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Re: New Mexico Environment Department comments, Draft 2023 Sampling Implementation Plan as required by the National Pollutant Discharge Elimination System Los Alamos National Laboratory Stormwater Individual Permit (NPDES number NM0030759)

Dear Troy Thomson and Brian Harcek,

The New Mexico Environment Department (NMED) Surface Water Quality Bureau (SWQB) has reviewed the 2023 Annual Sampling Implementation Plan (SIP) for the National Pollutant Discharge Elimination System (NPDES) the Los Alamos National Laboratory (LANL) Stormwater Individual Permit (IP), NPDES permit number NM0030759. The IP regulates stormwater discharges associated with LANL historical industrial activities from solid waste management units (SWMUs) and/or areas of concern (AOCs). The IP requires the Permittees -- N3B-Los Alamos and US Department of Energy Environmental Management Los Alamos Field Office (EM-LA) -- to prepare a draft SIP and annually provide it to NMED for review and comment.

NMED SWQB comments regarding the draft LANL IP 2023 SIP are attached.

If you have any questions about these comments, please contact Susan Lucas Kamat at 505-946-8924 or susan.lucaskamat@env.nm.gov.

Sincerely,

Shelly Lemon Digitally signed by Shelly Lemon
Date: 2024.02.13 10:20:03 -07'00'

Shelly Lemon, Bureau Chief
Surface Water Quality Bureau

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encl: Comments, draft 2023 LANL SIP

New Mexico Environment Department Comments
Draft 2023 Sampling Implementation Plan
Los Alamos National Laboratory Stormwater Individual Permit
NPDES Permit No. NM0030759
February 13, 2024

The New Mexico Environment Department (NMED) Surface Water Quality Bureau (SWQB) has the following comments regarding the components of the Los Alamos National Laboratory (LANL) draft 2023 Sampling Implementation Plan (SIP), as required by the National Pollutant Discharge Elimination System (NPDES) Stormwater Individual Permit (IP), NPDES permit number NM0030759.

General Comments:

1. Part I.A of the LANL Stormwater IP states: “For all Sites identified in Appendix A of this Permit, the Permittees shall install and/or maintain structural and nonstructural control measures as necessary to meet the non-numeric technology-based effluent limits to minimize Site-related POCs in storm water discharges. Nothing in this Permit relieves the Permittees of the obligation to implement additional control measures required by other Federal authorities or by a State or local authority.”

Comment: Review of the SIP showed multiple site monitoring areas (SMAs) that had a site-specific demonstration (SSD) stating a pollutant would not be included in the sampling and analysis plan (SAP) but ultimately was included in the SAP. For example, S-SMA-3.61 has a description in 38.5.1 *Soil Data Summary* describing PCBs as not having exceeded screening levels and therefore would not be included in the SAP, but total PCBs are included in table 68.5-1 *Proposed SAP, S-SMA-3.61*. NMED is in support of additional monitoring but requests clarification to the SSD for SMAs in Volume 1 through 5 of the SIP.

2. Part 1.B of the IP states: “for Sites discharging to impaired and water quality-limited waters, if the pollutants for which the water body is impaired are determined to be Site-related, as demonstrated under Part I.C.2 of the permit, the Permittees shall include the Site-related pollutants of impairment on the priority list for each Site in the SIP and shall prioritize these pollutants for analysis in the event a partial sample is collected.”

Comment: This was previously commented in the 2022 SIP review by NMED. The comment is retained as it is still applicable.

Pollutants of concern (POCs) that are site related and causing impairments in drainages where SMAs are located should be included in the SAP. For example, 2M-SMA-1.44 lists aluminum as a POC based on site history (Volume 3, Table 122.2-1) and impairment (Volume 3, Section 122.4.2). However, aluminum is missing from the SAP, and it must be included and monitored at this Site.

