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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

April 11, 2012

Thomas A. Ladd, Director
Environment and Safety Directorate
U.S. Army White Sands Missile Range
White Sands Missile Range,
New Mexico 88002-5000

RE: NOTICE OF DISAPPROVAL
STATUS REPORT FOR
THE HIGH ENERGY LASER SYSTEM TEST FACILITY
TECHNICAL SUPPORT AREA GASOLINE SPILL SITE SWMU 197 (CCWS-16)
WHITE SANDS MISSILE RANGE
EPA ID# NM2750211235
WSMR-11-014

Dear Mr. Ladd:

The New Mexico Environment Department (NMED) has completed a preliminary review of White Sands Missile Range's (Permittee) *Status Report for the High Energy Laser System Facility Technical Support Area Gasoline Spill Site SWMU 197 (CCWS-16)*(Report), dated March 2011. The Permittee titled the document as a Status Report; however, based on the document contents, NMED considers it to be an investigation report. NMED hereby issues this Notice of Disapproval (NOD) with the following comments.

Comment 1

In the Executive Summary, the Permittee states, "[t]he New Mexico Environment Department (NMED) approved, with direction, the Corrective Measures Implementation (CMI) Work Plan for this Site (WTS, 2007) in a letter dated January 16, 2008 (NMED, 2008). As discussed herein, the CMI Work Plan was not implemented; however, supplemental data collection and risk assessment were conducted. The purpose of this report is to document the supplemental work and to demonstrate that the Site is eligible for Corrective Action Complete (CAC) with

Controls." Because the Permittee did not follow the approved work plan, the Permittee implemented the work "at risk." Additional work at the site is necessary before a corrective action complete determination can be made. Revise the Report to include information pertaining to the field work conducted at the site and remove information related to corrective action complete determinations. Ensure that sufficient detail describing the field work is included in the Report. Once the site meets the applicable cleanup standards, the Permittee may submit a separate document to petition for a corrective action complete determination that requests a permit modification to change the status of the site. The permit modification request must also comply with the public notice requirements in 40 CFR 270.42(c) incorporated by 20.4.900 and 901 NMAC. Revise the Report as appropriate.

Comment 2

NMED has replaced the following documents: *Technical Background Document for Development of Soil Screening Levels*, Revision 5.0, 2009; *New Mexico Environment Department TPH Screening Guidelines*, October 2006, and *Risk-Based Remediation of Polychlorinated Biphenyls at RCRA Corrective Action Sites*, NMED Position Paper, March 2000 with the *NMED Risk Assessment Guidance for Site Investigations and Remediation* (February 2012). The new guidance is available through NMED's website at http://www.nmenv.state.nm.us/HWB/guidance.html. Because further corrective action is necessary, the Permittee must follow the new guidance for soil and groundwater screening levels as well as the requirements of 2009 RCRA Permit Appendix 3 (Cleanup Levels). Revise the Report as necessary.

Comment 3

In future submittals provide the text, figures, tables, and appendices as separate files on the disc rather than one large file.

Comment 4

Ensure that the reported results (sample quantitation limit) do not exceed the published screening levels; otherwise the results cannot be used to determine whether or not the site meets the applicable cleanup levels. This applies to all constituents, and specifically to constituents such as naphthalene, which is a constituent of concern at the site. The laboratory results for a majority of the analytical samples are flagged as "[g]rey highlight indicates that the reported result exceeds the published screening level. If the result is preceded by "<", the constituent was not detected, but the reported sample quantitation limit exceeds the screening level." Use appropriate laboratory methods that will guarantee that constituents can be detected at the appropriate levels for both soil and groundwater samples. The sample results that are above the screening levels can be used for comparison, but cannot be used to make decisions regarding completion of corrective action. Revise the Report as necessary.

