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 ENTERED

16 NOV 2001

Mr. Steve Zappe, WIPP Project Leader
 Hazardous Waste Permits Program
 Hazardous Waste Bureau
 New Mexico Environment Department
 2905 E. Rodeo Park Dr. Bldg. 1
 Santa Fe, New Mexico 87505-6303

RE: Transmittal of Waste Isolation Pilot Plant's November 2001 Quarterly Progress Report for Solid Waste Management Unit Activities

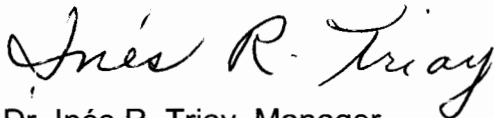
Dear Mr. Zappe:

The purpose of this letter is to submit the Waste Isolation Pilot Plant's November 2001 Quarterly Progress Report for Solid Waste Management Unit Activities, as required by Section VII.I.1 of the Hazardous Waste Facility Permit No. NM4890139088—TSDF.

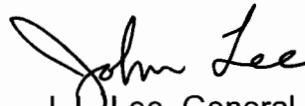
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, 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 fines and imprisonment for knowing violations.

If you have any questions regarding this transmittal, please contact Mr. Jody Plum at (505) 234-7462.

Sincerely,



Dr. Inés R. Triay, Manager
 Carlsbad Field Office



J. Lee, General Manager
 Westinghouse TRU Solutions LLC

Enclosure

cc: w/enclosure
 C. Walker, TechLaw

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 J. Bearzi, NMED
 J. Kieling, NMED



Waste Isolation Pilot Plant
November 2001 Quarterly Progress Report
for Solid Waste Management Unit Activities

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List of Acronyms

COC	Chain of Custody
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
HWFP	Hazardous Waste Facility Permit
NMED	New Mexico Environment Department
SWMU	Solid Waste Management Unit
TSDf	Treatment Storage and Disposal Facility
WIPP	Waste Isolation Pilot Plant
WTS	Westinghouse TRU Solutions, LLC

1. Introduction

Permit Condition VII.I of the Waste Isolation Pilot Plant (**WIPP**) Hazardous Waste Facility Permit (**HWFP**), number NM890139088-Treatment Storage and Disposal Facility (**TSDF**), requires the U.S. Department of Energy (**DOE**) and Westinghouse TRU Solutions, LLC (**WTS**), hereafter known as the Permittees, to submit quarterly progress reports within ninety (90) days of beginning Solid Waste Management Unit (**SWMU**) activities. This report summarizes SWMU soil sampling activities and subsequent analyses that commenced on August 20, 2001. The purpose of the SWMU sampling and analysis activities was to define the extent of potential contamination of hazardous constituents that exceed background levels in soil at four SWMUs.

This report contains the following items, as required by the Permit:

- Description of the work completed;
- Estimate of the percentage of work completed;
- Summaries of all findings;
- Summaries of all problems or potential problems encountered and corrective actions implemented;
- Projected work for the next reporting period;
- Summaries of contacts pertaining to corrective action or environmental matters;
- Changes in key personnel;
- Changes in funding which may impact the completion date; and
- Summaries of all implementation changes.

2. Description of the Work Completed

Field Sampling: SWMU sampling activities commenced on August 20, 2001 and concluded on August 24, 2001. A representative of the New Mexico Environment Department (**NMED**) was present to observe sampling activities. Sampling was conducted in accordance with the *WIPP Sampling and Analysis Plan for Solid Waste Management Units and Areas of Concern (SAP)* (DOE, 2000) as modified by changes documented in a letter from DOE to the New Mexico Environment Department (DOE, 2001a). Sampling was conducted at four SWMUs as summarized in the following table:

SWMU	Number of Sample Locations	Number of Shallow Samples (including field duplicates)	Number of Deep Samples
001q	6	6	6
001x	5	5	5
001L	6	6	6
004a	7	5	7

Specific locations within each SWMU are shown in the figures in Appendix A.