Similar errors were found in 2M-SMA-2, which lists aluminum, chromium, and metal pigment as POCs based on site history (Volume 3, Table 130.2-1) and lists aluminum as an impairment (Volume 3, Section 130.4.2). However, aluminum is missing from the SAP, and it must be included and monitored at this Site.

PJ-SMA-3.05 lists aluminum as a POC based on site history (Volume 3, Table 142.2-1) and impairment (Volume 3, Section 142.4.2). However, aluminum is missing from the SAP, and it must be included and monitored at this Site. Also, previously copper exceeded the target action level

(TAL) and background threshold value (BTV). The proposed SAP for PJ-SMA-3.05 following the completion of the corrective action should include and monitor for copper at this site.

PJ-SMA-5 lists arsenic, cadmium, chromium, copper, lead, nickel, silver, thallium, zinc, and cyanide as POC based on site history (Volume 3, Table 144.2-1) with impairments for copper, silver, and cyanide. However, silver and cyanide are missing from the SAP, and must be included and monitored at this Site.

PJ-SMA-20 lists PCBs as a POC based on site history (Volume 3, Table 164.2-1) and impairment (Volume 3, Section 164.4.2). However, PCBs are missing from the SAP, and they must be included and monitored at this Site.

STRM-SMA-5.05 lists PCBs as a POC based on site history (Volume 3, Table 168.2-1) and impairment (Volume 3, Section 168.4.2). However, PCBs are missing from the SAP, and they must be included and monitored at this Site.

Please include and prioritize in the SAP all site-related POCs that are also causes of impairment in the receiving water.

3. Part I.C.2(b)(i) of the LANL Stormwater IP states: "SW Tier 2: When the confirmation sample result for one or more POC exceeds the TAL but is less than the 90th percentile composite BTV, the SMA shall be assigned to long-term stewardship (LTS) and meet the requirements of Part I.B.8. However, if the composite BTV and the confirmation sample result do not exceed the TAL, SW Tier 1 applies."

Part I.C.3.a of the LANL Stormwater IP states: "Storm water sample results from the Site or Sites are greater than TALs because of background contribution as specified in Part I.C.2(b)(i) SW Tier 2;"

Comment: The criteria for a SMA to move into long-term stewardship is outlined in Part 1.C.3 of the IP. One of these criteria needs to be met for a SMA to move into long-term stewardship. An error was found for W-SMA-1, which has copper exceeding the composite BTV but not the TAL and the reference for long-term stewardship is Part I.C.3a. Since there is a POC that exceeds the BTV and not the TAL, this does not meet the requirements in Part I.C.3.a.

Additional errors were identified in 2M-SMA-1.7 for copper, in 2M-SMA-1.9 for copper and zinc, and in 3M-SMA-4 for copper.

Please review all SMAs identified to be in long-term stewardship to ensure applicability with the IP.

4. Part I.C.3 of the LANL Stormwater IP and Part 3.3 of the SIP Overview lists conditions when Sites can be placed in long-term stewardship: "results exceed the TAL but do not exceed the Composite BTV (when the Composite BTV is greater than the TAL) (Part I.C.3.a), all Sites within the SMA are deferred per the Consent Order (Part I.C.3), or gross alpha was the sole TAL exceedance for samples collected under the 2010 permit (Part I.C.3.c)."

Comment: Please identify in the SIP Overview Table 3.3-1 SMAs eligible for long-term stewardship for Monitoring Year 2023 and in the SMA summaries in Volumes 1 through 5 which criterion listed in Part I.C.3 of the IP and Part 3.3 of the SIP Overview is being met to justify site transition to long-term stewardship.

