2021 MARY RIVER RECLAMATION SECURITY REPORT – VERSION 3

February 2, 2021

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February 2, 2021

Qikiqtani Inuit Association
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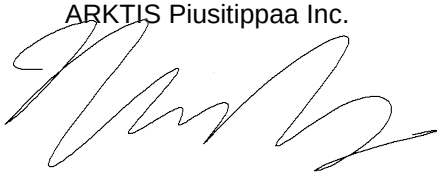
ATTENTION: Chris Spencer, Regulatory Manager

RE: 2021 MARY RIVER RECLAMATION SECURITY REPORT

ARKTIS Piusitippaa Inc. is providing Version 3 of the 2021 Mary River Reclamation Security Report that was completed on behalf of the Qikiqtani Inuit Association (QIA) under the terms of the Commercial Lease No.: Q13C301 with Baffinland Iron Mines Corporation (Baffinland).

Sincerely,

ARKTIS Piusitippaa Inc.



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DOCUMENT REVISION HISTORY

Version	Issuing Company	Date Issued	Revision Notes
V0	ARKTIS Piusitippaa Inc.	December 23, 2020	100% completion report – draft for review.
V1	ARKTIS Piusitippaa Inc.	December 29, 2020	Final report - addressed review comments.
V2	ARKTIS Piusitippaa Inc.	January 7, 2021	Final report – clerical version revision.
V3	ARKTIS Piusitippaa Inc.	February 2. 2021	Final report - addressed QIA direction.

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1 INTRODUCTION

ARKTIS Piusitippaa Inc. (ARKTIS) submits this 2021 Mary River Security Report (Report) to the Qikiqtani Inuit Association (QIA) that summarizes Baffinland's 2021 Marginal Closure and Reclamation Financial Security Estimate Rev. 0 (Baffinland's Estimate)[1] for the Mary River Project (Project) and recommendations for QIA's reclamation security. Adjustments to Baffinland's annual reclamation security are required as per Section 9.2, Item (d), of the Lease[2] as well as by the Nunavut Water Board (NWB) for Baffinland's Type 'A' Water Licence No. 2AM-MRY1325.[3]

The structure of this Report is as follows:

Section 2 outlines the methodology and assumptions used in the analysis.

Section 3 presents a summary of changes to the reclamation security estimate due to the 2019 Arbitration between QIA and Baffinland resulting in the Arbitration Final Award (Final Award).[4]

Section 4 presents Direct costs to be reconciled from previous work plans.

Section 5 presents the Direct Costs in the 2021 Marginal Reclamation Security Estimate.

Section 6 presents the Indirect Costs in the 2021 Marginal Reclamation Security Estimate.

Section 7 provides a summary of recommendations.

Section 8 provides a disclaimer and a closure of the document.

Appendix A presents ARKTIS general terms and conditions.

Appendix B summarizes unit costs used given inflation.

Appendix C presents a summary table of the Direct Cost adjustments.

Appendix D presents a summary table of the Indirect Cost adjustments.

Appendix E includes Report references.

2 METHODOLOGY

This Report incorporates information from previous ARKTIS reclamation security estimates (2015,[5] 2015 Addendum,[6] 2016,[7] 2016 Update,[8] 2017,[9] 2017 Addendum,[10] 2018,[11] 2018 Addendum,[12] 2019 Arbitration Update,[13] Affidavit of Jamie Van Gulck,[14] 2020[15]), and an analysis of the changes to planned activities as listed in Baffinland's Estimate. ARKTIS has also relied on the Interim Closure and Reclamation Plan (ICRP)[16] to expand on noted uncertainties.

The reclamation security estimate has followed the guidance provided in the Final Award. ARKTIS has amended the reclamation security calculation per the direction in the Final Award, QIA direction, responses from QIA legal counsel, Baffinland's responses to QIA's information requests,[17] and professional judgement. Further description of each modification to previous methods based on the Final Award are provided in Section 3.

As directed by QIA, Baffinland's quantities and costing for each reclamation line were adopted by ARKTIS unless otherwise noted. The general basis is that methodologies and productivities are from the 2014 Complete Project Financial Security Assessment[18] (herein referred to as the Baffinland 2014 Report) where unit rates and unit costs are from the 2019 Marginal Closure and Reclamation Financial Security Estimate[19] (herein referred to as the Baffinland 2019 Report). ARKTIS has detailed uncertainties using Baffinland costing for each reclamation item in the subsections that follow.

All other reclamation security methodology outside of those identified as impacted due to the Final Award are unchanged and use the methodologies detailed in the ARKTIS 2019 Mary River Financial Security Estimate,[20] the QIA Abandonment and Reclamation Policy,[21] and generally apply the principles outlined by Indigenous and Northern Affairs Canada (INAC),[22] now named Crown-Indigenous Relations and Norther Affairs Canada (CIRNAC).

The resultant change in the 2021 reclamation security estimate is summarized in Section 7. Note that security line items may have minor rounding inconsistencies due to the reclamation security model using additional digits to calculate reclamation security. ARKTIS has shown reclamation security to the nearest dollar for each line item. Totals for each section are rounded to the nearest thousand.

There are some security line items that have been changed by ARKTIS due to what has been perceived as Baffinland error. These items are identified in the paragraph preceding the table and highlighted yellow in applicable Sections of this Report.

The reclamation security does not include activities on Crown Lands (e.g., Steensby Inlet, Ore dock), nor does it address the Type 'B' Exploration Water Licence No. 2BE-MRY1421[23]. It is ARKTIS' understanding that QIA does not evaluate liability on behalf of other landowners, nor does QIA intend to take a position on whether the amount of security held by other parties is adequate to fulfill their interests.

ARKTIS has also incorporated in this Report the outcomes of the 2020 Environmental Audit.[24] These are addressed under their respective components throughout the Report.

2.1 GENERAL LIMITATIONS

QIA[25] has directed ARKTIS to use Baffinland unit costs. ARKTIS has used unit costs provided in the Baffinland 2019 Report. ARKTIS understands that the unit costs presented in the Baffinland 2019 Report use productivity and methods described in the Baffinland 2014 Report. ARKTIS has also relied on the Baffinland post-arbitration Estimate Breakdown Structure (EBS) that includes its unit cost development[26] to verify Baffinland unit costs and productivities. Given these assumptions, ARKTIS has identified the following limitations.

2.1.1 Unloading at Disposal Location

There does not appear to be reclamation security for the unloading of materials once it has arrived at the landfill. Reclamation activities typically include disassembly and decontamination, if applicable, and load

and haul, but do not include a cost to unload. For illustrative purposes, if it is assumed that the reclamation activity of unload is equivalent to load for the non-contaminated modular buildings, the unit cost increases from $47.64/m^2 to $71.45/m^2. If applied to the quantity of 43,591 m^2 of non-contaminated modular buildings, this would represent an increase of $1,038,237. Therefore, ARKTIS considers this a topic of high uncertainty that should be considered should unit costs be updated.

2.1.2 Crew Specificity

Given there is no specific crew or equipment provided in the Baffinland 2019 Report, productivities considered in 2014 may no longer apply. Baffinland has applied blended unit rates for labour and equipment from 2019 without updating productivities from 2014. Certain unit rates in the Baffinland 2014 Report were specific to a task that included additional detail given the lack of Site-specific data. ARKTIS is uncertain the unit rates Baffinland has applied in the Baffinland 2019 Report are consistent with productivity detailed in the Baffinland 2014 Report.

Crew size of reclamation activities appear low. Given the scale of the Project, there is a level of workers required to complete tasks to ensure a safe environment. For example, the reclamation activity of loading heavy mechanical equipment has a crew of two for one day. Should the labour requirements be considered for such an activity, it may include a labour foreman, a crane operator, and a given number of labourers to complete the task of loading the heavy equipment onto a transport. This lack of crew appears consistent throughout the development of unit costs.

2.1.3 Shipping

ARKTIS notes that Baffinland calculates the demobilization of 3rd Party Equipment using the rate provided by ARKTIS in 2019. This methodology is highly dependant on shipping rates and could be updated to 2020 dollars.

2.1.4 Fuel

2.1.4.1 Backhaul and Supply for Reclamation

The Final Award confirmed the QIA calculation except for Baffinland's approach to unit rates for fuel. Therefore, ARKTIS has used the unit rate to mobilize fuel at $0.40/L and demobilize fuel at $0.10/L, updated based on inflation as detailed in Section 2.1.5 and summarized in Appendix B. ARKTIS notes the basis for a fuel mobilization unit rate is reliant on Baffinland information, currently without reference, and could be updated should updated fuel costs, with enough justification (e.g., shipping contract and fee, date, etc.), be provided by Baffinland. Given the anticipated change is minor, rates have been maintained as the same as the Arbitration-agreed value.

As shipping rates have decreased since 2014, where the general cargo rate was $98.22/m^2 for southbound cargo compared to $96.69/m^2 in 2020, it could be expected that fuel rates have also experienced a similar decrease.

2.1.4.2 Fuel Price

Fuel price refers to the cost to purchase fuel for consumption to complete the reclamation activities by the reclamation mobile equipment. It does not account for the mobilization of fuel.

ARKTIS notes that in the Baffinland 2014 Report, both a fuel cost of $0.97/L and $1/L are referenced. Comparatively, the 2020 Government of Nunavut fuel price[27] is $1.1695/L.

ARKTIS considers the price for fuel to require justification to maintain a value of $0.97/L or $1/L, such as verified Site costs to purchase fuel if different than the Government of Nunavut rates.

2.1.4.3 Fuel for Reclamation Equipment

Baffinland maintains that fuel for reclamation equipment can be assumed as 10% of the equipment cost, effectively creating a blended equipment rate of $137.50/hr inclusive of fuel ($125/hr for equipment plus $12.50/hr for fuel).

Given the agreed equipment classification between QIA and Baffinland, summarized in **Table 2-1**, ARKTIS has found that this may underestimate the required fuel for reclamation. To compare rates, ARKTIS used the Caterpillar 2019 Performance Handbook[28] to quantify expected fuel use.

The light equipment fuel rate was chosen based on the high load of skid steers in the Caterpillar 2019 Performance Handbook. Fuel consumption rates ranged from 9.3-17.3 L/hr.

The medium equipment fuel rate was chosen based on the high load of D6 dozers in the Caterpillar 2019 Performance Handbook. Fuel consumption ranged from 24.6-35.6 L/hr.

The heavy equipment fuel rate was selected based on the high load of Cat 988 loaders in the Caterpillar 2019 Performance Handbook. The Cat 988 loader was considered for the heavy equipment fuel rate given its use in the Baffinland 2014 Report. Fuel consumption ranged from 44.7-55.3 L/hr.

Therefore, using a fuel price of $1/L, noting the uncertainty of fuel price detailed in Section 2.1.4.2, a fuel rate of $12.50/hr does not appear to correspond with equipment consumption expected to be required to reclaim the Site.

ARKTIS notes the fuel for reclamation equipment is a topic of high uncertainty and recommends adjusting the fuel required to be more specific to the expected equipment required for reclamation of the Project.

Table 2-1 QIA and Baffinland agreed mobile equipment classifications.

Equipment Classification	Equipment Example
Light Mobile Equipment	Forklifts, picks up, vehicles around five tonnes and under, scissor lift, man lifts, and small bin trucks. NOTE: Weight thresholds are not always a determining factor. Examples of Light Mobile Equipment include: Skid Steer P10000, Ford F-350 Pick-Up Truck.
Medium Mobile Equipment	Vehicles around 10 tonnes, trailers, buses, tow trucks, large garbage bins and water trucks. NOTE: Weight thresholds are not always a determining factor. Examples of Medium Mobile Equipment include: D6 Dozer, Kenworth T800 Fuel/Lube Truck, CAT P20000, Passenger Buses, Secondary Drills, Rock Drills, D6 Wheel Dozer, Dump Trailers.
Heavy Mobile Equipment	Vehicles over 10 tonnes, boom trucks, large front-end loaders, dump trucks, graders, and cranes. NOTE: Weight thresholds are not always a determining factor. Examples of Heavy Mobile Equipment include: D9 Dozer, CAT 740 EFLT Fuel/Lube Truck, CAT 824H Wheel Dozer, Production Drills.

2.1.5 Inflation

The Final Award confirms the QIA methodology for indexing unit rates to inflation using the Bank of Canada inflation calculator based on the consumer price index (CPI) for future years in which rates are not updated. All unit costs used to create the global security estimate have been updated to 2020 values. However, costs shown in Section 3 and 5 have been shown in 2018 dollars for comparative purposes. For greater certainty, these costs have been updated to 2020 dollars in the global security estimate.

ARKTIS notes that Baffinland had not updated the following unit costs to 2018 costs:

1. Contaminated soil treatment.
2. Reclamation fuel.
3. Waste and Materials.
4. Ammonium nitrate.
5. Explosives.
6. Crew accommodations.
7. Consumables.

ARKTIS has updated these costs to 2020 dollars. ARKTIS notes these are all Indirect Costs.

To update unit rates from one year to another, an inflation adjustment multiplier is used.

$$Inflation\ adjustment\ multiplier = 1 + \frac{CPI_{\ 2} - CPI_1}{CPI_1}$$

where:

CPI_1 – is the CPI in the initial period.

CPI_2 – is the CPI in the second period.

To fulfill the inflation adjustment multiplier equation, the CPI is required for Iqaluit (not seasonally adjusted) for the month of September. The month of September is appropriate given it is the latest month available following the Baffinland Annual Security Report that is due November 1 each year. Key CPI readings, to inform the inflation adjustment multiplier, are provided in **Table 2-2**.

