



# 2018 MARY RIVER RECLAMATION SECURITY REPORT

February 2, 2018

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February 2, 2018

Qikiqtani Inuit Association  
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**ATTENTION: Stephen Williamson Bathory**

**RE: 2018 MARY RIVER RECLAMATION SECURITY REPORT**

ARKTIS Solutions Inc. is pleased to provide the 2018 Mary River Reclamation Security Report, which was completed on behalf of the Qikiqtani Inuit Association under the terms of the Commercial Lease No.: Q13C301 with Baffinland Iron Mines Corporation.

We trust that the information presented in this report satisfies the requirements of the project; however, it is recommended that further information is sought from Baffinland to reduce the use of assumptions herein. These assumptions on High Uncertainty items is provided under separate cover. Please do not hesitate to contact the undersigned if there are any questions or comments regarding this report.

Sincerely,  
ARKTIS Solutions Inc.

Jason Ash  
Mining Associate

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## 1.0 EXECUTIVE SUMMARY

The calculated reclamation security adjustment pursuant to the Commercial Lease No. Q13C301<sup>1</sup> (Lease), for liability on Inuit Owned Lands (IOL) resulting from a review of Baffinland's 2018 Mary River Reclamation Security Report is an increase of **\$25.66M without inflation or \$87.30M total security held. Total security with inflation is \$91.05M for 2018.** Baffinland Iron Mines Corporation (Baffinland) has proposed an increase of \$14.03M<sup>2</sup> for a total security held of \$75.67M as described in the Baffinland 2018 Marginal Closure Cost Report<sup>3</sup>.

In developing this assessment, ARKTIS Solutions Inc. (ARKTIS) applied the methodologies detailed in the QIA 2014 Comprehensive Security Estimate<sup>4</sup>, and QIA's Abandonment and Reclamation Policy.<sup>5</sup>

Table 1-1 provides a summary of the 2018 security estimates. Please, note, Baffinland's 2018 Security Total Increase is less than the sum of their 2018 Direct and Indirect Costs as they believe they currently over-bonded.

There is a marginal difference in ARKTIS' and Baffinland's Direct Costs primarily due to differences in Unit Rates and the treatment of 3<sup>rd</sup> Party Equipment. There is a significant difference in Indirect Costs for the Phase II demobilization; as well as the treatment of 3<sup>rd</sup> Party Equipment.

**Table 1-1** 2018 Reclamation Security Adjustment.

	Baffinland	QIA	Difference
<b>2018 Security Update Direct Costs</b>	\$5,250,031	\$5,138,028	\$112,003
<b>2017 Security Update Indirect Costs (Excluding Expansion Project Equipment and Materials)</b>	\$5,300,000	\$5,223,700	\$76,300
<b>2018 Security Update Indirect Costs (Expansion Project Equipment and Materials)</b>	\$7,100,000	\$15,300,000	(\$8,200,000)
<b>2018 Security Update Total Indirect Costs</b>	\$12,400,000	\$20,523,700	(\$8,123,700)
<b>2018 Security Total Increase</b>	\$14,031,000	\$25,661,700	(\$11,630,700)
<b>2017 Total Security Posted</b>	\$61,642,000	\$61,642,000	\$0
<b>2018 Total Security Calculated<sup>6</sup></b>	\$75,673,000	\$87,303,700	(\$11,630,700)
<b>2018 Total Security Calculated including inflation</b>	\$75,673,000	\$91,049,000	(\$15,376,000)

<sup>1</sup> QIA and Baffinland (2013). Commercial Lease No. Q13C301. September 6, 2013.

<sup>2</sup> This value is from the 2018 Marginal Closure and Reclamation Cost Report, not calculated as comparison in this report. Baffinland does not include inflation.

<sup>3</sup> Baffinland (2018). 2018 Marginal Closure and Reclamation Financial Security Estimate Rev. 1. January 16, 2018.

<sup>4</sup> ARKTIS (2014). QIA 2014 Comprehensive Security Estimate. December 12, 2014.

<sup>5</sup> QIA (n.d.) Abandonment and Reclamation Policy for Inuit Owned Lands. V. 2.0.

<sup>6</sup> Calculated in 2014 Canadian Dollars.

## 2.0 INTRODUCTION

As requested by QIA, ARKTIS submits this 2018 Mary River Security Report (Report) updating the reclamation security estimate based on Baffinland's and their related information requests<sup>7</sup> for the Mary River Project (Project). The Report, and any requested adjustments to the annual security, is required as per Section 9.2, Item (d), of the Lease<sup>1</sup> as well as by the Nunavut Water Board (NWB) for Baffinland's Type 'A' Water Licence No. 2AM-MRY1325.<sup>8</sup>

The subsequent sections in the Report are structured as follows:

Section 3.0 outlines the methodology and assumptions used in the analysis.

Section 4.0 presents the Direct Costs in the reclamation security estimate.

Section 5.0 presents the Indirect Costs in the reclamation security estimate.

Section 6.0 presents the Direct Costs to be reconciled from previous work plans.

Section 7.0 provides a summary of recommendations found in this report.

Section 8.0 provides a disclaimer for the contents of this Report and a closure of the document.

Appendix A presents a summary table of the Direct Cost line items added.

Appendix B presents a summary table of the Indirect Cost line items added.

Appendix C presents the general terms and conditions of this Report.

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<sup>7</sup> Baffinland (2017). Re: Responses to Information Requests, 2018/19 Annual Security Review. January 10, 2018.

<sup>8</sup> NWB (2015). Type 'A' Water Licence No.: 2AM-MRY1325, Amendment No. 1. July 31, 2015.

### 3.0 METHODOLOGY

In developing this assessment, ARKTIS Solutions Inc. (ARKTIS) applied the methodologies detailed in the QIA 2014 Comprehensive Security Estimate<sup>4</sup>, and QIA's Abandonment and Reclamation Policy<sup>5</sup>, and generally applies the principles outlined by Indigenous and Northern Affairs Canada (INAC).<sup>9</sup> All values have been rounded to the nearest \$100.

