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RETURN RECEIPT REQUESTED

December 27, 2005

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RE: NOTICE OF DISAPPROVAL FOR THE INTERIM FACILITY-WIDE GROUNDWATER MONITORING PLAN
LOS ALAMOS NATIONAL LABORATORY
EPA ID #NM0890010515
HWB-LANL-05-007

Dear Messrs. Johansen and McInroy:

The New Mexico Environment Department (NMED) is in receipt of the United States Department of Energy and Regents of the University of California (collectively, the Permittees) document entitled *Interim Facility-Wide Groundwater Monitoring Plan* (Monitoring Plan) dated May 2005 and referenced by LA-UR-05-3443/ER2005-0204. NMED has reviewed the proposed groundwater monitoring activities and hereby issues this notice of disapproval. The Permittees must address these comments and submit a revised Monitoring Plan within 60 days of receipt of this letter, unless otherwise specified in this letter. As part of the response letter that accompanies the revised Monitoring Plan, the Permittees must include a table that details where all revisions have been made to the Monitoring Plan and cross-references NMED's numbered comments. All submittals must be in the form of two paper copies and one electronic copy in accordance with section XI.A of the Consent Order (Order).

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General Comments:

1. The Permittees refer to groundwater data on the web. The Permittees must provide a Uniform Resource Locator (URL) address when referring to the web or websites.

2. The Permittees must provide a description of all field investigation, monitoring, sampling methods and procedures (methods) in an appendix to the Monitoring Plan as required in Section IX.A of the Order. If, during the course of sampling, the Permittees alter or deviate from the approved methods outlined in the Monitoring Plan, the deviations must be documented in the subsequent periodic monitoring reports. Any changes to the previously permitted methods must be approved by NMED and also included in the annual Monitoring Plan. NMED must approve deviations and changes per Section IV.A.3.b of the Order.

3. The Permittees must provide more detailed descriptions of all proposed investigation methods, field measurements and the use of the field instruments identified in the Monitoring Plan per Section XI.B.8 of the Order. Table C-2 must be revised to include more detailed descriptions of the proposed methodologies. As discussed in Section IX.A of the Order, references to standard operating procedures may not substitute for descriptions of field methods and procedures.

4. The Permittees may not defer to work that is proposed in unapproved work plans. The Monitoring Plan must encompass *all* groundwater and spring monitoring necessary to fulfill the requirements of the Order.

5. In discussions of the various watersheds/canyons, the Permittees refer to wells that are scheduled for replacement. All plug and abandonment activities must be approved by the Office of the State Engineer according to *Well Driller Licensing; Construction, Repair and Plugging of Wells*, 19.27.4 NMAC and Section X.D of the Order.

6. The Permittees must sample all newly installed wells (including replacement wells) quarterly to provide baseline data for the new wells and as part of watershed characterization activities. The Permittees must add the new wells to the annually updated Monitoring Plan in accordance with Section IX.B.2.i of the Order.

7. The Permittees must sample all newly located springs following monitoring requirements described in Section IV.A.3.f of the Order. The Permittees shall also provide descriptions of the geologic and lithologic units from which the spring discharges, indicate the source aquifer (i.e., alluvial, intermediate or regional), and measure or estimate flow.

8. The Permittees must complete monitoring activities in each watershed during each monitoring event as required in the Monitoring Plan. These activities are required for the remainder of the 2005 calendar year and subsequent calendar years as stated in Section IV.A.3.b of the Order until a long term monitoring plan is approved. The monitoring and

characterization activities for each watershed shall begin the last quarter of calendar year 2005.

