WATER USE ASSESSMENT:</b> No water used.			
Sediment control measures in place:		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:		Water sample collected by	
Color of runoff:		Golder (TT/DD/DM). Samples	
Conductivity readings?:	Station # CPT19-15A Reading 45280 µS/cm	analyzed for TSS/TDS, pH,	
	Station # CPT19-15B Reading 90256 µS/cm	total metals (incl. arsenic),	
	Station # Reading	total mercury	
Turbidity sample(s) taken?:	Sample # CPT19-15A Reading 0.02 NTU		
	Sample # CPT19-15B Reading 0.1 NTU		
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity)			
Is site safe for drilling?			
Stable platform	Yes/No	Fire Extinguisher	Yes/No
First Aid kit	Yes/No	Eye Wash	Yes/No
PPE	Yes/No	Spill Kits	Yes/No
Lined Berms	Yes/No		
Safety concerns/issues: None			
Environmental concerns? None			
Corrective action required?: Action plan (if required):			
Responsible party:			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling? Photo of water management measures?		(Yes/No)	
Name:	Folder:		
Uploaded to hard drive?			
<b>COMMENTS:</b>			

Photo included in photo appendix



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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 106 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### POST-DRILLING INSPECTION REPORT

	POST-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: April 24, 2019 Time: 11:00 Final hole ID: CPT19-15	
<b>HOLE INFORMATION:</b>		
Deposit #: 1 Project: MARY RIVER Area: BAFFIN ISLAND NTS: 37G/5 Elevation: Sea Level Description of drill hole location: Purpose of drill hole:	Collar location: 17 (NAD 83) Dip: NA Azimuth: NA EOH: NA	E 603 944.2 N 797 7084.8
<b>DRILLING INFORMATION:</b>		
Drill contractor: Conetec Drill personnel: J. Knos, I. Bacon, A. MacDonald. Drill #: 1 End of drilling: 0-2 Casing: 0 Any rods/casing/tools lost in the drill hole? If yes, what was lost? None		
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? Yes / <input checked="" type="radio"/> No		
Next set-up collar location: E — N —		
<b>WATER USE ASSESSMENT:</b> No water used		
Water source: Mary River Pump station #: Total amount of hours water was pumped from pump station:		
<b>SITE ASSESSMENT:</b>		
All materials and debris removed from site? <input checked="" type="radio"/> Yes / No		
Any environmental concerns? Yes / <input checked="" type="radio"/> No If yes, please describe below:		
Any additional work required? Yes / <input checked="" type="radio"/> No If yes, please describe below:		
Corrective action: Responsible party: Date to be completed by:		
<b>PHOTOGRAPHIC RECORD:</b>		
Photo of drill hole location following demobilization and clean up? <input checked="" type="radio"/> Yes / No		
Name: Folder:		
Uploaded to hard drive?		
<b>COMMENTS:</b>		
Photo included in photo appendix		
<b>INSPECTION COMPLETED BY:</b>		
Baffinland signature: Drill contractor signature: 		


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APPENDIX E.1.21

2019 Geotechnical Location –  
BH19-CPT19-16




	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### 3.5 DRILL INSPECTION FORMS *BH19-CPT19-16*


SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT

	PRE-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: <i>April 24, 2019</i> Time: <i>14:00</i> Proposed hole ID: Final hole ID: <i>CPT19-16</i>	
PROPOSED HOLE INFORMATION:		
Deposit #: <i>1</i> Project: <i>Freight Dock Expansion</i> Area: <i>Milne Inlet</i> NTS: <i>37G15</i> Elevation: <i>Sea Level</i> Description of drill hole location: <i>Milne Inlet</i> Purpose of drill hole: <i>Geotechnical Soil Classification</i>	Collar location: <i>17</i> (NAD 83) Dip: <i>NA</i> Azimuth: <i>NA</i> Target depth: <i>NA</i>	E <i>503919.53</i> N <i>7977109.4</i>
DRILLING INFORMATION:		
Has site been approved by drill foreman? <i>yes</i> Drill contractor: Drill personnel: Drill #: <i>Conetec J. Knox, I. Bulon, C. MacDonald.</i> Expected start of drilling: <i>April 24, 2019</i> Is moving of drill hole required? <i>No</i> If yes, provide reason: New collar location: E — N —		
WATER MANAGEMENT: <i>No water used.</i>		
Water source: Pump Station #: <i>1</i> Sump location identified and constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N		
SITE ASSESSMENTS:		
Are wildlife present?: (If yes, record in log) Is site safe for drilling? Stable platform <i>Yes/No</i> Fire Extinguisher <i>Yes/No</i> First Aid kit <i>Yes/No</i> Eye Wash <i>Yes/No</i> PPE <i>Yes/No</i> Spill Kits <i>Yes/No</i> Safety concerns/issues: <i>None</i> Environmental concerns? <i>None</i>		
PHOTOGRAPHIC RECORD:		
Photo of drill hole location prior to setup? <i>No</i> Name: Folder: Uploaded to hard drive?		
COMMENTS:		
<i>Photo included in photo appendix</i> <i>Pre photo not taken</i>		

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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 105 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### DAILY DRILLING INSPECTION REPORT



		DAILY DRILL INSPECTION REPORT	
		Baffinland personnel: Date: April 24, 2019 Time: 14:00 Hole ID: CPT19-16	
<b>HOLE INFORMATION:</b>			
Deposit #:	1	Collar location:	17 E 503919.53
Location:		(NAD 83)	N 771109.8
<b>DRILLING INFORMATION</b>			
Drill contractor: Lonetec			
Drill personnel: J. Knox, I. Bacon, C. MacDonald			
Drill #: 1			
<b>DRILLING PROGRESS:</b>			
<b>Day Shift</b>		<b>Night Shift</b>	
Start depth: 0		Start depth:	
End depth: 15		End depth:	
Total depth drilled: 15		Total depth drilled:	
Casing installed: 0		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? None			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate None			
<b>WATER USE ASSESSMENT: No water used.</b>			
<b>Sediment control measures in place:</b>		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:		Water sample collected by Golder (TT/DD/DM). Samples analyzed for TSS/TDS, pH, total metals (incl. arsenic), total mercury	
Color of runoff?			
Conductivity readings?:			
Station # CPT19-16A Reading 89442 µS/cm Station # CPT19-16B Reading 92465 µS/cm Station # Reading Sample # CPT19-16A Reading 0.05 NTU Sample # CPT19-16B Reading 0.04 NTU			
Turbidity sample(s) taken?:			
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity)			
Is site safe for drilling?			
Stable platform	<input checked="" type="checkbox"/> Yes / No	Fire Extinguisher	<input checked="" type="checkbox"/> Yes / No
First Aid kit	<input checked="" type="checkbox"/> Yes / No	Eye Wash	<input checked="" type="checkbox"/> Yes / No
PPE	<input checked="" type="checkbox"/> Yes / No	Spill Kits	<input checked="" type="checkbox"/> Yes / No
Lined Berms	Yes <input checked="" type="checkbox"/> No		
Safety concerns/issues: None			
Environmental concerns? None			
Corrective action required?: Action plan (if required):			
Responsible party:			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling? Photo of water management measures?		<input checked="" type="checkbox"/> Yes / No	
Name:		Folder:	
Uploaded to hard drive?			
<b>COMMENTS:</b>			

Photo included in photo appendix


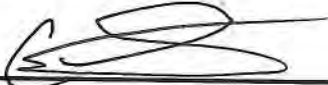
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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 106 of 135
	Environment	Revision: 1	
		Document #: BAF-PH1-830-P16-0008	

## POST-DRILLING INSPECTION REPORT

	<b>POST-DRILLING INSPECTION REPORT</b> Baffinland personnel: Date: April 24, 2019 Time: 14:00 Final hole ID: CPT 19-15
<b>HOLE INFORMATION:</b> Deposit #: 1 Project: MARY RIVER Area: BAFFIN ISLAND NTS: 37G/5 Elevation: Sea Level Description of drill hole location: Mine Inlet Purpose of drill hole: <u>Geotechnical Soil Classification.</u> Collar location: 17 E 503919.63 (NAD 83) N 7971109.8 Dip: Azimuth: EOH:	
<b>DRILLING INFORMATION:</b> Drill contractor: <u>Conotec</u> Drill personnel: <u>J. Knox, I. Bacon, C. MacDonald</u> Drill #: 1 End of drilling: 1.5 Casing: 0 Any rods/casing/tools lost in the drill hole? If yes, what was lost? <u>None</u> Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? Yes / <u>No</u> Next set-up collar location: E — N —	
<b>WATER USE ASSESSMENT:</b> <u>No water used.</u> Water source: Mary River Pump station #: Total amount of hours water was pumped from pump station:	
<b>SITE ASSESSMENT:</b> All materials and debris removed from site? <u>Yes</u> / No Any environmental concerns? Yes / <u>No</u> If yes, please describe below: Any additional work required? Yes / <u>No</u> If yes, please describe below: Corrective action: Responsible party: Date to be completed by:	
<b>PHOTOGRAPHIC RECORD:</b> Photo of drill hole location following demobilization and clean up? <u>Yes</u> / No Name: Folder: Uploaded to hard drive?	
<b>COMMENTS:</b> <div style="font-size: 1.2em; margin-top: 10px;">Photo included in photo appendix.</div>	
<b>INSPECTION COMPLETED BY:</b> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div>Baffinland signature:</div> <div>Drill contractor signature: </div> </div>	


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APPENDIX E.1.22

2019 Geotechnical Location –  
BH19-CPT19-17




	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### 3.5 DRILL INSPECTION FORMS

BH19-CPT19-17


SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT

	PRE-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: April 25, 2019 Time: 9:00 Proposed hole ID: CPT 19-17 Final hole ID: CPT 19-17	
PROPOSED HOLE INFORMATION:		
Deposit #:   Project: Freight Dock Expansion Area: Milne Inlet NTS: 37G 15 Elevation: Sea Level Description of drill hole location: Milne Inlet. Purpose of drill hole: Geotechnical Soil Classification		Collar location: 17 (NAD 83) Dip: NA Azimuth: NA Target depth: NA
E 503944.88 N 7971136.35		
DRILLING INFORMATION:		
Has site been approved by drill foreman? yes Drill contractor: Drill personnel: Drill #: Coretec. J. Knox, I. Bacon, C. MacDonald. Expected start of drilling: April 25, 2019 Is moving of drill hole required? NO If yes, provide reason: New collar location: E — N —		
WATER MANAGEMENT: No water used.		
Water source: Pump Station #: Sump location identified and constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N		
SITE ASSESSMENTS:		
Are wildlife present?: (If yes, record in log) Is site safe for drilling? Stable platform <input checked="" type="checkbox"/> Yes / No Fire Extinguisher <input checked="" type="checkbox"/> Yes / No First Aid kit <input checked="" type="checkbox"/> Yes / No Eye Wash <input checked="" type="checkbox"/> Yes / No PPE <input checked="" type="checkbox"/> Yes / No Spill Kits <input checked="" type="checkbox"/> Yes / No Safety concerns/issues: None Environmental concerns? None		
PHOTOGRAPHIC RECORD:		
Photo of drill hole location prior to setup? <input checked="" type="checkbox"/> No 88 Name: Folder: Uploaded to hard drive?		
COMMENTS: Photo included in photo appendix. Pre photo not taken.		

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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 105 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### DAILY DRILLING INSPECTION REPORT



		<b>DAILY DRILL INSPECTION REPORT</b> Baffinland personnel: Date: April 25, 2019 Time: 9:00 Hole ID: CPT19-17	
<b>HOLE INFORMATION:</b>			
Deposit #: 1	Collar location: 17	E 503944.98	
Location: Mine Inlet	(NAD 83)	N 7977135.35	
<b>DRILLING INFORMATION</b>			
Drill contractor: Conotec			
Drill personnel: J. Knox, I. Bacon, C MacDonald.			
Drill #: 1			
<b>DRILLING PROGRESS:</b>			
Day Shift		Night Shift	
Start depth: 0		Start depth:	
End depth: 0.8		End depth:	
Total depth drilled: 0.8		Total depth drilled:	
Casing installed: 0		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? <u>None</u>			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate <u>None</u>			
<b>WATER USE ASSESSMENT:</b> <u>No water used.</u>			
Sediment control measures in place:		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:		<u>Water sample collected by</u> <u>Golden (DD/DM) and Baffinland (SS).</u> <u>Samples analysed for TSS, TDS, pH, total</u> <u>metals (includes arsenic), total mercury.</u>	
Color of runoff?			
Conductivity readings?:			
Station # CPT17-A Reading 40803 uS/cm			
Station # CPT17-B Reading 67903 uS/cm			
Station # Reading			
Turbidity sample(s) taken?:			
Sample # CPT17-A Reading 0.03 NTU			
Sample # CPT17-B Reading 0.15 NTU			
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity)			
Is site safe for drilling?			
Stable platform	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	Fire Extinguisher	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
First Aid kit	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	Eye Wash	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
PPE	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	Spill Kits	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Lined Berms	Yes / <input checked="" type="checkbox"/> No		
Safety concerns/issues: <u>None</u>			
Environmental concerns? <u>None</u>			
Corrective action required?: Action plan (if required):			
Responsible party:			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling? Photo of water management measures?		<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	
Name:		Folder:	
Uploaded to hard drive?			
<b>COMMENTS:</b>			

Photo included in photo Appendix



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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 106 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

## POST-DRILLING INSPECTION REPORT

	POST-DRILLING INSPECTION REPORT	
	Baffinland personnel: Date: April 25, 2019 Time: 9:00 Final hole ID: CPT19-17	
<b>HOLE INFORMATION:</b>		
Deposit #: 1 Project: MARY RIVER Area: BAFFIN ISLAND NTS: 37G/5 Elevation: Sea Level Description of drill hole location: Mine Inlet Purpose of drill hole: <u>Geotechnical Soil Classification</u>	Collar location: 17 (NAD 83) Dip: NA Azimuth: NA EOH: NA	E 503944.88 N 7977135.35
<b>DRILLING INFORMATION:</b>		
Drill contractor: Conotec Drill personnel: C. MacDonald, J. Knox, J. Bacon Drill #: 1 End of drilling: 0.8 Casing: 0 Any rods/casing/tools lost in the drill hole? If yes, what was lost? <u>None</u>		
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? Yes / <input checked="" type="checkbox"/> No Next set-up collar location: E — N —		
<b>WATER USE ASSESSMENT:</b> <u>No water used.</u>		
Water source: Mary River Pump station #: Total amount of hours water was pumped from pump station:		
<b>SITE ASSESSMENT:</b>		
All materials and debris removed from site? <input checked="" type="checkbox"/> Yes / No Any environmental concerns? Yes / <input checked="" type="checkbox"/> No      If yes, please describe below:		
Any additional work required? Yes / <input checked="" type="checkbox"/> No      If yes, please describe below:		
Corrective action: Responsible party: Date to be completed by:		
<b>PHOTOGRAPHIC RECORD:</b>		
Photo of drill hole location following demobilization and clean up? <input checked="" type="checkbox"/> Yes / No Name:      Folder:		
Uploaded to hard drive?		
<b>COMMENTS:</b>		
Photo included in photo appendix		
<b>INSPECTION COMPLETED BY:</b>		
Baffinland signature:		Drill contractor signature: 

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APPENDIX E.1.23

2019 Geotechnical Location –  
KM107-DH19-01

	Environmental Protection Plan	Issue Date: August 30, 2016 Revision: 1	Page 104 of 135
	Environment	Document #: BAF-PH1-830-P16-0008	

### 3.5 DRILL INSPECTION FORMS

SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT

	<b>PRE-DRILLING INSPECTION REPORT</b>	
	Baffinland personnel: <u>JESSICA GALAVAN (KP)</u> Date: <u>APR. 8, 2019</u> Time: <u>10:30 AM</u> Proposed hole ID: <u>KM107-DH19-01</u> Final hole ID: <u>KM107-DH19-01</u>	
<b>PROPOSED HOLE INFORMATION:</b>		
Deposit #: _____ Collar location: E <u>564 116</u> Project: <u>MARY RIVER</u> (NAD 83) N <u>7 913 360</u> Area: <u>BAFFIN ISLAND</u> Dip: <u>-90°</u> NTS: _____ Azimuth: <u>-</u> Elevation: <u>304 masl</u> Target depth: <u>25m</u> Description of drill hole location: <u>SW facing slope, gently sloping tundra, snow covered.</u> Purpose of drill hole: <u>KM107 STOCKPILE GEOTECHNICAL</u>		
<b>DRILLING INFORMATION:</b>		
Has site been approved by drill foreman? <u>yes</u> Drill contractor: Drill personnel: Drill #: <u>BOART LONGYEAR, VERDON BIGELOW, #1419</u> Expected start of drilling: <u>APR. 8, 2019</u> Is moving of drill hole required? <u>no</u> If yes, provide reason: _____ New collar location: <u>N/A.</u> E _____ N _____		
<b>WATER MANAGEMENT:</b> <u>N/A (Sonic drilling without use of water)</u>		
<b>Water source:</b> <b>Pump Station #:</b> Sump location identified and constructed?: Yes/No (Photo required) Corner 1: _____ E _____ N _____ Corner 2: _____ E _____ N _____ Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: _____ E _____ N _____ Corner 2: _____ E _____ N _____		
<b>SITE ASSESSMENTS:</b>		
Are wildlife present?: (If yes, record in log) <u>no</u> Is site safe for drilling? Stable platform <u>Yes/No</u> Fire Extinguisher <u>Yes/No</u> First Aid kit <u>Yes/No</u> Eye Wash <u>Yes/No</u> PPE <u>Yes/No</u> Spill Kits <u>Yes/No</u> Safety concerns/issues: <u>uneven ground, ice.</u> Environmental concerns? <u>no</u>		
<b>PHOTOGRAPHIC RECORD:</b>		
Photo of drill hole location prior to setup? <u>Yes/No</u> Name: <u>KM107-DH19-01 Looking North, East, South, West Before.</u> Folder: _____ Uploaded to hard drive? _____		
<b>COMMENTS:</b>		

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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 105 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

## DAILY DRILLING INSPECTION REPORT

		<b>DAILY DRILL INSPECTION REPORT</b>	
		Baffinland personnel: JESSICA GALVAN Date: April 9, 2019 Time: 6:30 AM Hole ID: KM107-DH19-01	
<b>HOLE INFORMATION:</b>			
Deposit #:	1	Collar location:	E 564 116
Location:	MARY RIVER	(NAD 83)	N 7913 360
<b>DRILLING INFORMATION</b>			
Drill contractor: BOART LONGYEAR Drill personnel: Verdon, Corey, Rueben Drill #: 1419			
<b>DRILLING PROGRESS:</b>			
<b>Day Shift</b>		<b>Night Shift</b>	
Start depth: 12.19m		Start depth:	
End depth: 14.48m		End depth: N/A	
Total depth drilled: 2.29m		Total depth drilled:	
Casing installed: 0m		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost?			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate			
<b>WATER USE ASSESSMENT: N/A</b>			
Sediment control measures in place:		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:			
Color of runoff?			
Conductivity readings?:	Station #      Reading		
	Station #      Reading		
	Station #      Reading		
Turbidity sample(s) taken?:	Sample #      Reading		
	Sample #      Reading		
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity)			
fox foot prints			
Is site safe for drilling?			
Stable platform	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	Fire Extinguisher	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
First Aid kit	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	Eye Wash	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
PPE	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	Spill Kits	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Lined Berms	N/A Yes / <input type="checkbox"/> No		
Safety concerns/issues: NO			
Environmental concerns? NO			
Corrective action required?: Action plan (if required): NO			
Responsible party: N/A			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling?		Photo of water management measures?	
Name:		Folder:	
Uploaded to hard drive?			
<b>COMMENTS:</b>			



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	Environmental Protection Plan	Issue Date: August 30, 2016 Revision: 1	Page 106 of 135
	Environment	Document #: BAF-PH1-830-P16-0008	

## POST-DRILLING INSPECTION REPORT

		<b>POST-DRILLING INSPECTION REPORT</b> Baffinland personnel: <u>JESSICA GALAVAN (KP)</u> Date: <u>APR 10, 2019</u> Time: <u>11:00 AM</u> Final hole ID: <u>KM107-DH19-01</u>	
<b>HOLE INFORMATION:</b>			
Deposit #:		Collar location:	E <u>564 116</u>
Project:	MARY RIVER	(NAD 83)	N <u>7913 360</u>
Area:	BAFFIN ISLAND	Dip:	<u>-90</u>
NTS:	37G/5	Azimuth:	<u>-</u>
Elevation:	<u>304 masl</u>	EOH:	<u>11.58 m</u>
Description of drill hole location:			
Purpose of drill hole:			
<b>DRILLING INFORMATION:</b>			
Drill contractor: <u>BOART LONGYEAR</u>			
Drill personnel: <u>Verdon, Corey, Rueben.</u>			
Drill #: <u>1419</u>			
End of drilling: <u>22.86 m</u>			
Casing: <u>0m</u>			
Any rods/casing/tools lost in the drill hole? If yes, what was lost? <u>no</u>			
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? <u>Yes</u> / No <u>sand backfill</u>			
Next set-up collar location:		E <u>564 116</u> N <u>7913 360</u>	
WATER USE ASSESSMENT: <u>N/A</u>			
Water source: <u>Mary River</u>			
Pump station #:			
Total amount of hours water was pumped from pump station: <u>0</u>			
<b>SITE ASSESSMENT:</b>			
All materials and debris removed from site? <u>Yes</u> / No			
Any environmental concerns?		Yes <u>No</u> If yes, please describe below:	
Any additional work required?		Yes <u>No</u> If yes, please describe below:	
Corrective action:			
Responsible party: <u>N/A</u>			
Date to be completed by:			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole location following demobilization and clean up? <u>Yes</u> / No			
Name: <u>KM107-DH19-01</u> Looking North, East, South, Folder:			
Uploaded to hard drive? <u>West After</u>			
<b>COMMENTS:</b>			
<b>INSPECTION COMPLETED BY:</b>			
		Drill contractor signature:	

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APPENDIX E.1.24


2019 Geotechnical Location –  
KM107-DH19-02

	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### 3.5 DRILL INSPECTION FORMS

SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT

	<b>PRE-DRILLING INSPECTION REPORT</b> Baffinland personnel: <u>TESSICA GALAVAN (KP)</u> Date: <u>APR. 6, 2019</u> Time: <u>3:30 pm</u> Proposed hole ID: <u>KM107-DH19-02</u> Final hole ID: <u>KM107-DH19-02</u>	
	<b>PROPOSED HOLE INFORMATION:</b> Deposit #: _____ Project: <u>MARY RIVER</u> Area: <u>BAFFIN ISLAND</u> NTS: _____ Elevation: <u>319 masl</u> Description of drill hole location: <u>flat, snow covered tundra.</u> Purpose of drill hole: <u>KM107 STOCKPILE GEOTECHNICAL</u> Collar location: _____ E <u>564 217</u> (NAD 83) _____ N <u>7 913 497</u> Dip: <u>-90°</u> Azimuth: <u>-</u> Target depth: <u>25m</u>	
<b>DRILLING INFORMATION:</b> Has site been approved by drill foreman? <u>yes</u> Drill contractor: Drill personnel: Drill #: <u>BOART LONGYEAR, VERDON BIGELOW, #1419</u> Expected start of drilling: <u>April 12, 2019</u> Is moving of drill hole required? <u>no</u> If yes, provide reason: _____ New collar location: <u>N/A</u> E _____ N _____		
<b>WATER MANAGEMENT:</b> <u>N/A (sonic drilling without use of water)</u> Water source: _____ Pump Station #: _____ Sump location identified and constructed?: Yes/No (Photo required) Corner 1: _____ E _____ N _____ Corner 2: _____ E _____ N _____ Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: _____ E _____ N _____ Corner 2: _____ E _____ N _____		
<b>SITE ASSESSMENTS:</b> Are wildlife present?: (If yes, record in log) <u>no</u> Is site safe for drilling? Stable platform <u>Yes/No</u> Fire Extinguisher <u>Yes/No</u> First Aid kit <u>Yes/No</u> Eye Wash <u>Yes/No</u> PPE <u>Yes/No</u> Spill Kits <u>Yes/No</u> Safety concerns/issues: <u>uneven ground, ice.</u> Environmental concerns? <u>no</u>		
<b>PHOTOGRAPHIC RECORD:</b> Photo of drill hole location prior to setup? <u>Yes/No</u> Name: <u>KM107-DH19-02 Looking North, East, South, West.</u> Folder: _____ Uploaded to hard drive? _____		
<b>COMMENTS:</b>  		

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	Environmental Protection Plan	Issue Date: August 30, 2016 Revision: 1	Page 105 of 135
	Environment	Document #: BAF-PH1-830-P16-0008	

### DAILY DRILLING INSPECTION REPORT


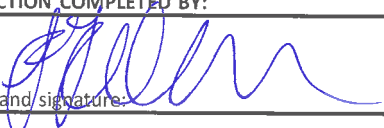
		DAILY DRILL INSPECTION REPORT	
		Baffinland personnel: JESSICA GALAVAN (KP) Date: Apr. 13, 2019 Time: 8:30 AM Hole ID: Km107 - DH19-02	
<b>HOLE INFORMATION:</b>			
Deposit #: 1	Collar location: E 564 217		
Location: MARY RIVER	(NAD 83) N 7913497		
<b>DRILLING INFORMATION</b>			
Drill contractor: BOART LONGYEAR Drill personnel: Verdon, Corey, Rueben Drill #: 1919			
<b>DRILLING PROGRESS:</b>			
<b>Day Shift</b>		<b>Night Shift</b>	
Start depth: 18.29m		Start depth:	
End depth: 21.33m		End depth:	
Total depth drilled: 3.04m		Total depth drilled: N/A	
Casing installed: 0m		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost?			
no			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate			
<b>WATER USE ASSESSMENT: N/A</b>			
<b>Sediment control measures in place:</b>		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:			
Color of runoff?			
Conductivity readings?:	Station # Reading		
	Station # Reading		
	Station # Reading		
Turbidity sample(s) taken?:	Sample # Reading		
	Sample # Reading		
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity)			
fox footprints			
Is site safe for drilling?			
Stable platform	<input checked="" type="radio"/> Yes / <input type="radio"/> No	Fire Extinguisher	<input checked="" type="radio"/> Yes / <input type="radio"/> No
First Aid kit	<input checked="" type="radio"/> Yes / <input type="radio"/> No	Eye Wash	<input checked="" type="radio"/> Yes / <input type="radio"/> No
PPE	<input checked="" type="radio"/> Yes / <input type="radio"/> No	Spill Kits	<input checked="" type="radio"/> Yes / <input type="radio"/> No
Lined Berms	N/A Yes / <input type="radio"/> No		
Safety concerns/issues: no			
Environmental concerns? no			
Corrective action required?: Action plan (if required): N/A			
Responsible party: N/A			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling? Photo of water management measures?		<input checked="" type="radio"/> Yes / <input type="radio"/> No	
Name:	Folder:		
Uploaded to hard drive?			
<b>COMMENTS:</b>			

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	Environmental Protection Plan	Issue Date: August 30, 2016 Revision: 1	Page 106 of 135
	Environment	Document #: BAF-PH1-830-P16-0008	

## POST-DRILLING INSPECTION REPORT

		<b>POST-DRILLING INSPECTION REPORT</b> Baffinland personnel: <u>JESSICA GALAVAN (KP)</u> Date: <u>April 13, 2019</u> Time: <u>1:00pm</u> Final hole ID: <u>KM107-DH19-02</u>	
<b>HOLE INFORMATION:</b>			
Deposit #: _____ Project: <u>MARY RIVER</u> Area: <u>BAFFIN ISLAND</u> NTS: <u>37G/5</u> Elevation: <u>319masl</u> Description of drill hole location: _____ Purpose of drill hole: <u>KM107 Stockpile.</u>		Collar location: <u>E 564 217</u> (NAD 83) <u>N 7913497</u> Dip: <u>-90</u> Azimuth: <u>-</u> EOH: <u>21.33m</u>	
<b>DRILLING INFORMATION:</b>			
Drill contractor: <u>BOART LONGYEAR</u> Drill personnel: <u>Verdon, Corey, Rueben</u> Drill #: <u>1419</u> End of drilling: <u>April 13, 2019</u> Casing: <u>0m</u> Any rods/casing/tools lost in the drill hole? If yes, what was lost? <div style="text-align: center; margin-top: 10px;"><u>no</u></div>			
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? <u>Yes</u> <u>No</u> <u>sand backfill</u> Next set-up collar location: <u>E 564 385</u> <u>N 7913545</u>			
<b>WATER USE ASSESSMENT:</b> <u>N/A</u>			
Water source: <u>Mary River</u> Pump station #: _____ Total amount of hours water was pumped from pump station: _____			
<b>SITE ASSESSMENT:</b>			
All materials and debris removed from site? <u>Yes</u> / No Any environmental concerns? Yes / <u>No</u> If yes, please describe below: _____  Any additional work required? Yes / <u>No</u> If yes, please describe below: _____  Corrective action: _____ Responsible party: <u>N/A</u> Date to be completed by: _____			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole location following demobilization and clean up? <u>Yes</u> / No Name: <u>KM107-DH19-02 Looking North, East,</u> Folder: _____ Uploaded to hard drive? <u>South, West After.</u>			
<b>COMMENTS:</b>			
<b>INSPECTION COMPLETED BY:</b>			
 Baffinland signature:		Drill contractor signature:	