The reclamation security estimate provided herein incorporates information from previous QIA reclamation security estimates (2014<sup>4</sup>; 2015<sup>10</sup>; 2015 Addendum<sup>11</sup>; 2016<sup>12</sup>; 2016 Update<sup>13</sup>; 2017<sup>14</sup>; and 2017 Addendum<sup>15</sup>), and an analysis of the changes to planned activities as listed in the Baffinland 2018 Marginal Closure Cost Reports. 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.<sup>16</sup> The reclamation security does not include items outside of the NWB approved<sup>17</sup> Category 1 items<sup>18</sup> for the 2018 Annual Security Review process. 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.

Baffinland values for quantity are used by ARKTIS as QIA is unable to complete an audit on future works. Quantity values may be reconciled in future security reports. As such, differences in Direct Cost values between Baffinland and QIA are typically based on differences in Unit Rates or assumptions regarding the closure scenario. Discrepancies were noted between Baffinland's Report and the Estimate Breakdown Structure (EBS) excel sheet provided by Baffinland. ARKTIS chose to use the EBS values, as it is believed to be the correct value. Cells within this report that use the EBS values instead of the Baffinland 2018 Marginal Closure Cost Report<sup>3</sup> values are highlighted orange.

Differences shown in the various summary tables of reclamation costs are Baffinland values minus QIA values, therefore differences in which QIA values are greater than Baffinland result in a negative value, and are depicted in red font.

Direct costs and Indirect Costs were calculated using unit costs as described in QIA's 2014 Comprehensive Security Estimate<sup>4</sup>, except as noted in Section 5.6 of this reclamation security estimate. The reclamation security estimate was based on the information available at the time of Report development.

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<sup>9</sup> INAC (2002) Mine Site Reclamation Policy for Nunavut.

<sup>10</sup> ARKTIS (2014). QIA 2015 Comprehensive Security Estimate. December 5, 2014.

<sup>11</sup> ARKTIS (2015). QIA Revised 2015 Comprehensive Security Estimate. January 13, 2015.

<sup>12</sup> ARKTIS (2015). QIA 2016 Comprehensive Security Estimate. December 2, 2015.

<sup>13</sup> ARKTIS (2016). 2016 Comprehensive Security Estimate Update. January 8, 2016.

<sup>14</sup> ARKTIS (2016). QIA 2017 Comprehensive Security Estimate. December 2, 2016.

<sup>15</sup> ARKTIS (2017). Baffinland Iron Mines Corporation, Mary River Project, QIA 2017 Addendum Reclamation Security Update Draft. July 19, 2017.

<sup>16</sup> NWB (2014). Type 'B' Water Licence No.: 2BE-MRY-1421. April 17, 2014.

<sup>17</sup> NWB (2017). Type 'A' Water Licence No.: 2AM-MRY1325, Amendment No. 1, Mary River Project; 2018 Annual Security Review Process – General Correspondence Follow-up. December 5, 2017.

<sup>18</sup> Baffinland (2018). 20180110\_BIM\_2018\_Work\_Plan\_Rev1\_Signed.pdf. January 16, 2018.

## 4.0 DIRECT COSTS ANALYSIS

The following sections describe in detail, by reclamation activity, changes to Direct Costs associated with the Baffinland 2018 Marginal Closure Cost Report<sup>3</sup>.

### 4.1 BUILDINGS AND FOUNDATIONS

Table 4-1 shows a detailed summary of Baffinland and QIA's comparison of security for Buildings and Foundations. ARKTIS used the Unit Cost for single modular building teardown – contaminated for Office/Washcars/changerooms whereas Baffinland used the Unit Rate modular building not contaminated. Historically, washcars have been considered to be contaminated<sup>14</sup>.

**ARKTIS recommends Baffinland confirms office/washcars/changerooms require a contaminated reclamation. If Baffinland disagrees, evidence is required to illustrate office/washcars/changerooms do not require a contaminated designation.**

Table 4-1 Buildings and foundations security comparison.

Item	Location	Quantity (m <sup>2</sup> )	Unit Cost		Direct Cost		
			Baffinland	QIA	Baffinland	QIA	Diff
Truck Maintenance Shop	Mine Site	2050	\$142	\$144	\$291,900	\$295,200	(\$3,300)
Rolling Stock Maintenance Shop	Mine Site	2050	\$142	\$144	\$291,900	\$295,200	(\$3,300)
Offices/ washcars/ changerooms	Mine Site	1218	\$59	\$185	\$72,300	\$224,800	(\$152,500)
Offices/ washcars/ changerooms	Milne Port	1218	\$59	\$185	\$72,300	\$224,800	(\$152,500)
Explosives Magazines	Milne Port	141	\$143	\$185	\$18,500	\$26,000	(\$7,500)
<b>Total</b>		<b>6,677</b>			<b>\$746,900</b>	<b>\$1,066,000</b>	<b>(\$319,100)</b>



## 4.2 MECHANICAL AND MOBILE EQUIPMENT

Table 4-2 shows a detailed summary of Baffinland and QIA's comparison of security for mechanical and mobile equipment. As QIA used Baffinland's quantity estimate, the difference in total Direct Costs is due to a difference in Unit Cost.

**Table 4-2 Mechanical and mobile equipment security estimate comparison.**

Item	Quantity (pcs)	Unit Cost		Direct Cost		
		Baffinland	QIA	Baffinland	QIA	Diff
Genset modules	4	\$41,205	\$41,570	\$164,822	\$166,300	(\$1,478)
E-house	1	\$41,205	\$41,570	\$41,205	\$41,600	(\$395)
Mobile Primary Crusher Unit	1	\$2,619	\$2,254	\$2,619	\$2,300	\$319
Mobile Fleet- 793 Haul Truck	1	\$2,619	\$2,254	\$2,619	\$2,300	\$319
994 Loader	1	\$2,619	\$2,254	\$2,619	\$2,300	\$319
992 Loader	4	\$2,619	\$2,254	\$10,475	\$9,000	\$1,475
988 Loader	1	\$2,619	\$2,254	\$2,619	\$2,300	\$319
D10 Dozer	1	\$2,619	\$2,254	\$2,619	\$2,300	\$319
Telehandler	1	\$2,619	\$2,254	\$2,619	\$2,300	\$319
Front End Loader	1	\$2,619	\$2,254	\$2,619	\$2,300	\$319
Fuel/Lube Truck	1	\$2,619	\$2,254	\$2,619	\$2,300	\$319
Mobile Fleet- 745C Rock Truck - TFK00727	1	\$2,619	\$2,254	\$2,619	\$2,300	\$319
Mobile Fleet- 745C Rock Truck - TFK01304	1	\$2,619	\$2,254	\$2,619	\$2,300	\$319
Mobile Fleet- 745C Rock Truck - TFK01306	1	\$2,619	\$2,254	\$2,619	\$2,300	\$319
Mobile Fleet- 745C Rock Truck - TFK01308	1	\$2,619	\$2,254	\$2,619	\$2,300	\$319
Mobile Fleet- 745C Rock Truck - TFK00734	1	\$2,619	\$2,254	\$2,619	\$2,300	\$319
Mobile Fleet- 745C Rock Truck - TFK00743	1	\$2,619	\$2,254	\$2,619	\$2,300	\$319
Mobile Fleet- 745C Rock Truck - TFK01353	1	\$2,619	\$2,254	\$2,619	\$2,300	\$319

