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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

March 18, 2015

Peter Maggiore
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Los Alamos Field Office
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Michael T. Brandt
Associate Director
Environment, Safety, Health
Los Alamos National Security, L.L.C.
P.O. Box 1663, MS M991
Los Alamos, NM 87545

RE: APPROVAL WITH MODIFICATIONS
STORM WATER PERFORMANCE MONITORING IN THE LOS ALAMOS/PUEBLO WATERSHED DURING 2013
LOS ALAMOS NATIONAL LABORATORY
EPA ID#NM0890010515
HWB-LANL-14-049

Dear Messrs. Maggiore and Brandt:

The New Mexico Environment Department (NMED) has received the United States Department of Energy (DOE) and the Los Alamos National Security, L.L.C.'s (LANS) (collectively, the Permittees) *Storm Water Performance Monitoring in the Los Alamos/Pueblo Watershed During 2013* (Report) dated and received June 30, 2014, and referenced by LA-UR-14-24516/EP2014-0263.

NMED has reviewed the Report and hereby approves the Report with the following modifications:

Modifications:

1. **Section 2.3, Sampling at the Gage Stations in the LA/P Watershed, p 4**

   Permittees' Statement: "[i]n 2013, the threshold discharge at a station was reached 100 times, and sampling was conducted 50 of these times, resulting in an overall sampling efficiency of 50%."

   NMED's Comment: While a portion of the inability to collect samples was due to force majeure events such as the September 13, 2013 flood event and restricted access to gage station E109.9, the Permittees provide little explanation as to why 11 samples following the September 13 flood were not collected. For instance, for station E050.1, Table 2.6-2, Gage Station Operational Issues during the 2012 Monitoring Year, indicates that silting was an issue on 9/13/13, but was repaired on 9/20/13. This issue accounts for the reason that samples were missed on 9/13/13 and 9/14/13. But, samples also were not collected on 9/21/13 and 9/22-23/13. No explanation is provided for why these samples were not collected. This applies to many other missed sampling opportunities following the flooding.

   In addition, while the Permittees' access to E109.9 was restricted on 8/12/13, Table 2.3-1 indicates that discharge data and at least one sample were collected from this station from 8/20/13 through the flood event on 9/13/13. The Permittees provide no explanation regarding their ability to continue to collect data and samples from this station following the access restrictions.

   The Permittees must revise the Report to provide detailed information regarding missed sampling opportunities. This information should be included in Table 2.6-2 for each missed sampling event. Tabulation of the factors contributing to the reduced sampling efficiency will assist the Permittees in proposing action to correct or mitigate these factors in the future. The Permittees must submit replacement pages that include discussions of these issues and a replacement Table 2.6-2 that includes all missed sampling opportunities. Also, the title of Table 2.6-2 must be corrected to state that the data is for 2013 instead of 2012.

2. **Section 2.4, Samples Collected in LA/P Watershed, p 5, #4**

   Permittees' Statement: "[s]everal samplers were programmed incorrectly, causing incomplete sample collection during several storm events".

   NMED's Comment: It is unclear from this statement how the samplers were programmed incorrectly and how many samplers were affected. In this and all future monitoring reports, the Permittees must provide a more detailed description of sampling errors including the error type, location affected, number of samples affected, and actions taken to prevent and correct these sampling errors. For the current report, include this information in the revised Table 2.6-2 discussed in the previous comment.

3. Section 2.5, Operational Issues, p 5

NMED's Comment: NMED understands that access to gage station E109.9 has been denied by the Pueblo of San Ildefonso. NMED is concerned about this issue because sample collection from this station provides important information on water quality prior to entering the Rio Grande, an important source of water for the State of New Mexico. NMED urges the Permittees to make a concerted effort to renew their access agreement to this important gage station.

4. Section 3.3, Geomorphic Changes

NMED's Comment: Appendix A demonstrates that large volumes of sediment were eroded during the 2013 storm season (*i.e.*, PU LW-6 reports sediment erosion (cross-sectional area) of -273.3 ft), which is indicative that some damage has occurred to existing grade controls, and their ability to continue to retain sediment. The Permittees state, "[n]o actions are recommended at this time except for continued resurveys".

This statement conflicts with Appendix A of the Report where the Permittees state, "[w]illows have also been replanted in the lower Pueblo willow planting area" and statements made in the *2013 Excavation of the Los Alamos Canyon Low-Head Weir* (Report) dated and received December 19, 2013 (referenced by LA-UR-13-28493 and EP2013-0258) which estimates that 6,000 cubic yards of sediment have been removed from behind the Los Alamos Canyon low-head weir and stockpiled in a former borrow pit. In future reports, the Permittees must discuss all actions taken to manage canyon sites and reference the documents that describe those actions.

5. Section 4.3 Relationships between Discharge, SSC, and Contaminant Concentrations

NMED's Comment: NMED notes that the Permittees have switched from total suspended solids (TSS) to suspended sediment concentrations (SSC). NMED agrees with the procedural change, since TSS has been shown to be fundamentally unreliable for the analysis of natural-water samples (Comparability of Suspended-Sediment Concentration and Total Suspended Solids Data, USGS August 2000).

The Permittees state, "[w]here analytical results are not bounded by sediment results; the concentration of the nearest sediment result is used as an estimate of the sediment concentration at the time the sample was collected." It is unclear from this statement if the nearest sediment result is similar in discharge rate. The nearest sediment result may exhibit a significant difference in discharge rate from the unbounded sample; therefore, utilization of the nearest sediment result as an estimate for the unbounded sample may be inappropriate.

