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Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

February 14, 2013

Alan Cox, Project Manager
Homestake Mining Company
Grants Reclamation Project
P.O. Box 98
Grants, NM 87020

RE: Homestake Mining Company—Conditional Temporary Permission to discharge: Phase 2 of "TPP alluvial pilot testing work plan," Sections 26 and 27 (Township 12 North, Range 10 West)

Dear Mr. Cox:

During a meeting on January 17, 2013, Homestake Mining Company ("HMC") discussed with the New Mexico Environment Department ("NMED") activities that are detailed in HMC, December 3, 2012¹ ("Work Plan"), Section 4.2 ("Phase 2—Alluvial pilot test"). These activities are associated with HMC's evaluation of utilizing tripolyphosphate ("TPP") solution injection to immobilize uranium in ground water as uranium phosphate precipitate. At that meeting it was determined by NMED that completion of the proposed Work Plan activities would require a Temporary Permission to Discharge. The ground water uranium contamination at the HMC Site, which originated from seepage from tailings impoundments created during prior uranium milling operations, has impacted ground water in four aquifers underlying the Site. Ongoing Site ground water remediation methodologies to date have comprised source control and ex-situ treatment of contaminated ground water.

In 2010, NMED approved an initial evaluation of the TPP treatment technology in a pilot test conducted on the Large Tailings Pile ("LTP"), determining that the proposed activity did not require modification of existing Discharge Permit DP-200 ("DP-200") since the testing utilized untreated ground water that already was being used to flush the LTP without constituting a new discharge.² Subsequently NMED approved activities that are detailed in Section 4.1 ("Phase 1—hydraulic evaluation") of the Work Plan.³ These Phase 1 activities, as summarized from the Work Plan and as modified by HMC, January 29, 2013,⁴ comprise the following:

- Installation of wells as detailed in the Work Plan Table 4 ("Well network and construction for Pilot Test S") and Table 5 ("Well network and construction for Pilot Test X") at two locations shown in Work Plan Figure 1 ("Pilot Test S location") and Figure 2 ("Pilot Test X location");

¹ Arcadis prepared on behalf of HMC, December 3, 2012. "TPP alluvial pilot testing work plan."

² NMED, November 22, 2010. "RE: Treatment alternatives testing in the Large Tailing Pile (LTP)"

³ NMED, December 10, 2012. "RE: Homestake Mining Company partial approval and comments—"TPP alluvial pilot testing work plan (December 3, 2012)."

⁴ HMC, January 29, 2013, "Re: Response to letter dated December 10, 2012 for TPP pilot testing."

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- Baseline monitoring of these wells for constituent concentrations as detailed in Work Plan Table 6 ("Alluvial pilot test analyte lists") plus chloride and arsenic;
- Tracer testing through injection of fluorescein mixed with ground water from the Alluvial aquifer;
- Monitoring for hydraulic evaluation.

As documented in HMC, January 29, 2013, the activities comprising Phase 1 are proposed to occur between March 11 and April 26, 2013.

Under Phase 2 of the Work Plan, as modified by HMC, January 29, 2013, which is the subject of this Temporary Permission, HMC has proposed injection of an amendment solution, comprising TPP and a tracer, at the two pilot test locations that are located in Section 26 (i.e., Pilot Test X location) and Section 27 (i.e., Pilot Test S location) of Township 12 North, Range 10 West. The objective of these injection activities is to achieve an in-situ concentration of approximately 1000 milligrams/liter as phosphate at dose response wells that are located at a 10-foot radius of influence ("ROI") from the injection well locations. Additional Phase 2 activities will include the following:

- Injection monitoring both before and during active solution injection, as detailed in Table 9 ("Alluvial pilot test monitoring program") of the Work Plan;
- Six months of performance monitoring, as detailed in Work Plan Table 6 plus chloride and arsenic⁵ and in Work Plan Table 9 ("Alluvial pilot test monitoring program");
- Long-term stability evaluation of uranium phosphate precipitants through soil coring and sampling, and injection of reverse osmosis product water into the injection well.

As documented in HMC, January 29, 2013, the amendment solution injection activities under this phase of the Work Plan are proposed to occur between May 27 and May 31, 2013.

NMED previously has required HMC to seek ground water contaminant treatment alternatives to contaminated ground water land application.⁶ NMED has considered that the locations of the pilot testing proposed under Work Plan Phase 2 are within areas of the Alluvial aquifer in which ongoing HMC ground water remedial operations cause reversal of the natural ground water gradient to capture all ground water in collection wells through maintenance of a hydraulic barrier by water injection. Additionally HMC has submitted a contingency plan, as required in NMED, December 10, 2012, to define the acceptable limits of continued test operation that will be protective to human health and the environment, as well as possible actions to address unexpected results that are not protective⁷.

NMED has reviewed data provided in Arcadis, December 3, 2012 as well as HMC's responses in HMC, January 29, 2013, and has concluded in accordance with 20.6.2.3106.B NMAC that the requested Temporary Permission for TPP solution injection is necessary to further the deployment of alternative treatment to contaminated ground water land application and to further progress on ground water restoration at the HMC Site. Importantly NMED has considered that the risk of failure of this process to human health and the environment is mitigated through its deployment within the hydraulic barrier, which effects capture of all ground water within the hydraulic barrier.

In granting this Temporary Permission for this discharge, NMED imposes the following condition:

1. Within the 30 days of HMC's receipt of this Temporary Permission, or no later than March 15, 2013, HMC shall submit to NMED for review a detailed plan to evaluate the sensitivity of uranium phosphate precipitate solubility at one or both pilot test locations to potential changes in ground water quality.

HMC shall comply with all terms and conditions contained herein, all of which are enforceable by NMED

⁵ See HMC, January 29, 2013, p. 3.

⁶ NMED, April 17, 2012. "RE: Homestake Mining Company Site—Conditional Temporary Permission granted to discharge: land application of contaminated Alluvial aquifer ground water in Sections 28 and 34 (Township 12 North, Range 10 West)"

⁷ HMC, January 29, 2013, Attachment 1.

Mr. A. Cox, Homestake Mining Company

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pursuant to 20.6.2.3104 NMAC and NMSA 1978 Sections 74-6-5 and 75-6-10. HMC is advised that this Temporary Permission to discharge does not relieve HMC of liability if its activities hereunder should result in actual pollution of surface or ground water, which may be actionable under other laws and/or regulations.

Pursuant to 20.6.2.3106.B NMAC, the term of this Temporary Permission shall be 120 consecutive days from the start of TPP solution injection to either pilot test location. If HMC intends to change the disposition of any discharge relating to this Temporary Permission at any time prior to or during the duration of this Temporary Permission, HMC shall notify NMED prior to the intended change.

Please contact David L. Mayerson at (505) 476-3777 or at david.mayerson@state.nm.us if you should have any questions.

Sincerely,



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

copies:

Sairam Appaji, EPA
Kathryn Becker, NMED
John Buckley, NRC
Candace Head-Dylla, BVDA
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JS/dlm