Item	Quantity (pcs)	Unit Cost		Direct Cost		
		Baffinland	QIA	Baffinland	QIA	Diff
Mobile Fleet-950M Loader - JIS00277	1	\$2,619	\$2,254	\$2,619	\$2,300	\$319
Mobile Fleet-950M Loader - JIS00251	1	\$2,619	\$2,254	\$2,619	\$2,300	\$319
Passenger bus	2	\$1,494	\$1,561	\$2,988	\$3,100	(\$112)
Mobile Fleet-CS56B - M4M00243	1	\$1,494	\$1,561	\$1,494	\$1,600	(\$106)
Service truck (including a space cab) F250	1	\$941	\$940	\$941	\$900	\$41
<b>Total</b>				\$266,448	\$261,600	\$4,848

It is ARKTIS' opinion that 3<sup>rd</sup> Party Equipment at the Project cannot be landfilled in a reclamation scenario as it is not the property of Baffinland. Within this Report, it is assumed that only items with 3<sup>rd</sup> party owned in the description are not owned by Baffinland.

In this Report, there is no QIA Direct Cost associated with 3<sup>rd</sup> party owned mobile equipment. 3<sup>rd</sup> Party Equipment is considered an Indirect Cost, associated with demobilization, and is discussed in Section 5.2. Table 4-3 shows Baffinland's summary of Direct Costs for 3<sup>rd</sup> party equipment.

**Table 4-3 3<sup>rd</sup> party mobile equipment security estimate comparison.**

Item	Quantity (pcs)	Unit Cost		Direct Cost		
		Baffinland	QIA	Baffinland	QIA	Diff
3rd Party Heavy Mobile Equipment (make up for 'typical' fleet)	78	\$2,619		\$204,272		\$204,272
3rd Party Medium Mobile Equipment (make up for 'typical' fleet)	128	\$1,494		\$191,249		\$191,249
3rd Party Light Mobile Equipment (make up for 'typical' fleet)	188	\$941		\$176,925		\$176,925
<b>Total</b>				<b>\$577,446</b>		<b>\$577,446</b>

### 4.3 SITE WORKS

Table 4-4 shows a detailed summary of Baffinland and QIA's grade and re-contour security estimate comparison. As QIA used Baffinland's quantity estimate, the difference in total Direct Costs is due to a difference in Unit Cost.

**Table 4-4 Site works security estimate comparison.**

Item	Location	Quantity (m <sup>2</sup> )	Unit Cost		Direct Cost		
			Baffinland	QIA	Baffinland	QIA	Diff
Crusher Pad Sedimentation Pond	Mine Site	4,500	\$5.31	\$5.36	\$23,900	\$24,100	(\$200)
Laydown Pad Development (Nuna)	Mine Site	11,400	\$1.81	\$1.93	\$20,600	\$22,000	(\$1,400)
Quarry Development Q5	Milne Port	15,000	\$1.81	\$1.93	\$27,200	\$29,000	(\$1,800)
Laydown Pad Development	Milne Port	282,000	\$1.81	\$1.93	\$510,400	\$544,300	(\$33,900)
Laydown Pad Development (Shipload Stockpiles)	Milne Port	26,000	\$1.81	\$1.93	\$47,100	\$50,200	(\$3,100)
<b>Total</b>		<b>334,400</b>			<b>\$605,300</b>	<b>\$645,500</b>	<b>(\$40,200)</b>

### 4.4 STORAGE TANKS

Table 4-5 shows a detailed summary of Baffinland and QIA's storage tanks security estimate comparison. As QIA used Baffinland's quantity estimate, the difference in total Direct Costs is due to a difference in Unit Cost.

**Table 4-5 Storage tanks security estimate comparison.**

Item	Quantity (ea.)	Unit Cost		Direct Cost		
		Baffinland	QIA	Baffinland	QIA	Diff
Water Tanks (Light Tank)	6	\$2,148	\$2,466	\$12,900	\$14,800	(\$1,900)
Water Tanks (Medium Tank)	1	\$7,387	\$6,610	\$7,400	\$6,600	\$800
Fuel Tanks (Light Diesel Tank)	5	\$3,694	\$3,107	\$18,500	\$15,500	\$3,000
Fuel Tanks (Medium Mobile Diesel Tank)	16	\$10,481	\$9,646	\$167,700	\$154,300	\$13,400
<b>Total</b>				<b>\$206,500</b>	<b>\$191,200</b>	<b>\$15,300</b>

## 4.5 CULVERTS

There are no culverts approved<sup>17</sup> by the QIA or NWB as part of the Category 1 items under the 2018 Work Plan. As such, there are no additional costs associated with this category.

## 4.6 CONSUMABLES

Baffinland and QIA have added consumables to the financial security due to the additional camps being added to site. The additional cost for both estimates is equal to **\$112,128**; based on the 160 additional beds at site and the \$700.80 cost per bed.

## 4.7 FILL APPLICATION

Table 4-6 shows a detailed summary of Baffinland and QIA's fill application security estimate comparison. As QIA used Baffinland's quantity estimate, the difference in total Direct Costs is due to a difference in Unit Cost.

