

F B O U



ENTERED

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

December 11, 2006

REPLY TO  
ATTENTION OF:

Directorate of Environment

Mr. John E. Kieling, Manager  
Permits Management Program  
New Mexico Environment Department  
Hazardous Waste Bureau  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505-6303



RE: Response to Comments  
Closure Certification Report  
McGregor Range Open Detonation (OD) Unit  
EPA ID No. NM4213720101

Dear Mr. Kieling:

In response to your letter of October 13, 2006, the Fort Bliss Directorate of Environment addressed each of NMED's comments (*italicized text*) as follows:

**SPECIFIC COMMENTS**

1. *In compliance with 40 CFR 264.14, a Survey Plat providing the location of the unit must be submitted to NMED. The Permittee must submit a Survey Plat with the Closure Certification Report.*

Fort Bliss completed a metes and bounds survey of the Open Detonation Unit on McGregor Range, and a copy of the metes and bound description along with a survey plat of the OD unit are included as Attachment A.

2. *Pages 6-1 and 6-2 have been modified to add a reference for dioxins/furans. This is in response to the previous report not providing the reference that was used for the toxicity equivalency factors (TEFs). It should be noted that more recently published TEFs (1997) are available. As outlined in our comments (deliverable dated March 16, 2006), the use of the 1997 TEFs over the 1989 TEFs does not result in a significant impact on risks nor the conclusions of the report. Therefore, a request to revise the TEF calculations to be based on the 1997 data is not required. The changed pages incorporate the 1989 reference.*

Fort Bliss acknowledges the TEF discussion above and concurs that no additional action is required regarding dioxin/furan TEFs.

3. *As noted in the original Specific Comment No. 1 in the letter dated August 16, 2006 from NMED to the Permittee, it was requested that a table, clearly showing what site data were used to compare to the New Mexico soil screening levels (SSLs) and the corresponding risk/hazard levels, be included in the report. In addition, cumulative risk and hazard were requested to be included in this table. A revised table including this information has been provided (see change page 5-3). The only constituent of concern driving the risk is arsenic. The hazard index is below the target level of one (1.0). When the maximum detected post-remediation datum for arsenic is applied, the risk estimate is 1.63E-05. This is slightly above the New Mexico target risk level of 1E-05. However, if the 95% upper confidence level of the mean (UCL) is applied for arsenic, the risk level drops to 9.36E-06, which is below the target risk level.*

*There is still an outstanding issue concerning the above analysis using the 95% UCL for determination of risk. As noted in the discussion of Comment Nos. 5 through 7 in the August 16, 2006 letter, the calculation of the 95% UCL was not conducted properly, and it was requested that the 95% UCLs be revised to reflect the proper distribution of the data sets. The response to the comments indicated that in lieu of re-calculating the 95% UCLs, it was requested by the Permittee that the 95% UCL be removed from the closure report. To clarify the request in the response, NMED agreed that the maximum detected concentration may be used in lieu of the 95% UCL. As noted in changed page 5-3, the Permittee chose to retain the use of the 95% UCL rather than using the maximum detected concentration as a basis for site closure. However, the previously requested information regarding the distributional method upon which the UCLs were based, remains absent from the revised pages.*

*If the final determination of closure is to rely on the 95% UCL, as it appears in the revised table (page 5-3), then the above comment concerning the derivation of the UCL must be addressed. If the facility wished to remove the UCL and rely on the maximum detected concentration, as outlined in their response, then additional lines of evidence must be provided to demonstrate that post-remediation levels of arsenic will not result in undue risk. The facility is strongly encouraged to consult the United States Environmental Protection Agency's (USEPA) website to obtain a free copy of ProUCL, which is a spreadsheet calculator that automatically tests the distribution of the data set and calculates and recommends the UCL to be used in the risk assessment (<http://www.epa.gov/nerlesd1/tsc/form.htm>).*

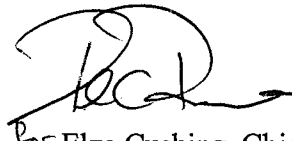
Fort Bliss acknowledges that NMED will accept using a 95% UCL calculated with the data set after hot spot remediation in the risk evaluation. Fort Bliss wishes to remove all UCL calculations from the report and use maximum concentrations except for arsenic (as shown in the previously changed page 5-3 that was submitted in the September 20, 2006, letter from Fort Bliss). Based on the results evaluation, Fort Bliss is requesting clean closure on the basis of acceptable risk using the 95% UCL approach for arsenic after hot spot remediation (as noted in

previously submitted changed page 5-3). No other revisions to the page 5-3 are required based on the additional discussion of the 95% UCL for arsenic provided below.

To comply with NMED's suggestion to test the distribution of the arsenic data set, the ProUCL calculator has been used to recalculate the UCL for arsenic. This program tests the dataset, determines the distribution, and then recommends an appropriate statistical method for calculating the 95% UCL value. Based on this recommended approach, the program then completes several statistical calculations including the 95% UCL value. The ProUCL output is included in Attachment B of this letter, and the recommended statistical method (Students T Test) is the one used in the previous response. The 95% UCL value calculated using ProUCL is the same as the one used in the Closure Certification Report and subsequent correspondence. Therefore, Fort Bliss requests that NMED consider clean closure of the OD Unit with no further action (other than the survey plat mentioned previously).

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

Sincerely,



For Elza Cushing, Chief  
Compliance Division  
Directorate of Environment

Attachments:

- A Survey Plat and Metes & Bounds Description of the OD Unit
- B ProUCL Output – 95% UCL Calculation for Arsenic

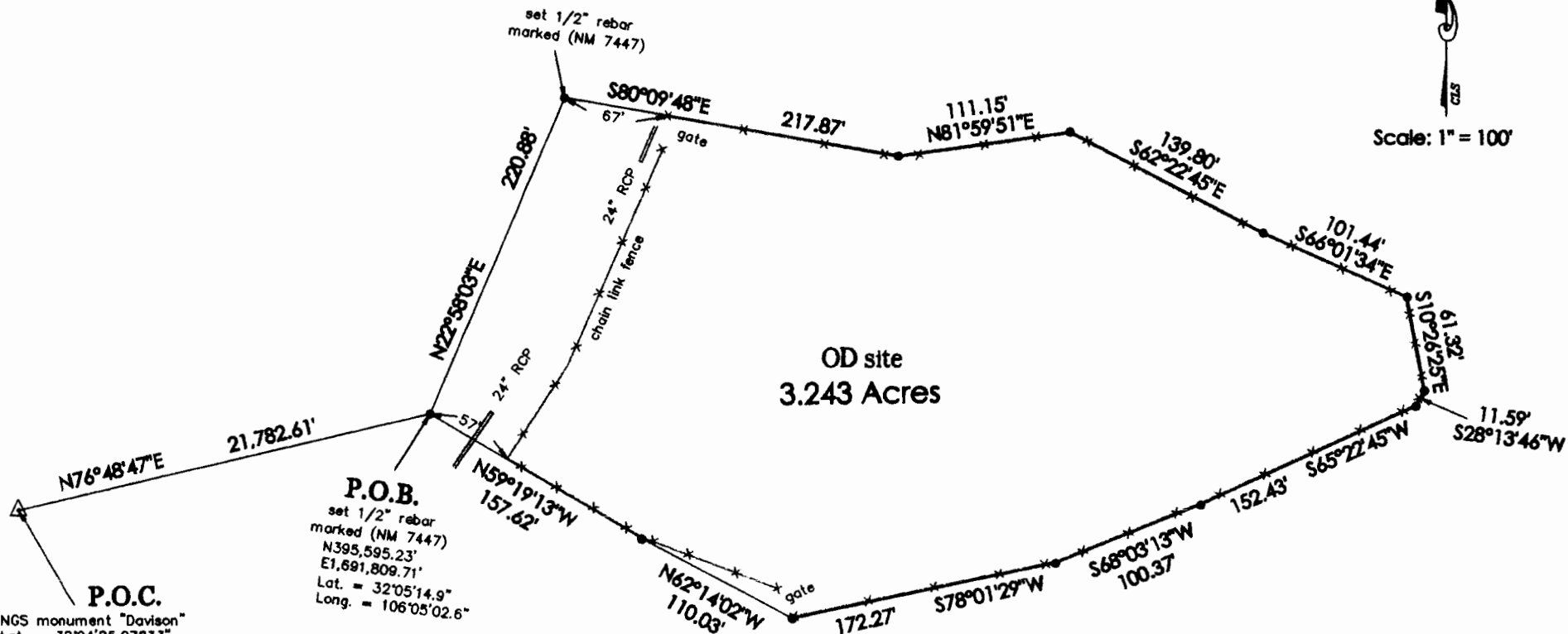
Copies Furnished:

David Cobrain, NMED HWB  
Cheryl Frischkorn, NMED HWB  
Tammy Diaz, NMED HWB  
Patricia McKernan, Fort Bliss DOE  
Ron Baca, Fort Bliss DOE

**ATTACHMENT A**  
**SURVEY PLAT AND METES & BOUNDS DESCRIPTION**  
**FORT BLISS, MCGREGOR RANGE, OPEN DETONATION UNIT**



Scale: 1" = 100'



OD site  
3.243 Acres

**P.O.C.**  
 NGS monument "Davison"  
 Lat. = 32°04'25.97833"  
 Long. = 106°09'09.16831"  
 N390,626.00', E1,670,601.49'  
 New Mexico State Plane Coordinate System  
 NAD 83(1992), Central Zone  
 Conv. = 0°03'06.3"  
 combined factor = 0.99970322

**P.O.B.**  
 set 1/2" rebar  
 marked (NM 7447)  
 N395,595.23'  
 E1,691,809.71'  
 Lat. = 32°05'14.9"  
 Long. = 106°05'02.6"

I, Jerry E. Cutts, New Mexico Professional Surveyor No. 7447 do hereby certify that this Survey Plat is based on a survey made on the ground under my supervision and is true and correct to the best of my knowledge and belief.

12-04-06

*Jerry E. Cutts*  
 Jerry E. Cutts, PS



Date surveyed: 12-04-06  
 Job No. 061106

**PLAT OF SURVEY**  
 PORTION OF SECTION 36, TOWNSHIP 25 SOUTH,  
 RANGE 8 EAST, NEW MEXICO PRINCIPAL MERIDIAN,  
 FORT BLISS, OTERO COUNTY, NEW MEXICO

**Cutts Land Surveying, Inc.**  
 Professional Land Surveyors  
 1100 Montana Avenue, Suite 206 Ph. (915) 534-9391  
 El Paso, Texas 79902 Fx. (915) 534-9394

# Cutts Land Surveying, Inc.

Professional Land Surveyors

## OD Site 3.243 Acres

Being the description of an OD Site located in Section 35, Township 25 South, Range 8 East, New Mexico Principal Meridian, Fort Bliss, Otero County, New Mexico and being more particularly described by metes and bounds as follows:

**COMMENCING FOR REFERENCE** at the NGS monument "Davison" Latitude =  $32^{\circ}04'25.97833''$ , Longitude =  $106^{\circ}09'09.16831''$ , North 390,626.00 feet, East 1,670,601.49 feet New Mexico State Plane Coordinate System, NAD 83 (1992), Central Zone. Convergence =  $0^{\circ}03'06.3''$ , combined factor = 0.99970322;

**THENCE**, North  $76^{\circ}48'47''$  East, a distance of 21,782.61 feet to a set  $\frac{1}{2}$  inch rebar marked (NM 7447) [North 395,595.23 feet, East 1,691,809.71 feet, Latitude =  $32^{\circ}05'14.9''$ , Longitude =  $106^{\circ}05'02.6''$ ] and **POINT OF BEGINNING** for the herein described tract;

**THENCE**, North  $22^{\circ}58'03''$  East, a distance of 220.88 feet to a set  $\frac{1}{2}$  inch rebar marked (NM 7447);

