



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (ACC)  
HOLLOMAN AIR FORCE BASE, NEW MEXICO

ENTERED

JUL 17 2012

A. David Budak  
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New Mexico Environment Department  
Attn: Mr. John Kieling  
Hazardous Waste Bureau  
2905 Rodeo Park Drive East, Building 1  
Santa Fe NM 87105-6303



Dear New Mexico Environment Department

Holloman Air Force Base is pleased to submit the response to comments to your May 14, 2012 Notice of Disapproval RCRA Facility Investigation (RFI) Report, Building 131 Washrack, Site SD-08 for your review.

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. Brent Hunt of our Asset Management Flight at (575) 572-5395.

Sincerely

A. DAVID BUDAK, GS-14, DAFC

Attachment:  
Response to Comments on Notice of Disapproval RFI Report, Building 131 Washrack, Site SD-08

cc:

(w/Atch)  
Mr. David Strasser  
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(w/o Atch)  
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Global Power for America

7011 2970 0003 3843 6549

**Comments**  
**RCRA Facility Investigation Report, Building 131 Washrack, Site SD-08**  
**Holloman Air Force Base, New Mexico, July, 2007**

Comment No.	Section	Page	Comment	Response
<b>Author: John F. Kieling NMED-Hazardous Waste Bureau</b>			<b>Date of Comments: May 14, 2012</b>	<b>Date of Response: July 6, 2012</b>
1	2.3.4 & Appendix A-5	Page 2-5	<p>This Section refers to a Decision Document that appears in Appendix A-5 that authorized the placement of an asphalt cap over the contaminated soils at the site and the installation of a fence to restrict access to the site as a preferred remedial action. This Decision Document was signed by the Secretary of the NMED on September 29, 1995 and the HAFB Commander on November 3, 1995. The Decision Document required that annual inspection and maintenance of the cap be conducted as well as a requirement for long term groundwater monitoring (LTM). The Decision Document also required that a review be conducted within five years to ensure that the remedy continues to provide adequate protection to human health and the environment.</p> <p>NMED acknowledges that LTM activities have commenced at the site, but no evidence has been submitted that shows that the annual inspections were conducted or that any 5-year reviews were conducted. Therefore, the Permittee shall submit an inspection and maintenance plan for the cap for NMED approval that satisfies the requirements of the Decision Document.</p>	<p>Ten years of groundwater monitoring and inspections were performed as required by the NMED approved September 29, 1995 Decision Document (Radian, 1995) for Site SD-08 and several others. During the HAFB ERP Five Year Review meeting held a HAFB, NM on April 21, 2004, all these sites were rejected for NFA status by the NMED. The reasoning for the rejection was that NMED did not have to follow agreements reached by USEPA and that additional characterization was necessary before any site could be considered for NFA status. Holloman then submitted a work plan for an additional investigation of site SD-08 in August 2005 (Bhate, 2005) and submitted a RCRA Facility Investigation report in July 2007 (Bhate, 2007). This RFI included the collection and analysis of soil samples from beneath the engineered cap to assess the current concentrations of pesticides (and other constituents) remaining in soil beneath the cap. These results revealed that the pesticides originally identified during previous investigations were either not present or, if present, were substantially below the NMED residential soil screening levels. Additionally, further annual asphalt cap inspections were not necessary or required since they were part of the rejected original agreement (1995 Decision Document).</p>

**Comments**  
**RCRA Facility Investigation Report, Building 131 Washrack, Site SD-08**  
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Comment No.	Section	Page	Comment	Response
The following comments refer to the Risk Based Evaluation presented in Section 8 of the RFI Report.				
2	8	General	<p>Although site concentrations were compared with risk-based target levels in soil and groundwater, incremental risks and hazard indices were not calculated for the receptors that were evaluated in the risk assessment. Incremental risks and hazard indices must be calculated in order to adequately characterize the total risk to receptors that may be present at the site. Furthermore, risks and hazards from all potentially completed exposure pathways (including soil and groundwater pathways) must be summed for each receptor to characterize cumulative risks and hazards before any conclusion of whether concentrations may be considered protective of future receptors at the site.</p> <p>The Permittee shall modify the risk assessment to present cumulative risks and hazards including all completed exposure pathways for each receptor.</p>	<p>Holloman is currently performing 8 quarters of groundwater monitoring at Site SD-08 as required by NMED. The current SD-08 groundwater monitoring program will generate additional data which will be utilized for conducting a revised human health risk assessment for current (construction worker) and future receptors (construction worker and residents [adult and child]) at the completion of monitoring (December 2013). At that time, all data collected from Site SD-08 (from the 2007 RFI and the 8 quarters of groundwater monitoring) will be evaluated in order to determine the appropriate site closure or Corrective Action Complete (CAC) site status. Furthermore, the revised SD-08 will risk assessment will be included in the revised SD-08 RFI Report and performed in accordance with approved NMED risk assessment guidance. It is currently anticipated that the revised SD-08 RFI Report will be completed in 2014.</p>

**Comments**  
**RCRA Facility Investigation Report, Building 131 Washrack, Site SD-08**  
**Holloman Air Force Base, New Mexico, July, 2007**

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3	8.3.3.1	8-5	<p>This Section indicates that residential receptors would be exposed to surficial soil. Per NMED's Soil Screening Guidance, residential receptors are expected to be exposed to soil from zero (0) to 10 feet below ground surface (ft bgs). The footnotes of Table 8-4(a) indicate that surface soil is defined as 0 to 2 ft bgs and that subsurface soil is assumed to be between two (2) ft bgs and the groundwater table. Based upon a review of the data provided in Tables 8-2(a) and 8-2(b), it appears that all soil results, including those collected from 10-12 ft bgs, were included in determining the exposure point concentrations (EPCs). In reviewing the data, there is a decreasing trend in concentrations with depth, therefore use of an EPC based on a more "surficial" soil is most likely conservative. However, the exposure depth evaluated for the residential scenario (and for each receptor) should include subsurface soil (to a depth of 10ft bgs or the water table) and be clearly stated in the text.</p> <p>The Permittee shall clarify whether all of the data provided in Table 8-2(b) were included in the risk assessment EPC determinations or whether data below 2 ft bgs were eliminated.</p>	See Response to Comment #2.
4	8.4.3.1	8-7	<p>This Section indicates that the toxicity values presented in the Johnson and Ettinger (J&amp;E) model were used to calculate target indoor air concentrations. Utilization of toxicity data contained in the J&amp;E model is not always appropriate as it may not be the most current or may not follow the same hierarchy of sources outlined in NMED's Soil Screening Guidance or per EPA guidance.</p> <p>The Permittee shall review the toxicity data used in the J&amp;E modeling and discuss whether use of current toxicity data (if there are differences) would result in any change to the risk conclusions and total risk/hazard.</p>	See Response to Comment #2.

**Comments**  
**RCRA Facility Investigation Report, Building 131 Washrack, Site SD-08**  
**Holloman Air Force Base, New Mexico, July, 2007**

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5	8.5	8-9	<p>The following text is taken from Section 8.5, "For the chemicals whose maximum detected concentration exceeded the target levels, the average concentrations were compared with the target levels. The average concentrations are more representative of the concentrations. To calculate the average concentrations, the nondetect values were replaced with ½ the detection limits." The following comments apply to this statement:</p> <p style="margin-left: 40px;">a) The use of an arithmetic average is inappropriate for risk assessment and may underestimate potential risks and hazards. Further, it is not clear that use of an average concentration was acceptable practice at the time this report was drafted. US EPA now recommends the use of a 95% upper confidence limit (UCL), which is an estimate of the mean, as a representative exposure point concentration for risk assessments.</p> <p style="margin-left: 40px;">The Permittee shall replace the average concentrations with the 95% UCL for the exposure point concentrations and provide a discussion of any change in risk conclusions that may occur.</p> <p style="margin-left: 40px;">b) While, historically, the use of an arithmetic average of detection levels or simple substitution for non-detects with one-half the detection level was common practice, these simple substitution methods are no longer deemed appropriate for risk assessments. Studies have shown the use of these simple substitution methods may underestimate potential risks and hazards. US EPA's ProUCL User's Guide states that, <i>"It should be noted that for data sets with NDs [nondetects], the DL/2 substitution method has been incorporated in ProUCL 4.0 only for historical reasons and also for its current default use. It is well known that the DL/2 [detection limit] method (with NDs replaced by DL/2) does not perform well (e.g., Singh, Maichle, and Lee (EPA, 2006) even when the percentage of NDs is only 5%-10%. It is strongly suggested to avoid the use of DL/2 method for estimation and hypothesis testing approaches used in various environmental applications. Also, when the % of NDs becomes high (e.g., &gt; 40%-50%), it is suggested to avoid the use of parametric MLE methods. For data sets with high</i></p>	See Response to Comment #2.

