EMID-702643

N3B-Los Alamos
1200 Trinity Drive, Suite 150
Los Alamos, New Mexico 87544
(505) 257-7690

Environmental Management
Los Alamos Field Office
1200 Trinity Drive, Suite 400
Los Alamos, New Mexico 87544
(240) 562-1122

Date: March 30, 2023
Refer To: N3B-2023-0114

RECEIVED

MAR 30 2023

GROUND WATER
QUALITY BUREAU

Justin D. Ball, Chief
Ground Water Quality Bureau
New Mexico Environment Department
1190 S. St. Francis Drive
Santa Fe, NM 87502-5469

Subject: Request for 45-Day Extension Regarding Notification of Cessation of Injection Activities, Los Alamos National Laboratory Underground Injection Control Wells, Discharge Permit 1835

Dear Mr. Ball:

On December 12, 2022, the New Mexico Environment Department (NMED) Ground Water Quality Bureau (GWQB) issued the "Corrective Action Plan Response and Further Action Required, Los Alamos National Laboratory Underground Injection Control Wells, DP-1835," to the U.S. Department of Energy (DOE) Environmental Management Los Alamos Field Office (EM-LA) and Newport News Nuclear BWXT-Los Alamos, LLC (N3B) (the Permittees). In addition to stating, "the corrective actions proposed are acceptable to NMED," NMED directed that by "April 1, 2023, the Permittees shall cease all injections authorized under Discharge Permit 1835 (DP-1835) to prevent any potential further migration of chromium contamination by April 1, 2023."

This letter is a request for a 45-day extension to continue injections as part of the Interim Measures (IM) for Chromium Plume Control under the Chromium Interim Measures and Characterization Campaign pursuant to the 2016 Compliance Order on Consent. This extension request is based on the following reasons. First, continued operation of injections will enable an additional 45 days of data to be collected and interpreted. Second, continued chromium concentration decreases in well R-45 screen 2, well R-70 screen 2, and other monitoring well locations indicate the IM is working to control the plume as intended. Third, this extension would align with upcoming technical discussions scheduled for April 11, 2023, between NMED, the Pueblo de San Ildefonso, and the Permittees on modifications or alternatives to IM operations.

On September 30, 2022, the Permittees submitted an action plan titled, "Regional Aquifer Monitoring Well R-45 Action Plan" (hereby referred to as the Action Plan). On June 6, 2022, NMED-GWQB issued a Notice of Violation based on increased concentrations of total dissolved chromium in the regional aquifer at well R-45 screen 2 that exceed the New Mexico Administrative Code (NMAC) 20.6.2.3103 standards for groundwater of 0.050 mg/L.

The Action Plan proposed the following actions:

- Technical analyses of plume behavior
- Installation of two additional monitoring wells
- Simulation plan describing options for revising the operating parameters of the IM system
- Continued monitoring of the chromium plume

In its letter of December 12, 2022, NMED-GWQB responded that these proposed actions were acceptable. However, NMED noted that the Action Plan did not "…identify the actions that the Permittees will take to control the cause of the contamination migration and prevent further migration of the contamination plume."

In the six months since the Permittees submitted the Action Plan, the following has been completed:

- performed and documented technical analyses of the IM in the "Initial Five-Year Evaluation of the Interim Measures for Chromium Plume Control with an Assessment of Potential Modifications to Operations" (IM Evaluation Report),
- submitted a drilling work plan for one monitoring well (R-80) and collaborated with NMED through discussions and a field walk down on a second monitoring well (R-79), and
- continued the monitoring program and interpreted results.

From late October 2022 to the present, the IM operated in a "reduced" mode, with extraction from wells CrEX-4 and CrEX-5, and injection of treated water in wells CrIN-4 and CrIN-5, to accommodate required maintenance upgrades.

On March 20, 2023, the Permittees met with NMED and the Pueblo de San Ildefonso to review the IM Evaluation Report, evaluate assessments of four operational scenarios, and discuss recent data trends. As discussed then, and again in a technical meeting between NMED and the Permittees on March 23, 2023, the chromium concentration in R-45 Screen 2 has decreased since late October 2022. The chromium concentration for a sample taken from well R-45 screen 2 on October 25, 2022, was 69.1 parts per billion (ppb). In contrast, the sample collected on February 2, 2023, the chromium concentration in was 49.1 ppb. This a 29% decrease, and it is also below the NMAC groundwater standard of 0.050 mg/L or 50 ppb.

This decrease in chromium concentration at well R-45 screen 2 is encouraging. Moreover, the chromium concentration in well R-70 screen 2 also declined from a high of 272 ppb in August 2020 to 148 ppb in a sample collected in February 2023. This decrease correlates with operation of extraction well CrEX-5. CrEX-5 may be drawing the plume back from locations to the east.

The Permittees note that if injection of treated water is ceased, extraction and treatment for the IM must also cease. As discussed in the March 20, 2023, technical meeting and in the IM Evaluation Report, the ability to disposition treated water through means other than injection is extremely limited without permit changes and extensive system upgrades. Given the current decrease in chromium concentrations in well R-45 screen 2 and well R-70 screen 2, cessation of the IM is not

advisable, as it could reverse a favorable trend and make interpretation of cause and effect more difficult to determine.

Therefore, The Permittees request this extension to enable (1) the additional collected and interpreted data to drive the decision making process, particularly in light of decreasing chromium concentrations at well R-45 screen 2 and well R-70 screen 2; and (2) the Permittees, NMED, and the Pueblo de San Ildefonso to conduct their meeting on modifications or alternatives to IM operations to control the plume, which is scheduled for April 11, 2023.

If you have questions, please contact Christian Maupin at (505) 695-4281 (christian.maupin@em-la.doe.gov) or Cheryl Rodriguez at (505) 414-0450 (cheryl.rodriguez@em.doe.gov).

Sincerely,

Robert Macfarlane
Program Manager
Environment, Safety, Health and Quality
N3B-Los Alamos

Sincerely,

ARTURO DURAN
Digitally signed by ARTURO DURAN
Date: 2023.03.30 13:36:41 -06'00'

Arturo Q. Duran
Office of Quality and Regulatory Compliance
U.S. Department of Energy
Environmental Management
Los Alamos Field Office

cc (letter and enclosure[s] emailed):
Laurie King, EPA Region 6, Dallas, TX
Raymond Martinez, San Ildefonso Pueblo, NM
Dino Chavarria, Santa Clara Pueblo, NM
Steve Yanicak, NMED-DOE-OB
Jason Herman, NMED-GWQB
Patrick Longmire, NMED-GWQB
Andrew Romero, NMED-GWQB
Dave Cobrain, NMED-HWB
Neelam Dhawan, NMED-HWB
Rick Shean, NMED-RPD
Shelly Lemon, NMED-SWQB
Jennifer Payne, LANL
Stephen Hoffman, NA-LA
M. Lee Bishop, EM-LA
John Evans, EM-LA
Thomas McCrory, EM-LA
Michael Mikolanis, EM-LA
David Nickless, EM-LA
Kenneth Ocker, EM-LA
Cheryl Rodriguez, EM-LA
Hai Shen, EM-LA
Felicia Aguilar, N3B
William Alexander, N3B

Michael Erickson, N3B
Vicky Freedman, N3B
Kim Lebak, N3B
Christian Maupin, N3B
Tashia Owen, N3B
Bradley Smith, N3B
Troy Thomson, N3B
Amanda White, N3B
emla.docs@em.doe.gov
n3brecords@em-la.doe.gov
Public Reading Room (EPRR)
PRS website