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Addressee Name:	M. Graham, ADEP
Originator:	J. Bearzi, NMED
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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

March 25, 2011

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Michael J. Graham
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RE: APPROVAL WITH MODIFICATION
2010 INTERIM FACILITY-WIDE GROUNDWATER MONITORING PLAN
LOS ALAMOS NATIONAL LABORATORY
EPA ID#NM0890010515
HWB-LANL-10-048

Dear Messrs. Rael and Graham:

The New Mexico Environment Department (NMED) is in receipt of the United States Department of Energy (DOE) and the Los Alamos National Security (LANS), L.L.C.'s (collectively, the Permittees) document entitled *2010 Interim Facility-Wide Groundwater Monitoring Plan* (Plan) dated June 2010 and referenced by EP2010-0231.

Pursuant to Section III.M.2 of the March 1, 2005 Order on Consent (Order), the NMED hereby issues this Approval with the following modifications and comments.

Part I: Modifications

The NMED has made the following modifications to the Plan, which must be implemented as part of the Approved Plan.

1. Suspend sampling of Westbay wells that show residual effects of drilling fluids until the results of the TA-16 Westbay reliability assessment study, which was ordered by the NMED letter dated January 31, 2011, have been reviewed and recommendations developed regarding the final disposition of Westbay wells.

2. Discontinue the usage of the Well Screen Analysis Report, Rev. 2 (LANL, May 2007) protocol for evaluating the residual effects of drilling products on the water quality data. Evaluation of the representativeness of water quality data from regional and perched intermediate wells must rely more on trends in field data collected during well purging; physical signs of potential problems with sample quality (e.g., odors, presence of foam or foreign objects, unusual color or turbidity); longer-term (one to three years) water quality trends; presence of chemical indicators of drilling products; anomalous data; and any other factors that might indicate impacts on the quality of water samples. For well screens, where representativeness of water quality data is questionable or has not yet been established (e.g., in newly constructed or rehabilitated wells), add dissolved total iron, dissolved total manganese, nitrate as nitrogen, total organic carbon, and sulfate to the list of field parameters that are measured during well purging. These additional field parameters must be collected at least once every casing volume of purged water.

3. **Section 1.12, Stable Isotope Sampling, second paragraph, page 10:**
Monitoring groups MDA C, MDA AB and TA-21 are being investigated under Order. Because thorough characterization of groundwater beneath these sites is required, isotopic signatures are important. Collect stable isotope data for nitrogen, deuterium, and oxygen semiannually at all intermediate and regional monitoring wells in these monitoring groups.

4. **Section 3.5, Modifications to the 2009 Interim Plan, first bullet, page 15:**
Attempt to remove silt from alluvial well SCA-1. If SCA-1 cannot be rehabilitated and is deemed unreliable for monitoring purposes, use drive point SCA-1P as a substitute for SCA-1.

5. **Section 8.5, Modifications to the 2009 Interim Plan, first paragraph, first and third bullets, page 27:**
Do not remove Springs 2B and 5B from the White Rock Canyon watershed sampling list. These springs and Spring 5A must be sampled during low Rio Grande flow conditions, preferably between November and January. Sampling during this time period will ensure that river water influence on samples is minimized.

6. **Figure 1.6-1, pages 34:**
Make the following changes to the boundaries of area-specific monitoring groups:

    1. Add well R-1 to the Chromium Investigation Monitoring Group;
    2. Add wells R-23 and R-23i to the TA-54 Monitoring Group; and

3. Add well R-5 to the TA-21 Monitoring Group.

7. **Table 1.6-2, pages 51 and 52:**
Make the following changes to the analytical suites and sampling frequencies for area-specific monitoring groups:

1. Characterization sampling of all new intermediate and regional wells must include quarterly sampling and analysis for stable isotopes;
2. For Sandia Canyon alluvial wells in the Chromium Investigation Monitoring Group, sampling and analysis for volatile organic compounds (VOC) and semivolatile organic compounds (SVOC) must be conducted semiannually;
3. For Mortandad Canyon intermediate wells in the Chromium Investigation Monitoring Group, sampling and analysis for VOC must be conducted semiannually;
4. For intermediate and regional wells in the TA-54 Monitoring Groups wells, sampling and analysis for high explosive compounds must be conducted semiannually;
5. For intermediate and regional wells in the MDA C Monitoring Group, sampling and analysis for SVOC and stable isotopes must be conducted semiannually, and for low-level tritium quarterly;
6. For regional wells in the MDA AB Monitoring Group, sampling and analysis for stable isotopes must be conducted semiannually; and
7. For all area-specific monitoring groups, except for the TA-16-260 Alluvial CMI Monitoring Group, schedule triennial sampling for SVOC, pesticides, polychlorinated biphenyls (PCBs), high explosives, and dioxins/furans for all sampling locations that are not planned to be sampled in 2011. The triennial sampling may be staggered over the 2011 to 2013 time frame, but in no event completed later than 2013.

8. **Table 1.6-3, pages 54 - 56:**
Make the following changes to the analytical suites and frequencies of sampling for general surveillance monitoring:

1. For Subgroup B and C springs in White Rock Canyon/Rio Grande, sampling and analysis for high explosive compounds must be conducted annually;
2. Characterization sampling of all new intermediate and regional wells must include quarterly sampling and analysis for stable isotopes; and
3. For all watersheds, schedule triennial sampling for VOC, SVOC, pesticides, PCBs, high explosives, and dioxins/furans for all sampling locations that are not planned to be sampled in 2011. The triennial sampling may be staggered over the 2011 to 2013 time frame, but in no event completed later than 2013.

9. **Table 2.4-1, page 69:**
   1. Move the sample collection event at Campsite Spring from spring to fall to coincide with base-flow conditions.
   2. Add the production well LA-1 to the General Surveillance Monitoring Group. Install a dedicated sampling system in well LA-1 and conduct characterization sampling to determine if groundwater contamination is present.

10. **Table 8.4-1, pages 112-113**
    Sample Ancho Spring and Spring 9B between December and March when flows are higher and springs are more accessible.

11. **Table 8.4-1, page 114:**
    If base flow in any of the canyons listed in the Table is not reaching the Rio Grande, collect a surface water sample at the first upstream location with sufficient flow that is no farther than 1000 ft from the confluence with the Rio Grande. If the first upstream location with sufficient flow is greater than 1000 ft from Rio Grande, no sampling is required.

12. **Appendix C, C-4.1 Analyses by Accredited Contract Laboratories, page C-11:**
    The Permittees propose to analyze bromide using EPA Method 300.0 that has a practical quantitation limit (PQL) above the corresponding screening level. However, EPA Method 300.1 has a PQL for bromide that is lower than Method 300.0 and can meet the screening level. Analyze bromide by an EPA-approved method that has a PQL lower than the corresponding screening level, such as Method 300.1.

13. **Appendix C, C-4.1 Analyses by Accredited Contract Laboratories, page C-14:**
    1. The Permittees propose to analyze atrazine using EPA Method 8270 that has a PQL above the corresponding screening level. EPA Methods 507, 508.1, 525.2, and 551.1 have PQLs for atrazine that are lower than Method 8270 and can meet the screening level. Analyze atrazine by an EPA-approved method that has a PQL no greater than the corresponding screening level, such as one of the aforementioned methods.
    2. The Permittees propose to analyze azobenzene using EPA Method 8270 that has a PQL approximately 8 times the corresponding screening level. EPA Method 8270D (with separatory funnel extraction) can achieve a PQL for azobenzene that is lower than the screening level. Analyze azobenzene by an EPA-approved method that has a PQL no greater than the corresponding screening level, such as Method 8270D.
    3. The Permittees propose to analyze benzidine using EPA Method 8270 that has a PQL approximately five orders of magnitude higher than the corresponding screening level. The Permittees state that EPA Method 605 can achieve much lower PQL for benzidine (approximately two orders of magnitude lower than Method 8270) but did not propose to use that method. Analyze benzidine by EPA

Method 605 or another EPA-approved method that has a PQL for benzidine no greater than Method 605.

