NEW MEXICO ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.nmenv.state.nm.us

SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

DAVE MARTIN
Cabinet Secretary

BUTCH TONGATE
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

February 2, 2012

Colonel David C. Piech
27th Special Operations Mission Support Group
110 E. Sextant Avenue, Building 600, Suite 1098
Cannon Air Force Base, New Mexico 88103

RE: NOTICE OF DISAPPROVAL
SITE INVESTIGATION AT EIGHT SITES
PROJECT ACTIVITIES WORK PLAN
CANNON AIR FORCE BASE, NEW MEXICO, AUGUST 2011
EPA ID #NM7572124454
HWB-CAFB-11-005

Dear Col. Piech:

The New Mexico Environment Department (NMED) has received Cannon Air Force Base's (Permittee's) *Site Investigation at Eight Sites Project Activities Work Plan for Cannon Air Force Base, New Mexico* dated August 2011 (Work Plan). NMED reviewed the Work Plan and hereby issues this Notice of Disapproval (NOD) with the following comments.

GENERAL COMMENTS

Comment 1

Work Plan Site Safety and Health Plan (SSHP), Appendix B:

The Permittee must remove Appendix B, Work Plan Site Safety and Health Plan (SSHP) from the Work Plan. The Permittee is reminded that while a SSHP is required NMED does not review or approve health and safety plans. In all future submittals to NMED the Permittee must not include, nor reference previously submitted, health and safety plans.

Comment 2

Standard Operating Procedures (SOPs), Appendix C:

The Permittee must remove Appendix C, Standard Operating Procedures (SOPs) and all references to the SOPs in the revised Work Plan. The Permittee is reminded that NMED does not review SOPs. In all future work plans the Permittee must provide descriptions of proposed procedures, specific field methods and specific equipment to be used in the execution of the work plan, in the appropriate section(s) of the text of the work plans. The Permittee must also fully describe all site specific procedures, specific field methods and specific field equipment actually used in field in the appropriate sections of all future facility reports.

Comment 3

Uniform Federal Policy–Quality Assurance Project Plan (QAPP), Appendix A:

NMED requires that all laboratories performing analyses to be accredited laboratories that can demonstrate that their work is legally defensible. NMED does not require the submittal of laboratory SOPs to determine the qualifications of laboratories performing analyses. Laboratory SOPs have been included in the Work Plan in the CD version of Appendix A of the QAPP. The Permittee is reminded that NMED does not review or approve SOPs (see Comment 2). The Permittee must remove the laboratory SOPs from the revised Work Plan. Approval of this Work Plan does not constitute approval of the QAPP or laboratory SOP's included therein.

Comment 4

The NMED Technical Background Document for Development of Soil Screening Levels was updated in August 2009. The Permittee is directed to use the updated soil screening levels provided in Table A-1 (NMED Soil Screening Levels) of the NMED *Technical Background Document for Development of Soil Screening Levels Rev 5.0*, August 2009. A copy of this document can be found on NMEDs website:
http://www.nmenv.state.nm.us/HWB/documents/NMED_SSG_August_2009_Dec09TableA-1_clean.pdf Please note that NMED is in the process of updating the Soil Screening Guidance (SSG) and anticipates the new version to be released in early 2012. Changes to the SSG include updating the soil screening levels (SSLs) for new toxicity data and adding mutagenicity. In addition, the Total Petroleum Hydrocarbon (TPH) and the Polychlorinated Biphenyl (PCB) guidance will be combined with the SSG, which will replace the individual documents. The most recent version of the SSG must be used in the evaluation of site data instead of the NMED 2006 TPH and 2009 SSG guidance once it is published.

Comment 5

The Work Plan references surface and subsurface soil but does not specifically address the soil exposure intervals to be included in the risk assessments. The Permittee must identify the soil exposure intervals proposed for each receptor (human health and ecological) in the revised Work Plan.

Comment 6

Section 4, Site descriptions and Background:

In the site descriptions for the Former Gas Station Site (ST-502), Base Support/Operations Generator Former Underground Storage Tank (UST) Site (ST-C503) and the Hospital Abandoned UST Site (ST-C504), the Permittee indicates that hard caliche is present from approximately 15 to 20 feet below ground surface (bgs) at these sites. As a result, direct push samples could not be obtained from depths greater than approximately 16 to 20 feet bgs during previous investigation activities at these sites. In **Section 5.4, Subsurface Drilling and Soil Sampling, first paragraph, page 5-4**, the Permittee states "[d]irect push technology was selected as the preferred sampling methodology in lieu of hollow stem auger, based on URS' previous drilling and sampling experience at Cannon AFB [at these sites]." The **'Summary of Planned Sampling Locations and Analytical Parameters' tables** propose approximate sample depths from 40 to 85 feet bgs at these sites. The Permittee must clarify how direct push technology (DPT) will be able to penetrate through the caliche layer to reach the proposed depths when this same drilling technique was unsuccessful during previous investigations at the same sites. To avoid costs associated with continued investigation, further work plan revisions and remobilization efforts the Permittee must propose an alternate method of obtaining soil samples from the proposed depths in the appropriate sections of the revised Work Plan to assure the scope of work proposed in the Work Plan can be successfully completed.

