



SUSANA MARTINEZ
Governor
JOHN A. SANCHEZ
Lieutenant Governor

State of New Mexico
ENVIRONMENT DEPARTMENT

Ground Water Quality Bureau

Harold Runnels Building
1190 Saint Francis Drive, PO Box 5469
Santa Fe, NM 87502-5469
Telephone (505) 827-2855 Fax (505) 827-2965
www.nmenv.state.nm.us



DAVE MARTIN
Secretary
BUTCH TONGATE
Deputy Secretary

CERTIFIED MAIL—RETURN RECEIPT REQUESTED

November 22, 2011

Mr. Billy Ray, Ambrosia Lake Site Manager
Rio Algom Mining LLC
P.O. Box 218
Grants, NM 87020

RE: Discharge Permit-169 renewal; Discharge Permit-362 renewal and modification, and associated Stage 1 abatement plan revision—Rio Algom Mining LLC Ambrosia Lake area sites, McKinley County, New Mexico

Dear Mr. Ray:

As follow-up to our September 6, 2011 meeting, the New Mexico Environment Department ("NMED") herein presents actions that Rio Algom Mining LLC ("RAML") shall undertake in order to maintain compliance with New Mexico ground water protection regulations, as codified within New Mexico Water Quality Control Commission ("WQCC") 20.6.2 NMAC regulations.

Discharge Permit-169 renewal

Discharge Plan ("DP")-169 was first approved by the New Mexico Environmental Improvement Division ("NMEID") for operation of the Ambrosia Lake uranium mill on March 30, 1984 (letter from NMEID to Kerr-McGee Corporation; "RE: Discharge plan approval for DP-169"), and last renewed on November 15, 1995 (letter from NMED to Quivira Mining Company; "RE: Discharge plan renewal, Quivira Mining Company Ambrosia Lake Uranium Mill, DP-169").

RAML shall submit an updated application for renewal of DP-169, as specified by the WQCC regulations 20.6.2.3106.C and 20.6.2.3107 NMAC, within **one hundred twenty (120) days** of RAML's receipt of this letter or by **March 30, 2012**. With respect to renewal of DP-169, NMED reminds RAML of its responsibility to demonstrate compliance with the Stage 1 and Stage 2 abatement requirements in 20.6.2.4101 through 20.6.2.4115 NMAC, as detailed previously in NMED's letter to RAML dated October 15, 2010 ("RE: Rio Algom Mill site, completion of Stage 1 and Stage 2 abatement requirements, DP-169").

DP-362 renewal and modification:

DP-362 was first approved on July 29, 1985 for stope leaching operations in the Section 17, 15, 19, 22, 23, 24, 30, 30W, 33, and 35 mines, and was last renewed on August 7, 1999 (Letter from NMED to Quivira Mining Company, "RE: Discharge plan renewal and modification, Quivira Mining Company, old stope leaching, DP-362"). RAML requested renewal for DP-362 in May 7, 2004; on June 20, 2005, NMED notified RAML that its renewal application was administratively incomplete. RAML submitted a request to perform abatement activities under 20.6.2.3109E(1)(b) and 20.6.2.4115 NMAC (letter from RAML to NMED, March 5, 2008; "RE: Request pursuant to Section 3109E (1) (b) regarding a

Mr. Billy Ray, Rio Algom

RE: Discharge Permit-169 renewal; Discharge Permit-362 renewal and modification, and associated Stage 1 abatement plan revision—Rio Algom Mining LLC Ambrosia Lake area sites, McKinley County, New Mexico

November 22, 2011

groundwater abatement plan”), which NMED approved on April 23, 2008 (letter from NMED to RAML, “**RE:** Request pursuant to Section 3109.E(1)(b) regarding a groundwater abatement plan and request for extension for submittal of Stage 1 abatement plan related to Discharge Permit 362, Old stope leach project, Ambrosia Lake, New Mexico”).

Within **one hundred twenty (120) days** of RAML’s receipt of this letter or by **March 30, 2012**, RAML shall submit an updated application for renewal and modification of existing DP-362. In accordance with the discussion during our September 6, 2011 meeting, modification of this DP upon renewal shall incorporate all current and future abatement activities under DP-362 (thereby superseding the permission granted by NMED on April 23, 2008 to conduct abatement activities under 20.6.2.4000 NMAC) and expired DPs-67, -71, and -264, as well as any future abatement activities to address possible environmental impacts to areas outside of the access-controlled perimeter of RAML’s Ambrosia Lake uranium mill that may have originated from RAML’s millsite, as currently regulated under DP-169. NMED advises RAML that NMED may levy permit fees additional to the DP-362 renewal fee to account for these abatement activities that were previously regulated under the other three DPs.

