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March 31, 2023

File: G22L1-005

Katie Oliver
KBL Environmental Ltd.
#17 Cameron Road
P.O. Box 1895
Yellowknife, NT X1A 2P4

Re: KBL Inuvik Soil Treatment Facility – Revised Security Estimate

Dear Katie,

The Gwich'in Land and Water Board met on March 28, 2023, to consider KBL Environmental Ltd.'s revised security estimate which was submitted to the Board on December 23, 2023, as a requirement of Water Licence G22L1-005 Part C, Condition 2 and Board direction dated November 23, 2022. In consideration of the information and updated RECLAIM model provided by KBL, as well as comments and recommendations provided by The Government of the Northwest Territories Water Resources Division, the Board has adjusted the security requirement under G22L1-005 Schedule 2 from \$450,116 to \$503,632.

The reasons for this decision are attached. Also attached is a copy the revised Licence. Please ensure that, in accordance with the Licence, the revised security deposit is posted with the Minister within 90 days of this notice.

Please direct written questions or concerns regarding this letter to GLWB executive Leonard DeBastien

Sincerely,

Elizabeth Wright
Chair, Gwich'in Land and Water Board

BCC'd to: GLWB Distribution List



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Reasons for Decision

Issued pursuant to section 72.25 of the *Mackenzie Valley Resource Management Act* (MVRMA) and subsection 26(1) of the *Waters Act*.

Water Licence Security Adjustment	
File Number	G22L1-005
Company	KBL Environmental Ltd.
Project	Inuvik Soil Treatment Facility
Location	Inuvik, NT
Activity	Waste Deposit
Date of Decision	March 28, 2023

1.0 DECISION

On March 28, 2023, the Gwich'in, Land and Water Board (GLWB or Board) met and considered the revised Closure Cost Estimate submitted by KBL Environmental Ltd. (Licensee) to the Board in accordance with Water Licence G22L1-005 Part C, Condition 2 and Board directive issued November 23, 2022.¹ After reviewing the evidence gathered during the regulatory proceeding, the Board has made the following decisions:

- 1) To set the security deposit in Schedule 2, item 1 at \$503, 632.

These Reasons for Decision set out the Board's regulatory process and rationale for decisions regarding this submission.

¹ See glwb.com online public registry for [KBL - Inuvik Soil Treatment Facility - Type B Water Licence Issuance Package and Reasons for Decision - Nov23_22.pdf](#)

2.0 **BACKGROUND**

KBL Environmental currently maintains a security deposit of \$450, 116 in accordance with Part C Condition 1 of Water Licence G22L1-005:

The Licensee shall post and maintain a security deposit with the Minister in accordance with Schedule 2. The Licensee shall not commence activities until the security deposit has been accepted by the Minister.

Part C Condition 2 of the Licence states:

Upon request of the Board, the Licensee shall submit an updated Closure Cost Estimate using the current version of RECLAIM or another method acceptable to the Board.

On November 23, 2022, the GLWB directed KBL to submit an updated Closure Cost Estimate to the Board by December 23, 2022.

On December 23, 2022, KBL submitted an updated closure cost estimate, RECLAIM model and confidential third-party quotes to the Board.²

On January 9, 2023, the cost estimate and RECLAIM model were circulated for public review on the Online Review System.³ The confidential quotes were also shared with the Government of the Northwest Territories Department of Environment and Natural Resources (GNWT - ENR).

By the review comment deadline of January 30, 2023, comments and recommendations had been received from GNWT - ENR. As part of its submission, GNWT- ENR submitted a RECLAIM Model and explanatory memo prepared by a third-part consultant.⁴

KBL responded to the comments and recommendations by the response deadline of February 13, 2023.

3.0 **REASONS**

In determining an appropriate security amount for this Licence, the Board reviewed KBL's updated Closure Cost Estimate, GNWT-ENR's Closure Cost Estimate, consultant memo, and comments and recommendations provided by the department, as well as KBL's responses to GNWT-ENR's recommendations.