14. **Appendix C, C-4.1 Analyses by Accredited Contract Laboratories, page C-15:**
    1. The Permittees propose to analyze benzo(a)anthracene, benzo(a)pyrene and benzo(b)fluoranthene using EPA Method 8270 that has PQLs above the corresponding screening levels. The Permittees state that EPA Method 8310 can achieve PQLs that are below the corresponding screening levels but did not propose to use that method. Analyze benzo(a)anthracene, benzo(a)pyrene and benzo(b)fluoranthene by EPA Method 8310 or another EPA-approved method (for example, EPA Method 550, 550.1, 610, or 8270D-SIM) that has PQLs no greater than the corresponding screening levels.
    2. The Permittees propose to analyze bis(2-chloroethyl)ether using EPA Method 8270 that has a PQL approximately two orders of magnitude higher than the corresponding screening level. The Permittees state that EPA Method 611 can achieve a PQL for bis(2-chloroethyl)ether that is much lower than Method 8270 but did not propose to use Method 611. Analyze bis(2-chloroethyl)ether by EPA Method 611 or another EPA-approved method (for example, Method 8270D) that has a PQL for bis(2-chloroethyl)ether no greater than Method 611.
    3. The Permittees propose to analyze bis(2-ethylhexyl)phthalate using EPA Method 8270 that has a PQL above the corresponding screening level. EPA Methods 525.2, 625, 8270C, and 8270D can achieve PQLs for bis(2-ethylhexyl)phthalate that are lower than Method 8270 and can meet the screening level. Analyze bis(2-ethylhexyl)phthalate by an EPA-approved method that has a PQL no greater than the corresponding screening level, such as one of the aforementioned methods.

15. **Appendix C, C-4.1 Analyses by Accredited Contract Laboratories, page C-16:**
    1. The Permittees propose to analyze 4-chloroaniline using EPA Method 8270 that has a PQL above the corresponding screening level. The Permittees state that EPA Method 8311 can achieve a PQL that is below the corresponding screening level but did not propose to use that method. Analyze 4-chloroaniline by EPA Method 8311 or another EPA-approved method (for example, EPA Method 8270D) that has a PQL no greater than the corresponding screening level.
    2. The Permittees propose to analyze dibenz(a,h)anthracene using EPA Method 8270 that has a PQL above the corresponding screening level. The Permittees state that EPA Method 8310 can achieve a lower PQL for dibenz(a,h)anthracene than Method 8270. However, Method 8310 does not provide the lowest available PQL for dibenz(a,h)anthracene and does not meet the corresponding screening level. Analyze dibenz(a,h)anthracene by EPA Method 8270D-SIM or another EPA-approved method that has a PQL no greater than the corresponding screening level.
    3. The Permittees propose to analyze 3,3'-dichlorobenzidine using EPA Method 8270 that has a PQL above the corresponding screening level. The Permittees state that EPA Method 605 can achieve a PQL that is below the corresponding

screening level but did not propose to use that method. Analyze 3,3'-dichlorobenzidine by EPA Method 605 or another EPA-approved method that has a PQL no greater than the corresponding screening level.

4. The Permittees propose to analyze 4,6-dinitro-2-methylphenol using EPA Method 8270 that has a PQL above the corresponding screening level. EPA Methods 528, 8270C-SIM and 8270D can achieve a PQL for 4,6-dinitro-2-methylphenol that is lower than Method 8270 and can meet the screening level. Analyze 4,6-dinitro-2-methylphenol by an EPA-approved method that has a PQL no greater than the corresponding screening level, such as one of the aforementioned methods.
5. The Permittees propose to analyze hexachlorobenzene using EPA Method 8270 that has a PQL above the corresponding screening level. The Permittees state that EPA Method 8121 can achieve a PQL that is below the corresponding screening level but did not propose to use that method. Analyze hexachlorobenzene by EPA Method 8121 or another EPA-approved method (for example, EPA Method 505, 508, 508.1, 525.2, 551.1, 608, 612, or 8081) that has a PQL no greater than the corresponding screening level.

