



DEPARTMENT OF THE ARMY  
FORT WINGATE DEPOT ACTIVITY  
P.O. BOX 268  
FORT WINGATE, NM 87316

September 18, 2013

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

**RE: Final RCRA Facility Investigation Report Parcel 10B - Arsenic**

Dear Mr. Kieling:

The purpose of this letter report is to address comments presented to the Army in the New Mexico Environment Department (NMED) Approval with Modifications letter dated May 7, 2013 for the *Final RCRA Facility Investigation Report Parcel 10B*, dated March 19, 2012 by demonstrating that the detected arsenic values are representative of background concentrations.

As established in the *Final RCRA Facility Investigation Report Parcel 10B*, arsenic was not detected above the NMED Soil Screening Level (SSL) within Area of Concern (AOC) 44 or Solid Waste Management Unit (SWMU) 26 during the October 2010 sampling event. However, arsenic was detected just slightly above the NMED SSL for two samples within AOC 44 and two samples within SWMU 26 during a previous investigation completed in March 2009 as shown on Figure 1. After comparison of the arsenic data with the initial soil background study (Shaw Environmental, Inc., 2010), the Army believes that the arsenic values are indicative of natural concentrations for the area. However, additional background soil samples were collected for arsenic at Fort Wingate Depot Activity (FWDA) in June 2012 based on the low background arsenic results found in the *Soil Background Study and Data Evaluation Report of Fort Wingate Depot Activity*, dated February 2010.

The additional background samples were obtained based on Natural Resources Conservation Service (NRCS) soil units. Samples were taken from soil units covering significant portions of the northern depot and soil units up gradient of the Hazardous Waste Management Unit (HWMU). The results were presented in the *Phase 2 Soil Background Report*, dated February 5, 2013 approved by NMED on July 23, 2013.

Since Parcel 10B is located in northern FWDA, the Army recommends using the arsenic 95<sup>th</sup> Upper Tolerance Limit (UTL) for soil unit 225 as the appropriate background value rather than the 95<sup>th</sup> UTL for the entire 2012 data set, the 2009 data set, or the combined 2009/2012 data sets as discussed in section 6.1 of the 2012 background study. The 95<sup>th</sup> UTL values from several of the soil units to the south are higher than the value of soil unit 225, the 2009 data set, and the 2012 set. It is reasonable to conclude these soils in the higher elevation southern areas are transported to the lower northern areas through natural weathering and erosion processes. Soil unit 225, consisting of Aquima-Hawaikuh silt loams, was chosen for background sampling to represent all of northern FWDA since soil unit 225 is a good representative for erosion

deposition of fine grained soil. In addition, many AOCs and SWMUs are within NRCS soil unit 225 areas and background samples were spread over four different areas to better represent northern FWDA. Additional information on the rationale is found in section 2.1 and Table 2-1 of the 2012 background study. Therefore, the **4.6 mg/kg** 95<sup>th</sup> UTL value representing soil unit 225 from the 2012 background sampling event will be used to compare to arsenic values detected from samples collected during the March 2009 sampling event within Parcel 10B. Table 4-1 from the *Phase 2 Soil Background Report*, dated February 5, 2013, presents the Phase 2 Background Soil Summary Statistics and is provided as an enclosure to this letter with the proposed comparison data row highlighted.

The Parcel 10B arsenic exceedances (of the SSLs) found in two samples within AOC 44 and in two samples within SWMU 26 are shown in Table 1 and were taken from the *Final RCRA Facility Investigation Report, Parcel 10B*, dated March 19, 2012; Table 3-1 and Table 4-1, respectively. Arsenic was consistently detected at a concentration of 4.2-4.3 mg/kg just slightly above the NMED SSL of 3.9 mg/kg. However, none of the arsenic detections exceed the 2012 background concentration for soil unit 225 of 4.6 mg/kg (95<sup>th</sup> percentile UTL). Based on this information, the arsenic detections within Parcel 10B are considered to be below background levels. In reference to Comments 1-4 of the May 7, 2013 Approval letter (FWDA-12-001), the Army believes it has demonstrated that the detected arsenic values are representative of background concentrations.