Table 2-2 Select CPI readings for September.[29]

Description	CPI Reading (September)
2002 CPI Reading (Base Year)	100
Original year unit rates were developed (2014)	118.8
Year the Consumables unit cost was developed (2016)	124.5
First unit rate update (2018)	129.5
Current year (2020)	130.3

As such, the following inflation adjustment multipliers were used, indicated to three decimals. Decimals, however, are not rounded in ARKTIS' global security estimate, which may result in minor cost discrepancies due to rounding differences.

- Unit rates developed in 2014 and updated to 2020 had an inflation adjustment multiplier of 1.097.
- Unit rates developed in 2016 and updated to 2020 had an inflation adjustment multiplier of 1.047.
- Unit rates developed in 2018 and updated to 2020 values had an inflation adjustment multiplier of 1.006.

Appendix B summarizes the 2020 unit costs used within ARKTIS' estimate, including the original unit cost, year it was developed, and the CPI readings used to update to 2020 unit costs.

2.2 DIRECT COST METHODS

2.2.1 Fill Application

ARKTIS notes the fill application unit cost includes drilling and blasting. ARKTIS is aware that general Site practice is to apply sand and gravel excavated from the KM97 borrow source which is unlikely to require

blasting during the summer months when the surface layer is not frozen. However, the KM97 Borrow Source Management Plan[30] indicates that there is the potential for winter blasting, crushing, and sorting of frozen gravel, although winter extraction is not expected. This remains an uncertainty.

ARKTIS includes fill application as a topic of high uncertainty. Currently, there is only one landfill located at the Mine Site, with no landfill at the Milne Port. It is uncertain if there is sufficient capacity at the Mary River Landfill to contain all materials that require landfilling. Furthermore, it is uncertain how lifts of fill have been applied to ensure sufficient fill is captured to cover landfilled material. Mirroring ARKTIS' uncertainty in 2014, emphasis should be placed on having Baffinland determine the final disposal location so that area, lifts, and suitability to QIA can be assessed.

2.2.2 Grade and Recontour

Grade and recontour of all disturbed areas at Site, to reinstate to near original grades, includes all infrastructure pads (e.g., accommodations pads), laydown areas, ore stockpiles, roads, quarries, and borrow sources. Within the Baffinland 2014 Report, grade and recontour was broken down into four different components:

1. Grade and recontour.
2. Grade and recontour/grade and recontour of building footprints.
3. Grade and recontour with liner.
4. Grade and recontour significantly disturbed areas.

ARKTIS notes that the reclamation activities for grade and recontour, using a dozer to move material at an average 0.5 m depth, may no longer be best applied to quarries or borrow areas to reflect closure activities described in the ICRP (i.e., filling, slope stabilization). This could be further refined in the future once a better understanding of closure design for areas is developed and agreed between Parties. An updated reclamation activity may require a fill component that is not addressed in the existing proposed rate.

ARKTIS notes the method used by Baffinland for the removal of liners has a high level of uncertainty given the productivity was developed without consideration for crew size, the cost for the removal of a liner has minimal details, and the lack of Site data which should be available given the replacement of liners (e.g., the Waste Rock Facility liner does not appear to have been considered). Baffinland does indicate in its post-arbitration EBS that this cost is based on 100% of installation hours, however, ARKTIS has not seen the basis for this unit cost development.

2.2.3 Pit Stabilization

ARKTIS understands a pit stabilization unit cost was in development in the Baffinland 2014 Report but has yet to be used. The Baffinland 2014 Report indicates that the pit stabilization unit cost was like the unit cost for fill application, involving hauling fill to stabilize the open pit.

Given the observation during the 2020 Environmental Audit that there is the development of a pit, it is pertinent to include a rate that factors in the closure criteria for a pit that needs to be stable, including holding water.

2.2.4 Culvert Removal

ARKTIS understands the unit cost developed for culvert removal is based on typical sizing of culverts. This will require updating, or development of additional size unit costs, should larger culverts be required given larger ore transportation equipment requiring water crossings be developed.

2.2.5 Bridge Removal

Baffinland has indicated that the unit cost for bridge removal is one third of the installation hours. ARKTIS considers this unit rate highly uncertain as it does not appear to consider loading, hauling, and unloading at a landfill, nor the specific labour or equipment requirements that would have been necessary to construct the bridge. For illustrative purposes, should a crane be needed for 50% of the equipment hours (381 hours)

at the Baffinland 3rd Party contractor rate of $247.43/hr, this results in a cost of $94,270.83; this represents over half of the bridge removal cost without factoring in labour or fuel.

2.2.6 Timber Cribbing

ARKTIS has no concerns with timber cribbing aside from those concerns included in Section 2.1.

2.2.7 Precast Foundations

Baffinland factors in 0.5 hr per precast concrete foundation block to load but does not appear to account for the volume of the foundation block in the Estimate. For example, the Baffinland 2014 Report indicates precast foundation volume of 0.26 m^3 per 1 m^2 of building as well as 25% of the foundation area being precast foundations. These factors do not appear to be used to develop the appropriate reclamation activity units. ARKTIS is uncertain if there is an error in the unit rate estimate calculation.

2.2.8 Slab on Grade

ARKTIS is uncertain the currently proposed grade and recontour applied to the area will be sufficient to adhere to closure criteria and may require a fill, haul and dump component should locally available materials not be sufficient to cover the slab. This uncertainty also applies to precast concrete foundations. This unit rate may be refined once better understanding of closure requirements is developed.

2.2.9 Mechanical and Mobile Equipment

As noted with the general limitations described in Section 2.1, there is uncertainty regarding required costing for unloading of equipment at the landfill, which may have high cost implications given the number of mechanical and mobile equipment that will require unloading. ARKTIS also believes the reclamation activity to disassemble, decontaminate, and load, haul, and unload at a landfill may have Site-specific occurrences from which to draw information to refine the unit cost, given the extent to which equipment may have already been reclaimed.

2.2.10 Buildings

The reclamation of buildings assumes a 3 m tall building. Given observations during QIA Environmental Audits, and Baffinland's response to information requests to the 2021 Annual Work Plan, it is noted that many of the proposed buildings, and likely many historical buildings exceed the 3 m assumption. The footprint of the building should have an adjustment factor applied should it be greater than 3 m; the factor being the height of the building divided by 3 m, multiplied by the area to determine the reclamation cost. ARKTIS considers this a typical approach used in other project cost estimates to factor in building height and has applied this methodology to the 2021 buildings. ARKTIS has not applied this methodology to buildings outside those estimated in 2021, as this year is the only year for which building heights have been provided by Baffinland. ARKTIS considers a future Environmental Audit the appropriate method to factor in the height of each building.

This change in assumed height data may impact the fill calculation required to cover these buildings.

When comparing the number of buildings and total areas of these buildings that have reclamation security, ARKTIS found discrepancies. In terms of the quantity of buildings, the number of buildings identified between ARKTIS and Baffinland were not aligned. However, the discrepancy of the total footprint of the buildings was within 5%. This may be a result of reconciliation of buildings that may not have been accepted between the Parties. ARKTIS considers a future Environmental Audit the appropriate method to confirm the discrepancies.

2.2.11 ISO Shipping Container and Sea Containers

ARKTIS notes these two items are now the same unit cost given the Final Award that indicates Sea Containers may be landfilled, similar to ISO Containers.

2.2.12 Piping and Cabling

ARKTIS notes that the unit cost used is a generic rate independent of the diameter or heat tracing of the pipe. ARKTIS has observed multiple size pipes during Environmental Audits; however, the cost used does not provide confidence that the unit cost factors in different sizes. Furthermore, it is uncertain the exact quantity of diameter-specific pipes currently at Site.

Both cabling and piping combines the reclamation activities of disassemble, load, haul and dispose into one activity. ARKTIS considers this highly uncertain and suggests the activity be further separated into specific reclamation activities to inform the required labour and equipment.

2.2.13 Incinerator, Potable Water, and Sewage Treatment Plant (Vendor Package)

ARKTIS has no concerns with Incinerator, Potable Water, and Sewage Treatment Plant (Vendor Package) aside from those concerns included in Section 2.1.

2.2.14 Non-Fuel Storage Tanks

Baffinland includes a cost to empty non-fuel storage tanks. However, the cost to dispose of this material is not detailed. Should greater certainty and location of non-fuel storage tank contents be known, greater certainty of removal and disposal costs can be estimated.

2.2.15 Fuel Storage Tanks

Baffinland includes the cost to empty and remove fuel storage tanks. However, the cost to transport the drained fuel that requires demobilization from Site has not been considered. This may have minimal impact for fuel stored at Milne Port, but will require transport costs for all fuel requiring demobilization from the Mine Site to Milne Port.

2.2.16 Miscellaneous Items

ARKTIS has no concerns with miscellaneous items aside from those concerns included in included in Section 2.1.

2.2.17 Reclaim Conveyor

ARKTIS has no concerns with reclaim conveyor aside from those concerns included in Section 2.1.

2.2.18 Contaminated Soil Removal

Baffinland does not have a contaminated soil removal cost. ARKTIS has developed a unit cost, described in Section 3.9, given the Final Award.

2.2.19 Airstrip Lighting

ARKTIS has no concerns with airstrip lighting aside from those concerns included in Section 2.1.

2.2.20 Ship Loader

In the Baffinland 2014 Report, Baffinland assumes 12 people for four months, or 14,448 hours, with equivalent equipment hours is required. However, Baffinland's post-arbitration EBS indicates a crew of 20 for four months, or 14,448 hours, with equivalent equipment hours. It is uncertain if the hours indicated need adjustment based on the crew size.

2.2.21 Camp Mats

Baffinland does not have a unit cost to reclaim camp mats. ARKTIS has developed a unit cost in Section 3.9 using Baffinland methodologies.

2.3 INDIRECT COST METHODS

2.3.1 Hazardous Materials/Waste and Ammonia Nitrate Backhaul

As included in the ARKTIS 2014 Report, shipping and disposal costs for hazardous materials were obtained from actual Site-related unit costs supplied by Baffinland and based on Baffinland experience in shipping and disposing of these materials as part of its regular operations on-Site. The Baffinland 2014 Report identified the unit rate of $358/m^3 to be an item of high uncertainty. Given this unit rate does not have a source that is currently available, this unit rate may be updated should Site-specific data be provided.

ARKTIS has considered this unit cost to be developed in 2014 and will require inflation to update the cost to 2020 dollars. Using an inflation multiplier of 1.097, the resulting 2020 cost is $393/m^3.

2.3.2 Explosives

Section 4.4 further details related 2020 Environmental Audit observations and impacts to ARKTIS' estimate. ARKTIS maintains that reclamation security should be held for the maximum explosives that Baffinland may store at Site in any given year.

ARKTIS considers this unit cost for explosives removal to have been developed in 2014 and will require inflation to update the cost to 2020 dollars. Using an inflation multiplier of 1.097, the resulting 2020 cost is $2.60/kg.

2.3.3 Contaminated Soil Treatment

Baffinland has never updated the unit cost for contaminated soil treatment. Therefore, ARKTIS has used Baffinland's unit cost from the Baffinland 2014 Report of $14.73/m^3. ARKTIS considers this unit cost to have been developed in 2014 and will require inflation to update the cost to 2020 dollars.

Using an inflation multiplier of 1.097, the resulting 2020 cost is $16/m^3.

Considering the ongoing nature of contaminated soil treatment at Site, ARKTIS believes this unit cost, based on equipment productivity estimations could be updated should Site-specific data be available.

2.3.4 3rd Party Mobile Equipment

Baffinland has adopted QIA's 2018 unit cost for the demobilization of 3rd Party mobile equipment. ARKTIS notes that this rate is dependant on shipping rates which have not been updated to 2020 values. ARKTIS has considered the 3rd Party mobile equipment costs to be in 2018 dollars. As such, inflation is applied to update these costs to 2020 dollars as detailed in Section 2.1.5. Therefore, the 2018 costs of $2,786/3rd Party light mobile equipment, $8,203/3rd Party medium mobile equipment, and $15,965/3rd Party heavy mobile equipment, using an inflation factor of 1.006, results in 2020 costs of $2,803/3rd Party light mobile equipment, $8,253/3rd Party medium mobile equipment, and $16,063/3rd Party heavy mobile equipment.

2.3.5 Mobilization of Workers Required for Reclamation

The total person-days for the reclamation of all Site components was determined, for which 30% were to be assumed person-days for Nunavut residents and 70% person-days for southern crews. The 30%/70% division of crews applies in particular to crew transportation costs. Per the Final Award, ARKTIS has assumed the Baffinland supplied unit cost of $1,532/passenger ($118,000.00/77 passengers) for return charter flights between the Mine Site and southern Canada and $1,500/passenger ($36,000/24 passengers) for flights between Northern communities and the Mine Site. The number of return flights over the course of complete Site reclamation was determined assuming crew shifts of three weeks on and three weeks off.

ARKTIS has considered the mobilization of workers required for reclamation costs to be in 2014 dollars. As such, inflation is applied to update these costs to 2020 dollars as detailed in Section 2.1.5. Using an inflation factor of 1.097 to convert the 2014 unit cost for mobilization of workers of $75/northern person-day and

$85.45/southern person-day to 2020 dollars, the resulting unit costs are $82.28/northern person-day and $93.74/southern person-day.