16. **Appendix C, C-4.1 Analyses by Accredited Contract Laboratories, page C-17:**
    1. The Permittees propose to analyze hexachlorobutadiene using EPA Method 8270 that has a PQL above the corresponding screening level. The Permittees state that EPA Method 8121 can achieve a PQL that is below the corresponding screening level but did not propose to use that method. Analyze hexachlorobutadiene by EPA Method 8121 or another EPA-approved method (for example, EPA Method 502.2, 524.2, 612, 8021B, 8260B, 8260C, or 8270D) that has a PQL no greater than the corresponding screening level.
    2. The Permittees propose to analyze indeno(1,2,3-cd)pyrene using EPA Method 8270 that has a PQL above the corresponding screening level. The Permittees state that EPA Method 8310 can achieve a PQL that is below the corresponding screening level but did not propose to use that method. Analyze indeno(1,2,3-cd)pyrene by EPA Method 8310 or another EPA-approved method (for example, EPA Method 525.2, 550, 550.1, 610, 8270C-SIM, or 8270D-SIM) that has a PQL no greater than the corresponding screening level.
    3. The Permittees propose to analyze n-nitrosodiethylamine using EPA Method 8270, with a PQL approximately four orders of magnitude higher than the corresponding screening level. The Permittees state that EPA Method 521 can achieve a much lower PQL for n-nitrosodiethylamine (approximately three orders of magnitude lower than Method 8270) but did not propose to use Method 521. Analyze n-nitrosodiethylamine by EPA Method 521 or another EPA-approved method that has a PQL for n-nitrosodiethylamine no greater than Method 521.
    4. The Permittees propose to analyze n-nitrosodimethylamine, n-nitroso-di-n-butylamine, n-nitroso-di-n-propylamine, and n-nitrosopyrrolidine (collectively, nitrosamines) using EPA Method 8270 that has PQLs above the corresponding screening levels. The Permittees state that EPA Method 521 can achieve PQLs that are below the corresponding screening levels but did not propose to use that

method. Analyze nitrosamines by EPA Method 521 or another EPA-approved method that has PQLs no greater than the corresponding screening levels.

17. **Appendix C, C-4.1 Analyses by Accredited Contract Laboratories, page C-18:**
    1. The Permittees propose to analyze 2,2'-oxybis(1-chloropropane) using EPA Method 8270 that has a PQL above the corresponding screening level. The Permittees state that EPA Method 611 can achieve a PQL that is below the corresponding screening level but did not propose to use that method. Analyze 2,2'-oxybis(1-chloropropane) by EPA Method 611 or another EPA-approved method (for example, EPA Method 625 or 8270D) that has a PQL no greater than the corresponding screening level.
    2. The Permittees propose to analyze pentachlorophenol using EPA Method 8270 that has a PQL above the corresponding screening level. EPA Methods 515.1, 515.2, 515.3, 515.4, 8041, 8151A, and 8270C-SIM can achieve PQLs for pentachlorophenol that are lower than Method 8270 and can meet the screening level. Analyze pentachlorophenol by an EPA-approved method that has a PQL no greater than the corresponding screening level, such as one of the aforementioned methods.
    3. The Permittees propose to analyze phenol using EPA Method 8270 that has a PQL above the corresponding screening level. The Permittees state that EPA Method 604 can achieve a PQL that is below the corresponding screening level but did not propose to use that method. Analyze phenol by EPA Method 604 or another EPA-approved method (for example, EPA Method 528, 625, 8270C, 8270C-SIM, or 8270D) that has a PQL no greater than the corresponding screening level.
    4. The Permittees propose to analyze acrolein using EPA Method 8260 that has a PQL approximately two orders of magnitude higher than the corresponding screening level. The Permittees state that EPA Method 603 can achieve a PQL for acrolein that is lower than Method 8260 but did not propose to use Method 603. Analyze acrolein by EPA Method 603 or another EPA-approved method that has a PQL for acrolein no greater than Method 603.
    5. The Permittees propose to analyze acrylonitrile using EPA Method 8260 that has a PQL above the corresponding screening level. EPA Method 8260C-SIM can achieve a PQL for acrylonitrile that is lower than Method 8260 and can meet the screening level. The Permittees must analyze acrylonitrile by Method 8260C-SIM or another EPA-approved method that has a PQL no greater than the corresponding screening level.