A summary of the Board's final Closure Cost Determination, as was derived using the RECLAIM model,⁵ is shown in Table 1, below. Discussion and reasons for each determination, and how they compare to KBL and GNWT-ENR determination are found in Table 2. 0

² See glwb.com online public registry for [KBL - Inuvik Soil Treatment Facility - KBL Updated Closure Cost Estimate - Dec23 22](#) and [KBL - Inuvik Soil Treatment Facility - KBL Updated Closure Cost Estimate RECLAIM model- Dec23 22](#)

³ See new.onlinereviewssystem.ca for [KBL - Updated Security Estimate - Inuvik STF \(G22L1-005\)](#)

⁴ See glwb.com online public registry for [KBL - Inuvik Soil Treatment Facility - Security Determination - Reviewer Comment Summary table with attachments - Mar31 23](#) and [KBL - Inuvik Soil Treatment Facility - GNWT ENR Closure Cost Estimate - RECLAIM Model - Mar31 23](#)

⁵ See glwb.com online public registry for [KBL - Inuvik Soil Treatment Facility - GLWB Closure Cost Determination - RECLAIM Model - Mar31 23](#)

Table 1: GLWB Closure Cost Determination

CAPITAL COSTS	COMPONENT NAME	COST	LAND LIABILITY	WATER LIABILITY
WELLS AND FACILITIES		\$0	\$0	\$0
BUILDINGS AND EQUIPMENT		\$7,500	\$7,500	\$0
CHEMICALS AND CONTAMINATED SOIL MANAGEMENT		\$215,705	\$107,853	\$107,853
SURFACE AND GROUNDWATER MANAGEMENT		\$159,895	-	\$159,895
INTERIM CARE AND MAINTENANCE		\$0	-	\$0
INFLATION	22.05%	\$10,369	\$5,103	\$5,266
	SUBTOTAL: Capital Costs	\$393,469	\$120,456	\$273,013
	PERCENT OF SUBTOTAL		31%	69%
INDIRECT COSTS		COST	LAND LIABILITY	WATER LIABILITY
MOBILIZATION/DEMOBILIZATION		\$0	\$0	\$0
POST-CLOSURE MONITORING AND MAINTENANCE		\$10,170	\$3,113	\$7,057
ENGINEERING	5%	\$19,673	\$6,023	\$13,651
PROJECT MANAGEMENT	5%	\$19,673	\$6,023	\$13,651
HEALTH AND SAFETY PLANS/MONITORING & QA/QC		\$0	\$0	\$0
BONDING/INSURANCE		\$0	\$0	\$0
CONTINGENCY	15%	\$60,559	\$18,539	\$42,020
MARKET PRICE FACTOR ADJUSTMENT		\$0	\$0	\$0
INFLATION	22.05%	\$87	\$27	\$61
	SUBTOTAL: Indirect Costs	\$110,163	\$33,725	\$76,438
TOTAL COSTS		\$503,632	\$154,181	\$349,451

Table 2: Comparison of KBL, ENR and GLWB Estimates, with GLWB Reasons for Decision

Capital Costs	KBL Estimate	ENR Estimate	GLWB Estimate	GLWB Reasons
	Total Costs			
Wells and facilities	\$0	\$0	\$0	N/A
Buildings and equipment	\$500	\$13,402	\$7,500	<p>1. KBL inputted \$500 cost for AST removal and disposal. KBL had further lumped \$7,500 AST cost with cost to remove liner and contour site (\$50,000), as input value in water management tab totaled \$57,500.</p> <p>ENR recommended separating out the cost for AST removal (\$7,500), and placing it in the buildings and equipment tab.</p> <p>GLWB verified third party quotes for these costs and accepts ENR recommendation.</p> <p>2. ENR recommended additional costs, totaling \$5,902 for removal and disposal of onsite shed, water treatment plant and fuel tanks.</p> <p>KBL's responded that these items would either not be on site or not require removal.</p> <p>GLWB has not included costs for these items.</p>
Chemicals and contaminated soil management	\$157,000	\$270,705	\$215,705	<p>3. KBL inputted a lump sum of \$140,000 to treat and transport 6361 m³ of soil, plus \$14,000 to treat reagent material and \$1,000 for a year of soil investigation.</p> <p>ENR recommend an additional \$55K for transportation of treated soil to adjacent landfill, as per 3rd party quotes.</p> <p>KBL responded that their inputted value included both soil treatment and transportation costs.</p> <p>GLWB reviewed 3rd party quotes, however it is unclear as to how KBL's \$140K value was determined.</p> <p>GLWB has maintained KBL's inputted cost and has not added additional costs for transport, as the inclusion of transport costs within the \$140K cost appears</p>