Subsurface soil samples were collected using direct push sample probes with split spoon liners. One field duplicate sample was collected from a shallow sample at each SWMU. Selected split samples were also provided to the NMED representative. Decontamination was accomplished by rinsing the probe with deionized water between samples and using disposable teflon liners for each sample taken. A sample of the decontamination water was taken at each SWMU.

Refusal was met at Sample Locations C, D, and E at SWMU 001L (WIPP12) and Sample Location F at SWMU 001q. For the purposes of this report, "refusal" is defined as the inability of the sample probe to penetrate deeper despite application of maximum pressure for a period of at least three minutes. In all cases adequate sample mass was obtained to complete the analyses, although the resulting sample represented a narrower depth range than planned.

Liner material was found on the surface between Sample Locations D and E at SWMU 001x. Liner material was also located at the surface between Sample Locations A and B, in the subsurface at Sample Location D, and at the surface between Sample Locations E and F at SWMU 001L. Liner material was encountered on the surface between Sample Locations A and B and in the subsurface at Sample Location C at SWMU 001q. In addition, drilling mud was found at a depth of four feet nine inches at Sample Location D at SWMU 001q. These locations are shown in the figures in Appendix A.

Samples were collected, preserved, and packaged in accordance with *Characterization Sampling, Shipping, and Documentation* (WIPP, WP 02EC1001); *Quality Assurance Project Plan for WIPP Site Effluent and Hazardous Materials Sampling*; (WIPP, WP 02-EC.05) and *WIPP Site Effluent and Hazardous Materials Sampling Plan* (WIPP, WP 02-EC.06). Following packaging, samples were shipped to an off-site laboratory for analysis. Chain of

Custody (**COC**) documentation accompanied the samples. The split samples were handled by the NMED representative.

Sample Analysis: The soil samples were analyzed by Wastren Laboratory located in Grand Junction CO. Samples were prepared using SW-846 Methods 3051 and 3015 and analyzed using SW-846 Methods 6010 and 6020 (EPA, 1997), as implemented through laboratory-specific Standard Operating Procedures (SOPs). The analytes included barium, chromium, lead, and nickel, although in accordance with the SAP not all samples were analyzed for all analytes. In accordance with the SAP, the laboratory had current MDL studies available for the applicable analytes.

Data Validation: Analytical laboratory data were validated in accordance with *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (EPA, 1994).

3. Estimate of the Percentage of Work Completed

One hundred percent (100%) of the SWMU sampling and analysis activities required by the SAP have been completed. Additional activities are planned for the next reporting period as discussed in Item 6.

4. Summaries of All Findings

4.1 SWMU Results

Results for each SWMU are shown on the figures in Appendix A and presented in tabular format in Appendix B. The results were compared to three screening levels: the NMED Industrial/Occupational Soil Screening Levels (NMED, 2000), the NMED Residential Soil Screening Levels (NMED, 2000), and the local background levels (DOE, 2000). These levels are shown in the following table:

Analyte	Industrial/ Occupational Soil Screening Level (mg/kg)	Residential Soil Screening Level (mg/kg)	Background Level (mg/kg)
barium	15000	5200	170
chromium	666	230	26
lead	1000	400	5.4
nickel	4400	1500	<2

Some sample results are accompanied by an asterisk, indicating that the laboratory duplicate sample results were not within laboratory control limits. Although the laboratory duplicate results did not meet the criteria established by the laboratory, only those results accompanied by a "J" qualifier were identified during the data validation process as exceeding quality control standards. A "J" qualifier indicates that the result is an estimate, but the data are usable for decision-making purposes.

The following paragraphs summarize the results as compared to background levels.

SWMU 001x: All results were lower than the NMED Residential Soil Screening Levels and the NMED Industrial/Occupational Soil Screening Levels. Results for two shallow samples and one field duplicate shallow sample exceeded the background barium concentration. No results exceeded the background chromium concentration. Results for two shallow samples and one field duplicate shallow sample exceeded the background lead concentration. The chromium and lead exceedances occurred in the same samples. Per the SAP, nickel was not analyzed for in SWMU 001x samples.