Comment 5
Throughout the Report, groundwater is referenced as 'soil water', 'vadose zone water' and sometimes as 'groundwater'. This interchange of terms is confusing. Revise the Report to include a definition of each of these terms and address whether they are interchangeable or not. NMED considers both the saturated vadose zone and phreatic zone groundwater to be groundwater.

Comment 6
In the CMI Work Plan (September 2007), approved by NMED, the Permittee proposed to conduct several pilot studies to see which remedies would be most effective at the site. Soil vapor extraction (SVE) (focusing on whether or not the contamination below 20 feet could be significantly affected by SVE), biosparging, air sparging combined with SVE, and monitored natural attenuation were all discussed in the CMI Work Plan. None of the proposed work was completed during the Phase III investigation. The Permittee chose to perform bail-down testing of groundwater wells and to use a passive product recovery system, the GeoSorb System, to experiment with the removal of LNAPL that is still present in the vadose zone groundwater wells rather than follow the approved plan. These activities did not address the contamination in the vadose zone or the potential for that contamination to migrate to regional groundwater as required by NMED's 2008 letter. The Permittee used the perceived failure of the bail-down test and GeoSorb system to rationalize that an engineered system will not work to remove contamination from the site. As required by NMED, the Permittee must address the vadose zone contamination. Submit a work plan to NMED that proposes actions to address the vadose zone contamination. No revision to the Report is necessary.

Comment 7
In the Executive Summary, the Permittee states that "[p]roduct recovery testing was performed in late 2009 and early 2010 to assess the recoverability of LNAPL. Results from the testing showed that product recoverability is negligible." The recovery testing was performed by conducting bail-down of wells and the use of the GeoSorb system. In Section 5.2.1.1 (Light Non-aqueous Phase Liquid (LNAPL) Occurrence), the Permittee states, "[t]he maximum quantity of product recovered via bailing or the GeoSorb passive recovery application at any well was approximately 0.23 gallons and recovered volumes were generally less than 0.1 gallon. After product removal, it generally took several days for a recoverable quantity of product to return to the well. In addition, some of the wells bailed dry during the bail-down tests. This information suggests that active product recovery using an engineered system is not practicable. The passive recovery system proved successful in removing the limited volume of product from the wells." Active recovery of LNAPL from the vadose zone may be impractical; however, NAPL-related contaminants are present in the soils and groundwater as well as in the NAPL phase and constituents will migrate depending on environmental conditions. Bailing and passive absorption are likely not the most effective remedies for the site. The Permittee must address the full extent of the contamination at the site, not only recovery of LNAPL from wells. The

Permittee must submit a work plan to address all vadose zone contamination. See Comment 6. No revision to the Report is necessary.

Comment 8

In Section 2.3.5, Annual Regional Groundwater Monitoring, the Permittee states, "[t]he four regional groundwater monitoring wells have been sampled annually since 2006 and the annual sampling continues. No gasoline constituents have ever been detected over the regulatory standards. MTBE has been detected in groundwater from only one regional monitoring well (HMW-52) at concentrations that are orders of magnitude below the NMED Tapwater Standard. The MTBE concentrations in this well are declining." The tanks and ancillary equipment have been removed; however, there are still elevated levels of LNAPL constituents in the vadose zone which have not been remediated. Additionally, MTBE is highly soluble and migrates more quickly than other gasoline constituents, making it more likely to be detected in groundwater first. The presence of MTBE in HMW-52 shows there is a connection between the vadose zone and regional groundwater. Additionally, MTBE does not degrade easily, so even though there is a decrease of MTBE in monitoring well HMW-52; the MTBE may have traveled past HMW-52 and be present in the groundwater at elevated concentrations. It is not clear whether HMW-50 is appropriately located to show if MTBE migrated in groundwater to the southeast. Continued monitoring is required and installation of additional regional groundwater wells may also be required. No revision to the Report is necessary.