2.3.6 Worker Accommodation and Camp Operations

ARKTIS has assumed Baffinland's unit cost for worker accommodation and camp operation required for reclamation as Baffinland's rates were accepted in the Final Award. However, ARKTIS has updated camp costs for inflation per Section 2.1.5. The following are select assumptions that result in a unit cost of $247.92/person-day for worker accommodation and camp operations:

1. The Baffinland 2014 Report indicates camp maintenance, catering and housekeeping by a 3rd Party Operator is assumed to be $110/person-day for an 80-person camp.
2. The Baffinland 2014 Report includes fuel for camp operation based on the Mary River Fuel Balance (0) which allocates 1,732,500 L of fuel per month for power and heat generation based on an average monthly camp load of 500 people (assume 30 days per month).

2.3.7 Mobilization and Demobilization of Reclamation Equipment

The Baffinland 2014 Report states:

> *Mobilization and demobilization costs are inclusive of equipment, materials and consumables required for reclamation and demobilization of reclamation equipment, 3rd Party Equipment, and misc-equipment, materials, waste, and consumables that have yet to be identified at the time of this estimate.*

Baffinland assumes a mobilization and demobilization cost estimated as 10% of total Direct Costs.

As the Final Award accepted that 3rd Party Equipment will follow QIA's methodology requiring demobilization, ARKTIS has interpreted that the 10% included for mobilization and demobilization does not include 3rd Party Equipment already at Site.

As directed by QIA to adopt Baffinland unit costs, ARKTIS has adopted the 10% of Direct Costs to account for mobilization and demobilization of reclamation equipment costs.

Given this unit cost was developed based on the scale of Project reclamation in 2014, this approach could be further verified as appropriate compared to an alternative methodology. This could include utilizing estimated equipment, material, and consumable requirements for reclamation with shipping rates or other equipment/material mobilization and demobilization rates to estimate costs.

2.3.8 Closure and Post-Closure Monitoring

ARKTIS has maintained the closure and post-closure monitoring costs as accepted in the Final Award and detailed in Sections 3.1, 3.2, and 3.3 that follow in this Report, except as detailed in Section 4.3 regarding water treatment.

ARKTIS has considered the closure and post-closure monitoring costs to be in 2018 dollars. As such, inflation is applied to update these costs to 2020 dollars as detailed in Section 2.1.5.

As further information becomes available for closure and post-closure monitoring, these costs can be further refined to be more Site-specific.

ARKTIS notes costs associated with Site water treatment are included with the closure and post-closure monitoring costs, and thus are treated as an Indirect Cost that is subject to administration and project management fees and contingency. As described in the Baffinland 2014 Report, Indirect Costs are costs incurred as a result of conducting the closure activities but cannot be directly related to a specific cost associated with a specific project component's closure activity (e.g., demolition and reclamation of a structure). Water treatment is required to occur independent of other closure activities, thus there is a case for including water treatment as a separate Direct Cost where it would be subject to additional engineering fees. However, given a water treatment system is already established at the Waste Rock Facility and

operating post-closure should occur, there is likely to be limited additional engineering required. Thus, ARKTIS accepts including water treatment as an indirect fee as reasonable.

2.3.9 Engineering Fees

Baffinland continues to use a value of 3.9% for engineering fees applied to Direct Costs.

The following organizations have documentation that relate to engineering and professional fees:

1. Association of Consulting Engineering Companies Ontario[31] (ACECO).
2. Ontario Society of Professional Engineers[32] (OSPE).
3. Association of Consulting Engineering Companies Saskatchewan[33] (ACEC-SK).
4. Consulting Engineers of British Columbia[34] (CEBC).

The ACECO provides guidance on the selection of engineering fees as a percentage of "construction costs", which is defined at the contract price(s) of all elements of the project designed by, or on behalf of, the professional engineer, including the general contractor's overhead and profit and all applicable taxes, except the harmonized sales tax (HST).

The ACECO recommended fees are based on historical data reported by the Professional Engineers Ontario and on survey data received from professional engineers and clients. The ACECO recommended fees apply to undeveloped areas where complexity is not introduced by existing structures and suggests that an additional fee should be negotiated for services related to demolition work.

In its 2020 fee guideline, the ACECO states an engineering design services fee of 6.75-7.25% should provide fair and equitable compensation for projects of average complexity with construction costs in excess of $10M. By way of comparison, the OSPE 2015 guideline recommends a 4.6% engineering design services fee for construction projects over $10M. ACEC-SK 2019 guideline recommends a fixed amount of $1.51M on the first $30M with a 4.5% fee on remaining costs for projects over $30M. Using the methodology recommended by the ACEC-SK, a $75M and $100M project would have a 4.71% and 4.66% engineering fee, respectively.

As used in the ARKTIS 2014 Report, the CEBC guidelines have not been updated since 2009 and remain at 3.9% for infrastructure engineering projects of average complexity with a construction cost of $20M. Further, the ARKTIS 2020 Report updated the engineering fees to 5%.

Based on the notion that the current reclamation activities are of average complexity, the Project is much larger than $20M as included in the ARKTIS 2014 Report, and as the CEBC guideline appears to be out of date, ARKTIS has used an engineering fee of 5% applied to total Direct Costs; this approach is consistent with the ARKTIS 2020 Report.

2.3.10 Contract Administration and Project Management

Contract administration and project management has been applied as a percentage to Direct Costs, post-closure monitoring and maintenance, and contaminated soil treatment.

Consistent with the most recent available guidelines for contract administration and project management fees provided by OSPE, ARKTIS has maintained the administration and project management fee at 9.4%.

2.3.11 Contingency

Per QIA legal direction, ARKTIS' contingency fee calculation of 20% was applied to Direct Costs,, contaminated soil treatment, and closure monitoring/reporting costs. Given the availability of engineering detail and levels of certainty used to develop the report, this level of contingency is still considered appropriate.

Application of contingency to other indirect costs, including mobilization and demobilization of equipment and materials, worker accommodation and camp operation, and mobilization of workers, was excluded based on direction from QIA. QIA understands excluding contingency from these items may leave potential uncertainty in the respective costing estimates not fully addressed but considers the risk low due to the

inherent conservativeness in activities and unit rates applied, and the provision of contingency for all direct costs.

3 2019 RECONCILIATION – FINAL AWARD UPDATE

This Section reconciles the changes to reclamation security based on the Final Award between Baffinland and QIA. Each item included in the Final Award is described, including the change to ARKTIS' methodology and the resulting change to the 2019 reclamation security estimate. These changes in methodology have been applied to the 2020 and 2021 reclamation security estimate, unless otherwise noted.

Costs presented in Section 3 are in 2018 dollars and based on the 2019 global reclamation security estimate to illustrate comparison to Baffinland's Estimate. For example, resulting changes presented in Section 3 represent a change in the recommended reclamation security held up to and including the 2019 Marginal Security Estimate, but do not factor in changes from the 2020 and 2021 marginal reclamation security estimates.

The global reclamation security estimate, that summarizes all reclamation security estimates up to and including the 2021 marginal reclamation security estimate, has updated unit costs to 2020 dollars and is summarized in Section 7.

ARKTIS has updated the estimate to align with the directives in the Final Award. ARKTIS' 2019 Security Estimate increased by $1,801,000 following the Final Award with a final total of $126,413,000.

3.1 CLOSURE AND POST-CLOSURE MONITORING – THE TOTE ROAD

Baffinland's methodology for Tote Road maintenance was accepted. It is currently uncertain to ARKTIS as to what works are intended for one full year of maintenance; reclamation works for the Tote Road have not yet been fully defined nor agreed to in the ICRP. However, due to a limited understanding of Baffinland's methodology, ARKTIS has assumed Baffinland's lump sum of $420,000 in year four for maintenance of the Tote Road. Previously, $531,847 had been allocated per year for a total of $2,659,237 over the course of five years. This results in a change of ($2,239,237).

3.2 CLOSURE AND POST-CLOSURE MONITORING – WASTE ROCK WATER TREATMENT FACILITY

Baffinland's methodology for the calculation of security for water treatment was accepted. It is unclear, however, how Baffinland calculates the average volume and for what years. Baffinland has also assumed operation of the Waste Rock Water Treatment Facility for three years and not five. ARKTIS has assumed Baffinland's average throughput volume of the Waste Rock Water Treatment Facility of 22,600 m^3 over the original 70,355 m^3. Maintaining the unit rate of $1/$m^3$, this resulted in a change of ($283,975), from $351,775 to $67,800.

ARKTIS has provided additional detail regarding observations during the 2020 Environmental Audit and changes to 2021 reclamation security in Section 4.3.

3.3 CLOSURE AND POST-CLOSURE MONITORING – REGULATORY FEES

ARKTIS' estimate of $2.3M was confirmed for regulatory fees associated with closure and reclamation. There was no effective change to ARKTIS' security estimate on this Section.

3.4 WORKER MOBILIZATION

ARKTIS has adopted Baffinland's worker mobilization and accommodation costs given the direction of QIA and its legal counsel. This resulted in a change of ($71,263) to ARKTIS' security estimate.

Methodology for worker mobilization for the 2021 Security Estimate is described further in Sections 2.3.5 and 6.4.

3.5 INVENTORY: SEA CONTAINERS

As the QIA Abandonment and Reclamation Policy does not prevent the landfilling of sea containers, during arbitration, QIA agreed that Baffinland owned sea containers could be landfilled as all Baffinland owned material is. ARKTIS has adjusted the reclamation activity so that all sea containers are to be landfilled. The count of 1,999 twenty-foot equivalent units (TEU) is confirmed, however this was converted to a Direct Cost and Baffinland's unit rate for landfilling sea containers has been adopted. The change to Indirect Costs was ($1,397,003) and $712,738 for Direct Costs.

3.6 INVENTORY: CALCIUM CHLORIDE

Baffinland's position was accepted. ARKTIS has removed its calculations for removal of calcium chloride resulting in a change of ($62,460).

The demobilization and mobilization of 10% of Direct Costs is considered to cover the cost to demobilize calcium chloride. ARKTIS is aware Baffinland is moving away from the use of calcium chloride in favour of other dust suppressants, so limited quantities of calcium chloride may be expected on Site.

3.7 INVENTORY: 3RD PARTY MOBILE EQUIPMENT

QIA's estimate for 3rd Party Mobile Equipment removal was confirmed, thus there were no changes to ARKTIS' security estimate required.

3.8 HAZARDOUS SUBSTANCES

Baffinland's methodology for the removal or hazardous substances was accepted. The original quantity of 1,000 m^3 at a rate of $358/$m^3$ was removed, resulting in a change of ($358,000) to ARKTIS 2019 security estimate. Security is now held for 5,500 m^3 of hazardous substances.

Further detail on the costing for hazardous substances is included in Section 2.3.1.

3.9 UNIT RATES

Baffinland's approach to unit rates was accepted. Until new Site-specific unit rates are developed, ARKTIS was directed to use Baffinland's unit costs in calculating the 2021 Security Estimate that includes reconciliation with the 2019 and 2020 estimates. The following are exceptions to this Final Award:

1. Remove Contaminated Soil: Baffinland does not have a unit cost for this activity. ARKTIS has used Baffinland's blended labour and equipment rates to calculate a rate of $16.94/$m^3$.
2. Remove Camp Mats – Size 1 & Remove Camp Mats – Size 2: Baffinland does not have a unit cost for this activity. ARKTIS has used Baffinland's blended labour and equipment rates to calculate a new removal rate of $237.60 and $330.00 for camp mats size 1 and size 2, respectively.
3. Remove Container Crossing: Baffinland does not have a unit cost for removal of container crossings. However, ARKTIS has not observed container crossings in each of the past three Environmental Audits. As such, ARKTIS has removed this cost.

Where ARKTIS developed unit costs for contaminated soil and camp mats, ARKTIS used Baffinland's blended labour rate of $75/hr and a blended equipment rate of $125/hr. However, ARKTIS has based the

unit costs on 8 hours of regular pay and 2 hours of overtime pay for a total of 10 hours per person-day. The total cost per hour was calculated according to the crew and the equipment required. It was then divided by the daily (8 hour) input to arrive at a rate per m^3. The remaining 2 hours in the day was calculated the same way however at 1.5 times the regular rate.

The changes in unit rates resulted in a change of ($8,571,074) to the 2019 reclamation security estimate, including the changes to the Direct Costs, the removal of security for container crossings, and the change of landfilling of sea containers to a Direct Cost.

3.10 UNIT RATES – INFLATION

QIA's methodology for inflation was confirmed for indexing unit rates to inflation using CPI for years in which rates are not updated. As such, ARKTIS' security estimate was unaffected by this Final Award.

Methodology for inflation for the 2021 Security Estimate can be found in more detail under Section 2.1.5 and 6.7.

3.11 FUEL MOBILIZATION AND DEMOBILIZATION

QIA's methodology for fuel mobilization and demobilization were accepted. This was, however, affected by the change in ISO-Containers from an Indirect Cost to a Direct Cost resulting in 421.45 m^3 of additional fuel requirements. The unit rate for fuel mobilization had also increased from $380/$m^3$ to $400/$m^3$ resulting in a net change of $275,096.

3.12 EQUIPMENT MOBILIZATION AND DEMOBILIZATION

QIA's methodology for the removal of Phase 2 equipment based on a shipping rate of $103.02/$m^3$ was confirmed. This was applied to Baffinland's quantity of 229,289 m^3 increasing ARKTIS' allocation for Phase 2 equipment, resulting in a change of $5,621,353.