**Table 4-6 Fill application security estimate comparison.**

Item	Location	Quantity (m <sup>2</sup> )	Unit Cost		Direct Cost		
			Baffinland	QIA	Baffinland	QIA	Diff
Fill Application	Mine Site	4,019	\$44.40	\$43.33	\$178,300	\$174,100	\$4,200

## 4.8 CONTAMINATED SOIL REMOVAL

Consistent with the 2014 Security Estimate<sup>4</sup>, ARKTIS has assumed that any contaminated buildings will result in the addition of contaminated soil. The volume being calculated by multiplying their areas by 0.5m in depth. Baffinland excluded contaminated soil from the Baffinland 2018 Marginal Closure Cost Report<sup>3</sup>.

**ARKTIS recommends QIA ask Baffinland, why contaminated soil remediation has been excluded in their 2018 submissions.**

**Table 4-7 Contaminated soil removal security estimate comparison.**

Item	Location	Quantity (m <sup>3</sup> )	Unit Cost		Direct Cost		
			Baffinland	QIA	Baffinland	QIA	Diff
Office/Washcars		51		\$31		\$1,600	(\$1,600)
Truck Maintenance Shop	Mine Site	71		\$31		\$2,200	(\$2,200)
Explosives Facility Garage		71		\$31		\$2,200	(\$2,200)
Rolling Stock Maintenance Shop	Mine Site	71		\$31		\$2,200	(\$2,200)
Offices/washcars/changerooms		1,218		\$31		\$37,500	(\$37,500)
<b>Total</b>		<b>1,483</b>				<b>\$45,700</b>	<b>(\$45,700)</b>

## 5.0 INDIRECT COSTS ANALYSIS

The following subsections describe in detail, by reclamation activity, changes to Indirect Costs resulting from the Report.

The Baffinland 2018 Marginal Closure Cost Report<sup>3</sup> has allocated \$573,000 to account for mobilization and demobilization of equipment and materials to and from site for reclamation. This is stated as 10% of the total Direct Costs. The total Direct Costs is used for multiple calculations such as Project Management, Engineering Fees, and Contingency, described in subsequent sections of this report, where values provided by Baffinland are however, there are large discrepancies between each calculated cost. ARKTIS is therefore uncertain what value Baffinland is using for Direct Costs.

**ARKTIS recommends QIA inquire as to how Baffinland calculates percentages of total Direct Costs. There is a discrepancy in percentages of Direct Cost security amounts for Mobilization and Demobilization (10% - \$573,000), Project Management (9.4% - \$1,206,000), Engineering Fees (3.9% - \$500,000), and Contingency (12.5% - \$1,798,000).**

## 5.1 CONTAMINATED SOIL TREATMENT

Based on the volumes determined in Section 4.8 Contaminated Soil Removal, and consistent with the 2014 Security Estimate Report, ARKTIS has applied a \$13.27/m<sup>3</sup> cost for the treatment of the contaminated soil. Baffinland excluded this Indirect Cost.

**Table 5-1 QIA's contaminated soil treatment security estimate.**

Item	Location	Quantity (m3)	Unit Cost		Indirect Cost		
			Baffinland	QIA	Baffinland	QIA	Diff
Office/Washcars		51		\$13.27		\$700	(\$700)
Truck Maintenance Shop	Mine Site	71		\$13.27		\$1,000	(\$1,000)
Explosives Facility Garage		72		\$13.27		\$1,000	(\$1,000)
Rolling Stock Maintenance Shop	Mine Site	71		\$13.27		\$1,000	(\$1,000)
Offices/washcars /changerooms	Milne Port	1,218		\$13.27		\$16,400	(\$16,400)
<b>Total</b>		<b>1,483</b>			<b>0</b>	<b>\$20,100</b>	<b>(\$65,800)</b>

## 5.2 3<sup>RD</sup> PARTY OWNED EQUIPMENT

As discussed in Section 4.2 Mechanical and Mobile Equipment, Baffinland has placed all new 3<sup>rd</sup> party mobile equipment in a landfill rather than backhauling it. Baffinland does assign an Indirect Cost associated with the mobilization and demobilization of equipment based on 10% of the Direct Costs. Table 5-2 shows QIA's demobilization costs for 3<sup>rd</sup> Party Mobile Equipment.

**Table 5-2 QIA's mobile equipment (3<sup>rd</sup> party owned) security estimate.**

Item	Quantity (pcs)	Unit Cost		Indirect Cost		
		Baffinland	QIA	Baffinland	QIA	Diff
3rd Party Heavy Mobile Equipment (make up for 'typical' fleet)	78		\$15,985		\$1,246,800	(\$1,246,800)
3rd Party Medium Mobile Equipment (make up for 'typical' fleet)	128		\$8,207		\$1,050,600	(\$1,050,600)
3rd Party Light Mobile Equipment (make up for 'typical' fleet)	188		\$2,802		\$526,700	(\$526,700)
<b>Total</b>	<b>394</b>			<b>\$573,000</b>	<b>\$2,824,100</b>	<b>(\$2,251,100)</b>

## 5.3 WORKER MOBILIZATION

Due to the increase in reclamation activities, additional person days are required to reclaim The Project. ARKTIS calculates that an additional 2,481 person days will be required; Baffinland calculated 3,190. The discrepancy noted between Baffinland and ARKTIS person days can likely be attributed to the large amount of mobile mechanical vehicles being landfilled by Baffinland, resulting in substantial time to crush, load and fill. ARKTIS continues to use the 70/30 split between northern and southern workers on 20 day shifts. Baffinland states it continued to use the 70/30 split between southern and northern workers to derive the reclamation cost, but did not show a breakdown of costs differentiating southern and northern workers. ARKTIS shows this breakdown in Table 5-3. As Baffinland did not provide the southern/northern split, only a differential for the total cost was possible.

**Table 5-3 Summary of Baffinland and QIA's worker mobilization security comparison.**

Item	Quantity (person-days)		Unit Cost		Indirect Cost		
	Baffinland	QIA	Baffinland	QIA	Baffinland	QIA	Diff
Southern Communities	2,233	1,737	\$85.45	\$76.62	nil	\$133,100	
Northern Communities	957	744	\$75.00	\$63.16	nil	\$47,000	
<b>Total</b>	<b>3,190</b>	<b>2,481</b>			<b>\$263,000</b>	<b>\$180,100</b>	<b>\$82,900</b>

## 5.4 WORKER ACCOMMODATION

The cost for accommodation and camp operation is assumed \$225.50/person day and includes camp maintenance, catering, housekeeping, and fuel costs is shown in Table 5-4. The differences between ARKTIS and Baffinland are number of person days calculated in Section 4.3.