SWMU 001L: All results were lower than the NMED Residential Soil Screening Levels and the NMED Industrial/Occupational Soil Screening Levels. Results for two shallow samples and one field duplicate shallow sample and four deep samples exceeded the background barium concentration. Per the SAP, chromium, lead, and nickel were not analyzed for in SWMU 001L samples.

SWMU 004a: All results were lower than the NMED Residential Soil Screening Levels and the NMED Industrial/Occupational Soil Screening Levels. No results exceeded the background chromium concentration. Results for two shallow samples and seven deep samples exceeded the background nickel concentration. Note that in the case of the shallow sample at Sample Location B, nickel was below the background concentration in the sample, but above the nickel background concentration in the field duplicate. Per the SAP, barium and lead were not analyzed for in SWMU 004a samples.

SWMU 001q: All results were lower than the NMED Residential Soil Screening Levels and the NMED Industrial/Occupational Soil Screening Levels. No results exceeded the background chromium concentration. Results for one shallow sample and one field duplicate shallow sample and two deep samples exceeded the lead background concentration. Per the SAP, barium was not analyzed for in SWMU 001q samples.

4.2 Decontamination Water Results

Decontamination water samples were analyzed for each SWMU. Barium, chromium, and lead were found in the decontamination water samples, primarily at levels below the Reporting Detection Limit but above the Instrument Detection Limit. Low levels of these analytes found in associated soil samples could be associated with equipment contamination. Decontamination water results are presented in Appendix C.

5. Problems and Corrective Actions

One difficulty experienced during field sampling activities was meeting refusal at depth as previously described. In one instance the probe became lodged in the ground and it was necessary to excavate an adjacent area to relieve the pressure on the probe and allow its removal. Actions to preclude further problems included halting further penetration when meeting refusal.

The second problem involved the failure of the sketch maps for in SWMUs 001x and 001q to accurately portray the boundaries of the SWMUs. The sketch maps were modified to reflect information gained during the sampling event.

No other actual or potential problems were noted.

6. Projected Work for the Next Reporting Period

During the next reporting period, WIPP plans to begin compiling information which will be used to prepare a report to support a Petition for No Further Action for the SWMUs.

7. Summaries of Contacts

During the reporting period, no contact regarding SWMU corrective actions or environmental matters was made with representatives of public interest groups or local governments.

Numerous written, telephone, and personal contacts with NMED occurred prior to and during the reporting period regarding approval of the SAP, field sampling dates, status of the No Further Action issue, field sampling event completion, analytical methods, status of analytical results, report formats, and sampling location maps.

8. Changes in Key Personnel

Mr. Steven Travis has replaced Ms. Linda Frank-Supka as WTS SWMU Project Manager.

9. Changes in Funding

At this time Congress has not approved the Fiscal Year 2002 budget for DOE. Consequently, it is not possible to conclude if there are any changes in funding that may impact the completion date of SWMU activities.

10. Changes in Implementation

No changes to implementation of the *WIPP Facility Work Plan for Solid Waste Management Units and Areas of Concern* (DOE, 2001b) were made during this reporting period.

11. References

DOE, 2000. *WIPP Sampling and Analysis Plan for Solid Waste Management Units and Areas of Concern*. DOE/WIPP 00-2014, Rev. 0.

DOE, 2001a. "Resolution of Comments Associated with the Solid Waste Management Units Sampling and Analysis Plan". Letter from Cynthia A. Zvonar (CBFO) to Steve Zappe (NMED) dated August 10, 2001.

DOE, 2001b. *WIPP Facility Work Plan for Solid Waste Management Units and Areas of Concern*. DOE/WIPP-00-2001, Rev. 1.

EPA, 1994. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*.

EPA, 1997. *Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods (SW-846)*.

NMED, 2000. *Technical Background Document for Development of Soil Screening Levels*, December 18, 2000.

WIPP. *Characterization Sampling, Shipping, and Documentation*, WP 02EC1001, Rev. 2.

WIPP. *Quality Assurance Project Plan for WIPP Site Effluent and Hazardous Materials Sampling*, WP 02-EC.05, Rev. 1.