The Army recommends no further action at AOC 44 and SWMU 26 pending approval of this letter report. The Army also plans to use the SWMU 26 berm as borrow material on future FWDA projects pending approval of this letter report. Since AOC 44 and SWMU 26 are the only permit sites at Parcel 10B, the Army will submit a separate letter to petition for the Corrective Action Complete Determination without controls for the two sites. If you have questions or require further information, please call me at 330-358-7312.

Sincerely,

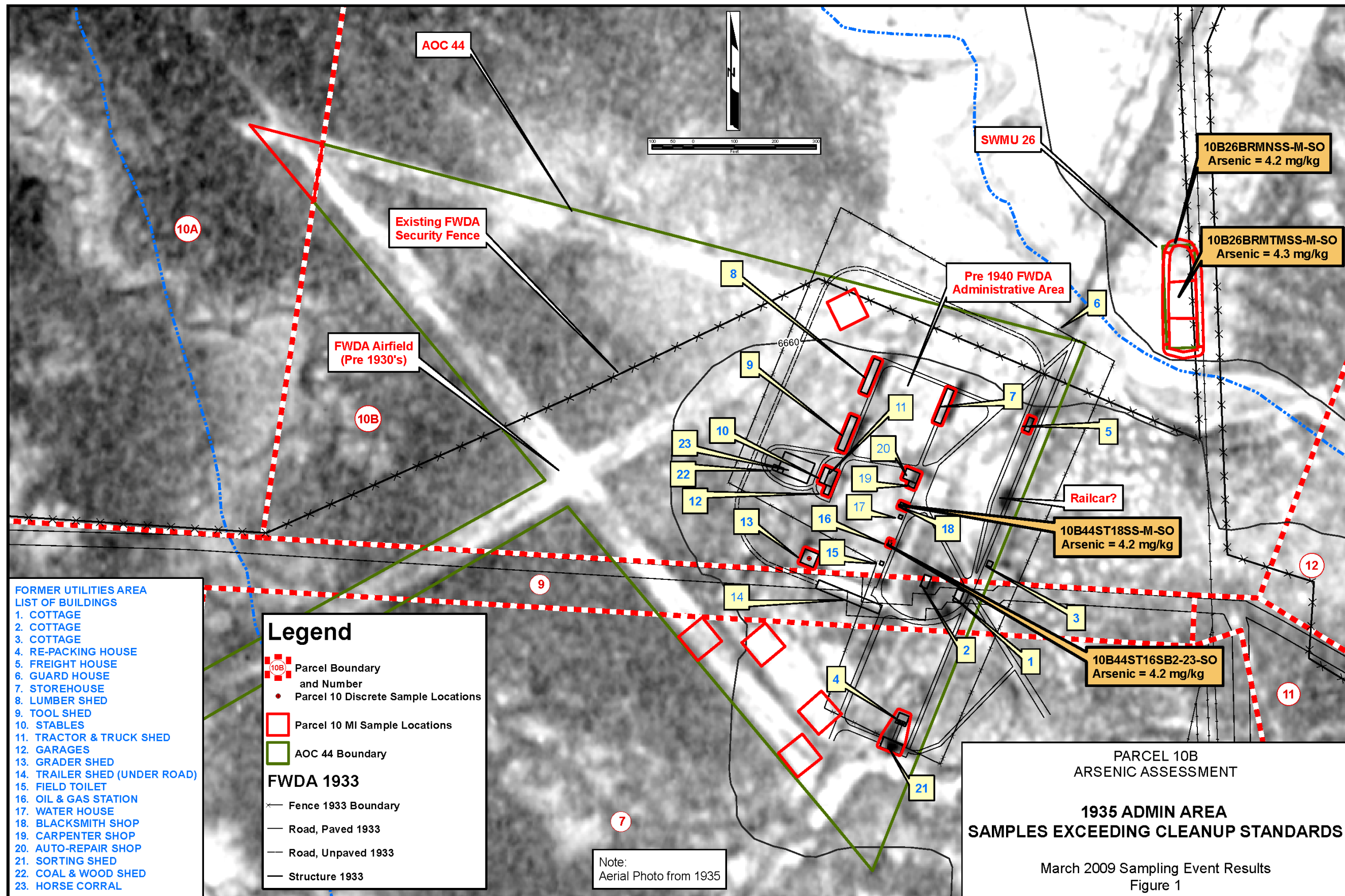


Mark Patterson  
BRAC Environmental Coordinator

Enclosures

CF:  
Vicky Baca, NMED HWB  
Neelam Dhawan, NMED, HWB  
Chuck Hendrickson, U.S. EPA Region 6  
Micki Gonzales, Fort Wingate  
Bill O'Donnell, ACSIM  
Steven Smith, USACE  
Mike Kipp, USAEC  
Jarvis Williams, Navajo Nation  
Darrell Tsabetsaye, Pueblo of Zuni  
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Angela Kelsey, BIA  
Pat Ryan, Fort Wingate Web Manager



**PARCEL 10B - AOC 44 AND SWMU 26 - TABLE 1  
 SAMPLE RESULTS EXCEEDING NMED SSL STANDARDS - ARSENIC ONLY**

SAMPLE ID	DATE COLLECTED	METHOD	MATRIX	CAS #	ANALYTE	RESULT	REPORTING LIMIT	UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	SCREENING LEVEL SOURCE+	SCREENING LEVEL VALUE	UNITS	EXCEEDS SCREENING LEVEL?	2012 ARSENIC BACKGROUND VALUE**	UNITS	EXCEEDS 2012 ARSENIC BACKGROUND VALUE?
<b>SAMPLE LOCATION: Suspect Car Berm - Berm North End</b>																	
