



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY AIR DEFENSE ARTILLERY CENTER AND FORT BLISS
1733 PLEASANTON ROAD
FORT BLISS, TEXAS 79916-6816



January 30, 1997

*Jerry B -
pls let me
know when this will
be issued - Bents
2/12/97*



Dr. Ed Kelly
Director
Water & Waste Management Division
New Mexico Environment Department
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, New Mexico 87502

RE: Request for Class I Permit Modification for
US Army Air Defense Artillery Center
Fort Bliss Open Detonation Operational Permit
EPA ID No. NM 4213720101-01

Dear Dr. Kelly:

As required by the above-referenced Resource Conservation and Recovery Act (RCRA) Operational Permit, Fort Bliss has completed an Initial Unit Characterization (IUC) (August 1995), and two subsequent semi-annual sampling events (April and August 1996) at the McGregor Range Open Detonation (OD) Treatment Unit. The two semi-annual sampling events are referred to as the First and Second Compliance Sampling Events. During each of the three sampling events, the general sampling scope detailed in the Permit was implemented. A review of the analytical results from each sampling event indicates that continuance with semi-annual sampling at the current level is not a prudent use of our limited environmental resources.

This correspondence contains a summary of the analytical data collected from the historical sampling activities as it has been used to characterize and assess the ongoing operational condition of the Unit. Sufficient information now exists to revise the sampling scope to better assess the future operational conditions at the Unit, with a reduction in the level of sampling. The requested sampling revisions and rationale follow in this letter.

Background

Three sampling events have been conducted to date at the OD Unit in which individual blast pits, the interior of the OD Unit, the OD Unit perimeter, background, and subsurface soil conditions have been investigated (see tables 1 & 2 and figure 2-1). A few of the locations illustrated on Figure 2-1 have been adjusted during the three events to allow for a complete assessment of the OD Unit. However, the locations illustrated in Figure 2-1 are generally representative of those utilized during all of the sampling events.

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Background samples have been collected during each of the three sampling events and used to establish comparative values for the laboratory analyses specified in our Permit. Background values for metals and nitrate have been established at three times the maximum background sample result. It should be noted that the background values for the IUC (August 1995) were established from three samples, and the background values for the Second Compliance Sampling Event (August 1996) were established from nine samples. As successive sampling events were conducted, all of the previously collected background sample results were used in the establishment of the background values. For all other analyses, the practical quantitation limit for the specific analyte has been used as a comparative value.

As shown in Table 1, the presence of explosives at the OD Unit is primarily limited to two compounds: 2,4-dinitrotoluene and nitroglycerine. Since only one occurrence of 2,4,6-trinitrotoluene and only two occurrences of RDX have been reported in historical samples, these compounds have not been used to evaluate conditions of the OD Unit. While it may appear that explosives vary between sampling stations, the presence is generally consistent and confined to the western portion of the OD Unit and the associated western perimeter. In addition, the general level of explosives has remained relatively unchanged over the last year.

As expected, elevated nitrates are predominant in sample stations located within the OD Unit as expected since many of the materials treated contain nitrate-based compounds. Elevated nitrates are confined to the surface (0-6 inches below grade) and near surface soils (6-12 inches below grade) and, based on the available data, no migration either horizontally or vertically has been identified.

As shown in Table 2, cadmium, copper, lead, and zinc are reported in samples above established background levels. Of these, cadmium, copper, and zinc are also above published ranges for naturally occurring metals. Lead is a common element in many of the propellants and explosives treated at the Unit. Cadmium, copper, and zinc are not common elements in the materials and instead are used in the construction of casings and housing structures of the materials treated at the Unit.

Polychlorinated biphenyls (PCBs) and chlorinated dibenzodioxins/dibenzofurans (CDD/CDF) analyses have been performed on approximately ten percent of the sample stations, generally those with the highest total explosives levels reported during the previous sampling event. PCBs have not been reported in any of the collected samples. One species of CDD/CDF, Octa-chlorinated dibenzodioxin (OCDD), has been reported in isolated samples, and hepta-chlorinated dibenzodioxin (HpCDD) has been reported in one sample at very low (ng/g) concentrations. These dioxin species have been found in samples that were also reported with elevated explosives. As such, the explosives results may be used as indicators of dioxin presence. Assuming that the presence of explosives does not change significantly, it should also be assumed that the presence

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of dioxins will not change. Additional data is planned for collection in February 1997 to further support this correlation.

Free liquids have not been reported in the collected samples, flash points have not been reported above 190°F, and the reported pH has been normal in all samples.