Comment 9

In Section 2.3.3 (July 2000 through February 2001 Corrective Action (MEVATEC, 2002)), the Permittee states, "[b]ased on the results of the 2000 investigation, it was determined that it would be prudent to remediate the gasoline retained in the vadose zone so that the threat of groundwater contamination could be eliminated. A SVE pilot study was conducted in July 2000. The results of the pilot study indicated that SVE would be an effective method of remediation at the facility, specifically at HVW-01. A SVE system was installed on October 16, 2000 for long-term remediation and was operated continuously through February 24, 2001." In Section 2.3.4 (2004 Soil and Groundwater Investigation (North Wind, 2004)) the Permittee states, "[t]he results of the investigation demonstrated that the more porous, poorly graded sands with silt in the upper 25 ft of soil were remediated successfully by the SVE operations. The remaining areas of impact in soil were in the saturated zones within the 25 to 35 ft bgs interval. The concentrations of fuel-related constituents in soil were lower in 2004 than they were in 2000 prior to the remediation, but the constituents had migrated below 25 ft and laterally to the west and northeast. There were no impacts from the fuel release to regional groundwater." Four months does not qualify as "long-term remediation" for the scale of the spill (originally believed to be 1,485 gallons, the SVE system is estimated to have removed 1,790 gallons and constituents are still present in the vadose zone). All contaminated areas may not be remediated at the same rate due to variations in soil conditions and contaminant concentrations. Typically more time is required to remediate soils that are less permeable. Explain why the system was not run for a longer period of time. Additionally, although HVW-01 appears to be an effective extraction point, an extraction well

with a deeper screened interval may have been more effective (as recommended in the SVE pilot test report). HVW-01 had to be occasionally bailed because water was drawn into the screened interval (along with LNAPL), which may have made the system less effective. Contamination has now migrated into lithologic zones that the Permittee believes are not conducive to remediation by SVE. The contamination also has affected regional groundwater. If contamination is located at depth in the saturated zone, SVE alone is likely no longer feasible as the primary remedy; the Permittee must investigate additional remedial alternatives such as bioventing or airsparging as mentioned in Comment 6. Revise the Report to clarify the why the system was shut down after only four months and explain why the Permittee did not implement the approved CME Work Plan.

Comment 10

In Section 2.3.4 (2004 Soil and Groundwater Investigation (North Wind, 2004)), page 7, the Permittee states, "[t]he report also stated that site lithology was not conducive to additional vertical migration toward the non-potable Regional Aquifer and is, therefore, protective of the Regional Aquifer." In Section 2.4.2 (Description of Local Geology) the Permittee states, "[i]n contrast to the laterally continuous channel fill sand deposits in the shallow interbedded zone, the spatial distribution of channel fill sand deposits in the deep interbedded zone results in significant vertical and lateral anisotropy (Figure 2-4). The downward migration of water within these higher permeability zones is likely limited by the degree of hydraulic connection between vertically stacked channel fill deposits." MTBE is present in regional groundwater well HMW-50 demonstrating that contamination can migrate through the lithology. Revise the Report to discuss the vertical migration of contamination and the potential for contamination to migrate laterally through the higher permeability zones. Additional soil borings are required to define the limits of the lateral extent of the contamination; submit a work plan to NMED proposing further investigation (see also Comment 6). Revise the Report as necessary.

Comment 11

In Section 3 (Supplemental Field Work) the Permittee states, "[i]nstallation of six wells screened in saturated soils located 22 to 35 ft bgs within the interbedded soils above the Regional Aquifer (HVW-05 through HVW-10)." Revise the Report to discuss the reasoning behind the placement of these wells. In Appendix A (Field Methodologies), the Permittee states, "[s]oil samples were collected from soils in the vadose zone during drilling activities. A total of eight primary soil samples were collected: HVW-05 (20 – 22'), HVW-05 (30-31') HVW-07 (20-22'), HVW-08 (20-22') HVW-08 (30-31'), HVW-09 (16 – 17'), HVW-09 (19 – 20') and HVW-10 (25.5 – 26.5')." Discuss the rationale for sampling at these depths; discuss the total depth of the borings and whether or not samples were collected from each boring at the total depth. Discuss why samples were not collected when the presence of gasoline constituents was noted; for instance, for well HVW-05 the boring log indicates that a "moderate odor" was present from 26.5 feet bgs to 28 feet bgs, but a sample was not obtained from that interval. Focus the report on the supplemental field work that was conducted and additional data that was collected. Revise the Report to include more detailed information regarding the field work.