It is also unclear which samples have used sediment estimates from the nearest sample or the total number of samples requiring sediment concentration estimates. In future reports, the Permittees must indicate which values have been estimated from the nearest sediment result, whether the value used for the sediment concentration is an estimate, and the total number

samples affected. The Permittees must also propose a method for selecting a nearest sediment concentration which includes matching similar discharge rates.

6. **Section 4.4, Storm Water Sampling below SWMU 01-001(f)**

   NMED's Comment: The Permittees state that the "[t]otal PCB results are within the range of results for samples collected in 2011 and 2012. The higher results suggest the hill slope continues to be source of PCBs even after sediment and rock were removed during corrective action at SWMU 01-001(f) in 2010". NMED agrees with the Permittees' conclusion that the hill slope at SWMU 01-001(f) is still a source of PCBs in storm water runoff. In next year's monitoring report or in the corresponding aggregate area report, if the report will be submitted within the same time frame, the Permittees must provide a discussion of proposed remedial activities for SWMU 01-001(f).

7. **Figure 3.2-2, Box and Whisker Plots of TSS and SSC for all Stations in the Los Alamos and Pueblo Watershed over the last 4 yrs of Monitoring**

   NMED's Comment: TSS and SSC are not interchangeable sampling methods and side-by-side comparisons of these two fundamentally different sampling results are not appropriate. In future monitoring reports, provide a footnote stating that TSS and SSC are not directly comparable values and that TSS values are only included for completeness of data. In future reports, TSS and SSC must be displayed on separate plots.

8. **Figures 4.3-1 to 4.3-32 SSC vs. analyte concentration for each gage station**

   NMED's Comment: The contaminant Sediment Background values (in mg/kg) depicted on Figure 4.3-1 through Figure 4.3-32 are specific to sediment and are not interchangeable with surface water quality values (in µg/L). Comparing background sediment values is useful as a qualitative indicator of the likelihood of a contaminant being present in water, but cannot be directly compared quantitatively due to physical differences, unpredictable site specific partitioning or leaching of contaminants into water, and interactions by physical agitation specific to surface water.

9. **Table 2.4-2 Analytical Requirements for Storm Water Samples**

   NMED's Comment: In NMED's October 24, 2013 Review (2013 Review) of the Permittees' *Storm Water Performance Monitoring in the Los Alamos/Pueblo Watershed During 2012*, NMED noted that the "reported results for filtered aluminum were obtained using methods which no longer correspond to the methods described in [the New Mexico Water Quality Control Commission (NMWQCC)] 20.4.900(I)(1), NMAC. These methods are also described in the document titled *Procedures for Assessing Water Quality Standards Attainment for the State of New Mexico CWA §303(d)/305(b) Integration Report: Assessment Protocol* (Procedure Report) submitted by the New Mexico Environment Department Surface Water Quality Bureau (SWQB) and dated August 24, 2012."

According to both the Procedure Report and NMED's 2012 *Aluminum Filtration Study*, aquatic life criteria for aluminum are based on analysis of samples that are filtered to minimize mineral phase aluminum without restricting amorphous or colloidal phases. The SWQB's study of this issue concluded that a filter of 10 µm pore size is appropriate to accomplish this task.

The 10 µm pore size standard for aluminum was officially adopted as a sampling procedure by NMWQCC on December 1, 2010, and the EPA provided SWA 303 (c) approval for the filtration language on April 12, 2012. NMED's 2013 Review stated that the "Permittees must filter aluminum samples with a pore size of 10 µm prior to performing the analysis." It appears that the Permittees have not filtered aluminum samples with 10 µm pore size and have continued to utilize a 0.45 µm pore size filter based on the EPA method listed in Table 2.4-2.

If the Permittees have used the incorrect filter, the aluminum data submitted in this Report is likely not acceptable for use. If so, the Permittees must revise the Report to remove the aluminum data or provide and explanation for why the data is viable. In the future, the Permittees must filter aluminum samples with a pore size of 10 µm prior to performing the analysis and must reference in Table 2.4-2 the NMWQCC methods used to sample aluminum.

10. Table 4.2-2 Maximum Detected Results by Station and Event

NMED's Comment: NMED notes that several analytes (Al, Cu, Gross Alpha, Hg, Ra 226/Ra228, and Se) are in exceedance of the NMWQCC Surface Water Standards (Table 4.2-1) and are not described in Section 5.0, Conclusions. In NMED's 2013 Review, the Permittees were directed to provide a separate table of exceedances with gage station number, analyte, concentration results, and the exceeded water quality standard for that analyte. The Permittees did not provide the required table in this report. The Permittees must provide replacement pages that include a discussion of exceedances in the conclusion section and a separate table of exceedances as described above.

The Permittees must submit replacement pages for the Report no later than **May 30, 2015** and incorporate all of the modifications listed above in all future reports. In addition, because these comments, as applicable, must be incorporated into both the *Storm Water Performance Monitoring in the Los Alamos/Pueblo Watershed During 2014* report and the *2015 Monitoring Plan for Los Alamos and Pueblo Canyons Sediment Transport Mitigation Project*, NMED has extended the due date for these two documents from March 31, 2015 to **May 15, 2015**.

Should you have any questions or comments, please contact Ben Wear at (505)-476-6041.

Sincerely,

John E. Kieling
Chief
Hazardous Waste Bureau

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File: Reading and LANL 2015, Surface Water, Los Alamos/Pueblo Watershed.