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APPENDIX E.1.25

2019 Geotechnical Location –  
KM107-DH19-03



	Environmental Protection Plan	Issue Date: August 30, 2016 Revision: 1	Page 104 of 135
	Environment	Document #: BAF-PH1-830-P16-0008	

### 3.5 DRILL INSPECTION FORMS

SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT


	<b>PRE-DRILLING INSPECTION REPORT</b> Baffinland personnel: <u>JESSICA GALAVAN (KP)</u> Date: <u>APR. 5, 2019</u> Time: <u>3:00 PM</u> Proposed hole ID: <u>KM107-DH19-03</u> Final hole ID: <u>KM107-DH19-03</u>	
	<b>PROPOSED HOLE INFORMATION:</b> Deposit #: _____ Project: <u>MARY RIVER</u> Area: <u>BAFFIN ISLAND</u> NTS: _____ Elevation: <u>318 masl</u> Description of drill hole location: <u>flat, snow covered tundra.</u> Purpose of drill hole: <u>KM107 STOCKPILE GEOTECHNICAL</u> Collar location: _____ (NAD 83) _____ Dip: <u>-90°</u> Azimuth: <u>-</u> Target depth: <u>25m</u> E <u>564 385</u> N <u>7 913 545</u>	
<b>DRILLING INFORMATION:</b> Has site been approved by drill foreman? <u>YES</u> Drill contractor: Drill personnel: Drill #: <u>BOART LONGYEAR, VERDON BIGELOW, #1419</u> Expected start of drilling: <u>April 14, 2019</u> Is moving of drill hole required? <u>no</u> If yes, provide reason: _____ New collar location: <u>N/A</u> E _____ N _____		
<b>WATER MANAGEMENT:</b> <u>N/A (Sonic drilling without use of water)</u> Water source: _____ Pump Station #: _____ Sump location identified and constructed?: Yes/No (Photo required) Corner 1: _____ E _____ N _____ Corner 2: _____ E _____ N _____ Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: _____ E _____ N _____ Corner 2: _____ E _____ N _____		
<b>SITE ASSESSMENTS:</b> Are wildlife present?: (If yes, record in log) <u>no</u> Is site safe for drilling? _____ Stable platform <u>Yes/No</u> Fire Extinguisher <u>Yes/No</u> First Aid kit <u>Yes/No</u> Eye Wash <u>Yes/No</u> PPE <u>Yes/No</u> Spill Kits <u>Yes/No</u> Safety concerns/issues: <u>uneven ground, ice</u> Environmental concerns? <u>no</u>		
<b>PHOTOGRAPHIC RECORD:</b> Photo of drill hole location prior to setup? _____ Name: <u>KM107-DH19-03 Looking North, East, South, West</u> Folder: _____ Uploaded to hard drive? _____		
<b>COMMENTS:</b>  		

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	Environmental Protection Plan	Issue Date: August 30, 2016 Revision: 1	Page 105 of 135
	Environment	Document #: BAF-PH1-830-P16-0008	

### DAILY DRILLING INSPECTION REPORT


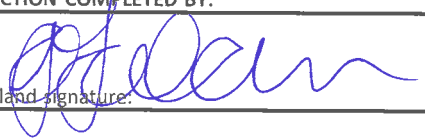
		DAILY DRILL INSPECTION REPORT	
		Baffinland personnel: JESSICA GALAVAN (KP) Date: Apr. 15, 2019 Time: 7:00am Hole ID: Km107-DH19-03   Km107-DH19-04	
HOLE INFORMATION:			
Deposit #: 1		Collar location: E 564 385   564 309	
Location: MARY RIVER		(NAD 83) N 7913545   7913 350	
DRILLING INFORMATION			
Drill contractor: BOART LONGYEAR			
Drill personnel: Verdon, Corey, Rueben.			
Drill #: 1419			
DRILLING PROGRESS:			
Day Shift		Night Shift	
Start depth: 0.0m		Start depth:	
End depth: 22.08m		End depth: N/A	
Total depth drilled: 22.08m		Total depth drilled:	
Casing installed: 0m		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost?			
no			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate			
as drill move - 1 hr			
WATER USE ASSESSMENT: N/A			
Sediment control measures in place:		DAILY WATER USE MONITORING:	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:			
Color of runoff?			
Conductivity readings?:	Station #	Reading	
	Station #	Reading	
	Station #	Reading	
Turbidity sample(s) taken?:	Sample #	Reading	
	Sample #	Reading	
SITE ASSESSMENT:			
Are wildlife present?: (check log for previous wildlife activity)			
no			
Is site safe for drilling?			
Stable platform	Yes / No	Fire Extinguisher	Yes / No
First Aid kit	Yes / No	Eye Wash	Yes / No
PPE	Yes / No	Spill Kits	Yes / No
Lined Berms	N/A		
Safety concerns/issues: no			
Environmental concerns? no			
Corrective action required?: Action plan (if required): N/A			
Responsible party: N/A			
Date to be completed: Photograph (only required to document problems and corrective actions)			
PHOTOGRAPHIC RECORD:			
Photo of drill hole during drilling? Photo of water management measures?		Yes / No	
Name:		Folder:	
Uploaded to hard drive?			
COMMENTS:			

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	Environmental Protection Plan	Issue Date: August 30, 2016 Revision: 1	Page 106 of 135
	Environment	Document #: BAF-PH1-830-P16-0008	

## POST-DRILLING INSPECTION REPORT

		<b>POST-DRILLING INSPECTION REPORT</b> Baffinland personnel: <u>JESSICA GALAVAN (KP)</u> Date: <u>April 15, 2019</u> Time: <u>3:00 PM</u> Final hole ID: <u>Km107-DH19-03</u>	
<b>HOLE INFORMATION:</b>			
Deposit #: _____ Project: <u>MARY RIVER</u> Area: <u>BAFFIN ISLAND</u> NTS: <u>37G/5</u> Elevation: <u>318</u> Description of drill hole location: _____ Purpose of drill hole: <u>Km107 Stockpile</u>	Collar location: <u>E 564 385</u> (NAD 83) <u>N 7913545</u> Dip: <u>-90</u> Azimuth: <u>-</u> EOH: <u>22.08m</u>		
<b>DRILLING INFORMATION:</b>			
Drill contractor: <u>BOART LONGYEAR</u> Drill personnel: <u>Verdon, Corey, Rueben</u> Drill #: <u>1419</u> End of drilling: <u>April 15, 2019</u> Casing: <u>0m</u> Any rods/casing/tools lost in the drill hole? If yes, what was lost? <div style="text-align: center; margin-top: 10px;"><u>no</u></div>			
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? <u>Yes</u> / No <u>backfill</u> Next set-up collar location: <u>E 564355</u> <u>N 7913717</u>			
<b>WATER USE ASSESSMENT:</b>			
Water source: <u>Mary River</u> Pump station #: _____ Total amount of hours water was pumped from pump station: _____			
<b>SITE ASSESSMENT:</b>			
All materials and debris removed from site? <u>Yes</u> / No Any environmental concerns? <u>Yes</u> / <u>No</u> If yes, please describe below: _____  Any additional work required? <u>Yes</u> / <u>No</u> If yes, please describe below: _____  Corrective action: _____ Responsible party: _____ Date to be completed by: <u>N/A</u>			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole location following demobilization and clean up? <u>Yes</u> / No Name: <u>Km107-DH19-03 Looking North, East, South, West After.</u> Folder: _____ Uploaded to hard drive? _____			
<b>COMMENTS:</b>			
<b>INSPECTION COMPLETED BY:</b>			
 Baffinland signature:		Drill contractor signature:	

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APPENDIX E.1.26

2019 Geotechnical Location –  
KM107-DH19-04

	Environmental Protection Plan	Issue Date: August 30, 2016 Revision: 1	Page 104 of 135
	Environment	Document #: BAF-PH1-830-P16-0008	

### 3.5 DRILL INSPECTION FORMS

SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT


	<b>PRE-DRILLING INSPECTION REPORT</b>	
	Baffinland personnel: <u>JESSICA GALAVAN (KP)</u> Date: <u>APRIL 5, 2019</u> Time: <u>2:45 PM</u> Proposed hole ID: <u>KM107-DH19-04</u> Final hole ID: <u>KM107-DH19-04</u>	
<b>PROPOSED HOLE INFORMATION:</b>		
Deposit #: _____ Project: <u>MARY RIVER</u> Area: <u>BAFFIN ISLAND</u> NTS: _____ Elevation: <u>330 masl</u> Description of drill hole location: <u>flat, snow covered tundra.</u> Purpose of drill hole: <u>KM107 STOCKPILE GEOTECHNICAL</u>	Collar location: _____ (NAD 83) _____ Dip: <u>-90°</u> Azimuth: <u>-</u> Target depth: <u>25m</u>	E <u>564 355</u> N <u>7 913 717</u>
<b>DRILLING INFORMATION:</b>		
Has site been approved by drill foreman? <u>YES</u> Drill contractor: Drill personnel: Drill #: <u>BOART LONGYEAR, VERDON BIGELOW, #1419</u> Expected start of drilling: <u>Apr. 15, 2019</u> Is moving of drill hole required? <u>no</u> If yes, provide reason: _____ New collar location: <u>N/A</u> E      N		
<b>WATER MANAGEMENT:</b> <u>N/A (Sonic drilling without use of water)</u>		
Water source: _____ Pump Station #: _____ Sump location identified and constructed?: Yes/No (Photo required) Corner 1: _____ E _____ N Corner 2: _____ E _____ N Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: _____ E _____ N Corner 2: _____ E _____ N		
<b>SITE ASSESSMENTS:</b>		
Are wildlife present?: (If yes, record in log) <u>no</u> Is site safe for drilling? _____ Stable platform <u>Yes/No</u> Fire Extinguisher <u>Yes/No</u> First Aid kit <u>Yes/No</u> Eye Wash <u>Yes/No</u> PPE <u>Yes/No</u> Spill Kits <u>Yes/No</u> Safety concerns/issues: <u>uneven ground, ice.</u> Environmental concerns? <u>no</u>		
<b>PHOTOGRAPHIC RECORD:</b>		
Photo of drill hole location prior to setup? <u>Yes/No</u> Name: <u>KM107-DH19-04 Looking North, East, South, West</u> Folder: _____ Uploaded to hard drive? _____		
<b>COMMENTS:</b>		

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	Environmental Protection Plan	Issue Date: August 30, 2016 Revision: 1	Page 105 of 135
	Environment	Document #: BAF-PH1-830-P16-0008	

### DAILY DRILLING INSPECTION REPORT

		DAILY DRILL INSPECTION REPORT	
		Baffinland personnel: JESSICA GALAVAN (KP) Date: Apr. 16, 2019 Time: 7:00 AM Hole ID: KM107-DH19-04	
HOLE INFORMATION:			
Deposit #:	1	Collar location:	E 564 309
Location:	MARY RIVER	(NAD 83)	N 7913 350
DRILLING INFORMATION			
Drill contractor: BOART LONGYEAR			
Drill personnel: VERDON, COREY, RUEBEN			
Drill #: 1419			
DRILLING PROGRESS:			
Day Shift		Night Shift	
Start depth: 3.05m		Start depth:	
End depth: 3.66m		End depth:	
Total depth drilled: 0.61m		Total depth drilled: N/A.	
Casing installed: 0m		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? no			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate no			
WATER USE ASSESSMENT: N/A.			
Sediment control measures in place:		DAILY WATER USE MONITORING:	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:			
Color of runoff?			
Conductivity readings?:	Station #	Reading	
	Station #	Reading	
	Station #	Reading	
Turbidity sample(s) taken?:	Sample #	Reading	
	Sample #	Reading	
SITE ASSESSMENT:			
Are wildlife present?: (check log for previous wildlife activity) Arctic fox			
Is site safe for drilling?			
Stable platform	<input checked="" type="radio"/> Yes / <input type="radio"/> No	Fire Extinguisher	<input checked="" type="radio"/> Yes / <input type="radio"/> No
First Aid kit	<input checked="" type="radio"/> Yes / <input type="radio"/> No	Eye Wash	<input checked="" type="radio"/> Yes / <input type="radio"/> No
PPE	<input checked="" type="radio"/> Yes / <input type="radio"/> No	Spill Kits	<input checked="" type="radio"/> Yes / <input type="radio"/> No
Lined Berms	N/A Yes / <input type="radio"/> No		
Safety concerns/issues:	no		
Environmental concerns?	no		
Corrective action required?: Action plan (if required): no			
Responsible party: N/A			
Date to be completed: Photograph (only required to document problems and corrective actions) N/A			
PHOTOGRAPHIC RECORD:			
Photo of drill hole during drilling? Photo of water management measures?		<input checked="" type="radio"/> Yes / <input type="radio"/> No	
Name:		Folder:	
Uploaded to hard drive?			
COMMENTS:			


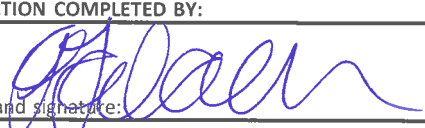
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	Environmental Protection Plan	Issue Date: August 30, 2016 Revision: 1	Page 106 of 135
	Environment	Document #: BAF-PH1-830-P16-0008	

## POST-DRILLING INSPECTION REPORT

		<b>POST-DRILLING INSPECTION REPORT</b> Baffinland personnel: <u>JESSICA GALAVAN (KP)</u> Date: <u>April 16, 2019</u> Time: <u>11:00 AM</u> Final hole ID: <u>KM107-DH19-04</u>	
<b>HOLE INFORMATION:</b>			
Deposit #: _____ Project: <u>MARY RIVER</u> Area: <u>BAFFIN ISLAND</u> NTS: <u>37G/5</u> Elevation: <u>330 masl</u> Description of drill hole location: _____ Purpose of drill hole: <u>KM107 Stockpile</u>	Collar location: <u>E 564 355</u> (NAD 83) <u>N 7913 717</u> Dip: <u>-90</u> Azimuth: <u>-</u> EOH: <u>3.66m</u>		
<b>DRILLING INFORMATION:</b>			
Drill contractor: <u>BCART LONGYEAR</u> Drill personnel: <u>Verdon, Corey, Rueben</u> Drill #: <u>1419</u> End of drilling: <u>April 16, 2019</u> Casing: <u>0m</u> Any rods/casing/tools lost in the drill hole? If yes, what was lost? <div style="text-align: center; margin-top: 5px;"><u>no</u></div>			
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? <u>Yes</u> / No <u>Sand backfill</u> Next set-up collar location: <u>E N/A</u> <u>N</u>			
<b>WATER USE ASSESSMENT:</b> <u>N/A</u>			
Water source: <u>Mary River</u> Pump station #: _____ Total amount of hours water was pumped from pump station: _____			
<b>SITE ASSESSMENT:</b>			
All materials and debris removed from site? <u>Yes</u> / No Any environmental concerns? <u>Yes</u> / <u>No</u> If yes, please describe below:			
Any additional work required? <u>Yes</u> / <u>No</u> If yes, please describe below:			
Corrective action: _____ Responsible party: <u>N/A</u> Date to be completed by: _____			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole location following demobilization and clean up? <u>Yes</u> / No Name: <u>KM107-DH19-04 Looking North</u> Folder: _____ Uploaded to hard drive? <u>East, South, West After</u>			
<b>COMMENTS:</b>			
<b>INSPECTION COMPLETED BY:</b>			
Baffinland signature: 		Drill contractor signature: _____	

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APPENDIX E.1.27

2019 Geotechnical Location –  
KM107-DH19-05

	Environmental Protection Plan	Issue Date: August 30, 2016 Revision: 1	Page 104 of 135
	Environment	Document #: BAF-PH1-830-P16-0008	

### 3.5 DRILL INSPECTION FORMS

SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT

	<b>PRE-DRILLING INSPECTION REPORT</b>													
	Baffinland personnel: <u>JESSICA GALAVAN (KP)</u> Date: <u>APR. 5, 2019</u> Time: <u>14:30</u> Proposed hole ID: <u>KM107-DH19-05</u> Final hole ID: <u>KM107-DH19-05</u>													
<b>PROPOSED HOLE INFORMATION:</b>														
Deposit #: _____ Collar location: <u>E 563 872</u> Project: <u>MARY RIVER</u> (NAD 83) <u>N 7913 617</u> Area: <u>BAFFIN ISLAND</u> NTS: _____ Dip: <u>-90°</u> Elevation: <u>334 masl</u> Azimuth: <u>—</u> Description of drill hole location: <u>South facing slope below haul road, tundra, snow covered.</u> Purpose of drill hole: <u>KM107 STOCKPILE ACCESS ROAD GEOTECHNICAL</u> Target depth: <u>25 m</u>														
<b>DRILLING INFORMATION:</b>														
Has site been approved by drill foreman? <u>YES</u> Drill contractor: Drill personnel: Drill #: <u>BOART LONGYEAR, VERDON BIGELOW, #1419</u> Expected start of drilling: <u>APR. 6, 2019</u> Is moving of drill hole required? <u>no</u> If yes, provide reason: _____ New collar location: <u>N/A</u> E _____ N _____														
<b>WATER MANAGEMENT: <u>N/A (sonic drilling without use of water)</u></b>														
Water source: _____ Pump Station #: _____ Sump location identified and constructed?: Yes/No (Photo required) Corner 1: _____ E _____ N _____ Corner 2: _____ E _____ N _____ Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: _____ E _____ N _____ Corner 2: _____ E _____ N _____														
<b>SITE ASSESSMENTS:</b>														
Are wildlife present?: (If yes, record in log) <u>no</u> Is site safe for drilling? _____ <table border="0"> <tr> <td>Stable platform</td> <td><u>Yes</u>/No</td> <td>Fire Extinguisher</td> <td><u>Yes</u>/No</td> </tr> <tr> <td>First Aid kit</td> <td><u>Yes</u>/No</td> <td>Eye Wash</td> <td><u>Yes</u>/No</td> </tr> <tr> <td>PPE</td> <td><u>Yes</u>/No</td> <td>Spill Kits</td> <td><u>Yes</u>/No</td> </tr> </table> Safety concerns/issues: <u>uneven ground, ice</u> Environmental concerns? <u>no</u>			Stable platform	<u>Yes</u> /No	Fire Extinguisher	<u>Yes</u> /No	First Aid kit	<u>Yes</u> /No	Eye Wash	<u>Yes</u> /No	PPE	<u>Yes</u> /No	Spill Kits	<u>Yes</u> /No
Stable platform	<u>Yes</u> /No	Fire Extinguisher	<u>Yes</u> /No											
First Aid kit	<u>Yes</u> /No	Eye Wash	<u>Yes</u> /No											
PPE	<u>Yes</u> /No	Spill Kits	<u>Yes</u> /No											
<b>PHOTOGRAPHIC RECORD:</b>														
Photo of drill hole location prior to setup? <u>Yes</u> /No Name: <u>KM107-DH19-05 Looking North, East, South, West Before</u> Folder: _____ Uploaded to hard drive? _____														
<b>COMMENTS:</b>														

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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 105 of 135
	Environment	Revision: 1	
		Document #: BAF-PH1-830-P16-0008	

### DAILY DRILLING INSPECTION REPORT

		DAILY DRILL INSPECTION REPORT	
		Baffinland personnel: <u>JESSICA GALAVAN</u> Date: <u>April 7, 2019</u> Time: <u>1:00 PM</u> Hole ID: <u>KM107-DH19-05</u>	
<b>HOLE INFORMATION:</b>			
Deposit #: <u>1</u>		Collar location: <u>E 563 872</u>	
Location: <u>MARY RIVER</u>		(NAD 83) <u>N 7913 617</u>	
<b>DRILLING INFORMATION</b>			
Drill contractor: <u>BOART LONGYEAR</u>			
Drill personnel: <u>Verdon, Corey, Rueben</u>			
Drill #: <u>1419</u>			
<b>DRILLING PROGRESS:</b>			
Day Shift		Night Shift	
Start depth: <u>0.0 m</u>		Start depth:	
End depth: <u>10.67 m</u>		End depth: <u>N/A</u>	
Total depth drilled: <u>10.67 m</u>		Total depth drilled:	
Casing installed: <u>0 m</u>		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? <u>no</u>			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate <u>no</u>			
<b>WATER USE ASSESSMENT: <u>N/A</u></b>			
Sediment control measures in place:		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:			
Color of runoff:			
Conductivity readings?:	Station #	Reading	
	Station #	Reading	
	Station #	Reading	
Turbidity sample(s) taken?:	Sample #	Reading	
	Sample #	Reading	
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity) <u>arctic fox</u>			
Is site safe for drilling?			
Stable platform	<u>Yes</u> / No	Fire Extinguisher	<u>Yes</u> / No
First Aid kit	<u>Yes</u> / No	Eye Wash	<u>Yes</u> / No
PPE	<u>Yes</u> / No	Spill Kits	<u>Yes</u> / No
Lined Berms	<u>N/A</u> Yes / No		
Safety concerns/issues: <u>no</u>			
Environmental concerns? <u>no</u>			
Corrective action required?: Action plan (if required): <u>no</u>			
Responsible party: <u>N/A</u>			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling?		Photo of water management measures? <u>Yes</u> / No	
Name: <u>KM107-DH19-05 Looking North, East, South,</u>		Folder:	
Uploaded to hard drive? <u>West During</u>			
<b>COMMENTS:</b>			



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	Environmental Protection Plan	Issue Date: August 30, 2016 Revision: 1	Page 106 of 135
	Environment	Document #: BAF-PH1-830-P16-0008	

## POST-DRILLING INSPECTION REPORT

	<b>POST-DRILLING INSPECTION REPORT</b> Baffinland personnel: <u>JESSICA GALAVAN (KP)</u> Date: <u>April 8, 2019</u> Time: <u>2:00 PM</u> Final hole ID: <u>KM107-DH19-05</u>		
<b>HOLE INFORMATION:</b> Deposit #: _____ Project: <u>MARY RIVER</u> Area: <u>BAFFIN ISLAND</u> NTS: <u>37G/5</u> Elevation: <u>334 masl</u> Description of drill hole location: <u>below haul road, stl facing slope</u> Purpose of drill hole: <u>KM107 Stockpile</u>			
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <b>DRILLING INFORMATION:</b>            Drill contractor: <u>BOART LONGYEAR</u>            Drill personnel: <u>Verden, Corey, Rueben</u>            Drill #: <u>1419</u>            End of drilling: <u>April 8, 2019</u>            Casing: <u>0m</u>            Any rods/casing/tools lost in the drill hole? If yes, what was lost?  <div style="text-align: center; margin-top: 10px;"><u>no</u></div> </td> <td style="width: 50%; border: none;">           Collar location: <u>E 563 872</u>            (NAD 83) <u>N 7913 617</u>            Dip: <u>-90</u>            Azimuth: <u>-</u>            EOH: <u>11.58m</u> </td> </tr> </table>		<b>DRILLING INFORMATION:</b> Drill contractor: <u>BOART LONGYEAR</u> Drill personnel: <u>Verden, Corey, Rueben</u> Drill #: <u>1419</u> End of drilling: <u>April 8, 2019</u> Casing: <u>0m</u> Any rods/casing/tools lost in the drill hole? If yes, what was lost? <div style="text-align: center; margin-top: 10px;"><u>no</u></div>	Collar location: <u>E 563 872</u> (NAD 83) <u>N 7913 617</u> Dip: <u>-90</u> Azimuth: <u>-</u> EOH: <u>11.58m</u>
<b>DRILLING INFORMATION:</b> Drill contractor: <u>BOART LONGYEAR</u> Drill personnel: <u>Verden, Corey, Rueben</u> Drill #: <u>1419</u> End of drilling: <u>April 8, 2019</u> Casing: <u>0m</u> Any rods/casing/tools lost in the drill hole? If yes, what was lost? <div style="text-align: center; margin-top: 10px;"><u>no</u></div>	Collar location: <u>E 563 872</u> (NAD 83) <u>N 7913 617</u> Dip: <u>-90</u> Azimuth: <u>-</u> EOH: <u>11.58m</u>		
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? <u>Yes</u> / No <u>sand backfill.</u> Next set-up collar location: <u>E 564116</u> <u>N 7913 360</u> WATER USE ASSESSMENT: <u>N/A</u>			
Water source: <u>Mary River</u> Pump station #: _____ Total amount of hours water was pumped from pump station: _____			
<b>SITE ASSESSMENT:</b> All materials and debris removed from site? Yes <u>No</u> Any environmental concerns? Yes <u>No</u> If yes, please describe below:  Any additional work required? Yes <u>No</u> If yes, please describe below:  Corrective action: _____ Responsible party: <u>N/A</u> Date to be completed by: _____			
<b>PHOTOGRAPHIC RECORD:</b> Photo of drill hole location following demobilization and clean up? <u>Yes</u> / No Name: <u>KM107-DH19-05 Looking North, East, South</u> Folder: _____ Uploaded to hard drive? <u>Next After</u>			
<b>COMMENTS:</b> <div style="height: 40px; border: 1px solid black;"></div>			
<b>INSPECTION COMPLETED BY:</b> <div style="height: 40px; border: 1px solid black; position: relative;"> <div style="position: absolute; top: 0; left: 0; width: 100%; height: 100%; background: linear-gradient(to bottom right, transparent 49%, #ccc 49% 51%, #ccc 51% 100%);"></div> </div>			
Baffinland signature: 	Drill contractor signature: _____		

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APPENDIX E.1.28

2019 Geotechnical Location –  
KM107-DH19-06

	Environmental Protection Plan	Issue Date: August 30, 2016 Revision: 1	Page 104 of 135
	Environment	Document #: BAF-PH1-830-P16-0008	

### 3.5 DRILL INSPECTION FORMS

SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT


	<b>PRE-DRILLING INSPECTION REPORT</b> Baffinland personnel: JESSICA GALAVAN (KP) Date: April 10, 2019 Time: 7:00 AM Proposed hole ID: KM107-DH19-06 Final hole ID: KM107-DH19-06													
	<b>PROPOSED HOLE INFORMATION:</b> Deposit #: _____ Project: MARY RIVER Area: BAFFIN ISLAND NTS: _____ Elevation: 308 masl Description of drill hole location: _____ Purpose of drill hole: KM107 STOCKPILE GEOTECHNICAL Collar location: E 564 309 (NAD 83) N 7913 350 Dip: -90 Azimuth: - Target depth: 25m													
<b>DRILLING INFORMATION:</b> Has site been approved by drill foreman? YES Drill contractor: Drill personnel: Drill #: BOART LONGYEAR, VERDON BIGELOW, #1419 Expected start of drilling: April 11, 2019 Is moving of drill hole required? no If yes, provide reason: _____ New collar location: E N														
<b>WATER MANAGEMENT:</b> N/A (Sonic drilling without use of water) Water source: _____ Pump Station #: _____ Sump location identified and constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N														
<b>SITE ASSESSMENTS:</b> Are wildlife present?: (If yes, record in log) _____ Is site safe for drilling? _____ <table border="0"> <tr> <td>Stable platform</td> <td>Yes/No</td> <td>Fire Extinguisher</td> <td>Yes/No</td> </tr> <tr> <td>First Aid kit</td> <td>Yes/No</td> <td>Eye Wash</td> <td>Yes/No</td> </tr> <tr> <td>PPE</td> <td>Yes/No</td> <td>Spill Kits</td> <td>Yes/No</td> </tr> </table> Safety concerns/issues: no Environmental concerns? no			Stable platform	Yes/No	Fire Extinguisher	Yes/No	First Aid kit	Yes/No	Eye Wash	Yes/No	PPE	Yes/No	Spill Kits	Yes/No
Stable platform	Yes/No	Fire Extinguisher	Yes/No											
First Aid kit	Yes/No	Eye Wash	Yes/No											
PPE	Yes/No	Spill Kits	Yes/No											
<b>PHOTOGRAPHIC RECORD:</b> Photo of drill hole location prior to setup? _____ Name: KM107-DH19-06 Looking North, East, South, West Before. Uploaded to hard drive? _____ Folder: _____														
<b>COMMENTS:</b>  														