10B26BRMNSS-M-SO	03/25/2009	SW6010B	SOIL	7440-38-2	Arsenic	4.2	9.9	mg/kg	JD		NMED Residential SSL	3.90	mg/kg	YES	4.6	mg/kg	NO
<b>SAMPLE LOCATION: Suspect Car Berm - Berm Top Middle</b>																	
10B26BRMTMSS-M-SO	03/25/2009	SW6010B	SOIL	7440-38-2	Arsenic	4.3	10	mg/kg	JD		NMED Residential SSL	3.90	mg/kg	YES	4.6	mg/kg	NO
<b>SAMPLE LOCATION: Oil &amp; Gas Station - Structure ID: 16</b>																	
10B44ST16SB2-23-SO	03/24/2009	SW6010B	SOIL	7440-38-2	Arsenic	4.2	10	mg/kg	JD		NMED Residential SSL	3.90	mg/kg	YES	4.6	mg/kg	NO
<b>SAMPLE LOCATION: Blacksmith Shop - Structure ID: 18</b>																	
10B44ST18SS-M-SO	03/24/2009	SW6010B	SOIL	7440-38-2	Arsenic	4.2	10	mg/kg	JD		NMED Residential SSL	3.90	mg/kg	YES	4.6	mg/kg	NO

**Notes:**

mg/kg - milligrams per kilogram  
AOC - Area of Concern  
CRQL - Contract-Required Quantitation Limit  
GC - Gas Chromatography  
ID - Identification  
IDL - Instrument Detection Limit  
MDL - Method Detection Limit  
NS - No Standard  
QC - Quality Control  
RPT LIM - Reporting Limit  
SWMU - Solid Waste Management Unit  
+ - EPA RSL used as screening level when no NMED SSL exists

NMED SSL - New Mexico Environmental Department Soil Screening Level, as published in the Risk Assessment Guidance for Site Investigations and Remediation. New Mexico Environmental Department, Hazardous Waste Bureau and Ground Water Quality Bureau Voluntary Remediation Program, June 2012.