9. The Permittees must sample all approved springs and alluvial, intermediate and regional wells for the first year (beginning the last quarter of calendar year 2005) on a quarterly basis as described in Table XII-5 of the Order. Based on recent characterization of the groundwater system, the only exceptions are the alluvial wells located in the Los Alamos/Pueblo Canyon watershed, which are to be monitored on a semi-annual basis, because NMED believes sufficient data is available for the alluvial system to provide information regarding fluctuations in the hydrogeologic system. More frequent monitoring is required in other watersheds as geochemical variations in the hydrogeologic system are not well understood. NMED may allow sampling results from the Monitoring Plan to supplement or substitute for other groundwater monitoring requirements approved in other work plans to avoid duplication (e.g., groundwater monitoring requirements at corrective action sites).

10. The Permittees must monitor and sample all wells scheduled for plugging and abandonment until abandonment is complete.

11. The Permittees must define what is meant by "continuous" measurement of water levels and flow sampling as referred to in each of the sampling tables.

12. The Permittees must monitor all wells including those wells that are suspected to be dry and/or historically have dry screens during each monitoring event. If groundwater is present then the Permittees must sample the well. When submitting water level data, NMED requires the dates of water level measurement to coincide with sampling events as mandated in Section IX.B.2.h.i of the Order.

13. The Permittees must update all appropriate figures and maps to include all existing springs and existing and abandoned wells regardless of status. In addition to the location of the wells and springs, other maps to be submitted shall include: surface-water flow conditions (perennial versus ephemeral), locations where ongoing artificial liquid releases occur such as the TA-50 outfall, TA-16 HE treatment plant outfall, TA-3 Sandia Canyon/ SWSC plant outfall, Bayo treatment outfall, the White Rock sewage treatment outfall, and cooling tower outfalls. Structures that influence flow such as the Mortandad Canyon PRB and man-made structures within the watercourse such as the Pajarito dam and low-head weir must also be identified on the required maps.

14. The Permittees must include a list or table of all wells available for ground water monitoring. The Permittees must include in the list/table, information regarding drilling methods and identify each well where drilling and/or development fluids (fluids) were used in the completion of the well. The list/table must also include information regarding the volumes, types of fluids used and purged, and development techniques utilized during the drilling and development of the well. Any documented residual geochemical effects must also be briefly discussed in the list/table. Finally, any construction problems that may affect the quality and representativeness of the analytical data must be identified in

the list/table. Based on the information to be provided, NMED may require the Permittees to rehabilitate, replace and/or install new wells that have construction problems, residual drilling or development fluid impacts that can not be eliminated or alleviated substantially in a timely manner.

15. NMED requires the Permittees to include the following in the analytical suite for wells and springs: stable isotopes of oxygen, hydrogen, carbon and nitrogen. The information gained will provide data regarding contaminant pathways, recharge, and source-term delineation. Additional required analytical suites concern the watersheds and locations where explosive compounds were discharged, disposed, and/or used. The explosive compound analytical suite should also include: hexahydro-1-nitro-3, 5-dinitro-1,3,5-trinizine (MNX), hexahydro-1,3-dinitroso-3-nitro-1,3,5-triazine (DNX), and hexahydro-1,3,5-trinitroso-1,3,5-triazine (TNX). These degradation products of RDX are indicators of degradation and natural attenuation of RDX in groundwater. In locations where explosive compounds are required analytes, the analytical suite must also include the explosive compounds found in Table III-1 of the Order. Finally, the Permittees must also analyze for furans and monitor for redox/oxidation reduction potential and dissolved oxygen using a flow-cell or other approved technique when purging wells prior to sampling.

16. On all future and resubmitted maps and figures the Permittees should remove all disclaimers (including figures) that state that the United States Government or the University of California and their employees cannot guarantee the responsibility for the accuracy, completeness and usefulness of any information or process disclosed. Such disclaimers are meaningless, as these maps must be "accurate, complete and useful" as required under Section XI.B.1 of the Order and 20.4.1.900 NMAC (incorporating 40 C.F.R. 270.11(d)(i)).

17. The Permittees must identify analytical methods and detection limits for all explosive compounds located on Table III-1 of the Order, and MNX, DNX, and TNX, and explained in #15 above..