**Table 5-4 Summary of Baffinland and QIA's worker accommodation security comparison.**

Item	Quantity		Unit Cost		Indirect Cost		
	Baffinland	QIA	Baffinland	QIA	Baffinland	QIA	Diff
Accommodations	3190	2481	\$225.50	\$225.50	\$719,000	\$559,500	\$159,500

## 5.5 FUEL

Based on Baffinland's submissions<sup>3, 18</sup>, no new fuel storage facilities will be constructed in 2018. Therefore, no new fuel backhaul costs are included in this Report. The increase in Fuel Indirect Costs is solely based on the increased fuel usage to complete new activities for Direct Costs. Table 5-5 shows the Indirect Cost comparison for fuel. The following assumptions were included in the estimate.

QIA takes the conservative assumption that fuel abandoned onsite will not be available for use for reclamation activities, as there is no guarantee QIA will have access to the fuel, as another creditor may be awarded this asset. QIA assumes that 50% of total fuel storage capacity will be left at closure and will need to be demobilized from site. As Baffinland did not include additional fuel capacity, additional abandoned fuel was not added in to this estimate. In this Report, no changes have been made to the fuel storage capacity at the Project.

QIA assumes that all fuel required for reclamation will have to be mobilized to site. Contrarily, Baffinland typically assumes it will only need to bring half of the required fuel to complete reclamation activities. In Baffinland's Report, only the total lump sum number was provided.

It is unclear what Baffinland includes within their lump sum reclamation fuel costs such as Worker Accommodation (for heat and power generation), mobile mechanical fuel use, and/or demobilization.

**ARKTIS recommends QIA to request the details of Baffinland's analysis on how they determined their lump sum reclamation fuel costs.**

**Table 5-5 Fuel security comparison.**

Item	Quantity (m3)		Unit Cost		Indirect Cost		
	Baffinland	QIA	Baffinland	QIA	Baffinland	QIA	Diff
Fuel Mobilization	638.2	516	\$400.00	\$380.00	\$241,000	\$196,100	\$44,900

## 5.6 DEMOBILIZATION ALLOCATION FOR EXPANSION PROJECT EQUIPMENT AND MATERIALS

ARKTIS is of the opinion that the items included in the Baffinland 2018 Marginal Closure Cost Report Section 3.3.1.5 Demobilization Allocation for Expansion Project Equipment and Materials may be stored on site while seeking NWB approval. ARKTIS does not agree with using a 10% of capital costs as being sufficient for demobilization. There is no justification provided to suggest that this is reasonable.

ARKTIS has calculated the Indirect Cost to mobilize the expansion project equipment and materials based on the Revenue Tonnes for the equipment assigned to the contractors Thyssen Krupp; EBC; and “Contractor” being shipped to site detailed in the 2018 Work Plan<sup>19</sup>. As detailed by Baffinland these three contractors area associated with the Expansion Project Equipment and Materials. Consequently, ARKTIS’ categorization is based on each contractors’ equipment and not the modules listed by Baffinland. With the exception of mobile equipment, ARKTIS has included all material from these contractors as it is assumed that it will be shipped to site during 2018 as the inventory anticipated to be shipped to site did not change between the 2018 Work Plan Rev. 0<sup>19</sup> and Rev. 1<sup>18</sup>.

ARKTIS has estimated 88,000 Revenue Tonnes for expansion project equipment and material after removing 3<sup>rd</sup> Party Mobile Equipment from the inventory. To reduce costs, ARKTIS estimated the total price per cargo ship instead of basing on a per Revenue Tonne basis. ARKTIS found<sup>20</sup> that it costs approximately **\$1,700,000 per ship** that can carry approximately 10,000 Revenue Tonnes, where that same ship can only carry 8,000 Revenue Tonnes on the last ship voyage to reflect the need for support machinery for loading. Therefore, it would require 9 full ships to be fully loaded to demobilize all Phase II materials and equipment for a total of **\$15,300,000**.

Table 5-6 summarizes the comparison between Baffinland and QIA’s security estimate for the demobilization allocation for expansion project equipment and materials. QIA’s cost is only represented as a total cost as the indirect cost was estimated using a per ship calculation in lieu of a percentage of each module listed.

**Table 5-6 Expansion project equipment demobilization security estimate comparison.**

Item	Location	Unit Cost		Indirect Cost		
		Baffinland	QIA	Baffinland	QIA	Diff
Crushing Module	Milne Port	\$1,500,000		\$1,500,000		
Screening Module	Milne Port	\$1,400,000		\$1,400,000		
Car Dumper Module	Milne Port	\$2,200,000		\$2,200,000		
BMH Conveyors	Milne Port	\$1,500,000		\$1,500,000		
Rail Construction Materials	Milne Port	\$500,000		\$500,000		
<b>Total</b>				<b>\$7,100,000</b>	<b>\$15,300,000</b>	<b>(\$8,200,000)</b>

<sup>19</sup> Baffinland (2017). 2018 Work Plan. November 1, 2017 (Delivered November 11, 2017).

<sup>20</sup> Nunavut Eastern Arctic Shipping (2018). Phone correspondence on January 29, 2018.



## 5.7 CONTINGENCY

ARKTIS has calculated the additional 2018 contingency to be \$770,700, or 15% of Direct Costs as established in the 2014<sup>4</sup>.

The Baffinland 2018 Marginal Closure Cost Report<sup>3</sup> includes an additional contingency of \$1,798,000 or 12.5% of the total Direct Costs, mobilization and demobilization of equipment and materials costs, worker accommodation and camp operation costs, mobilization of workers costs, care and maintenance costs, and closure monitoring/reporting costs.

## 5.8 SHORT TERM CARE AND MAINTENANCE, CLOSURE MONITORING AND REPORTING

ARKTIS previously adopted the reclamation cost proposed by Baffinland for Short Term Care and Maintenance and Closure Monitoring & Reporting. ARKTIS notes that at this time, the Interim Closure and Reclamation Plan being updated by Baffinland, and therefore has not been approved by the QIA.<sup>21</sup> No changes to this cost was made in this Report.