3.13 CONTINGENCY

QIA's position was confirmed for a contingency factor of 20% applied to all costs, not including engineering and project management fees. ARKTIS therefore applied contingency to all costs excluding engineering and project management fees as per the Final Award for the 2019 security estimate, as follows:

> *"The QIA position is confirmed for a contingency factor of 20% applied to all costs including contaminated soil treatment, mobilization and demobilization of equipment and materials, worker accommodation and camp operation and mobilization of workers."*

The total change in contingency was $7,783,485.

3.14 ADDITIONAL INDIRECT COSTS

The Final Award also resulted in net changes to the Direct Costs and contaminated soil treatment, updating Indirect Costs including engineering fees and project management fees. Project management fees changed by ($756,781) and engineering fees by ($222,586).

4 2020 RECONCILIATION

QIA did not accept security for 2020 Reclamation Security Estimate[35] given the Parties were in ongoing Arbitration for the 2019 reclamation security estimate. Given the Final Award, ARKTIS understands that QIA is now accepting reclamation security for the 2020 Reclamation Security Estimate.

Baffinland reconciles changes to its 2020 Reclamation Security Estimate within Baffinland's Estimate. Reconciled changes are those that Baffinland is changing given alternate occurrences from those estimated in the given security estimate. ARKTIS has included both items Baffinland is proposing to reconcile as well as those from the 2020 Environmental Audit.

To inform ARKTIS' recommended reconciliation of Baffinland items, QIA had requested information[36] from Baffinland following the 2021 Annual Work Plan submission, to which Baffinland responded[17] and ARKTIS has reviewed.

All other quantities of reclamation activities listed in the ARKTIS 2020 Reclamation Security Estimate remain unchanged. Unit costs for these reclamation activities have been updated based on the methodologies listed within this Report, specifically Section 2 and Section 3.

4.1 GRADE AND RECONTOUR

Baffinland has included a proposed reconciliation for annual satellite imagery. ARKTIS understands that QIA and Baffinland have agreed to use satellite surveys to reconcile disturbed areas but have not yet agreed on a precise methodology. Specifically, there has not been agreement on the relative tightness of the area to the disturbed area and whether there requires a buffer area to facilitate the reclamation of impacted lands outside of the boundaries of the disturbed area (i.e., the embankment of the road).

ARKTIS understands that QIA and Baffinland continue to disagree should the Tote Road and the Aerodrome require reclamation security. ARKTIS is of the opinion that both the Tote Road and Aerodrome require reclamation security to ensure reclamation security is held should Inuit decide these areas are to be reclaimed, as detailed in the ICRP. Depending on the extent, or buffer, surrounding the Tote Road, this is approximately 3,300,000 m^2 of land requiring grading and recontouring.

In addition, Baffinland's assessment provided in the Baffinland Estimate is based on 2020 satellite imagery that was not provided to QIA until requested following the submission of Baffinland's Estimate. As such, QIA is limited in its assessment to the 2019 satellite imagery and not the 2020 satellite imagery completed by Baffinland.

ARKTIS also understands that QIA also received in the package with the 2020 satellite imagery the extents of proposed disturbed areas. These proposed disturbed areas would not have been able to be included in QIA's assessment previously without limitations.

ARKTIS is further uncertain of the 3,160,642 m^2 addition, described as Proposed Disturbed Area Reconciliation - 2021 Work Plan and Prior - IOL in Baffinland's Estimate, for the following reasons:

1. ARKTIS is unable to verify what constitutes the increase and if it is a summary of works previously proposed.
2. The description indicates 2021 Work Plan; however, it is included in the 2020 Work Plan reconciliation.

Given the uncertainty detailed, ARKTIS has not reconciled the proposed area provided by Baffinland. This takes into consideration that ARKTIS currently maintains the disturbed areas included in its 2020 estimate that are above what Baffinland includes, including the Tote Road and the Aerodrome. ARKTIS suggests the Parties determine a path forward for the reconciliation of disturbed areas. This includes how the Parties will consider applying grade and recontour to all disturbed areas, based on assessment of satellite imagery from the same month and year, and also factor in areas indicated for future disturbance by Baffinland.

4.2 MECHANICAL AND MOBILE EQUIPMENT

Baffinland has reconciled mechanical and mobile equipment for one of three reasons:

1. Equipment was brought to Site but not previously allocated.
2. Equipment was not brought to Site, and Baffinland is no longer planning to bring it to Site, so a reduction in security is requested.
3. Equipment has been demobilized from Site.

Table 4-1 lists the items Baffinland proposes to be reconciled from Baffinland's 2020 Work Plan.

Consistent with the ARKTIS 2020 estimate:

1. ARKTIS has included equipment Baffinland has brought to Site but not previously estimated to ensure security is in place should additional equipment be mobilized.
2. ARKTIS will not decrease reclamation security for items that have not arrived at Site given the ongoing uncertainty in Baffinland's inventory tracking system.

Different than the ARKTIS 2020 estimate, Baffinland has provided shipping manifests confirming the demobilization of Baffinland equipment, which ARKTIS has removed from the estimate.

To illustrate the above nuances, ARKTIS has included all items Baffinland has proposed to reconcile in **Table 4-1**. However, should there not be a value in the Direct Cost column, ARKTIS has not reconciled this equipment in its estimate.

According to the Final Award, 3rd Party Mobile Equipment at the Project cannot be landfilled in a reclamation scenario as it is not the property of Baffinland. As such, 3rd Party Mobile Equipment has been included in Section 6.3 as an Indirect Cost. ARKTIS understands that the proposed 3rd Party Mobile Equipment Baffinland has reconciled is due to the Final Award and not due to its 2020 Estimate. Therefore, ARKTIS has not made changes to reclamation security for reconciliation of 2020 3rd Party Mobile Equipment.

ARKTIS has used Baffinland's unit costs. Given ARKTIS has used Baffinland's unit costs, the main difference to Baffinland's unit cost is based on quantity of equipment accepted for reconciliation. In addition, Baffinland indicated unit costs of $728.20/piece and $729.20/piece for light mobile equipment in this section. It has been assumed by ARKTIS that $728.20/piece is an entry error and $729.20/piece was a rounding issue by Baffinland in its Estimate. The rate used most in Baffinland's Estimate for light mobile equipment of $729.17/piece replaced the previously mentioned rates; these are highlighted below.

Table 4-1 Summary of mechanical and mobile equipment reconciliation.

Description	Unit Rate Type	Quantity (pcs)	Unit Rate ($/pc)	Direct Cost
Screen	Heavy Equipment	4	32,950	$131,800
Stacker	Heavy Equipment	4	32,950	$131,800
Generator 1000 kW	Heavy Equipment	-1	32,950	-
Jaw Crusher Unit	Heavy Equipment	-1	32,950	-
908 Loader	Heavy Mobile Equipment	-2	2,075	-
950 Loader	Heavy Mobile Equipment	-2	2,075	-
D10 Dozer	Heavy Mobile Equipment	-1	2,075	-
374F Excavator	Heavy Mobile Equipment	-4	2,075	-
USED TANDEM DRIVE WESTERN STAR WINCH TRUCK UNIT# 587	Heavy Mobile Equipment	1	2,075	$2,075
USED WINCH TRUCK WESTERN STAR UNIT #586	Heavy Mobile Equipment	1	2,075	$2,075
600kW Generators	Medium Equipment	-2	3,392.50	-

Description	Unit Rate Type	Quantity (pcs)	Unit Rate ($/pc)	Direct Cost
60kW Generator	Medium Equipment	-3	3,392.50	-
Atlas 1000 mVA Transformers	Medium Equipment	-4	3,392.50	-
740B Water Truck	Medium Mobile Equipment	-1	1,162.50	-
14M Grader	Medium Mobile Equipment	-1	1,162.50	-
Fuel Tanker	Medium Mobile Equipment	-1	1,162.50	-
Jet A Truck	Medium Mobile Equipment	-1	1,162.50	-
Cube truck	Medium Mobile Equipment	-2	1,162.50	-
Steam truck	Medium Mobile Equipment	-1	1,162.50	-
Track Mounted Drill Rig	Medium Mobile Equipment	-2	1,162.50	-
4x4 hotseating bus	Medium Mobile Equipment	-2	1,162.50	-
School bus	Medium Mobile Equipment	-1	1,162.50	-
Flat bed boom truck	Medium Mobile Equipment	1	1,162.50	$1,163
Deckover Trailer (5 Ton)	Medium Mobile Equipment	1	1,162.50	$1,163
CCM200E Concrete Mixer	Medium Mobile Equipment	-1	1,162.50	-
Pressure Washing Truck	Medium Mobile Equipment	-1	1,162.50	-
Light Plant	Light Equipment	-7	1,583.80	-
Boat Trailer	Light Mobile Equipment	1	729.17	$729
Larue Snow Blower	Light Mobile Equipment	-1	729.17	-
257 Skid steer	Light Mobile Equipment	-2	729.17	-
Blaze Cube Frost Fighters	Light Mobile Equipment	-2	729.17	-
Equipment Backhauled				
Western Star Truck	Heavy Mobile Equipment	-2	2,075	(4,150)
740 Articulated Truck	Heavy Mobile Equipment	-1	2,075	(2,075)
Bus	Medium Mobile Equipment	-1	1,162.50	(1,163)
Argo vehicle	Light Mobile Equipment	-2	729.17	(729)
Tire Changer	Light Mobile Equipment	-1	729.17	(729)
Total		**-38**		**$262,000**

4.3 WATER TREATMENT

It was observed during the 2020 Environmental Audit, as well as during previous Audits, that water requiring treatment captured in water containment structures, such as hazardous waste berms, fuel containment cells, and certain sedimentation ponds, had not yet been considered for Site, aside from the Waste Rock Facility. The 2020 Environmental Audit recommended a three-year average for calculating water treatment required at Site. As there are numerous factors that impact the quantity of water requiring treatment, such as changes in catchment areas due to development and changes in climate year to year, as some examples, the three-year average was considered reasonable to limit the fluctuations that may occur from calculating water treatment on an annual basis. This method is consistent with the Final Award and would reflect the constantly changing operations and capacity of the Project while remaining robust to accommodate extreme fluctuations of Project activities. This methodology would be applied to water retention structures, including the Waste Rock Facility.

For the Waste Rock Facility, ARKTIS averaged the annual discharge from MS-08, the discharge point linked with the Waste Rock Facility. ARKTIS has assumed all water discharged from MS-08 requires treatment for the following reasons:

1. The NWB Annual Reports are not explicit if the discharge does or does not require treatment. However, the 2019 Annual Report indicates “Effluent from MS-08 (Mine Site Waste Rock Facility

Pond) was treated using a water treatment plant and discharged to the catchment of Mary River Tributary F."

2. When ARKTIS has been at Site for Environmental Inspections or Environmental Audits, the Waste Rock Facility Water Treatment Plant has appeared in operation and has been mentioned by Baffinland staff that the water is being recirculated even if not discharging. Recirculation would still instill cost of operation.
3. ARKTIS is not aware of data available to suggest all water being discharged from MS-08 does not require treatment or would not require treatment in the case of abandonment.

Baffinland maintains, within its response to QIA's 2020 Environmental Audit,[37] that Baffinland remains well below the average annual discharge volume of 22,600 m^3 as accepted in the Final Award.

The 2020 Environmental Audit found the annual average of discharge for the past three years to be 68,277 m^3 for the Waste Rock Facility, where it is notable that 2019 had significantly higher discharge of 117,731 m^3. Given the pit now being dewatered to the Waste Rock Facility, it can be assumed this value will continue to increase in the coming years. Given the Final Award quantity of 22,600 m^3 per year for three years and unit cost of \$1/m^3, this represents an increase of 45,577 m^3 per year for three years for a total of \$137,031.

Consistent with observations of quantity of water discharged at the Waste Rock Facility (using data provided by Baffinland from the 2017 to 2019 Annual Reports included on the NWB's public registry), the sum of water treated at other water retention structures has increased over the past three years. This included discharge from MS-01, MP-01, MS-MRY-4b, MS-01B, MP-01A, MP-01B, MP-03, MP-04, MP-04A, and MS-HWB-07 (formerly MS-MRY-6). Using the same methodology as applied to the Waste Rock Facility water, the annual average amount of water requiring treatment is 62,749 m^3 over the past three years. Different than the Waste Rock Facility, all data used here indicated treated water and not discharge. ARKTIS has assumed, consistent with the Final Award, that water will require treatment for three years, resulting in an increase of \$188,247.

Table 4-2 summarizes ARKTIS' changes to reclamation security given details above.

ARKTIS notes the uncertainty with the unit cost of \$1/m^3 to treat water. ARKTIS acknowledges this unit rate was proposed by ARKTIS given industry experience, however, notes that this unit cost was general and not Site-specific. Furthermore, this unit cost would not consider pumping water for approximately two kilometers like what is currently occurring at Deposit 1, where water is pumped to the Waste Rock Facility. ARKTIS suggests Site costs for treatment of water are considered and used to update the rate for water treatment.

Table 4-2 2020 Audit water treatment reconciliation.