**Comments**  
**RCRA Facility Investigation Report, Building 131 Washrack, Site SD-08**  
**Holloman Air Force Base, New Mexico, July, 2007**

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			<p><i>percentage of NDs (e.g., &gt; 40%), the distributional assumptions needed to use parametric methods are hard to verify; and those parametric MLE methods may yield unstable results."</i> Use of simple substitution may also result in an underestimation of the exposure point concentration. In lieu of the proposed methods applied in this report, ProUCL provides several other methods for handling censored data to include regression on order statistics (ROS). As the use of simple substitution tests for censored data are not a currently accepted practice, determination of the EPC for censored data sets should be revised to reflect current guidance.</p> <p>The Permittee shall modify the risk assessment to utilize alternative methods for calculating UCLs with datasets containing non-detects, such as those recommended by US EPA's ProUCL User's Guide.</p>	
6	8	Table 8-4(a)	<p>This Table lists dermal contact with groundwater as an incomplete exposure pathway for the residential receptor. However, the exposure interval for a residential receptor is 0-10 ft bgs. The water table is noted as being as high as 6 ft bgs, meaning that it is plausible that a resident digging in their yard could come into contact with potentially contaminated groundwater and have some dermal and incidental ingestion exposures. However, the risk from these pathways is typically minor and most likely would not contribute significantly to risk.</p> <p>The Permittee shall classify the "dermal contact with groundwater" pathway as being potentially complete. While inclusion of a quantitative analysis probably will not change the overall risk conclusions, the report should qualitatively address this pathway.</p>	See Response to Comment #2.
7	8	Appendix G	<p>The Johnson and Ettinger (J&amp;E) input spreadsheets provided as Appendix G show that soil and groundwater target levels were calculated for both a child resident (which utilized a value of 6 years for the exposure duration and the averaging time for noncarcinogens) and an adult resident (which utilized a value of 24 years for the exposure duration and the averaging time for noncarcinogens). Calculation of both adult and child target levels is not necessary as the algorithms employed by the J&amp;E model do not take into account the</p>	See Response to Comment #2.

Comments				
RCRA Facility Investigation Report, Building 131 Washrack, Site SD-08 Holloman Air Force Base, New Mexico, July, 2007				
Comment No.	Section	Page	Comment	Response
			<p>body weight of receptors. In addition, a value of 30 years should be used for the residential exposure duration and averaging time for non-carcinogens, which is the residential default value recommended in the User's Guide to the J&amp;E model. It is noted that the soil and groundwater target levels presented in Tables 8.9(a) and 8.9(b) are the target levels based on the exposure duration of 24 years. However, the target levels based on the exposure duration of 24 years for several COPCs are less conservative than those that would be calculated by applying the exposure duration of 30 years.</p> <p>The Permittee shall update the J&amp;E model to use the exposure duration of 30 years for residential receptors.</p>	
8	8	Appendix H	<p>The equation outlined in Appendix H for the estimation of risk-based target levels in outdoor air (RBTL00) was adapted from US EPA's 1989 <i>Risk Assessment Guidance for Superfund: Part A</i>, as noted. This equation estimates intakes (i.e., mg/kg-day) via inhalation through the consideration of body weight and inhalation slope factors or reference doses. The more recent US EPA (1996) <i>Soil Screening Guidance: User's Guide</i> does not recommend estimating intakes. Rather, the volatilization factor is applied to inhalation unit risk factors or reference concentrations (adjusted for exposure frequency, duration, and time). As the 1996 guidance was available at the time this report was drafted, the more currently methodology should have been used.</p> <p>The Permittee shall determine whether the usage of the more current US EPA (1996) Soil Screening Guidance would result in significant changes to the cumulative risk and hazard calculations for the construction worker.</p>	See Response to Comment #2.
9	General		<p>The Permittee must submit a revised RFI Report that corrects the deficiencies noted above by <b>July 11, 2012</b>. As part of the response letter that accompanies the revised Report, the Permittee shall include a table that details where all revisions have been made to the Report and that cross references NMED's numbered comments. All submittals (including figures and tables) must be in the form of two paper copies and one electronic copy (in MS Word™ format). In addition, the Permittees must submit an electronic redline-strikeout version that includes all changes and edits to the Report.</p>	See Response to Comment #2.