**ARKTIS recommends QIA review the assumptions previously used to determine this cost be examined in subsequent security estimates, if Baffinland continues to change the Project (e.g., another Water Licence or Project Certificate amendment)**

## 5.9 SUPERVISION, PROJECT MANAGEMENT AND CONTRACT ADMINISTRATION

The Report includes a project supervision, management and contract administration Indirect Cost of \$1,206,000 or 9.4% of the total Direct Costs, contaminated soil treatment costs, care and maintenance costs, and closure monitoring/reporting costs. ARKTIS has calculated the 2018 project management fees to be \$472,700, or 9.4% of the total Direct Costs. The difference between QIA's and Baffinland's estimate is based on differing total Direct Costs.

## 5.10 ENGINEERING FEES

The Report includes an engineering, design and execution planning Indirect Cost allowance of \$500,000 or 3.9% of the total Direct Costs. ARKTIS has calculated the 2018 engineering fees to be \$200,400 or 3.9% of the total Direct Costs. The difference between QIA's and Baffinland's estimate is based on differing total Direct Costs.

## 5.11 INFLATION

The unit costs used by both ARKTIS and Baffinland are based on rates and costs derived in 2014 and therefore representative of 2014 Canadian dollars. Baffinland has not applied an adjustment for inflation and change in market conditions. As of September 2016, Baffinland maintained unit rates developed in 2014 are still representative of estimated reclamation costs for the purpose of the 2017/18 Annual Security Review Process as the labor, equipment, and fuel costs used as the basis of the 'first principle' buildup of unit rates have not significantly changed since they were developed. In the 2017 Annual Security Review,

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<sup>21</sup> QIA's October 23, 2015, letter to Baffinland titled, "Baffinland Iron Mines Corporation's Interim Mine Closure and Reclamation Plan – Conditional Approval."

QIA offered to jointly review unit rates with Baffinland. However, since the 2017 Annual Security Review QIA and Baffinland did not complete this work, as Baffinland has not yet replied to QIA's June 2017 email<sup>22</sup>. According to Section 9.6 of the Lease, use of reclamation security is to compensate the landlord for reasonable costs of remediation and reclamation; further Section 4.8 of the Lease requires that rent and other compensation calculated from time to time shall include an annual increase for inflation.

Rather than recalculating unit costs annually, unless otherwise warranted, ARKTIS applied an inflation adjustment, to the total security estimate, to account for rising unit costs as per Section 4.8 of the Lease<sup>1</sup>. In addition, Baffinland was not able to commit to updating the unit rate costs in 2017; as such QIA is applying inflation as was discussed in 2016<sup>23</sup>.

The base year for estimating the inflation increase is October 2014, the year and month the unit costs were calculated. The monthly Commercial Price Index for Canada is published in the Statistics Canada table.<sup>24</sup> In October 2014, the inflation reading was 125.9, which represents the *base year for inflation adjustment* in the equation below.

The current Consumer Price Index for the year and month in which the Annual Security Review is being completed is then taken from the most recent Statistics Canada table, which is November 2017. The Consumer Price Index is 131.3 for November 2017, which represents the current year in the formula below:

The mathematical formula used to determine the *Inflation Adjustment multiplier* is as follows:

$$\text{Inflation Rate} = \frac{CPI_2 - CPI_1}{CPI_1}$$

where:

CPI1 – is the CPI in the initial period

CPI2 – is the CPI in the second period

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<sup>22</sup> QIA (2017). Email: Modification of Unit Rates Memo. June 5, 2017.

<sup>23</sup> QIA (2016). Financial Security Assessment, Application of Inflation, and, Joint Submission to the NWB. December 21, 2016.

<sup>24</sup> CANSIM table 326-0020

## 6.0 SECURITY RECONCILIATION

Baffinland has submitted a reconciliation of items in previous Work Plans. Reconciliation is required as previous estimates have been incorrect or plans have been changed, resulting in incorrect security totals. These changes have been categorized as:

- a) Activities with security allocated, but no longer planned to be conducted.
- b) Activities with security allocated, planned to be conducted but have not occurred.
- c) Activities conducted but no security explicitly allocated.

Direct Costs have been included with the 2018 Report. Indirect Costs for these activities have not been presented by Baffinland and are assumed to have not been considered. ARKTIS is uncertain if additional items in this section are Baffinland owned or 3<sup>rd</sup> Party owned, which based on the reconciliation, would affect the Indirect Costs.

**ARKTIS recommends QIA inquire about how Indirect Costs for security reconciliation has occurred.**

### 6.1 ACTIVITIES WITH SECURITY ALLOCATED, BUT NO LONGER PLANNED TO BE CONDUCTED

Table 6-1 shows a detailed summary of Baffinland and QIA's comparison of security for activities with security allocated but no longer planned to be conducted. Though unit costs remain the same, a difference is noted, it is suspected that this is due to a calculation error.

**Table 6-1 Activities with security allocated, but no longer planned to be conducted security comparison.**

Item	Location	Quantity (pcs)	Unit Cost		Direct Cost		
			Baffinland	QIA	Baffinland	QIA	Diff
Cross Conveyor	Milne Port	-0.17	\$1,329,441	\$1,329,441	(\$221,574)	(\$226,000)	\$4,431

### 6.2 ACTIVITIES WITH SECURITY ALLOCATED, PLANNED TO BE CONDUCTED BUT HAVE NOT OCCURRED.

Baffinland has proposed an additional \$9,571,000 to account for 2017 Work Plan Addendum activities. The substance of this \$9,571,000 was not provided and accounts for a 100% increase in security proposed by Baffinland in the 2017 Work Plan Addendum.

### 6.3 ACTIVITIES CONDUCTED BUT NO SECURITY EXPLICITLY ALLOCATED.

Table 6-2 shows a detailed summary of Baffinland and QIA's comparison of security for grade and re-contour conducted but no security explicitly allocated. The difference in Total Direct Cost is based on a difference in Unit Cost.