Description	Unit Rate Type	Quantity (m^3)	Unit Rate (\$/m^3)	Indirect Cost
Waste Rock Facility Water Treatment (2020)	Water Treatment	137,031	1	\$137,031
Water Retention Structure Water Treatment (2020)	Water Treatment	188,247	1	\$188,247
TOTAL		325,278		**\$325,000**

4.4 AMMONIUM NITRATE AND EXPLOSIVES

Monthly quantities of ammonium nitrate on Site as well as the total amount of pre-packed explosives stored on Site were assessed in the 2020 Environmental Audit. ARKTIS used a shipping density of 576 kg/m^3 of ammonium nitrate for calculation of volume, as described in the 2018 Environmental Audit.[38] Baffinland's maximum monthly volume of ammonium nitrate present on Site occurred in August 2019 with a reported weight of 8,282,000 kg, or 14,380 m^3. This is greater than the current security amount held of 12,143 m^3. ARKTIS continues to apply the principle that reclamation security is held for the maximum quantity of explosives maintained on Site. Therefore, this represents an increase of 2,237 m^3.

ARKTIS notes that the rate of $358/m^3 was developed in 2014 and thus requires inflation to 2020 values. Unit rates for Indirect Costs developed in 2014 and updated to 2020 had an inflation adjustment multiplier of 1.097. The resulting unit rate for the demobilization of ammonium nitrate and explosive is $393/m^3.

ARKTIS also notes that the activity to remove pre-packaged explosives does not appear in the EBS appended to Baffinland's Estimate. As indicated in the 2020 Environmental Audit, the total amount of pre-packaged explosives on Site, as provided by Baffinland, was reported to be 372,520 kg, less than the 716,519 kg currently held for security. This indicates pre-packaged explosives remain on Site. ARKTIS is unaware of Baffinland reconciling the quantity of prepackaged explosives maintained on Site. ARKTIS maintains the 716,519 kg within its estimate. This results in no change to quantities of reclamation security.

Table 4-3 2020 Audit ammonium nitrate reconciliation.

Item	Quantity (m^3)	Unit Cost ($/$m^3$)	Indirect Cost
Ammonium nitrate (2020 Audit)	2,237	$393	$878,000

4.5 PIT WITHIN DEPOSIT 1

The 2020 Environmental Audit observed a pit, being two depressions within the Deposit 1 area that collected water and required pumping. This was termed a pit during discussions at the Mine Site with Baffinland staff, however, Baffinland continues to correct QIA following the Audit that what was observed was a temporary depression and should not be constituted a pit. Regardless, the area is now considered significantly disturbed and will likely require additional reclamation effort than would be typically provisioned by the standard grade and recontour unit cost.

The 2020 Environmental Audit recommended that Baffinland provide the volume of the pit observed in m^3 to align with the Baffinland unit cost of open pit stabilization, to be included in the Baffinland Estimate. Baffinland provided the volume of water collected from the pit, but not the volume of the pit itself. This volume of water would be considered in water treatment costs in 2021.

Given the volume of the pit is uncertain, in addition to the long-term physical stability of the benches next to the pit, ARKTIS has changed the reclamation activity from grade and recontour to significant grade and recontour. ARKTIS has removed the disturbed area within Deposit 1 that had required grade and recontour. This area was found to be approximately 280,000 m^2 based on August 2019 satellite surveys, the most recent QIA has assessed. ARKTIS then applied the unit cost associated with grade and recontour significant disturbed areas that results in an increase of $210,000.

The increase of $210,000 is added security that ARKTIS has applied given the additional uncertainty surrounding the development of Deposit 1 and should be updated based on the following:

1. A unit cost is developed to ensure stability of the pit, and ultimate deposit area.
2. The extent of the disturbance within Deposit 1 is better understood or the entire extent has an agreed cost.
3. Water management and its influence on Deposit 1 stability is better understood.

Table 4-4 Summary of 2020 pit within Deposit 1 changes.

Item	Reclamation Activity	Quantity (m^2)	Increased Cost ($/$m^2$)	Increase Direct Cost
Pit Grade and Recontour	Grade and Recontour	-280,000	$1.49	(417,200)
Deposit 1 Stability	Grade and Recontour Significant Disturbed Areas	280,000	$2.24	$627,200
TOTAL				**$210,000**

5 DIRECT COSTS ANALYSIS

The following subsections describe in detail, by reclamation activity, changes to Direct Costs resulting from Baffinland's Estimate. A summary of all Direct Costs by line item is presented in Appendix C.

All unit costs in Section 5 are in 2018 dollars, except contaminated soil removal which Baffinland does not include in the Baffinland Estimate. Therefore, all Direct Costs require inflation as detailed in Section 2.1.5 aside from contaminated soil removal. The 2018 unit costs have been maintained for illustrative purposes to provide a more direct comparison to the Baffinland Estimate.

5.1 BUILDINGS AND FOUNDATIONS

Table 5-1 shows a summary of Baffinland's Estimate for buildings and foundations.

It was noted that Baffinland's Estimate identified a new thaw and wash bay facility for maintenance and two heated maintenance shops for pit equipment at KM110.5. The unit rate for the new thaw and wash bay as well as the maintenance shops at KM110.5 was set to $114.04/m^2 in Baffinland's Estimate; however, in Baffinland's 2019 Security Estimate a rate of $114.88/m^2 was set for Modular Building Contaminated.

ARKTIS used Baffinland's unit costs. However, ARKTIS has replaced the $114.04/m^2 cost with a cost of $114.88/m^2 for the new thaw and wash bay facility for maintenance as this was the more commonly used rate for Modular Building Contaminated; this instance is highlighted in yellow in the table below.

ARKTIS maintains the position that any contaminated buildings will result in contaminated soil. This is further detailed in Section 5.7.

As detailed in Section 2.2.10, ARKTIS has applied a height factor for buildings greater than 3 m tall. Updated quantities based on heights are included in **Table 5-1**. The updated quantity is used for the calculation of reclamation security for buildings and fill application as detailed in Section 5.6. The height of the buildings does not impact contaminated soil removal or treatment.

Table 5-1 Buildings and foundations security summary.

Item	Location	Height (m)	Baffinland Quantity (m^2)	Updated Quantity (m^2)	Unit Cost ($/m^2)	Direct Cost
Modular Building Not Contaminated						
Quonset hut structure at the Milne Port Firehall	Milne Port	9	100	300	47.64	$14,292
Quonset hut structure at the Aerodrome	Mine Site	12	100	400	47.64	$19,056
Construction of new offices and trailers at the OHT Laydown	Mine Site	3	400	400	47.64	$19,056
Modular Building Contaminated						
New thaw and wash bay facility for Maintenance	Milne Port	3	1,250	1,250	114.88	$143,600
Washcar for Ore Pad	Milne Port	4	36	48	114.88	$5,514
Construction of new warehouse facility (seacan tent structure) on laydown LP2	Milne Port	6	1,127	2,254	114.88	$258,940
Construction of warehouse parts/staging area (seacan tent structure)	Milne Port	6	540	1,080	114.88	$124,070

Item	Location	Height (m)	Baffinland Quantity (m^2)	Updated Quantity (m^2)	Unit Cost ($/$m^2$)	Direct Cost
Construction of offices and workshops at the stockpile and shiploader (seacan structure)	Milne Port	6	208	416	114.88	$47,790
Washcar	Mine Site	4	36	48	114.88	$5,514
Heated Maintenance shops (2) for pit equipment at KM110.5	Mine Site	4.5 (average 3 and 6)	180	270	114.88	$31,018
Construction of seacan tent structure for freight and equipment sorting	Mine Site	6	1,127	2,254	114.88	$258,940
Slab on Grade						
Concrete pad apron for exterior of HD Shop	Mine Site	-	1,020	1,020	$30	$30,600
Concrete Pad for tire maintenance and welding shop at 110 Laydown	Mine Site	-	600	600	$30	$18,000
TOTAL			**6,724**	**10,340**		**$976,000**

5.2 MECHANICAL AND MOBILE EQUIPMENT

Table 5-2 summarizes ARKTIS' estimate for mechanical and mobile equipment reclamation security. ARKTIS has used Baffinland's unit costs and quantities for this estimate, thus there are no differences between ARKTIS and Baffinland's estimate in this Section.

The development of an inventory or tracking system for mobile and mechanical equipment has been an item of high uncertainty between QIA and Baffinland since 2016 and was a topic presented before the Arbitrator in 2020.

The uncertainty was reiterated again in QIA's 2020 Environmental Audit. As identified during QIA's 2020 Environmental Audit, many items indicated in the 2019 Shipping Manifests[39] did not have sufficient identifiers to verify if they were included in Baffinland's 2020 EBS[35]. For example, cranes and tractors may be light, medium, or heavy equipment however Baffinland does not indicate the category in the Shipping Manifests. This poses difficulties for allocating security.

QIA requested evidence regarding equipment inventories as part of its information request to Baffinland regarding the 2021 Annual Work Plan and Marginal Security Estimate. Baffinland responded to QIA's information request without including the evidence or indicating when it may be provided. Baffinland, instead, requested, QIA support in establishing an inventory methodology. The status of the Baffinland equipment inventory is not currently known nor its potential impact on security.

ARKTIS considers the inventory of mechanical and mobile equipment maintained on Site to be a topic of uncertainty and suggests the Parties develop a methodology that can verify the equipment, the reclamation cost for that piece of equipment, the location of that equipment, and when it had arrived at Site to inform and verify reclamation security in a given year.

Table 5-2 Summary of mechanical and mobile equipment for 2021.

Description	Unit Rate Type	Quantity (pcs)	Unit Rate ($/pcs)	Direct Cost
Welding Shop Crane	Heavy Mobile Equipment	1	2,075	$2,075
D10 Dozer	Heavy Mobile Equipment	2	2,075	$4,150
374 CAT Excavator	Heavy Mobile Equipment	1	2,075	$2,075
349 Cat Excavator	Heavy Mobile Equipment	1	2,075	$2,075

Description	Unit Rate Type	Quantity (pcs)	Unit Rate ($/pcs)	Direct Cost
320 Track Cat Excavator	Heavy Mobile Equipment	1	2,075	$2,075
374 Excavator	Heavy Mobile Equipment	1	2,075	$2,075
390 Excavator	Heavy Mobile Equipment	1	2,075	$2,075
Fuel Tanker	Heavy Mobile Equipment	1	2,075	$2,075
Jet A Truck	Heavy Mobile Equipment	1	2,075	$2,075
793F Haul Truck	Heavy Mobile Equipment	3	2,075	$6,225
D10 Dozer	Heavy Mobile Equipment	2	2,075	$4,150
Tripper Car	Heavy Mobile Equipment	1	2,075	$2,075
777 Water Truck	Heavy Mobile Equipment	1	2,075	$2,075
777 Spreader Box	Heavy Mobile Equipment	1	2,075	$2,075
Spare 793 Box	Heavy Mobile Equipment	1	2,075	$2,075
Vacuum Truck	Heavy Mobile Equipment	2	2,075	$4,150
740 Water Truck	Heavy Mobile Equipment	1	2,075	$2,075
14M Grader	Heavy Mobile Equipment	1	2,075	$2,075
908 CATERPILLAR LOADER	Heavy Mobile Equipment	2	2,075	$4,150
Welding Shop Crane	Heavy Mobile Equipment	1	2,075	$2,075
SPYDER CRANE URW295	Heavy Mobile Equipment	1	2,075	$2,075
SPYDER CRANE URW706	Heavy Mobile Equipment	1	2,075	$2,075
1500 kW Alternators	Medium Equipment	2	3,392	$6,785
4x4 15 passenger crew van	Medium Mobile Equipment	1	1,162.50	$1,163
HPS 185 Spray Unit for Stockpile Dust suppression	Medium Mobile Equipment	1	1,162.50	$1,163
4x4 hotseating bus	Medium Mobile Equipment	2	1,162.50	$2,325
Flat Bed Boom Truck	Medium Mobile Equipment	1	1,162.50	$1,163
Pressure washing truck	Medium Mobile Equipment	1	1,162.50	$1,163
48 Person School Bus	Medium Mobile Equipment	2	1,162.50	$2,325
Cube truck	Medium Mobile Equipment	2	1,162.50	$2,325
F550 Service/Fuel Truck	Medium Mobile Equipment	4	1,162.50	$4,650
Service Truck	Medium Mobile Equipment	1	1,162.50	$1,163
CCM200E Concrete Mixer	Medium Mobile Equipment	1	1,162.50	$1,163
Steam Truck	Medium Mobile Equipment	1	1,162.50	$1,163
4x4 Fire Truck	Medium Mobile Equipment	1	1,162.50	$1,163
Shovel 6060	Medium Mobile Equipment	1	1,162.50	$1,163
Heated Water Truck - Drill Water System	Medium Mobile Equipment	1	1,162.50	$1,163
Epiroc D65 Drill	Medium Mobile Equipment	1	1,162.50	$1,163
Water Jet - Ceramic Cutting	Light Equipment	1	1,583.75	$1,584
Gensets/compressors for field maintenance	Light Mobile Equipment	1	729.17	$729
Ford F350 Pickup	Light Mobile Equipment	3	729.17	$2,188
Dual Engine Marine Response Boat	Light Mobile Equipment	1	729.17	$729
F250 Light Vehicle	Light Mobile Equipment	1	729.17	$729
F-350 Pickup	Light Mobile Equipment	2	729.17	$1,458
F-350 Pickup	Light Mobile Equipment	2	729.17	$1,458
Land Cruiser Service Truck	Light Mobile Equipment	2	729.17	$1,458
F250 Light Vehicle	Light Mobile Equipment	1	729.17	$729
Light Vehicle	Light Mobile Equipment	8	729.17	$5,833

Description	Unit Rate Type	Quantity (pcs)	Unit Rate ($/pcs)	Direct Cost
SKID STEER	Light Mobile Equipment	2	729.17	$1,458
SKID STEER - 257D	Light Mobile Equipment	1	729.17	$729
Total		**43**		**$233,000**

5.3 SITE WORKS

Table 5-3 shows a summary of Baffinland's planned area disturbances. This is calculated based upon unit rates of $1.49/m^2 for unlined grading and recontouring and $4.12/m^2 for lined grading and recontouring. Baffinland has not proposed any Site works that require a liner.