Comment 12
The Permittee performed slug tests on vadose zone groundwater wells HVW-04, HVW-05, and HVW-10 and the regional groundwater wells. The slug test data is presented in Appendix F; however, most of the solutions are cut off at the bottom of the page. Revise the Report to make the slug test data visible.

Comment 13
In Section 5.1 (Soil), the Permittee states, "[a]s shown in Table 2-1, no gasoline constituents were detected at concentrations exceeding the SSLs. Benzene, ethylbenzene, isopropylbenzene, naphthalene, toluene, and xylenes have been detected in a number of samples at concentrations exceeding the DAF1 value. These DAF1 exceedances generally occurred in samples collected from depths of about 20 to 35 ft bgs. With the exception of benzene detected above the DAF 1 value in the sample collected from 16 to 17 ft bgs in boring HVW-09, none of the detected exceedances occurred in soils shallower than 20 ft bgs." The DAF 1 exceedances occur where groundwater is present in the vadose zone. Vadose zone groundwater contains BTEX levels which exceed tap water standards in most of the HVW groundwater wells. The Permittee must address the contamination in the vadose zone. No revision is necessary.

Comment 14
In Section 6 (Conclusions), the Permittee states, "[v]adose zone water occurs in the saturated sediments from depths of approximately 20 to 35 ft bgs and extends to approximately 75 ft bgs. It occurs in discontinuous sand lenses that occur at varying depths and in poor hydraulic communication. Results from hydraulic testing and sampling in the vadose zone supports the model of complex geologic architecture and limited hydraulic connectivity of high permeability materials. Meaningful pumping rates cannot be sustained in vadose zone wells and water levels in adjacent monitoring wells are generally unaffected by pumping, indicating a very limited radius of influence at an individual well. The vadose zone water is anthropogenic and is generally not a sustainable water resource because of its limited occurrence. Potable water for the TSA originates from water wells located over nine miles from the Site near the basin margins and is piped to the areas via WSMR's water distribution system. This will remain the source of potable water for the TSA into the foreseeable future." The Permittee asserts that the groundwater (both the vadose zone water and the regional water table) are not sources for potable water; however, NMED considers all groundwater to be a potential resource and subject to the water quality regulations. Additionally, it is possible that an SVE system that is focused on the sand lenses within the lithology beneath the SWMU may be more effective at removing the remaining volatiles from the subsurface. The Permittee must take this into account when developing the work plan required by Comment 6. Revise the Report to reflect the fact that all groundwater at the site is subject to regulation under the NM Water Quality Act and Hazardous Waste Act.

Comment 15
In Section 6 (Conclusions), the Permittee states, "[m]eaningful pumping rates cannot be sustained in vadose zone wells and water levels in adjacent monitoring wells are generally unaffected by pumping, indicating a very limited radius of influence at an individual well." During operation of the SVE system, the radius of influence from HVW-01 was measured at almost 60ft in one direction and almost 30ft in another. From the initial investigation, the Permittee described the vapor plume as having a radius of approximately 16 to 18 ft horizontally (it is not clear whether or not the Permittee has determined the current radius of the plume) and the RFI Report indicated the Permittee estimates that the plume has migrated to depths of 30 to 35 feet. The plume has expanded since the initial investigation; however, a radius of influence of 30-60ft may be sufficient to address the plume (especially if multiple wells are used as extraction points to cover the areal extent of the plume). The slug test data provided hydraulic conductivity for selected zones; however, air permeability is the most important soil parameter with respect to the success of SVE systems – it is not clear if the Permittee has determined soil air permeabilities at the site. The *HELSTF Technical Support Area Petroleum/Oil/Lubricants Station Investigation* (January 2002) does not present sufficient data to determine whether or not soil air permeabilities were sufficiently defined during the SVE pilot test. Soils with air permeabilities less than about 10^{-10} cm^2 may not be amenable to SVE. Determine the air permeability of the soils in the affected area to determine whether or not SVE may be an appropriate remedial alternative for the site. Provide a work plan to NMED as required by Comment 6. No revision is necessary.