**Table 6-2 Grade and re-contour conducted but no security explicitly allocated security comparison.**

Item	Location	Quantity (m <sup>2</sup> )	Unit Cost		Direct Cost		
			Baffinland	QIA	Baffinland	QIA	Diff
Laydown Pad Development (2017 Addendum)	Milne Port	-150,000	\$1.81	\$1.93	(\$271,800)	(\$289,500)	\$17,700
Laydown Pad Development (2017 Work Plan)	Milne Port	81,730	\$1.81	\$1.93	\$148,000	\$157,700	(\$9,700)
Q1 Quarry Expansion	Tote Road	824,500	\$1.81	\$1.93	\$1,492,000	\$1,591,300	(\$99,300)
IT Tower Upgrades - Laydown Pads	Tote Road	33,900	\$1.81	\$1.93	\$61,400	\$65,400	(\$4,000)
Laydown Pad Development (2017 Addendum Allocation)	Mine Site	-15,000	\$1.81	\$1.93	(\$27,200)	(\$29,000)	\$1,800
Laydown Pad Development (2017 Work Plan)	Mine Site	44,250	\$1.81	\$1.93	\$80,100	\$85,400	(\$5,300)
<b>Total</b>		<b>819,380</b>			<b>\$1,482,500</b>	<b>\$1,581,300</b>	<b>(\$98,800)</b>

Table 6-3 shows a detailed summary of Baffinland and QIA's comparison for mechanical equipment not previously allocated. The difference in Total Direct Cost is based on a difference in Unit Cost. The cells that are orange represent ARKTIS' assumption that the correct value to be used is from Baffinland's EBS in lieu of the numbers presented in the Report.

**Table 6-3 Mechanical and Mobile Equipment not previously allocated security comparison.**

Item	Quantity	Unit	Unit Cost		Direct Cost		
			Baffinland	QIA	Baffinland	QIA	Diff
Light Diesel Tanks	5	Ea.	\$3,694	\$3,107	\$18,468	\$15,500	\$2,968
Med. Mobile Diesel Tank	5	m2	\$10,481	\$9,645	\$52,405	\$48,200	\$4,205
Light Tank (Water)	1	m2	\$2,148	\$2,465	\$2,148	\$2,500	(\$352)
Medium Tank (Water)	1	m2	\$7,387	\$6,609	\$7,387	\$6,600	\$787
Office/Washcars	576	m2	\$102	\$185	\$59,000	\$106,300	(\$47,300)
Heavy Mobile Equipment	-30	Ea.	\$5,217	\$2,254	(\$157,000)	(\$67,600)	(\$89,400)
Medium Mobile Equipment	117	Ea.	\$2,707	\$1,561	\$317,000	\$182,700	\$134,300
Light Mobile Equipment	34	Ea.	\$1,588	\$940	\$54,000	\$31,900	\$22,100
Heavy Mechanical Equipment	6	Ea.	\$41,205	\$41,570	\$247,000	\$249,400	(\$2,400)
Medium Mechanical Equipment	93	Ea.	\$4,261	\$4,283	\$396,000	\$398,400	(\$2,400)
Light Mechanical Equipment	14	Ea.	\$1,981	\$1,787	\$28,000	\$25,000	\$3,000
<b>Total</b>					\$1,024,409	\$998,900	\$25,509

Table 6-4 shows a detailed summary of Baffinland and QIA's comparison of security for buildings and foundations not previously allocated. The Buildings and foundations was not originally considered in the initial 2018 Marginal Closure and Reclamation Cost Report<sup>17</sup>. The difference in Total Direct Cost is based on a difference in Unit Cost.

**Table 6-4 Buildings and foundations not previously allocated security comparison.**

Item	Quantity	Unit	Unit Cost		Direct Cost		
			Baffinland	QIA	Baffinland	QIA	Diff
IT Towers Communication Sheds	1,050	m <sup>2</sup>	\$29.69	\$35.76	\$31,200	\$37,500	(\$6,300)

## 7.0 RECOMMENDATIONS

The following is a summary of ARKTIS' recommendations:

1. ARKTIS recommends Baffinland confirms office/washcars/changerooms require a contaminated reclamation. If Baffinland disagrees, evidence is required to illustrate that office/washcars/changerooms do not require a contaminated reclamation.
2. ARKTIS recommends QIA ask Baffinland, why contaminated soil remediation has been excluded in their 2018 submissions.
3. ARKTIS recommends QIA inquire as to how Baffinland calculates percentages of total Direct Costs. There is a discrepancy in percentages of Direct Cost security amounts for Mobilization and Demobilization (10% - \$573,000), Project Management (9.4% - \$1,206,000), Engineering Fees (3.9% - \$500,000), and Contingency (12.5% - \$1,798,000).
4. ARKTIS recommends QIA to request the details of Baffinland's analysis on how they determined their lump sum reclamation fuel costs.
5. ARKTIS recommends QIA review the assumptions previously used for Short Term Care and Maintenance and Closure Monitoring & Reporting to determine this cost be examined in subsequent security estimates, if Baffinland continues to change the Project (e.g., another Water Licence or Project Certificate amendment).
6. ARKTIS recommends QIA inquire about how Indirect Costs for security reconciliation has occurred.
7. ARKTIS recommends QIA work with Baffinland to update the 2016 High Uncertainty Memorandum<sup>25</sup>.

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<sup>25</sup> Adam Grzegorcyk (Hatch) (2016). Mary River Financial Security Estimate – Preliminary Path Forward on Items with High Uncertainty. October 27, 2016.



## 8.0 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 SOLUTIONS INC.

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Jason Ash  
Mining Associate