It was noted that Baffinland combined multiple laydowns at KM106, KM107, and KM108 into a single line item. However, each laydown should be identified with the term used on Site for reference or explain if it is an expansion of a current laydown. This security item has been kept as-is until Baffinland provides greater detail.

ARKTIS used Baffinland's quantity estimates as well as its unit rates, thus there is no difference in the reclamation security estimate for proposed Site works. **Table 5-3** does not consider Baffinland's proposed disturbed areas to be reconciled, as detailed in Section 4.1 of this Report.

Table 5-3 Summary of planned area disturbances.

Description	Location	Quantity (m^2)	Unit Rate ($/$m^2$)	Direct Cost
Expansion of the area east of the Mine Site workshops and crushing area for improved traffic management	Mine Site	37,732	1.49	$56,221
Expansion of MSC laydown for vehicle parking	Mine Site	5,243	1.49	$7,812
Construction of three (3) laydown areas for road aggregate storage on the mine haul road KM106, KM107 and KM108	Mine Site	10,705	1.49	$15,950
Explosives plant secondary storage location	Mine Site	20,000	1.49	$29,800
Waste Rock Facility - expansion to approved footprint	Mine Site	265,000	1.49	$394,850
TOTAL		**338,680**		**$505,000**

5.4 CABLING REMOVAL

Table 5-4 summarizes ARKTIS' cabling removal reclamation security estimate. ARKTIS used Baffinland's quantity estimates and unit cost. Therefore, there is no difference between Baffinland and ARKTIS' cabling cost.

Table 5-4 Cabling removal reclamation security estimate.

Item	Location	Quantity (m)	Unit Cost ($/m)	Direct Cost
Steensby Camp power line	Milne Port	100	21.30	$2,130
Powerhouse to Dyno Nobel explosive facility	Mine Site	500	21.30	$10,650
E-House 3 to KM104 laydown	Mine Site	300	21.30	$6,390
TOTAL		**900**		**$19,000**

5.5 DESALINATION PLANT

Table 5-5 summarizes ARKTIS' security estimate for the proposed desalination plant to be mobilized to Milne Port. Baffinland based the cost of the proposed desalination plant on the unit rate buildup for a potable water plant. The Baffinland 2018 Report[40] indicates this unit cost is $7,925 plus cover material application costs. ARKTIS has assumed that Baffinland has included cover material as fill application, that is detailed in Section 5.6 of this Report.

Table 5-5 Desalination plant security estimate.

Item	Quantity (pcs)	Unit Cost ($/pc)	Direct Cost
Desalination plant	1	$7,925	**$8,000**

5.6 FILL APPLICATION

Table 5-6 summarizes ARKTIS' fill application security estimate. ARKTIS has adopted Baffinland's unit cost.

ARKTIS has added fill per the changes to building heights described in Section 5.1. As the change to heights was only to modular buildings, the following assumptions from the Baffinland 2014 Report were used to develop the addition of 603 m^2 of fill:

1. Modular buildings are compacted to a volume of 1 m^3 per m^2 of area.
    a. For example, a modular building of 300 m^2 will be compressed into 300 m^3 in the landfill.
2. 6 m of refuse will be placed before fill is placed on top.
3. Therefore, the total volume of refuse from the modular buildings in m^3 is divided by 6 m to represent how much fill would be placed on top.

ARKTIS reiterates the uncertainty with the required fill to cover all buildings at Site given the uncertainty in building heights. In addition, capacity at the current landfill or if alternative disposal locations are to be considered and their relevant impacts on hauling distance to unit costs remains not well understood.

Table 5-6 Fill application security estimate comparison.

Item	Location	Quantity (m^2)	Unit Cost ($/$m^2$)	Direct Cost
Fill Application for 2021 Estimate	Mine Site	1,301	$38.83	**$50,529**
Buildings height adjustment	Mine Site	603	$38.83	**$23,414**
Total		**1,904**		**$74,000**

5.7 CONTAMINATED SOIL REMOVAL

Table 5-7 summarizes ARKTIS' contaminated soil removal estimate. Consistent with the ARKTIS 2014 Report, ARKTIS has assumed that any contaminated buildings will result in contaminated soil. As such, any items in **Table 5-1** that are categorized as contaminated will require contaminated soil removal.

For these items, 50% of the soil was assumed contaminated at a depth of 0.5 m, concurrent with the ARKTIS 2014 Estimate. The Indirect Costs for the contaminated soil treatment are included in Section 6.

Baffinland did not include a contaminated soil removal cost. ARKTIS has used the unit rate of $17/$m^3$ for contaminated soil removal as detailed in Section 3.9 of this Report.

Table 5-7 Contaminated soil removal reclamation security estimate.

Item	Quantity (m^2)	Quantity (m^3)	Unit Rate ($/$m^3$)	Indirect Cost
New thaw and wash bay facility for Maintenance	1,250	312	$17	$5,286
Washcar for Ore Pad	36	9	$17	$152
Construction of new warehouse facility (seacan tent structure) on laydown LP2	1,127	282	$17	$4,778
Construction of warehouse parts/staging area (seacan tent structure)	540	135	$17	$2,287
Construction of offices and workshops at the stockpile and shiploader (seacan structure)	208	52	$17	$881
Washcar	36	9	$17	$152
Heated Maintenance shops (2) for pit equipment at KM110.5	180	45	$17	$762
Construction of seacan tent structure for freight and equipment sorting	1,127	282	$17	$4,778
TOTAL	**1,430**	**1,126**		**$19,000**

6 INDIRECT COSTS ANALYSIS

The following subsections describe in detail, by reclamation activity, changes to Indirect Costs resulting from Baffinland's Estimate. A summary of all Indirect Costs by line item is presented in Appendix D.

All unit costs in Section 6 are in 2020 dollars.

6.1 CONTAMINATED SOIL TREATMENT

Table 6-1 summarizes the costs for contaminated soil treatment. This is included as an Indirect Cost consistent with the ARKTIS 2014 Report given it does not require engineering fees.

ARKTIS has included quantities of contaminated soil based on Section 5.7 and as summarized in **Table 5-7** of this Report. The unit cost applied is detailed in Section 2.3.3.

Table 6-1 Security update for contaminated soil treatment.

Item	Quantity (m^3)	Unit Cost ($/$m^3$)	Indirect Cost
New thaw and wash bay facility for Maintenance	312	$16	$5,058
Washcar for Ore Pad	9	$16	$146
Construction of new warehouse facility (seacan tent structure) on laydown LP2	282	$16	$4,571
Construction of warehouse parts/staging area (seacan tent structure)	135	$16	$2,188
Construction of offices and workshops at the stockpile and shiploader (seacan structure)	52	$16	$843
Washcar	9	$16	$146
Heated Maintenance shops (2) for pit equipment at KM110.5	45	$16	$729
Construction of seacan tent structure for freight and equipment sorting	282	$16	$4,571
TOTAL	**1,126**		**$18,000**

6.2 EXPLOSIVES

The Baffinland Estimate did not include an update to explosives.

ARKTIS notes here, as detailed in Section 4.4, that the unit cost for explosives has been updated to 2020 costs.

6.3 3RD PARTY OWNED EQUIPMENT

Table 6-2 summarizes ARKTIS' reclamation security estimate for 3rd Party Equipment. As per the Final Award from Arbitration, Baffinland has adopted QIA's rates from 2018 and now includes them as an Indirect Cost rather than a Direct Cost as completed previously. ARKTIS has used rates inflated to 2020 costs, per Section 2.3.4 of this Report.

Table 6-2 Summary estimate of security for 3rd party owned equipment.

Item	Quantity (pcs)	Unit Cost ($/pc)	Indirect Cost
3rd Party Equipment - Medium	5	$8,253	$41,442
3rd Party Equipment - Light	13	$2,803	$36,442
TOTAL	**18**		**$78,000**

6.4 WORKER MOBILIZATION AND CAMP ACCOMMODATIONS

Table 6-3 summarizes ARKTIS' reclamation security estimate for worker mobilization and accommodations.

ARKTIS has increased Worker Mobilization and Camp Accommodations, in addition to Baffinland's Estimate, for the following two reasons.

First, given the additional area of modular buildings detailed in Section 5.1, person-days were calculated using Baffinland post-Arbitration EBS productivity of 0.56 person-hours/m^2 of modular building contaminated and 0.224 person-hours/m^2 of modular building not contaminated. Using Baffinland's assumption of 10-hour workdays, this resulted in 186 person-days, or 130 southern person-days and 56 northern person-days. Combined with the Baffinland Estimate of 489 person-days, this provides a total of 675 person-days.

Second, given the change from grade and recontour to grade and recontour significant disturbed area detailed in Section 4.5, ARKTIS has removed the 3,640 person hours associated with grade and recontour and added the 5,320 person hours required for grade and recontour significant disturbed area. ARKTIS calculated this change based on the productivity of 0.013 person hours/m^2 for grade and recontour to 0.019 person hours/m^2 for grade and recontour significant disturbed area included in the post-Arbitration EBS.

ARKTIS notes this does not include the person-days required for the additional contaminated soil removal and treatment, as Baffinland does not have a specific productivity for either unit cost. Furthermore, it is uncertain if Baffinland has included reductions in person-hours for negative reclamation costs, such as the reduction in mechanical and mobile equipment, or the proposed changes to grade and recontour which ARKTIS has not applied. Therefore, the person hours included in this estimate are likely lower than required.

ARKTIS maintains Baffinland's assumption that workers are to be on a 70/30 split between southern and northern workers and has applied 2020 unit costs as detailed in Section 2.3.5.

Per Section 2.3.6, ARKTIS has used the 2020 cost of $247.92/person-day.

Table 6-3 Worker mobilization and camp accommodations security estimate.

Item	Quantity	Unit Cost ($/person-days)	Indirect Cost
Worker Mobilization - Northern Hires	252.9	$82	$20,809
Worker Mobilization - Southern Hires	590.1	$94	$55,316
Worker Accommodations and Camp Operations	675	$247.92	$208,997
TOTAL			**$285,000**

6.5 FUEL

Table 6-4 summarizes ARKTIS' reclamation security estimate for the Indirect Cost for fuel. ARKTIS' methodology was accepted in the Final Award for fuel mobilization and demobilization and is applied to Baffinland's quantities in this Section. However, the quantity of fuel required was based on the equipment being used. Given the direction to use Baffinland unit costs, ARKTIS has adopted Baffinland's quantity of fuel required, with the following amendment for the increase in cost for buildings:

1. ARKTIS has assumed equipment is required on a one-to-one basis with labour, and therefore 1,860 equipment hours.
2. ARKTIS has maintained Baffinland's assumption that equipment requires 10% of the equipment cost in fuel. Converting with the Baffinland fuel cost of $1/L results in a fuel rate of 12.5 L/equipment hour.
3. ARKTIS has increased fuel requirements for reclamation equipment by 23,250 L or 23 m^3 based on 1,860 equipment hours and a fuel rate of 12.5 L/equipment hour.

4. ARKTIS has increased fuel requirements for heating by 21,576 L or 22 m^3 given the additional 186 person-days on Site, at a rate of 116 L/person-day.

The same methodology above was applied to the increase in equipment hours required given the change in reclamation activity from grade and recontour to grade and recontour significant disturbed area as detailed in Section 4.5. This results in an additional 21,000 L, or 21 m^3.

ARKTIS notes that the fuel requirements appear very low for Baffinland's Estimate, likely based on using a very low fuel rate. ARKTIS details uncertainties with the fuel rate in Section 2.1.4.

ARKTIS is also uncertain if the Baffinland Estimate considers fuel solely for the marginal 2021 estimate, or also factors in the 2020 reconciliation.

Baffinland has calculated that an additional 123,000 L of fuel is required for marginal reclamation and closure activities, with 66,000 L for the increase in activities and 57,000 L for heat and power generation for the camp.

Table 6-4 Fuel security estimate comparison.

Item	Quantity (m^3)	Unit Cost ($/$m^3$)	Indirect Cost
Fuel Mobilization (Baffinland)	123	$438	$54,000
Additional Fuel Mobilization	66	$438	$29,000
TOTAL			**$83,000**

6.6 CLOSURE AND POST-CLOSURE MONITORING

Given the update to water treatment costs, detailed in Section 4.3 of this Report, the global cost for closure and post-closure monitoring increase from $7,303,000 post-arbitration to 7,628,278 in 2018 dollars. Using an inflation factor of 1.006, the resulting global cost is $7,674,000 in 2020 dollars.

6.7 INFLATION

Section 2.1.5 summarizes ARKTIS' methodology for applying inflation.

All Direct Costs are in 2018 dollars, and as such require an inflation factor of 1.006 applied prior to applying the percentage to indirect fees. This is required to update all unit costs to 2020 dollars, and not solely those within the marginal estimate. This increases the total 2021 marginal Direct Cost from $1,997,000 to $2,008,000. For the global estimate, this is an increase from $43,473,000 to $43,821,000.

All Indirect Costs have been updated to 2020 dollars as described in Section 2.3.