18. **Appendix C, C-4.1 Analyses by Accredited Contract Laboratories, page C-19:**
    The Permittees propose to analyze 1,2-dibromo-3-chloropropane and 1,2-dibromoethane using EPA Method 8260 that has PQLs above the corresponding screening levels. The Permittees state that EPA Method 8011/504 can achieve PQLs that are below the corresponding screening levels but did not propose to use that method. Analyze 1,2-dibromo-3-chloropropane and 1,2-dibromoethane by EPA Method 8011/504 or another EPA-approved method (for example, EPA Method

504.1, 551.1 or 604) that has PQLs no greater than the corresponding screening levels.

19. **Appendix C, C-4.1 Analyses by Accredited Contract Laboratories, page C-20:**
    1. The Permittees propose to analyze methacrylonitrile using EPA Method 8260 that has a PQL above the corresponding screening level. EPA Method 524.2 can achieve a PQL for methacrylonitrile that is lower than Method 8260 and can meet the screening level. Analyze methacrylonitrile by Method 524.2 or another EPA-approved method that has a PQL no greater than the corresponding screening level.
    2. The Permittees propose to analyze 1,2,3-trichloropropane using EPA Method 8260 that has a PQL approximately two orders of magnitude higher than the corresponding screening level. The Permittees state that EPA Method 504 can achieve a lower PQL for 1,2,3-trichloropropane than Method 8260. However, Method 504 does not provide the lowest available PQL for 1,2,3-trichloropropane and does not meet the corresponding screening level. Analyze 1,2,3-trichloropropane by SRL-524M-TCP (a modified, GS/MS-SIM version of EPA Method 524.2) or another industry-accepted method that has a PQL no greater than the corresponding screening level.

Part II: Comments

Resolve the following comments and concerns in future Plans, beginning in May 2011.

1. The Plan does not include Background, Monitoring Objectives, or Scope of Activities sections for any of the area-specific monitoring groups. In future Plans, provide these sections for each of the area-specific monitoring groups. Sampling locations that are not included in any of the area-specific monitoring groups may be combined into their own monitoring group, considered on a watershed-by-watershed basis, or some combination of both, but in any event must have their own Background, Monitoring Objectives, and Scope of Activities sections.

2. There are substantial differences in the scope of the Background sections between watersheds. All Background sections must describe the alluvial groundwater and perched intermediate and regional aquifers beneath each monitoring area, including occurrences of alluvial and perched intermediate saturation and the corresponding characteristics (if known) of each occurrence (e.g., location, depth, lateral extent, saturated thickness, flow direction). A general description of sources, type, distribution, and concentration of contaminants present in all aquifers beneath each monitoring area, and of surface water conditions (including springs) must be included. As an example, a description of surface water conditions for Pajarito Canyon should state that perennial flow is found: 1) in the upper reaches of Pajarito Canyon west of the Laboratory, 2) along a short 1.5 mile reach from Bulldog, Homestead, and Starmer springs to just upstream of the Twomile Canyon confluence; and 3) in the lower reach

of the canyon near the Rio Grande, supported by contributions from Springs 4A and 4AA. The Permittees may reference other documents for more detailed information on the subjects addressed in the Background sections.

3. Sampling locations that are being used or are candidates for the determination of background water quality for the regional and perched intermediate aquifers must be listed. The listing must include the corresponding analytical suites, sampling frequency, and whether or not the sampling frequency for a particular well deviates from the sampling frequency for the monitoring group to which the well belongs.

4. List all regional and perched intermediate well screens for which representativeness of water quality data is in question or has not yet been established (e.g., in newly constructed or rehabilitated wells). Include the rationale for each listed item, a description of actions to evaluate the well screens or correct deficiencies, and proposed analytical suites for the samples. Catalog all water sample quality problems that were identified in regional and perched intermediate well screens during the past 18 months (e.g., lack of stabilization of field parameters during well purging, incomplete equilibration after well installation or redevelopment, presence of chemical indicators of drilling products, unusual odors, colors or turbidity, anomalous data, and any other issue that might indicate impact on the quality of water samples). Well screens that are known not to produce representative samples and are no longer being evaluated for representativeness must also be included in the list.

5. List all perched intermediate and regional well screens that are purged less than three casing volumes. Explain why they were not purged at least three casing volumes.