Comment 16
In Section 6 (Conclusions), the Permittee states, "[t]he complex hydrogeologic conditions and lack of hydraulic connectivity within the water-bearing vadose zone soils indicate that sparging/biosparging are impracticable and will not be effective. Because there is no risk of exposure to the vadose zone water, and there are no constituents in the regional water that exceed cleanup levels, the most appropriate action is continued long-term monitoring of the Regional Aquifer." The Permittee must evaluate remediation of the vadose zone because of the potential to affect the regional aquifer. The Permittee must demonstrate that the remaining contamination in the vadose zone does not pose a threat to the regional aquifer. See Comment 15 and Comment 6.

Comment 17
In Table 2-1 (Summary of Soil Analytical Data) there are pages of analytes listed with the symbol "- -" listed and described in the table footnotes as "[t]he sample was not tested for this constituent and/or no data were available." If the Permittee focused primarily on GRO, BTEX and naphthalene for the HVW soil samples, there is no need to report constituents that were not included in the analyses in the summary tables. Revise the tables accordingly.

Comment 18
Data from Table 2-3 (Summary of Vadose Zone Water Analytical Data) , depicts groundwater analytical results from vadose zone groundwater monitoring wells HVW-02, HVW-03, HVW-04, HVW-05, HVW-06, HVW-08, and HVW-10 that have only two data points (with the exception of HVW-04 which has three data points). Additional groundwater monitoring data is needed and more frequent monitoring may be required. From the available data, it appears that some of the constituent concentrations are increasing in vadose zone water even after source removal and the use of SVE for remediation. The vadose zone's saturated interval is thought to be from 20 to 35 feet below ground surface to 75 feet below ground surface and the regional water table is located at approximately 85 feet below ground surface. Detected levels of benzene, ethylbenzene, toluene, xylenes and MTBE in vadose zone water are above the NMED groundwater cleanup standards. MTBE is present in regional aquifer groundwater, and MTBE moves faster through media than most other constituents. The Permittee asserts that the connection between the vadose zone groundwater and the regional groundwater is limited hydraulic connectivity between the relatively high permeability materials prevents constituents from moving rapidly from vadose zone groundwater to regional groundwater. Because vadose zone groundwater is affected and MTBE has reached the regional groundwater, other constituents may also migrate to regional groundwater. Any corrective measure for the SWMU must include components that are also protective of regional groundwater. Submit a work plan to NMED as required by Comment 6. No revision is necessary.

Comment 19
Table 2-6 (Summary of Vadose Zone Water Level Elevation Data) presents data for the vadose zone wells. Some of the measurements appear to contain errors. HVW-01 has a total depth of 20 feet and the measured depth to water ranges from 16.51 feet to 20.67 feet. This is also an issue in Appendix G (Product Recovery Test Data). Review the field data and well construction data for accuracy and revise the table as necessary.

Comment 20
The screening level ecological risk assessment (ERA) involved comparing site concentrations with published ecological screening levels (i.e., US EPA Region 4, Region 5, and/or US EPA EcoSSLs) in order to: 1) calculate screening level hazard quotients; and 2) determine the list of constituents of potential ecological concern (COPECs) to be evaluated further. This is an acceptable approach and consistent with USEPA guidance; however, this methodology is not in accordance with NMED's *Guidance for Assessing Ecological Risks Posed by Chemicals: Screening-Level Ecological Assessment* (2008). For future ecological assessments, follow the protocol outlined in the NMED guidance. Additionally, NMED recently updated its screening guidance, *NMED Risk Assessment Guidance for Site Investigations and Remediation* (February 2012), which includes methodologies for conducting screening level ecological assessments. The Permittee must ensure that ERAs are consistent with the NMED guidance.

