

# Rio Algom Mining LLC

June 14, 2016

Mr. Matthew Meyers  
Chief, Materials Decommissioning Branch (Acting)  
NMSS/DUWP/NDP  
U.S. Nuclear Regulatory Commission  
Two White Flint North, Mailstop T-8F05,  
1545 Rockville Pike,  
Rockville, MD 20852

Subject: Rio Algom Mining LLC – Ambrosia Lake Facility  
License No. SUA-1473, Docket No. 40-8905  
2016 Surety Update – License Condition #22

Dear Mr. Meyers,

Rio Algom Mining LLC (RAML) is pleased to submit the 2016 annual surety update for the above referenced source material license. The surety calculations are consistent with 10CFR40, Appendix A, Criteria 9 and 10.

The work over the last fiscal year consisted of final grading, revegetation of disturbed soils, and the closure of Impoundment 2. The work completed within the last year resulted in a decrease in the anticipated completion costs of the direct activity costs to \$2,143,502 compared against the 2012 surety calculated amount of \$9,952,003.

The indirect costs in this submittal were revised following the previously received NRC guidance. The 2016 estimate of indirect plus total contingency is \$1,523,905.

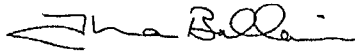
The total estimated cost to complete the work by a third-party is approximately \$4,217,519. The enclosed tables summarize the revised 2016 surety calculations. RAML currently retains a financial surety instrument in the amount of \$16,000,000. RAML requests approval to retain the current financial surety instrument in place. However, RAML expects to initiate discussions with the NRC regarding reduction of the surety amount within the next twelve months.

The attached tables provide supporting information to justify cost estimates (10CFR Part 40, Appendix A, Criterion 9 and Appendix C, NUREG-1620). A summary table is included as well as calculations for the Groundwater, Lined Pond Closure, Monitor Well Closure and Radiological Surveying and Monitoring. The Tailings Reclamation and Mill Decommissioning are complete.

The work represented in the tables is merely a repackaging of a portion of the remaining construction activities required to fully close the site. The document "Design for Construction Mill Site Reclamation, Amendment 1" did not include any new engineering designs or any new reclamation plans. All items included in the current amendment, and pending future amendments, have been previously reviewed by the NRC and incorporated in the site's Radioactive Material License and there are no changes to the established closure plan.

If you have any questions on this matter or require additional information, please contact me at (209)736-4803 or by email at [Theresa.Ballaine@bhpbilliton.com](mailto:Theresa.Ballaine@bhpbilliton.com).

Respectfully submitted,  
**Rio Algom Mining LLC.**

A handwritten signature in black ink, appearing to read "Theresa Ballaine". The signature is written in a cursive style with a long horizontal stroke at the end.

Theresa Ballaine  
Site Manager

cc: NRC Document Control

Attachments



**RIO ALGOM MINING LLC - AMBROSIA LAKE OPERATION**  
**FINANCIAL ASSURANCE COST ALLOCATION**  
**Tailings Reclamation**

May 26, 2016

Activity	Unit/Quantity	Unit Rate	Task Estimate	Source	Date of Estimate	Real Dollars as of April 1, 2015
<u>Cleanup Hot Spots</u>	<u>CY</u>	<u>\$/CY</u>	<u>\$</u>			
Contaminated Soil Removal	0	3.99	0	Complete - June 2013	--	--
Clean Soil Backfill	0	4.09	0	Complete - June 2013	--	--
<u>Site Wide Revegetation</u>	<u>Acres</u>	<u>\$/Acre</u>	<u>\$</u>			
Seeding and Mulch	0	1,004.32	0	Complete - April 2016	--	--
<u>100 Year Channel</u>	<u>CY</u>	<u>\$/CY</u>	<u>\$</u>			
Channel Excavation	0	9.80	0	Complete - June 2013	--	--
Backfill and Embankment	0	3.60	0	Complete - June 2013	--	--
1" Rock Placement	0	4.41	0	Complete - June 2014	--	--
7.8" Rock Placement	0	11.59	0	Complete - June 2014	--	--
<u>Borrow Site Reclamation</u>	<u>CY</u>	<u>\$/CY</u>	<u>\$</u>			
Overburden Excavation and Fill	0	0.85	0	Complete - June 2014	--	--
<u>Pond 7 &amp; 8 Erosion and Diversion</u>	<u>CY</u>	<u>\$/CY</u>	<u>\$</u>			
Backfill	0	4.56	0	Complete - June 2014	--	--
Channel Excavation	0	13.44	0	Complete - June 2014	--	--
Channel Fill	0	3.32	0	Complete - June 2014	--	--
1" Rock Placement	0	5.28	0	Complete - June 2014	--	--
9.2" Rock Placement	0	10.27	0	Complete - June 2014	--	--
		<b>Total</b>	<b>0.00</b>			<b>0.00</b>