6. Whenever symbols indicating semiannual (S), annual (A) or triennial (T) sampling frequencies are used, include superscripts/subscripts to specify the quarter(s) and year during which the sampling is scheduled to occur. For example, $S^{1,3}$ would indicate semiannual sampling in the first and third monitoring year quarters, and T^{2}_{13} would denote triennial sampling in the second monitoring quarter of the 2013 monitoring year.

7. When establishing groundwater screening levels, if there is no EPA MCL or NMWQCC standard for an analyte, use the most recent NMED tap water screening level. If there is no NMED tap water screening level, use the most recent EPA regional tap water screening level, adjusted to a cancer risk of 10^{-5}. This methodology has been proposed by the Permittees in the document entitled Corrective Measures Evaluation Report for Material Disposal Area G, Consolidated Unit 54-013(b)-99, at Technical Area 54, Revision 2 (LA-UR-10-7868), dated November 2010. NMED concurs with this procedure for all groundwater monitoring at LANL.

8. **Section 4.2, Background, third paragraph, page 16:**
   Make a clarification regarding the presence of alluvial groundwater in Mortandad Canyon. The Plan states that groundwater in Mortandad Canyon is present in alluvium. The presence of groundwater in the canyon bottom along the eastern extent of saturation in sediments of the Cerro Toledo Interval is not mentioned. This groundwater may be chemically different from that of the main alluvial aquifer, and may preferentially infiltrate towards the perched-intermediate and regional aquifers.

9. **Section 7.1, Chaquehui Canyon, first paragraph, second sentence, page 23:**
   Discharge from Spring 9 flows directly to the Rio Grande, not Chaquehui Canyon. DOE Spring and Spring 9A contribute flow to Chaquehui Canyon.

10. **Figure 2.4-1, pages 35:**
    Mark the location of Campsite Spring on the map.

11. **Table 5.4-1, page 88:**
    3. Groundwater discharge from Homestead Spring is not significant compared to that of nearby Starmer or Bulldog Springs.
    4. The classification of PC Spring as a background water quality location for the regional aquifer is inconsistent with the Groundwater Background Investigation Report, Revision 4 (EP2010-0308), where PC Spring is listed as a background water quality location for the intermediate aquifer.

12. **Table 5.4-1, page 91:**
    The source aquifer for canyon-bottom wells CDBO-6 and CDBO-7 is Bandelier Tuff, not alluvium.

13. **Table 6.4-1, pages 97 and 98:**
    It is still uncertain whether or not regional wells R-26 screen 1, CdV-R-15-3 and CdV-R-37-2 can be converted to non-Westbay wells. The conversion of these wells will be based on results of the ongoing reliability assessment.

14. **Table 7.4-1, pages 112 and 113:**
    5. Sacred Spring, Sandia Spring, and Springs 1 and 2 should be intermediate aquifer monitoring locations because they exhibit temperatures that are indicative of intermediate groundwater beneath the Pajarito Plateau.
    6. La Mesita Spring and Springs 7 and 8 discharge on the east side of the Rio Grande and are likely recharged from the eastern portion of the Española Basin.

15. **Appendix B, B-3.0 Protocol For Screening Nonstorm-Related Surface Water Data, sixth paragraph, page B-5:**
    Calculate watershed-specific or watershed-segment-specific hardness-dependent acute and chronic aquatic life criteria for base flows for all metals listed in and in accordance with 20.6.4.900.I NMAC. The calculations must be based on geometric

means of hardness data collected during the previous four years. If four years of hardness data are not available, utilize validated hardness data collected over a shorter period of time, highlighting each use of a shorter collection period.

16. **Appendix B, Tables B-2 and B-4:**
The abbreviations for Standard Source in Tables B-2 and B-4 (HHPersU and HHPersF) are inconsistent with corresponding abbreviations in Tables 1.6-1 and B-1.0-1 (HHPU and HHPF).

17. **Appendix B, Table B-4:**
The Table classifies the sampling locations Pajarito 0.5 mi above SR-501, Pajarito below confluences of South and North Anchor East Basin, and Pajarito at Rio Grande as ephemeral. Prior documentation by the Permittees (Figure A-1 from the document entitled "Work Plan for Pajarito Canyon" dated 1998, LAUR-98-2550) depicts the three locations as being located along a perennial surface-water reach, which comports with current knowledge.