Comment 21
The ecological risk assessment did not include an evaluation of plants potentially exposed to COPECs. As stated in Section 2.4.1.2 of Appendix H, "the subsurface soils down to a depth of 10 ft bgs were included in the evaluation to address potential exposure scenarios in the event there are burrowing wildlife or vegetation with deep rooting zones". Modify the ERA to include potential hazards to the plant community at SWMU 197.

Comment 22
In Tables HHRA-9 through HHRA-12, Values used for Daily Intake Calculations, the exposure factors are shown for adult and child receptors. Since intakes are not calculated for the inhalation pathway and body weight is not considered in the inhalation risk and hazard calculations, a single residential receptor should be evaluated using the exposure duration of 30 years. Usage of 24 years for an adult and 6 years for a child underestimates potential risk and hazard via the vapor intrusion pathway. For example, Tables HHRA-23 and HHRA-24, Risk and Hazard Calculations, use the exposure duration of 6 years in the hazard quotient calculations, which are based on a child receptor. The hazard quotients are underestimated and should be based on the exposure duration of 30 years. Update Tables HHRA-9 through HHRA-12 accordingly. In addition, update the hazard calculations in Tables HHRA-23 and HHRA-24 to utilize the exposure duration of 30 years.

Comment 23
In Tables HHRA-9 through HHRA-12, Values used for Daily Intake Calculations, averaging times for either carcinogens or non-carcinogens were omitted. Revise the tables to include averaging times for both carcinogens and non-carcinogens.

Comment 24
In Table HHRA-17 (Summary of Input Parameters Estimating Vapor Concentrations in Indoor Air Migrating from Total Soil, Future Scenario) the thickness of soil stratum A (1310 cm) is not equal to the depth below grade to top of contamination (625 cm). The thickness of soil stratum A should equal the depth below grade to the top of contamination, or "Lt". Revise the calculations so that the thickness of soil stratum A is equal to the depth below grade to top of contamination.

Comment 25
In Tables HHRA-5 (Noncarcinogenic Toxicity Values for Inhalation Exposure) and HHRA-6 (Carcinogenic Toxicity Values for Inhalation Exposure) there are several constituents for which an inhalation unit risk (IUR) factor is not listed. Following the hierarchy for toxicity data (USEPA, 2003), California Environmental Protection Agency Office of Environmental Health Hazard Assessment's Chronic Reference Exposure Levels (RELs) and the Cancer Potency Values, the following constituents have IUR published by CalEPA that should be included in the risk assessment: Ethylbenzene: IUR of 2.5 x 10-6 (µg/m3)-1; Bromodichloromethane: IUR of 3.7 x 10-5 (µg/m3)-1; Naphthalene. An IUR of 3.4 x 10-5 (µg/m3)-1 [USEPA, 2003.

Memorandum. Office of Solid Waste and Emergency Response. Subject: Human Health Toxicity Values in Superfund Risk Assessments. OSWER Directive 9285.7-53]. Revise the tables and subsequent calculations accordingly.

Comment 26
Table HHRA-5 (Noncarcinogenic Toxicity Values for Inhalation Exposure) references concentration (RfC) values are listed for n-butylbenzene and sec-butylbenze and are referenced as found in US EPA's Integrated Risk Information System (IRIS). There are no RfCs listed in IRIS for these two chemicals. Clarify the sources of the RfCs for n-butylbenzene and sec-butylbenzene. Revise the Report as necessary.