Neither groundwater nor water-bearing zones have been encountered in any of the three soil borings completed within the OD Unit. The location of the 50 foot boring has been adjusted during each sampling event to provide a thorough assessment of the subsurface conditions beneath the OD Unit. As indicated from the sampling results, elevated levels of site-related constituents have not been reported in samples collected below a depth of five feet.

Summary of Sampling Events

Results of the IUC and two subsequent Compliance Sampling Events suggest that conditions at the OD Unit have remained consistent over the last year. Elevated levels of some constituents of concern, namely those associated with the products that are treated and destroyed at the Unit, have been identified in surface and near surface samples at the Unit. While some variation in the location of these occurrences has been observed, soils with elevated levels of the constituents of concern are contained within the Unit or at the Unit perimeter, and migration does not appear to have occurred.

Based on these findings, we are requesting the following modification to our permit. We recommend annual monitoring of the OD Unit, and tailoring the sampling scope to assess the areas historically identified with elevated levels of site-related constituents. Furthermore, many of the analytes specified in the Permit have not been identified to date. As such, we suggest abbreviating the sampling scope for the analytical parameters that have been historically identified at the site.

Permit Modification Request

Based on the initial characterization and assessment activities that have been completed at the McGregor Range OD Unit, a revision in the sampling scope for future sampling events will provide the same level of assessment that has previously been performed. It is understood that this request is contingent on similar operating practices in the future and any operational changes will first have to be approved and may require that the original sampling scope be reinstated. The requested sampling revisions and rationale are listed below.

Case II
Permit Module III.I., I.1, Page 4, second paragraph. This paragraph requires that PCBs and dioxins analyses must be completed since they are known to be byproducts of open detonation

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events. Since PCBs have not been reported in samples, it is requested that these analyses be discontinued on future sampling events.

CLASS II

Permit Module III.I., I.2., Page 4. This provision requires that "semi-annual sampling be conducted within 24 hours after the last semi-annual open detonation event." It is requested that future sampling be reduced to annually due to of the consistency of results and the infrequent conductance of OD activities at the Unit. Currently, OD activities are only conducted on average once per quarter unless emergency situations arise. Semi-annual sampling may be required in the event that more frequent OD activities occur at the Unit.

Due to the uncertainty in the schedule of OD activities at the Unit, and the fact that OD activities are rare, it is difficult to coordinate sampling within 24 hours of an OD event. This difficulty is recognized in the Permit (Permit Attachment J, page 14, Sampling Methods, last of second paragraph) where it is noted that "...OD operations are relatively rare and scheduling sampling based on these operations may cause delays in data acquisition." It is, therefore, requested that the sampling be performed "as soon as practicable" after an OD event.

CLASS II

Permit Attachment A, Page 4, Parameters and Rationale.

Permit Attachment J, Page 19, Residue Analysis Plan. These sections of the Permit provide for hazardous waste characterization of ash and residues found in the OD Unit. Residues and ash have not been found within the OD Unit or within OD blast pits, and should be dropped.

CLASS II

Permit Attachment A, Page 5, Sampling Methods, 1st - 3rd Bullets.

Permit Attachment J, Pages 14 and 16, Sampling Methods, 1st - 3rd Bullets. These areas require characterization of each of the OD pits in the excavation (Unit). This sampling approach applied to historical operational practices where there was a series of OD pits on the western side of the excavation and a series of pits on the eastern side of the excavation. As shown on Figure 2-1, each of these areas are referred to as Pit A and Pit B. According to the Fort Bliss 41st Explosives Ordinance Detachment, who operates the OD Unit, they have not conducted OD activities on the eastern side of the excavation in several years. The OD activities are currently conducted in the western portion (Pit A) of the excavation and the blast pits in the eastern portion of the excavation have been filled as a result of recent grading to control vegetation. Therefore, it is requested that the discreet pit sampling associated with the eastern OD pit be discontinued and assessment be conducted by repositioning the random samples that are required in the 5th bullet of the respective areas in the Permit. This would eliminate 8 samples from future sampling events.

CLASS II

Permit Attachment A, Page 5, Sampling Methods, 4th Bullet.

Permit Attachment J, Pages 14 and 16, Sampling Methods, 4th Bullets. These areas of the Permit require collection of three discreet background samples from an area of the OD Unit that has not been impacted by its operation. To date, a total of nine background samples (three from each event) have been collected (and three additional are planned for collection during the February

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1997 compliance sampling event) and used to establish background values or baseline conditions for comparative purposes. Further collection of background values is not necessary and may in fact "dilute" the established background values. It is planned to utilize the background values established during the Second Compliance Sampling Event (August 1996) for future sampling events.