EPA RSL - U.S. Environmental Protection Agency Regional Screening Level, as published in the Human Health Medium-Specific Screening Levels 2012. U.S. Environmental Protection Agency, Region 6, May 2013.

\*\* 2012 Arsenic background value found in Table 4-1 of the Phase 2 Soil Background Report, dated February 5, 2013. The 4.6 mg/kg 95th Upper Tolerance Limit (UTL) value representing soil unit 225 from the 2012 background sampling event is used to compare to arsenic values of sites located in northern Fort Wingate Depot Activity (FWDA) which includes Parcel 10B.

The Parcel 10B arsenic exceedances (of the SSLs) found in two samples within AOC 44 and in two samples within SWMU 26 reported in this Table 1 were taken from the Final RCRA Facility Investigation Report, Parcel 10B, dated March 19, 2012; Table 3-1 and Table 4-1, respectively.

**Lab Qualifier Codes:**

**All Departments**

- B Analyte found in associated blank as well as in sample
- U Compound analyzed for but not detected
- BQL Below Quantitation Limit

**Organics**

- D Analyte was reported from a diluted analysis
- E Concentration detected exceeded calibration range of the instrument
- J Value is less than the reporting limit but greater than the MDL
- P Greater than 25% difference for detected pesticide/Arochlor results between two GC columns

**Metals**

- J Reported value less than reporting limit but greater than or equal to the IDL/MDL
- E Reported value is estimated because of possible presence of interference
- H Element found in associated blank as well as in the sample and the value is greater than or equal to the reporting limit
- D Analyte was reported from a diluted analysis
- N Spiked sample recovery not within control limits
- \* Duplicate analysis not within control limits

**Validation Qualifier Codes:**

- J Estimated (quantitatively) and tentatively usable
- U Below reporting limit
- UJ Estimated non-detect

**Sample ID nomenclature:**

Sample ID's consist of a combination of Parcel, AOC or SWMU, Site identifier, source of sample, increment number for sub sample identification if necessary, type of sample, depth of sample collection, and matrix.

Example: 10B44ST18SS-M-SO

Parcel: 10B  
AOC: 44  
Site Identifier: ST18 (in this case it's structure 18 -former building in the old administration/utilities area)  
Source of sample: SS (Surface Soil), SB (Soil Boring)  
Increment number:00x (3 digits for subsample if necessary)  
Type of sample: M (Multi-incremental), C (Composite)  
Matrix: SO (Soil)

Example: 10B44ST16SB2-23-SO

Parcel: 10B  
AOC: 44  
Site Identifier: ST16 (in this case it's structure 16 -former building in the old administration/utilities area)  
Source of sample: SS (Surface Soil), SB (Soil Boring)  
Increment number: 00x (3 digits for subsample if necessary) - in this case it's the 2nd of 2 soil borings  
Depth of sample: 2 to 3 feet  
Matrix: SO (Soil)

Example: 10B26BRMNSS-M-SO

Parcel: 10B  
SWMU: 26  
Site Identifier: BRMN (in this case it's the berm - North side)  
Source of sample: SS (Surface Soil)  
Increment number:00x (3 digits for subsample if necessary)  
Type of sample: M (Multi-incremental), C (Composite)  
Matrix: SO (Soil)

**Table 4-1**  
**Phase 2 Background Soil Summary Statistics**  
**Phase 2 Soil Background Study, Fort Wingate Army Depot**