Comment 7

Section 5-5, Field Screening and Headspace Analysis, first paragraph, page 5-5:

The Permittee states: "Subsurface soil samples collected in 5-foot-long clear acetate lines will be field screened with a MiniRae 2000 PID (or equivalent) for signs of potential contamination. Field screening will involve making a single cut the entire length of the liner. The tip of the PID will then be inserted into the cut and the entire length of the liner will be scanned." To obtain useful headspace readings the loss of Volatile Organic Compounds (VOCs) must be minimized. The Permittee's proposed field screening procedure will allow for loss of VOC vapors as well as dilution with ambient air. The Permittee is directed to follow guidance for headspace vapor screening found on page 29 of Appendix 5, Section 5.2.2.d Soil, Rock, and Sediment Sample Field Screening, third paragraph in the *United States Department of Army, White Sands Missile Range RCRA Permit*, December 2009. A copy of this section can be found on NMEDs website at: http://www.nmenv.state.nm.us/HWB/documents/FINAL_WSMR_APPENDICES_12-2009.pdf

Comment 8

Section 5.3, Surface Soil Sample Collection, sixth and seventh bullets and second to last paragraph, page 5-3:

The Permittee indicates that samples will be analyzed for "[s]ite related Semi Volatile Organic Compounds (SVOCs) by USEPA Method 8270D" and "TCL [target compound list] SVOCs by USEPA Method 8270D." While the differences between these two analyte lists is provided in Worksheet #17 of the QAPP, the Permittee must specify the difference between these two designations in text and the footnotes of the applicable tables, listing the specific compounds to be quantified, for each of the analyte sets in Section 5 (Field Sampling Plan) of the revised Work

Plan.

Comment 9

Section 6.3, SI at Eight Sites Report, pages 6-1 and 6-2:

According to Section 6.3, SI at Eight Sites Report, page 6-1, first paragraph the Permittee presents a list of items to be included in the report. In the first bullet on page 6-2 of this same section, the Permittee states "[f]ield generated paperwork" will be included. It is unclear if boring logs will be included in the report. To facilitate the approval of future work plan and report submittals to NMED the Permittee is directed to follow guidance for reporting requirements found in Appendix 7, page 62 of the *United States Department of Army, White Sands Missile Range RCRA Permit*, December 2009; particularly Sections 7.2 Investigation Work Plan and 7.3 Investigation Report for the current "*Site Investigation at Eight Sites*" submittals. A copy of this document can be found on NMEDs website at: http://www.nmenv.state.nm.us/HWB/documents/FINAL_WSMR_APPENDICES_12-2009.pdf

Comment 10

Uniform Federal Policy–Quality Assurance Project Plan (QAPP), Appendix A, Work Sheet #2 (Identifying Information), page 2-1:

The Permittee states that the regulatory driver for this investigation is Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CAFB is regulated under a Resource Conservation and Recovery Act (RCRA) Hazardous Waste Permit (No. NM7572124454) and investigation of these sites must comply with the requirements outlined in the permit, with the New Mexico Hazardous Waste Act and 20.4.1.500 NMAC (incorporating 40 CFR 264.101). Revise the Work Plan accordingly.

SPECIFIC COMMENTS

Risk Assessment

Comment 11

The methodology for the ecological screening assessment presented in the Work Plan is not in accordance with NMED guidance. As noted in Cannon Air Force Base's (CAFB), Hazardous Waste Facility Permit (No. NM7572124454), the methodology for the screening-level ecological risk assessment should follow NMED's *Guidance for Assessing Ecological Risks Posed by Chemicals: Screening-Level Ecological Assessment*, July 2008. According to the 2008 NMED Guidance, calculated exposure doses for selected ecological receptors are compared with toxicity reference values in order to estimate hazard quotients. The Permittee must follow appropriate NMED guidance for proposed screening-level ecological risk assessments in the revised Work Plan. In addition, the revised SSG (release anticipated for early 2012), includes more detailed discussions of how to conduct an ecological screening evaluation; the methodology is consistent with the guidance cited above.

Comment 12

QAPP, Appendix A, Worksheet #10 (Problem Definition), page 10-2:

The Permittee specifies that only invertebrate receptors will be evaluated for the ecological

screening assessments at sites SS-C507 and SD-C508. Based on the photographs provided with the work plan, it appears that plants and small wildlife (deer mouse) may exist at the sites. The plants and small mammals represent varying trophic levels of the food web that should be evaluated. The Permittee must include evaluation of plants and the deer mouse in addition to invertebrates in the proposed screening level ecological risk assessments in the revised Work Plan.