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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 105 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### DAILY DRILLING INSPECTION REPORT

		DAILY DRILL INSPECTION REPORT	
		Baffinland personnel: JESSICA GALAVAN (KP) Date: APR. 12 '19 Time: 6:30 AM Hole ID: KM107-DH19-06   KM107-DH19-02	
HOLE INFORMATION:			
Deposit #: 1		Collar location: E 564 309   564 217	
Location: MARY RIVER		(NAD 83) N 7913 350   7913 497	
DRILLING INFORMATION			
Drill contractor: BOART LONGYEAR			
Drill personnel: Verdon, Corey, Rueben			
Drill #: 1419			
DRILLING PROGRESS:			
Day Shift		Night Shift	
Start depth: 15.24m		Start depth:	
End depth: 27.86		End depth: N/A -	
Total depth drilled: 7.62m		Total depth drilled:	
Casing installed: 0m		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost?			
no			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate			
couldn't get through to drill until 9:30 am, drill move 1 hr.			
WATER USE ASSESSMENT: N/A			
Sediment control measures in place:		DAILY WATER USE MONITORING:	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:			
Color of runoff:			
Conductivity readings?:	Station # Reading		
	Station # Reading		
	Station # Reading		
Turbidity sample(s) taken?:	Sample # Reading		
	Sample # Reading		
SITE ASSESSMENT:			
Are wildlife present?: (check log for previous wildlife activity)			
no			
Is site safe for drilling?			
Stable platform	Yes/No	Fire Extinguisher	Yes/No
First Aid kit	Yes/No	Eye Wash	Yes/No
PPE	Yes/No	Spill Kits	Yes/No
Lined Berms	N/A Yes/No		
Safety concerns/issues: no			
Environmental concerns? no			
Corrective action required?: Action plan (if required): N/A			
Responsible party: N/A			
Date to be completed: Photograph (only required to document problems and corrective actions)			
PHOTOGRAPHIC RECORD:			
Photo of drill hole during drilling? Photo of water management measures?		Yes/No	
Name:		Folder:	
Uploaded to hard drive?			
COMMENTS:			



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	Environmental Protection Plan	Issue Date: August 30, 2016 Revision: 1	Page 106 of 135
	Environment	Document #: BAF-PH1-830-P16-0008	

## POST-DRILLING INSPECTION REPORT

	<b>POST-DRILLING INSPECTION REPORT</b> Baffinland personnel: <u>JESSICA GALAVAN</u> Date: <u>April 12, 2019</u> Time: <u>2:00pm.</u> Final hole ID: <u>KM107-DH19-06</u>
<b>HOLE INFORMATION:</b>	
Deposit #: _____ Project: <u>MARY RIVER</u> Area: <u>BAFFIN ISLAND</u> NTS: <u>37G/5</u> Elevation: <u>308 masl</u> Description of drill hole location: _____ Purpose of drill hole: <u>KM107 Stockpile</u>	Collar location: <u>E 564 309</u> (NAD 83) <u>N 7913 350</u> Dip: <u>-90</u> Azimuth: <u>-</u> EOH: <u>22.86m.</u>
<b>DRILLING INFORMATION:</b>	
Drill contractor: <u>BOART LONGYEAR</u> Drill personnel: <u>Verdon, Corey, Rueben</u> Drill #: <u>1419</u> End of drilling: <u>April 12, 2019</u> Casing: <u>0m</u> Any rods/casing/tools lost in the drill hole? If yes, what was lost? <div style="text-align: center; margin-top: 10px;"><u>no</u></div>	
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? <u>Yes</u> / No <u>Sand backfill</u> Next set-up collar location: <u>E 564 217</u> <u>N 7913497</u>	
<b>WATER USE ASSESSMENT:</b> <u>N/A</u>	
Water source: <u>Mary River</u> Pump station #: _____ Total amount of hours water was pumped from pump station: _____	
<b>SITE ASSESSMENT:</b>	
All materials and debris removed from site? <u>Yes</u> / No Any environmental concerns? <u>Yes</u> / <u>No</u> If yes, please describe below: _____  Any additional work required? <u>Yes</u> / <u>No</u> If yes, please describe below: _____  Corrective action: _____ Responsible party: _____ Date to be completed by: <u>N/A</u>	
<b>PHOTOGRAPHIC RECORD:</b>	
Photo of drill hole location following demobilization and clean up? <u>Yes</u> / No Name: <u>KM107-DH19-06 Looking North, East, South, West After.</u> Folder: _____ Uploaded to hard drive? _____	
<b>COMMENTS:</b>	
<b>INSPECTION COMPLETED BY:</b>	
 Baffinland signature:	Drill contractor signature:

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APPENDIX E.1.29

2019 Geotechnical Location –  
KM106-DH19-01

	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### 3.5 DRILL INSPECTION FORMS

SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT

		<b>PRE-DRILLING INSPECTION REPORT</b>	
		Baffinland personnel: <u>JESSICA GALAVAN (KP)</u> Date: <u>May 16, 2019</u> Time: <u>10:00 AM</u> Proposed hole ID: <u>KM106-DH19-01</u> Final hole ID: <u>KM106-DH19-01</u>	
<b>PROPOSED HOLE INFORMATION:</b>			
Deposit #: _____ Project: <u>MARY RIVER</u> Area: <u>KM106 Stockpile</u> NTS: _____ Elevation: <u>264m asl</u> Description of drill hole location: _____ Purpose of drill hole: <u>KM106 Stockpile geotech</u>		Collar location: <u>E 563473</u> (NAD 83) <u>N 7913064</u> Dip: <u>-90</u> Azimuth: <u>—</u> Target depth: <u>15m</u>	
<b>DRILLING INFORMATION:</b>			
Has site been approved by drill foreman? <u>YES</u> Drill contractor: Drill personnel: <u>Verdon Bigelow, Boart Longyear, #1419</u> Expected start of drilling: <u>May 16, 2019</u> Is moving of drill hole required? <u>no</u> If yes, provide reason: <u>N/A</u> New collar location: <u>E</u> <u>N</u>			
<b>WATER MANAGEMENT:</b> <u>N/A (Dry drilling without water)</u>			
Water source: _____ Pump Station #: _____ Sump location identified and constructed?: Yes/No (Photo required) Corner 1: <u>E</u> <u>N</u> Corner 2: <u>E</u> <u>N</u> Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: <u>E</u> <u>N</u> Corner 2: <u>E</u> <u>N</u>			
<b>SITE ASSESSMENTS:</b>			
Are wildlife present?: (If yes, record in log) <u>no</u> Is site safe for drilling? <u>YES</u> Stable platform <u>Yes/No</u> Fire Extinguisher <u>Yes/No</u> First Aid kit <u>Yes/No</u> Eye Wash <u>Yes/No</u> PPE <u>Yes/No</u> Spill Kits <u>Yes/No</u> Safety concerns/issues: <u>no</u> Environmental concerns? <u>no</u>			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole location prior to setup? _____ Name: <u>KM106-DH19-01 Before</u> Uploaded to hard drive? _____		Yes/No Folder: _____	
<b>COMMENTS:</b>			

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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 105 of 135
	Environment	Revision: 1	
		Document #: BAF-PH1-830-P16-0008	


### DAILY DRILLING INSPECTION REPORT

		<b>DAILY DRILL INSPECTION REPORT</b> Baffinland personnel: JESSICA GALAVAN (KP) Date: May 16, 2019 Time: 10:00am Hole ID: KM106-DH19-01	
<b>HOLE INFORMATION:</b>			
Deposit #:	1	Collar location:	E 563473
Location:	MARY RIVER	(NAD 83)	N 7913064
<b>DRILLING INFORMATION</b>			
Drill contractor: BOART LONGYEAR			
Drill personnel: VERDON BIGELOW, COREY BUDGELL			
Drill #: 1419			
<b>DRILLING PROGRESS:</b>			
Day Shift		Night Shift	
Start depth: 0 m		Start depth:	
End depth: 1.52m		End depth:	
Total depth drilled: 1.52m		Total depth drilled:	
Casing installed: 0m		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost?			
no			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate			
no			
<b>WATER USE ASSESSMENT:</b>			
Sediment control measures in place:		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:			
Color of runoff?			
Conductivity readings?:	Station #	Reading	
	Station #	Reading	
	Station #	Reading	
Turbidity sample(s) taken?:	Sample #	Reading	
	Sample #	Reading	
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity)			
no			
Is site safe for drilling?			
Stable platform	Yes / No	Fire Extinguisher	Yes / No
First Aid kit	Yes / No	Eye Wash	Yes / No
PPE	Yes / No	Spill Kits	Yes / No
Lined Berms	N/A Yes / No		
Safety concerns/issues: no			
Environmental concerns? no			
Corrective action required?: Action plan (if required): N/A			
Responsible party: N/A			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling? Photo of water management measures?		Yes / No	
Name: KM106-DH19-01 During Drilling		Folder:	
Uploaded to hard drive?			
<b>COMMENTS:</b>			



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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 106 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

## POST-DRILLING INSPECTION REPORT

	<b>POST-DRILLING INSPECTION REPORT</b> Baffinland personnel: <u>JESSICA GALAVAN (KP)</u> Date: <u>May 16, 2019.</u> Time: <u>10:30 am</u> Final hole ID: <u>Km106-DH19-01</u>
<b>HOLE INFORMATION:</b>	
Deposit #: _____ Project: <u>MARY RIVER</u> Area: <u>BAFFIN ISLAND</u> NTS: <u>37G/5</u> Elevation: <u>264masl</u> Description of drill hole location: _____ Purpose of drill hole: <u>Km106 Stockpile geotech</u>	Collar location: <u>E 563 473</u> (NAD 83) <u>N 7913 064</u> Dip: <u>-90</u> Azimuth: <u>-</u> EOH: <u>1.52m</u>
<b>DRILLING INFORMATION:</b>	
Drill contractor: <u>Boart Longyear</u> Drill personnel: <u>Verdon Bigelow, Corey Budgell</u> Drill #: <u>1419</u> End of drilling: <u>May 16, 2019</u> Casing: <u>0m</u> Any rods/casing/tools lost in the drill hole? If yes, what was lost? <div style="text-align: center; margin-top: 10px;"><u>no</u></div>	
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? <u>Yes</u> / No Next set-up collar location: <u>E 563 545</u> <u>N 7913 193</u>	
<b>WATER USE ASSESSMENT:</b> <u>N/A</u>	
Water source: <u>Mary River</u> Pump station #: _____ Total amount of hours water was pumped from pump station: _____	
<b>SITE ASSESSMENT:</b>	
All materials and debris removed from site? <u>Yes</u> / No Any environmental concerns? <u>Yes</u> / <u>No</u> If yes, please describe below: _____  Any additional work required? <u>Yes</u> / <u>No</u> If yes, please describe below: _____  Corrective action: _____ Responsible party: <u>N/A</u> Date to be completed by: _____	
<b>PHOTOGRAPHIC RECORD:</b>	
Photo of drill hole location following demobilization and clean up? <u>Yes</u> / No Name: <u>Km106-DH19-01 After</u> Folder: _____ Uploaded to hard drive? _____	
<b>COMMENTS:</b>	
<b>INSPECTION COMPLETED BY:</b>	
Baffinland signature: 	Drill contractor signature: _____

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APPENDIX E.1.30

2019 Geotechnical Location –  
KM106-DH19-02

	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### 3.5 DRILL INSPECTION FORMS

SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT

		<b>PRE-DRILLING INSPECTION REPORT</b>	
		Baffinland personnel: JESSICA GALAVAN (RP) Date: May 16, 2019 Time: 1:00 PM. Proposed hole ID: Km106-DH19-02 Final hole ID: Km106-DH19-02	
<b>PROPOSED HOLE INFORMATION:</b>			
Deposit #:		Collar location:	E 563 418
Project: MARY RIVER		(NAD 83)	N 7913 168
Area: Km106 stockpile		Dip: -90	
NTS:		Azimuth: -	
Elevation: 278 masl		Target depth: 15m	
Description of drill hole location:			
Purpose of drill hole: Km106 stockpile geotech			
<b>DRILLING INFORMATION:</b>			
Has site been approved by drill foreman?	yes		
Drill contractor: Drill personnel: Drill #:	Boart Longyear, Verdon Bigelow, 1419		
Expected start of drilling:	May 16, 2019		
Is moving of drill hole required?	no		
If yes, provide reason:			
New collar location:	N/A	E	N
<b>WATER MANAGEMENT:</b> N/A (same drilling without water)			
Water source:			
Pump Station #:			
Sump location identified and constructed?:	Yes/No (Photo required)		
Corner 1:	E	N	
Corner 2:	E	N	
Silt fence(s) constructed?:	Yes/No (Photo required)		
Corner 1:	E	N	
Corner 2:	E	N	
<b>SITE ASSESSMENTS:</b>			
Are wildlife present?: (If yes, record in log)	no		
Is site safe for drilling?			
Stable platform	Yes/No	Fire Extinguisher	Yes/No
First Aid kit	Yes/No	Eye Wash	Yes/No
PPE	Yes/No	Spill Kits	Yes/No
Safety concerns/issues:	no		
Environmental concerns?	no		
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole location prior to setup?	Yes/No		
Name: Km106-DH19-02 Before		Folder:	
Uploaded to hard drive?			
<b>COMMENTS:</b>			

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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 105 of 135
	Environment	Revision: 1	
		Document #: BAF-PH1-830-P16-0008	

### DAILY DRILLING INSPECTION REPORT

		<b>DAILY DRILL INSPECTION REPORT</b> Baffinland personnel: JESSICA GALAVAN (KP) Date: May 16, 2019 Time: 1:00 PM Hole ID: KM106-PH19-02	
<b>HOLE INFORMATION:</b>			
Deposit #:	1	Collar location:	E 563418
Location:	MARY RIVER	(NAD 83)	N 7913168
<b>DRILLING INFORMATION</b>			
Drill contractor: BOART LONGYEAR			
Drill personnel: VERDON BIGELCW, COREY BUDGETT			
Drill #: 1419			
<b>DRILLING PROGRESS:</b>			
Day Shift		Night Shift	
Start depth: 0.0		Start depth:	
End depth: 1.52m		End depth:	
Total depth drilled: 1.52m		Total depth drilled:	
Casing installed: 0m		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? no			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate no			
<b>WATER USE ASSESSMENT:</b> N/A			
Sediment control measures in place:		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:			
Color of runoff?			
Conductivity readings?:	Station #	Reading	
	Station #	Reading	
	Station #	Reading	
Turbidity sample(s) taken?:	Sample #	Reading	
	Sample #	Reading	
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity)			
Is site safe for drilling?			
Stable platform	Yes / No	Fire Extinguisher	Yes / No
First Aid kit	Yes / No	Eye Wash	Yes / No
PPE	Yes / No	Spill Kits	Yes / No
Lined Berms	N/A Yes / No		
Safety concerns/issues: no			
Environmental concerns? no			
Corrective action required?: Action plan (if required): N/A			
Responsible party: N/A			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling? Photo of water management measures? Yes / No			
Name: KM106-PH19-02 During Drilling		Folder:	
Uploaded to hard drive?			
<b>COMMENTS:</b>			


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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 106 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

## POST-DRILLING INSPECTION REPORT

		POST-DRILLING INSPECTION REPORT	
		Baffinland personnel: JESSICA GALAVAN (KP) Date: May 16, 2019 Time: 2:00 pm. Final hole ID: KM106-DH19-02	
<b>HOLE INFORMATION:</b>			
Deposit #:		Collar location:	E 563418
Project:	MARY RIVER	(NAD 83)	N 7913168
Area:	BAFFIN ISLAND	Dip:	-90
NTS:	37G/5	Azimuth:	-
Elevation:	278 masl	EOH:	1.52m
Description of drill hole location:			
Purpose of drill hole: KM106 Stockpile geotech.			
<b>DRILLING INFORMATION:</b>			
Drill contractor: Boart Longyear			
Drill personnel: Verdon Bigelow, Corey Budgett			
Drill #: 1419			
End of drilling: May 16, 2019			
Casing: 0m			
Any rods/casing/tools lost in the drill hole? If yes, what was lost?			
no			
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? Yes / No			
Next set-up collar location: E 563505 N 7913113			
<b>WATER USE ASSESSMENT:</b>			
Water source: Mary River			
Pump station #:			
Total amount of hours water was pumped from pump station:			
<b>SITE ASSESSMENT:</b>			
All materials and debris removed from site? Yes / No			
Any environmental concerns?		Yes / No	If yes, please describe below:
Any additional work required?		Yes / No	If yes, please describe below:
Corrective action:			
Responsible party:			
Date to be completed by: N/A			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole location following demobilization and clean up? Yes / No			
Name: KM106-DH19-02 After.		Folder:	
Uploaded to hard drive?			
<b>COMMENTS:</b>			
<b>INSPECTION COMPLETED BY:</b>			
Baffinland signature:		Drill contractor signature:	

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APPENDIX E.1.31

2019 Geotechnical Location –  
KM106-DH19-03

	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### 3.5 DRILL INSPECTION FORMS

SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT

		<b>PRE-DRILLING INSPECTION REPORT</b>	
		Baffinland personnel: <u>JESSICA GALAVAN (KP)</u> Date: <u>May 16, 2019</u> Time: <u>10:45am</u> Proposed hole ID: <u>KM106-DH19-03</u> Final hole ID: <u>KM106-DH19-03</u>	
<b>PROPOSED HOLE INFORMATION:</b>			
Deposit #:		Collar location: E <u>563545</u>	
Project: <u>MARY RIVER</u>		(NAD 83) N <u>7913193</u>	
Area: <u>KM106 Stockpile</u>		Dip: <u>-90</u>	
NTS:		Azimuth: <u>-</u>	
Elevation: <u>279 masl</u>		Target depth: <u>15m</u>	
Description of drill hole location:			
Purpose of drill hole: <u>KM106 Stockpile geotech</u>			
<b>DRILLING INFORMATION:</b>			
Has site been approved by drill foreman? <u>yes</u>			
Drill contractor: Drill personnel: Drill #: <u>Beart Longyear, Verden Bigelow, #1419</u>			
Expected start of drilling: <u>May 16, 2019</u>			
Is moving of drill hole required? <u>no</u>			
If yes, provide reason:			
New collar location: <u>N/A</u> E N			
<b>WATER MANAGEMENT:</b> <u>N/A (soils drilling without water)</u>			
Water source:			
Pump Station #:			
Sump location identified and constructed?: Yes/No (Photo required)			
Corner 1:	E	N	
Corner 2:	E	N	
Silt fence(s) constructed?: Yes/No (Photo required)			
Corner 1:	E	N	
Corner 2:	E	N	
<b>SITE ASSESSMENTS:</b>			
Are wildlife present?: (If yes, record in log) <u>no</u>			
Is site safe for drilling? <u>yes</u>			
Stable platform	Yes/No	Fire Extinguisher	Yes/No
First Aid kit	Yes/No	Eye Wash	Yes/No
PPE	Yes/No	Spill Kits	Yes/No
Safety concerns/issues: <u>no</u>			
Environmental concerns? <u>no</u>			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole location prior to setup?		Yes/No	
Name: <u>KM106-DH19-03 Before</u>		Folder:	
Uploaded to hard drive?			
<b>COMMENTS:</b>			

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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 105 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### DAILY DRILLING INSPECTION REPORT

		<b>DAILY DRILL INSPECTION REPORT</b> Baffinland personnel: JESSICA GALAVAN (KP) Date: May 16, 2019 Time: 10:45 AM Hole ID: km106-DH19-03	
<b>HOLE INFORMATION:</b>			
Deposit #:	1	Collar location:	E 563 545
Location:	MARY RIVER	(NAD 83)	N 7913193
<b>DRILLING INFORMATION</b>			
Drill contractor: Boart Longyear			
Drill personnel: Verdon Bigelow, Corey Budgett			
Drill #: 1419			
<b>DRILLING PROGRESS:</b>			
Day Shift		Night Shift	
Start depth: 0.0 m		Start depth:	
End depth: 1.83 m		End depth:	
Total depth drilled: 1.83 m		Total depth drilled:	
Casing installed: 0 m		Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost? no			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate no			
<b>WATER USE ASSESSMENT:</b> N/A.			
Sediment control measures in place:		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:			
Color of runoff?			
Conductivity readings?:	Station #	Reading	
	Station #	Reading	
	Station #	Reading	
Turbidity sample(s) taken?:	Sample #	Reading	
	Sample #	Reading	
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity) no			
Is site safe for drilling?			
Stable platform	Yes/No	Fire Extinguisher	Yes/No
First Aid kit	Yes/No	Eye Wash	Yes/No
PPE	Yes/No	Spill Kits	Yes/No
Lined Berms	N/A Yes/No		
Safety concerns/issues: no			
Environmental concerns? no			
Corrective action required?: Action plan (if required): N/A			
Responsible party: N/A			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling? Photo of water management measures?			Yes/No
Name: km106-DH19-03 During Drilling			Folder:
Uploaded to hard drive?			
<b>COMMENTS:</b>			


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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 106 of 135
	Environment	Revision: 1	
		Document #: BAF-PH1-830-P16-0008	

### POST-DRILLING INSPECTION REPORT

		<b>POST-DRILLING INSPECTION REPORT</b> Baffinland personnel: JESSICA GALAVAN (KP) Date: May 16, 2019 Time: 11:30 AM Final hole ID: KM106-DH19-03	
<b>HOLE INFORMATION:</b>			
Deposit #:		Collar location:	E 563 545
Project: MARY RIVER		(NAD 83)	N 7913193
Area: BAFFIN ISLAND		Dip: -90	
NTS: 37G/5		Azimuth: -	
Elevation: 279m		EOH: 1.83m	
Description of drill hole location:			
Purpose of drill hole: KM106 Stockpile geotech.			
<b>DRILLING INFORMATION:</b>			
Drill contractor: Boart Longyear			
Drill personnel: Vernon Bigelow, Corey Budgett			
Drill #: 1419			
End of drilling: May 16, 2019			
Casing: 0m			
Any rods/casing/tools lost in the drill hole? If yes, what was lost?			
no			
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? Yes/No			
Next set-up collar location: E 562 418 N 7913 165			
<b>WATER USE ASSESSMENT:</b>			
Water source: Mary River			
Pump station #:			
Total amount of hours water was pumped from pump station:			
<b>SITE ASSESSMENT:</b>			
All materials and debris removed from site? Yes/No			
Any environmental concerns?		Yes/No	If yes, please describe below:
Any additional work required?		Yes/No	If yes, please describe below:
Corrective action:			
Responsible party: N/A			
Date to be completed by:			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole location following demobilization and clean up? Yes/No			
Name: KM106-DH19-03 After.		Folder:	
Uploaded to hard drive?			
<b>COMMENTS:</b>			
<b>INSPECTION COMPLETED BY:</b>			
Baffinland signature:		Drill contractor signature:	

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APPENDIX E.1.32


2019 Geotechnical Location –  
KM106-DH19-04

	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### 3.5 DRILL INSPECTION FORMS

SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT

		<b>PRE-DRILLING INSPECTION REPORT</b> Baffinland personnel: JESSICA GALAVAN (KP) Date: May 16, 2019 Time: 12:00 PM Proposed hole ID: KM106-DH19-04 Final hole ID: N/A													
		<b>PROPOSED HOLE INFORMATION:</b> Deposit #: Project: MARY RIVER Area: KM106 Stockpile NTS: Elevation: 285 m a.s.l. Description of drill hole location: Purpose of drill hole: KM106 Stockpile geotech.													
<b>DRILLING INFORMATION:</b> Has site been approved by drill foreman? no Drill contractor: Drill personnel: Drill #: Boart Longyear, Verdon Bigelow, #H19 Expected start of drilling: N/A Is moving of drill hole required? drill hole not completed due to access issues (too many boulders). Bedrock is at surface, therefore do not need to drill here. If yes, provide reason: New collar location: E N		Collar location: E 563 618 (NAD 83) N 7913 306 Dip: -90 Azimuth: - Target depth: 15m													
<b>WATER MANAGEMENT:</b> N/A Water source: Pump Station #: Sump location identified and constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N															
<b>SITE ASSESSMENTS:</b> Are wildlife present?: (If yes, record in log) no Is site safe for drilling? N/A <table border="0"> <tr> <td>Stable platform</td> <td>Yes /No</td> <td>Fire Extinguisher</td> <td>Yes /No</td> </tr> <tr> <td>First Aid kit</td> <td>Yes /No</td> <td>Eye Wash</td> <td>Yes /No</td> </tr> <tr> <td>PPE</td> <td>Yes /No</td> <td>Spill Kits</td> <td>Yes /No</td> </tr> </table> Safety concerns/issues: Environmental concerns?				Stable platform	Yes /No	Fire Extinguisher	Yes /No	First Aid kit	Yes /No	Eye Wash	Yes /No	PPE	Yes /No	Spill Kits	Yes /No
Stable platform	Yes /No	Fire Extinguisher	Yes /No												
First Aid kit	Yes /No	Eye Wash	Yes /No												
PPE	Yes /No	Spill Kits	Yes /No												
<b>PHOTOGRAPHIC RECORD:</b> Photo of drill hole location prior to setup? Yes /No Name: KM106-DH19-04 Before Folder: Uploaded to hard drive?															
<b>COMMENTS:</b>															

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APPENDIX E.1.33

2019 Geotechnical Location –  
KM106-DH19-05



	Environmental Protection Plan	Issue Date: August 30, 2016	Page 104 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### 3.5 DRILL INSPECTION FORMS

SECTION	OPERATIONAL ENVIRONMENT STANDARD	REVISION #	REVISION DATE
3.5	Drilling Inspection Forms	B	July 19, 2009

#### PRE-DRILLING INSPECTION REPORT


		<b>PRE-DRILLING INSPECTION REPORT</b>	
		Baffinland personnel: JESSICA GALAVAN (KP) Date: May 16, 2019 Time: 3:00pm Proposed hole ID: N/A (hole not proposed) Final hole ID: Km106-DH19-05	
<b>PROPOSED HOLE INFORMATION:</b>			
Deposit #: Project: MARY RIVER Area: Km106 Stockpile NTS: Elevation: 265 masl Description of drill hole location: Purpose of drill hole: Km106 Stockpile geotech		Collar location: E 563505 (NAD 83) N 7913113 Dip: -90 Azimuth: Target depth: 15m	
<b>DRILLING INFORMATION:</b>			
Has site been approved by drill foreman? YES Drill contractor: Drill personnel: Drill #: Boart Longyear, Verdon Bigelow, #1419 Expected start of drilling: May 16, 2019 Is moving of drill hole required? NO If yes, provide reason: New collar location: N/A E N			
<b>WATER MANAGEMENT:</b> N/A (soil drilling without water)			
Water source: Pump Station #: Sump location identified and constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N Silt fence(s) constructed?: Yes/No (Photo required) Corner 1: E N Corner 2: E N			
<b>SITE ASSESSMENTS:</b>			
Are wildlife present?: (If yes, record in log) NO Is site safe for drilling? YES Stable platform: YES/NO Fire Extinguisher: YES/NO First Aid kit: YES/NO Eye Wash: YES/NO PPE: YES/NO Spill Kits: YES/NO Safety concerns/issues: NO Environmental concerns? NO			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole location prior to setup? YES/NO Name: Km106-DH19-05 Before Folder: Uploaded to hard drive?			
<b>COMMENTS:</b>			

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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 105 of 135
	Environment	Revision: 1	Document #: BAF-PH1-830-P16-0008