18. The Permittees must update maps and figures to include all newly installed wells (since the Monitoring Plan was submitted).

19. Purging and sample collection methods (sampling methods) specific to *each* well must be identified and discussed in a table. The depth of the pump, port, or other sampling device), pumping and purging rates and location of the screen(s) must also be provided in order for NMED and stakeholders to audit procedures and track sampling method deviations specific to each well.

20. If volatile organic compounds (VOCs) are a contaminant of concern at a given well, the Permittees shall not utilize a peristaltic pump, bailer or other collection method that may volatilize the contaminants.

21. The Permittees shall revise the Monitoring Plan to reflect monitoring requirements of the proposed wells once these wells have been installed.

22. Deviations from the sampling methods outlined in Section XI must be requested and approved prior to the completing the task.

23. Wells that are historically dry must be monitored and, if they contain water, they must be sampled according to procedures and methods for the analytes required in the Monitoring Plan. **See also #12 above.**

24. Practical quantification limit and detection limits for each analyte must be included in the Monitoring Plan.

25. Background spring, well and surface gage station locations identified in the location/analyte/frequency tables must also indicate the alluvial, intermediate perched, and regional zone for which it applies.

Specific Comments:

Section 1.1 Purpose, page 1-2:

26. An additional purpose of determining the water quality with respect to mining the aquifer must be added to this section.

Section 1.5 Approach to Monitoring Network Design, page 1-6, paragraph 4:

27. **Permittees' Statement:** "A level of significance is defined when the detection of the constituent at a concentration consistently greater than the appropriate regulatory standards is identified."

    NMED Comment: The Permittees must clearly define the phrases "level of significance" and "consistently greater than the appropriate regulatory standards." The Permittees are reminded that NMED will consider *any* contaminant detection above regulatory standards as significant, especially if the constituent is expected to be present and/or are found in other media. As indicated in the Monitoring Plan, changes in field parameters may prompt a response or action. Detections above regulatory standards will obviously trigger actions, but NMED may require a response or action regardless of whether a concentration is greater than a cleanup or screening level. For example, depending on the contaminant, any detection and/or any contaminant level showing increasing trends above background may prompt NMED to require a response or action by the Permittees.

Section 1.5 Approach to Monitoring Network Design, page 1-7, paragraph 2:

28. **Permittees' Statement:** "Intermediate perched and regional groundwaters are not intimately linked to seasonal hydrologic cycles and may be monitored less frequently."

NMED Comment: The Permittees have not provided adequate justification (e.g., water level data) to document that these aquifers are not connected. The Permittees must sample and collect water level data from alluvial, intermediate perched and regional wells, unless otherwise approved by NMED, on a quarterly basis in order to determine if seasonal hydrologic fluctuations occur. **See general comment # 9.**

Section 1.7 Analytical Methods, Field Methods, and Data Review, page 1-8:

29. The Permittees must include descriptions of water level and sampling methods for springs. In addition, if the Permittees are referring to spring flow measurements instead of spring water level measurements, then spring flow measurement field methods shall be provided. Revise the text accordingly. **See general comment # 3.**

Section 1.8 Sampling Frequency and Schedule, page 1-8:

30. **Permittees' Statement:** "Although the Consent Order calls for quarterly sampling of all alluvial, intermediate and regional wells, semiannual sampling will adequately capture annual variability and contaminant transport in base flow and groundwater."

    NMED Comment: Quarterly sampling will better identify the variations in groundwater flow, recharge and contaminant transport on the Pajarito Plateau. At a minimum, quarterly sampling must be conducted during the initial year of monitoring. The Permittees may propose alternate sampling frequencies for monitoring of selected wells in the annual submittals of the Monitoring Plan. Such proposals are subject to NMED approval. **See General Comment #9.**

Figures 1.5-1 to1.5-6 Decision flow watershed conceptual models, pages 1-12 to 1-17:

31. Although decision models may be useful in certain circumstances, NMED will not permit their use to base decisions regarding monitoring at this time. The Environmental Protection Agency guidance document referred to in this section states that it is intended for use at sites that have *completed* site characterization, risk assessment, remedy selection and are in the process of implementing a removal action. This does not describe Los Alamos National Laboratory. Use of the decision model is therefore premature and not appropriate in the development of the Monitoring Plan.