Comment 13

Figure 3-1 (Decision Diagram for Site Investigation at Eight Sites):

It is agreed that site history and historical data should be used to identify Constituents of Potential Concern (COPCs); however, based upon the soil investigation, a refinement of the COPC list may be required (to remove or add COPCs). State that this step will be conducted in the revised Work Plan. Clarification is also needed on what values will be used for "other screening criteria". While it is noted that the RCRA hazardous waste permit (Condition 7.5) allows for alternative cleanup levels, the work plan should provide a discussion of the alternative levels that may be proposed. It is not clear whether "alternative cleanup levels" refer to industrial levels or site-specific screening levels.

In addition, the ecological screening process is not included in the decision diagram. Modify Figure 3-1 to: 1) display the components of the decision diagram in the proper order, 2) include the ecological screening process, and 3) provide clarification on what values will be used for "other screening criteria."

Comment 14

Section 3.1, Description of Decision Process, fourth paragraph, page 3-1:

Text in Section 3.1 states "Chemicals of potential concern (COPCs) are defined as chemicals that are site-related (i.e., they are derived from the site and are at concentrations that exceed background levels), and that either have toxicity factors (i.e., carcinogenic slope factors or noncarcinogenic reference doses) derived by the EPA (EPA) or have potential toxicity that can be addressed qualitatively (e.g., lead)." There are several comments concerning this statement:

a) COPCs are defined as those constituents deemed to be site-related. The availability of toxicity criteria has no bearing on whether a constituent should be identified as a COPC. For those COPCs without appropriate toxicity criteria, a discussion should be included in the uncertainties section of the risk assessment. Revise the text to clarify the definition of a COPC.

b) Lead should be evaluated quantitatively in the risk assessment. Screening levels for lead have been developed using the IUEBK model. Both the NMED SSLs and United States Environmental Protection Agency Regional Screening Levels (RSLs) provide screening levels for lead (400 mg/kg for residential land use and a value of 800 mg/kg for industrial land use). While the risk to lead is typically evaluated separately, and

not part of the hazard index, exclusion of a quantitative analysis is not acceptable. Revise accordingly.

c) The text indicates that only EPA derived toxicity data may be used in assessing risk from COPCs. Both the NMED soil screening guidance and RSL presents a hierarchy of sources for toxicity criteria based on EPA Directive 9285.7-53, *Human Health Toxicity Values in Superfund Risk Assessments*, December 5, 2003. This guidance provides a tiered hierarchy of acceptable toxicity data, of which the third tier includes non-EPA sources of toxicity values. Further, the Air Force supports use of tier three sources (as discussed in *Identification and Selection of Toxicity Values/Criteria for CERCLA and Hazardous Waste Site Risk Assessments in the Absence of IRIS Values*, April 23, 2007, ECOS-DoD Sustainability Work Group (http://www.ecos.org/section/committees/cross_media/ecos_dod_sustainability_work_group/). Revise the work plan to include evaluation of non-EPA toxicity data as appropriate, as addressed in the above references.

Comment 15

Section 3.6.1, Derivation of Human Health Risk Screening Criteria, first paragraph, page 3-6:

The Permittee indicates that the SSLs and RSLs are based on a risk level of 1×10^{-5} or 1×10^{-6}. NMED applies a target risk level of 1×10^{-5}. For purposes of determining whether the selected laboratory can meet risk-based action levels, the use of the RSLs based on a 10^{-6} level is conservative. However, when conducting the risk screening please ensure that carcinogenic RSLs are adjusted to a risk level of 1×10^{-5}.

Comment 16

Section 3.6.1, Derivation of Human Health Risk Screening Criteria, first paragraph, page 3-7:

The Permittee states that "[t]o account for noncarcinogenic additivity, SSLs and RSLs will be divided by 10 as part of the screening level human health risk evaluation." This methodology is not in accordance with NMED guidance. Per NMED (2009) soil screening guidance, noncarcinogenic effects should be considered additive as a first-tier screening approach. If the hazard index is greater than the target level of one, then noncarcinogenic effects may be considered additive for those chemicals with the same toxic endpoint and/or mechanism of action. The Permittee must revise the work plan to follow NMED (2009) guidance with respect to the additivity of noncarcinogenic effects. (Please note that the 2009 methodology is also consistent with the 2012 SSG to be released in early 2012.)

Comment 17

Figures 3-2 through 3-9, Preliminary Site Conceptual Exposure Models:

While the conceptual site models (CSMs) include inhalation of COPCs in airborne soil particles, they do not include inhalation of volatiles as an exposure route in both indoor and outdoor air. VOCs potentially present in subsurface soil could migrate through pore spaces in the vadose

zone into outdoor air, and indoor air, if buildings are present.

The NMED SSLs and EPA RSLs were calculated based on fate and transport models that include inhalation of volatiles in outdoor air. Utilization of the SSLs would therefore cover this exposure route. Nevertheless, this pathway should be shown as a completed exposure pathway on the CSMs. The Permittee must modify the CSMs to include inhalation of volatiles in outdoor air in the revised Work Plan.

