DEPARTMENT OF THE AIR FORCE
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HOLLOMAN AIR FORCE BASE, NEW MEXICO

ENTERE

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New Mexico Environment Department
Attn: Mr. John Kieling
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Dear New Mexico Environment Department

Holloman Air Force Base is pleased to submit the following responses to comments of your December 15, 2011, Second Notice of Deficiency on the Expanded Closure and Post-Closure Care Plans, 20,000 Pound Open Detonation (OD) Unit.

NMED Comment 1: Surface and Subsurface Soil Sampling

Although the Closure Plan addressed the nitroglycerin and RDX contaminated soils that were discovered during quarterly post-treatment sampling and provided Figures 1 through 3 in Appendix A showing the historical locations of associated surface soil samples, the Permittee "re-graded the OD unit to backfill the depression", which now makes it impossible to draw conclusions based on earlier findings. Moreover, subsurface soils deeper than 6 inches were never sampled for the explosives compounds and toxic metals listed on pages 1-3 and 1-4 of Appendix A of the Expanded Closure Plan. Therefore, the Permittee shall:

(a) Submit a revised sampling and analysis plan for the sampling of explosives, toxic metals, perchlorate, nitrate, and phosphorus in soils at the OD Unit. The Permittee is required to characterize the OD Unit soil for contaminants by collecting both surface samples (0-6 inches deep) and subsurface samples (up to 5 feet deep) on a 25-foot by 25-foot grid spacing. At a minimum, the 25-foot by 25-foot grid shall encompass all portions of the OD Unit that have hosted or may have hosted a pit or crater used for the treatment of hazardous waste. This sampling event shall include the areas of the OD Unit previously impacted by high concentrations of nitroglycerin and RDX and shall be done in lieu of taking samples at the proposed Geostatistical and Perchlorate sampling locations shown in Figure 3 of Appendix A.

(b) Provide a figure showing the sampling grid for collecting the soil samples described in item a) above. The figure must be shown to scale, depict the boundaries of the OD Unit, depict the active area of the OD Unit where explosive ordnance treatment took place, include a north arrow, and show a standard coordinate system (e.g., UTM, latitude/longitude).

NMED Comment 1: Response

This comment raises the following issues:

1. NMED suggests that re-grading the site was not appropriate.
2. NMED believes that historic data are useless because the site was re-graded.
3. NMED believes that soils as deep as 5 feet below grade should be sampled because wastes were treated in pits or craters.
4. NMED believes that the closure should focus on the treatment area, rather than the entire site.

Issue 1: NMED suggests that re-grading the site was not appropriate.

Response: The Permittee acknowledges that the site was re-graded, but it was done according to the Permit conditions as noted in the following permit excerpts:

Permit Attachment G, Pages 4 and 5 of 15, General Description (last paragraph) states:
"When the detonation area is covered with depressions, a bulldozer smoothes out the site, filling in the depressions."

Permit Attachment I, Page 7 of 7, Post Operation Procedures, Step 3, states:
"If necessary, EOD Chief makes arrangements to have depressions in the OD unit backfilled."

Issue 2: NMED believes that historic data are useless because the site was re-graded.

Response: In agreement with the Permit, the Permittee considers this data to be significant and relevant in demonstrating that the soils are not likely to exceed established standards for parameters already sampled. Supporting permit excerpts are provided below.

Permit Attachment F, Page 3 of 10, Closure Sampling and Approach, states:
"Because abundant data will have been gathered during prior quarterly sampling events, and because it is important to verify that the entire area of the OD Unit has been adequately sampled, a non-stratified sampling approach will be used."

The permit then suggests a geostatistical approach for closure sampling. The historic data show that very few samples (discussed in the Expanded Closure Plan) exceeded the standards established at the time. Therefore, even though periodic re-grading of the site over the life of the unit has moved soils around the site, the soils have been characterized every quarter for the last 10+ years from many different locations. This results in a random sampling of the homogenized soils, which does provide useful information.

Issue 3: NMED believes that soils as deep as 5 feet below grade should be sampled because wastes were treated in pits or craters.

Response: The NMED is requesting that the samples be collected as deep as 5 feet below grade to address their concern regarding the use of pits or craters for treatment. The Permit conditions clearly state that pits or trenches were not to be used for treating wastes and that any detonations after a depression was created, would be performed at locations surrounding the first depression (not within it). Therefore, there was no treatment performed in pits or craters and the need for sampling below 1 foot is not justifiable. Finally, the Permit only requires that samples be collected from a depth of 0-1 foot. The addition of a second depth (up to 5 feet) is not required by the Permit and clearly not germane to the detonation practices followed. Relevant supporting excerpts from the permit are provided below.

Permit Attachment F, Closure, Closure Sampling and Analysis, Page 3 of 10, states:
"…Hand auger samples will be collected from the surface interval (0-1 ft) at each of these locations…"

Permit Attachment G, Pages 4 and 5 of 15, General Description (last paragraph) states:
"Treatment of the wastes is accomplished by placing the explosive ordnance on top of the ground within a 100-ft diameter area at the center of the clear zone. The waste is then treated by detonation. The force of the explosion often creates a depression in the ground, which is inspected to ensure that the waste has been completely destroyed. Unexploded ordnance (UXO) that may have been ejected from the depression is collected and returned to the depression and exploded again to treat the UXO. […] Subsequent detonations are performed at locations surrounding the first depression within the 100-ft diameter detonation area."

Permit Attachment I, Standard Operating Procedures, Page 1 and 2 of 7, Treatment Process, states:
"All OD Unit waste treatment activities are conducted on the ground surface. No trenches or pits are excavated to contain the wastes."

Permit Attachment G, Pages 4 and 5 of 15, General Description (last paragraph) also states:
"During quarterly soil sampling, the last detonation depression is not filled in, nor is any dirtwork conducted, until the soil samples have been collected."

Issue 4: NMED believes that the closure should focus on the treatment area, rather than the entire site.

Response: The Permit requires that the entire are of the OD unit be adequately sampled. Focusing a 25 foot grid over the detonation areas alone would exclude areas and thus not in compliance with permit language. As indicated in the response to Issue 1 above, the Permittee has proposed a geostatistical sampling approach that complies with closure requirements in the permit. Therefore, in accordance with the Permit, the Expanded Closure Plan establishes a plan to collect samples from the entire OD site. Adjusting the focus of the closure sampling from the entire site to a localized area of treatment would not be in compliance with the Permit conditions.

The Permit (Attachment F, Closure Sampling and Analysis, Page 3 of 10) specifically states: "It is important to verify that the entire area of the OD Unit [be] adequately sampled…"

Comment 2: Hazard Index

The Permittee shall provide the steps to be used to calculate the hazard quotient from the ratios of any inorganic toxic metal concentrations above approved background levels relative to the NMED Soil Screening Levels.

The Permittee shall follow the guidance provided in the "NMED Technical Background Document for the Development of Soil Screening Levels", (Revision 5, August 2009) regarding the steps used to calculate the hazard quotient from the ratios of metal concentrations above approved background levels. If the total cancer risk is greater than the target risk level of 1E-05 or if the hazard index is >1, concentrations at the site will warrant further site-specific evaluation. Site-specific conditions will be evaluated for each receptor to determine if the assumptions associated with the generic SSLs are appropriate for comparison with the available site data.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please contact Mr. David Scruggs of our Asset Management Flight at (575) 572-5395.

Sincerely

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