5. Part I.D.1 of the LANL Stormwater IP states: “Once a TAL and/ or composite BTV (per Part I.C.2) has been exceeded for a Site-related POC, the Permittees shall determine the appropriate corrective action. At a minimum, as applicable this corrective action determination shall consider one or more of the following: volume of storm water currently retained and the potential for additional retention of storm water; potential and physical limitation for installation of Site-appropriate storm water controls (with consideration of technological availability); evaluation of the efficacy, limitations, and predicted water quality improvement performance of any proposed storm water controls (may include information from published literature or manufacturers specifications); or distribution of contaminants in soil and the predicted efficacy of any proposed soil removal on removal of POCs from storm water. The options for implementation of corrective action may include installation of enhanced control measures, elimination of exposure of POCs to stormwater, or retention of a 3-year, 24-hour storm event as described below.”

Comment: Please identify in the SIP overview Table 3.4-1 SMAs Screened into Corrective Action and in the SMA Summaries in Volumes 1 through 5 which criterion listed in Part 1.D.1 of the IP and Part 3.4 of the SIP Overview is being met for corrective action.

6. Part III.C.5.c of the LANL Stormwater IP states: “An adequate analytical quality control program, including the analyses of sufficient standards, spikes, and duplicate samples to insure [sic] the accuracy of all required analytical results shall be maintained by the permittee or designated commercial laboratory.”

Comment: Review of the SIP did not indicate any duplicate sampling or reference to a quality control program. Please reference or include information on LANL’s quality control program, including planning of duplicate sampling (e.g., 10 percent of overall samples collected). This comment is repeated from NMED’s comments on the 2022 SIP review.

Site Monitoring Area-Specific Comments:

1. In the SIP Overview, Table 1.3-1 states: “Metals - Metals were analyzed for every sample in the former Permit using the TAL metals suite, which included aluminum, antimony, arsenic, boron, cadmium, chromium, cobalt, copper, lead, mercury (total), nickel, selenium (total), silver, thallium, vanadium, and zinc. If samples have already been collected, the sampler will be reactivated only if a metal, not previously monitored for, is specifically designated in the Site history (e.g., barium, beryllium, iron, manganese, and uranium, which do not have TALs but do have WQS).

Comment: For S-SMA-3.7, the site history identifies sodium molybdate was an additive to cooling water for corrosion inhibition and metals are identified on in table 70.2-1. Since a specific metal, molybdenum, has been identified and the group is highlighted as a possible POC, the pollutant should be included in the SAP. This is similar for other SMAs, such as CDB-SMA-0.55 regarding alkali

metals. Please review the SIP Volume 1 through 5 regarding the addition of site specific POCs that are identified in the site history and have not been previously monitored.

2. In the SIP Volume 1, Table 37.2-1 has “inorganic chemicals” listed as POCs known or suspected to be used historically at the site.

Part I.B.4 of the Stormwater IP states, “For Sites discharging to impaired and water quality-limited waters, if the pollutants for which the water body is impaired are determined to be Site related, as demonstrated under Part I.C.2 of the permit (Site Specific Demonstration), the Permittees shall include the Site-related pollutants of impairment on the priority list for each Site in the SIP and shall prioritize these pollutants for analysis in the event a partial sample is collected. If there are insufficient data to determine if a pollutant causing an impairment is Site-related, the Permittees shall prioritize analysis of the pollutants causing impairments in the event a partial sample is collected.”

Comment: Since there are no stormwater data, “inorganic chemicals” are site-related, and Los Alamos Canyon is impaired due to total recoverable cyanide and total recoverable selenium. LANL must include cyanide and selenium in the SAP for LA-SMA-5.52.

3. SIP Volume 1, Section 43.5.2 (Stormwater Data Summary for LA-SMA-6.3) states, “Total aluminum, gross alpha, and selenium exceeded TALs but not BTVs. Iron exceeded the water quality standard; however, there is no TAL in the Permit for iron. Only POCs with TALs are used in the SSD.”

Part I.C.1 of the LANL Stormwater IP states, “Target Action Levels (TALs) are based on and equivalent to New Mexico State water quality criteria for the subject pollutants.” A water quality criterion for iron is identified in the New Mexico State WQS (see 20.6.4.900 NMAC).