With respect to inhalation of indoor air, residential SSLs and RSLs do not take into consideration the vapor intrusion pathway. Due to the nature of contamination at most of the sites referenced in this Work Plan (i.e., potential fuel spills), VOCs are likely to be present. Therefore, it must be shown that VOCs are not present at levels that would pose unacceptable risks to current/future receptors via the vapor intrusion pathway. The Permittee must modify the CSMs to include this pathway, and modify the Work Plan to present the methodology that will be used to quantify risks and hazards from inhalation of VOCs in indoor air.

Comment 18

Figures 3-2 through 3-9, Preliminary Site Conceptual Exposure Models:

The CSMs show that ingestion of contaminated biota by residential and recreational receptors is a potentially complete exposure pathway. However, neither the NMED SSLs nor the EPA RSLs account for this pathway in the derivation of the screening levels. The Work Plan does not present the methodology that will be used to address the ingestion of biota quantitatively. The Permittee must modify the Work Plan to include the methodology that will be used to quantify risks and hazards from ingestion of contaminated biota (e.g., produce, meat, and dairy).

Comment 19

Figures 3-7 and 3-8, Preliminary Site Conceptual Exposure Models (ST-C507 and ST-C508):

The CSMs do not indicate which ecological receptors are selected for evaluation in the screening level ecological risk assessment. In the revised Work Plan the Permittee must modify the CSMs to present the receptors that will be evaluated quantitatively. While Appendix A (QAPP) indicates that only invertebrates will be evaluated, as noted in the general comments, the deer mouse and plants should also be identified as potential ecological receptors.

Comment 20

QAPP, Appendix A, Work Sheet #15 (Reference Limits and Evaluation Table):

Footnote 1 indicates that CAFB "reserves the right to compare existing concentrations to other applicable screening levels." Clarify what other screening levels may be proposed. As noted in Condition 7.5 of CAFB's RCRA Hazardous Waste Permit, alternative levels may be used, but the levels must be approved by NMED.

Comment 21

QAPP, Appendix A, Attachment A (Laboratory Standard Operating Procedures), SOP Code: HMS-8290, Revision 9, Table 8 (2,3,7,8-TCDD TOXICITY EQUIVALENCY FACTORS (TEFs) FOR THE POLYCHLORINATED DIBENZO-p-DIOXINS AND DIBENZOFURANS):

It is noted that the table in this Standard Operating Procedure is labeled as uncontrolled and will not be modified. However, if dioxin/furans are detected at any of the investigation sites, ensure that the most recent toxicity equivalency factors (TEFs) are applied. The TEFs listed on this table are from 1989 and are out of date and not acceptable for use.

Former Petroleum Oil Lubricants (POL) AGE Dispatch Facility Spills Site (SS-C-501)

Comment 22

Section 4.1.1, Site Description and Background (SS-C501), page 4-1:

SS-C501 Former Aerospace Ground Equipment (AGE) Facility: page 4-1, Section 4.1.1 Site Description and Background (SS-C501), second paragraph, the Permittee states: "[p]rior to 2009, Buildings 191 and 193 (located south and east of the parking lot) were removed and a canopy structure, used for personnel training, was constructed near the former location of Building 191." The Permittee must provide more detail regarding the historical use of these buildings including all possible environmental impacts associated with the buildings.

Comment 23

Table 5-1 (Summary of Planned Sampling Locations and Analytical Parameters Former POL AGE Dispatch Facility Spills Site (SS-C-501)):

Footnote 6 incorrectly states "VOCs analysis via USEPA Method 8270D.", the correct designation should be "SVOCs analysis via USEPA Method 8270D." Correct this typographical error in the revised Work Plan.

Former Gas Station Site (ST-C502)

Comment 24

Section 5.11.2.1, Subsurface Soil Sampling (ST-C502), first paragraph, page 5-1 and Figure 5-2a (Planned Soil Sampling Locations (base Map) Former Gas Station Site (ST-C502):

The Permittee states "[e]leven planned subsurface soil borings will be completed at ST-C502 in order to satisfy the objectives of this investigation. Three additional soil borings (TBD borings) will be completed at ST-C502 based on data collected…" However, Figure 5-2a (Planned Soil Sampling Locations (base Map) Former Gas Station Site (ST-C502)) depicts thirteen proposed soil boring locations and Table 5-2 (Summary of Planned Sampling Locations and Analytical Parameters, Former Gas Station Site (ST-502)) lists thirteen soil borings plus three additional soil borings (TBD borings). Resolve this discrepancy.