### DAILY DRILLING INSPECTION REPORT


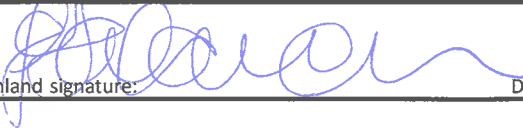
		<b>DAILY DRILL INSPECTION REPORT</b> Baffinland personnel: <u>JESSICA GALAVAN (KP)</u> Date: <u>May 16, 2019</u> Time: <u>3:00 PM</u> Hole ID: <u>KM106-DH19-05</u>	
<b>HOLE INFORMATION:</b>			
Deposit #:	<u>1</u>	Collar location:	E <u>563 505</u>
Location:	<u>MARY RIVER</u>	(NAD 83)	N <u>7913 113</u>
<b>DRILLING INFORMATION</b>			
Drill contractor:	<u>Boart Longyear</u>		
Drill personnel:	<u>Verdon Bigelow, Corey Budgett</u>		
Drill #:	<u>1419</u>		
<b>DRILLING PROGRESS:</b>			
<b>Day Shift</b>		<b>Night Shift</b>	
Start depth:	<u>0.0 m</u>	Start depth:	
End depth:	<u>4.57 m</u>	End depth:	
Total depth drilled:	<u>4.57 m</u>	Total depth drilled:	
Casing installed:	<u>0 m</u>	Casing installed:	
Any rods/casing/tools lost in the drill hole? If yes, what was lost?			
<u>no</u>			
Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc.) Provide time estimate			
<u>no</u>			
<b>WATER USE ASSESSMENT:</b>			
Sediment control measures in place:		<b>DAILY WATER USE MONITORING:</b>	
Assessment of effectiveness:		Water meter reading (start of day):	
Approximate water level in sump:		Water meter reading (end of day):	
Color of water in sump:			
Color of runoff?			
Conductivity readings?:	Station #	Reading	
	Station #	Reading	
	Station #	Reading	
Turbidity sample(s) taken?:	Sample #	Reading	
	Sample #	Reading	
<b>SITE ASSESSMENT:</b>			
Are wildlife present?: (check log for previous wildlife activity)			
<u>no</u>			
Is site safe for drilling?			
Stable platform	Yes/No	Fire Extinguisher	Yes/No
First Aid kit	Yes/No	Eye Wash	Yes/No
PPE	Yes/No	Spill Kits	Yes/No
Lined Berms	<u>N/A</u> Yes/No		
Safety concerns/issues: <u>no</u>			
Environmental concerns? <u>no</u>			
Corrective action required?: Action plan (if required): <u>N/A</u>			
Responsible party: <u>N/A</u>			
Date to be completed: Photograph (only required to document problems and corrective actions)			
<b>PHOTOGRAPHIC RECORD:</b>			
Photo of drill hole during drilling? Photo of water management measures?			Yes/No
Name: <u>KM106-DH19-05 During Drilling</u>			Folder:
Uploaded to hard drive?			
<b>COMMENTS:</b>			

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	Environmental Protection Plan	Issue Date: August 30, 2016	Page 106 of 135
	Environment	Revision: 1	
		Document #: BAF-PH1-830-P16-0008	

## POST-DRILLING INSPECTION REPORT

	<b>POST-DRILLING INSPECTION REPORT</b> Baffinland personnel: JESSICA GALAVAN (KP) Date: May 16, 2019 Time: 5:30 PM Final hole ID: KM106-DH19-05
<b>HOLE INFORMATION:</b>	
Deposit #: Project: MARY RIVER Area: BAFFIN ISLAND NTS: 37G/5 Elevation: 268 masl Description of drill hole location: Purpose of drill hole: KM106 Stockpile geotech.	Collar location: E 563 505 (NAD 83) N 7913 113 Dip: -40 Azimuth: - EOH: 4.57m.
<b>DRILLING INFORMATION:</b>	
Drill contractor: Boart Longyear Drill personnel: Verdon Bigelow, Corey Budgell Drill #: 1419 End of drilling: May 16, 2019 Casing: 0m Any rods/casing/tools lost in the drill hole? If yes, what was lost? <div style="text-align: center;">no</div>	
Are rods/casing left in the ground cut at ground level and is the hole properly plugged and capped? Yes / No Next set-up collar location: N/A - E N	
<b>WATER USE ASSESSMENT:</b>	
Water source: Mary River Pump station #: Total amount of hours water was pumped from pump station:	
<b>SITE ASSESSMENT:</b>	
All materials and debris removed from site? Yes / No Any environmental concerns? Yes / No If yes, please describe below:	
Any additional work required? Yes / No If yes, please describe below:	
Corrective action: Responsible party: N/A. Date to be completed by:	
<b>PHOTOGRAPHIC RECORD:</b>	
Photo of drill hole location following demobilization and clean up? Yes / No Name: KM106-DH19-05 After. Folder:	
Uploaded to hard drive?	
<b>COMMENTS:</b>	
<b>INSPECTION COMPLETED BY:</b>	
Baffinland signature: 	Drill contractor signature:

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APPENDIX E.2

Exploration Drilling Inspection  
Logs 2019



APPENDIX E.2.1

2019 Exploration Location –  
MR3-18-244

**PRE-DRILLING INSPECTION REPORT (pre-set-up) 2019**

BIM Personnel: Massoud Robatian

Date &amp; Time: 2019/06/17 11:05

Proposed hole ID:

Final Hole ID: MR3-18-244

**PROPOSED HOLE INFORMATION:**

Deposit #: Deposit No. 3

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Elevation: 466 metres

Description of drillhole location: Western Portion of Deposit 3

Purpose of drillhole: To complete hole from 2018

Collar location: E 567244  
(UTM NAD 83) N 7913520

Dip: -40

Azimuth: 350

Target depth: 312 metres

**DRILLING INFORMATION:**

Has site been approved by drill foreman?: Yes

Foreman: Shane Lupien

Drill contractor: Boart Longyear

Drill #: 7508

Expected start of drilling: 2019-06-17

Is moving of drillhole required?: No

If yes, provide reason:

New Collar Location E N

**ENVIRONMENT ASSESSMENT:**

Water source: Mary River

Pump Station #: Portable Tanks: Yes

Natural depression/ drainage evident?: No (Photo required)

Manual drainage constructed?: Yes (Photo required)

Silt fence(s) constructed?: Yes (Photo required)

Silt Bag Used: Yes (Photo required)

**SITE ASSESSMENTS:**

Are wildlife present?: (if yes, record in log) No

Is site safe for drilling?: Yes

Safety concerns/issues:

None

Environmental concerns?:

None

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location prior to setup? Yes

Location of photos: 2019 Drill Hole

Database

**COMMENTS:****INSPECTION COMPLETED BY:**

Name:

Signature:

Massoud Robatian

Date: 2019-06-17

BIM personnel: Leeno Jr Kublv  
 Date & Time: 2019/06/17 00:00  
 Hole ID: MR3-18-244

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 567244  
 Location: Western Section: (UTM NAD 83 17W) N 7913520

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LM 55      Drill #: 7508  
 Drill personnel: JUSTIN COLLINS, CYRIL ROSEWORTHY

**DRILLING PROGRESS:**

Start Shift Depth:      End Shift Depth:      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Currently drilling through ice

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place:

Assessment of effectiveness:

Salt usage per day: 40

Flow Meter Reading:      Start of Shift: 72.6m<sup>3</sup>      End of Shift: 92.6m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity)

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

None

Corrective action required?: No

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No      Photo of sediment control measures? No

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Leeno Jr Kublv

Date: 6/17/19

BIM personnel: Chad Panipakutsuk  
 Date & Time: 2019/06/18 00:00  
 Hole ID: MR3-18-244

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 567244  
 Location: Western Section: (UTM NAD 83 17W) N 7913520

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LM 55      Drill #: 7508  
 Drill personnel: Justin Collins, Cyril Noseworthy

**DRILLING PROGRESS:**

Start Shift Depth:      End Shift Depth:      Current Lithology:

Any rods/casing/tools lost in the drill hole?      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

One shift on drill, will be reaming/drilling ice in hole

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Silt Fence

Assessment of effectiveness: Good

Salt usage per day: 57 bags

Flow Meter Reading:      Start of Shift: 92.6 m3      End of Shift: 105.8 m3

Has wildlife been present?: (check log for previous wildlife activity)

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Heat for survival shack

Corrective action required?: No

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Chad Panipakutsuk

Date: 6/18/19



BIM personnel: Massoud Robatian  
 Date & Time: 2019/06/23 00:00  
 Hole ID: MR3-18-244

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 567244  
 Location: Western Section: (UTM NAD 83 17W) N 7913520

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LM 55      Drill #: 7508  
 Drill personnel: ROD OLIVER

**DRILLING PROGRESS:**

Start Shift Depth:      End Shift Depth:      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

No

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Silt Fence

Assessment of effectiveness: Good

Salt usage per day:

Flow Meter Reading:      Start of Shift:      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity)

No

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

No

Corrective action required?: No

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Massoud Robatian

Date: 6/23/19

BIM personnel: Kenny Allurut  
 Date & Time: 2019/06/24 00:00  
 Hole ID: MR3-18-244

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 567244  
 Location: Western Section: (UTM NAD 83 17W) N 7913520

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LM 55      Drill #: 7508  
 Drill personnel: Rob Oliver and Sam Gray

**DRILLING PROGRESS:**

Start Shift Depth:      End Shift Depth:      Current Lithology:

Any rods/casing/tools lost in the drill hole?      If yes, what was lost?:

N/A

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

N/A

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Silt Fence

Assessment of effectiveness: Good

Salt usage per day: 57 bags

Flow Meter Reading:      Start of Shift: 227.0 m3      End of Shift: 270.4 m3

Has wildlife been present?: (check log for previous wildlife activity)

No

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

No

Corrective action required?: No

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Kenny Allurut

Date: 6/24/19

BIM personnel: Kenny Allurut  
 Date & Time: 2019/06/25 00:00  
 Hole ID: MR3-18-244

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 567244  
 Location: Western Section: (UTM NAD 83 17W) N 7913520

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LM 55      Drill #: 7508  
 Drill personnel: ROD OLIVER

**DRILLING PROGRESS:**

Start Shift Depth: NQ to 189 m      End Shift Depth:      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

No

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Silt Fence

Assessment of effectiveness: Good

Salt usage per day: 43 bags

Flow Meter Reading:      Start of Shift: 307.9 m3      End of Shift: 340.4 m3

Has wildlife been present?: (check log for previous wildlife activity)

No

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

No

Corrective action required?: No

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Kenny Allurut

Date: 6/25/19

**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

BIM personnel: Justin Hoyle

Date &amp; Time: 2019/09/20 08:20

Hole ID: MR3-18-244

**HOLE INFORMATION:**

Deposit #: Deposit No. 3

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Collar location: E 567244

(UTM NAD 83 17W) N 7913520

Actual depth: NA Drilling Ice metres

Description of drillhole location: Western portion of Deposit 3

Purpose of drillhole: Infill drilling of Deposit 3

**DRILLING INFORMATION:**

Drill Contractor: Boart Lonqvear

Drill #: 7508

End Date of drilling: 2019-06-25

**ENVIRONMENT ASSESSMENT:**

	Yes	No	
All materials and debris removed from site?	<input checked="" type="radio"/>	<input type="radio"/>	
Casing left?:	<input checked="" type="radio"/>	<input type="radio"/>	
Has Casing left been cut to ground level?	<input checked="" type="radio"/>	<input type="radio"/>	
Any drill rods lost in the drillhole?	<input checked="" type="radio"/>	<input type="radio"/>	If yes, how many? 70
Has hole been properly marked?	<input checked="" type="radio"/>	<input type="radio"/>	
Any environmental concerns?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:
Any additional work required?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:

Corrective action:

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location following demobilization and clean up? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:****INSPECTION COMPLETED BY:**

BIM signature:

Foreman signature:

Date: 2019-09-20

Date:



APPENDIX E.2.2

2019 Exploration Location –  
MR1-19-251

**PRE-DRILLING INSPECTION REPORT (pre-set-up) 2019**

BIM Personnel: Massoud Robatian

Date &amp; Time: 2019/06/15 12:02

Proposed hole ID: MR1-18-P05

Final Hole ID: MR1-19-251

**PROPOSED HOLE INFORMATION:****Deposit #:** Deposit No. 1**Project:** Mary River**Area:** Baffin Island**NTS:** 37G/5**Elevation:** 600 metres**Description of drillhole location:** KM 108.5 of mine haul road**Purpose of drillhole:** SW definition**Collar location:** E 563819  
(UTM NAD 83) N 7915498**Dip:** -45**Azimuth:** 296**Target depth:** 175 metres**DRILLING INFORMATION:****Has site been approved by drill foreman?:** Yes**Foreman:** Shane Lupien**Drill contractor:** Boart Longyear**Drill #:** 7560**Expected start of drilling:** 2019-06-18**Is moving of drillhole required?:** Yes**If yes, provide reason:** Too steep**New Collar Location** E 563819 N 7915498**ENVIRONMENT ASSESSMENT:****Water source:** KM 108 sump**Pump Station #:** **Portable Tanks:** Yes**Natural depression/ drainage evident?:** Yes (Photo required)**Manual drainage constructed?:** Yes (Photo required)**Silt fence(s) constructed?:** Yes (Photo required)**Silt Bag Used:** Yes (Photo required)**SITE ASSESSMENTS:****Are wildlife present?:** (if yes, record in log) No**Is site safe for drilling?:** Yes**Safety concerns/issues:**

None

**Environmental concerns?:**

None

**PHOTOGRAPHIC RECORD:****Photo of drillhole location prior to setup?** No**Location of photos:** 2019 Drill Hole

Database

**COMMENTS:****INSPECTION COMPLETED BY:****Name:**

Massoud Robatian

**Signature:****Date:** 2019-06-15

BIM personnel: Massoud Robatian  
 Date & Time: 2019/06/18 00:00  
 Hole ID: MR1-19-251

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563819  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915498

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Christophe Legace and Corey Budgei

**DRILLING PROGRESS:**

Start Shift Depth:      End Shift Depth:      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

None

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Good

Salt usage per day: N/A

Flow Meter Reading:      Start of Shift: N/A      End of Shift: N/A

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Massoud Robatian

Date: 6/18/19

BIM personnel: Joasie Iqalukjuak  
 Date & Time: 2019/06/19 15:52  
 Hole ID: MR1-19-251

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563819  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915498

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Christophe Legace and Corey Budger

**DRILLING PROGRESS:**

Start Shift Depth: 4m      End Shift Depth: 9m      Current Lithology: 9 - Banded Ir  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

None

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Good

Salt usage per day: N/A

Flow Meter Reading:      Start of Shift: N/A      End of Shift: N/A

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Joasie Iqalukjuak      Signature:

Date: 6/19/19



BIM personnel: Massoud Robatian  
Date & Time: 2019/06/20 00:00  
Hole ID: MR1-19-251

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563819  
Location: N. Limb      Section: (UTM NAD 83 17W) N 7915498

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
Drill personnel: Christophe Legace and Corey Budgei

**DRILLING PROGRESS:**

Start Shift Depth:      End Shift Depth:      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

None

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Good

Salt usage per day: N/A

Flow Meter Reading:      Start of Shift: N/A      End of Shift: N/A

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Massoud Robatian

Date: 6/20/19

BIM personnel: Massoud Robatian  
 Date & Time: 2019/06/21 00:00  
 Hole ID: MR1-19-251

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563819  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915498

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Christophe Legace and Corey Budgei

**DRILLING PROGRESS:**

Start Shift Depth:      End Shift Depth:      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

None

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Good

Salt usage per day: N/A

Flow Meter Reading:      Start of Shift: N/A      End of Shift: N/A

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Massoud Robatian

Date: 6/21/19

BIM personnel: Kenny Allurut  
 Date & Time: 2019/06/22 06:22  
 Hole ID: MR1-19-251

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563819  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915498

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Christophe Legace and Corey Budger

**DRILLING PROGRESS:**

Start Shift Depth: 24m      End Shift Depth: 36m      Current Lithology: g - Banded Ir  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

None

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness:

Salt usage per day:

Flow Meter Reading:      Start of Shift: 206m<sup>3</sup>      End of Shift: 232m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity)

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No      Photo of sediment control measures? No  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Kenny Allurut

Date: 6/22/19

BIM personnel: William Koonoo  
 Date & Time: 2019/06/23 00:00  
 Hole ID: MR1-19-251

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563819  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915498

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Christophe Legace and Corey Budgei

**DRILLING PROGRESS:**

Start Shift Depth: 45m      End Shift Depth: 81m      Current Lithology: 7 - High Grac  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

None

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness:

Salt usage per day: 48 bags

Flow Meter Reading:      Start of Shift:      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: William Koonoo      Signature:

Date: 6/23/19



BIM personnel: William Koonoo  
Date & Time: 2019/06/24 00:00  
Hole ID: MR1-19-251

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563819  
Location: N. Limb      Section: (UTM NAD 83 17W) N 7915498

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
Drill personnel: Christophe Legace and Corey Budgei

**DRILLING PROGRESS:**

Start Shift Depth: 99m      End Shift Depth: 112.5m      Current Lithology: 7 - High Grac  
Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

1 hour delay: bit change and wireline change

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Good

Salt usage per day: 32 bags

Flow Meter Reading:      Start of Shift: 361.4m<sup>3</sup>      End of Shift: 371.8m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity) Yes

Small birds flying by.

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
Location of photos: 2019 Drilling Database

**COMMENTS:**

Fixed the sill fence.

**INSPECTION COMPLETED BY:**

Name: William Koonoo      Signature:

Date: 6/24/19

BIM personnel: William Koonoo  
 Date & Time: 2019/06/25 00:00  
 Hole ID: MR1-19-251

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563819  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915498

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Christophe Legace and Corey Budgei

**DRILLING PROGRESS:**

Start Shift Depth: 142.5m      End Shift Depth: 174m      Current Lithology: 4 - Schist  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

None

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence  
 Assessment of effectiveness: Good  
 Salt usage per day: 12 bags  
 Flow Meter Reading:      Start of Shift: 420m<sup>3</sup>      End of Shift: 442m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity) Yes

Little bird nest upwards towards drill 2.

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: William Koonoo      Signature:

Date: 6/25/19

BIM personnel: Kenny Allurut  
Date & Time: 2019/06/26 11:01  
Hole ID: MR1-19-251

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563819  
Location: N. Limb      Section: (UTM NAD 83 17W) N 7915498

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
Drill personnel: Christophe Legace and Corey Budger

**DRILLING PROGRESS:**

Start Shift Depth: 192m      End Shift Depth: 199.5m      Current Lithology: 4 - Schist  
Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence  
Assessment of effectiveness: Good  
Salt usage per day: 4 bags  
Flow Meter Reading:      Start of Shift: 478.4m<sup>3</sup>      End of Shift: 481.0m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:  
Kenny Allurut

Date: 6/26/19

**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

BIM personnel: Anita Egyir

Date &amp; Time: 2019/08/28 13:56

Hole ID: MR1-19-251

**HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Collar location: E 563819  
(UTM NAD 83 17W) N 7915498

Actual depth: 199.5 metres

Description of drillhole location: North Limb

Purpose of drillhole: Exploration of North Limb

**DRILLING INFORMATION:**

Drill Contractor: Boart Lonqvear

Drill #: 7560

End Date of drilling: 2019-06-26

**ENVIRONMENT ASSESSMENT:**

	Yes	No	
All materials and debris removed from site?	<input checked="" type="radio"/>	<input type="radio"/>	
Casing left?:	<input type="radio"/>	<input checked="" type="radio"/>	
Has Casing left been cut to ground level?	<input checked="" type="radio"/>	<input type="radio"/>	
Any drill rods lost in the drillhole?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, how many?:
Has hole been properly marked?	<input checked="" type="radio"/>	<input type="radio"/>	
Any environmental concerns?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:
Any additional work required?	<input checked="" type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:
Drill anchors and casing need to be cut and plugged			
<b>Corrective action:</b>			
Drill anchors and casing cut and plugged September 3, 2019			

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location following demobilization and clean up? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:****INSPECTION COMPLETED BY:**

BIM signature:

Anita Egyir  
Digitally signed by Anita Egyir  
Date: 2019.09.20 14:08:54 -04'00'

Foreman signature:

Date:

Date:



APPENDIX E.2.3

2019 Exploration Location –  
MR3-19-255

**PRE-DRILLING INSPECTION REPORT (pre-set-up) 2019**

BIM Personnel: Leeno Kublu  
Date & Time: 2019/05/28 14:07  
Proposed hole ID: MR3-19-P01  
Final Hole ID: MR3-19-255

**PROPOSED HOLE INFORMATION:**

**Deposit #:** Deposit No. 3  
**Project:** Mary River  
**Area:** Baffin Island  
**NTS:** 37G/5  
**Elevation:** 448 metres  
**Description of drillhole location:** Western Portion of Deposit 3  
**Purpose of drillhole:** MR3 west infill drilling

**Collar location:** E 567296  
(UTM NAD 83) N 7913560  
**Dip:** -45  
**Azimuth:** 350  
**Target depth:** 210 metres

**DRILLING INFORMATION:**

**Has site been approved by drill foreman?:** Yes **Foreman:** Leon Reid  
**Drill contractor:** Boart Longyear  
**Drill #:** 7508  
**Expected start of drilling:** 2019-06-29  
**Is moving of drillhole required?:** Yes  
**If yes, provide reason:** Too Steep  
**New Collar Location** E 567296 N 7913560

**ENVIRONMENT ASSESSMENT:**

**Water source:** Stream leading to Mary River  
**Pump Station #:** **Portable Tanks:** Yes  
**Natural depression/ drainage evident?:** Yes (Photo required)  
**Manual drainage constructed?:** Yes (Photo required)  
**Silt fence(s) constructed?:** Yes (Photo required)  
**Silt Bag Used:** Yes (Photo required)

**SITE ASSESSMENTS:**

**Are wildlife present?:** (if yes, record in log) No

**Is site safe for drilling?:** Yes

**Safety concerns/issues:**

None

**Environmental concerns?:**

None

**PHOTOGRAPHIC RECORD:**

**Photo of drillhole location prior to setup?** Yes

**Location of photos:** 2019 Drill Hole

**Database**

**COMMENTS:****INSPECTION COMPLETED BY:**

**Name:** Leeno Kublu **Signature:**

**Date:** 2019-05-28

BIM personnel: Anita Egyir  
Date & Time: 2019/06/30 10:31  
Hole ID: MR3-19-255

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 567296  
Location:      Section: (UTM NAD 83 17W) N 7913560

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LM 55      Drill #: 7508  
Drill personnel: Robert, Cyril

**DRILLING PROGRESS:**

Start Shift Depth: 10m      End Shift Depth: 19m      Current Lithology: 9 - Banded Ir  
Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Pulling rods; changing casing due to type of rock (sandy) they are currently drilling through

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Silt fence

Assessment of effectiveness: Fair

Salt usage per day: n/a

Flow Meter Reading:      Start of Shift:      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity) Yes

A few foxes

**Environmental Concerns:**

Silt has almost over-run the two silt fences currently up. A third one was erected to control the silt.

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

**Safety concerns/issues:**

Corrective action required?: No

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
Location of photos: 2019 Drilling Database

**COMMENTS:**

Drillers haven't added any salt yet today, as they are currently pulling rods. Flow meter is currently not working; a new one is needed.

**INSPECTION COMPLETED BY:**

Name: Anita Egyir      Signature:

Date: 6/30/19

BIM personnel: Eric Munro  
 Date & Time: 2019/07/01 13:30  
 Hole ID: MR3-19-255

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 567296  
 Location:      Section: (UTM NAD 83 17W) N 7913560

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LM 55      Drill #: 7508  
 Drill personnel: Robert, Cyril

**DRILLING PROGRESS:**

Start Shift Depth: 19m      End Shift Depth: 46m      Current Lithology: 9 - Banded Ir  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Unknown

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Silt fence  
 Assessment of effectiveness: Fair  
 Salt usage per day: 25 bags  
 Flow Meter Reading:      Start of Shift: Unknown      End of Shift: Unknown

Has wildlife been present?: (check log for previous wildlife activity) No

**Environmental Concerns:**

No flow meter.

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

**Safety concerns/issues:**

None

Corrective action required?: No

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Eric Munro      Signature:

Date: 7/1/19



BIM personnel: Joe / Wally / Eric  
 Date & Time: 2019/07/03 15:00  
 Hole ID: MR3-19-255

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 567296  
 Location:      Section: (UTM NAD 83 17W) N 7913560

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LM 55      Drill #: 7508  
 Drill personnel: ROBERT, Cyril

**DRILLING PROGRESS:**

Start Shift Depth: 91m      End Shift Depth: 130m      Current Lithology: 7 - High Grac  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Replaced wireline

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Silt fence  
 Assessment of effectiveness: Fair  
 Salt usage per day: 35 bags  
 Flow Meter Reading:      Start of Shift: Unknown      End of Shift: Unknown

Has wildlife been present?: (check log for previous wildlife activity) No

**Environmental Concerns:**

No flow meter.

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input type="radio"/>	<input checked="" type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

**Safety concerns/issues:**

None

Corrective action required?: No

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
 Location of photos: 2019 Drilling Database

**COMMENTS:**

Driller wasn't wearing safety glasses.

**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Wally Issigaitok

Date: 7/3/19

**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

BIM personnel: Justin Hoyle, Eric Munro, Anita Egvir

Date &amp; Time: 2019/08/28 16:39

Hole ID: MR3-19-255

**HOLE INFORMATION:**

Deposit #: Deposit No. 3

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Collar location: E 567296.469

(UTM NAD 83 17W) N 7913559.581

Actual depth: 226 metres

Description of drillhole location: Western portion of Deposit 3

Purpose of drillhole: Definition Drilling

**DRILLING INFORMATION:**

Drill Contractor: Boart Lonqvear

Drill #: 7508

End Date of drilling: 2019-07-05

**ENVIRONMENT ASSESSMENT:**

	Yes	No	
All materials and debris removed from site?	<input checked="" type="radio"/>	<input type="radio"/>	
Casing left?:	<input checked="" type="radio"/>	<input type="radio"/>	
Has Casing left been cut to ground level?	<input checked="" type="radio"/>	<input type="radio"/>	
Any drill rods lost in the drillhole?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, how many?:
Has hole been properly marked?	<input checked="" type="radio"/>	<input type="radio"/>	
Any environmental concerns?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:
Any additional work required?	<input type="radio"/>	<input type="radio"/>	If yes, please describe below:

Corrective action:

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location following demobilization and clean up? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:****INSPECTION COMPLETED BY:**

BIM signature:

Anita Egvir

Digitally signed by Anita  
Egvir  
Date: 2019.09.22  
06:47:34 -04'00'

Foreman signature:

Date:

Date:

APPENDIX E.2.4

2019 Exploration Location –  
MR1-19-254

**PRE-DRILLING INSPECTION REPORT (pre-set-up) 2019**

BIM Personnel: Massoud Robatian

Date &amp; Time: 2019/06/15 00:00

Proposed hole ID: MR1-19-P02

Final Hole ID: MR1-19-254

**PROPOSED HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Elevation: 568 metres

Description of drillhole location:

Purpose of drillhole: MR1 North Limb infill drilling

Collar location: E 563731  
(UTM NAD 83) N 7915265

Dip: -45

Azimuth: 295

Target depth: 265 metres

**DRILLING INFORMATION:**

Has site been approved by drill foreman?: Yes

Foreman: Leon Reid

Drill contractor: Boart Longyear

Drill #: 7560

Expected start of drilling: 2019-06-30

Is moving of drillhole required?: No

If yes, provide reason:

New Collar Location E N

**ENVIRONMENT ASSESSMENT:**

Water source: 108.5km sump

Pump Station #: Portable Tanks: Yes

Natural depression/ drainage evident?: Yes (Photo required)

Manual drainage constructed?: Yes (Photo required)

Silt fence(s) constructed?: Yes (Photo required)

Silt Bag Used: Yes (Photo required)

**SITE ASSESSMENTS:**

Are wildlife present?: (if yes, record in log) No

Is site safe for drilling?: Yes

Safety concerns/issues:

None

Environmental concerns?:

None

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location prior to setup? Yes

Location of photos: 2019 Drill Hole

Database

**COMMENTS:****INSPECTION COMPLETED BY:**

Name:

Signature:

Massoud Robatian

Date: 2019-06-15



BIM personnel: Wally Issigatok  
 Date & Time: 2019/06/30 15:00  
 Hole ID: MR1-19-254

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563731  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915265

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Christophe Legace and Corey Budgei

**DRILLING PROGRESS:**

Start Shift Depth: 3m      End Shift Depth: 27.5m      Current Lithology: 7 - High Grac  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Unknown

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Fair

Salt usage per day: 22 bags

Flow Meter Reading:      Start of Shift: 561m³ at 15:00      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

Silt fence needs repair

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input type="radio"/>	<input checked="" type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Driller does not have a shirt

Corrective action required?: Yes

Action plan (if required): Tell supervisor

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Wally Issigatok

Date: 6/30/19

BIM personnel: Wally / Kenny / Eric  
 Date & Time: 2019/07/01 10:00  
 Hole ID: MR1-19-254

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563731  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915265

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Christophe Legace and Corey Budgei

**DRILLING PROGRESS:**

Start Shift Depth: 63.5m      End Shift Depth: 87.5m      Current Lithology:  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Water system problem, waiting for part.