18. **Appendix C, C-2.0 Summary of Field Investigation Methods, page C-3:**
List stabilization criteria for field parameters measured during well purging.

19. **Appendix C, C-4.1 Analyses by Accredited Contract Laboratories:**
For the naturally-occurring General Inorganic Analytes, Metals and Radionuclides that have numerical background values, use the background values as screening levels. If an area-specific monitoring group has its own background values, screening levels for that monitoring group must be based on those background values. If an analyte has multiple numerical backgrounds (for example, different backgrounds in different aquifer zones), then the lowest applicable numerical background must be used as a screening level for that analyte. If a naturally-occurring analyte listed under the General Inorganic Analytes, Metals or Radionuclides does not have a numerical background value, then the lowest PQL achievable by the most recent EPA or industry-accepted extraction and analytical method for that analyte must be used as a screening level. For hexavalent chromium, use the screening level established for total chromium. For each analyte with a screening level based on a numerical background, specify an analytical method that has PQL no greater than the corresponding screening level. If there is no EPA or industry-accepted analytical method that can achieve the required PQL, then specify the EPA or industry-accepted analytical method that has the lowest achievable PQL.

20. **Appendix C, C-4.1 Analyses by Accredited Contract Laboratories, page C-14:**
    7. The Permittees list 15 pCi/L as the EPA MCL for gross alpha. The numerical standard of 15 pCi/L is the EPA MCL for adjusted gross alpha, which excludes alpha particle activity from radon and uranium.
    8. The Permittees list 8 pCi/L and 20,000 pCi/L as the EPA MCLs for strontium-90 and tritium. These are not EPA MCLs but average annual concentrations assumed

to produce a dose of 4 mrem/year (the EPA MCL for beta particle and photon radioactivity). If two or more radionuclides are present, the sum of their annual dose from beta particle and photon radioactivity must not exceed the MCL of 4 mrem/year.

21. **Appendix C, C-4.2 Analyses by On-Site Laboratories, pages C-21-22:**
For each analyte listed under General Organics and Metals, provide information on the PQL and the relevant screening level. Each analyte with a PQL above the corresponding screening level must be highlighted in the table, and an explanation for each occurrence provided. For the naturally-occurring General Inorganics and Metals that have numerical background values, use the background values as screening levels. If an area-specific monitoring group has its own background values, screening levels for that monitoring group must be based on those background values. If an analyte has multiple numerical backgrounds (for example, different backgrounds in different aquifer zones), the lowest applicable numerical background must be used as a screening level. If a naturally-occurring analyte listed under the General Inorganics or Metals does not have a numerical background value, then the lowest PQL achievable by the most recent EPA or industry-accepted extraction and analytical method must be used as a screening level. For hexavalent chromium, use the screening level established for total chromium. For each analyte with a screening level based on a numerical background, specify an analytical method that has a PQL no greater than the corresponding screening level. If there is no EPA or industry-accepted analytical method that can achieve the required PQL, use the EPA or industry-accepted analytical method that has the lowest achievable PQL.

22. **Appendix C:**
Add a section on analytical methods for base-flow samples for analytes listed in Table B-2. The section must have contents and format similar to Section C.4.0 Analytical Methods – Groundwater Analytical Suites, and must cover analyses performed by both contract laboratories and on-site laboratories.

23. **Appendix D, Tables D-1.0-3, D-2.0-1 and D-4.0-1:**
Superscripts in column headings and table entries are not defined in the table footnotes.

This Plan, as modified, will be in effect until the 2011 Plan is approved by NMED.

Do not resubmit the Plan. Incorporate the corrections and changes requested in this Approval into the 2011 Plan.

Should you have any questions, please contact Jerzy Kulis or Michael Dale of my staff at (505) 476-6038 or (505) 661-2673, respectively.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

JPB:md/jk

cc: J. Kieling, NMED HWB
D. Cobrain, NMED HWB
N. Dhawan, NMED HWB
M. Dale, NMED HWB
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B. Olson, NMED GWQB
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