WIPP. *WIPP Site Effluent and Hazardous Materials Sampling Plan*, WP 02-EC.06, Rev. 4.

Appendix A
SWMU Sketch Maps

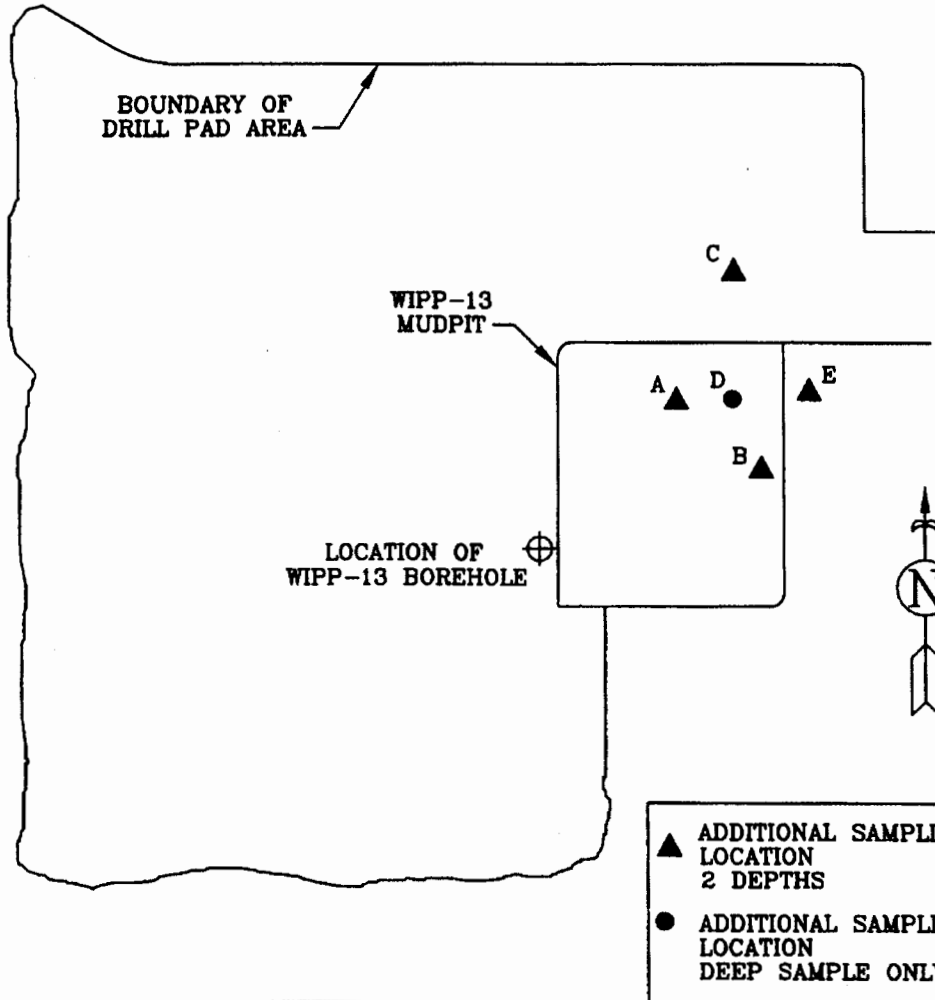