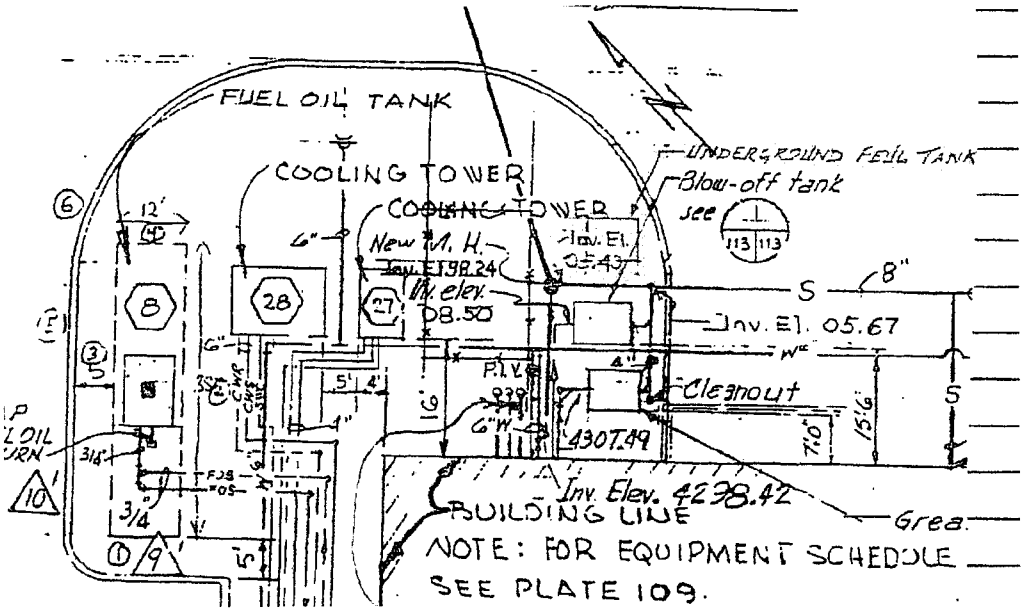
Base Support/Operations Generator Former UST Site (ST-C503)
Comment 25
All figures associated with the Base Support/Operations Generator Former UST Site (ST-C503):
The location of previous soil sample location CAFB-FAC0600-05 appears to be incorrect according to historical Figure 4.4.1 (Location of boreholes at Facility 600 (Base Support Center/Operation Center)) included in the 1995 USGS report titled *"Investigation of Eight Underground Storage Tank Facilities on Cannon Air Force Base and Melrose Bombing Range, New Mexico, 1995, Volume I'*. The Permittee must correct the location of this soil boring in all figures associated with the Work Plan and in any subsequent documents.

Comment 26
5.12.2.2 Subsurface Soil Sampling (ST-C503), second paragraph, page 5-12:
The Permittee states "Soil boring CA503-SB05 will be completed at the same location as former soil sample location CAFB-FAC0600-05 to confirm the vertical extent of contamination in this area." The location of the proposed soil boring CA503-SB05 must be relocated from its position on the figures in the Work Plan to coincide with the actual location of soil sample CAFB-FAC0600-05 (refer to Comment 24).

Comment 27
Table 4-6 (Summary of Previous Analytical Data and Screening Results, Base Support/Operations Generator Former UST Site (ST-C503):
Data obtained from the UST removal excavation in the location of previous soil sample SES-UST-EX includes TPH detections above NMSSLs at the total excavation depth (11 ft bgs). The Work Plan does not propose to advance soil borings at this location. The Permittee must revise the Work Plan to propose to collect soil samples between the depths of 10 to at least 25 ft bgs at the location of previous soil sample SES-UST-EX.

Hospital Abandoned UST Site (ST-C504)
Comment 28
Appendix D (Historical Site Information), Hospital Abandoned UST Site (ST-C504), Partial Utility Plan with USGS Sample Locations:
According to the map of a pre-1995 partial utility plan, it appears there is another possible UST fuel tank located east southeast of the eastern most cooling tower (see excerpt of map from Appendix D below). The included map of the partial utility plan is incomplete, as some identifying labels are cut off, and the map is not to scale. The Permittee must discuss the current status of the possible additional UST fuel tank (shown below) and identify all major features presented on the map included with in Appendix D (e.g., "blow-off tank", "Cleanout", "Grea…"), in the revised work plan.

The possible additional UST fuel tank area must be included for investigation along with ST-C504 in the revised work plan. Alternatively, a justification for the reason why no further investigation is necessary, along with historical information to substantiate that justification, may be included in the revised work plan.



Comment 29

Section 4.4.2, Previous Investigation Results (ST-C504), pages 4-7 and 4-8:

Several mistakes were made regarding directions of boring locations relative to one another (e.g., CAFB-FAC1400-7 (east) should be CAFB-FAC1400-7(south southeast)), contaminant levels (e.g., 5.80E+03 mg/kg should be 9.3E+03 mg/kg) and boring identification numbers (e.g., CAFB-FAC-1400-9 (north) should be CAFB-FAC1400-12 (north)). The Permittee must correct these, and all other errors in this section, in the revised Work Plan.

Flightline Generator UST Site (ST-C505)

Comment 30

Section 4.5.2, Previous Investigation Results (STC505), last paragraph, page 4-9 and Section 5.14.1, Sampling Objectives (ST-C505), last paragraph, page 5-13:

Section 4.5.2, Previous Investigation Results (STC505), page 4-9, the Permittee states "[t]he bases of the two USTs were approximately nine feet bgs. Samples were collected from two feet below the bases of the USTs." In Section 5.14.1 Sampling Objectives (ST-C505), page 5-13, the Permittee states "[b]ased on the fact that the primary source of contamination at this site was previously detected at approximately seven feet bgs (from a leaking UST as described in Section 4.5)..." Information from previous investigations included in Section 4.5 of the 1995 USGS report titled *Investigation of Eight Underground Storage Tank Facilities on Cannon Air Force Base and Melrose Bombing Range, New Mexico, 1995, Volume I* indicates that the primary source of contamination at ST-C505 was detected from nine to eleven feet bgs. The Permittee must present historical information accurately throughout the revised Work Plan.

Comment 31

Section 5.14.2.1, Subsurface Soil Sampling (ST-C505), second paragraph, page 5-14:
This section has several mistakes regarding previous soil boring identification numbers and proposed soil boring identification numbers. For example; previous soil boring identifiers incorrectly contain the facility designation for the Base Support/Operations Generator Former UST Site (ST-C503) (ie: CAFB-FAC0600-03 should be CAFB-FAC3060-02). In addition, the numerical boring number portion of the proposed soil boring identifiers does not correspond with the proposed locations at the Flightline Generator UST Site (ST-C505). The proposed soil boring identification numbers appear to be switched (ie: CA505SB-05 appears to be CA505-SB01). The Permittee must correct these and all similar errors in the revised work plan.

Comment 32

Section 5.14.2.1, Subsurface Soil Sampling (ST-C505), third paragraph, page 5-14:
The Permittee states "[o]utside the former UST excavation, three subsurface soil borings will be completed to a depth of 15 feet bgs to help define the horizontal extent of potential contamination." Contamination tends to migrate downward from a source area and spread laterally from the source area with depth; therefore, the Permittee must complete the soil borings outside the former UST excavation to a minimum depth of 15 feet bgs. If contamination is encountered at depths of 15 feet bgs or greater in the soil borings near the corners of the former UST excavation, the borings completed outside the former UST excavation must then be advanced to a minimum depth of 25 feet bgs.

POL Yard Refueling Area Site (SS-C-507)

Comment 33

Table 5-6 (Summary of Planned Sampling Locations and Analytical Parameters Former POL Yard Refueling Area Site (SS-C-507)):
This table uses footnote 4 twice (for two different analyses) and places footnote 5 where footnote 6 appears to belong. The table key appears to be correct and includes footnotes 4, 5 and 6. Correct these errors in the revised work plan.

Comment 34

Section 4.6.1, Site Description and Background (SS-C507), page 4-13:
The Permittee indicates that underground fuel lines are still present at several locations at the POL Yard Refueling Area Site; however, the location of these underground fuel lines is not marked on the site figures included with the Work Plan. The Permittee must mark the location of all remaining underground fuel lines associated with the Former POL Yard Refueling Area on the appropriate site figures in the revised Work Plan.

Comment 35

Section 4.6.1, Site Description and Background (SS-C507), page 4-13:
Several spills have occurred at this site. The locations of former spills and excavation boundaries are not clear on the site figures presented in the Work Plan. Mark the former spill locations and previous excavation boundaries on appropriate site figures in the revised Work Plan.

Comment 36
Section 4.6.1, Site Description and Background (SS-C507), third line, page 4-13:
The Permittee states "[a]fter approximately 1994, fuel was delivered to the fuel unloading area via 8,000-gallon tanker trucks..." It is not noted what type(s) of fuel was delivered via tanker trucks to this area; JP-4/JP-8, MOGAS and/or diesel fuel. Specify the type(s) of fuel delivered, and by which methods (e.g., train tanker cars, tanker trucks) in the revised Work Plan.

Comment 37
Section 4.6.1, Site Description and Background (SS-C507), first bullet, page 4-13:
The Permittee references a "[r]eported MOGAS spill at the former MOGAS unloading and dispensing area." No estimate of the spill volume is provided. In the revised Work Plan the Permittee must state the approximate volume of this spill and mark its location on the appropriate figures of the revised Work Plan or provide evidence that an estimate is not possible and state the reason why information on this spill is not in CAFBs historical record.

Comment 38
Section 4.6.1, Site Description and Background (SS-C507), page 4-13:
The Work Plan describes previous spill/releases that have occurred at the site, but the Work Plan does not propose sampling in some of these areas. In the revised Work Plan the Permittee must:

a) Propose additional soil sampling locations in and around the MOGAS unloading and dispensing areas to evaluate MOGAS spills/releases.

b) Propose to collect additional soil samples around the edges of concrete pad for the JP-4/JP-8 pump islands to address the potential for contamination related to the "[m]ultiple reported JP-4 and JP-8 spills onto the concrete surrounding the two JP-4/JP-8 pump islands."

c) Propose to collect additional soil samples outside of the excavation boundary of the previously reported JP-8 spill (approximately 400 gallons) to the north of the area formerly occupied by Building 390 and the canopy structure to define lateral extent of impacts of the JP-8 spill in this area.

Comment 39
Section 4.6.1, Site Description and Background (SS-C507), first bullet, page 4-1:
The Permittee describes various places where runoff from paved areas is diverted to various breaks in the concrete curb and is discharged to unpaved areas as well as a concrete drainage trench where runoff is also discharged to an unpaved area. According to aerial photo figures associated with the Former POL Yard Refueling Area Site and Google Earth imagery these unpaved areas appear to be discolored. In the revised Work Plan, the Permittee must propose additional soil sampling at locations within these unpaved discharge areas where water accumulates and infiltrates to evaluate for the presence of contamination. In addition to the proposed soil sampling locations at the breaks in the concrete curbs and at the discharge point of the concrete drainage trench, the Permittee must propose soil sampling locations in the areas that

include, but are not limited to, the north end of the concrete drainage trench (inside the large oval), north northwest of sample location CA507-SS/SB36, east of CA507-SS/SB19, and within the unpaved area located between southern gates of the Former POL Yard.

Comment 40

Section 4.6.1, Site Description and Background (SS-C507), first paragraph, page 4-13: The Permittee states "[o]n the tanker truck side (east side), potential spills that may have occurred during unloading, and stormwater runoff, would flow to shallow concrete trenches located down the center of the truck unloading areas. These shallow concrete trenches were less than six inches deep and were covered with metal grates. A drain at the low point of each trench (located in the middle of each trench) would receive runoff, which was piped to the east, and ultimately to an Oil Water Separator (OWS) contained in a below ground concrete vault." These pipelines from the storm grates to the OWS are not marked on the figures associated with the Former POL Yard Refueling Area. Mark the locations of these pipelines on the appropriate site figures and propose additional soil boring locations to address the potential for contamination from possible leaks from these pipelines in the revised Work Plan.

Comment 41

According to the figures for the Former POL Yard Refueling Area (SS-C507) included in the Work Plan there are two areas marked "cleanouts and valve for storm sewer lines". It is possible these are associated with the pipelines between the storm grates and OWS (See Comment 39). The Permittee must mark the locations of these pipelines on the associated site figures and propose soil boring locations to address the potential for contamination at the locations of the identified cleanouts and valve in the revised Work Plan.

Comment 42

Section 4.6.1, Site Description and Background (SS-C507), last paragraph, page 4-10: The Permittee states "[u]nderground piping is still present at the site, but has been properly drained and capped." It appears that the remaining underground piping associated with the site is not marked on the associated site figures. In the revised Work Plan, mark the locations of the remaining underground piping on the all site figures.

The Work Plan does not propose enough soil sampling locations to adequately assess the potential for contamination associated with above ground and underground fuel piping. The Permittee must demonstrate that the underground piping did not leak while in use at the Former POL Refueling Area Site. In the revised Work Plan, propose additional soil boring locations to address the potential for contamination at the following locations: the underground fuel line connecting Building 392 to Building 390, the underground MOGAS line connecting the MOGAS unloading port to the MOGAS vault, the underground piping associated with the diesel unloading ports as well as under any elbows and joints in the above ground diesel piping. Likely locations for potential leaks in underground piping include connection points, joints and elbows. Straight runs of underground piping should be assessed at approximately 25 ft intervals to ensure no breaches in the lines occurred during their use.

Comment 43

Section 4.6.1, Site Description and Background (SS-C507), first sentence, page 4-13:
The Permittee states "[a] railroad yard existed further to the west (outside the current fenced area). This railroad yard was used to deliver supplies to the base. The railroad yard reportedly was not used by train tanker cars." In **Section 4.6.1, Site Description and Background (SS-C507), page 4-14**, the Permittee describes "[a]dditional areas that have the highest probability of containing potential contamination, and may be potential areas of concern," and lists the "[f]ormer railroad yard to west of the JP-4/JP-8 unloading (outside the current fence)." The Permittee must resolve this discrepancy and propose sampling in this area in the revised Work Plan.

Comment 44

Section 4.6.1, Site Description and Background (SS-C507), last bullet, page 4-12:
The Permittee states "...prior to 1992, JP-4 and JP-8 were delivered to the fuel unloading area via train tanker cars. Based on the 1991 historical aerial photograph, a railroad spur existed between the main railroad lines along Highway 60 (to the north) and the fuel unloading area. Train tanker cars were unloaded on the west side of Building 392." According to Figure 5-6a (Planned Soil Sampling Locations (Base Map) Former Petroleum, Oil, and Lubricants Yard Refueling Area Site (SS-C507)), no soil borings are planned at the location of the native soils north of the previous fuel spill excavation area and northwest of Building 392 and the former JP-4/JP-8 line and canopy. In the revised Work Plan propose to advance soil borings in native soils in this area to assess potential impacts from railcar unloading activities along the former railroad spur.

Surface Disposal Area Site (SD-C508)

Comment 45

Section 4.7.1, Site Description and Background (Surface Disposal Area Site)(SD-C508), first paragraph, page 4-15:
The Permittee states "[t]his site is located adjacent to an area of the base used by Cannon AFB Explosives Ordnance Disposal (EOD) personnel." The EOD area is not marked on the figures associated with this site in the Work Plan. In the revised Work Plan, include an area map which depicts the EOD area and SWMU-107 for reference.

Comment 46

Section 5.16.2, Sampling Locations, Frequencies and Analysis (SD-C508), first paragraph, page 5-16 and 5-17:
The Permittee states "COPCs for this site are based on its inferred past use as a surface disposal area for various debris and burned material. The analyte list for SD-C508 includes the following: TPH-DRO, TPH-GRO, TPH-ORO, VOCs, SVOCs, pesticides, RCRA metals, PCBs, and dioxins/furans." Due to the apparent proximity of the Surface Disposal area to an area of the base used by Cannon AFB Explosives Ordnance Disposal (EOD) personnel (see Comment 44) COPCs may include constituents originating from the EOD area. The Permittee must include explosive constituents in the analyte list for SD-C508 in the revised Work Plan. The chosen suite of explosive constituents must include all types that may have been used in the various

types of ordnance and treatment methods that were possibly used at the EOD area (e.g., burning, detonation).

Comment 47

In Section 4.7.1, Site Description and Background (Surface Disposal Area Site)(SD-C508), second paragraph, page 4-15:

The Permittee states "[t]he vegetation on the mounded area was noticeably shorter and sparser compared to the surrounding vegetation." **Appendix D, Photographic Log – Site Visit, Photograph No. 24**, is the only photograph of the Surface Disposal Area Site. This photo shows a close view of the surface debris. The overall site features discussed in the Work Plan, such as mounding and a change in vegetation, are not visible in this photograph. Include additional photographs of the site showing these features in either the revised Work Plan or the Report.

Waste Oil Storage Facility 224 and Leach Field Site (TA/AS-C129)

Comment 48

Section 4.8.1, Site Description and Background (TA/AS-C129), second bullet, page 4-17:

The Permittee states "[v]arious types of debris are present at the ground surface near the former leach field, including plastic and metal debris, dried paint, and an area covered with an approximately six-inch layer of previously liquefied, dried soil, which appears to have been dumped at this location." In the revised Work Plan, the Permittee must mark the location of these areas on all figures associated with the site and propose to collect soil samples at these locations to assess the potential impacts to soils from the various types of waste dumped in these areas.

Comment 49

Appendix D, Waste Oil Storage Facility 224 and Leach Field Site (TA/AS-C129):

In the *Closure Report / Contamination Assessment, SWMU-129 – Facility 244, Aboveground Tank Storage Area, Cannon Air Force Base, Clovis, New Mexico, July 19, 2000,* the Permittee states "[h]istorically, lubricating oils, hydraulic fluids, and solvents were reportedly stored in the tanks, at various times." NMED was unable to locate historical VOC analytical data in the Work Plan to assess potential impacts from solvent storage activities associated with the site. Include the historical VOC data in the revised Work Plan.

Comment 50

Section 5.17.2.1, Subsurface Soil Sampling (TA/AS-C129), page 5-18 and **Figure 5-8a (Planned Soil sampling Locations (Base Map) Waste Oil Storage Facility 224 and Leach Field Site (TA/AS-C129)):**

The Permittee both describes and depicts on a figure proposed sampling locations for the former leach field. The Permittee must also sample the former leach field line at the approximate location of the 'former cleanout / pipe to leach field', (approximately 25 feet south of the former OWS), the center of the drain pipe between the OWS and the leach field, and at the intersection of the drain pipe with the leach field piping. Due to the shallow depth of the former leach field, exploration to a depth of 15 feet is sufficient for these locations, unless field screening indicates greater depths are warranted due to the presence of potential contaminants.

The Permittee must address all comments in this NOD and submit a revised Work Plan. The revised Work Plan must be accompanied with a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. In addition, an electronic version of the revised Work Plan must be submitted identifying where all changes were made to the Work Plan in red-line strikeout format. The revised Work Plan must be submitted to NMED no later than April 18, 2012.

If you have questions regarding this letter, please contact Lane Andress of my staff at (505) 476-6059.

Sincerely,

John E. Kieling
Acting Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
N. Dhawan, NMED HWB
L. Andress, NMED HWB
R. Lancaster, CAFB
M. Higginbotham, CAFB
A. Lafuente, CAFB

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CAFB-11-005