CLASS II
Permit Attachment A, Page 6, first paragraph.

Permit Attachment J, Page 16, first paragraph. These areas of the Permit require that soil samples be collected to a depth of 50 feet approximately in the middle of the OD Unit. To date, three 50 foot soil borings have been completed across the OD Unit and soil samples have been collected from approximately 5 foot intervals to total depth. No evidence of groundwater nor vertical migration of constituents of concern has been identified in any of the three soil borings completed at the Unit. Therefore, it is requested that sampling to a depth of 50 feet be discontinued.

CLASS II
Permit Attachment A, Page 28, Table A-8.

Permit Attachment J, Page 17, Table J-3. These tables list the analytes and associated analytical methods that are required for soil sampling. Historical sampling has not identified many of the listed metals and information has been collected to sufficiently characterize the physical nature of the surface soils at the Unit. It is, therefore, requested to discontinue testing for the following parameters:

- Free Liquids by EPA Method SW846 9095
- Ignitability (Flash Point) by EPA Method SW846 1010
- pH by EPA Method SW846 9040
- Selected Metals including Arsenic, Antimony, Barium, Beryllium, Iron, Mercury, Potassium, Selenium, and Silver by EPA Methods 6010 and 7000 series.

Annual Sampling

This modification in the sampling strategy would begin occurring annually as opposed to the current semi-annual sampling. Fort Bliss believes that this recommendation will not affect the overall and ongoing assessment of the OD Unit. In order to update and confirm the status of the Unit, Fort Bliss will implement the full sampling scope once every five years.

Conclusion


Sampling has consistently indicated that several parameters are not of concern at this Unit. Based on the data and considering the infrequent use of the Unit, semi-annual sampling does not appear to be warranted. Fort Bliss continues to be committed to environmental stewardship in all of our activities.

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Thank you for your consideration to discontinue the semi-annual sampling requirements from our permit. Additional justification and or information can be supplied upon request. As per the telephone conversation with Ms. Elda Rodriguez of my staff, a meeting to present our permit modification request has been tentatively scheduled with you for February 11, 1997 at your office. In the meantime, we are planning for the next semi-annual sampling event, scheduled for February 1997. If you have any questions or need additional information concerning this matter, please feel free to contact me at (915) 568-6697 or Ms. Rodriguez at (915) 568-6674.

Sincerely, 

James R. Hartman, Ph.D.
Director
Directorate of the Environment
Fort Bliss, Texas