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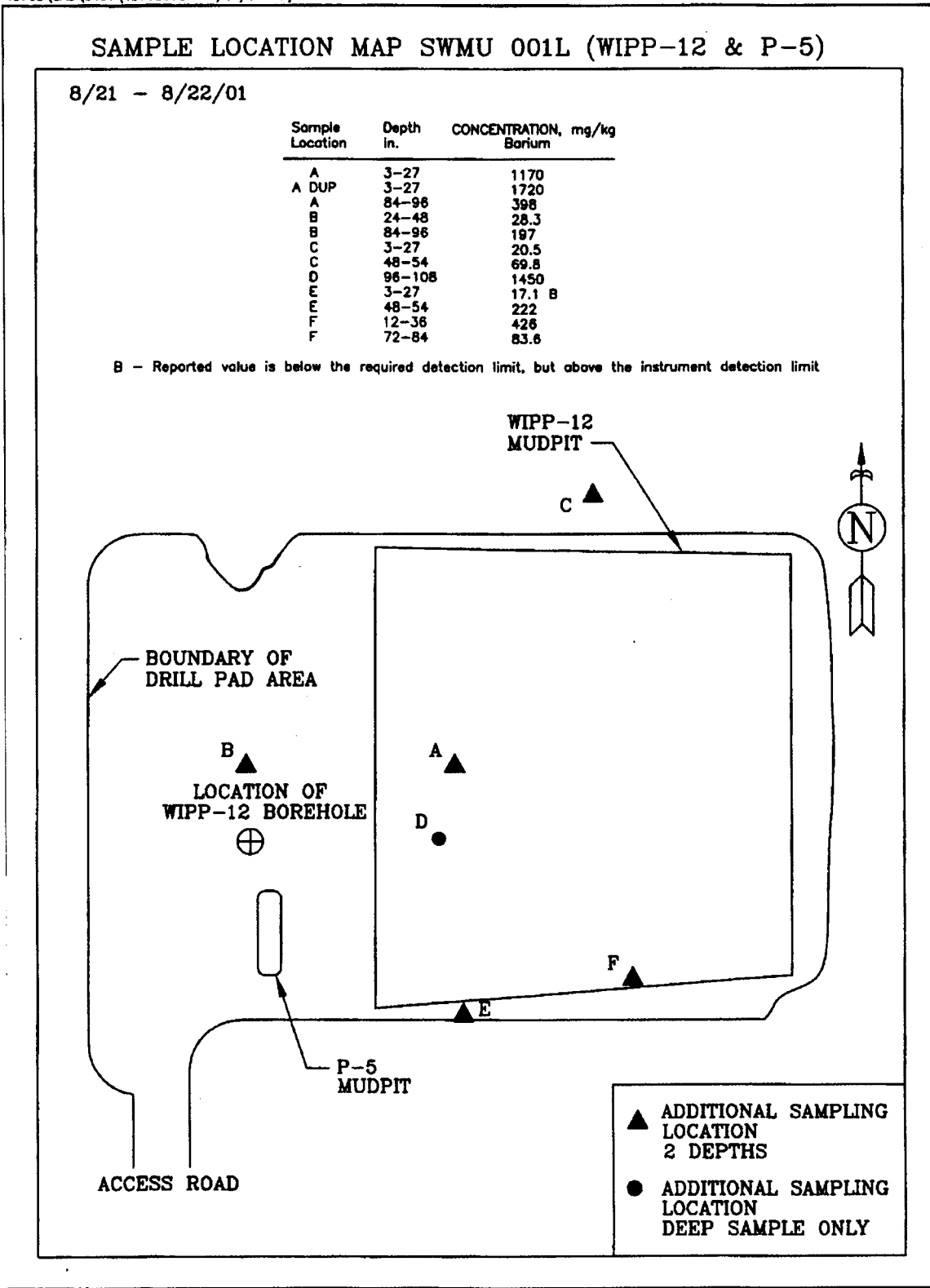
SAMPLE LOCATION MAP SWMU 001x (WIPP-13)