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence  
 Assessment of effectiveness: Fair  
 Salt usage per day: 19 bags  
 Flow Meter Reading:      Start of Shift: 553.7m<sup>3</sup>      End of Shift: 581.8m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity) No

**Environmental Concerns:**

Garbage on the ground, I have taken care of it.

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

**Safety concerns/issues:**

None

**Corrective action required?:**

Action plan (if required):

**Responsible party:**
**Date to be completed:**

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
 Location of photos: 2019 Drilling Database

**COMMENTS:**

Composite and corrections from Wally and Kenny's forms.

**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Wally / Kenny / Eric

Date: 7/1/19

BIM personnel: Eric Munro  
 Date & Time: 2019/07/02 08:45  
 Hole ID: MR1-19-254

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563731  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915265

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Christophe Legace and Corey Budgei

**DRILLING PROGRESS:**

Start Shift Depth: 119m      End Shift Depth: 156.5m      Current Lithology: 7 - High Grac  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Unknown

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Fair

Salt usage per day: 40 bags

Flow Meter Reading:      Start of Shift: 621.3m³ at 08:54      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity) No

**Environmental Concerns:**

Silt fence needs repair, broken hydrometer

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

**Safety concerns/issues:**

None

**Corrective action required?:**

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Eric Munro      Signature:

Date: 7/2/19

BIM personnel: Joe Palitug  
 Date & Time: 2019/07/03 09:06  
 Hole ID: MR1-19-254

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563731  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915265

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Christophe Legace and Corey Budgei

**DRILLING PROGRESS:**

Start Shift Depth: 186.5m      End Shift Depth: 212m      Current Lithology: 4 - Schist  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Unknown

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Fair

Salt usage per day: 20 bags

Flow Meter Reading:      Start of Shift: 686m³ at 08:54      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

Silt fence needs repair

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Platform supports look crooked

Corrective action required?: Yes

Action plan (if required): Tell supervisor

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Joe Palitug      Signature:

Date: 7/3/19



**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

BIM personnel: Anita Egyir

Date &amp; Time: 2019/08/28 14:08

Hole ID: MR1-19-254

**HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Collar location: E 563731  
(UTM NAD 83 17W) N 7915265

Actual depth: 261.5 metres

Description of drillhole location: North Limb

Purpose of drillhole: Exploration of North Limb

**DRILLING INFORMATION:**

Drill Contractor: Boart Lonqvear

Drill #: 7560

End Date of drilling: 2019-07-06

**ENVIRONMENT ASSESSMENT:**

	Yes	No	
All materials and debris removed from site?	<input checked="" type="radio"/>	<input type="radio"/>	
Casing left?:	<input type="radio"/>	<input checked="" type="radio"/>	
Has Casing left been cut to ground level?	<input checked="" type="radio"/>	<input type="radio"/>	
Any drill rods lost in the drillhole?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, how many?:
Has hole been properly marked?	<input checked="" type="radio"/>	<input type="radio"/>	
Any environmental concerns?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:

Any additional work required?	<input checked="" type="radio"/>	<input type="radio"/>	If yes, please describe below:
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Drill anchors and casing need to be cut and plugged

**Corrective action:**

Drill anchors and casing cut and plugged September 3, 2019

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location following demobilization and clean up? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:****INSPECTION COMPLETED BY:**

BIM signature:

Anita Egyir

Digitally signed by Anita  
Egyir  
Date: 2019.09.20  
14:13:39 -04'00'

Foreman signature:

Date:

Date:

APPENDIX E.2.5

2019 Exploration Location –  
MR1-19-257

**PRE-DRILLING INSPECTION REPORT (pre-set-up) 2019**

BIM Personnel: Stephen MacConnell

Date &amp; Time: 2019/07/05 13:45

Proposed hole ID: MR1-19-P01

Final Hole ID: MR1-19-257

**PROPOSED HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Elevation: 568 metres

Description of drillhole location:

Purpose of drillhole: MR1 North Limb infill drilling

Collar location: E 563948  
(UTM NAD 83) N 7915652

Dip: -45

Azimuth: 350

Target depth: 235 metres

**DRILLING INFORMATION:**

Has site been approved by drill foreman?: Yes

Foreman: Scott Young

Drill contractor: Boart Longyear

Drill #: 7560

Expected start of drilling: 2019-07-05

Is moving of drillhole required?: No

If yes, provide reason:

New Collar Location E N

**ENVIRONMENT ASSESSMENT:**

Water source: 108.5km sump

Pump Station #: Portable Tanks: Yes

Natural depression/ drainage evident?: Yes (Photo required)

Manual drainage constructed?: Yes (Photo required)

Silt fence(s) constructed?: Yes (Photo required)

Silt Bag Used: Yes (Photo required)

**SITE ASSESSMENTS:**

Are wildlife present?: (if yes, record in log) No

Is site safe for drilling?: Yes

Safety concerns/issues:

None

Environmental concerns?:

None

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location prior to setup? Yes

Location of photos: 2019 Drill Hole

Database

**COMMENTS:****INSPECTION COMPLETED BY:**

Name:

Signature:

Stephen MacConnell

Date: 2019-07-05

**BIM personnel:** Chad Panipakutsuk

**Date & Time:** 2019/07/09 00:00

**Hole ID:** MR1-19-257

**HOLE INFORMATION:**
**Deposit #:** Deposit No. 1

**Location:** N. Limb **Section:**
**Collar location:** E 563948  
(UTM NAD 83 17W) N 7915652

**DRILLING INFORMATION**
**Drill contractor:** Boart Longyear

**Drill Type:** LF /U

**Drill #:** 7560

**Drill personnel:** Todd Vokek and Shane Lachapelle

**DRILLING PROGRESS:**
**Start Shift Depth:** 24m

**End Shift Depth:** 75m

**Current Lithology:**
**Any rods/casing/tools lost in the drill hole?** No

If yes, what was lost?:

**Delays/Problems:** (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**
**Sediment control measures in place:** Yes

**Assessment of effectiveness:**
**Salt usage per day:** 45 bags

**Flow Meter Reading:** Start of Shift:

End of Shift:

**Has wildlife been present?:** (check log for previous wildlife activity)

**Environmental Concerns:**
**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

**Safety concerns/issues:**
**Corrective action required?:**
**Action plan (if required):**
**Responsible party:**
**Date to be completed:**
**Photograph (only required to document problems and corrective actions):**
**PHOTOGRAPHIC RECORD:**
**Photo of drill hole during drilling?** No

**Photo of sediment control measures?** No

**Location of photos:** 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**
**Name:**
**Signature:**

Chad Panipakutsuk

**Date:** 7/9/19



BIM personnel: Joasie Iqalukjuak  
 Date & Time: 2019/07/10 08:38  
 Hole ID: MR1-19-257

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563948  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915652

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Ioda Vokek and Shane Lacnapelle

**DRILLING PROGRESS:**

Start Shift Depth: 132m      End Shift Depth: 168m      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes

Assessment of effectiveness: Fair

Salt usage per day: 38 bags

Flow Meter Reading:      Start of Shift: 876.7m      End of Shift: 896.5m

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

None

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No      Photo of sediment control measures? No

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Joasie Iqalukjuak

Date: 7/10/19

BIM personnel: Joey Manniapik  
Date & Time: 2019/07/11 00:00  
Hole ID: MR1-19-257

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563948  
Location: N. Limb      Section: (UTM NAD 83 17W) N 7915652

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
Drill personnel: James Blake and Shane Lachapelle

**DRILLING PROGRESS:**

Start Shift Depth: 189m      End Shift Depth: 213m      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes

Assessment of effectiveness: Fair

Salt usage per day: 36 bags

Flow Meter Reading:      Start of Shift: 978.1m<sup>3</sup>      End of Shift: 1009.2m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

None

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No      Photo of sediment control measures? No

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Joey Manniapik

Date: 7/11/19

BIM personnel: Stephen MacConnell  
 Date & Time: 2019/07/12 00:00  
 Hole ID: MR1-19-257

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563948  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915652

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: James Blake and Shane Lachapelle

**DRILLING PROGRESS:**

Start Shift Depth: 237m      End Shift Depth: 237m      Current Lithology: 5 - Gneiss  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes

Assessment of effectiveness: Good

Salt usage per day:

Flow Meter Reading:      Start of Shift:      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

None

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No      Photo of sediment control measures? No  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Stephen MacConnell      Signature:

Date: 7/12/19

**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

BIM personnel: Anita Egyir

Date &amp; Time: 2019/08/28 13:48

Hole ID: MR1-19-257

**HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Collar location: E 563948  
(UTM NAD 83 17W) N 7915652

Actual depth: 237.0 metres

Description of drillhole location: North Limb

Purpose of drillhole: Exploration of North Limb

**DRILLING INFORMATION:**

Drill Contractor: Boart Lonqvear

Drill #: 7560

End Date of drilling: 2019-07-11

**ENVIRONMENT ASSESSMENT:**

	Yes	No	
All materials and debris removed from site?	<input checked="" type="radio"/>	<input type="radio"/>	
Casing left?:	<input type="radio"/>	<input checked="" type="radio"/>	
Has Casing left been cut to ground level?	<input checked="" type="radio"/>	<input type="radio"/>	
Any drill rods lost in the drillhole?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, how many?:
Has hole been properly marked?	<input checked="" type="radio"/>	<input type="radio"/>	
Any environmental concerns?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:
Any additional work required?	<input checked="" type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:
Drill anchors and casing need to be cut and plugged			
<b>Corrective action:</b>			
Drill anchors and casing cut and plugged September 3, 2019			

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location following demobilization and clean up? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:****INSPECTION COMPLETED BY:**

BIM signature:

Anita Egyir

Digitally signed by Anita  
Egyir  
Date: 2019.09.20  
14:18:32 -04'00'

Foreman signature:

Date:

Date:



APPENDIX E.2.6

2019 Exploration Location –  
MR1-19-253

**PRE-DRILLING INSPECTION REPORT (pre-set-up) 2019**

BIM Personnel: Massoud Robatian

Date &amp; Time: 2019/06/15 00:00

Proposed hole ID: MR1-19-P03

Final Hole ID: MR1-19-253

**PROPOSED HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Elevation: 597 metres

Description of drillhole location: North Limb of Deposit 1

Purpose of drillhole: Definition drilling of North Limb

Collar location: E 563787

(UTM NAD 83) N 7915383

Dip: -48

Azimuth: 295

Target depth: 285 metres

**DRILLING INFORMATION:**

Has site been approved by drill foreman?: Yes

Foreman: Scott Young

Drill contractor: Boart Longyear

Drill #: 7565

Expected start of drilling: 2019-06-27

Is moving of drillhole required?: No

If yes, provide reason:

New Collar Location E N

**ENVIRONMENT ASSESSMENT:**

Water source: sump at Km 108.5

Pump Station #: Portable Tanks: Yes

Natural depression/ drainage evident?: Yes (Photo required)

Manual drainage constructed?: No (Photo required)

Silt fence(s) constructed?: Yes (Photo required)

Silt Bag Used: Yes (Photo required)

**SITE ASSESSMENTS:**

Are wildlife present?: (if yes, record in log) No

Is site safe for drilling?: Yes

Safety concerns/issues:

None

Environmental concerns?:

None

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location prior to setup? Yes

Location of photos: 2019 Drill Hole

Database

**COMMENTS:****INSPECTION COMPLETED BY:**

Name:

Massoud Robatian

Signature:

Date: 2019-06-15

BIM personnel: Eric Munro  
Date & Time: 2019/06/30 15:15  
Hole ID: MR1-19-253

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563787  
Location: N. Limb      Section: (UTM NAD 83 17W) N 7915383

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
Drill personnel: James Blake and Sam

**DRILLING PROGRESS:**

Start Shift Depth: 6m      End Shift Depth: 27m      Current Lithology: 4 - Schist  
Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence  
Assessment of effectiveness: Poor  
Salt usage per day: 22 bags  
Flow Meter Reading:      Start of Shift:      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity) No

**Environmental Concerns:**

Silt fence in need of repair, no flow meter.

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input type="radio"/>	<input checked="" type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

**Safety concerns/issues:**

Pumpman (?) not wearing eye protection

Corrective action required?: Yes

Action plan (if required): Tell supervisor

Responsible party: Massoud Robatian

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Eric Munro      Signature:

BIM personnel: Eric Munro  
Date & Time: 2019/07/01 10:30  
Hole ID: MR1-19-253

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563787  
Location: N. Limb      Section: (UTM NAD 83 17W) N 7915383

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
Drill personnel: James Blake, Calvin Durocher

**DRILLING PROGRESS:**

Start Shift Depth:      End Shift Depth:      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Unknown

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Fair

Salt usage per day:

Flow Meter Reading:      Start of Shift:      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

no flow meter.

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?: No

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:

Signature:

Eric Munro

Date: 7/1/19



BIM personnel: Eric Munro  
 Date & Time: 2019/07/02 09:15  
 Hole ID: MR1-19-253

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563787  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915383

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: James Blake and Sam

**DRILLING PROGRESS:**

Start Shift Depth: 81m      End Shift Depth: 99m      Current Lithology: 9 - Banded Ir  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Unknown

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Poor

Salt usage per day: 25 bags

Flow Meter Reading:      Start of Shift:      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity) No

**Environmental Concerns:**

Silt fence in need of repair, no flow meter.

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

**Safety concerns/issues:**

No drilling guard, rotating equipment dangerously exposed.

Corrective action required?: Yes

Action plan (if required): Tell supervisor

Responsible party: Massoud Robatian

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Eric Munro

Date: 7/2/19

BIM personnel: Joe Palituq  
 Date & Time: 2019/07/03 10:10  
 Hole ID: MR1-19-253

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563787  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915383

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: James Blake and Sam

**DRILLING PROGRESS:**

Start Shift Depth: 117m      End Shift Depth: 130.5m      Current Lithology: g - Banded Ir  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Unknown

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Poor

Salt usage per day: 50 bags

Flow Meter Reading:      Start of Shift:      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

No flow meter.

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

None

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No      Photo of sediment control measures? No  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Joe Palituq      Signature: 

Date: 7/3/19

BIM personnel: Leeno Kublu  
 Date & Time: 2019/07/15 00:00  
 Hole ID: MR1-19-253

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563787  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915383

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: James Blake and James

**DRILLING PROGRESS:**

Start Shift Depth:      End Shift Depth:      Current Lithology:

Any rods/casing/tools lost in the drill hole? Yes      If yes, what was lost?:

drill snaps

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

drill snaps

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place:

Assessment of effectiveness: Poor

Salt usage per day:

Flow Meter Reading:      Start of Shift:      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

No flow meter.

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

None

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Leeno Kublu



Date: 7/15/19

BIM personnel: Joe Palituq  
 Date & Time: 2019/07/16 00:00  
 Hole ID: MR1-19-253

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563787  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915383

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: Glen Hepnner, James James

**DRILLING PROGRESS:**

Start Shift Depth: 204m      End Shift Depth:      Current Lithology:

Any rods/casing/tools lost in the drill hole?      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

stuck rods

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Fair

Salt usage per day:

Flow Meter Reading:      Start of Shift:      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

No flow meter.

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

None

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Joe Palituq



Date: 7/16/19



BIM personnel: Joe Palituq  
 Date & Time: 2019/07/17 00:00  
 Hole ID: MR1-19-253

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563787  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915383

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: James Blake and James

**DRILLING PROGRESS:**

Start Shift Depth:      End Shift Depth:      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

not drilling/ moving drill

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Fair

Salt usage per day:

Flow Meter Reading:      Start of Shift:      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity) Yes

fox

Environmental Concerns:

No flow meter.

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

None

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No      Photo of sediment control measures? No

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Joe Palituq



Date: 7/17/19

**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

BIM personnel: Anita Egyir

Date &amp; Time: 2019/08/28 14:03

Hole ID: MR1-19-253

**HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Collar location: E 563787  
(UTM NAD 83 17W) N 7915383

Actual depth: 204.0 metres

Description of drillhole location: North Limb

Purpose of drillhole: Exploration of North Limb

**DRILLING INFORMATION:**

Drill Contractor: Boart Lonqvear

Drill #: 7565

End Date of drilling: 2019-07-17

**ENVIRONMENT ASSESSMENT:**

	Yes	No	
All materials and debris removed from site?	<input checked="" type="radio"/>	<input type="radio"/>	
Casing left?:	<input type="radio"/>	<input checked="" type="radio"/>	
Has Casing left been cut to ground level?	<input checked="" type="radio"/>	<input type="radio"/>	
Any drill rods lost in the drillhole?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, how many?:
Has hole been properly marked?	<input checked="" type="radio"/>	<input type="radio"/>	
Any environmental concerns?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:

Any additional work required?	<input checked="" type="radio"/>	<input type="radio"/>	If yes, please describe below:
-------------------------------	----------------------------------	-----------------------	--------------------------------

Drill anchors and casing need to be cut and plugged

**Corrective action:**

Drill anchors and casing cut and plugged September 3, 2019

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location following demobilization and clean up? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:****INSPECTION COMPLETED BY:**

BIM signature:

Anita Egyir

Digitally signed by Anita  
Egyir  
Date: 2019.09.20  
14:12:03 -04'00'

Foreman signature:

Date:

Date:

APPENDIX E.2.7

2019 Exploration Location –  
MR1-19-258

**PRE-DRILLING INSPECTION REPORT (pre-set-up) 2019**

BIM Personnel: Massoud Robatian

Date &amp; Time: 2019/07/13 10:57

Proposed hole ID: MR1-19-P05

Final Hole ID: MR1-19-258

**PROPOSED HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Elevation: 562 metres

Description of drillhole location: North Limb of Deposit 1

Purpose of drillhole: Definition drilling of North Limb Extension

Collar location: E 564020  
(UTM NAD 83) N 7915718

Dip: -45

Azimuth: 293

Target depth: 240 metres

**DRILLING INFORMATION:**

Has site been approved by drill foreman?: Yes

Foreman: Scott Young

Drill contractor: Boart Longyear

Drill #: 7560

Expected start of drilling: 2019-07-14

Is moving of drillhole required?: No

If yes, provide reason:

New Collar Location E N

**ENVIRONMENT ASSESSMENT:**

Water source: Sump at Km 108.5

Pump Station #: Portable Tanks: Yes

Natural depression/ drainage evident?: Yes (Photo required)

Manual drainage constructed?: Yes (Photo required)

Silt fence(s) constructed?: Yes (Photo required)

Silt Bag Used: Yes (Photo required)

**SITE ASSESSMENTS:**

Are wildlife present?: (if yes, record in log) No

Is site safe for drilling?: Yes

Safety concerns/issues:

None

Environmental concerns?:

None

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location prior to setup? No

Location of photos: 2019 Drill Hole

Database

**COMMENTS:****INSPECTION COMPLETED BY:**

Name:

Massoud Robatian

Signature:

Date: 2019-07-13



BIM personnel: Chad Panipococho  
Date & Time: 2019/07/15 00:00  
Hole ID: MR1-19-258

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 564020  
Location: N. Limb      Section: (UTM NAD 83 17W) N 7915718

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
Drill personnel: Todd Vokey and Sheldon Gifford

**DRILLING PROGRESS:**

Start Shift Depth: 0m      End Shift Depth: 31.5m      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place:

Assessment of effectiveness:

Salt usage per day: 27 bags

Flow Meter Reading:      Start of Shift:      End of Shift: 1039.4m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity)

Environmental Concerns:

No berm

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling?

Photo of sediment control measures?

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:

Signature:

Chad Panipacocho

Date: 7/15/19

BIM personnel: Leeno Jr Kublu  
 Date & Time: 2019/07/16 12:30  
 Hole ID: MR1-19-258

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 564020  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915718

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Ioda vokey and Snelson Gifford

**DRILLING PROGRESS:**

Start Shift Depth: 67.5m      End Shift Depth: 84m      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness:

Salt usage per day: 35 bags

Flow Meter Reading:      Start of Shift: 1070.2m<sup>3</sup>      End of Shift: 1103.5m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

None

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**

Not drilling at the moment, tried using bucket but the salinity was 0% so ended using outside tank.

**INSPECTION COMPLETED BY:**

Name:

Signature:

Leeno Jr Kublu

Date: 7/16/19

BIM personnel: Chad Panipakutsuk  
 Date & Time: 2019/07/17 00:00  
 Hole ID: MR1-19-258

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 564020  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915718

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Ioda vokey and Snelton Gifford

**DRILLING PROGRESS:**

Start Shift Depth: 106.5m      End Shift Depth:      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness:

Salt usage per day:

Flow Meter Reading:      Start of Shift:      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity)

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Chad Panipakutsuk      Signature:

Date: 7/17/19

**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

BIM personnel: Anita Egyir

Date &amp; Time: 2019/08/28 13:40

Hole ID: MR1-19-258

**HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Collar location: E 564020  
(UTM NAD 83 17W) N 7915718

Actual depth: 132.0 metres

Description of drillhole location: North Limb

Purpose of drillhole: Exploration of North Limb

**DRILLING INFORMATION:**

Drill Contractor: Boart Lonqvear

Drill #: 7560

End Date of drilling: 2019-07-19

**ENVIRONMENT ASSESSMENT:**

	Yes	No	
All materials and debris removed from site?	<input checked="" type="radio"/>	<input type="radio"/>	
Casing left?:	<input type="radio"/>	<input checked="" type="radio"/>	
Has Casing left been cut to ground level?	<input checked="" type="radio"/>	<input type="radio"/>	
Any drill rods lost in the drillhole?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, how many?:
Has hole been properly marked?	<input checked="" type="radio"/>	<input type="radio"/>	
Any environmental concerns?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:

Any additional work required?	<input checked="" type="radio"/>	<input type="radio"/>	If yes, please describe below:
-------------------------------	----------------------------------	-----------------------	--------------------------------

Drill anchors and casing need to be cut and plugged

**Corrective action:**

Drill anchors and casing cut and plugged September 3, 2019

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location following demobilization and clean up? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:****INSPECTION COMPLETED BY:**

BIM signature:

Anita Egyir

Digitally signed by Anita  
Egyir  
Date: 2019.09.20  
14:22:28 -04'00'

Foreman signature:

Date:

Date:



APPENDIX E.2.8

2019 Exploration Location –  
MR3-19-256

**PRE-DRILLING INSPECTION REPORT (pre-set-up) 2019**

BIM Personnel: Stephen MacConnell

Date &amp; Time: 2019/07/04 13:45

Proposed hole ID: MR3-19-P04

Final Hole ID: MR-19-256

**PROPOSED HOLE INFORMATION:**

Deposit #: Deposit No. 3

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Elevation: 448 metres

Description of drillhole location:

Purpose of drillhole: MR3 west infill drilling

Collar location: E 567185  
(UTM NAD 83) N 7913540

Dip: -45

Azimuth: 350

Target depth: 250 metres

**DRILLING INFORMATION:**

Has site been approved by drill foreman?: Yes

Foreman: Scott Young

Drill contractor: Boart Longyear

Drill #: 7508

Expected start of drilling: 2019-07-05

Is moving of drillhole required?: No

If yes, provide reason:

New Collar Location E N

**ENVIRONMENT ASSESSMENT:**

Water source: Stream leading to Mary River

Pump Station #: Portable Tanks: Yes

Natural depression/ drainage evident?: Yes (Photo required)

Manual drainage constructed?: Yes (Photo required)

Silt fence(s) constructed?: Yes (Photo required)

Silt Bag Used: Yes (Photo required)

**SITE ASSESSMENTS:**

Are wildlife present?: (if yes, record in log) No

Is site safe for drilling?: Yes

Safety concerns/issues:

None

Environmental concerns?:

None

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location prior to setup? Yes

Location of photos: 2019 Drill Hole

Database

**COMMENTS:****INSPECTION COMPLETED BY:**

Name:

Stephen MacConnell

Signature:

Date: 2019-07-04

BIM personnel: Massoud Robatian  
Date & Time: 2019/07/12 18:30  
Hole ID: MR3-19-256

**HOLE INFORMATION:**

Deposit #: Deposit No. 3 Collar location: E 567185  
Location: Deposit No. Section: Deposit No.3 west (UTM NAD 83 17W) N 7913540

**DRILLING INFORMATION**

Drill contractor: Boart Longyear Drill Type: LM 55 Drill #: 7508  
Drill personnel: Dylan Ryan, Michel Gilbert

**DRILLING PROGRESS:**

Start Shift Depth: 157 m End Shift Depth: 157 m Current Lithology: 7 - High Grac  
Any rods/casing/tools lost in the drill hole? No If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Stuck rods

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Silt fence  
Assessment of effectiveness: Fair  
Salt usage per day: 40 bags  
Flow Meter Reading: Start of Shift: 013729 End of Shift: 013729

Has wildlife been present?: (check log for previous wildlife activity) No

**Environmental Concerns:**

No water used from Mary River, drilling Ice and recirculating water

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

**Safety concerns/issues:**

None

Corrective action required?: No

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No Photo of sediment control measures? No  
Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Massoud Robatian Signature:

Date: 7/12/19

BIM personnel: Massoud Robatian  
 Date & Time: 2019/07/14 17:30  
 Hole ID: MR3-19-256

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 567185  
 Location: Deposit No. Section: Deposit No.3 west      (UTM NAD 83 17W) N 7913540

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LM 55      Drill #: 7508  
 Drill personnel: Christophe Legace- Corey Budgel

**DRILLING PROGRESS:**

Start Shift Depth: 181 m      End Shift Depth: 190 m      Current Lithology: 7 - High Grac  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Stuck rods

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Silt fence  
 Assessment of effectiveness: Fair  
 Salt usage per day: 20 bags  
 Flow Meter Reading:      Start of Shift: 01480?      End of Shift: 01572 at 18:30

Has wildlife been present?: (check log for previous wildlife activity) No

**Environmental Concerns:**

No water used from Mary River, drilling Ice and recirculating water

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

**Safety concerns/issues:**

None

Corrective action required?: No

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Massoud Robatian

Date: 7/14/19



BIM personnel: Massoud Robatian  
 Date & Time: 2019/07/15 13:50  
 Hole ID: MR3-19-256

**HOLE INFORMATION:**

Deposit #: Deposit No. 3 Collar location: E 567185  
 Location: Deposit No. Section: Deposit No.3 west (UTM NAD 83 17W) N 7913540

**DRILLING INFORMATION**

Drill contractor: Boart Longyear Drill Type: LM 55 Drill #: 7508  
 Drill personnel: Christophe Legace- Corey Budgel

**DRILLING PROGRESS:**

Start Shift Depth: 190 m End Shift Depth: 190 m Current Lithology: 7 - High Grac  
 Any rods/casing/tools lost in the drill hole? No If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Stuck rods

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Silt fence  
 Assessment of effectiveness: Fair  
 Salt usage per day: 20 bags  
 Flow Meter Reading: Start of Shift: 01592? End of Shift: 01630 at 13:50

Has wildlife been present?: (check log for previous wildlife activity) No

**Environmental Concerns:**

No water used from Mary River, drilling Ice and recirculating water

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

**Safety concerns/issues:**

None

Corrective action required?: No

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes Photo of sediment control measures? Yes  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Massoud Robatian Signature:

Date: 7/15/19

BIM personnel: Massoud Robatian  
Date & Time: 2019/07/17 15:12  
Hole ID: MR3-19-256

**HOLE INFORMATION:**

Deposit #: Deposit No. 3 Collar location: E 567185  
Location: Deposit No. Section: Deposit No.3 west (UTM NAD 83 17W) N 7913540

**DRILLING INFORMATION**

Drill contractor: Boart Longyear Drill Type: LM 55 Drill #: 7508  
Drill personnel: Christophe Legace- Corey Budget

**DRILLING PROGRESS:**

Start Shift Depth: 220 m End Shift Depth: 220 m at 15:12 Current Lithology: 7 - High Grac  
Any rods/casing/tools lost in the drill hole? No If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Stuck rods

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Silt fence  
Assessment of effectiveness: Fair  
Salt usage per day: 65 bags at 15:12  
Flow Meter Reading: Start of Shift: 01700? End of Shift: 1767m at 15:12