ARKTIS is uncertain if Baffinland has applied inflation appropriately, given the following example:

1. In Table 5.1 of Baffinland's Estimate, Baffinland summarizes its 2019 Work Plan Global Estimate. There is no indication of inflation being applied.
2. In Table 5.2 of Baffinland's Estimate, Baffinland summarizes its 2020 Work Plan marginal estimate and adjustment for Arbitration outcomes, which includes a cost increase of $31,480 for inflation.
3. In Table 5.3 of Baffinland's Estimate, Baffinland summarizes its 2021 Work Plan marginal estimate and 2020 reconciliation, which includes a cost increase of $8,939 for inflation.
4. In Table 5.4 of Baffinland's Estimate, Baffinland summarizes its 2021 Work Plan Global Estimate for a total of $119,270,419 for the Type A water Licence, which is the sum of the totals of Table 5.1, 5.2, and 5.3.

Therefore, inflation has not been applied to unit costs included in the 2019 Work Plan Global Estimate.

For illustrative purposes, applying the 1.006 inflation factor to the 2019 Work Plan Global Estimate Direct Cost Sub-Total (re. page 27 of the Baffinland Estimate) of $36,682,702, the result would be a Direct Cost sub-total of $36,902,798, an increase of $220,096 prior to percentage based Indirect Costs.

Furthermore, Baffinland assumes all unit costs are in 2018 dollars. ARKTIS understands the following unit costs are in 2014 or 2016 dollars:

1. Contaminated soil treatment.
2. Reclamation fuel.
3. Waste and Materials.
4. Ammonium nitrate.
5. Explosives.
6. Crew accommodations.
7. Consumables.
8. ARKTIS has updated these unit costs to 2020 dollars.

A summary of when unit costs were developed, and their corresponding 2020 dollar cost is summarized in Appendix B.

6.8 MOBILIZATION AND DEMOBILIZATION OF RECLAMATION EQUIPMENT

ARKTIS has adopted Baffinland's methodology of adding 10% of total Direct Costs as an approximate cost for the mobilization and demobilization of equipment required for reclamation. This results in an increase of $846,000 from the current estimate of $3,536,000.

6.9 CONTINGENCY

ARKTIS has maintained contingency as 20%. As per QIA legal direction, contingency has been applied to Direct Costs, contaminated soil treatment, and closure monitoring/reporting. This results in an increase of $1,476,202 compared to contingency as agreed between QIA and Baffinland as part of the 2019 Arbitration outcomes. Application of contingency to other indirect costs, including mobilization and demobilization of equipment and materials, worker accommodation and camp operation, and mobilization of workers, was excluded based on direction from QIA. QIA understands excluding contingency from these items may leave potential uncertainty in the respective costing estimates not fully addressed but considers the risk low due to the inherent conservativeness in activities and unit rates applied, and the provision of contingency for all direct costs.

6.10 SUPERVISION, PROJECT MANAGEMENT AND CONTRACT ADMINISTRATION

Supervision, project management and contract administration are calculated as 9.4% of the total Direct Costs, contaminated soil treatment costs, closure and post-closure monitoring costs.

ARKTIS' marginal reclamation security estimate for project supervision, management and contract administration Indirect Cost is $544,000.

6.11 ENGINEERING FEES

ARKTIS' marginal reclamation security estimate for engineering fees is $691,000 or 5% of the total Direct Costs per Section 2.3.9. The increase is due to the updated percentage applied to global Direct Costs.

7 RECOMMENDATIONS

Table 7-1 summarizes the global reclamation security updated based on details provided within this Report. Estimates have been rounded to the nearest thousand.

Table 7-1 Global security estimate.

Description	Current Estimate ($)
Total Security	**$132,909,000**
Direct Costs	**$43,822,000**
Indirect Costs	**$89,087,000**
Mob and Demob of Reclamation Equipment	$4,382,220
Fuel for Reclamation Mobilization (m^3)	$3,170,883
Southern Worker Mobilization Cost	$1,593,730
Northern Worker Mobilization Cost	$599,525
Worker Accommodation	$6,021,481
Contaminated Soil Treatment	$507,472
Explosives	$1,862,533
Ammonium Nitrate	$5,646,181
Fuel Backhaul	$5,319,487
Phase 2 Expansion Modules	$25,907,932
Closure and Post-Closure Monitoring	$7,696,331
Hazardous Materials	$2,159,602
3rd Party Light Mobile Equipment	$731,636
3rd Party Medium Mobile Equipment	$1,840,495
3rd Party Heavy Mobile Equipment	$4,160,355
Engineering Fees (5% Directs)	$2,191,110
PM Fees	$4,890,445
Contingency	$10,405,202

ARKTIS has noted uncertainties and suggestions throughout this Report. ARKTIS has summarized a select list of suggestions that may impact reclamation security:

1. ARKTIS recommends the inclusion of the reclamation activity of unloading items at a destination. Examples would include unloading equipment at a landfill, or unload fuel being transported from Mary River to Milne Port. Currently, unloading may represent more than $1,000,000 in security.
2. ARKTIS recommends the inclusion of verifiable Site-based unit rates and productivities. There are numerous unit costs that are based on Site-based unit rates but on estimated productivity. Given Baffinland operations for the past six years, numerous productivities, such as liner removal and equipment disposal, may be available.
3. ARKTIS recommends the fuel rate for equipment is verified given fuel rates in the 2019 Caterpillar Performance Handbook for current mobile equipment fuel consumption rates.
4. ARKTIS recommends Site-specific fuel costs are used, should they be available. Particularly, to justify not using Government of Nunavut fuel costs which are greater than Baffinland's 2014 fuel costs.

5. ARKTIS recommends Baffinland propose a final disposal location, such as a landfill, where decommissioned materials at Site will be disposed. This impacts the haul distance used in numerous unit costs. ARKTIS notes this has been a topic of uncertainty since the ARKTIS 2014 Report.
6. ARKTIS recommends the Parties agree to a tiered closure scenario of an increasingly large pit in Deposit 1. This would lead to the development of a unit cost to reclaim the pit. It is pertinent to include a unit cost that factors in the closure criteria for a pit that needs to be stable, including holding water.
7. ARKTIS recommends verifying the reclamation activities, including productivities, to remove bridges.
8. ARKTIS recommends QIA include the building height adjustment factor during the next Audit.
9. ARKTIS recommends the reclamation activity of hauling fuel from fuel storage tanks be considered, as significant fuel is contained at the Mine Site that is assumed to need to be hauled to Milne Port for demobilization.
10. ARKTIS recommends the crew and productivity to reclaim the ship loader is verified.
11. ARKTIS recommends rates last updated in 2014 are updated to 2020, Site-specific values. These include:
    a. Contaminated soil treatment.
    b. Reclamation fuel.
    c. Waste and Materials.
    d. Ammonium nitrate.
    e. Explosives.
    f. Crew accommodations.
    g. Consumables.
12. ARKTIS recommends the 10% of Direct Cost methodology used to estimate the cost for mobilization and demobilization of equipment required for reclamation is compared to alternative methods to ensure it is still applicable.
13. ARKTIS recommends confirming what constitutes the 3,160,642 m^2 addition of grade and recontour area in Baffinland's Estimate and amend reclamation security accordingly.
14. ARKTIS recommends the Parties determine a path forward for the reconciliation of disturbed areas, including the area that requires grading and recontouring, using same-year satellite imagery as Baffinland and that considers Baffinland's proposed disturbed area.
15. ARKTIS recommends the Parties develop a methodology that can verify the equipment, the reclamation cost for that piece of equipment, the location of that equipment, and when it had arrived at Site to inform and verify reclamation security in a given year.
16. ARKTIS recommends Site costs for treatment of water are considered and used to update the rate for water treatment.
17. ARKTIS recommends confirming reclamation security for explosives is to be maintained.
18. ARKTIS recommends confirming that inflation is to be applied to the global estimate to unit rates not developed in the current year of reclamation security estimation.

8 CLOSURE

This report has been prepared exclusively for the use of the QIA for the specific application described within this report. The details provided in this report are for general information purposes only. The information and recommendations contained in this report should not be used for any other purpose, at another location, or by any other parties. Any use of, or reliance on this report by any third party is at that party's sole risk. ARKTIS assumes no responsibility for inappropriate use of the contents of this report, and disclaims all liability arising from negligence or otherwise. General terms and conditions are provided in Appendix A.

ARKTIS PIUSITIPPAA INC.

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Professional Geoscientist

PERMIT TO PRACTICE
ARKTIS PIUSITIPPAA INC.
Signature
Date Feb 2, 2021
PERMIT NUMBER: P 745
NWT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL GEOSCIENTIST
D.B. STAVINGA
LICENSEE
Feb 2/2021
NT/NU

APPENDIX A – GENERAL TERMS AND CONDITIONS

USE OF REPORT

This report pertains to a specific site, a specific development, and a specific scope of work. It is not applicable to any other sites, nor should it be relied upon for types of development other than those to which it refers. Any variation from the site or proposed development would necessitate a supplementary investigation and assessment.

This report and the assessments and recommendations contained in it are intended for the sole use of ARKTIS Piusitippaa Inc.'s (ARKTIS) client. ARKTIS does not accept any responsibility for the accuracy of any of the data, the analysis or the recommendations contained or referenced in the report when the report is used or relied upon by any party other than ARKTIS' client unless otherwise authorized in writing by ARKTIS. Any unauthorized use of the report is at the sole risk of the user.

LIMITATIONS OF REPORT

This report is based solely on the conditions which existed on site at the time of ARKTIS' investigation. The client, and any other parties using this report with the express written consent of the clients and ARKTIS, acknowledge that conditions affecting the environmental assessment of the site can vary with time and that the conclusions and recommendations set out in this report are time sensitive.

The client, and any other party using this report with the express written consent of the client and ARKTIS, also acknowledge that the conclusions and recommendations set out in this report are based on limited observations and testing on the subject site and that conditions may vary across the site which, in turn, could affect the conclusions and recommendations made.

The client acknowledges that ARKTIS is neither qualified to, nor is it making, any recommendations with respect to the purchase, sale, investment or development of the property, the decisions on which are the sole responsibility of the client.

During the performance of the work and the preparation of this report, ARKTIS may have relied on the information provided by persons other than the client. While ARKTIS endeavors to verify the accuracy of such information when instructed to do so by the client, ARKTIS accepts no responsibility for the accuracy or the reliability of such information which may affect the report.

STANDARD OF CARE

Services performed by ARKTIS for this report have been conducted in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions in the jurisdiction in which the services are provided, subject to the time limits and financial and physical constraints applicable to the services. Professional judgment has been applied in developing the conclusions and/or recommendations provided in this report. No warranty or guarantee, express or implied, is made concerning the test results, comments, recommendations, or any other portion of this report.

ALTERNATE REPORT FORMAT

Where ARKTIS submits both electronic file and hard copy versions of reports, drawings and other project related documents and deliverables (collectively termed instruments of professional service), the Client agrees that only the signed and sealed hard copy versions shall be considered final and legally binding. The hard copy versions submitted by ARKTIS shall be the original documents for record and working purposes, and, in the event of a dispute or discrepancies, the hard copy versions shall govern over the electronic versions. Furthermore, the Client agrees and waives all future right of dispute that the original hard copy signed version archived by ARKTIS shall be deemed to be the overall original for the Project.

The Client agrees that both electronic file and hard copy versions of instruments of professional services shall not, under any circumstances, no matter who owns or uses them, be altered by any party except ARKTIS. The Client warrants that instruments of professional services will be used only and exactly as submitted by ARKTIS.

APPENDIX B – SUMMARY OF UNIT COSTS WITH INFLATION

RECLAMATION ACTIVITIES	UNIT RATE ($)	UNIT	Year	CPI Base Value	CPI Current Value	Unit Rate Post Inflation ($)
CONTAMINATED SOIL TREATMENT	14.78	/m^2	2014	118.8	130.3	16.21
RECLAMATION FUEL	400.00	/m^3	2014	118.8	130.3	438.72
WASTE AND MATERIALS	358.00	/m^3	2014	118.8	130.3	392.65
AMMONIUM NITRATE	358.00	/m^3	2014	118.8	130.3	392.65
EXPLOSIVES	2.37	/kg	2014	118.8	130.3	2.60
REMOVE CULVERTS- Pre 2019	862.50	/EACH	2014	118.8	130.3	945.99
CREW ACCOMMODATIONS	225.50	/person day	2014	118.8	130.3	247.92
CONSUMABLES	700.80	/BED	2016	124.5	130.3	733.45
BRIDGE REMOVAL	161,904.76	EACH	2018	129.5	130.3	162,904.94
DOUBLE MODULAR BUILDING TEARDOWN - CONTAMINATED	114.89	/m^2	2018	129.5	130.3	115.60
DOUBLE MODULAR BUILDING TEARDOWN - NOT CONTAMINATED	47.64	/m^2	2018	129.5	130.3	47.93
DRILL SLAB	30.00	/m^2	2018	129.5	130.3	30.19
FILL APPLICATION	38.83	/m^2	2018	129.5	130.3	39.07
FOLD-AWAY BUILDING TEARDOWN - CONTAMINATED	114.04	/m^2	2018	129.5	130.3	114.74
FOLD-AWAY BUILDING TEARDOWN - NOT CONTAMINATED	33.34	/m^2	2018	129.5	130.3	33.55
GRADE AND RECONTOUR	1.49	/m^2	2018	129.5	130.3	1.50
GRADE AND RECONTOUR SIGNIFICANT DISTURBED AREAS	2.24	/m^2	2018	129.5	130.3	2.25
GRADE AND RECONTOUR WITH LINER	4.12	/m^2	2018	129.5	130.3	4.15
LINER REMOVAL	2.62	/m^2	2018	129.5	130.3	2.64
OTHER BUILDING	33.34	/m^2	2018	129.5	130.3	33.55
OTHER BUILDING - CONTAMINATED	114.04	/m^2	2018	129.5	130.3	114.74
RECLAIM CONVEYOR	1,066,410.00	EACH	2018	129.5	130.3	1,072,997.86
REMOVE 20' ISO-CONTAINER	23.82	/m^2	2018	129.5	130.3	23.97
REMOVE 20' ISO-CONTAINER (TEU)	354.07	/TEU	2018	129.5	130.3	356.26
REMOVE 20' ISO-CONTAINER (CONTAMINATED)	23.82	/m^2	2018	129.5	130.3	23.97
REMOVE 20' ISO-CONTAINER (CONTAMINATED) (TEU)	354.07	/TEU	2018	129.5	130.3	356.26
REMOVE 40' ISO-CONTAINER	23.82	/m^2	2018	129.5	130.3	23.97