cc: Corneilus Amindyas - NMED
Steve Pullen - NMED

TABLE 1
COMPARISON OF EXPLOSIVES AND NITRATE-NITRITE RESULTS
OD UNIT COMPLIANCE SAMPLING
FORT BLISS, TEXAS

Sample Station	Analyte Detected and Concentration (mg/kg)														
	2,4 Dinitrotoluene			2,4,6 Trinitrotoluene			Nitroglycerin			RDX			Nitrate-Nitrite		
	Aug 1995	Apr 1996	Aug 1996	Aug 1995	Apr 1996	Aug 1996	Aug 1995	Apr 1996	Aug 1996	Aug 1995	Apr 1996	Aug 1996	Aug 1995	Apr 1996	Aug 1996
002-51-1*	0.33	<.24	<.2	<.24	<.24	<.2	5.6	<.97	<.81	<1.0	<.97	<.81	40.6	2.9	<1.0
010-51-1	0.5	<.24	NS	<.25	<.24	NS	<2.0	<.97	NS	<1.1	<.97	NS	317	105	NS
011-51-1	0.34	<.25	NS	<.25	<.25	NS	<2.0	<1.0	NS	<1.1	<1.0	NS	62.5	103	NS
012-51-1	0.28	<.23	NS	<.22	1.1	NS	<1.8	<.93	NS	<.95	<.93	NS	28.3	121	NS
013-51-1	120	<.24	NS	<.23	<.24	NS	<1.8	<.95	NS	<1.0	<.95	NS	35.6	141	NS
014-51-1	4.7	<.24	NS	<.24	<.24	NS	<1.9	<.96	NS	<1.0	<.96	NS	127	168	NS
016-51-1	0.26	<.24	NS	<.25	<.24	NS	<2.0	<.95	NS	<1.1	<.95	NS	96	86.5	NS
018-51-1	<.24	<.25	230	<.25	<.25	<.24	<2.0	<.99	<.96	<1.1	<.99	<.96	115	23.7	2.4
019-51-1	<.23	<.25	0.31J	<.23	<.25	<.24	<1.8	<.98	<.96	<1.0	<.98	<.96	65.7	44.9	2.3
019-51-2	<.23	0.27	<.21	<.23	<.24	<.22	<1.8	4.4	<.85	<.98	<.95	<.88	151	45.6	2.7
019-52-1	NS	NS	<.21	NS	NS	<.22	NS	NS	<.88	NS	NS	<.88	NS	NS	2.4
020-51-1	0.43	<.24	<.22	<.24	<.24	<.22	13	<.97	<.88	<1.0	<.97	<.88	36.7	3.3	2.8
021-51-1	<.24	<.24	<.22	<.24	<.24	<.22	<1.9	13	<.86	<1.0	<.96	<.86	37.6	2.8	<1.0
022-51-2	<.25	<.25	<.21	<.25	<.25	<.21	<2.0	<.99	3.7	<1.1	<.99	<.84	10.3	18.7	7.3
024-52-1	NS	NS	<.2	NS	NS	<.2	NS	NS	4	NS	NS	<.81	NS	NS	1.9
026-51-1	0.3	<.24	<.24	<.22	<.24	<.24	98	<.96	<.94	<.96	<.96	<.94	<1.1	23.3	<1.1
027-51-1	88	<.25	<.21	<.22	<.25	<.22	<1.8	4.5	6.8	<.95	<.98	<.86	<1.1	1.1	<1.2
027-51-2	<.23	<.25	0.32J	<.24	<.25	<.25	<1.9	<.99	12	<1.0	<.99	<1.0	<1.0	2.9	<1.2
027-52-2	NS	NS	<.23	NS	NS	<.23	NS	NS	3.6	NS	NS	<.92	NS	NS	<.98
028-51-1	0.26	6.9	<.24	<.23	<.24	<.24	<1.8	13	<.97	<.99	<.94	<.97	<1.0	1.2	<1.0
028-51-2	0.47	<.25	0.56J	<.24	<.25	<.24	9.3	<1.0	16	<1.0	<1.0	<.93	2.4	1.5	<.96
030-51-1	<.25	3.3	<.24	<.25	<.25	<.24	<2.0	48	<.95	<1.1	<1.0	<.95	1.9	2.6	<.96
030-52-1	<.23	NS	NS	<.23	NS	NS	1.9	NS	NS	<.98	NS	NS	2.1	NS	NS
036-51-2*	<.23	<.24	<.2	<.24	<.24	<.2	<1.9	17	<.79	<1.0	<.95	<.79	22.1	15.6	<.94
036-51-10*	<.22	<.25	<.21	<.22	<.25	<.22	<1.8	<.99	<.86	<.95	<.99	1.4	<1.1	<.85	105
101-52-1	N/A	N/A	0.18J	N/A	N/A	<.21	N/A	N/A	<.83	N/A	N/A	<.83	N/A	N/A	2.4
102-51-1	NS	NS	<.23	NS	NS	<.23	NS	NS	<.93	NS	NS	3.2	NS	NS	<1.3

"<" = Not detected above the laboratory detection limit shown.

** = Indicates a change in sample location over the three events. Some results can not be compared directly

N/A = Not applicable due to change in sample station locations.