Has wildlife been present?: (check log for previous wildlife activity) No

**Environmental Concerns:**

No water used from Mary River, drilling Ice and recirculating water

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

**Safety concerns/issues:**

None

Corrective action required?: No

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes Photo of sediment control measures? Yes  
Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Massoud Robatian Signature:

Date: 7/17/19

**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

BIM personnel: Justin Hoyle, Eric Munro, Anita Egvir

Date &amp; Time: 2019/08/28 16:39

Hole ID: MR3-19-256

**HOLE INFORMATION:**

Deposit #: Deposit No. 3

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Collar location: E 567184.869

(UTM NAD 83 17W) N 7913540.422

Actual depth: 220 metres

Description of drillhole location: Western portion of Deposit 3

Purpose of drillhole: Definition Drilling

**DRILLING INFORMATION:**

Drill Contractor: Boart Lonqvear

Drill #: 7508

End Date of drilling: 2019-07-19

**ENVIRONMENT ASSESSMENT:**

	Yes	No	
All materials and debris removed from site?	<input checked="" type="radio"/>	<input type="radio"/>	
Casing left?:	<input checked="" type="radio"/>	<input type="radio"/>	
Has Casing left been cut to ground level?	<input checked="" type="radio"/>	<input type="radio"/>	
Any drill rods lost in the drillhole?	<input checked="" type="radio"/>	<input type="radio"/>	If yes, how many? <u>73</u>
Has hole been properly marked?	<input checked="" type="radio"/>	<input type="radio"/>	
Any environmental concerns?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:
Any additional work required?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:

Corrective action:

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location following demobilization and clean up? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:****INSPECTION COMPLETED BY:**

BIM signature:

Anita Egvir

Digitally signed by Anita  
Egvir  
Date: 2019.09.22  
06:41:21 -04'00'

Foreman signature:

Date:

Date:

APPENDIX E.2.9

2019 Exploration Location –  
MR1-19-259



**PRE-DRILLING INSPECTION REPORT (pre-set-up) 2019**

BIM Personnel: Massoud Robatian

Date &amp; Time: 2019/07/13 10:57

Proposed hole ID: MR1-19-P05

Final Hole ID: MR1-19-259

**PROPOSED HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Elevation: 562 metres

Description of drillhole location: North Limb of Deposit 1

Purpose of drillhole: Definition drilling of North Limb Extension

Collar location: E 564020  
(UTM NAD 83) N 7915718

Dip: -55

Azimuth: 293

Target depth: 240 metres

**DRILLING INFORMATION:**

Has site been approved by drill foreman?: Yes

Foreman: Scott Young

Drill contractor: Boart Longyear

Drill #: 7560

Expected start of drilling: 2019-07-14

Is moving of drillhole required?: No

If yes, provide reason:

New Collar Location E N

**ENVIRONMENT ASSESSMENT:**

Water source: Sump at Km 108.5

Pump Station #: Portable Tanks: Yes

Natural depression/ drainage evident?: Yes (Photo required)

Manual drainage constructed?: Yes (Photo required)

Silt fence(s) constructed?: Yes (Photo required)

Silt Bag Used: Yes (Photo required)

**SITE ASSESSMENTS:**

Are wildlife present?: (if yes, record in log) No

Is site safe for drilling?: Yes

Safety concerns/issues:

None

Environmental concerns?:

None

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location prior to setup? No

Location of photos: 2019 Drill Hole

Database

**COMMENTS:**

Same drill set up as MR-19-258

**INSPECTION COMPLETED BY:**

Name:

Signature:

Massoud Robatian

Date: 2019-07-13

BIM personnel: Bernard Choquette  
 Date & Time: 2019/07/19 10:45  
 Hole ID: MR1-19-259

**HOLE INFORMATION:**

Deposit #: Deposit No. 1 Collar location: E 564020  
 Location: N. Limb Section: (UTM NAD 83 17W) N 7915718

**DRILLING INFORMATION**

Drill contractor: Boart Longyear Drill Type: LF /U Drill #: 7560  
 Drill personnel: Todd Vokey and Sheldon Gifford

**DRILLING PROGRESS:**

Start Shift Depth: 0m End Shift Depth: Current Lithology: 1 - Casing

Any rods/casing/tools lost in the drill hole? No If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Poor

Salt usage per day:

Flow Meter Reading: Start of Shift: 1250 at 11:45am End of Shift:

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

Fence backwards, needs fixing

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Bernard Choquette Signature:

Date: 7/19/19

BIM personnel: Bernard Choquette  
 Date & Time: 2019/07/20 00:00  
 Hole ID: MR1-19-259

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 564020  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915718

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Ioda vokey and miyungnoon jun

**DRILLING PROGRESS:**

Start Shift Depth: 24m      End Shift Depth: 31.5m      Current Lithology: 1 - Casing  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence  
 Assessment of effectiveness: Poor  
 Salt usage per day: 9 bags  
 Flow Meter Reading:      Start of Shift: 1301.7m<sup>3</sup>      End of Shift: 1323.3m<sup>3</sup>  
 Has wildlife been present?: (check log for previous wildlife activity) No

**Environmental Concerns:**

Fence backwards, needs fixing

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

**Safety concerns/issues:**

Raining

Corrective action required?: No

Action plan (if required): Awareness... boots laced up

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Bernard Choquette      Signature:

Date: 7/20/19

BIM personnel: Isaiah Pikujak  
Date & Time: 2019/07/21 00:00  
Hole ID: MR1-19-259

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 564020  
Location: N. Limb      Section: (UTM NAD 83 17W) N 7915718

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
Drill personnel: Ioda vokey and myungnoon Jun

**DRILLING PROGRESS:**

Start Shift Depth: 69.5m      End Shift Depth: 81m      Current Lithology: 4 - Schist

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Fair

Salt usage per day: 26 bags

Flow Meter Reading:      Start of Shift: 1358.8m<sup>3</sup>      End of Shift: 1376.9m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:  
Isaiah Pikuyak

Date: 7/21/19



BIM personnel: Isaiah Pikujak  
Date & Time: 2019/07/22 00:00  
Hole ID: MR1-19-259

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 564020  
Location: N. Limb      Section: (UTM NAD 83 17W) N 7915718

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
Drill personnel: Ioda vokey and myungnoon jun

**DRILLING PROGRESS:**

Start Shift Depth: 111m      End Shift Depth: 123m      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Good

Salt usage per day: 18 bags

Flow Meter Reading:      Start of Shift: 1417.6m<sup>3</sup>      End of Shift: 1436.9m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:  
Isaiah Pikuyak

Date: 7/22/19

BIM personnel: Isaiah Pikujak  
Date & Time: 2019/07/23 00:00  
Hole ID: MR1-19-259

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 564020  
Location: N. Limb      Section: (UTM NAD 83 17W) N 7915718

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
Drill personnel: Ioda vokey and miyungnoon jun

**DRILLING PROGRESS:**

Start Shift Depth: 150m      End Shift Depth: 166.5m      Current Lithology: 7 - High Grac  
Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Good

Salt usage per day:

Flow Meter Reading:      Start of Shift: 1476.0m<sup>3</sup>      End of Shift: 1497.4m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Slippery floor

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:  
Isaiah Pikuyak

Date: 7/23/19

BIM personnel: Isaiah Pikujak  
 Date & Time: 2019/07/24 00:00  
 Hole ID: MR1-19-259

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 564020  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915718

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Ioda vokey and miyungnoon jun

**DRILLING PROGRESS:**

Start Shift Depth: 193.5m      End Shift Depth: 202.5m      Current Lithology: 4 - Schist  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence  
 Assessment of effectiveness: Good  
 Salt usage per day:  
 Flow Meter Reading:      Start of Shift: 1554.7m<sup>3</sup>      End of Shift: 1572.8m<sup>3</sup>  
 Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Slippery floor

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Isaiah Pikuyak

Date: 7/24/19

**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

BIM personnel: Anita Egyir

Date &amp; Time: 2019/08/28 13:40

Hole ID: MR1-19-259

**HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Collar location: E 564020  
(UTM NAD 83 17W) N 7915718

Actual depth: 204.0 metres

Description of drillhole location: North Limb

Purpose of drillhole: Exploration of North Limb

**DRILLING INFORMATION:**

Drill Contractor: Boart Lonqvear

Drill #: 7560

End Date of drilling: 2019-07-19

**ENVIRONMENT ASSESSMENT:**

	Yes	No	
All materials and debris removed from site?	<input checked="" type="radio"/>	<input type="radio"/>	
Casing left?:	<input type="radio"/>	<input checked="" type="radio"/>	
Has Casing left been cut to ground level?	<input checked="" type="radio"/>	<input type="radio"/>	
Any drill rods lost in the drillhole?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, how many?:
Has hole been properly marked?	<input checked="" type="radio"/>	<input type="radio"/>	
Any environmental concerns?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:

Any additional work required?	<input checked="" type="radio"/>	<input type="radio"/>	If yes, please describe below:
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Drill anchors and casing need to be cut and plugged

**Corrective action:**

Drill anchors and casing cut and plugged September 3, 2019

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location following demobilization and clean up? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:****INSPECTION COMPLETED BY:**

BIM signature:

Anita Egyir

Digitally signed by Anita  
Egyir  
Date: 2019.09.20  
14:24:53 -04'00'

Foreman signature:

Date:

Date:



APPENDIX E.2.10

2019 Exploration Location –  
MR3-19-261

**PRE-DRILLING INSPECTION REPORT (pre-set-up) 2019**

BIM Personnel: Justin Hoyle

Date &amp; Time: 2019/07/14 18:00

Proposed hole ID: MR3-19-P06

Final Hole ID: MR3-19-261

**PROPOSED HOLE INFORMATION:**

Deposit #: Deposit No. 3

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Elevation: 450 metres

Description of drillhole location: Western portion of Deposit 3

Purpose of drillhole: Infill drilling of Deposit 3

Collar location: E 567406  
(UTM NAD 83) N 7913604

Dip: -45

Azimuth: 350

Target depth: 240 metres

**DRILLING INFORMATION:**

Has site been approved by drill foreman?: Yes

Foreman: Scott Young

Drill contractor: Boart Longyear

Drill #: 7508

Expected start of drilling: 2019-07-21

Is moving of drillhole required?: No

If yes, provide reason:

New Collar Location E N

**ENVIRONMENT ASSESSMENT:**

Water source: Mary River

Pump Station #: Portable Tanks: Yes

Natural depression/ drainage evident?: Yes (Photo required)

Manual drainage constructed?: No (Photo required)

Silt fence(s) constructed?: Yes (Photo required)

Silt Bag Used: Yes (Photo required)

**SITE ASSESSMENTS:**

Are wildlife present?: (if yes, record in log) No

Is site safe for drilling?: Yes

Safety concerns/issues:

None

Environmental concerns?:

None

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location prior to setup? Yes

Location of photos: 2019 Drill Hole

Database

**COMMENTS:****INSPECTION COMPLETED BY:**

Name:

Justin Hoyle

Signature:

Date: 2019-07-14

BIM personnel: Bernard Choquette  
 Date & Time: 2019/07/21 06:30  
 Hole ID: MR3-19-261

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 0567406  
 Location:      Section: (UTM NAD 83 17W) N 7913604

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LM 55      Drill #: 7508  
 Drill personnel: Justin Collins and James Elder

**DRILLING PROGRESS:**

Start Shift Depth: 0m      End Shift Depth: 0m      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Drill rig still being set up at 06:30, anchored to bedrock at 10.5m (16:30-17:00)

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Good

Salt usage per day: None

Flow Meter Reading:      Start of Shift: 1854.7m<sup>3</sup>      End of Shift: 1871.1m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity) No

**Environmental Concerns:**

Remade silt fence to improve effectiveness.

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

**Safety concerns/issues:**
**Corrective action required?:**

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
 Location of photos: 2019 Drilling Database

**COMMENTS:**

Drill rig and anchor placement fired up at 12:00.

**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Bernard Choquette

Date: 7/21/19

BIM personnel: Bernard Choquette  
 Date & Time: 2019/07/22 00:00  
 Hole ID: MR3-19-261

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 0567406  
 Location:      Section: (UTM NAD 83 17W) N 7913604

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LM 55      Drill #: 7508  
 Drill personnel: Justin Collins and James Elder

**DRILLING PROGRESS:**

Start Shift Depth: 13.5m      End Shift Depth: 54m      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Poor

Salt usage per day: 31 bags

Flow Meter Reading:      Start of Shift: 1901.9m<sup>3</sup>      End of Shift: 1930.0m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity) Yes

Fox at 07:00

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Bernard Choquette      Signature:

Date: 7/22/19



**BIM personnel:** Bernard Choquette

**Date & Time:** 2019/07/23 00:00

**Hole ID:** MR3-19-261

**HOLE INFORMATION:**
**Deposit #:** Deposit No. 3

**Location:** Section:

**Collar location:** E 0567406

(UTM NAD 83 17W) N 7913604

**DRILLING INFORMATION**
**Drill contractor:** Boart Longyear

**Drill Type:** LM 55

**Drill #:** 7508

**Drill personnel:** Justin Collins and James Elder

**DRILLING PROGRESS:**
**Start Shift Depth:** 93m

**End Shift Depth:**
**Current Lithology:**
**Any rods/casing/tools lost in the drill hole?** No

If yes, what was lost?:

**Delays/Problems:** (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Pump (mixer) tub has a hole in it. Prepping for helicopter swap. Operation on stand by and fogged in at 08:30. Mechar


**ENVIRONMENT ASSESSMENT:**
**Sediment control measures in place:** Yes, silt fence

**Assessment of effectiveness:** Poor

**Salt usage per day:**
**Flow Meter Reading:** Start of Shift: 1972m<sup>3</sup>

End of Shift:

**Has wildlife been present?:** (check log for previous wildlife activity) No

**Environmental Concerns:**
**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

**Safety concerns/issues:**

Foggy, low visibility.

**Corrective action required?:**
**Action plan (if required):**
**Responsible party:**
**Date to be completed:**
**Photograph (only required to document problems and corrective actions):**
**PHOTOGRAPHIC RECORD:**
**Photo of drill hole during drilling?** Yes

**Photo of sediment control measures?** Yes

**Location of photos:** 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**
**Name:**
**Signature:**

Bernard Choquette

**Date:** 7/23/19

BIM personnel: Bernard Choquette  
 Date & Time: 2019/07/24 00:00  
 Hole ID: MR3-19-261

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 0567406  
 Location:      Section: (UTM NAD 83 17W) N 7913604

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LM 55      Drill #: 7508  
 Drill personnel: Justin Collins and James Elder

**DRILLING PROGRESS:**

Start Shift Depth: 96m      End Shift Depth: 96m      Current Lithology: 7 - High Grac  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

No drilling last night due to weather conditions. 12:00 mechanics arrived to fix hot water tank, drilling resumed at 12:45

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence  
 Assessment of effectiveness: Good  
 Salt usage per day: 53 bags  
 Flow Meter Reading:      Start of Shift: 2007.6m<sup>3</sup>      End of Shift: 2027.0m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No      Photo of sediment control measures? No  
 Location of photos: 2019 Drilling Database

**COMMENTS:**

Drill up and running. Drilling through ice at 09:30. 12:00 mechanics arrived to fix hot water pump (ice drilling at a stand drill) 12:45 hot water pump running and resumed drilling. 13:30 mechanic on site working on mixer tub, stopped drilling for 15 minutes. Hit bottom of hole at 18:00

**INSPECTION COMPLETED BY:**

Name: Bernard Choquette      Signature:

Date: 7/24/19

BIM personnel: Bernard Choquette  
 Date & Time: 2019/07/25 00:00  
 Hole ID: MR3-19-261

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 0567406  
 Location:      Section: (UTM NAD 83 17W) N 7913604

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LM 55      Drill #: 7508  
 Drill personnel: Justin Collins and James Elder

**DRILLING PROGRESS:**

Start Shift Depth: 120m      End Shift Depth:      Current Lithology: 7 - High Grac  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence  
 Assessment of effectiveness: Fair  
 Salt usage per day: 45 bags  
 Flow Meter Reading:      Start of Shift: 2054m<sup>3</sup>      End of Shift: 2078.8m<sup>3</sup>  
 Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No      Photo of sediment control measures? No  
 Location of photos: 2019 Drilling Database

**COMMENTS:**

Out of ore at 138m at ~1:40pm into banded iron formation.

**INSPECTION COMPLETED BY:**

Name: Bernard Choquette      Signature:

Date: 7/25/19

**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

BIM personnel: Justin Hoyle, Eric Munro, Anita Egvir

Date &amp; Time: 2019/08/28 16:39

Hole ID: MR3-19-261

**HOLE INFORMATION:**

Deposit #: Deposit No. 3

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Collar location: E 567405.932

(UTM NAD 83 17W) N 7913604.353

Actual depth: 174 metres

Description of drillhole location: Western portion of Deposit 3

Purpose of drillhole: Definition Drilling

**DRILLING INFORMATION:**

Drill Contractor: Boart Lonqvear

Drill #: 7508

End Date of drilling: 2019-07-26

**ENVIRONMENT ASSESSMENT:**

	Yes	No	
All materials and debris removed from site?	<input checked="" type="radio"/>	<input type="radio"/>	
Casing left?:	<input checked="" type="radio"/>	<input type="radio"/>	
Has Casing left been cut to ground level?	<input checked="" type="radio"/>	<input type="radio"/>	
Any drill rods lost in the drillhole?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, how many?:
Has hole been properly marked?	<input checked="" type="radio"/>	<input type="radio"/>	
Any environmental concerns?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:
Any additional work required?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:

Corrective action:

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location following demobilization and clean up? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:****INSPECTION COMPLETED BY:**

BIM signature:

Anita Egvir

Digitally signed by Anita  
Egvir  
Date: 2019.09.22  
06:42:08 -04'00'

Foreman signature:

Date:

Date:



APPENDIX E.2.11

2019 Exploration Location –  
MR1-19-260

**PRE-DRILLING INSPECTION REPORT (pre-set-up) 2019**

BIM Personnel: Massoud Robatian

Date &amp; Time: 2019/07/20 14:12

Proposed hole ID: MR1-19-P04

Final Hole ID: MR1-19-260

**PROPOSED HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Elevation: 595 metres

Description of drillhole location:

Purpose of drillhole:

Collar location: E 563812  
(UTM NAD 83) N 7915443

Dip: -45

Azimuth: 298

Target depth: 250 metres

**DRILLING INFORMATION:**

Has site been approved by drill foreman?: Yes

Foreman: Scott Young

Drill contractor: Boart Longyear

Drill #: 7565

Expected start of drilling: 2019-07-21

Is moving of drillhole required?: No

If yes, provide reason:

New Collar Location E N

**ENVIRONMENT ASSESSMENT:**

Water source: Sump at Km 108.5

Pump Station #: Portable Tanks: Yes

Natural depression/ drainage evident?: Yes (Photo required)

Manual drainage constructed?: No (Photo required)

Silt fence(s) constructed?: Yes (Photo required)

Silt Bag Used: Yes (Photo required)

**SITE ASSESSMENTS:**

Are wildlife present?: (if yes, record in log) No

Is site safe for drilling?: Yes

Safety concerns/issues:

None

Environmental concerns?:

None

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location prior to setup? No

Location of photos: 2019 Drill Hole

Database

**COMMENTS:****INSPECTION COMPLETED BY:**

Name:

Signature:

Massoud Robatian

Date: 2019-07-20

BIM personnel: Isaiah Pikuyak  
 Date & Time: 2019/07/25 00:00  
 Hole ID: MR1-19-260

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563812  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915443

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: Sneider Gifford, Leslie Nicholson, Myungnoon Jun

**DRILLING PROGRESS:**

Start Shift Depth: 123m      End Shift Depth: 129m      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Good

Salt usage per day: 22 bags

Flow Meter Reading:      Start of Shift: -      End of Shift: -

Has wildlife been present?: (check log for previous wildlife activity)

Environmental Concerns:

No flow meter at drill 3.

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Isaiah Pikuyak

Date: 7/25/19

BIM personnel: Bernard Choquette  
 Date & Time: 2019/07/26 00:00  
 Hole ID: MR1-19-260

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563812  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915443

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: MIKE and LESS

**DRILLING PROGRESS:**

Start Shift Depth: 151m      End Shift Depth: 160.5m      Current Lithology:  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:  
 Wire line snapped. Over shot down the hole at 13:50. Warming up to pull out rods.  
 Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate  
 Pulling out rods at 14:10.

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence  
 Assessment of effectiveness: Fair  
 Salt usage per day:  
 Flow Meter Reading:      Start of Shift: -      End of Shift: -  
 Has wildlife been present?: (check log for previous wildlife activity)  
 Environmental Concerns:  
 No flow meter at drill 3.

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
 Location of photos: 2019 Drilling Database

**COMMENTS:**

Rod thread broken and bent, seems to be reason for snapped wire line.

**INSPECTION COMPLETED BY:**

Name: Bernard Choquette      Signature:

Date: 7/26/19



BIM personnel: Bernard Choquette  
 Date & Time: 2019/07/27 00:00  
 Hole ID: MR1-19-260

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563812  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915443

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: MIKE and LESS

**DRILLING PROGRESS:**

Start Shift Depth: 162m      End Shift Depth: 168m      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Water pump hose leaking for drill 3 (fixed), 14:20 Dakota fixing second hose leak.

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Fair

Salt usage per day:

Flow Meter Reading:      Start of Shift: -      End of Shift: -

Has wildlife been present?: (check log for previous wildlife activity)

Environmental Concerns:

No flow meter at drill 3.

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Bernard Choquette      Signature:

Date: 7/27/19

BIM personnel: Marvin Illauq  
 Date & Time: 2019/07/29 00:00  
 Hole ID: MR1-19-260

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563812  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915443

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: MIKE and LESS

**DRILLING PROGRESS:**

Start Shift Depth: 232.5m      End Shift Depth:      Current Lithology:  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:  
 Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence  
 Assessment of effectiveness: Fair  
 Salt usage per day: 40  
 Flow Meter Reading:      Start of Shift: -      End of Shift: -  
 Has wildlife been present?: (check log for previous wildlife activity)  
 Fox at 10:45  
 Environmental Concerns:  
 No flow meter at drill 3.

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:  
 Be careful, walk slowly, watch out for slippery surfaces.

Corrective action required?:  
 Action plan (if required):

Responsible party:      Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Marvin Illauq      Signature:

Date: 7/29/19

BIM personnel: Marvin Illauq  
 Date & Time: 2019/07/30 00:00  
 Hole ID: MR1-19-260

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563812  
 Location:      Section: (UTM NAD 83 17W) N 7915443

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: MICNEI, MICNEI, DAKOTA

**DRILLING PROGRESS:**

Start Shift Depth: 261      End Shift Depth:      Current Lithology: 7 - High Grac

Any rods/casing/tools lost in the drill hole?      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes

Assessment of effectiveness: Fair

Salt usage per day:

Flow Meter Reading:      Start of Shift:      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity) Yes

Fox at 1:35pm

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input type="radio"/>	<input checked="" type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Walk slowly, be careful. Watch out for slippery surfaces.

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No      Photo of sediment control measures? No

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Marvin Illauq

Date: 7/30/19

**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

BIM personnel: Anita Egyir

Date &amp; Time: 2019/08/28 13:59

Hole ID: MR1-19-260

**HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Collar location: E 563811.2

(UTM NAD 83 17W) N 7915444

Actual depth: 273.0 metres

Description of drillhole location: North Limb

Purpose of drillhole: Exploration of North Limb

**DRILLING INFORMATION:**

Drill Contractor: Boart Lonqvear

Drill #: 7565

End Date of drilling: 2019-07-30

**ENVIRONMENT ASSESSMENT:**

	Yes	No	
All materials and debris removed from site?	<input checked="" type="radio"/>	<input type="radio"/>	
Casing left?:	<input type="radio"/>	<input checked="" type="radio"/>	
Has Casing left been cut to ground level?	<input checked="" type="radio"/>	<input type="radio"/>	
Any drill rods lost in the drillhole?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, how many?:
Has hole been properly marked?	<input checked="" type="radio"/>	<input type="radio"/>	
Any environmental concerns?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:
Any additional work required?	<input checked="" type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:
Drill anchors and casing need to be cut and plugged			
<b>Corrective action:</b>			
Drill anchors and casing cut and plugged September 3, 2019			

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location following demobilization and clean up? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:****INSPECTION COMPLETED BY:**

BIM signature:

Anita Egyir

Digitally signed by Anita  
Egyir  
Date: 2019.09.20  
14:29:40 -04'00'

Foreman signature:

Date:

Date:



APPENDIX E.2.12

2019 Exploration Location –  
MR3-19-263

**PRE-DRILLING INSPECTION REPORT (pre-set-up) 2019**

BIM Personnel: Justin Hoyle, Eric Munro

Date &amp; Time: 2019/07/26 00:00

Proposed hole ID: MR3-19-P07

Final Hole ID: MR3-19-263

**PROPOSED HOLE INFORMATION:**

Deposit #: Deposit No. 3

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Elevation: 450 metres

Description of drillhole location: Western portion of Deposit 3

Purpose of drillhole:

Collar location: E 567532  
(UTM NAD 83) N 7913625

Dip: -45

Azimuth: 350

Target depth: 165 metres

**DRILLING INFORMATION:**

Has site been approved by drill foreman?: Yes

Foreman: Scott Young

Drill contractor: Boart Longyear

Drill #: 7508

Expected start of drilling: 2019-07-27

Is moving of drillhole required?: No

If yes, provide reason:

New Collar Location E N

**ENVIRONMENT ASSESSMENT:**

Water source: Mary River

Pump Station #: Portable Tanks: Yes

Natural depression/ drainage evident?: Yes (Photo required)

Manual drainage constructed?: No (Photo required)

Silt fence(s) constructed?: Yes (Photo required)

Silt Bag Used: Yes (Photo required)

**SITE ASSESSMENTS:**

Are wildlife present?: (if yes, record in log) No

Is site safe for drilling?: Yes

Safety concerns/issues:

None

Environmental concerns?:

None

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location prior to setup? No

Location of photos: 2019 Drill Hole

Database

**COMMENTS:****INSPECTION COMPLETED BY:**

Name:

Justin Hoyle

Signature:

Date: 2019-07-26

BIM personnel: Isaiah Pikuyak  
 Date & Time: 2019/07/28 00:00  
 Hole ID: MR3-19-263

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 0567532  
 Location:      Section: (UTM NAD 83 17W) N 7913625

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LM 55      Drill #: 7508  
 Drill personnel: Justin and James

**DRILLING PROGRESS:**

Start Shift Depth: 4m      End Shift Depth: 10m      Current Lithology:

Any rods/casing/tools lost in the drill hole?      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Feed cylinder leaking at 13:15.

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes

Assessment of effectiveness:

Salt usage per day: 17 bags

Flow Meter Reading:      Start of Shift: 2177.5m<sup>3</sup>      End of Shift: 2203.0m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity)

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No      Photo of sediment control measures? No

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Isaiah Pikuyak

Date: 7/28/19

BIM personnel: Isaiah Pikuyak  
 Date & Time: 2019/07/29 00:00  
 Hole ID: MR3-19-263

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 0567532  
 Location:      Section: (UTM NAD 83 17W) N 7913625

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LM 55      Drill #: 7508  
 Drill personnel: Justin and James

**DRILLING PROGRESS:**

Start Shift Depth: 13m      End Shift Depth: 46m      Current Lithology:

Any rods/casing/tools lost in the drill hole?      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Pump heater broke at 13:30. Resumed drilling at 14:45.

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes

Assessment of effectiveness: Poor

Salt usage per day: 35 bags

Flow Meter Reading:      Start of Shift: 2230.6m<sup>3</sup>      End of Shift: 2255.8m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity)

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No      Photo of sediment control measures? No

Location of photos: 2019 Drilling Database

**COMMENTS:**

Hit ore at 15m.