RECLAMATION ACTIVITIES	UNIT RATE ($)	UNIT	Year	CPI Base Value	CPI Current Value	Unit Rate Post Inflation ($)
REMOVE 40' ISO-CONTAINER (TEU)	354.07	/TEU	2018	129.5	130.3	356.26
REMOVE 40' ISO-CONTAINER (CONTAMINATED)	23.82	/m^2	2018	129.5	130.3	23.97
REMOVE 40' ISO-CONTAINER (CONTAMINATED) (TEU)	354.07	/TEU	2018	129.5	130.3	356.26
REMOVE AIRSTRIP LIGHTING	21.25	/m	2018	129.5	130.3	21.38
REMOVE CABLING	21.30	/m	2018	129.5	130.3	21.43
Remove Camp Mats- Size 1	237.60	EACH	2018	129.5	130.3	239.07
Remove Camp Mats- Size 2	330.00	EACH	2018	129.5	130.3	332.04
REMOVE CONTAINER CROSSING		EACH	2018	129.5	130.3	0.00[a]
REMOVE CULVERTS	50.00	m	2018	129.5	130.3	50.31
REMOVE HEAVY EQUIPMENT	32,950.00	EACH	2018	129.5	130.3	33,153.55
REMOVE HEAVY EQUIPMENT (3rd Party)	19,515.69	EACH	2018	129.5	130.3	19,636.25
REMOVE HEAVY MOBILE EQUIPMENT	2,075.00	EACH	2018	129.5	130.3	2,087.82
REMOVE HEAVY MOBILE EQUIPMENT (3rd Party)	15,964.53	EACH	2018	129.5	130.3	16,063.15
REMOVE INCINERATORS	7,925.00	EACH	2018	129.5	130.3	7,973.96
REMOVE LARGE DIESEL TANKS (5ML)	85,157.50	EACH	2018	129.5	130.3	85,683.57
REMOVE LARGEST DIESEL TANKS (12ML)	137,277.50	EACH	2018	129.5	130.3	138,125.55
REMOVE LIGHT EQUIPMENT	1,583.75	EACH	2018	129.5	130.3	1,593.53
REMOVE LIGHT EQUIPMENT (3rd Party)	800.50	EACH	2018	129.5	130.3	805.45
REMOVE LIGHT MOBILE EQUIPMENT	729.17	EACH	2018	129.5	130.3	733.67
REMOVE LIGHT MOBILE EQUIPMENT (3rd Party)	2,785.99	EACH	2018	129.5	130.3	2,803.20
REMOVE MEDIUM DIESEL TANKS (500,000 L to 750,000 L)	12,928.50	EACH	2018	129.5	130.3	13,008.37
REMOVE MEDIUM EQUIPMENT	3,392.50	EACH	2018	129.5	130.3	3,413.46
REMOVE MEDIUM EQUIPMENT (3rd Party)	1,705.53	EACH	2018	129.5	130.3	1,716.07
REMOVE MEDIUM MOBILE EQUIPMENT	1,162.50	EACH	2018	129.5	130.3	1,169.68
REMOVE MEDIUM MOBILE EQUIPMENT (3rd Party)	8,202.67	EACH	2018	129.5	130.3	8,253.34

[a] See Section 3.9.

RECLAMATION ACTIVITIES	UNIT RATE ($)	UNIT	Year	CPI Base Value	CPI Current Value	Unit Rate Post Inflation ($)
REMOVE MEDIUM MOBILE FUEL TANKS (3,000 L to 500kL)	8,381.25	EACH	2018	129.5	130.3	8,433.03
REMOVE MISCELLANEOUS	425.00	EACH	2018	129.5	130.3	427.63
REMOVE NON-FUEL MEDIUM STORAGE TANKS	5,900.00	EACH	2018	129.5	130.3	5,936.45
REMOVE NON-FUEL SMALL STORAGE TANKS	1,710.42	EACH	2018	129.5	130.3	1,720.99
REMOVE PIPING	53.13	/m	2018	129.5	130.3	53.46
REMOVE POTABLE WATER	7,925.00	EACH	2018	129.5	130.3	7,973.96
REMOVE PRECAST CONCRETE FOUNDATIONS	30.86	/m^3	2018	129.5	130.3	31.05
REMOVE SEWAGE TREATMENT PLANT	8,775.00	EACH	2018	129.5	130.3	8,829.21
REMOVE SMALL DIESEL TANKS (10,000 to 20,000 L)	2,950.00	EACH	2018	129.5	130.3	2,968.22
REMOVE SOFT WALLED BUILDING - CONTAMINATED	128.86	/m^2	2018	129.5	130.3	129.66
REMOVE SOFT WALLED BUILDING - NOT CONTAMINATED	38.11	/m^2	2018	129.5	130.3	38.35
REMOVE TIMBER CRIBBING	16.67	/m^2	2018	129.5	130.3	16.77
SINGLE MODULAR BUILDING TEARDOWN - CONTAMINATED	114.88	/m^2	2018	129.5	130.3	115.59
SINGLE MODULAR BUILDING TEARDOWN - NOT CONTAMINATED	47.64	/m^2	2018	129.5	130.3	47.93
SPECIAL MODULAR BUILDING TEARDOWN - CONTAMINATED	114.89	/m^2	2018	129.5	130.3	115.60
SPECIAL MODULAR BUILDING TEARDOWN - NOT CONTAMINATED	47.64	/m^2	2018	129.5	130.3	47.93
TEMPORARY WAREHOUSES AND CONSTRUCTION OFFICES	47.64	/m^2	2018	129.5	130.3	47.93
FUEL BACKHAUL	100.00	/m^3	2014	129.5	130.3	109.68
WASTE ROCK FACILITY WATER TREATMENT	61,750.00	EACH	2018	129.5	130.3	62,131.47
OPEN PIT STABILIZATION	5.49	/m3	2018	129.5	130.3	5.52
CONTAMINATED SOIL REMOVAL	16.94	/m^3	2020	130.3	130.3	16.94

APPENDIX C – SUMMARY OF DIRECT COST ADJUSTMENTS

The following table summarizes changes included in Sections 4 and 5 of this Report, that result in an update to Direct Costs.

Description	Direct Cost ($)
Pit Grade and Recontour	(419,777)
Deposit 1 Stability	631,075
Generator 1000 kW	-
Jaw Crusher Unit	-
Screen	132,614
Stacker	132,614
374F Excavator	-
908 Loader	-
950 Loader	-
Western Star Truck	(4,176)
740 Articulated Truck	(2,088)
D10 Dozer	-
USED WINCH TRUCK WESTERN STAR UNIT #586	2,088
Used Tandem Drive Western Star Winch Truck Unit #587	2,088
Light Plant	-
257 Skid Steer	-
Argo vehicle	(1,467)
Blaze Cube Frost Fighters	-
Tire Changer	(734)
Larue Snow Blower	-
Boat Trailer	734
Atlas 1000 mVA Transformers	-
60kW Generator	-
600kW Generators	-
4x4 Hotseating Bus	-
Cube Truck	-
Track Mounted Drill Rig	-
14M Grader	-
Bus	(1,170)
740B Water Truck	-
CCM200E Concrete Mixer	-
Fuel Tanker	-
Jet A Truck	-
Pressure Washing Truck	-
School Bus	-
Steam Truck	-
Deckover Trailer (5 Ton)	1,170

Description	Direct Cost ($)
Flatbed Boom Truck	1,170
New thaw and wash bay facility for Maintenance	5,286
Washcar for Ore Pad	152
Construction of new warehouse facility (seacan tent structure) on laydown LP2	4,778
Construction of warehouse parts/staging area (seacan tent structure)	2,287
Construction of offices and workshops at the stockpile and shiploader (seacan structure)	881
Washcar	152
Heated Maintenance shops (2) for pit equipment at KM110.5	762
Construction of seacan tent structure for freight and equipment sorting	4,778
Quonset hut structure at the Milne Port Firehall	14,380
Quonset hut structure at the Aerodome	19,174
Construction of new offices and trailers at the OHT Laydown	19,174
New Thaw and Wash Bay Facility for Maintenance	144,487
Washcar for Ore Pad	5,548
Construction of new warehouse facility (seacan structure) on laydown LP2	260,539
Construction of warehouse parts/staging area (seacan tent structure)	124,837
Construction of offices and workshops at the stockpile and shiploader	48,085
Washcar	5,548
Heated Maintenance shops (2) for pit equipment at KM110.5 laydown	31,209
Construction of seacan tent structure for freight and equipment sorting	260,539
concrete pad apron for exterior of HD shop	30,789
Concrete Pad for tire maintenance and welding shop at 110 Laydown	18,111
Welding Shop Crane	2,088
D10 Dozer	4,176
374 CAT Excavator	2,088
349 CAT Excavator	2,088
320 Track Cat Excavator	2,088
374 Excavator	2,088
390 Excavator	2,088
Fuel Tanker	2,088
Jet A Truck	2,088
793F Haul Truck	6,263
D10 Dozer	4,176
Tripper Car	2,088
777 Water Truck	2,088
777 Spreader Box	2,088
Spare 793 Box	2,088
Vacuum Truck	4,176
740 Water Truck	2,088
14M Grader	2,088

Description	Direct Cost ($)
908 Caterpillar Loader	4,176
Welding Shop Crane	2,088
Spyder Crane URW295	2,088
Spyder Crane URW706	2,088
Water Jet - Ceramic Cutting	1,594
Gensets/compressors for field maintenance	734
Ford F350 Pickup	2,201
Dual Engine Marine Response Boat	734
F250 Light Vehicle	734
F-350 Pickup	1,467
F-350 Pickup	1,467
Land Cruiser Service Truck	1,467
F250 Light Vehicle	734
Light Vehicle	5,869
Skid Steer	1,467
Skid Steer- 257D	734
1500 kW Alternators	6,827
4x4 15 passenger crew van	1,170
HPS 185 Spray Unit for Stockpile Dust suppression	1,170
4x4 hotseating bus	2,339
Flat Bed Boom Truck	1,170
Pressure washing truck	1,170
48 Person School Bus	2,339
Cube truck	2,339
F550 Service/Fuel Truck	4,679
Service truck	1,170
CCM200E Concrete Mixer	1,170
Steam Truck	1,170
4x4 Fire Truck	1,170
Shovel 6060	1,170
Heated Water Truck - Drill Water System	1,170
Expansion of the area east of the Mine Site workshops and crushing area for improved traffic management	56,568
Expansion of MSC laydown for vehicle parking	7,860
Construction of three (3) laydown areas for road aggregate storage on the mine haul road KM 106, KM 107 and KM 108	16,049
Explosives plant secondary storage location	29,984
Waste Rock Facility - Expansion to approved footprint	397,289
Steensby Power Line	2,143
Powerhouse to Dyno Nobel Explosives Facility	10,716
E-House 3 to KM 104 Laydown	6,429

Description	Direct Cost ($)
Desalination Plant	7,974
Buildings height adjustment	23,559
Fill Application for 2021 Estimate	50,830
Epiroc D65 Drill	1,170
Total	**2,194,000**

APPENDIX D – SUMMARY OF INDIRECT COST ADJUSTMENTS

The following table summarizes changes included in Sections 4 and 6 of this Report, that result in an update to Indirect Costs.

Description	Indirect Cost ($)
Ammonium nitrate (2020 Audit)	878,369
New thaw and wash bay facility for Maintenance	5,058
Washcar for Ore Pad	146
Construction of new warehouse facility (seacan tent structure) on laydown LP2	4,571
Construction of warehouse parts/staging area (seacan tent structure)	2,188
Construction of offices and workshops at the stockpile and shiploader (seacan structure)	843
Washcar	146
Heated Maintenance shops (2) for pit equipment at KM110.5	729
Construction of seacan tent structure for freight and equipment sorting	4,571
Waste Rock Facility Water Treatment (2020)	137,878
Water Retention Structure Water Treatment (2020)	189,410
3rd Party Equipment- Light	36,442
3rd Party Equipment- Medium	41,267
Worker Mobilization - Northern Hires	20,809
Worker Mobilization - Southern Hires	55,316
Worker Accommodations and Camp Operations	208,997
Fuel Mobilization (Baffinland)	54,000
Additional Fuel Mobilization	29,000
Mobilization and demobilization of equipment	846,000
Contingency	1,476,202
Supervision, Project Management and Contract Administration	544,000
Engineering Fees	691,000
Total	**5,226,942**

APPENDIX E – REFERENCES

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