8/20/01

Sample Location	Depth in.	CONCENTRATION, mg/kg		
		Barium	Chromium	Lead
A	6-30	1330	10.8 E*	7 *
A	84-96	29.6	9.1 E*	3.4 *
B	6-30	2230	13.4 E*	11 *
B DUP	6-30	1790	17.9 E*	15 *
B	84-96	31.5	7.1 E*	4.3 *
C	28-40	21.6	5.7 E*, J	2.4 *
C	96-108	106	2.9 E*	1.9 *
D	108-120	50.6	4.3 E*	2.7 *
E	6-30	16.1 B	4.7 E*	1.8 *
E	84-96	36	8.8 E*	4.5 *

- * - Duplicate sample results not within laboratory control limits
- B - Reported value is below the required detection limit, but above the instrument detection limit
- E - Result from serial dilution differs from original result by more than 10 percent
- J - Value qualified as estimated during data validation





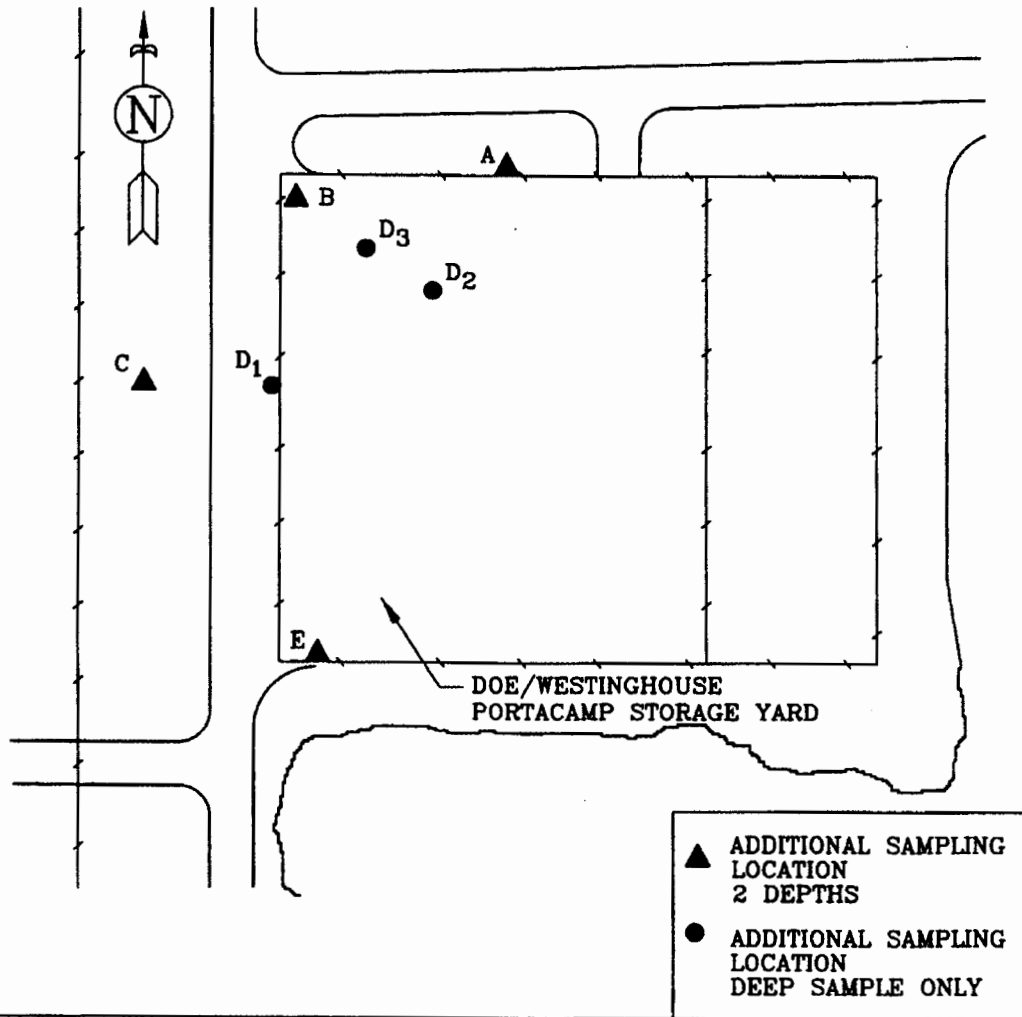
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SAMPLE LOCATION MAP SWMU 004a (PORTACAMP STORAGE YARD)

8/22/01

Sample Location	Depth in.	CONCENTRATION, mg/kg	
		Chromium	Nickel
A	12-24	2.9 *N	1.5 B
A	72-84	5.7 *N	3.7 B
B	12-24	3.5 *N	1.9 B
B DUP	12-24	4.5 *N	2.2 B
B	72-84	4.1 *N	2.7 B
C	12-24	5 *N, J	2.5 B
C	72-84	6.7 *N	4.8
D1	72-84	7.3 *N	5.4
D2	72-84	6.7 *N	4.8
D3	72-84	5.7 *N	3.9 B
E	12-24	3.4 *N	1.6 B
E	72-84	4.5 *N	2.6 B