**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Isaiah Pikuyak

Date: 7/29/19



**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

BIM personnel: Justin Hoyle, Eric Munro, Anita Egvir

Date &amp; Time: 2019/08/28 16:39

Hole ID: MR3-19-263

**HOLE INFORMATION:**

Deposit #: Deposit No. 3

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Collar location: E 567532.265

(UTM NAD 83 17W) N 7913624.792

Actual depth: 154 metres

Description of drillhole location: Western portion of Deposit 3

Purpose of drillhole: Definition Drilling

**DRILLING INFORMATION:**

Drill Contractor: Boart Lonqvear

Drill #: 7508

End Date of drilling: 2019-07-31

**ENVIRONMENT ASSESSMENT:**

	Yes	No	
All materials and debris removed from site?	<input checked="" type="radio"/>	<input type="radio"/>	
Casing left?:	<input checked="" type="radio"/>	<input type="radio"/>	
Has Casing left been cut to ground level?	<input checked="" type="radio"/>	<input type="radio"/>	
Any drill rods lost in the drillhole?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, how many?:
Has hole been properly marked?	<input checked="" type="radio"/>	<input type="radio"/>	
Any environmental concerns?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:
Any additional work required?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:

Corrective action:

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location following demobilization and clean up? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:****INSPECTION COMPLETED BY:**

BIM signature:

Anita Egvir

Digitally signed by Anita  
Egvir  
Date: 2019.09.22  
06:44:52 -04'00'

Foreman signature:

Date:

Date:

APPENDIX E.2.13

2019 Exploration Location –  
MR1-19-262

**PRE-DRILLING INSPECTION REPORT (pre-set-up) 2019**

BIM Personnel: Eric Munro

Date &amp; Time: 2019/07/25 12:00

Proposed hole ID: MR1-19-P07

Final Hole ID: MR1-19-262

**PROPOSED HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Elevation: 563.87 metres

Description of drillhole location: Drill setup on weakly sloping terrain, 

Purpose of drillhole: Expand and better delineate resource northward.

Collar location: E 564102  
(UTM NAD 83) N 7915845

Dip: 293

Azimuth: -45

Target depth: 240 metres

**DRILLING INFORMATION:**

Has site been approved by drill foreman?: Yes

Foreman: Arnout Devree

Drill contractor: Boart Longyear

Drill #: 7560

Expected start of drilling: 2019-07-26

Is moving of drillhole required?: No

If yes, provide reason:

New Collar Location E N

**ENVIRONMENT ASSESSMENT:**

Water source: 108.5km Sump

Pump Station #: Portable Tanks: Yes

Natural depression/ drainage evident?: No (Photo required)

Manual drainage constructed?: No (Photo required)

Silt fence(s) constructed?: Yes (Photo required)

Silt Bag Used: Yes (Photo required)

**SITE ASSESSMENTS:**

Are wildlife present?: (if yes, record in log) No

Is site safe for drilling?: Yes

Safety concerns/issues:

None

Environmental concerns?:

None

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location prior to setup? Yes

Location of photos: 2019 Drill Hole

Database

**COMMENTS:****INSPECTION COMPLETED BY:**

Name:

Signature:

Eric Munro

Date: 2019-07-25

BIM personnel: Marvin Illauq  
Date & Time: 2019/07/27 00:00  
Hole ID: MR1-19-262

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 0564102  
Location: N. Limb      Section: (UTM NAD 83 17W) N 7915845

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
Drill personnel: IOD, MJ, and Sheldon

**DRILLING PROGRESS:**

Start Shift Depth: 18      End Shift Depth:      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Good

Salt usage per day: 8 bags

Flow Meter Reading:      Start of Shift: 1630.1m<sup>3</sup>      End of Shift: 1644.8m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity)

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No      Photo of sediment control measures? No

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Marvin Illauq      Signature:

Date: 7/27/19



**BIM personnel:** Bernard Choquette

**Date & Time:** 2019/07/28 00:00

**Hole ID:** MR1-19-262

**HOLE INFORMATION:**
**Deposit #:** Deposit No. 1

**Location:** N. Limb **Section:**
**Collar location:** E 0564102

(UTM NAD 83 17W) N 7915845

**DRILLING INFORMATION**
**Drill contractor:** Boart Longyear

**Drill Type:** LF /U

**Drill #:** 7560

**Drill personnel:** IODD and MJ

**DRILLING PROGRESS:**
**Start Shift Depth:** 45m

**End Shift Depth:** 66m

**Current Lithology:** g - Banded Ir

**Any rods/casing/tools lost in the drill hole?** No

If yes, what was lost?:

**Delays/Problems:** (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**
**Sediment control measures in place:** Yes, silt fence

**Assessment of effectiveness:** Good

**Salt usage per day:** 30 bags

**Flow Meter Reading:** Start of Shift: 1692m<sup>3</sup>

End of Shift: 1717m<sup>3</sup>
**Has wildlife been present?:** (check log for previous wildlife activity) Yes

Young fox

**Environmental Concerns:**
**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steel toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

**Safety concerns/issues:**
**Corrective action required?:**
**Action plan (if required):**
**Responsible party:**
**Date to be completed:**
**Photograph (only required to document problems and corrective actions):**
**PHOTOGRAPHIC RECORD:**
**Photo of drill hole during drilling?** Yes

**Photo of sediment control measures?** Yes

**Location of photos:** 2019 Drilling Database

**COMMENTS:**

09:30 mechanics on site changing pump hose. Driller conditioning hole (oil change and quick-connect replacement)

09:50 mechanics finished, resumed drilling

**INSPECTION COMPLETED BY:**
**Name:**
**Signature:**

Bernard Choquette

**Date:** 7/28/19

BIM personnel: Marvin Illauq  
 Date & Time: 2019/07/29 00:00  
 Hole ID: MR1-19-262

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 564102  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915845

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: MIKE LES/MIJ, Todd, Dakota

**DRILLING PROGRESS:**

Start Shift Depth: 232.5      End Shift Depth: 293      Current Lithology: 7 - High Grac  
 Any rods/casing/tools lost in the drill hole?      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes

Assessment of effectiveness: Fair

Salt usage per day:

Flow Meter Reading:      Start of Shift:      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity)

Fox at 10:45am

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input type="radio"/>	<input checked="" type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures?  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Marvin Illauq      Signature:

Date: 7/29/19

BIM personnel: Marvin Illauq  
 Date & Time: 2019/07/30 00:00  
 Hole ID: MR1-19-262

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 0564102  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7915845

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: IOD and MJ

**DRILLING PROGRESS:**

Start Shift Depth: 127.5m      End Shift Depth:      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes, silt fence

Assessment of effectiveness: Fair

Salt usage per day: 24 bags

Flow Meter Reading:      Start of Shift: 1825.8m<sup>3</sup>      End of Shift: 1844.1m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity) Yes

2 Foxes at 12:30

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Marvin Illauq      Signature:

Date: 7/30/19

BIM personnel: Leeno Kublu  
 Date & Time: 2019/08/02 00:00  
 Hole ID: MR1-19-262

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 564102  
 Location:      Section: (UTM NAD 83 17W) N 7915845

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Justin and James

**DRILLING PROGRESS:**

Start Shift Depth: 174.0      End Shift Depth:      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place:

Assessment of effectiveness:

Salt usage per day:

Flow Meter Reading:      Start of Shift: 1948.6      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity)

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

No

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No      Photo of sediment control measures?

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Leeno Kublu

Date: 8/1/19



BIM personnel: Leeno Kublu  
Date & Time: 2019/08/02 00:00  
Hole ID: MR1-19-262

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 564102  
Location:      Section: (UTM NAD 83 17W) N 7915845

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
Drill personnel: Justin and James

**DRILLING PROGRESS:**

Start Shift Depth: 195.2      End Shift Depth: 208.5      Current Lithology:

Any rods/casing/tools lost in the drill hole?      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place:

Assessment of effectiveness:

Salt usage per day:

Flow Meter Reading:      Start of Shift: 2022.2      End of Shift: 2044.3

Has wildlife been present?: (check log for previous wildlife activity)

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

No

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No      Photo of sediment control measures?

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Leeno Kublu

Date: 8/2/19

**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

BIM personnel: Anita Egyir

Date &amp; Time: 2019/08/28 13:32

Hole ID: MR1-19-262

**HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Collar location: E 564102.2

(UTM NAD 83 17W) N 7915845

Actual depth: 207.0 metres

Description of drillhole location: North Limb

Purpose of drillhole: Exploration of North Limb

**DRILLING INFORMATION:**

Drill Contractor: Boart Lonqvear

Drill #: 7560

End Date of drilling: 2019-08-02

**ENVIRONMENT ASSESSMENT:**

	Yes	No	
All materials and debris removed from site?	<input checked="" type="radio"/>	<input type="radio"/>	
Casing left?:	<input type="radio"/>	<input checked="" type="radio"/>	
Has Casing left been cut to ground level?	<input checked="" type="radio"/>	<input type="radio"/>	
Any drill rods lost in the drillhole?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, how many?:
Has hole been properly marked?	<input checked="" type="radio"/>	<input type="radio"/>	
Any environmental concerns?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:
Any additional work required?	<input checked="" type="radio"/>	<input type="radio"/>	If yes, please describe below:
Drill anchors and casing need to be cut and plugged			
Corrective action:			
Drill anchors and casing cut and plugged September 3, 2019			

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location following demobilization and clean up? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:****INSPECTION COMPLETED BY:**

BIM signature:

Anita Egyir

Digitally signed by Anita  
Egyir  
Date: 2019.09.20  
14:32:38 -04'00'

Foreman signature:

Date:

Date:

APPENDIX E.2.14

2019 Exploration Location –  
MR1-19-264

**PRE-DRILLING INSPECTION REPORT (pre-set-up) 2019**

BIM Personnel: Massoud Robatian

Date &amp; Time: 2019/07/31 00:00

Proposed hole ID: MR1-19-P08

Final Hole ID: MR1-19-264

**PROPOSED HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Elevation: 545 metres

Description of drillhole location: North Limb of Deposit 1

Purpose of drillhole: Exploration/condemnation of area beyond known extent of North Limb Extension

Collar location: E 564190  
(UTM NAD 83) N 7916001

Dip: -45

Azimuth: 280

Target depth: 350 metres

**DRILLING INFORMATION:**

Has site been approved by drill foreman?: Yes

Foreman: Scott Young

Drill contractor: Boart Longyear

Drill #: 7565

Expected start of drilling: 2019-08-01

Is moving of drillhole required?: No

If yes, provide reason:

New Collar Location E N

**ENVIRONMENT ASSESSMENT:**

Water source: Sump at Km 108.5

Pump Station #: Portable Tanks: Yes

Natural depression/ drainage evident?: Yes (Photo required)

Manual drainage constructed?: No (Photo required)

Silt fence(s) constructed?: Yes (Photo required)

Silt Bag Used: Yes (Photo required)

**SITE ASSESSMENTS:**

Are wildlife present?: (if yes, record in log) No

Is site safe for drilling?: Yes

Safety concerns/issues:

None

Environmental concerns?:

None

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location prior to setup? No

Location of photos: 2019 Drill Hole

Database

**COMMENTS:****INSPECTION COMPLETED BY:**

Name:

Signature:

Massoud Robatian

Date: 2019-07-31



BIM personnel: Leeno Kublu  
Date & Time: 2019/08/01 00:00  
Hole ID: MR1-19-264

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 564190  
Location: N. Limb      Section: (UTM NAD 83 17W) N 7916001

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
Drill personnel: MIKE and LESS

**DRILLING PROGRESS:**

Start Shift Depth:      End Shift Depth:      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place:

Assessment of effectiveness: Fair

Salt usage per day:

Flow Meter Reading:      Start of Shift: 1948.6      End of Shift: -

Has wildlife been present?: (check log for previous wildlife activity) Yes

Fox

Environmental Concerns:

No

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

uneven platform, watch your step

Corrective action required?: No

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No      Photo of sediment control measures? No

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:

Signature:

Leeno Kublu

Date: 8/1/19

BIM personnel: Marvin Illauq  
Date & Time: 2019/08/02 07:05  
Hole ID: MR1-19-264

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 564190  
Location: North Line Section: (UTM NAD 83 17W) N 7916001

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
Drill personnel: MIKE, MIJ

**DRILLING PROGRESS:**

Start Shift Depth: 23      End Shift Depth: 25.5      Current Lithology: 7 - High Grac

Any rods/casing/tools lost in the drill hole?      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes

Assessment of effectiveness: Fair

Salt usage per day:

Flow Meter Reading:      Start of Shift: None (equipment missing)      End of Shift: None (equipment missing)

Has wildlife been present?: (check log for previous wildlife activity) Yes

Fox at 3:35pm

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Following instructions. Walk slowly. Be careful.

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:

Signature:

Marvin Illauq

Date: 8/2/19

BIM personnel: Marvin Illauq / Leeno Kublu Jr.  
 Date & Time: 2019/08/03 00:00  
 Hole ID: MR1-19-264

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 564190  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7916001

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: MICHEL, M.J., DAKOTA

**DRILLING PROGRESS:**

Start Shift Depth: 34.5      End Shift Depth: 72      Current Lithology: 7 - High Grac  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes  
 Assessment of effectiveness: Fair  
 Salt usage per day: 30  
 Flow Meter Reading:      Start of Shift: None      End of Shift: None  
 Has wildlife been present?: (check log for previous wildlife activity)

Environmental Concerns:  
 No

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input type="radio"/>	<input checked="" type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:  
 Follow instructions. Be carefule. Walk slowly.

Corrective action required?:  
 Action plan (if required):

Responsible party:      Date to be completed: 2019/08/03

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No      Photo of sediment control measures? No  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Marvin Illauq / Leeno Kublu Jr.

BIM personnel: Leeno Jr. Kublu / Marvin Illauq  
 Date & Time: 2019/08/04 07:43  
 Hole ID: MR1-19-264

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 564190  
 Location:      Section: (UTM NAD 83 17W) N 7916001

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: MIKE / DAKOTA

**DRILLING PROGRESS:**

Start Shift Depth: 102      End Shift Depth: 115.5      Current Lithology:  
 Any rods/casing/tools lost in the drill hole?      If yes, what was lost?:  
 No  
 Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate  
 1 burner is down from 7:45-11:51am. 2:45pm- changed the bit (drilling started again at 4:45pm). Waiting for mechanic

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: yes  
 Assessment of effectiveness: Fair  
 Salt usage per day:  
 Flow Meter Reading:      Start of Shift: 1229.9      End of Shift: 1253.8  
 Has wildlife been present?: (check log for previous wildlife activity) Yes  
 Fox  
 Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input type="radio"/>	<input checked="" type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

**Safety concerns/issues:**

Watch your steps

Corrective action required?: No

Action plan (if required): No

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Leeno Jr. Kublu

Date: 8/4/19



BIM personnel: Leeno Kublu  
 Date & Time: 2019/08/05 00:00  
 Hole ID: MR1-19-264

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 564190  
 Location:      Section: (UTM NAD 83 17W) N 7916001

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: MIKE/Dakota

**DRILLING PROGRESS:**

Start Shift Depth: 133.5      End Shift Depth: 148.5      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

No

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes

Assessment of effectiveness: Fair

Salt usage per day:

Flow Meter Reading:      Start of Shift: 1294.5      End of Shift: 1316.5

Has wildlife been present?: (check log for previous wildlife activity)

Yes, two foxes

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input type="radio"/>	<input checked="" type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Slippery slope (rain), watch your step

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Leeno Kublu Jr.

Date: 8/5/19

BIM personnel: Leeno Kublu  
 Date & Time: 2019/08/06 00:00  
 Hole ID: MR1-19-264

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 564190  
 Location:      Section: (UTM NAD 83 17W) N 7916001

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: MIKE/Dakota

**DRILLING PROGRESS:**

Start Shift Depth: 169.5      End Shift Depth: 189      Current Lithology:  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:  
 No  
 Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate  
 No

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes  
 Assessment of effectiveness: Fair  
 Salt usage per day:  
 Flow Meter Reading:      Start of Shift: 1355.5      End of Shift: 1377.7  
 Has wildlife been present?: (check log for previous wildlife activity) No

**Environmental Concerns:**
**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input type="radio"/>	<input checked="" type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:  
 No

Corrective action required?:  
 Action plan (if required):

Responsible party:      Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Leeno Kublu Jr.

BIM personnel: Leeno Kublu  
 Date & Time: 2019/08/07 00:00  
 Hole ID: MR1-19-264

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 564190  
 Location:      Section: (UTM NAD 83 17W) N 7916001

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: MIKE/Dakota

**DRILLING PROGRESS:**

Start Shift Depth: 208.5      End Shift Depth: 225      Current Lithology: 7 - High Grac

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

No

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

At 1:15pm pump clogged and waited 45 minutes

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes

Assessment of effectiveness: Fair

Salt usage per day:

Flow Meter Reading:      Start of Shift: 1419      End of Shift: 1439.7

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input type="radio"/>	<input checked="" type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Watch your steps

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Leeno Kublu Jr.

Date: 8/7/19

BIM personnel: Leeno / Chad  
 Date & Time: 2019/08/08 00:00  
 Hole ID: MR1-19-264

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 564190  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7916001

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: MIKE/Dakota

**DRILLING PROGRESS:**

Start Shift Depth: 247.5      End Shift Depth: 264      Current Lithology: 7 - High Grac

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

No

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

At 1:15pm pump clogged and waited 45 minutes

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes

Assessment of effectiveness: Fair

Salt usage per day:

Flow Meter Reading:      Start of Shift: 1478.1      End of Shift: 1501.8

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Watch your steps

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Leeno Kublu Jr.

Date: 8/8/19



BIM personnel: Leeno / Chad  
 Date & Time: 2019/08/09 00:00  
 Hole ID: MR1-19-264

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 564190  
 Location: N. Limb      Section: (UTM NAD 83 17W) N 7916001

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: MIKE/Dakota

**DRILLING PROGRESS:**

Start Shift Depth: 270      End Shift Depth: 270      Current Lithology: 4 - Schist

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

No

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Changing bit and rod at 7:38am, started drill at 8:19am

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes

Assessment of effectiveness: Fair

Salt usage per day:

Flow Meter Reading:      Start of Shift: 1538.8      End of Shift: 1558.1

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Watch your steps

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No      Photo of sediment control measures? No

Location of photos: 2019 Drilling Database

**COMMENTS:**

Stopped drill at 3:05pm

**INSPECTION COMPLETED BY:**

Name: Chad Panipakatsuk      Signature:

Date: 8/9/19

**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

BIM personnel: Anita Egyir

Date &amp; Time: 2019/08/28 13:20

Hole ID: MR1-19-264

**HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Collar location: E 564187.8

(UTM NAD 83 17W) N 7916001

Actual depth: 270.0 metres

Description of drillhole location: North Limb

Purpose of drillhole: Exploration of North Limb

**DRILLING INFORMATION:**

Drill Contractor: Boart Longyear

Drill #: 7565

End Date of drilling: 2019-08-09

**ENVIRONMENT ASSESSMENT:**

	Yes	No	
All materials and debris removed from site?	<input checked="" type="radio"/>	<input type="radio"/>	
Casing left?:	<input type="radio"/>	<input checked="" type="radio"/>	
Has Casing left been cut to ground level?	<input checked="" type="radio"/>	<input type="radio"/>	
Any drill rods lost in the drillhole?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, how many?:
Has hole been properly marked?	<input checked="" type="radio"/>	<input type="radio"/>	
Any environmental concerns?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:

Any additional work required?	<input checked="" type="radio"/>	<input type="radio"/>	If yes, please describe below:
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Drill anchors and casing need to be cut and plugged

**Corrective action:**

Drill anchors and casing cut and plugged September 3, 2019

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location following demobilization and clean up? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:****INSPECTION COMPLETED BY:**

BIM signature:

Anita Egyir

Digitally signed by Anita  
Egyir  
Date: 2019.09.20  
14:37:21 -04'00'

Foreman signature:

Date: 2019-08-28

Date:

APPENDIX E.2.15

2019 Exploration Location –  
MR3-19-265

**PRE-DRILLING INSPECTION REPORT (pre-set-up) 2019**

BIM Personnel: Massoud Robatian

Date &amp; Time: 2019/08/02 00:00

Proposed hole ID: MR3-19-P03

Final Hole ID: MR3-19-265

**PROPOSED HOLE INFORMATION:**

Deposit #: Deposit No. 3

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Elevation: 432 metres

Description of drillhole location: Western Portion of Deposit 3

Purpose of drillhole: Infill drilling of Deposit 3

Collar location: E 567191

(UTM NAD 83) N 7913508

Dip: -50

Azimuth: 350

Target depth: 350 metres

**DRILLING INFORMATION:**

Has site been approved by drill foreman?: Yes

Foreman: Scott Young

Drill contractor: Boart Longyear

Drill #: 7560

Expected start of drilling: 2019-08-03

Is moving of drillhole required?: No

If yes, provide reason:

New Collar Location E N

**ENVIRONMENT ASSESSMENT:**

Water source: Mary River

Pump Station #: Portable Tanks: Yes

Natural depression/ drainage evident?: No (Photo required)

Manual drainage constructed?: Yes (Photo required)

Silt fence(s) constructed?: Yes (Photo required)

Silt Bag Used: Yes (Photo required)

**SITE ASSESSMENTS:**

Are wildlife present?: (if yes, record in log) No

Is site safe for drilling?: Yes

Safety concerns/issues:

None

Environmental concerns?:

None

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location prior to setup? No

Location of photos: 2019 Drill Hole

Database

**COMMENTS:****INSPECTION COMPLETED BY:**

Name:

Signature:

Massoud Robatian

Date: 2019-08-02



BIM personnel: Joey Manneipik  
Date & Time: 2019/08/06 00:00  
Hole ID: MR1-19-265

**HOLE INFORMATION:**

Deposit #: Deposit No. 3  
Location: Western Section:

Collar location: E 567191  
(UTM NAD 83 17W) N 7913508

**DRILLING INFORMATION**

Drill contractor: Boart Longyear  
Drill personnel: James, Justin

Drill Type: LF /U Drill #: 7560

**DRILLING PROGRESS:**

Start Shift Depth: 25.5

End Shift Depth: 61.5

Current Lithology:

Any rods/casing/tools lost in the drill hole?

If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place:

Assessment of effectiveness:

Salt usage per day: 27

Flow Meter Reading: Start of Shift:

End of Shift:

Has wildlife been present?: (check log for previous wildlife activity)

Yes

Environmental Concerns:

No

**SAFETY ASSESSMENT:**

	Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)		

	Yes	No
Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

No eye wash

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No

Photo of sediment control measures? No

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:

Signature:

Joey Manneipik

Date: 8/6/19

BIM personnel: Joey Manniapik  
 Date & Time: 2019/08/07 00:00  
 Hole ID: MR3-19-265

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 567191  
 Location: Western Section: (UTM NAD 83 17W) N 7913508

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: James, Justin

**DRILLING PROGRESS:**

Start Shift Depth: 90      End Shift Depth: 117      Current Lithology: 9 - Banded Ir  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place:  
 Assessment of effectiveness:  
 Salt usage per day: 47  
 Flow Meter Reading:      Start of Shift: 2573.3      End of Shift: 2595.5

Has wildlife been present?: (check log for previous wildlife activity)

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input type="radio"/>	<input checked="" type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input type="radio"/>	<input checked="" type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input type="radio"/>	<input checked="" type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling?      Photo of sediment control measures?  
 Location of photos: 2019 Drilling Database

**COMMENTS:**

Survival shack left open during night, wildlife got into garbage inside survival shack. Picked up all garbage inside and outside of survival shack.

**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Joey Manniapik

Date: 8/7/19

BIM personnel: Joasie and William  
 Date & Time: 2019/08/08 00:00  
 Hole ID: MR3-19-265

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 567191  
 Location: Western Section: (UTM NAD 83 17W) N 7913508

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Justin / Shawn

**DRILLING PROGRESS:**

Start Shift Depth: 135      End Shift Depth: 139.5      Current Lithology: g - Banded Ir  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Drill was broken when we came in. No pressure. Driller worked on it.

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place:

Assessment of effectiveness:

Salt usage per day:

Flow Meter Reading:      Start of Shift: 2636.7      End of Shift: 2654.1

Has wildlife been present?: (check log for previous wildlife activity)

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling?      Photo of sediment control measures?  
 Location of photos: 2019 Drilling Database

**COMMENTS:**

Survival shack left open during night, wildlife got into garbage inside survival shack. Picked up all garbage inside and outside of survival shack.

**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Joasie Iqalukjuak

Date: 8/8/19

BIM personnel: Joasie and William  
 Date & Time: 2019/08/11 00:00  
 Hole ID: MR3-19-265

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 567191  
 Location: Western Section: (UTM NAD 83 17W) N 7913508

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: JUSTIN / Corey

**DRILLING PROGRESS:**

Start Shift Depth: 211.5      End Shift Depth: 226.5      Current Lithology:  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place:

Assessment of effectiveness:

Salt usage per day: 72

Flow Meter Reading:      Start of Shift: 2799.8      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? No      Photo of sediment control measures? No  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Josie Iqalukjuak

Date: 8/11/19



BIM personnel: Sarah/Jason/Massoud/Mallory  
 Date & Time: 2019/08/12 00:00  
 Hole ID: MR3-19-265

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 567191  
 Location:      Section: (UTM NAD 83 17W) N 7913508

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: JUSTIN / Corey

**DRILLING PROGRESS:**

Start Shift Depth: 238.5      End Shift Depth:      Current Lithology: 7 - High Grac

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: silt fence

Assessment of effectiveness: Good

Salt usage per day: 60

Flow Meter Reading:      Start of Shift: 2874.3      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity) Yes

fox and ermine

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Sarah Mckenzie

Date: 8/12/19

BIM personnel: Joasie and Joe  
 Date & Time: 2019/08/13 00:00  
 Hole ID: MR3-19-265

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 567191  
 Location:      Section: (UTM NAD 83 17W) N 7913508

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: JUSTIN / COREY

**DRILLING PROGRESS:**

Start Shift Depth: 274.5      End Shift Depth: 289.5      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place:

Assessment of effectiveness:

Salt usage per day: 85

Flow Meter Reading:      Start of Shift:      End of Shift: 2983.5

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Joasie Iqalukjuak      Signature:

Date: 8/13/19

**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

BIM personnel: Justin Hoyle, Eric Munro, Anita Egvir

Date &amp; Time: 2019/08/28 16:39

Hole ID: MR3-19-265

**HOLE INFORMATION:**

Deposit #: Deposit No. 3

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Collar location: E 567190.856

(UTM NAD 83 17W) N 7913507.575

Actual depth: 301.5 metres

Description of drillhole location: Western portion of Deposit 3

Purpose of drillhole: Definition Drilling

**DRILLING INFORMATION:**

Drill Contractor: Boart Lonqvear

Drill #: 7560

End Date of drilling: 2019-08-14

**ENVIRONMENT ASSESSMENT:**

	Yes	No	
All materials and debris removed from site?	<input checked="" type="radio"/>	<input type="radio"/>	
Casing left?:	<input checked="" type="radio"/>	<input type="radio"/>	
Has Casing left been cut to ground level?	<input checked="" type="radio"/>	<input type="radio"/>	
Any drill rods lost in the drillhole?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, how many?:
Has hole been properly marked?	<input checked="" type="radio"/>	<input type="radio"/>	
Any environmental concerns?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:
Any additional work required?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:

Corrective action:

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location following demobilization and clean up? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:****INSPECTION COMPLETED BY:**

BIM signature:

Anita Egvir

Digitally signed by Anita  
Egvir  
Date: 2019.09.22  
06:45:43 -04'00'

Foreman signature:

Date:

Date:

APPENDIX E.2.16

2019 Exploration Location –  
MR1-19-266



**PRE-DRILLING INSPECTION REPORT (pre-set-up) 2019**

BIM Personnel: Stephen MacConnell

Date &amp; Time: 2019/08/11 15:54

Proposed hole ID: MR1-19-AZP01

Final Hole ID: MR1-19-266

**PROPOSED HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Elevation: 592 metres

Description of drillhole location: drill set up on 590 bench in pit

Purpose of drillhole: Pit resource delineation

Collar location: E 563181.8

(UTM NAD 83) N 7914313.4

Dip: -46

Azimuth: 296

Target depth: 180 metres

**DRILLING INFORMATION:**

Has site been approved by drill foreman?: Yes

Foreman: Scott Young

Drill contractor: Boart Longyear

Drill #: 7565

Expected start of drilling: 2019-08-12

Is moving of drillhole required?: No

If yes, provide reason:

New Collar Location E N

**ENVIRONMENT ASSESSMENT:**

Water source: 590 Sump

Pump Station #: Portable Tanks: Yes

Natural depression/ drainage evident?: No (Photo required)

Manual drainage constructed?: Yes (Photo required)

Silt fence(s) constructed?: Yes (Photo required)

Silt Bag Used: Yes (Photo required)

**SITE ASSESSMENTS:**

Are wildlife present?: (if yes, record in log) No

Is site safe for drilling?: Yes

Safety concerns/issues:

None

Environmental concerns?:

None

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location prior to setup? Yes

Location of photos: 2019 Drill Hole

Database

**COMMENTS:****INSPECTION COMPLETED BY:**

Name:

Signature:

Stephen MacConnell

Date: 2019-08-11

BIM personnel: Mallory Metcalf / Stephen MacConnell  
 Date & Time: 2019/08/12 12:11  
 Hole ID: MR1-19-266

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 563182  
 Location: Axial Plan Section: (UTM NAD 83 17W) N 7914313

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: Dakota

**DRILLING PROGRESS:**

Start Shift Depth: 22.5      End Shift Depth:      Current Lithology: 4 - Schist

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

No

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes

Assessment of effectiveness: Fair

Salt usage per day:

Flow Meter Reading:      Start of Shift:      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

No

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Mallory Metcalf

Date: 8/12/19

BIM personnel: Chad P and Lenno Kublu  
 Date & Time: 2019/08/13 00:00  
 Hole ID: MR1-19-266

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 0563182  
 Location: Axial Zone Section: (UTM NAD 83 17W) N 7914313

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: Dakota and Mike

**DRILLING PROGRESS:**

Start Shift Depth: 84m      End Shift Depth: 87.5m      Current Lithology: 7 - High Grac

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Waiting on water 8:22am, started drilling at 9:55am. Drill broke down at 10:32am, pulling out rods. At 2:20pm fixed rod

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: N/A

Assessment of effectiveness: Good

Salt usage per day: 75

Flow Meter Reading:      Start of Shift: N/A      End of Shift: N/A

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

No flow meter

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? No

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Chad P and Leeno Kublu

Date: 8/13/19

BIM personnel: Chad P  
Date & Time: 2019/08/14 00:00  
Hole ID: MR1-19-266

**HOLE INFORMATION:**

Deposit #: Deposit No. 1 Collar location: E 0563182  
Location: Axial Zone Section: (UTM NAD 83 17W) N 7914313

**DRILLING INFORMATION**

Drill contractor: Boart Longyear Drill Type: LF /U Drill #: 7565  
Drill personnel: Dakota and Mike

**DRILLING PROGRESS:**

Start Shift Depth: 112.5m End Shift Depth: 125.5m Current Lithology: 7 - High Grac  
Any rods/casing/tools lost in the drill hole? No If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Changing the drill bit at 11:42am, started drilling at 9:43am.

