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Date: June 25, 2021
Refer To: N3B-2021-0214

Steve Pullen
 Program Manager
 Groundwater Pollution Prevention Section
 New Mexico Environment Department
 1190 S. St. Francis Drive
 P.O. Box 5469
 Santa Fe, NM 87502-5469

Subject: Request for Amendment 3 to Discharge Permit 1793, Work Plan #5, for Additional Water Source

Dear Mr. Pullen:

On July 27, 2015, the New Mexico Environment Department (NMED) issued Discharge Permit 1793 (DP-1793) to the U.S. Department of Energy (DOE) and Los Alamos National Security, LLC (LANS). On March 16, 2017, DOE/LANS submitted the "Multiple Activities Work Plan for the Treatment and Land Application of Groundwater from Mortandad and Sandia Canyons, DP-1793 Work Plan #5" (EPC-DO-17-050; hereafter Work Plan #5) for the continued land application of treated groundwater at Technical Area 05. NMED approved Work Plan #5 with conditions on June 15, 2017. On September 28, 2017, DOE/LANS submitted a proposed amendment to Work Plan #5 requesting to extend the project schedule end date for the work plan (EPC-DO-17-353). On October 26, 2017, DOE/LANS submitted to NMED a proposed Amendment 2 to Work Plan #5 to add an additional groundwater source for land application (EPC-DO-17-422). On April 30, 2018, DP-1793 was transferred from LANS to Newport News Nuclear BWXT-Los Alamos, LLC (N3B). Finally, on June 11, 2019, DOE/N3B submitted a letter clarifying the sources of water that may be land applied under DP-1793 (N3B-19-0173). On February 6, 2020, NMED approved the modified source term language.

The purpose of this letter is to amend the source term language in Work Plan #5 to clarify the groundwater sources that may be land applied under DP-1793. Work Plan #5, as currently

approved, identifies the following four activities generating groundwater to be treated and land applied:

1. Legacy water generated in a previous calendar year from activities 2 through 4 listed below.
2. Water generated from well installations within the Chromium Project area:
 - a. Development, aquifer testing, and extended pumping at new extraction well(s);
 - b. Development, aquifer testing, and injection capacity evaluation at new injection well(s);
 - c. Development and aquifer testing at new monitoring well(s); and
 - d. Monthly sampling at injection wells before injection at these locations.
3. Groundwater generated during operation and maintenance activities at extraction wells and injection wells within the Chromium Project area.
4. Groundwater generated from routine purging during sampling of contaminant-affected monitoring wells under the current NMED-approved monitoring year Interim Facility-Wide Groundwater Monitoring Plan and up to 5 days of pumping at additional piezometers/monitoring wells associated with the Chromium Project.

DOE/N3B are in the planning process of performing extended pumping activities at wells R-28 and R-42 to obtain well-related data. The amount of water produced from the extending pumping activities will not exceed 500,000 gallons. R-28 and R-42 were the two regional monitoring wells chosen to perform a pilot-scale study to determine if amendment addition would be a viable option for remediation of the chromium contamination in the aquifer below Mortandad Canyon. The amendments were added to R-28 and R-42 under the July 2017 "Pilot-Scale Amendments Testing Work Plan for Chromium in Groundwater Beneath Mortandad Canyon" (LA-UR-17-25406), approved by NMED on July 31, 2017. Current analytical results at R-42 show that manganese is above the groundwater standard (0.2 mg/L) per 20.6.2.3103 of the New Mexico Administrative Code. Analytical results at R-28 show that iron and manganese are both above the groundwater standards (1.0 mg/L and 0.2 mg/L, respectively). Due to the reducing conditions resulting from the addition of the amendments at the wells, chromium concentrations are significantly reduced in both wells. However, with the commencement of extending pumping, it is expected that the chromium levels may exceed groundwater standards.

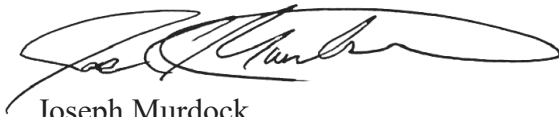
DOE/N3B will treat the water produced from the extended pumping activities at wells R-28 and R-42 for iron and manganese near the wellheads. DOE/N3B are currently in the process of procuring ion exchange vessel/resin that will remove the iron and manganese to levels at or below 90% of the groundwater standard. The exchange vessel/resin will be used to treat the pumped water at the wellheads before its transfer to the existing treatment system used for removing chromium under Work Plan #5. After treatment, the water will be transferred via existing piping to the synthetically lined lagoons for storage until ultimate disposition through land application. Before land application, the operational grab samples will be collected twice a week when treated groundwater is being land applied. These operational grab samples will be analyzed in the field using HACH test kits, or their equivalent, to ensure the water is below 90% of the groundwater standard for iron, manganese, chromium, and nitrate+nitrite as nitrogen. In accordance with DP-1793, Work Plan #5, a minimum of one grab sample will be collected downstream of the last ion-exchange treatment vessel at least once a week when land application operations are occurring for chromium, perchlorate, and nitrate+nitrite as nitrogen for analysis by an off-site, independent analytical laboratory accredited by the National Environmental Laboratory Accreditation Program.