Data Sets	Element	Sample Statistics								Sample Variance			Population Statistics		Regulatory Standard
		Number of Samples	Percent Nondetects	Distribution Type	Minimum Concentration (mg/kg)	Median Concentration (mg/kg)	Geometric Mean (mg/kg)	Arithmetic Mean (mg/kg)	Maximum Concentration (mg/kg)	Inter-Quartile Range	Standard Deviation	Coefficient of Variation	95th UCL of Mean	95th UTL	NMED <sup>a</sup> SSLs Residential (mg/kg)
Combined 2009 and 2012	Arsenic	212	0	Nonparametric	0.2	1.2	1.3	1.7	14.0	1.7	1.5	0.9	2.2	3.9	3.9
Combined 2009 and 2012 (without the 14.0 value)	Arsenic	211	0	Nonparametric	0.2	1.2	1.3	1.6	11.2	1.7	1.3	0.8	2.0	3.8	3.9
Full Data set 2009	Arsenic	112	0	Nonparametric	0.2	0.8	0.8	1.1	11.2	0.5	1.3	1.2	1.6	3.7	3.9
Full Data set 2012	Arsenic	100	0	Nonparametric	0.6	2.3	2.1	2.3	14.0	1.4	1.5	0.6	2.6	4.3	3.9
Full Data Set 2012 (without the 14.0 value)	Arsenic	99	0	Nonparametric	0.6	2.3	2.1	2.3	4.7	1.5	0.9	0.4	2.4	4.1	3.9
Individual Soil Units 2012:															
225ss (without the 14.0 value)	Arsenic	39	0	Lognormal	1.5	2.8	2.8	2.9	4.7	0.9	0.7	0.2	3.0	4.6	3.9
350ss	Arsenic	10	0	Lognormal	1.1	1.7	1.7	1.8	2.9	1.2	0.7	0.4	2.2	5.0	3.9
351ss	Arsenic	10	0	Lognormal	0.9	1.4	1.3	1.3	2.0	0.5	0.4	0.3	1.5	2.8	3.9
404ss	Arsenic	10	0	Lognormal	1.2	1.8	1.9	2.0	3.7	1.0	0.8	0.4	2.5	5.6	3.9
414ss	Arsenic	10	0	Lognormal	0.6	1.2	1.2	1.2	2.1	0.3	0.4	0.3	1.5	3.1	3.9
550ss	Arsenic	10	0	Lognormal	1.2	1.7	1.8	1.9	3.8	0.7	0.8	0.4	2.4	4.8	3.9
555ss	Arsenic	10	0	Normal	1.3	3.2	2.8	3.0	4.3	1.7	1.0	0.3	3.6	6.0	3.9
Full Data Set 2012	Antimony	60	90	Nonparametric	0.015	0.2	0.157	0.183	0.23	0.02	0.0571	0.312	0.215	0.22	31.3
Individual Soil Units 2012:															
350ss	Antimony	10	100	Nonparametric	0.200	0.205	0.21	0.21	0.23	0.02	0.0115	0.055	0.217	0.23	31.3
351ss	Antimony	10	70	Nonparametric	0.015	0.185	0.0918	0.139	0.2	0.1387	0.0847	0.61	0.256	0.2	31.3
404ss	Antimony	10	70	Nonparametric	0.016	0.205	0.0998	0.152	0.22	0.145	0.0931	0.612	0.281	0.22	31.3
414ss	Antimony	10	100	Nonparametric	0.180	0.21	0.203	0.204	0.22	0.025	0.0158	0.0773	0.211	0.22	31.3
550ss	Antimony	10	100	Nonparametric	0.180	0.195	0.193	0.193	0.21	0.017	0.0106	0.0549	0.198	0.21	31.3
555ss	Antimony	10	100	Nonparametric	0.18	0.2	0.198	0.198	0.22	0.01	0.0114	0.0573	0.204	0.22	31.3

**Notes:**

<sup>a</sup>New Mexico Environment Department Soil Screening Level, as published in the Risk Assessment Guidance for Site Investigations and Remediation. New Mexico Environmental Department, Hazardous Waste Bureau and Ground Water Quality Bureau Voluntary Remediation Program, February 2012.

Parcel 10B comparison data; 95th UTL = 4.6 mg/kg.

mg/kg = milligram(s) per kilogram

NMED = New Mexico Environment Department

SSL = Soil Screening Level

UCL = Upper Confidence Limit

UTL = Upper Tolerance Limit