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: N/A

Assessment of effectiveness: Good

Salt usage per day:

Flow Meter Reading: Start of Shift: N/A End of Shift: N/A

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

No flow meter

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes Photo of sediment control measures? No  
Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Chad P Signature:

Date: 8/14/19



**BIM personnel:** Bernard Choquette and Joe Palituaq  
**Date & Time:** 2019/08/15 00:00  
**Hole ID:** MR1-19-266

**HOLE INFORMATION:**

**Deposit #:** Deposit No. 1  
**Location:** Axial Zone **Section:** **Collar location:** E 0563182  
 (UTM NAD 83 17W) N 7914313

**DRILLING INFORMATION**

**Drill contractor:** Boart Longyear **Drill Type:** LF /U **Drill #:** 7565  
**Drill personnel:** Michel and Corry

**DRILLING PROGRESS:**

**Start Shift Depth:** 153m **End Shift Depth:** 156m **Current Lithology:** 7 - High Grac  
**Any rods/casing/tools lost in the drill hole?** No **If yes, what was lost?:**

**Delays/Problems:** (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

No

**ENVIRONMENT ASSESSMENT:**

**Sediment control measures in place:** N/A

**Assessment of effectiveness:** Good

**Salt usage per day:**

**Flow Meter Reading:** **Start of Shift:** N/A **End of Shift:**

**Has wildlife been present?:** (check log for previous wildlife activity) No

**Environmental Concerns:**

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

**Safety concerns/issues:**

No

**Corrective action required?:**

**Action plan (if required):**

**Responsible party:**

**Date to be completed:**

**Photograph (only required to document problems and corrective actions):**

**PHOTOGRAPHIC RECORD:**

**Photo of drill hole during drilling?** Yes **Photo of sediment control measures?**  
**Location of photos:** 2019 Drilling Database

**COMMENTS:**

11:50 dropped rod in hole, pulled line out, waiting for blast  
 14:30 attempting to tap dropped rod out  
 16:20 retrieved rod out of hole with tap

**INSPECTION COMPLETED BY:**

**Name:** Bernard Choquette **Signature:**

**Date:** 8/15/19

BIM personnel: Bernard Choquette and Jeff  
 Date & Time: 2019/08/16 00:00  
 Hole ID: MR1-19-266

**HOLE INFORMATION:**

Deposit #: Deposit No. 1 Collar location: E 0563182  
 Location: Axial Zone Section: (UTM NAD 83 17W) N 7914313

**DRILLING INFORMATION**

Drill contractor: Boart Longyear Drill Type: LF /U Drill #: 7565  
 Drill personnel: Michel and Corry

**DRILLING PROGRESS:**

Start Shift Depth: 171m End Shift Depth: 187.5m Current Lithology: g - Banded Ir  
 Any rods/casing/tools lost in the drill hole? No If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

No

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: N/A

Assessment of effectiveness: Good

Salt usage per day:

Flow Meter Reading: Start of Shift: 1549m<sup>3</sup> End of Shift: 1573.2m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

No

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes Photo of sediment control measures?  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Bernard Choquette Signature:

Date: 8/16/19

**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

BIM personnel: Justin Hoyle

Date &amp; Time: 2019/09/20 15:40

Hole ID: MR1-19-266

**HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Description of drillhole location: Axial Zone

Purpose of drillhole: Mine Planning

Collar location: E 563182  
(UTM NAD 83 17W) N 7914313

Actual depth: 187.5 metres

**DRILLING INFORMATION:**

Drill Contractor: Boart Lonqvear

Drill #: 7565

End Date of drilling: 2019-08-16

**ENVIRONMENT ASSESSMENT:**

	Yes	No	
All materials and debris removed from site?	<input checked="" type="radio"/>	<input type="radio"/>	
Casing left?:	<input type="radio"/>	<input checked="" type="radio"/>	
Has Casing left been cut to ground level?	<input type="radio"/>	<input checked="" type="radio"/>	
Any drill rods lost in the drillhole?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, how many?:
Has hole been properly marked?	<input type="radio"/>	<input checked="" type="radio"/>	
Any environmental concerns?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:
None			
Any additional work required?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:

Corrective action:

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location following demobilization and clean up? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**

Drilling performed on working bench in the pit that was subsequently mined.

**INSPECTION COMPLETED BY:**

BIM signature:

Foreman signature:

Date: 2019-09-20

Date:

APPENDIX E.2.17

2019 Exploration Location –  
MR1-19-268



**PRE-DRILLING INSPECTION REPORT (pre-set-up) 2019**

BIM Personnel: Massoud Robatian

Date &amp; Time: 2019/08/15 00:00

Proposed hole ID: MR1-19-AZP02

Final Hole ID: MR1-19-268

**PROPOSED HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Elevation: 600 metres

Description of drillhole location: Axial Zone on 600 bench

Purpose of drillhole: Ore Classification

Collar location: E 563097  
(UTM NAD 83) N 7914174

Dip: -45

Azimuth: 296

Target depth: 160 metres

**DRILLING INFORMATION:**

Has site been approved by drill foreman?: Yes

Foreman: Scott Young

Drill contractor: Boart Longyear

Drill #: 7565

Expected start of drilling: 2019-09-16

Is moving of drillhole required?: No

If yes, provide reason:

New Collar Location E N

**ENVIRONMENT ASSESSMENT:**

Water source: Robert Lake / 108km sump

Pump Station #: Portable Tanks: Yes

Natural depression/ drainage evident?: No (Photo required)

Manual drainage constructed?: Yes (Photo required)

Silt fence(s) constructed?: No (Photo required)

Silt Bag Used: No (Photo required)

**SITE ASSESSMENTS:**

Are wildlife present?: (if yes, record in log) No

Is site safe for drilling?: Yes

Safety concerns/issues:

None

Environmental concerns?:

None

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location prior to setup? No

Location of photos: 2019 Drill Hole

Database

**COMMENTS:****INSPECTION COMPLETED BY:**

Name:

Massoud Robatian

Signature:

Date: 2019-08-15

**BIM personnel:** Joey Manniapik

**Date & Time:** 2019/08/18 00:00

**Hole ID:** MR1-19-268

**HOLE INFORMATION:**
**Deposit #:** Deposit No. 1

**Location:** Axial Zone Section:

**Collar location:** E 0563097

(UTM NAD 83 17W) N 7914174

**DRILLING INFORMATION**
**Drill contractor:** Boart Longyear

**Drill Type:** LF /U

**Drill #:** 7565

**Drill personnel:** Dakota and Mike

**DRILLING PROGRESS:**
**Start Shift Depth:** 6m

**End Shift Depth:** 31m

**Current Lithology:** 7 - High Grac

**Any rods/casing/tools lost in the drill hole?** No

If yes, what was lost?:

**Delays/Problems:** (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

None

**ENVIRONMENT ASSESSMENT:**
**Sediment control measures in place:** None, in pit

**Assessment of effectiveness:**
**Salt usage per day:**
**Flow Meter Reading:** Start of Shift:

End of Shift: 1649.4m<sup>3</sup>
**Has wildlife been present?:** (check log for previous wildlife activity) No

**Environmental Concerns:**

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

**Safety concerns/issues:**
**Corrective action required?:**
**Action plan (if required):**
**Responsible party:**
**Date to be completed:**
**Photograph (only required to document problems and corrective actions):**
**PHOTOGRAPHIC RECORD:**
**Photo of drill hole during drilling?** Yes

**Photo of sediment control measures?** No

**Location of photos:** 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**
**Name:**
**Signature:**

Joey Manniapik

**Date:** 8/18/19

BIM personnel: Jeff P and Joe P  
 Date & Time: 2019/08/19 00:00  
 Hole ID: MR1-19-268

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 0563097  
 Location: Axial Zone Section: (UTM NAD 83 17W) N 7914174

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: Dakota and Mike

**DRILLING PROGRESS:**

Start Shift Depth: 60m      End Shift Depth: 73.5m      Current Lithology: 7 - High Grac  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Blast at 11:00am

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: None, in pit  
 Assessment of effectiveness:  
 Salt usage per day: 30 bags  
 Flow Meter Reading:      Start of Shift: 1689.6m<sup>3</sup>      End of Shift: 1715m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

None

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? No  
 Location of photos: 2019 Drilling Database

**COMMENTS:**

Casing starts at 8:26am.  
 Drillers washing hole to heat it up again at 3:20pm.

**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Jeff Panikpakutsuk

Date: 8/19/19

BIM personnel: Jeff P and Joe P  
 Date & Time: 2019/08/20 00:00  
 Hole ID: MR1-19-268

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 0563097  
 Location: Axial Zone Section: (UTM NAD 83 17W) N 7914174

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: Dakota and Mike

**DRILLING PROGRESS:**

Start Shift Depth: 87m      End Shift Depth: 114m      Current Lithology: 7 - High Grac  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: None, in pit  
 Assessment of effectiveness:  
 Salt usage per day: 30 bags  
 Flow Meter Reading:      Start of Shift: 1756.8m<sup>3</sup>      End of Shift: 1782.2m<sup>3</sup>  
 Has wildlife been present?: (check log for previous wildlife activity) No

**Environmental Concerns:**

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

**Safety concerns/issues:**

None

**Corrective action required?:**

Action plan (if required):

**Responsible party:**
**Date to be completed:**

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? No  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Jeff and Joe      Signature:

Date: 8/20/19



BIM personnel: Jeff P and Joe P  
 Date & Time: 2019/08/21 00:00  
 Hole ID: MR1-19-268

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 0563097  
 Location: Axial Zone Section: (UTM NAD 83 17W) N 7914174

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: Dakota and Mike

**DRILLING PROGRESS:**

Start Shift Depth: 114m      End Shift Depth: 133.5m      Current Lithology: 7 - High Grac  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Rods stuck.

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: None, in pit

Assessment of effectiveness:

Salt usage per day: 35 bags

Flow Meter Reading:      Start of Shift: 1838.1m<sup>3</sup>      End of Shift: 1854.2m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity) Yes

Fox.

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

None

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? No  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:

Signature:

Joe Palituq

Date: 8/21/19

**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

BIM personnel: Justin Hoyle

Date &amp; Time: 2019/09/20 15:00

Hole ID: MR1-19-268

**HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Collar location: E 563097  
(UTM NAD 83 17W) N 7914174

Actual depth: 160.5 metres

Description of drillhole location: Axial Zone 600 bench in pit

Purpose of drillhole: Ore Classification

**DRILLING INFORMATION:**

Drill Contractor: Boart Longyear

Drill #: 7565

End Date of drilling: 2019-08-22

**ENVIRONMENT ASSESSMENT:**

	Yes	No	
All materials and debris removed from site?	<input checked="" type="radio"/>	<input type="radio"/>	
Casing left?:	<input type="radio"/>	<input checked="" type="radio"/>	
Has Casing left been cut to ground level?	<input type="radio"/>	<input checked="" type="radio"/>	
Any drill rods lost in the drillhole?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, how many?:
Has hole been properly marked?	<input type="radio"/>	<input checked="" type="radio"/>	
Any environmental concerns?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:
Any additional work required?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:

Corrective action:

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location following demobilization and clean up? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**

Drilling performed on working 600 bench in the pit that was subsequently mined.

**INSPECTION COMPLETED BY:**

BIM signature:

Foreman signature:

Date: 2019-09-20

Date:

APPENDIX E.2.18

2019 Exploration Location –  
MR3-19-267

**PRE-DRILLING INSPECTION REPORT (pre-set-up) 2019**

BIM Personnel: Massoud Robatian

Date &amp; Time: 2019/08/15 00:00

Proposed hole ID: MR3-19-P02

Final Hole ID: MR3-19-267

**PROPOSED HOLE INFORMATION:**

Deposit #: Deposit No. 3

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Elevation: 434 metres

Description of drillhole location: Western portion of Deposit 3

Purpose of drillhole: Infill drilling of Deposit 3

Collar location: E 567306  
(UTM NAD 83) N 7913517

Dip: -50

Azimuth: 350

Target depth: 310 metres

**DRILLING INFORMATION:**

Has site been approved by drill foreman?: Yes

Foreman: Scott Young

Drill contractor: Boart Longyear

Drill #: 7560

Expected start of drilling: 2019-08-16

Is moving of drillhole required?: No

If yes, provide reason:

New Collar Location E N

**ENVIRONMENT ASSESSMENT:**

Water source: Mary River

Pump Station #: Portable Tanks: Yes

Natural depression/ drainage evident?: No (Photo required)

Manual drainage constructed?: Yes (Photo required)

Silt fence(s) constructed?: Yes (Photo required)

Silt Bag Used: Yes (Photo required)

**SITE ASSESSMENTS:**

Are wildlife present?: (if yes, record in log) No

Is site safe for drilling?: Yes

Safety concerns/issues:

None

Environmental concerns?:

None

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location prior to setup? No

Location of photos: 2019 Drill Hole

Database

**COMMENTS:****INSPECTION COMPLETED BY:**

Name:

Signature:

Massoud Robatian

Date: 2019-08-15



BIM personnel: Joey Manniapik  
 Date & Time: 2019/08/17 00:00  
 Hole ID: MR3-19-267

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 0567306  
 Location:      Section: (UTM NAD 83 17W) N 7913517

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Bernie and Corey

**DRILLING PROGRESS:**

Start Shift Depth: 11.5m      End Shift Depth: 31m      Current Lithology: 4 - Schist

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

None

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes

Assessment of effectiveness: Good

Salt usage per day: 45 bags

Flow Meter Reading:      Start of Shift: 3040      End of Shift: 3061

Has wildlife been present?: (check log for previous wildlife activity) Yes

7 baby foxes

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

None

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**

6:30 drillers begin casing  
 12:20 drillers done casing  
 Hydrometer broken

**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Joey Manniapik

Date: 8/17/19

BIM personnel: Bernard and Jeff  
 Date & Time: 2019/08/18 00:00  
 Hole ID: MR3-19-267

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 0567306  
 Location:      Section: (UTM NAD 83 17W) N 7913517

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Bernie and Connor

**DRILLING PROGRESS:**

Start Shift Depth: 58m      End Shift Depth: 91m      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

None

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes

Assessment of effectiveness: Good

Salt usage per day: 23 bags

Flow Meter Reading:      Start of Shift: 3085      End of Shift: 3107

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

None

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:

Bernard Choquette

Date: 8/18/19

BIM personnel: Bernard Choquette  
 Date & Time: 2019/08/19 00:00  
 Hole ID: MR3-19-267

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 0567306  
 Location:      Section: (UTM NAD 83 17W) N 7913517

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Bernie and Connor

**DRILLING PROGRESS:**

Start Shift Depth: 112m      End Shift Depth: 130m      Current Lithology: g - Banded Ir  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

None

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes

Assessment of effectiveness: Good

Salt usage per day: 25 bags

Flow Meter Reading:      Start of Shift: 3148      End of Shift: 3159

Has wildlife been present?: (check log for previous wildlife activity) Yes

Foxes, mother and 3 pups

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

None

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:

Signature:

Bernard Choquette

Date: 8/19/19

BIM personnel: Bernard Choquette  
 Date & Time: 2019/08/20 00:00  
 Hole ID: MR3-19-267

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 0567306  
 Location:      Section: (UTM NAD 83 17W) N 7913517

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Bernard Doucette and Corey Budgei

**DRILLING PROGRESS:**

Start Shift Depth: 161.5m      End Shift Depth: 184m      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes

Assessment of effectiveness: Fair

Salt usage per day: 35 bags

Flow Meter Reading:      Start of Shift: 3189      End of Shift: 3207

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

None

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Bernard Choquette      Signature:

Date: 8/20/19



BIM personnel: Bernard Choquette  
 Date & Time: 2019/08/21 00:00  
 Hole ID: MR3-19-267

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 0567306  
 Location:      Section: (UTM NAD 83 17W) N 7913517

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
 Drill personnel: Bernard Doucette and Corey Budgei

**DRILLING PROGRESS:**

Start Shift Depth: 212.5m      End Shift Depth: 232m      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes

Assessment of effectiveness: Good

Salt usage per day: 62 bags

Flow Meter Reading:      Start of Shift: 3238      End of Shift: 3259

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

None

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Bernard Choquette      Signature:

Date: 8/21/19

BIM personnel: Bernard Choquette  
Date & Time: 2019/08/22 00:00  
Hole ID: MR3-19-267

**HOLE INFORMATION:**

Deposit #: Deposit No. 3      Collar location: E 0567306  
Location:      Section: (UTM NAD 83 17W) N 7913517

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7560  
Drill personnel: Bernard Doucette and Corey Budgei

**DRILLING PROGRESS:**

Start Shift Depth: 235m      End Shift Depth:      Current Lithology:

Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: Yes

Assessment of effectiveness: Fair

Salt usage per day:

Flow Meter Reading:      Start of Shift: 3288      End of Shift: 3308

Has wildlife been present?: (check log for previous wildlife activity) No

Environmental Concerns:

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

None

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**

Nearly froze hole during night shift. Will be conditioning hole often today. Tub mixer burnt out. Mixing salt with Shovel. Waiting for mixer from deposit #1, drill #3. New mixing running at 10:15am. At 2:30 pressure rising in hole, pulling rods out.

**INSPECTION COMPLETED BY:**

Name:      Signature:

Bernard Choquette

Date: 8/22/19

**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

BIM personnel: Justin Hoyle, Eric Munro, Anita Egvir

Date &amp; Time: 2019/08/28 16:39

Hole ID: MR3-19-267

**HOLE INFORMATION:**

Deposit #: Deposit No. 3

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Collar location: E 567306.347

(UTM NAD 83 17W) N 7913516.716

Actual depth: 236.5 metres

Description of drillhole location: Western portion of Deposit 3

Purpose of drillhole: Definition Drilling

**DRILLING INFORMATION:**

Drill Contractor: Boart Longyear

Drill #: 7560

End Date of drilling: 2019-08-22

**ENVIRONMENT ASSESSMENT:**

	Yes	No	
All materials and debris removed from site?	<input checked="" type="radio"/>	<input type="radio"/>	
Casing left?:	<input checked="" type="radio"/>	<input type="radio"/>	
Has Casing left been cut to ground level?	<input checked="" type="radio"/>	<input type="radio"/>	
Any drill rods lost in the drillhole?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, how many?:
Has hole been properly marked?	<input checked="" type="radio"/>	<input type="radio"/>	
Any environmental concerns?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:
Any additional work required?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:

Corrective action:

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location following demobilization and clean up? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:****INSPECTION COMPLETED BY:**

BIM signature:

Anita Egvir

Digitally signed by Anita  
Egvir  
Date: 2019.09.21  
08:41:59 -04'00'

Foreman signature:

Date:

Date:

APPENDIX E.2.19

2019 Exploration Location –  
MR1-19-269



**PRE-DRILLING INSPECTION REPORT (pre-set-up) 2019**

BIM Personnel: Eric Munro, Justin Hoyle

Date &amp; Time: 2019/08/24 00:00

Proposed hole ID: MR1-19-AZP03

Final Hole ID: MR1-19-269

**PROPOSED HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Elevation: 620 metres

Description of drillhole location: Axial Zone 620 bench

Purpose of drillhole: Ore Classification

Collar location: E 562980  
(UTM NAD 83) N 7913992

Dip: -55

Azimuth: 116

Target depth: 80.0 metres

**DRILLING INFORMATION:**

Has site been approved by drill foreman?: Yes

Foreman: Scott Young

Drill contractor: Boart Longyear

Drill #: 7565

Expected start of drilling: 2019-08-25

Is moving of drillhole required?: No

If yes, provide reason:

New Collar Location E N

**ENVIRONMENT ASSESSMENT:**

Water source: Robert Lake (water truck)

Pump Station #: Portable Tanks: Yes

Natural depression/ drainage evident?: (Photo required)

Manual drainage constructed?: Yes (Photo required)

Silt fence(s) constructed?: No (Photo required)

Silt Bag Used: No (Photo required)

**SITE ASSESSMENTS:**

Are wildlife present?: (if yes, record in log) No

Is site safe for drilling?: Yes

Safety concerns/issues:

None

Environmental concerns?:

None

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location prior to setup? No

Location of photos: 2019 Drill Hole

Database

**COMMENTS:****INSPECTION COMPLETED BY:**

Name:

Justin Hoyle

Signature:

Date: 2019-08-24

BIM personnel: Jeff Panipakutsuk  
 Date & Time: 2019/08/26 00:00  
 Hole ID: MR1-19-269

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 562980  
 Location: Axial Zone Section: (UTM NAD 83 17W) N 7913992

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: Michel Gilbert and Corey Budgei

**DRILLING PROGRESS:**

Start Shift Depth: 6m      End Shift Depth: 12m      Current Lithology: 7 - High Grac  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Water sump on the 590 bench was out of water between 1:30pm and 3:30pm

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: None, in pit

Assessment of effectiveness:

Salt usage per day: 6 bags

Flow Meter Reading:      Start of Shift: 1956.8m^3      End of Shift:

Has wildlife been present?: (check log for previous wildlife activity) Yes

Fox at 7:50am

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

None

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? No  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Jeff Panipakutsuk

Date: 8/26/19

BIM personnel: Marvin Illauq  
 Date & Time: 2019/08/27 00:00  
 Hole ID: MR1-19-269

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 562980  
 Location: Axial Zone Section: (UTM NAD 83 17W) N 7913992

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: Michel Gilbert and Corey Budger

**DRILLING PROGRESS:**

Start Shift Depth: 15m      End Shift Depth: 15m      Current Lithology: 7 - High Grac  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

Water sump on the 590 bench was out of water between 6:00am and 3:30pm

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: None, in pit  
 Assessment of effectiveness:  
 Salt usage per day: 3 bags  
 Flow Meter Reading:      Start of Shift: 1982.8m<sup>3</sup>      End of Shift: 1984.8m<sup>3</sup>  
 Has wildlife been present?: (check log for previous wildlife activity) Yes  
 Fox at 8:06amam  
 Environmental Concerns:  
 None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:  
 None

Corrective action required?:  
 Action plan (if required):

Responsible party:      Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? No  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name:      Signature:  
 Marvin Illauq

Date: 8/27/19

BIM personnel: Marvin Illauq  
 Date & Time: 2019/08/28 00:00  
 Hole ID: MR1-19-269

**HOLE INFORMATION:**

Deposit #: Deposit No. 1      Collar location: E 562980  
 Location: Axial Zone Section: (UTM NAD 83 17W) N 7913992

**DRILLING INFORMATION**

Drill contractor: Boart Longyear      Drill Type: LF /U      Drill #: 7565  
 Drill personnel: Michel Gilbert and Corey Budgei

**DRILLING PROGRESS:**

Start Shift Depth: 27m      End Shift Depth: 30m      Current Lithology: 7 - High Grac  
 Any rods/casing/tools lost in the drill hole? No      If yes, what was lost?:

Delays/Problems: (breakdowns, stuck rods, bit change, weather, wait time, drill move, etc) Provide time estimate

No water between 8:30am-1:15pm

**ENVIRONMENT ASSESSMENT:**

Sediment control measures in place: None, in pit

Assessment of effectiveness:

Salt usage per day: 17 bags

Flow Meter Reading:      Start of Shift: 2010.1m<sup>3</sup>      End of Shift: 2019.0m<sup>3</sup>

Has wildlife been present?: (check log for previous wildlife activity) Yes

Fox at 8:45am

Environmental Concerns:

None

**SAFETY ASSESSMENT:**

	Yes	No		Yes	No
Stable platform	<input checked="" type="radio"/>	<input type="radio"/>	Fall prevention system if platform is over 1.8m	<input checked="" type="radio"/>	<input type="radio"/>
First Aid Kit	<input checked="" type="radio"/>	<input type="radio"/>	Fire Extinguisher(2)	<input checked="" type="radio"/>	<input type="radio"/>
PPE	<input checked="" type="radio"/>	<input type="radio"/>	Eye Wash (2)	<input checked="" type="radio"/>	<input type="radio"/>
(Safety glasses/steal toe boots/ear plugs/Hard Hat)			Spill Kits (2)	<input checked="" type="radio"/>	<input type="radio"/>
			Lined Berms	<input checked="" type="radio"/>	<input type="radio"/>
			Survival Shack	<input checked="" type="radio"/>	<input type="radio"/>

Safety concerns/issues:

None

Corrective action required?:

Action plan (if required):

Responsible party:

Date to be completed:

Photograph (only required to document problems and corrective actions):

**PHOTOGRAPHIC RECORD:**

Photo of drill hole during drilling? Yes      Photo of sediment control measures? No  
 Location of photos: 2019 Drilling Database

**COMMENTS:**
**INSPECTION COMPLETED BY:**

Name: Marvin Illauq      Signature:

Date: 8/28/19



**POST-DRILL CLEAN UP INSPECTION REPORT 2019**

BIM personnel: Justin Hoyle

Date &amp; Time: 2019/09/20 14:20

Hole ID: MR1-19-269

**HOLE INFORMATION:**

Deposit #: Deposit No. 1

Project: Mary River

Area: Baffin Island

NTS: 37G/5

Collar location: E 562980  
(UTM NAD 83 17W) N 7913992

Actual depth: 100.5 metres

Description of drillhole location: Axial Zone 620 bench

Purpose of drillhole: Ore Classification

**DRILLING INFORMATION:**

Drill Contractor: Boart Longyear

Drill #: 7565

End Date of drilling: 2019-08-30

**ENVIRONMENT ASSESSMENT:**

	Yes	No	
All materials and debris removed from site?	<input checked="" type="radio"/>	<input type="radio"/>	
Casing left?:	<input type="radio"/>	<input checked="" type="radio"/>	
Has Casing left been cut to ground level?	<input type="radio"/>	<input checked="" type="radio"/>	
Any drill rods lost in the drillhole?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, how many?:
Has hole been properly marked?	<input type="radio"/>	<input checked="" type="radio"/>	
Any environmental concerns?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:
Any additional work required?	<input type="radio"/>	<input checked="" type="radio"/>	If yes, please describe below:

Corrective action:

**PHOTOGRAPHIC RECORD:**

Photo of drillhole location following demobilization and clean up? Yes

Location of photos: 2019 Drilling Database

**COMMENTS:**

Drilling performed on working bench 620 in the pit that was subsequently mined

**INSPECTION COMPLETED BY:**

BIM signature:

Foreman signature:

Date: 2019-09-20

Date: