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**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, U. S. ARMY GARRISON COMMAND  
1733 PLEASANTON ROAD  
FORT BLISS, TEXAS 79916-6816

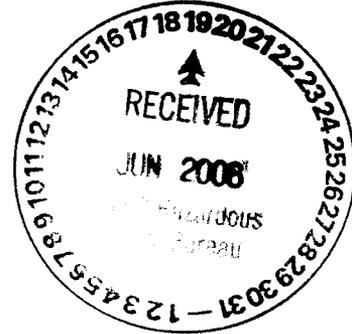
June 15, 2006

REPLY TO  
ATTENTION OF:

Directorate of Environment

Mr. James Bearzi, Bureau Chief  
Hazardous Waste Bureau  
New Mexico Environment Department  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505-6303

RE: Notice of Deficiency  
Closure Certification Report  
McGregor Range Open Detonation (OD) Unit  
EPA ID No. NM4213720101  
FB-05-006



Dear Mr. Bearzi:

In response to your letter of May 15, 2006, the Directorate of Environment addressed each of NMED's comments (*italicized text*) as follows:

*Within 90 days of receipt of this letter Fort Bliss must submit a work plan describing supplemental closure excavation and confirmation sampling activities. The work plan must also include a response letter that addresses the remainder of the comments in this letter cross-referencing NMED's numbered comments with the appropriate parts of the Closure Certification Report.*

Although the NOD letter is dated May 15, 2006, Fort Bliss did not receive the letter until May 30, 2006. We were informed by your office that this was due to a mailing delay. As a result, we understand that the 90-day period for submitting a work plan and response letter began on May 30, 2006, and will end on August 28, 2006. We are sending the response letter well in advance of the August 28<sup>th</sup> date for two reasons: 1) to inform you that along with this response, Fort Bliss is submitting a request for a Class 1 Permit Modification, and 2) to ask that the 90-day suspense for submitting a work plan be delayed until the Hazardous Waste Bureau has reviewed this letter and responded to Fort Bliss' request for a permit modification

**GENERAL COMMENTS**

- 1. The data presentation in the report does not allow for a clear understanding of the analytical results. A summary table with appropriate data statistics, including the minimum, maximum, mean, and 95 percent upper confidence limit of the (95% UCL) should be provided. Please provide a data table (for all constituents) that includes this information.*

The data summary table is enclosed. In accordance with verbal instructions from NMED, the table includes those constituents (metals) for which the minimum, maximum, mean, and 95% UCL were calculated.

- 2. The maximum detected concentration for arsenic (20.3 mg/kg) is above both the residential NMED SSL and the background 95% UCL. The 95% UCL for arsenic was calculated to be 4.83 (presented in Table 2-5). Because some areas contained elevated arsenic concentrations, targeted soil removal was conducted. Upon completion of this soil removal activity, 95% UCL for arsenic was calculated (3.66 mg/kg), which still exceeds the background value (3.38 mg/kg). As stated in Permit Attachment F (Closure Plan) the cleanup level for arsenic is the background level of arsenic, not the Residential NMSSL. Although stated in Appendix F that background levels should be used rather than residential, arsenic levels have been detected above the background level but less than the Residential NMSSL. Therefore, NMED recommends that FB submit a permit modification request stating that the cleanup level for arsenic be the Residential NMSSL rather than the background level.*

Enclosed with this letter is Fort Bliss' request for a Class I Permit Modification with prior written approval of the New Mexico Environment Department. Fort Bliss requests the permit modification to specify that cleanup levels be the Residential New Mexico Soil Screening Levels rather than background levels.

- 3. In Section 5, page 5-1, the last paragraph states "the presence of arsenic may represent natural conditions since the soils excavated from the OD Unit were placed around the perimeter." Fort Bliss must clarify whether the excavated soils were placed there during the initial construction of the OD unit or if the excavated soils are from an excavation that occurred during remediation or other activities.*

The Closure Certification Report, Section 5.2, page 5-1, last paragraph, refers to soils excavated during initial construction of the OD Unit during the 1960s. (As reported in the RCRA Part B Permit Application, August 1993, the demolition unit has been in operation since 1965.)

*Since some sample locations outside of the OD perimeter contain arsenic concentrations above both NMSSL and background levels, Fort Bliss must remove all previously transported soils located outside of the OD perimeter where arsenic was detected at concentrations greater than the Residential NMSSL. The soil must be disposed of appropriately. In Appendix F of the approved Closure Plan, page 1 of 17, NMED requires that soil removed during remediation activities be transported to a permitted facility for disposal.*

The Closure Certification Report (Section 4.3) describes removal and disposal of soils excavated during the 2005 remediation and restoration activities. Copies of the disposal manifests are included in Appendix G of the Closure Report.

4. *Results from verification sampling (page 4-2) demonstrate that three of the fifteen soil samples collected and analyzed contain arsenic levels greater than the NMED SSL (3.9 mg/kg). Fort Bliss must remove all soils containing elevated arsenic levels. The excavated soil must be disposed as required in Closure Plan Appendix F.*

The arsenic 95% UCL of the site characterization and verification sampling dataset (representing soils remaining after hot-spot removal) is 3.66 mg/kg, which is below the NMSSL. As stated previously, Fort Bliss is submitting (with this letter) a request for a permit modification that specifies the NMSSLs as standards for clean-up. If the permit modification is approved, Fort Bliss respectfully requests that NMED consider the OD Unit clean-closed and withdraw the requirement for additional soil removal.

### **SPECIFIC COMMENTS**

1. **Section 2.6.1, Evaluation Methods, page 2-6.** *The last paragraph in this section indicates that site characterization results were compared to the SSLs to evaluate significance and overall health risk. However, the text does not discuss how the site data were compared to the SSLs (e.g., the maximum detected site concentration used or the 95% UCL). For a screening assessment, the maximum site concentration is compared to the SSL. In the event that the screening results pose an unacceptable risk, then additional analysis may be warranted. Clarify how it was determined whether site data meet the release criteria (SSLs). In addition, provide a table that clearly shows site data were used to compare to the SSLs and include the corresponding risk/hazard levels.*

The results for each individual sample were compared directly to the NMSSLs to evaluate significance in terms of human health, as suggested in the comment pertaining to screening assessments. Since the site data have been compared directly to the NMSSLs, it does not appear that the correspondence to risk/hazard levels is necessary. The NMSSLs were established based on acceptable risk levels.

2. **Section 2.6.3, Background Calculations, page 2-7.** *Background soil samples were analyzed for explosive compounds as well as eight RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). It is not clear why the background samples were analyzed for these eight specific RCRA metals. Permit Attachment F, Closure Plan, page 10 of 17, indicates that background soil samples will only be analyzed for explosives and arsenic; therefore, the analysis for metals other than arsenic was not required. If additional analyses were conducted, it is not clear why only these metals were included in the analysis and not all metals that were being analyzed for in the detonation unit. Please state the rationale for the additional analyses of background metals other than arsenic.*

At the request of NMED (letter of June 10, 2005), the Closure Plan was amended to analyze all soil samples collected for background determination for all RCRA metals. The updated Closure Plan was re-submitted in June 2005 and approved in July 2005 (Class I Permit Modification

Approval, July 7, 2005). Therefore, all background samples were analyzed for the eight RCRA metals.

3. **Table 2-3, Summary of Dioxin/Furan Detections.** *The Environmental Protection Agency (EPA) toxicity equivalency factors (TEFs) from EPA 1989 were applied. First, this reference was not provided in the reference list in Section 6. Please revise the reference list for completeness. Second, the TEFs for dioxin/furans have subsequently been updated as summarized in the World Health Organization's (WHO) "Toxicity Equivalency Factors (TEFs) for Dioxin-like Compounds for Humans and Wildlife" (June 1997, [http://www.dioxinfacts.org/dioxin\\_health/dioxin\\_tissues/dioxin\\_toxicity.html](http://www.dioxinfacts.org/dioxin_health/dioxin_tissues/dioxin_toxicity.html)). These 1997 values were used in reviewing the TEFs presented in the table. The following discrepancies were noted:*

<b><u>Dioxin/Furan Isomer</u></b>	<b><u>1989 EPA TEF</u></b>	<b><u>1997 WHO TEF</u></b>
1,2,3,7,8-PeCDD	.5	1
1,2,3,4,6,7,8,9-OCDD	.001	0.0001
1,2,3,4,6,7,8,9-OCDF	.001	0.0001

*In reviewing the driving isomers for the data, it appears that in most cases, 1,2,3,4,6,7,8,9-OCDD and 1,2,3,4,6,7,8,9-OCDF contributed the most to the total toxicity equivalency (TEQ) that was compared to EPA Region 6 SSL. As such, the TEFs applied, which are more conservative than the WHO TEFs for these two isomers. This results in a more conservative estimation of TEQ. Therefore, while the most recent TEFs were not applied, the use of the 1989 TEFs does not appear to greatly impact the assessment for closure. No modification to the tables are required concerning the TEFs.*

*However, a second comment concerning Table 2-3 is that the EPA Region 6 screening level for dioxin (2,3,4,8-TCDD) was used. It should be noted that the Region 6 screening level for dioxin as presented in Table 2-3 of the report is based upon a risk level of 1E-06. As New Mexico enforces a target risk level of 1E-05 for clean closure (resulting SSL is 39 pg/g), the analysis of dioxins as presented in the report is conservative. When the above modifications to the TEFs and the SSL for 2,3,7,8-TCDD based on a 1E-05 risk are applied, all of the site dioxin-furan data are below acceptable limits for clean closure. No modifications to the report concerning this issue are required.*

*Finally concerning Table 2-3, NMED Residential Soil Screening Levels for TCDD should be presented in milligrams per kilogram (mg/kg) or parts per million (ppm). No modifications to this report are required at this time.*

The References Section has been updated to include the 1989 EPA reference for toxicity equivalent factors. Fort Bliss concurs that dioxins/furans are not an issue regarding clean closure of the OD Unit.

4. **Table 2-5, 95% UCL for Arsenic.** It is noted that when a duplicate is available, both the sample and the duplicate sample were used in determining the UCL. Typically, either the maximum concentration or the average of the two samples is used to represent the sample location, but both samples are not applied. Please clarify whether including both the sample and the duplicate represents an over-or under-estimation of the UCL.

The 95% UCL calculation for arsenic provides an underestimation of the UCL. Calculations using maximum, average, and minimum resulted in UCL values of 4.91, 4.91, and 4.90 mg/kg, respectively. These increases are due to a reduction in the population of the dataset, since the UCL is a direct function of the size of the dataset. The conclusion is that the UCL values presented in the Certification Closure Report are conservative.

5. **Appendix E, 95% UCL Calculation for Mercury.** *The table for the calculation of the 95% UCL indicates that a normal distribution was assumed and that the Students T-test was applied. However, when ProUCL (version 3.00.02) was applied to the data in the table, the model indicated that the data were not normally distributed (using both the Shapiro-Wilk test and the Liliefors test, 0.05 confidence). ProUCL indicated that the dataset was actually lognormal distributed and that a lognormal test should be used in determining the 95% UCL. When using the lognormal test, the 95% UCL was calculated as 0.0127 mg/kg. It is noted that the difference between the normal and lognormal 95% UCL is not significant and therefore has no impact on the comparison of site data to the background concentrations. However, the correct distribution should be applied. Please modify accordingly.*

The 95% UCL for mercury, either 0.0127 mg/kg (NMED value from preceding paragraph) or the value presented in the Closure Certification Report (0.0126 mg/kg), is not significant when compared to the NMSSL of 23.1 mg/kg. Because Fort Bliss has submitted a permit modification to use NMSSLs as clean-up standards, we request permission to remove the 95% UCL calculation for mercury from the Closure Certification Report.

6. **Appendix E, 95% UCL Calculation for Selenium.** *The table for the calculation of the 95% UCL indicates that a normal distribution was applied for selenium, However, when ProUCL was run, the results of the distribution analysis indicated that the data are non-parametrically distributed. However, when the 95% UCL was calculated, the model indicated that there were insufficient unique observations to derive an accurate bootstrap estimate and that it recommended that either the Students T-test or modified T-test should be applied. The result of the 95% UCL using the modified T-test was 0.5077 mg/kg. As there is not a significant difference between the Students T-test and modified T-test results, and the Students T-test was applied, no modifications to the methodology must be provided. Fort Bliss should discuss the above, as it is misleading to indicate the data were normally distributed. Fort Bliss must also discuss the distribution of the dataset for selenium and the 95% UCL was estimated using a normal distribution.*

Neither the selenium UCL of 0.5077 mg/kg (NMED value) nor the value presented in the report (0.5088 mg/kg) is significant when compared to the NMSSL of 391 mg/kg. Fort Bliss requests permission to remove the 95% UCL calculation for selenium from the Closure Certification Report.

7. ***Appendix E, 95% UCL Calculation for Silver.*** *The table for the calculation of the 95% UCL indicates that a normal distribution was applied for silver. However, all of the data points in the data set are identical, and therefore there is no variation in the dataset. Therefore, the 95% UCL is meaningless. It is unclear how the Students T-test was applied to a dataset with no variation. When ProUCL was run using this dataset, the model indicated that there was insufficient variation. Please clarify how the 95% UCL was determined, and more importantly, why a 95% UCL was identified.*

Silver was not detected in any of the 15 background samples, but the 95% UCL was calculated for all RCRA metals for completeness. Fort Bliss concurs that the 95% UCL for silver is meaningless and requests permission to remove this calculation for silver from the Closure Certification Report.

If you have any questions concerning this letter, please do not hesitate to call Patricia McKernan at 915 568-2688.

Sincerely,



Keith Landreth, Director  
Directorate of Environment

Enclosures:

Request for Class 1 Permit Modification and Revised Closure Plan  
Data Summary Table  
Reference List (updated)

Copy with enclosures:

Cheryl Frischkorn, NMED HWB

Copies of letter furnished:

John Kieling, NMED HWB  
David Cobrain, NMED HWB  
Tammy Diaz, NMED HWB  
Patricia McKernan, Fort Bliss DOE  
Ron Baca, Fort Bliss DOE

**TABLE C-3**  
**Summary of Inorganic Results**  
**2005 Compliance Sampling Event**  
**McGregor Range OD Unit, Fort Bliss, New Mexico**

Inorganic Constituents	Statistical Summary of Metals Results <sup>1</sup>				
	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Mean Concentration (mg/kg)	95% UCL Value (mg/kg) <sup>2</sup>	NMED Res SSL (mg/kg)
<b>Metals</b>					
Antimony	1.01 UM	0.974 JM	0.918 J	---	31.3
Arsenic - Pre Response Action	0.602 J	20.3	4.26	4.83	3.9
Arsenic - Post Response Action	0.602 J	6.37	3.46	3.66	3.9
Barium	15	139	85.15	---	5,450
Beryllium	0.242	0.677	0.438	---	156
Cadmium	0.097 J	6.48	0.592	---	74
Chromium	1.35	13.5	8.59	---	100,000
Cobalt	1.03 U	48.1	4.23	---	1,520
Copper	2.46	443	46.60	---	3,130
Iron	7,920	13,900	10808	---	23,500
Lead	1.58 M	44.3	13.12	---	400
Mercury	0.02 U	0.032	0.017 J	---	23.5
Potassium	707	5,920	2083	---	NE
Selenium	1 U	0.638 JM	0.856 J	---	391
Silver	0.505 U	1.35	0.514	---	391
Strontium	71.8	376	199.6	---	46,900
Zinc	6.86	179	48.13	---	23,500

**Notes:**

<sup>1</sup> Subsurface soil samples from the deep soil boring and background samples excluded from this summary presentation.