Section 2.3.4 Intermediate Perched Groundwater, pages 2-3 to 2-4:

32. The newly installed wells (LAOI-7 and LADP-5) must be added to the monitoring schedule identified in the Monitoring Plan. **See general comment # 6.**

Table 2.3-1 Los Alamos Canyon/Pueblo Canyon Watershed Interim Monitoring Plan, pages 2-7 to 2-11:

33. The Permittees' analytical suites must include all constituents listed in Section IX.B.2.i of the Order. The Permittees shall also sample the alluvial wells located in Los Alamos Canyon for polychlorinated biphenyls (PCBs) and tungsten from the alluvial and intermediate zones and regional monitoring wells as described in Section IV.B.1.b.iv of the Order.

34. The Permittees must sample springs in Los Alamos Canyon watershed for explosive compounds, and dioxins/furans as listed in 40 C.F.R. Part 264, Appendix IX, as stated in Section IV.A.3.f item 4 of the Order. In addition, due to explosive testing in the watershed (TAs-3 and 10), the Permittees must also analyze for the explosive compounds found in Table III-1 of the Order. Finally, the Permittees must include the Target Analyte List metals in the analytical suite for R-6. **See general comment #15.**

35. The Permittees must monitor water levels and sample wells LAOI-3.2, LAO-0.3, LAO-0.6, LAO-0.91, LAO-1, LLAO-3, LLAO-5, LAO-1.2, LAO-5, LAO-6, LAUZ-1, LAUZ-2, PAO-2.5, PAO-5s, PAO-5n, APCO-1, LA-1, LA-1b, LA-2, LA-5, Halladay, Otowi, MW-3, MW-5, MW-6, and MW-9 quarterly for the first calendar year (2005). **See general comment #9.** Several of these wells are located at the farthest lateral extent of the Los Alamos Canyon watershed and must be sampled to characterize any releases beyond the Facility boundary. Furthermore, the New Mexico Department of Transportation wells (MW-3, 5, 6, and 9) have not been characterized and must be sampled in order to understand their relationship to other alluvial wells and groundwater flow in the Los Alamos Canyon watershed. The Permittees must sample alluvial well LAO-0.6 in addition to LAO-0.3, because groundwater at that location will provide a better representation of releases from former TAs -1 and -41 than LAO-0.3. LAO-0.3 is located upstream of TA-2 and most of TA-41 and it will not adequately characterize any contaminant releases from those TAs. Contamination has been detected in LAO-0.6 at concentrations greater than Maximum Contaminant Levels (MCLs) and must be sampled.

36. The Permittees did not provide justification that wells, LA0-0.91, LAO-1, LAO-1.2, LAUZ-1 and LAUZ-2 provide duplicative data. Therefore, the Permittees must monitor and sample these wells as approved or provide justification that adequately illustrates the duplicative nature of the wells in the Monitoring Plan.

37. According to Section IV.A.3 of the Order, the Permittees must sample the newly identified spring GU-0.01 located at the confluence of Los Alamos Canyon and Guaje Canyon to determine if water emitted from this spring is impacted by the Facility activities. This spring must be added to the Monitoring Plan and must be depicted on appropriate maps. **See general comment #7.**

Section 3.3.2 Alluvial Groundwater, page 3-1:

38. **Permittees' Statement:** "Locations SCO-1 and SCO-2 will be monitored on a seasonal frequency (spring snowmelt and summer monsoon) for the presence of groundwater."