DP-362 abatement activities

Stage 1 abatement work completed by RAML

Following is a brief summary of abatement activities that previously have been approved by NMED or completed by RAML:

DP-362

NMED conditionally approved a Stage 1 abatement plan proposal for former stope leaching operations at 12 mines that RAML operated under DP-362 (Letter from NMED to RAML, April 28, 2009; “Conditional approval of the Stage 1 abatement plan proposal for the Rio Algom Mining LLC’s Ambrosia Lake Mines”). RAML subsequently clarified that it had not operated stope leaching operations in 4 of the 12 mines, although RAML owns the surface rights for 2 of these mines (email from Terry Fletcher [RAML] to Jerry Schoeppner [NMED], January 25, 2010; “**RE:** DP-362”). Therefore, RAML is responsible for abatement of contamination associated with 10 mines, as necessary. RAML submitted a workplan that included development of a comprehensive historical database containing project-relevant ground water quality data pursuant to approval Condition 2, and proposed monitoring locations pursuant to Condition 3 (Intera, Inc. on behalf of RAML, August 24, 2009; “**RE:** work plan for database development, Rio Algom Mining LLC’s Stage 1 abatement plan, Ambrosia Lake mines”). Subsequently, RAML verbally rescinded the historical ground water quality database workplan, and committed to submittal of a comprehensive ground water monitoring plan.

DP-67

NMED conditionally approved a Stage 1 abatement plan proposal that RAML submitted under DP-67 (Letter from NMED to RAML, March 13, 2009; “Conditional approval of Stage 1 abatement plan proposal, Section 36/36, Ambrosia Lake, New Mexico”). RAML has completed many of the activities under this workplan, such as defining the magnitude and extent of contamination in soil through gamma surveying and soil sampling (RAML, November 8, 2005, “**RE:** Section 35 and 36 mine dewatering project”), and installing monitoring wells (Intera Incorporated, prepared for RAML, October 26, 2007; “Evaluation of impacts from Section 35 and 36 mine dewatering, Ambrosia Lake valley, New Mexico”) and Geoprobe sampling points to confirm and define the extent of alluvial ground water contamination. RAML has verbally committed to submitting a workplan to install monitoring wells to define the horizontal and vertical extent of ground water contamination.

Mr. Billy Ray, Rio Algom

RE: Discharge Permit-169 renewal; Discharge Permit-362 renewal and modification, and associated Stage 1 abatement plan revision—Rio Algom Mining LLC Ambrosia Lake area sites, McKinley County, New Mexico

November 22, 2011

Required DP-362 Stage 1 abatement plan revisions

As stated previously, NMED and RAML have agreed in principle to address, under a renewed and modified DP-362, all remaining abatement activities that previously were required under current and expired DPs-67, -71, and -362, as well as potential offsite impacts currently regulated under DP-169.

Pursuant to the WQCC regulations 20.6.2.1203.A(9) and 20.6.2.3109E NMAC, within **one hundred twenty (120) days** of RAML's receipt of this letter or by **March 30, 2012**, RAML shall submit a revised comprehensive Stage 1 abatement plan proposal under DP-362 to characterize potential contamination of environmental media that may have originated from operations on RAML-owned properties. Elements of this revised Stage 1 abatement plan proposal shall include, but not necessarily be limited to, the following investigational activities:

- A workplan to characterize potential contaminant impacts to the Arroyo del Puerto drainage system sediments, which may be associated with historical mining and milling activities that were conducted at RAML-operated properties; such potential impacts include seepage and/or discharges from the RAML's millsite, the Section 35 and 36 mine dewatering operations, Section 4 evaporation ponds, and former stope leaching operations at the Section 17, 19, 30, 30W, 33, and 35 (Township 14 north, Range 9 west), 22, 23, 24, and 25 (Township 14 north, Range 10 west) mines.
- A workplan for installation, and associated sampling and analysis, of alluvial aquifer monitoring wells to further characterize ground water contamination associated with Section 35 and 36 mine operational discharges, including, but not limited to, a monitoring well in Section 3 in order to establish saturated conditions in the alluvium not influenced by seepage from the former Section 4 evaporation ponds (see Condition 2 in NMED, March 13, 2009; "RE: Conditional approval of Stage 1 abatement plan proposal, Section 35/36, Ambrosia Lake, New Mexico").
- A workplan for installation, and associated sampling and analysis, of a bedrock aquifer monitoring network to characterize potential ground water contamination associated with former stope leaching operations at the above-specified 10 mines, and with the former Section 4 (Township 13 north, Range 9 west) evaporation ponds operations. Data from this monitoring network shall be used to verify and calibrate RAML's previously-submitted ground water flow model. Wells proposed under this workplan shall include, but not be limited to, additional monitoring wells, as appropriate, to characterize possible ground water contamination originating from former stope leaching operations that were conducted at the RAML-owned mines identified previously (see Conditions 1 and 3 in NMED, April 28, 2009; "RE: Conditional approval of the Stage 1 abatement plan proposal for the Rio Algom Mining LLC's Ambrosia Lake mines").
- A workplan to evaluate the potential for alluvial ground water contamination associated with the Section 35 and 36 former mine dewatering operations to have impacted ground water in underlying bedrock aquifers via anthropogenic and/or geologic interconnections (see Condition 1 in NMED, March 13, 2009; "RE: Conditional approval of Stage 1 abatement plan proposal, Section 35/36, Ambrosia Lake, New Mexico").
- Compilation and evaluation of RAML's historical ground water quality data by aquifer (see Conditions 2 and 8 in "RE: Conditional approval of the Stage 1 abatement plan proposal for the Rio Algom Mining LLC's Ambrosia Lake mines," NMED, April 28, 2009). As noted above, NMED understands that RAML no longer intends to compile a historical ground water quality database, as was proposed previously (see Intera Incorporated on behalf of RAML, August 24, 2009; "RE: Work plan for database development, Rio Algom Mining LLC's Stage 1 abatement plan, Ambrosia Lake mines"). Therefore, RAML also must document the reasons why RAML will not construct this database, and propose an alternate means by which Conditions 2 and 8 shall be addressed, for NMED approval.
- Development of a site conceptual model for contaminant impacts to ground water, including all contaminants of concern and the projected timeframe for restoration success (see Condition 7 in

Mr. Billy Ray, Rio Algom

RE: Discharge Permit-169 renewal; Discharge Permit-362 renewal and modification, and associated Stage 1 abatement plan revision—Rio Algom Mining LLC Ambrosia Lake area sites, McKinley County, New Mexico

November 22, 2011

NMED, April 28, 2009 ; **RE:** Conditional approval of the Stage 1 abatement plan proposal for the Rio Algom Mining LLC's Ambrosia Lake mines").

Required documentation submittals:

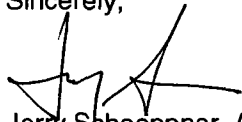
Within **fourteen (14) days** of RAML's receipt of this letter or by **December 7, 2011**, RAML shall submit documentation, in accordance with NMED's April 7, 2010 letter ("**RE:** Status of existing Discharge Permits for Rio Algom projects in the Ambrosia Lake area") for the following completed site activities:

- Reclamation and closure of surface facilities, shafts, vent hole(s), tailings sand backfill hole(s), and other features associated with former dewatering and reclamation operations for the Section 35 and 36 mines;
- Surface reclamation activities that were undertaken to achieve a 100 mrem/yr surface radiation level, following Section 35 and 36 mine backfill operations;
- Section 4 pond closures and surface reclamation;
- Surface reclamation activities undertaken to address previous mine stope leaching operations.

Additionally, NMED requests RAML to submit a letter report evaluating relevant recently-acquired ASPECT aerial gamma radiation survey data (U.S. Environmental Protection Agency Office of Emergency Management, August, 2011; "Aerial radiological survey, Ambrosia Lake uranium mines," and associated Google Earth files) with respect to the efficacy of surface reclamation activities that were performed for the Section 4 ponds, Section 35 and 36 mine backfill operations, and mine stope leaching operations, as well as previous Stage 1 abatement findings for its properties, within **thirty (30) days** of RAML's receipt of this letter or by **December 30, 2011**.

Please contact David L. Mayerson of NMED's staff at (505) 476-3777 or by email at david.mayerson@state.nm.us if you should have any questions on the content of this letter.

Sincerely,



Jerry Schoeppner, Acting Chief
Ground Water Quality Bureau
New Mexico Environment Department

Copies:

David L. Mayerson, NMED
Dr. Tom McLaughlin, NRC

JS/dlm