**RIO ALGOM MINING LLC - AMBROSIA LAKE OPERATION**  
**FINANCIAL ASSURANCE COST ALLOCATION**  
**Groundwater**

May 26, 2016

Activity	Task Estimate	Source	Date of Estimate	Estimate Date CPI	April 30, 2016 CPI	Inflation	Real Dollars as of May 1, 2016
Monitor Well Replacement	0	Complete - January 2013	--				--
Monitor Well Closure <i>(see Monitor Well Closure tab)</i>	134,301	Consultant Estimate	10/12/2012	231.32	239.26	1.03	138,914
Stability Monitoring Reporting Program	300,000	Consultant Estimate	6/24/2015	238.64	239.26	1.00	300,783
Groundwater Monitoring within LTSM	400,000	Consultant Estimate	6/24/2015	238.64	239.26	1.00	401,044
<b>Total</b>	<b><u>834,301.43</u></b>						<b><u>840,741.13</u></b>

Notes

CPI - Consumer Price Index

**RIO ALGOM MINING LLC - AMBROSIA LAKE OPERATION  
FINANCIAL ASSURANCE COST ALLOCATION  
Mill Decommissioning**

May 26, 2016

Activity	Unit/Quantity	Unit Rate	Task Estimate	Source	Date of Estimate	Real Dollars as of April 1, 2015
<u>Mill Yard Soils Clean-Up &amp; Pond Closure</u>	<u>CY</u>	<u>\$/CY</u>	<u>\$</u>			
Contaminated Soil Consolidation	0	4.27	0	Complete - May 2013	--	--
Contaminated Soil Removal	0	5.52	0	Complete - May 2013	--	--
Clean Backfill and Regrading	0	5.11	0	Complete - May 2015	--	--
Radon Barrier Placement	0	16.14	0	Complete - June 2014	--	--
1" Rock Placement	0	5.41	0	Complete - June 2014	--	--
7.8" Rock Placement	0	7.67	0	Complete - June 2014	--	--
<u>Building Demolition</u>			<u>\$</u>			
Asbestos Disposal	Lump Sum		0	Complete - March 2015	--	--
Haz Waste Disposal	Lump Sum		0	Complete - March 2015	--	--
Building Demolition	Lump Sum		0	Complete - March 2015	--	--
Substation Fencing (powerline relocation)	Lump Sum		0	Complete - June 2015	--	--
		<b>Total</b>	<b>0</b>			<b>0</b>

**RIO ALGOM MINING LLC - AMBROSIA LAKE OPERATION**  
**FINANCIAL ASSURANCE COST ALLOCATION**  
**Lined Pond Closure**

May 26, 2016

Activity	Unit/Quantity	Unit Rate	Task Estimate	Source	Date of Estimate	Estimate Date CPI	April 30, 2016 CPI	Inflation	Real Dollars as of May 1, 2016
<u>Pond 2 Cover Rock Purchase</u>	<u>CY</u>	<u>\$/CY</u>	<u>\$</u>						
Pond 2 - Cover Rock Purchase - 1"	0	19.92	0	Complete - April 2016	6/8/2015				-
Pond 2 - Cover Rock Purchase - 3.2"	0	20.42	0	Complete - April 2016	6/8/2015				-
Pond 2 - Cover Rock Purchase - 7.8"	0	22.38	0	Complete - April 2016	6/8/2015				-
Pond 2 - Cover Rock Purchase - 9.2"	0	22.38	0	Complete - April 2016	6/8/2015				-
<u>Pond 2 Cover Placement</u>	<u>CY</u>	<u>\$/CY</u>	<u>\$</u>						
Pond 2 - Cover Clay Placement	0	5.00	0	Complete - Dec 2015	2/26/2013				
Pond 2 - Regrade	0	2.76	0	Complete - May 2015	--				
Pond 2 - Cover Rock Placement - 1" (Includes Apron)	0	4.07	0	Complete - April 2016	2/26/2013				
Pond 2 - Cover Rock Placement - 3.2"	0	12.31	0	Complete - April 2016	2/26/2013				
Pond 2 - Apron/Channel Rock Placement - 7.8"	0	11.56	0	Complete - April 2016	2/26/2013				
Pond 2 - Apron/Channel Rock Placement - 9.2"	0	11.02	0	Complete - April 2016	2/26/2013				
<u>Section 4 Hot Spot Removal</u>	<u>CY</u>	<u>\$/CY</u>	<u>\$</u>						
Remaining Contaminated Soil	0	17.60	0	Complete - October 2014	--				-
Scanning and Survey (from Rad Survey & Monitor sheet)	Lump Sum		366,078	Consultant Estimate	2/3/2010	216.74	239.26	1.10	404,115
Dose Assessment (from Rad Survey & Monitor sheet)	Lump Sum		67,930	Consultant Estimate	2/3/2010	216.74	239.26	1.10	74,988
<u>Section 4 Final Contour</u>	<u>Acres</u>	<u>\$/Acre</u>	<u>\$</u>						
Regrade	300	256.00	76,800	Contractor Estimate	2/26/2013	232.17	239.26	1.03	79,147
Reseed	300	1,004.32	301,296	Contractor Estimate	2/26/2013	232.17	239.26	1.03	310,504
<u>Borrow Site Reclamation</u>	<u>CY</u>	<u>\$/CY</u>	<u>\$</u>						
Overburden Excavation and Fill	0	0.85	0	Complete - April 2016	2/26/2013				
<u>Highway Overcrossing Removal</u>	<u>CY</u>	<u>\$/CY</u>	<u>\$</u>						
Bridge Removal and Demolition	Lump Sum		0	Complete - January 2015					-
			<b>Total</b>						<b>868,753.28</b>