    NMED requires quarterly monitoring and sampling to monitor seasonal variations. **See general comment #9.**

Table 3.3.1 Sandia Canyon Watershed Interim Monitoring Plan, page 3-5:

39. Based on historical practices at TAs-3 and -20, the Permittees must sample wells in Sandia Canyon for explosive compounds.

Section 4.3 Scope of Activities, page 4-1:

40. The Permittees' statement regarding the number of sampling rounds is unclear. The Permittees must define "characterization sampling" rounds versus "monitoring" rounds and indicate the wells to which this applies. The sampling activities for Mortandad Canyon must adhere to quarterly sampling whether "monitoring" or "characterization," as required in Table XII-5 of the Order. Furthermore, the Permittees' monitoring activities shall begin in the last quarter of the calendar year of 2005 based upon the approval of this Monitoring Plan. **See general comment #9.**

Table 4.3-1 Mortandad Canyon Watershed Interim Monitoring Plan. Page 4-5:

41. Based on historical practices at former TA-4 and TA-5, the Permittees must sample alluvial, intermediate and regional wells for explosive compounds, furans, and tungsten. The analytical suites must also include the general chemistry parameters (both organic and inorganic) included in Section IX.B.2.i of the Order.

42. The Permittees shall sample for pesticides at all baseflow stations in the Mortandad Canyon watershed.

43. The Permittees must monitor water levels and sample MCO-2, MCO-3, MCO-7.5, TSWB-6, CBDO-1, CBDO-2, CBDO-3, CBDO-5, CBDO-8, and CBDO-9 on a quarterly basis. **See general comment # 6.**

44. According to Table XII-5 of the Order, the Permittees must sample the following wells on a quarterly basis, MCO-7.5, TSWB-6, MCOBT-4.4, TW-8 and R-16 (screens 2, 3, and 4). NMED understands that MCOBT-4.4 has not been plugged and abandoned (P&A'd); MCOBT-8.5 was. Provide P&A provide documentation with the response to this NOD. If this is not the case the Permittees shall sample the wells as required or inform NMED of the status of these wells. Other wells that shall be monitored and sampled on a quarterly basis include MT-2, MT-3, and MT-4.

45. According to Section IV.A.3 of the Order the Permittees must sample Pine Rock Spring in order to evaluate for water chemistry and the presence of contaminants. This newly identified spring must be included in the Monitoring Plan, and must be included on figures and maps illustrating the Mortandad Canyon watershed. **See general comment # 7.**

Section 5.3 Scope of Activities, page 5-1:

46. The Permittees refer to the "approved" monitoring scope in the Pajarito Work Plan. The Permittees are reminded that the Pajarito Work Plan has not been approved. Furthermore, a Notice of Disapproval issued by NMED directs the Permittees to follow the schedule that will be approved as part of this Monitoring Plan.

47. The sampling activities for Pajarito Canyon must adhere to quarterly sampling as required in Table XII-5 of the Order. **See general comment # 9.**

Section 5.3.3 Intermediate Perched Groundwater, page 5-2:

48. The Permittees must provide the locations of the three new intermediate wells 03-MW-2, 03-MW-03, and 03-MW-04. In addition, the Permittees state that 03-MW-2, 03-MW-3, and 03-MW-4 are proposed as intermediate wells; however, Figure 5.3-1 describes these wells as alluvial wells. The Permittees must clarify which types of wells are proposed by revising the text and all appropriate tables and figures.

Figure 5.3-1 Pajarito Canyon Watershed, page 5-3:

49. The figure provided indicates R-23i as a green symbol on the map; however, the green symbol is not represented in the legend. The Permittees must edit the figure and legend to depict the correct function of this well. Once the location for R-17i is determined, the Permittees must add the location to the current figure or present a new figure with these changes.