## APPENDIX A – SUMMARY OF DIRECT COST ADJUSTMENTS

Item	Direct Cost		
	Baffinland	QIA	Diff
Truck Maintenance Shop	\$291,900	\$295,200	(\$3,300)
Rolling Stock Maintenance Shop	\$291,900	\$295,200	(\$3,300)
Offices/washcars/changerooms	\$72,300	\$224,800	(\$152,500)
Offices/washcars/changerooms	\$72,300	\$224,800	(\$152,500)
Explosives Magazines	\$18,500	\$26,000	(\$7,500)
Genset modules	\$164,822	\$166,300	(\$1,478)
E-house	\$41,205	\$41,600	(\$395)
Mobile Primary Crusher Unit	\$2,619	\$2,300	\$319
Mobile Fleet- 793 Haul Truck	\$2,619	\$2,300	\$319
994 Loader	\$2,619	\$2,300	\$319
992 Loader	\$10,475	\$9,000	\$1,475
988 Loader	\$2,619	\$2,300	\$319
D10 Dozer	\$2,619	\$2,300	\$319
Telehandler	\$2,619	\$2,300	\$319
Front End Loader	\$2,619	\$2,300	\$319
Fuel/Lube Truck	\$2,619	\$2,300	\$319
Mobile Fleet- 745C Rock Truck - TFK00727	\$2,619	\$2,300	\$319
Mobile Fleet- 745C Rock Truck - TFK01304	\$2,619	\$2,300	\$319
Mobile Fleet- 745C Rock Truck - TFK01306	\$2,619	\$2,300	\$319
Mobile Fleet- 745C Rock Truck - TFK01308	\$2,619	\$2,300	\$319
Mobile Fleet- 745C Rock Truck - TFK00734	\$2,619	\$2,300	\$319
Mobile Fleet- 745C Rock Truck - TFK00743	\$2,619	\$2,300	\$319
Mobile Fleet- 745C Rock Truck - TFK01353	\$2,619	\$2,300	\$319
Mobile Fleet- 950M Loader - JIS00277	\$2,619	\$2,300	\$319
Mobile Fleet- 950M Loader - JIS00251	\$2,619	\$2,300	\$319
Passenger bus	\$2,988	\$3,100	(\$112)
Mobile Fleet- CS56B - M4M00243	\$1,494	\$1,600	(\$106)
Service truck (including a space cab) F250	\$941	\$900	\$41
3rd Party Heavy Mobile Equipment (make up for 'typical' fleet)	\$204,272		\$204,272
3rd Party Medium Mobile Equipment (make up for 'typical' fleet)	\$191,249		\$191,249
3rd Party Light Mobile Equipment (make up for 'typical' fleet)	\$176,925		\$176,925
Crusher Pad Sedimentation Pond	\$23,900	\$24,100	(\$200)
Laydown Pad Development (Nuna)	\$20,600	\$22,000	(\$1,400)
Quarry Development Q5	\$27,200	\$29,000	(\$1,800)
Laydown Pad Development	\$510,400	\$544,300	(\$33,900)
Laydown Pad Development (Shipload Stockpiles)	\$47,100	\$50,200	(\$3,100)
Water Tanks (Light Tank)	\$12,900	\$14,800	(\$1,900)
Water Tanks (Medium Tank)	\$7,400	\$6,600	\$800
Fuel Tanks (Light Diesel Tank)	\$18,500	\$15,500	\$3,000
Fuel Tanks (Medium Mobile Diesel Tank)	\$167,700	\$154,300	\$13,400
Consumables	\$112,128	\$112,128	\$0



Item	Direct Cost		
	Baffinland	QIA	Diff
Fill Application	\$178,300	\$174,100	\$4,200
Office/Washcars		\$1,600	(\$1,600)
Truck Maintenance Shop		\$2,200	(\$2,200)
Explosives Facility Garage		\$2,200	(\$2,200)
Rolling Stock Maintenance Shop		\$2,200	(\$2,200)
Offices/washcars/changerooms		\$37,500	(\$37,500)
Cross Conveyor	(\$221,574)	(\$226,000)	\$4,426
Laydown Pad Development (2017 Addendum)	(\$271,800)	(\$289,500)	\$17,700
Laydown Pad Development (2017 Work Plan)	\$148,000	\$157,700	(\$9,700)
Q1 Quarry Expansion	\$1,492,000	\$1,591,300	(\$99,300)
IT Tower Upgrades - Laydown Pads	\$61,400	\$65,400	(\$4,000)
Laydown Pad Development (2017 Addendum Allocation)	(\$27,200)	(\$29,000)	\$1,800
Laydown Pad Development (2017 Work Plan)	\$80,100	\$85,400	(\$5,300)
Light Diesel Tanks	\$18,468	\$15,500	\$2,968
Med. Mobile Diesel Tank	\$52,405	\$48,200	\$4,205
Light Tank (Water)	\$2,148	\$2,500	(\$352)
Medium Tank (Water)	\$7,387	\$6,600	\$787
Office/Washcars	\$59,000	\$106,300	(\$47,300)
Heavy Mobile Equipment	(\$157,000)	(\$67,600)	(\$89,400)
Medium Mobile Equipment	\$317,000	\$182,700	\$134,300
Light Mobile Equipment	\$54,000	\$31,900	\$22,100
Heavy Mechanical Equipment	\$247,000	\$249,400	(\$2,400)
Medium Mechanical Equipment	\$396,000	\$398,400	(\$2,400)
Light Mechanical Equipment	\$28,000	\$25,000	\$3,000
IT Towers Communication Sheds	\$31,200	\$37,500	(\$6,300)
<b>Total</b>	<b>\$5,250,031</b>	<b>\$5,138,028</b>	<b>\$112,003</b>

## APPENDIX B – SUMMARY OF INDIRECT COST ADJUSTMENTS

Item	Indirect Cost		
	Baffinland	QIA	Diff
Crushing Module	\$1,500,000	\$15,300,000	(\$8,200,000)
Screening Module	\$1,400,000		
Car Dumper Module	\$2,200,000		
BMH Conveyors	\$1,500,000		
Rail Construction Materials	\$500,000		
Contaminated Soil - Office/Washcars		\$700	(\$700)
Contaminated Soil - Truck Maintenance Shop		\$1,000	(\$1,000)
Contaminated Soil - Explosives Facility Garage		\$1,000	(\$1,000)
Contaminated Soil - Rolling Stock Maintenance Shop		\$1,000	(\$1,000)
Contaminated Soil - Offices/washcars/changerooms		\$16,400	(\$16,400)
3rd Party Heavy Mobile Equipment (make up for 'typical' fleet)	\$573,000	\$1,246,800	(\$2,251,100)
3rd Party Medium Mobile Equipment (make up for 'typical' fleet)		\$1,050,600	
3rd Party Light Mobile Equipment (make up for 'typical' fleet)		\$526,700	
Southern Communities	\$263,000	\$133,100	\$82,900
Northern Communities		\$47,000	
Accommodations	\$719,000	\$559,500	\$159,500
Fuel Mobilization	\$241,000	\$196,100	\$44,900
PM Fees (9.4%)	\$1,206,000	\$472,700	\$733,300
Eng. Fees (3.9%)	\$500,000	\$200,400	\$299,600
Contingency (12.5%/15%)	\$1,798,000	\$770,700	\$1,027,300
<b>Total</b>	<b>\$12,400,000</b>	<b>\$20,523,700</b>	<b>(\$8,123,700)</b>

## **APPENDIX C – 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 Solutions 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.