Results from the Site Characterization Event, as documented in the Site Characterization Report (Dec 2005).

<sup>2</sup> UCL value calculated only for those constituents where the maximum detected value exceeds the NMED Residential SSL.

mg/kg = milligrams per kilogram

J = Analyte estimated below the sample quantitation limit or estimated above the sample quantitation limit due to QA/QC issues.

M = Value estimated due to potential matrix affects.

NE = Not Established

U = Analyte not detected above the sample quantitation limit shown.

Shaded values exceed the NMED Residential Soil Screening Level.

## SECTION 6 REFERENCES

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NMED (New Mexico Environment Department). 1995. "Resource Conservation and Recovery Act Hazardous Waste Facility Operational Permit, EPA ID No. NM4213720101-01." Santa Fe, NM. 8 June 1995

NMED. 2000. *Technical Background Document for Development of Soil Screening Levels*. February 2004.

USACE (U.S. Army Corps of Engineers) Tulsa District. 2005. *Scope of Work for McGregor Range OD Site Characterization and Closure, Fort Bliss, TX*. Contract No. W912BV-04-D-2005, Task Order No. 16. 22 March 2005.

U.S. EPA, 1989. "Interim procedures for estimating risks associated with exposure to mixtures of chlorinated dibenzo-p-dioxins and dibenzofurans (CDDs and CDFs) and 1989 update," U.S. EPA, Risk Assessment Forum, Washington, D.C., EPA/625/3-89/016.

WESTON (Weston Solutions, Inc.). 1996a. *Final Report of Findings for Part B Permit, Open Detonation Treatment Unit Investigation - Fort Bliss, TX*. March 1996.

WESTON. 1996b. *Open Detonation Treatment Unit Work Plan Addendum*. May 1996.

WESTON. 1996c. *Final Compliance Sampling Results Report - Part B Permit, Open Detonation Treatment Unit, Fort Bliss, TX*. October 1996.

WESTON. 1997a. *Final Compliance Sampling Results Report - Second 1996, Open Detonation (OD) Treatment Unit, Fort Bliss, TX*. February 1997.

WESTON. 1997b. *Final Compliance Sampling Results Report—First CY97 for Part B Permit, Open Detonation (OD) Unit, Fort Bliss, NM*. July 1997.

WESTON. 1997c. *Compliance Sampling Results Report—Second CY97 for Part B Permit, Open Detonation (OD) Unit*. November 1997.

WESTON. 1999. *Final 1998 Compliance Sampling Results Report, Open Detonation Treatment Unit*. August 1999.

WESTON. 2000. *Final 1999 Compliance Sampling Results Report, Open Detonation Treatment Unit*. February 2000.

WESTON. 2001. *Final 2000 Compliance Sampling Results Report, Open Detonation Treatment Unit.* January 2001.

WESTON. 2002. *Final 2001 Compliance Sampling Results Report, Open Detonation Treatment Unit.* March 2002.

WESTON. 2003. *Final 2002 Compliance Sampling Results Report, Open Detonation Treatment Unit.* March 2003.

WESTON. 2004. *Final 2003 Compliance Sampling Results Report, Open Detonation Treatment Unit – Fort Bliss, NM.* February 2004.

WESTON. 2005a. *Final 2004 Compliance Sampling Results Report, Open Detonation Treatment Unit – Fort Bliss, NM.* February 2005.

WESTON. 2005b. *Site Characterization Work Plan, McGregor Range Open Detonation (OD) Unit – Fort Bliss, NM.* July 2005.