Table 5.3.1 Pajarito Canyon Watershed Interim Monitoring Plan, page 5-5:

50. The Permittees must sample wells 18-BG-1, 18-BG-4, 18-MW-4, 18-MW-5, 18-MW-7, 18-MW-9, 18-MW-10, 18-MW-11, 18-MW-12, 18-MW-16 and 18-MW-17 on a quarterly basis for the first calendar year of the Monitoring Plan. The Permittees must revise the Monitoring Plan to reflect the approved changes.

51. The Permittees are required to include PCBs, pesticides and explosive compounds in their analytical suite for proposed wells 03-MW-2, 03-MW0-3 and 03-MW-4.

52. According to Sections IV.A.3.f, item 4 and IV.B.4.b.v item 4 of the Consent Order, the Permittees must submit groundwater and baseline surface water samples to offsite laboratories from springs, and alluvial, intermediate and regional monitoring wells (listed in Table XII-5) for analysis of general chemistry parameters VOCs, SVOCs, explosive

compounds, cyanide, lithium, molybdenum, PCBs, ClO_4 and pesticides as described in Section IX.B.2.i of the Order. **See general comment #15.**

53. Pesticide (furans) analyses are required for samples collected from all alluvial wells and baseflow stations. Pesticide analyses from regional and intermediate wells may be required by NMED depending on the results of the alluvial well analyses. However, the Permittees must sample R-19 screens 1-7 for all of the constituents listed in the preceding paragraph.

54. The Permittees must include the replacement well and additional wells installed intermediate well 03-MW-1 and the replacement well on Figure 5.3-1. **See general comment # 13**.

Figure 6.3-1 Water Canyon/Canon de Valle Watershed, page 6-5:

55. The Permittees must provide a description for alluvial wells, 16-2655 and 16-6295 which are represented as a turquoise symbol and not identified in the legend of the figure. The Permittees must edit the figure to describe the symbol used to represent these wells.

56. The Permittees must revise the map to reflect the location of R-18 on Figure 6.3-1.

57. The Permittees must update the figure to correctly represent the location of gage station 252. The map erroneously depicts the location of gage station 252 on the western side rather than the eastern side of the SR501. **See general comment #13**.

Table 6.3-1 Water Canyon/Canon de Valle Watershed Interim Monitoring Plan, pages 6-7 to 6-9:

58. The Permittees must sample springs on a quarterly basis as specified in Table XII-5. According to Section IV.A.3.f item 4 of the Order, analytical suites for springs must include analyses for general organic chemistry parameters, PCBs, and dioxins/furans. Additional inorganic analyses for wells and springs shall include lithium, ClO_4, molybdenum, and cyanide. The Permittees must also include the explosive compounds listed on Table III-1 of the Order.

59. The Permittees must sample newly identified spring WA-6.25, located in Water Canyon near Beta Hole, in accordance with Section IV.A.3 of the Order to evaluate this spring for contaminants and water chemistry. This newly identified spring shall also be added to the Monitoring Plan for quarterly sampling. **See general comment # 7**.

60. The Permittees must, at a minimum, sample the wells in this watershed for the first year (beginning at the last quarter of 2005) of the Monitoring Plan on a quarterly basis as described in Table XII-5 of the Order. **See general comment #9**. Furthermore, the 16-021(c) Corrective Measures Study proposes quarterly groundwater and spring sampling which must be reflected in the Monitoring Plan.

61. The Permittees must also monitor for redox/ORP, specific conductance and dissolved oxygen when purging wells prior to sampling. **See general comment #15.**

62. NMED requests that the Permittees add a baseflow station midway between gage stations E252 and E262.

63. The Permittees must analyze samples collected at all baseflow stations for dioxins and furans.

Section 7.1 Introduction, page 7-1:

64. The Permittees must sample all wells for the first year (beginning the last quarter of 2005) on a quarterly basis as described in Table XII-5 of the Order. **See general comment #9.**

Section 7.3 Scope of Activities, page 7-2:

65. The Permittees must monitor and sample or provide sufficient data and adequate justification for not including DOE Spring in Chaquehui Canyon and Ancho Spring in Ancho Canyon as sampling locations.