Comment 27
In Appendix H, Section 2.3.4.5 (Indoor Air), the Permittee states that "there are no buildings currently on or near SWMU-197." However, Section 2.3.4.3 (Exposure Parameters) describes a building approximately 100 feet from SWMU 197. Modify the text in Section 2.3.4.5 to state that there is currently a building near SWMU 197.

Comment 28
The footnotes in Table HHRA-3 (Selection of Constituents of Potential Concern for the Vapor Intrusion Pathway – Based on Maximum Detected Concentration) indicate that the groundwater screening levels are from the ARCADIS, 2010 publication. Since the groundwater screening levels are ultimately taken from US EPA's (2002) Vapor Intrusion Guidance, the citation should include the source of the screening levels as US EPA (2002) in the footnote. Revise the footnotes.

Comment 29
In Table HHRA-3 (Selection of Constituents of Potential Concern for the Vapor Intrusion Pathway – Based on Maximum Detected Concentration) the groundwater screening level for m,p-xylenes is based on the screening value for m-xylene. The p-xylene screening level (22 mg/L) is lower than the groundwater screening level for m-xylene (23 mg/L). Clarify whether the analytical results for m,p-xylene specifies the percentages of each isomer. If not, modify the table to use the screening level for p-xylene (22 mg/L).

Comment 30
The titles of the tables HHRA-7 through HHRA-13 and the names of the equations indicate that chronic daily intakes were calculated. Chronic daily intakes via inhalation are calculated based on inhalation rates and presented in mg/kg/day. The usage of the term 'chronic daily intake' can be misleading as intakes were not calculated for inhalation. Rather, the equations in Tables HHRA-7 through HHRA-13 show how indoor air concentrations were predicted and adjusted for exposure frequencies, durations, and time. Revise Tables HHRA-7 through HHRA-13 accordingly.

Comment 31
In Table HHRA-12 (Values Used for Daily Intake Calculations – Potential Hypothetical Furutre Child Resident Exposure to Groundwater) body weight is shown as an exposure parameter. Body weight is not used in the equation. Delete body weight as an exposure parameter in Table HHRA-12.

Comment 32
It appears that Table HHRA-24 (Risk and Hazard Calculations for Hypothetical Future Resident Receptor (Adult and Child) from Exposure to Vapors in Indoor Air Migrating from Total Soil) has an incorrect title, "Risk and Hazard Calculations for Hypothetical Future Resident Receptors (Adult and Child) from Exposure to Vapors in Indoor Air Migrating from Total Soil." Table HHRA-24 displays risk and hazard calculations from exposure to vapors in indoor air migrating from groundwater. Revise the title of Table HHRA-24 accordingly.

Comment 33
Appendix H, Section 2.3.4.3 (Exposure Parameters), in the subsections titled "Future Adult Resident" and "Future Child Resident" the text references soil ingestion rates, skin surface area, soil adherence rates, body weight, and age-adjusted ingestion factors. Soil ingestion and dermal contact were not evaluated for residents in this risk assessment. Remove all references to soil ingestion rates and dermal contact rates.

Comment 34
In Appendix H, Section 2.3.4.3 (Exposure Parameters) the text describes the evaluation of a "Future Medical Aid Worker" and the exposure parameters are listed in Table HHRA-13. Provide additional justification of the exposure frequency (84 days/year) parameter selected for the medical aid worker (assume 7-days per month per year based on engineering judgment). Revise the Report as necessary.

The Permittee must address all comments in this NOD and submit a revised Report. The revised Report must be accompanied with a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments and a red-line strikeout version of the Report that shows where all changes have been made. The revised Report must be submitted to NMED no later than **May 25, 2012**.

Additionally, the Permittee must submit a work plan as required by Comment 6 and other comments in this letter. The work plan must be submitted no later than **June 22, 2012**.

If you have any questions regarding this letter, please contact Kristen Van Horn at (505) 476-6046.

Sincerely,

John E. Kieling
Acting Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
J. Gallegos, WSMR
B. Avalos, WSMR

File: WSMR 2012 and Reading
WSMR-11-014