**Notes**

CPI - Consumer Price Index

**RIO ALGOM MINING LLC - AMBROSIA LAKE OPERATION  
FINANCIAL ASSURANCE COST ALLOCATION  
Monitor Well Closure**

May 26, 2016

Well ID	Total Depth (ft)	Cost Breakdown - Based on 2013 project for NMED	Date of Estimate	Estimate Date CPI	April 30, 2016 CPI	Inflation	Real Dollars as of May 1, 2016
<b>Alluvial Wells:</b>							
5-03 R	56.25	Linear Feet Abandoned in 2013					
5-04	64.05	Total Plug and Abandon Cost					
5-08 R	76.52	Cost per foot					
5-73 R	35.69	Future Linear Feet to Abandon					
31-61	29.32	<b>Estimated Cost</b>	10/12/2012	231.32	239.26	1.03	<b><u>138,913.67</u></b>
31-65	41.47						
32-59	28.26						
<b>TRB Wells:</b>							
19-77 TRB	288.22	Nominal 6" wells					
		Plugged and abandoned in accordance with					
31-02 TRB R	128.33	New Mexico Environment Department Ground Water Quality					
		Bureau, Monitoring Well Construction and Abandonment					
31-67 TRB	97.52	Guidelines, 2011.					
36-01 TRB	58.41						
36-02 TRB	57.51	Work estimated based on:					
<b>TRA Wells:</b>							
30-01 TRA	207.35	The reaming of the wells					
		Grout backfill					
31-01 TRA R	213.58	Surface reclamation					
33-01 TRA	181.31	Reseeding					
<b>Dakota Wells:</b>							
5-02 KD	190.54						
17-01 KD	807.90						
30-02 KD	313.38						
30-48 KD R	358.59						
32-45 KD R	269.91						
36-06 KD	198.27						
<b>Total Linear Feet</b>	<b>3,702.38</b>						
Data from 1st Half 2013 semi-annual NRC report							

*Notes*

*CPI - Consumer Price Index*

*\*Estimate included in Line 8 of "Groundwater" Table*



**RIO ALGOM MINING LLC - AMBROSIA LAKE OPERATION**  
**FINANCIAL ASSURANCE COST ALLOCATION**  
**Radiological Survey and Monitoring**

May 26, 2016

<b>Gamma Scanning and Survey</b>		<b>Date of Estimate</b>	<b>Estimate Date CPI</b>	<b>April 30, 2016 CPI</b>	<b>Inflation</b>	<b>Real Dollars as of May 1, 2016</b>
Gamma Survey of Windblown Area	\$52,361	--				\$52,361
Gamma Survey of ARC Areas	\$23,398	--				\$23,398
Gamma Survey of Unaffected and Mine Affected Areas	\$12,329	--				\$12,329
Resurvey of Windblown Area	\$3,892	--				\$3,892
<b>Total Gamma Scanning and Survey</b>	<b>\$91,980</b>	3/1/2016	239.26	239.26	1	<b>\$91,980</b>
<b>Soil Sampling</b>		<b>Date of Estimate</b>				<b>Real Dollars as of May 1, 2016</b>
Soil Sampling of Windblown Area	\$163,810	--				\$163,810
Soil Sampling of ARC Areas	\$97,620	--				\$97,620
Capture Pipeline Remediation FSS data	\$12,668	--				\$12,668
<b>Total Soil Sampling</b>	<b>\$274,098</b>	3/1/2016	239.26	239.26	1.00	<b>\$274,098</b>
<b>Total Scanning and Survey</b>	<b>\$366,078</b>					<b>\$366,078</b>
<b>QA/QC and Reporting</b>		<b>Date of Estimate</b>				<b>Real Dollars as of May 1, 2016</b>
Prepare Quality Assurance Project Plan (QAPP)	\$7,530	--				\$7,530
Produce Final Status Survey Report	\$48,400	--				\$48,400
Respond to NRC RAIs	\$12,000	--				\$12,000
<b>Total QA/QC &amp; Reporting</b>	<b>\$67,930</b>	3/1/2016	239.26	239.26	1.00	<b>\$67,930</b>
<b>Total</b>	<b>\$434,008</b>					<b>\$434,008</b>

**Notes**

CPI - Consumer Price Index

\* Estimates from - Proposal to Implement Final Status Survey Plan at the Rio Algom Mining, LLC --ERG