66. NMED requests that the analytical suite for Chaquehui Canyon watershed sampling locations include tritium because of the historic tritium operations at TA-33.

Figure 7.3-1 Ancho Canyon Watershed, page 7-5:

67. The Permittees shall include a separate figure (or expand Figure 7.3-1) depicting all areas referenced in the Monitoring Plan. Chaquehui Canyon, Indio Canyon and Frijoles Canyon and associated sampling locations are not illustrated on any map within the Monitoring Plan. The Permittees must provide a revised or additional map.

Table 7.3-1 Ancho/Chauquehui/Frijoles Watersheds Interim Monitoring Plan, page 7-8:

68. The Permittees propose triennial sampling for VOCs, PCBs, and pesticides for wells in Ancho Canyon. NMED requires quarterly sampling for these wells. The Permittees may revise the schedule after the first year (2005) of the Monitoring Plan.

69. Due to the use and disposal of explosive compounds in these or adjacent watersheds and intermittent detections of explosive compounds in springs, the Permittees must also sample for furans, the explosive compounds listed in Table III-1, and the compounds MNX, DNX, and TNX in wells and springs on a quarterly basis. **See general comment #15.**

70. The Permittees must monitor and sample alluvial wells 39-1120 and 39-1135 in Ancho Canyon on a quarterly basis.

Table 8.3-1 White Rock Canyon and Rio Grande Watershed Interim Monitoring Plan, pages 8-5 to 8-6:

71. The Permittees must monitor Springs 4, 4A, 4AA, 4B, 4C, and 9 in White Rock Canyon according to Table XII-5 on a quarterly basis, at a minimum, for the first year. The Permittees may propose to revise the schedule based on the sampling results in the annual update of the Monitoring Plan. NMED requires a minimum of semi-annual sampling for all other springs for the first year of monitoring.

72. The Permittees must include monitoring and sampling of Spring 9B, DOE Spring, Spring 8A, Spring 10, and Spring 6AAA or adequately justify why these springs were not included. The Permittees must add the location of these springs to Figure 8.3-1.

73. The Permittees shall include explosive compounds in their analytical suite for Spring 2B, Sacred Spring, Sandia Spring, Ancho Spring and springs found adjacent to the Pajarito Canyon and Water Canyon watersheds. The analyte suite must also include furans, the constituents listed in Table III-1 of the Order, and the explosive compound degradation products MNX, DNX and TNX. **See general comment #15.**

74. According to Section IV.A.3 of the Order the Permittees must monitor and sample Sandia Spring located in lower Sandia Canyon. The NMED Oversight Bureau has utilized a new sampling location for Sandia Spring due to low-flow conditions. This alternative sampling location may be utilized during low-flow conditions. The new location shall be added to the appropriate maps or figures.

Appendix B, page B-1 to B-368:

75. The usefulness of Appendix B is unclear. The Permittees must either remove the appendix entirely or provide a discussion and context for the inclusion of the data in the Interim Plan. Alone, the data tables presented do not provide justification for altering sample locations, analyte requirements, and/or changing the sampling frequency outlined in the Order.

Appendix C, Table C-1, Procedure for Measuring Groundwater Levels and Collecting Water Samples Under the interim Plan, page C-1:

76. The Permittees must provide a brief description of the methods and procedures in accordance with Section IX.A, of the Order. The description must include sufficient details of all field monitoring, sampling and testing methods so that the procedures may be evaluated.

Appendix C, Table C-3 Analytical Methods – Groundwater Analytical Suites, pages C-1 to C-9:

77. The Permittees must provide an analytical method for fluoride, total phosphorus and total kjeldahl nitrogen (TKN).

78. The Permittees must provide a description for the analytical method designation "CVAA" (i.e., cold vapor atomic absorption) in the footnotes portion of Table C-3.

