



DEPARTMENT OF ENERGY
Environmental Management Los Alamos Field Office (EM-LA)
Los Alamos, New Mexico 87544

EMLA-2020-1471-02-001

June 4, 2020

Mr. Kevin Pierard
Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6313

Subject: Request for Extension of Assessment Report for the Evaluation of Conditions in the Regional Aquifer around Well R-70

- References
1. Letter EM-LA-2020-1001-00-001, D.E. Hintze to J.E. Kieling, "Response to NMED's Letter Dated August 21, 2019; Approval extension Request for Submittal of Two Drilling Work Plans for Monitoring Well R-35c and R-73," dated October 28, 2019
 2. Letter, J.E. Kieling to D.E. Hintze, "Results from Regional Groundwater Monitoring Well R-70," dated July 12, 2019
 3. Letter EMLA-2020-1151-02-001, A.Q. Duran to D. Cobrain, "Submittal of the Assessment Work Plan for the Evaluation of Conditions in the Regional Aquifer Around Well R-70," dated December 16, 2019
 4. Letter, K. Pierard to A.Q. Duran, "Approval, Submittal of the Assessment Work Plan for the Evaluation of Conditions in the Regional Aquifer around Well R-70, Los Alamos National Laboratory," dated April 14, 2020
 5. Letter EMLA-2020-1393-02-001, A.Q. Duran to K. Pierard, "U.S. Department of Energy Environmental Management Los Alamos Field Office Transition to Essential Mission Critical Activities Notification," dated March 31, 2020
 6. Letter EMLA-2020-1437-02-001, A.Q. Duran to K. Pierard, "Response to April 16, 2020, New Mexico Environment Department Email, Impacts from Cr IM Shutdown," dated April 29, 2020

Dear Mr. Pierard:

The U.S. Department of Energy (DOE) Environmental Management Los Alamos Field Office (EM-LA) is requesting an extension for submittal of the report documenting the evaluation of conditions in the regional aquifer around well R-70 (hereafter the R-70 assessment report) due to the New Mexico Environment Department (NMED) by June 17, 2020. The R-70 assessment report is the result of the designated area managers' agreement documented in a letter from EM-LA to NMED dated October 28, 2019 (Reference 1). The letter documents the minutes of two meetings held on September 4 and 17, 2019. The letter states

Fundamentally, DOE and NMED (the Parties) are committed to protecting human health and the environment, and agree to cooperate and coordinate necessary actions to effectively address the challenges of current Chromium plume in the regional

groundwater aquifer. The Parties further agree that decisions between the parties must be based on scientific viable data and information. Based upon these mutual interests and as a result of the good faith discussions between the DAMs, the Parties have agreed to the following path forward in lieu of the direction NMED provided in the letter dated July 12, 2019 (Reference [2]):

"In order to expeditiously and effectively address current concerns by the parties; the Parties agree that DOE will submit an assessment Work Plan for NMED 's review and approval by December 17, 2019. The Work Plan will include the following components: 1) specific activities to be conducted by DOE to further evaluate the conditions of the regional groundwater and to perform an assessment within nine months; 2) a drilling work plan for regional well R-35(c); 3) a proposed evaluation for consideration of drilling regional well R-73; and 4) an implementation schedule.

The Parties also agree to meet and confer to reconsider the drilling of regional monitoring well R-35(c) based on information and evaluation included in an assessment report to be prepared and submitted to NMED by June 17, 2020. The Parties are committed to facilitate the implementation of necessary actions as expeditiously as possible to ensure protection to human health and the environment."

The "Assessment Work Plan for the Evaluation of Conditions in the Regional Aquifer Around Well R-70" was submitted to NMED on December 16, 2019 (Reference 3) and was subsequently approved by NMED on April 14, 2020 (Reference 4).

The objective of the R-70 assessment report is to present the assessment of multiple lines of inquiry into the nature of the chromium concentration distribution between screens 1 and 2 in R-70 and whether there are groundwater monitoring data gaps downgradient of R-70. One specific aspect of the assessment pertains to the adequacy of existing sentinel monitoring wells R-35a and R-35b upgradient of Los Alamos County water-supply well, PM-3. The lack of sufficient analytical data from groundwater monitoring well R-70 affects the ability to present a complete report by the specified June 17, 2020, due date. The assessment of the geochemistry and hydrology in the R-70 area relies on confidence in the analytical data from R-70, and the current data set from R-70 is considered insufficient to support a complete assessment. Additionally, groundwater modeling being conducted to support the assessment of monitoring data gaps relies heavily on good model calibration and confidence in the R-70 data, as a calibration target is considered essential.

The following narrative explains the lack of sufficient analytical data available from R-70 at present. To date, analytical data are available for screen 1 only from May 2019 and for screen 2 from May and November 2019. The May 2019 data are from samples collected at the end of aquifer tests in each screen. Following the aquifer tests, a packer was deployed between well screens pending installation of the 2-screen Baski sampling system. Competing priorities during the summer and early fall of 2019 led to available Baski systems being deployed at wells undergoing conversion from Westbay to Baski sampling

systems. Installation of the Baski system in R-70 was completed in early November 2019. During any Baski-system installation, groundwater flow between screens is expected during the period between when the temporary packer is removed and Baski system is set. At R-70, approximately 5500 gal. of cross-flow is estimated to have occurred from screen 2 into screen 1. During the November 2019 sampling event, samples were first collected from screen 2, and because screen 2 was the source of cross-flow during the Baski installation, no purging beyond standard protocol was necessary. Because screen 1 received the cross-flow water, purging of the cross-flow volume was considered necessary to obtain samples representative of screen 1. During the purge, a recurring electrical issue was observed that resulted in the pump motor shutting off after approximately 10 min. of run time. While the motor would restart, performance was not acceptable and the purge was not completed. The issue was attributed to programmable settings in the pump control panel. During troubleshooting and operations of the pump, work crews bypassed electrical safety controls and did not follow approved work control documentation and Newport News Nuclear BWXT-Los Alamos, LLC (N3B) electrical safety protocols. N3B paused electrical work activities until corrective actions could be implemented. Activities at R-70 had not resumed prior to the March 23, 2020, transition to Essential Mission Critical Activities (EMCA) status in response to the COVID-19 pandemic. A series of corrective actions will be implemented to enable restarting monitoring activities at R-70.

Experience with new deep monitoring wells drilled at Los Alamos National Laboratory shows that they often require sampling over a period of time following installation and development before the data settle into what is considered representative of aquifer conditions as opposed to local conditions immediately surrounding the well that may have been induced by drilling or cross-flow. Analytical and field parameter data from multiple rounds are used to assess representativeness.

Restarting operations at R-70 and periodic sampling was scheduled to begin in March 2020. However, under EMCA status restarting operations at R-70 was not deemed to be mission critical, and therefore the final well construction work was delayed. To date, neither the final fieldwork nor the periodic sampling has been performed. Written notification of transition to EMCA was provided to NMED on March 31, 2020 (Reference 5).

Additional information specified in the assessment work plan but not yet obtained is the evaluation of the actual response in chromium concentrations in R-70 from chromium interim measure (IM) operations. Specifically, data from a sustained period of extraction at CrEX-5 and injection into CrIN-1 and CrIN-2 have not been collected. Characterization of the potential response at R-70 to IM operations is considered necessary for estimates that will be provided through modeling. As part of the transition to EMCA, IM operations were shut down. Since that time, an evaluation of potential chromium plume rebound associated with the shutdown was provided to NMED on April 29, 2020 (Reference 6).

EM-LA proposes that a revised date for the assessment report be based on at least three consecutive monthly samples that will be collected after EM-LA has restarted field activities at R-70 and the Chromium Interim Measure is operational. Protocols for restarting operations are under development to enable fieldwork to be conducted safely. EM-LA will communicate to NMED when these field activities resume and will provide the schedule for resumption of sampling at R-70, including removal of additional cross-flow after the completion of corrective actions required to support restarting fieldwork operations.

At that time, EM-LA requests that the parties establish a new due date for the assessment report based on time needed to collect and incorporate the necessary data from R-70. In addition to the necessary data from R-70, additional observations of chromium concentration response following a sustained period of extraction of CrEX-5 and injection into CrIN-1 and CrIN-2 will benefit the overall assessment.

If you have any questions, please contact Danny Katzman at (505) 690-7346 (danny.katzman@em-la.doe.gov) or Cheryl Rodriguez at (505) 414-0450 (cheryl.rodriguez@em.doe.gov).

Sincerely,

Arturo Duran
Digitally signed by Arturo Duran
Date: 2020.06.04 09:52:09 -06'00'

Arturo Q. Duran
Compliance and Permitting Manager
Environmental Management
Los Alamos Field Office

CC (letter emailed):

Laurie King, EPA Region 6, Dallas, TX
Raymond Martinez, San Ildefonso Pueblo, NM
Dino Chavarria, Santa Clara Pueblo, NM
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Pamela T. Maestas

From: Pierard, Kevin, NMENV <Kevin.Pierard@state.nm.us>
Sent: Thursday, June 4, 2020 10:48 AM
To: Pamela T. Maestas
Cc: Dhawan, Neelam, NMENV; Emily M. Day; Regulatory Documentation; Martinez, Cynthia, NMENV; cheryl.rodriguez@em.doe.gov; Bruce A. Robinson; Danny Katzman
Subject: RE: Submittal to NMED on 6/4/2020 of Extension Rqst for R-70 Rpt

I acknowledge receipt of your extension request.

From: Pamela T. Maestas <pamela.maestas@em-la.doe.gov>
Sent: Thursday, June 4, 2020 10:18 AM
To: Pierard, Kevin, NMENV <Kevin.Pierard@state.nm.us>
Cc: Dhawan, Neelam, NMENV <neelam.dhawan@state.nm.us>; Emily M. Day <Emily.Day@em-la.doe.gov>; Regulatory Documentation <RegDocs@EM-LA.DOE.GOV>; Martinez, Cynthia, NMENV <cynthia.martinez1@state.nm.us>; cheryl.rodriguez@em.doe.gov; Bruce A. Robinson <bruce.robinson@em-la.doe.gov>; Danny Katzman <danny.katzman@em-la.doe.gov>
Subject: [EXT] Submittal to NMED on 6/4/2020 of Extension Rqst for R-70 Rpt

Mr. Pierard,

Attached for submittal is a pdf of the following:

- Request for Extension of Assessment Report for the Evaluation of Conditions in the Regional Aquifer around Well R-70 (letter)

Please acknowledge receipt of this submittal by responding to this email.

Let me know if you have any questions.

Thank you.

Pamela T. Maestas

Regulatory Documentation Manager

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