- * - Duplicate sample results not within laboratory control limits
- B - Reported value is below the required detection limit, but above the instrument detection limit
- J - Value qualified as estimated during data validation
- N - Results for associated matrix spike analysis not within laboratory limits

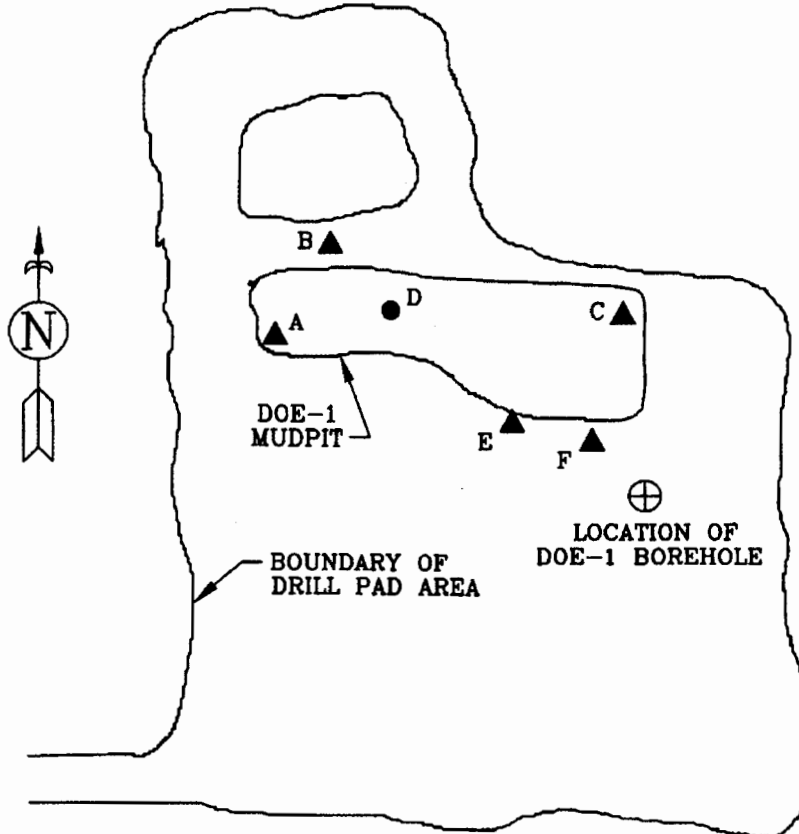


RFA SAMPLE LOCATION MAP FOR SWMU 001q (DOE-1)

8/23/01

Sample Location	Depth in.	CONCENTRATION, mg/kg		
		Chromium	Lead	Nickel
A	24-48	6.5 N	3.9 *	4.3
A	84-96	3.1 N	3.2 *	4.8
B	24-48	3.7 N	1.8 *	1.7 B
B	84-96	4.5 N	2.6 *	5
C	24-48	9.5 N, J	32.2 *	2.9 B
C DUP	24-48	12.6 N	32.3 *	2.6 B
C	48-51	8.4 N	12.2 *	2.7 B
D	90-102	4.8 N	2.9 *	4 B
E	24-48	3.8 N	1.9 *	5
E	72-84	21.2 N	6.1 *	19.8
F	24-48	7.5 N	3.7 *	12.4
F	48-54	7.5 N	3.2 *	9.8

- * - Duplicate sample results not within laboratory control limits
- B - Reported value is below the required detection limit, but above the instrument detection limit
- J - Value qualified as estimated during data validation
- N - Results for associated matrix spike analysis not within laboratory limits



▲	ADDITIONAL SAMPLING LOCATION 2 DEPTHS
●	ADDITIONAL SAMPLING LOCATION DEEP SAMPLE ONLY

Appendix B
Analytical Results

Table B-1: Analytical Results for SWMU 001x August 2001 Sampling Event

Sample Location	Depth (inches)	CONCENTRATION, mg/kg		
		Barium	Chromium	Lead
A	6-30	1330	10.8 E*	7 *
A	84-96	29.6	9.1 E*	3.4 *
B	6-30	2230	13.4 E*	11 *
B DUP	6-30	1790	17.9 E*	15 *
B	84-96	31.5	7.1 E*	4.3 *
C	28-40	21.6	5.7 E*, J	2.4 *
C	96-108	106	2.9 E*	1.9 *
D	108-120	50.6	4.3 E*	2.7 *
E	6-30	16.1 B	4.7 E*	1.8 *
E	84-96	36	8.8 E*	4.5 *

* - Laboratory duplicate sample results not within laboratory control limits
 E - Result from serial dilution differs from original result by more than 10 percent
 J - Value qualified as estimated during data validation

Table B-2: Analytical Results for SWMU 001L August 2001 Sampling Event

Sample Location	Depth (inches)	CONCENTRATION, mg/kg
		Barium
A	3-27	1170
A DUP	3-27	1720
A	84-96	398
B	24-48	28.3
B	84-96	197
C	3-27	20.5
C	48-54^	69.8
D	96-108^	1450
E	3-27	17.1 B
E	48-54^	222
F	12-36	426
F	72-84	83.6

B - Reported value is below the required detection limit, but above the instrument detection limit
 ^ - refusal encountered during sample probe insertion

Table B-3: Analytical Results for SWMU 004a August 2001 Sampling Event

Sample Location	Depth (inches)	CONCENTRATION, mg/kg	
		Chromium	Nickel
A	12-24	2.9 *N	1.5 B
A	72-84	5.7 *N	3.7 B
B	12-24	3.5 *N	1.9 B
B DUP	12-24	4.5 *N	2.2 B
B	72-84	4.1 *N	2.7 B
C	12-24	5 *N, J	2.5 B
C	72-84	6.7 *N	4.8
D1	72-84	7.3 *N	5.4
D2	72-84	6.7 *N	4.8
D3	72-84	5.7 *N	3.9 B
E	12-24	3.4 *N	1.6 B
E	72-84	4.5 *N	2.6 B

- * - Laboratory duplicate sample results not within laboratory control limits
- B - Reported value is below the required detection limit, but above the instrument detection limit
- J - Value qualified as estimated during data validation
- N - Results for associated matrix spike analysis not within laboratory limits

Table B-4: Analytical Results for SWMU 001q August 2001 Sampling Event

Sample Location	Depth (inches)	CONCENTRATION, mg/kg		
		Chromium	Lead	Nickel
A	24-48	6.5 N	3.9 *	4.3
A	84-96	3.1 N	3.2 *	4.8
B	24-48	3.7 N	1.8 *	1.7 B
B	84-96	4.5 N	2.6 *	5
C	24-48	9.5 N, J	32.2 *	2.9 B
C DUP	24-48	12.6 N	32.3 *	2.6 B
C	48-51	8.4 N	12.2 *	2.7 B
D	90-102	4.8 N	2.9 *	4 B
E	24-48	3.8 N	1.9 *	5
E	72-84	21.2 N	6.1 *	19.8
F	24-48	7.5 N	3.7 *	12.4
F	48-54^	7.5 N	3.2 *	9.8

- * - Laboratory duplicate sample results not within laboratory control limits
- B - Reported value is below the required detection limit, but above the instrument detection limit
- J - Value qualified as estimated during data validation
- N - Results for associated matrix spike analysis not within laboratory limits
- ^ - refusal encountered during sample probe insertion

Appendix C
Decontamination Water Results

Table C-1: Analytical Results for Decontamination Water Samples August 2001 Sampling Event

Associated SWMU	CONCENTRATION, $\mu\text{g/L}$			
	Barium	Chromium	Lead	Nickel
001x	16.4 B	4.8 B	3.8	N/A
001L	11.9 B	N/A	N/A	N/A
004a	N/A	2.4B	N/A	1.2 U
001q	N/A	2.9 B	1.4 B	1.2 U

B - Reported value is below the required detection limit, but above the instrument detection limit
U - Analyte was not detected
N/A - Not analyzed