Appendix C: Investigation Derived Waste, pages C-10 to C-12:

79. The Permittees must correct this section of Appendix C. In this section, waste streams are described as being present in Table C-1; however, Table C-1 makes no mention of waste streams or investigation-derived waste (IDW). Table C-4 identifies only waste streams.

80. The Permittees must provide a detailed description of the methods and procedures used to characterize the waste streams. As stated in section IX.A of the Order, the Permittees cannot substitute a reference to their standard operating procedures and website for a description of procedures.

81. Unless otherwise approved by NMED, the Permittees must sample all purge water, each sample collected must be analyzed for Appendix VIII constituents (40 C.F.R. Part 261) and the results must be submitted to NMED (including the Ground Water Quality Bureau) before purge water can be discharged. If the Permittees intend to use existing data to characterize IDW, then associated quality assurance/quality control data must be provided in conjunction with any supporting data in the justification.

Appendix D, Table D-1 Wells Included in Consent Order Table XII-5 and Not Included in Interim Plan for Various Reasons, pages D-1 to D-2:

82. The Permittees shall modify Table D-1 to reflect the required changes made to each of the watershed sampling schedules.

Appendix D: Figure D-1 Comparison between parameters at LAUZ-1 and LAUZ-2, page D-3:

83. The Permittees' representation of LAUZ-1 and LAUZ-2 compares data over a period of five years. During that time there is a significant gap between 8/29/98 and 2/24/01. The Permittees must clarify the cause of the data gap.

84. The Permittees shall include all tables and figures required in Sections XI.B.11 and XI.B.12 of the Order.

85. Additional comparisons similar to Figure D-1 shall be provided to justify well substitution. If the rationale of similar water quality data is used, then comparisons between those wells must be provided. In addition, the data, citations and sampling methodologies shall be provided to allow direct comparisons and reproduction of the graphs presented in the Monitoring Plan.

NMED understands the Permittees has attempted to address continuing concerns regarding residual drilling and development fluids (fluids) impacting the quality and representativeness of the groundwater monitoring data through the *Well Screen Assessment Report* (dated November 2005 and referenced by LA-UR-05-8615). The Permittees must also develop a plan for rehabilitation of all wells where fluids were utilized and where construction problems (e.g., misplaced screens/grout or excessive filter pack lengths) are documented. This plan is especially important in light of the chromium exceedances in R-28, as the Permittees must be prepared to justify why drilling fluids have not masked chromium detections in other single completion wells that were installed with drilling fluids. This plan must be submitted completed prior to and reported in the annual update (2006) of the Monitoring Plan. If the wells cannot be rehabilitated to provide representative, quality groundwater monitoring data, the Permittees may be required by NMED to plug and abandon and complete a new well in an adjacent or more appropriate location.

Questions concerning construction, well development and residual fluid impacts continue to plague the Permittees' drilling and monitoring well program. Questionable wells proposed for the interim monitoring network must be rehabilitated to eliminate or substantially reduce fluid impacts. The alternative solution will be to replace, adjust locations as required by NMED, and install new wells that yield representative samples. All wells, including any future wells and replacement wells must be drilled, installed, and developed to ensure that high quality, representative groundwater samples can be collected as required in Section IV.A of the Order and the Hazardous Waste Regulations, 20.4.1.500 NMAC (incorporating 40 C.F.R. Part 264, Subpart F). Finally, the Permittees are advised that corrective action decisions at solid waste management units (e.g., upcoming corrective measures study implementations at 16-021 (c) and Material Disposal Area H) and for other locations that require groundwater monitoring could be problematic when data quality is in question.

NMED requires a response within 60 days of receipt of the NOD. The Permittees will be required to submit a completely revised copy of the Monitoring Plan after resolution of all NOD comments. Should you have any questions or comments, please contact John Young of my staff at (505) 428-2538.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

JPB:jry

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