SIP Volume 1, Section 43.5.3 (2022 Permit Status for LA-SMA-6.3) states: “The SMA is eligible for long-term stewardship; all Site-related POCs were below their respective composite background threshold values (Part I.C.3.a).”

According to the data presented in Figures 43.4-3 and 43.4-4 (Tables 1 and 2):

- aluminum and gross alpha exceeded TALs and BTVs (aluminum result = 40,900 ug/L and composite BTV = 37,300 ug/L; gross alpha result = 857 pCi/L and composite BTV = 56.9 pCi/L);
- uranium exceeded the BTV (uranium result = 1.17 ug/L and composite BTV = 0.310 ug/L).

Comment: Since Los Alamos Canyon is impaired due to total recoverable selenium and adjusted gross alpha, TALs and background threshold values were exceeded for aluminum and gross alpha, and uranium results were almost 4 times the background threshold value, LANL must include and prioritize aluminum, gross alpha, iron, and uranium in the SAP for LA-SMA-6.3.

LA-SMA-6.3 is not eligible for long-term stewardship because not all Site-related POCs are below their respective composite background threshold values. The 2022 and 2023 Permit status should be identified as “active monitoring” with a proposed SAP for the SMA. There is a general comment

above that identifies the criteria for moving into long-term stewardship. Please review all SMAs that are identified as being in long-term stewardship for the correct applicability. If the SMA does not meet the criteria outlined in Part I.C.3 of the permit then the site should be in active monitoring.

4. In the SIP Volume 2, DP-SMA-3, Figure 58.4-3, NMED found an error with the calculation of detected/background values (“dB”). For example, aluminum has a “2019-07-25 dB” result of 0.431, however the two detected results of 35,000 and 72600 have a geometric mean of 50408. When the geometric mean is divided by 37,400 (composite BTV) equals 1.348. Similarly, gross alpha has a “2019-08-09 dB” result of 0.637, however the detected results are 66.5 and 164 which have a geometric mean of 104.43. And when divided by 57.2 (composite BTV) is equal to 1.826. NMED found additional errors for this calculation for other POCs and other SMAs.

Comment: This is repeated from the 2022 SIP review. The same errors were noted on the same SMAs. Please check Site tables and verify calculations to ensure they are correct.

5. In SIP Volume 3, several sections did not identify a Sample and Analysis Plan.

Part I.C.3.c of the LANL Stormwater IP states: “Sites in LTS status must be tracked by Site, not by individual controls, and the inspection dates, maintenance dates, maintenance activities, and LTS listing date for each LTS Site must be included in the SIP.”

Comment: Review of the SIP Volume 3, Sections 119.5, 125.5, 135.5, 148.5, and 151.5 did not identify a Sample and Analysis Plan. SIP Volume 3 Proposed SAPs for 119.0 2M-SMA-1, 125.0 2M-SMA-1.65, 135.0 2M-SMA-1, 148.0 PJ-SMA-8, and 151.0 PJ-SMA-10 did not indicate when the SMAs were placed into the Long-Term Stewardship Category. Please provide this date to help indicate the time frame for the 5-year period.

6. SIP Volume 3, Section 141.0 (Stormwater Data Summary for PJ-SMA-2) states: “Aluminum exceeded the TAL but not the BTV. Iron exceeded the WQS, but there is no TAL for iron. Only POCs with TALs are used in the SSD.”

Part I.C.1 of the IP states, “Target Action Levels (TALs) are based on and equivalent to New Mexico State water quality criteria for the subject pollutants.” A water quality criterion for iron is identified in the New Mexico State WQS (*see* 20.6.4.900 NMAC).

According to the data presented in Figures 141.4-3 and 141.4-4 (Tables 1 and 2):

- Aluminum exceeded the TAL but not the BTV (aluminum result = 4580 ug/L and composite BTV = 37,400 ug/L).
- Copper and zinc exceeded the TAL and BTV (copper = 23.1 ug/L and composite BTV = 3.12 ug/L; zinc = 95.6 ug/L and composite BTV = 10.0 ug/L).
- Iron exceeded the water quality criterion (i.e., TAL), and no data are available for BTV.