Upon completion of the land application of the water produced from the extended pumping activities at R-28 and R-42, DOE/N3B will perform soil sampling at the areas where land application was performed. The soil will be analyzed for iron, manganese, and chromium. Soil sampling results from the sampling conducted in January 2020 and reported in the "Report for Characterization of Soils in the Land Application Zones Used at the Chromium and RDX Project Areas Under Discharge Permit 1793" (EM2020-0039) will be used as baseline conditions because there has been no land application in those areas since the soil sampling event occurred.

DOE/N3B are requesting NMED Ground Water Quality Bureau approval of the proposed Amendment 3 to the groundwater sources that may be treated and land applied under Work Plan #5. The proposed changes do not increase the quantity or quality of treated groundwater being land applied. The proposed changes are necessary to reflect the sources of groundwater for treatment and land application under Work Plan #5.

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,



Joseph Murdock
Program Manager
Environment, Safety and Health
N3B-Los Alamos

Sincerely,

**Stephen G.
Hoffman**

Digitally signed by
Stephen G. Hoffman
Date: 2021.06.25
16:13:47 -06'00'

M. Lee Bishop, Director
Office of Quality and Regulatory Compliance
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
Chris Catechis, NMED-DOE-OB/-RPD
Steve Yanicak, NMED-DOE-OB
Patrick Longmire, NMED-GWQB
Andrew Romero, NMED-GWQB
Neelam Dhawan, NMED-HWB
Christopher Krambis, NMED-HWB
Peter Maggiore, NA-LA
Arturo Duran, EM-LA
John Evans, EM-LA
Stephen Hoffman, EM-LA
Cheryl Rodriguez, EM-LA
Thomas McCrory, EM-LA
Kenneth Ocker, EM-LA
Hai Shen, EM-LA

Kenneth Ocker, EM-LA
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Public Reading Room (EPRR)
PRS website

Pamela T. Maestas

From: Romero, Andrew C, NMENV <AndrewC.Romero@state.nm.us>
Sent: Monday, June 28, 2021 3:47 PM
To: Pamela T. Maestas
Subject: RE: Submittal to NMED on 6/25/2021 of Rqst for Amndmnt 3 to DP-1793 WP #5

Hi Pamela,

All is well, thank you! How are you?
NMED is in receipt of this submittal.

Thank you!

Andrew C. Romero

Environmental Scientist, Pollution Prevention Section
Ground Water Quality Bureau
New Mexico Environment Department
1190 St. Francis Dr
(505) 660-8624
andrewc.romero@state.nm.us

From: Pamela T. Maestas <pamela.maestas@em-la.doe.gov>
Sent: Monday, June 28, 2021 3:24 PM
To: Romero, Andrew C, NMENV <AndrewC.Romero@state.nm.us>
Subject: FW: Submittal to NMED on 6/25/2021 of Rqst for Amndmnt 3 to DP-1793 WP #5
Importance: High

Hi there,
I hope you are doing well.
Would you mind responding that you have received this submittal?
Thank you.

From: Pamela T. Maestas <pamela.maestas@em-la.doe.gov>
Sent: Friday, June 25, 2021 4:52 PM
To: 'Pullen, Steve, NMENV' <steve.pullen@state.nm.us>
Cc: 'Romero, Andrew C, NMENV' <AndrewC.Romero@state.nm.us>; 'patrick.longmire@state.nm.us' <patrick.longmire@state.nm.us>; Emily M. Day <Emily.Day@em-la.doe.gov>; Regulatory Documentation <RegDocs@EM-LA.DOE.GOV>; cheryl.rodriguez@em.doe.gov; Christian T. Maupin <Christian.Maupin@em-la.doe.gov>; Kenneth Ocker <kenneth.ocker@em.doe.gov>
Subject: Submittal to NMED on 6/25/2021 of Rqst for Amndmnt 3 to DP-1793 WP #5

Mr. Pullen,

Attached for submittal is a pdf of the following:

- Request for Amendment 3 to Discharge Permit 1793, Work Plan #5, for Additional Water Source (N3B-2021-0214)

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
Newport News Nuclear BWXT-Los Alamos, LLC
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regdocs@em-la.doe.gov



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