				<p>reasonable.</p> <p>4. ENR recommended adding additional costs, totaling \$58,705 for investigations and treatment of soil below the liner, and for the transport and disposal of untreatable soil. ENR recommended accounting for 100m3 of soil requiring disposal post closure.</p> <p>KBL responded that this amount is considered by the contingency section and should not be a standalone item.</p> <p>GLWB notes the challenges of treating soil in a northern environment, and the expectation that treatment could take longer than one year and/or experience failure seems reasonable.</p> <p>GLWB agrees that the management of a conservative volume (100m3) is a reasonable cost expectation, and suggests that any volumes above 100m3 would be captured by the contingency values.</p> <p>GLWB accepts ENR recommendations and has included the cost estimates provided by ENR.</p>
Surface and groundwater management	\$151,785	\$160,395	\$159,895	<p>5. KBL had inputted a lump sum of \$57,500 for removal of liner and site contour.</p> <p>ENR Recommended allocating \$7500 to AST removal, in Buildings and Facilities Tab, and maintain \$50,000 cost as per 3rd party quotes.</p> <p>GLWB reviewed quotes and accepts ENR recommendations. It has included this cost distribution in the estimate.</p> <p>6. ENR recommend including an additional \$500 cost for the removal of the water treatment plant.</p> <p>KBL responded that the WTP was mobile, and only brought to site when needed.</p>

				<p>GLWB has not included costs for this item.</p> <p>7. ENR recommended adding a \$200 cost for the removal of discharge pipe.</p> <p>GLWB accepts ENR recommendations and has included this cost in its estimate.</p> <p>8. ENR recommended that Water treatment include the addition of \$15,000 for AST pump out and \$536 for AST contingency.</p> <p>GLWB confirms these values were included in KBL third party quotes, but not inputted into KBL estimate.</p> <p>GLWB accepts ENR recommendations, and has included these costs</p>
Interim care and maintenance	\$0	\$0		
Inflation (0% vs. 22.05%)	\$0	\$11,358	\$10,369	<p>9. ENR calculations included Inflation applied to RECLAIM unit costs.</p> <p>KBL responded that inflation should not be applied as quotes were current.</p> <p>GLWB confirms that inflation applied only to RECLAIM standard costs – which are circa 2014 - and not to third-party quotes.</p>
SUBTOTAL: Capital Costs	\$309,285	\$455,860	\$393, 469	
Indirect Costs	Total Costs			
Mobilization/demobilization	\$0	\$0	\$0	N/A
Post-closure monitoring and maintenance	\$0	\$10,170	\$10, 170	<p>10. ENR recommended costs totaling \$10,170 for groundwater well monitoring and decommissioning costs following facility reclamation.</p> <p>GLWB has accepted this recommendation and included these costs.</p>
Engineering (5%)	\$15,464	\$22,793	\$19, 673	11. Indirect cost calculated as 5% of capital costs.
Project management (5%)	\$15,464	\$22,793	\$19, 673	12. Indirect cost calculated as 5% of capital costs.

Health and safety plans/ monitoring and quality assurance/quality control (0%)	\$0	\$0	\$0	
Bonding/insurance (0%)	\$0	\$0	\$0	
Contingency (20% vs. 15%)	\$61,857	\$69,918	\$60,559	13. KBL contingency calculations applied 20% to capital costs. ENR recommended contingency be applied 15% to capital costs, as well as to post-closure monitoring / maintenance and inflation costs. GLWB accepts ENR recommendation for 15% contingency applied to capital costs and to post-closure monitoring / maintenance and inflation costs.
Market price factor adjustment (0%)	\$0	\$0	\$0	N/A
Inflation (0% vs. 22.05%)	\$0	\$87	\$61	14. ENR recommended that calculations included Inflation applied to RECLAIM unit costs. KBL responded that inflation should not be applied as quotes were current. GLWB confirms that inflation applies to RECLAIM standard costs only and not third-party quotes.
SUBTOTAL: Indirect Costs	\$92,785	\$125,761	\$110,163	
TOTAL COSTS	\$402,070	\$581,621	\$503,632	

4.0 CONCLUSION

In consideration of the evidence provided to the Board during this proceeding, the Board is satisfied that the security requirements of Licence G22L1-005 are adequate to ensure mitigations and remedial measures can be carried out in the event of non-compliance with an Inspector's orders as required, or to carry out closure and reclamation if the site is abandoned, as per subsection 35(1) of the [Waters Act](#).

In rendering this decision the Board is also satisfied that its legislative requirements, as outlined in paragraph 26(5)(d) and subsection 35(1) of the [Waters Act](#) have have been met.

SIGNATURE



Elizabeth Wright, Chair
Gwich'in Land and Water Board

March 31, 2023

Date