Comment: Since Pajarito Canyon is impaired due to aluminum and copper, TALs and background threshold values were exceeded for aluminum and copper, and iron results were above the

applicable State water quality criterion, LANL must include and prioritize aluminum, copper, and iron SAP for PJ-SMA-2.

7. SIP Volume 3, Section 149.0 (Stormwater Data Summary for PJ-SMA-9) states: "Aluminum and gross alpha exceeded the TAL but not the BTV. Copper exceeded the TAL and BTV. Iron exceeded the WQS; however, there is no TAL in the Permit for iron. Only POCs with TALs are used in the SSD. Corrective action will be initiated for copper while monitoring is ongoing for SVOCs and 2,3,7,8-tetrachlorodibenzodioxin."

Part I.C.1 of the IP states, "Target Action Levels (TALs) are based on and equivalent to New Mexico State water quality criteria for the subject pollutants." A water quality criterion for iron is identified in the New Mexico State WQS (*see* 20.6.4.900 NMAC).

According to the data presented in Figures 149.4-3 and 149.4-4 (Tables 1 and 2):

- Aluminum and gross alpha exceeded the TAL but not the BTV (aluminum result = 18,700 ug/L and composite BTV = 36,900 ug/L; gross alpha = 47.0 ug/L and composite BTV = 56.1 ug/L).
- Copper exceeded the TAL and BTV (copper = 11.0 ug/L and composite BTV = 3.99 ug/L).
- Iron exceeded the water quality criterion (i.e., TAL), and no data are available for BTV.

Comment: Since Pajarito Canyon is impaired due to aluminum and copper, TALs and background threshold values were exceeded for aluminum, gross alpha, copper, and iron results were above the applicable State water quality criterion, LANL must include and prioritize aluminum, gross alpha, copper, and iron SAP for PJ-SMA-9.

8. SIP Volume 3, Section 163.0 (Stormwater Data Summary for PJ-SMA-19) states: "Aluminum and gross alpha exceeded the TAL/WQS but not the BTV. Iron exceeded the WQS; however, there is no TAL in the Permit for iron. Only POCs with TALs are used in the SSD."

Part I.C.1 of the IP states, "Target Action Levels (TALs) are based on and equivalent to New Mexico State water quality criteria for the subject pollutants." A water quality criterion for iron is identified in the New Mexico State WQS (*see* 20.6.4.900 NMAC).

According to the data presented in Figures 163.4-3 and 163.4-4 (Tables 1 and 2):

- Aluminum and gross alpha exceeded the TAL/WQS but not the BTV (aluminum result = 20,400 ug/L and composite BTV = 37,000 ug/L; gross alpha = 56.3 ug/L and composite BTV = 44.7 ug/L).
- Iron exceeded the water quality criterion (i.e., TAL), and no data are available for BTV.

Comment: Since Pajarito Canyon is impaired due to aluminum and copper, TALs and background threshold values were exceeded for aluminum, gross alpha, copper, and iron results were above the applicable State water quality criterion, LANL must include and prioritize aluminum, gross alpha, copper, and iron SAP for PJ-SMA-19.

9. In the SIP Volume 4, CDV-SMA-2, Table 174.5-1 identifies the proposed SAP which does not correspond to the description in 174.5.1 Soil Data Summary. In 174.5.1 it is stated aluminum, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, nickel, RDX, silver, TNT, uranium, vanadium, and zinc will be included in the SAP. The SAP details Dissolved arsenic, barium, boron, cadmium, chromium, cobalt, copper, lead, manganese, nickel, silver, uranium, vanadium, and zinc. The inconsistencies are with aluminum and boron.

Comment: Please review all tables and descriptions regarding the SAPs in the SIP volume 1 through 5 for continuity and correct reference to POC.