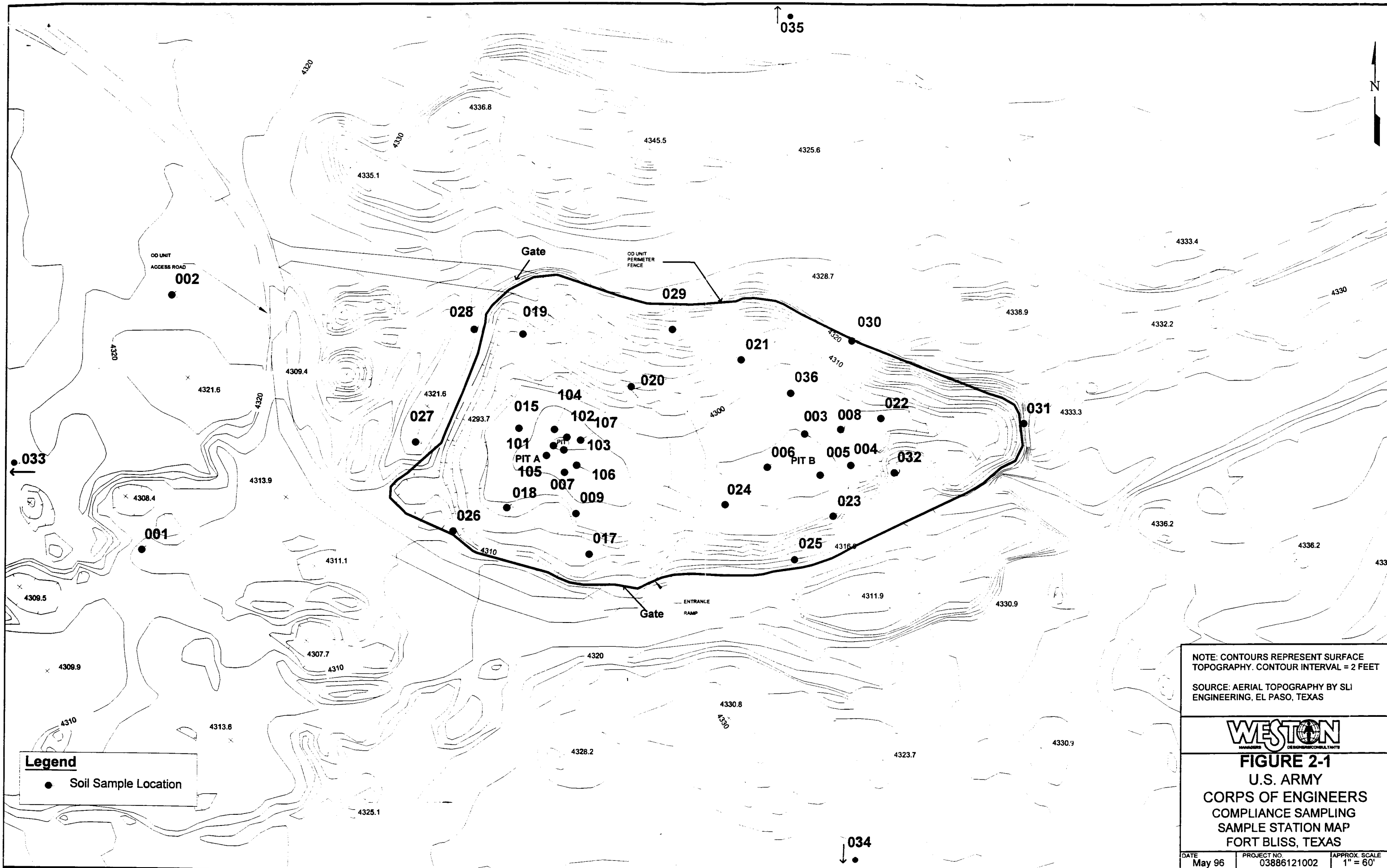
NS = Not sampled.

**TABLE 2
COMPARISON OF METALS RESULTS
OD UNIT COMPLIANCE SAMPLING
FORT BLISS, TEXAS**

Analyte	Initial Characterization Background Value	First Compliance Background Value	Second Compliance Background Value	Initial Characterization Maximum Value	First Compliance Maximum Value	Second Compliance Maximum Value	Natural Range In Soils *
Cadmium	<0.81	<0.82	<0.91	3	2.2	1.9	0.01-0.7 (0.06)
Chromium	26.7	28.8	29.1	28.5	15.8	19.8	1-100 (100)
Copper	124.5	124.5	124.5	5320	452	2100	2-100 (30)
Lead	30.9	31.5	31.5	98.9	312	83	2-200 (30)
Mercury	<0.098	<0.098	<0.05	0.13	<0.1	<0.05	0.01-0.3 (0.03)
Silver	<0.81	<0.82	<0.88	1.1	1.8	1.3	0.01-5 (0.05)
Strontium	369	378	510	642	664	664	50-1000 (200)
Zinc	87.9	103.2	103.2	2090	326	734	10-300 (50)

Notes:

1. All Results reported in mg/kg.
2. ND = Not detected.
- * Lindsay, 1979.



Legend
 ● Soil Sample Location

NOTE: CONTOURS REPRESENT SURFACE TOPOGRAPHY. CONTOUR INTERVAL = 2 FEET
 SOURCE: AERIAL TOPOGRAPHY BY SLI ENGINEERING, EL PASO, TEXAS



FIGURE 2-1
 U.S. ARMY
 CORPS OF ENGINEERS
 COMPLIANCE SAMPLING
 SAMPLE STATION MAP
 FORT BLISS, TEXAS

DATE May 96	PROJECT NO. 03886121002	APPROX. SCALE 1" = 60'
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