**THENCE**, South  $80^{\circ}09'48''$  East, a distance of 217.87 feet;

**THENCE**, North  $81^{\circ}59'51''$  East, a distance of 111.15 feet;

**THENCE**, South  $62^{\circ}22'45''$  East, a distance of 139.80 feet;

**THENCE**, South  $66^{\circ}22'45''$  East, a distance of 139.80 feet;

**THENCE**, South  $66^{\circ}01'34''$  East, a distance of 101.44 feet;

**THENCE**, South  $10^{\circ}26'25''$  East, a distance of 61.32 feet;

**THENCE**, South  $28^{\circ}13'46''$  West, a distance of 11.59 feet;

**THENCE**, South  $65^{\circ}22'45''$  West, a distance of 152.43 feet;

**THENCE**, South  $68^{\circ}03'13''$  West, a distance of 100.37 feet;

**THENCE**, South  $78^{\circ}01'29''$  West, a distance of 172.27 feet;

**THENCE**, North  $62^{\circ}14'02''$  West, a distance of 110.03 feet;

**THENCE**, North  $59^{\circ}19'13''$  West, a distance of 157.61 feet to the **POINT OF BEGINNING** and containing **3.243 acres** of land.

PREPARED BY:  
Cutts Land Surveying, Inc.  
El Paso, Texas  
December 5, 2006  
Job No. 061106



**ATTACHMENT B**  
**ProUCL OUTPUT – 95% UCL CALCULATION FOR ARSENIC**

ProUCL Ver. 3.0

Data File C:\ProUCL\Data\Fort Bliss.xls

Variable: Arsenic

Raw Statistics

Number of Valid Samples	70
Number of Unique Samples	61
Minimum	0.602
Maximum	6.37
Mean	3.460885714
Median	3.655
Standard Deviation	1.014852806
Variance	1.029926219
Coefficient of Variation	0.293234995
Skewness	-0.546074284

Gamma Statistics

k hat	8.489869857
k star (bias corrected)	8.135542101
Theta hat	0.407648854
Theta star	0.425403209
nu hat	1188.58178
nu star	1138.975894
Approx. Chi Square Value (.05)	1061.607566
Adjusted Level of Significance	0.046571429
Adjusted Chi Square Value	1060.050731

Log-transformed Statistics

Minimum of log data	-0.507497834
Maximum of log data	1.85159947
Mean of log data	1.181476262
Standard Deviation of log data	0.391789028
Variance of log data	0.153498643

RECOMMENDATION

Data are Non-parametric (0.05)

Use Student's-t UCL  
or Modified-t UCL

Normal Distribution Test

Lilliefors Test Statistic	0.13501
Lilliefors 5% Critical Value	0.105897

**Data not normal at 5% significance level**

95% UCL (Assuming Normal Distribution)

Student's-t UCL	3.663119
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Gamma Distribution Test

A-D Test Statistic	2.663165
A-D 5% Critical Value	0.75174
K-S Test Statistic	0.152026
K-S 5% Critical Value	0.106457

**Data do not follow gamma distribution  
at 5% significance level**

95% UCLs (Assuming Gamma Distribution)

Approximate Gamma UCL	3.71311
Adjusted Gamma UCL	3.718563

Lognormal Distribution Test

Lilliefors Test Statistic	0.15216
Lilliefors 5% Critical Value	0.105897

**Data not lognormal at 5% significance level**

95% UCLs (Assuming Lognormal Distribution)

95% H-UCL	3.829258
95% Chebyshev (MVUE) UCL	4.256321
97.5% Chebyshev (MVUE) UCL	4.577077
99% Chebyshev (MVUE) UCL	5.20714

95% Non-parametric UCLs

CLT UCL	3.660403
Adj-CLT UCL (Adjusted for skewness)	3.651944
Mod-t UCL (Adjusted for skewness)	3.661799
Jackknife UCL	3.663119
Standard Bootstrap UCL	3.659259
Bootstrap-t UCL	3.660343
Hall's Bootstrap UCL	3.667196
Percentile Bootstrap UCL	3.656143
BCA Bootstrap UCL	3.641
95% Chebyshev (Mean, Sd) UCL	3.989612
97.5% Chebyshev (Mean, Sd) UCL	4.218392
99% Chebyshev (Mean, Sd) UCL	4.667787