

Rio Algom Mining LLC

May 22, 2015

Mr. Tom McLaughlin
United States Nuclear Regulatory Commission
Mail Stop T-8F5
Washington, DC 28555

Subject: SUA-1473, Monthly Sampling Results for First Quarter 2015 for Rio Algom Mining, LLC's Ambrosia Lake Facility

Dear Mr. McLaughlin:

This letter represents reporting of the first quarter 2015 analytical results from monthly sampling for the following constituents, in accordance with Condition 34.F of SUA-1473:

- Gross alpha, beryllium, and cadmium in well 36-06 KD
- Gross alpha in well 31-02 TRB-R
- Molybdenum and nitrate + nitrite as N in well 32-45 KD-R

The tables included in this report summarize the sampling results. Bolded results indicate an exceedance of Groundwater Protection Standards (GPS) or Alternate Concentration Limits (ACL).

Well 36-06 KD

Monthly sampling results from well 36-06 KD show that beryllium (Be) and cadmium (Cd) continue to hover at concentrations near or above the GPS (Table 1). At the time of the original ACL petition, Be and Cd were not present in elevated concentrations. Since the time of the ACL petition (2001), Be and Cd concentrations have increased in a pattern that appears consistent with effects caused by surface reclamation activities. RAML submitted a Corrective Action Plan (CAP) for Be and Cd in 2007, and has been monitoring those two parameters on a monthly basis since then. Since the concentrations are not stabilizing below the GPS, RAML will propose to amend License SUA-1743 to add ACLs for these constituents. Until such time as ACLs are granted, monthly monitoring of Be and Cd will continue. Corrected gross alpha (gross alpha minus uranium) remains below the GPS of 56 pCi/L.

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Table 1. Beryllium, Cadmium, and Gross Alpha in 36-06 KD

Date	Well 36-06 KD		
	Beryllium (mg/L)	Cadmium (mg/L)	Corrected Gross Alpha (pCi/L)
GPS	0.01	0.01	56
1/19/2015	0.01847	0.0053	-131
2/11/2015	0.0201	0.0064	-39.4
3/06/2015	0.01642	0.0124	-58.4

Well 31-02 TRB-R

Monitoring well 31-02 TRB-R is a replacement well that was installed in December 2012. Original well 31-02 TRB was in accelerated monthly monitoring for uranium (U) and gross alpha (GA). When the well was replaced, RAML continued to monitor for those constituents on a monthly basis. Since 2013, GA concentrations have exceeded the GPS three times, including in February 2015 when the concentration of GA was 21.4 picocuries per liter (pCi/L) (Table 2). U concentrations have remained below the ACL. Monthly monitoring for GA and U in well 31-02 TRB-R will continue throughout 2015 as the well continues to stabilize.

Table 2. Gross Alpha (Corrected) in 31-02 TRB-R

Date	Well 31-02 TRB-R	
	Corrected Gross Alpha (pCi/L)	Uranium (mg/L)
GPS / ACL	21	1.6
1/19/2015	-15.6	0.0039
2/11/2015	21.4	0.0039
3/06/2015	-14.2	0.0048

Well 32-45 KD-R

Molybdenum (Mo) and nitrate (NO₃) + nitrite (NO₂) as N continue to exceed their respective GPSs (Table 3). Pursuant to Condition 34.F and Criterion 5D of 40CFR, RAML proposed a CAP to address the exceedances of Mo and NO₃ + NO₂ as N in well 32-45 KD-R in the *First Half 2014 Groundwater Stability Monitoring Report*. Since well 32-45 KD-R is a newly-installed replacement well (replacing well 32-45 KD), RAML will continue monthly monitoring for these parameters through 2015 in order to evaluate apparent stabilization trends in the data. The ACL for NO₃ + NO₂ as N was established based on the geochemical conditions present in the groundwater in Dakota wells in 2006. Evidence of temporal and spatial geochemical variability indicates that the ACLs and GPSs established for original well 32-45 KD may not be applicable for compliance in replacement well 32-45 KD-R.

Table 3. Molybdenum and Nitrate in 32-45 KD-R

Date	Well 32-45 KD-R	
	Molybdenum (mg/L)	Nitrate+Nitrite as N (mg/L)
GPS / ACL	0.06	22.8
1/19/2015	0.456	28.5
2/17/2015	0.460	26.7
3/06/2015	0.505	22.9

Monthly sampling results for the wells and constituents presented above will continue throughout 2015 and will be reported in the Semi-Annual Groundwater Stability Monitoring Reports and the NRC Quarterly Reports.

Please contact me or Theresa Ballaine (209)736-4803 with any questions.

Rio Algom Mining LLC

Anthony Baus

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