



## **Follow-On Closure Activities**

## **Camp Pedricktown, New Jersey**

## *Final* **Sampling Summary Report**

*Prepared For:*

**U.S. Army Corps of Engineers  
Louisville District  
Louisville, Kentucky**

**Pre-placed Remedial Action Contract  
DACA27-02-D-0005 Task Order 008**

*Prepared By:*

**CATI, Inc.  
9730 Martin Luther King, Jr. Highway, Suite B-1  
Lanham, Maryland 20706**

**27 September 2006**





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Lenny Gunnell  
U.S. Army Corps of Engineers  
Louisville District  
ATTN: (CELRL-ED-E-C)  
600 Martin Luther King Jr. Place  
P.O. Box 59  
Louisville, Kentucky 40202-0059

Re: Pre-placed Remedial Action (PRAC) Contract DACA27-02-D-0005  
Draft Final Sampling Summary Report  
Follow-On Closure Activities  
Camp Pedricktown, New Jersey

Dear Mr. Gunnell;

CATI, Inc. has received and incorporated agency comments on the Draft Sampling Summary Report for the Follow-On Closure Activities project at the Camp Pedricktown, New Jersey site. Enclosed is the Draft Final Sampling Summary Report, which includes the modifications in response to the provided comments.

It has been our pleasure to provide our professional high-quality services in the expedited time schedule for the United States Army Corps of Engineers. We look forward to future opportunities at this site and at other locations. Please contact Jim Nicula, Project Manager, at (240)-882-9169 with any questions or concerns.

Sincerely,

Edward J. Harris, Jr.  
President

Enclosures: Draft Sampling Summary Report

cc: Mr. Jim Nicula – CATI, Inc.  
Ms. Cathy Misko – Platinum Engineering

**SAMPLING SUMMARY  
FOLLOW-ON CLOSURE ACTIVITIES  
CAMP PEDRICKTOWN, NEW JERSEY**

**1.0 PERSONNEL ON-SITE:**

Soe Aung, P.G., United States Army Reserve Representative  
Paul Fluck, United States Army Base Realignment and Closure Representative  
Jim Nicula, CATI, Inc. – Project Manager  
Cathy Misko, P.E., Platinum Engineering – Project Engineer  
Paul Wirrick, Eichelberger - Driller

**2.0 SUMMARY OF ACTIVITIES:**

The field work for the Follow-On Closure Activities at the Camp Pedricktown site was conducted on 28 August 2006 and 29 August 2006. Personnel on-site during the field activities included Mr. Soe Aung, Mr. Paul Fluck, Mr. Jim Nicula, Ms. Cathy Misko, and Mr. Paul Wirrick. Utilities markings were present at the project site for sewer, water, and gas. A representative of the communications utilities arrived to the site to locate and mark underground communications facilities. After a tailgate safety meeting, the project personnel initiated work activities. Mr. Soe Aung and Ms. Cathy Misko determined the locations of the soil borings and discussed the project objectives with the sampling team. A total of 6 borings were completed using a Direct-Push Geoprobe® rig (B1 through B6). Soil borings B1, B3, B4, and B5 were completed to a depth of 15 feet below ground surface (bgs). Soil boring B2 terminated at 20 feet bgs and boring B6 terminated at 10 feet bgs.

One soil sample was collected from each boring (6 soil samples plus quality control samples). Soil cores were collected in 5-foot increments. Following extraction of the soil core, the polyethylene casing was cut open and the soil profile was exposed for observation and sample collection. The observed soil profiles were similar in nature, with a dark brown organic topsoil overlaying a bleached light brown sand, followed by a reddish brown sand. The reddish brown sand layer was underlain by a transition layer of light brown coarse sand followed by a greenish-tan coastal sand and gravel material. The coastal sand and gravel was encountered in the 10-15 foot bgs casing for borings B1 and B5. Borings B2, B3, B4, and B6 terminated in the light brown coarse sand. Groundwater was typically encountered in the reddish brown sand layer. No free product or hydrocarbon odor was observed in the borings.

Utilizing his technical expertise and site knowledge, soil samples were collected at the direction of Mr. Soe Aung. The sampling interval for the soil samples typically

correlated with the sampling interval from previous investigation efforts as described in the Final Site Investigation Report (Kemron, 2005). Temporary peizometers were constructed in borings B1 through B5 to enable collection of representative groundwater samples (5 groundwater samples plus quality control samples). A peristaltic pump was utilized for retrieval of groundwater from the temporary peizometers.

In addition, two samples were collected of the coal slag material. One sample was collected from the coal slag exposed on the roadway south of Building 464 (between Building 464 and Building 434) and one sample was collected from the coal slag observed in boring B4 at approximately 39-45 inches bgs.

The location of the borings and corresponding soil and groundwater samples were as follows:

<b>BORING ID</b>	<b>SAMPLE ID</b>	<b>LOCATION DESCRIPTION</b>
B1	PED-SS01 PED-GW01	Southwest of Building 464
B2	PED-SS02 PED-GW02	Northwest of Building 464
B3	PED-SS03 PED-GW03	Along North Wall of Building 464
B4	PED-SS04 PED-GW04	Southeast of Building 464
B5	PED-SS05 PED-GW05 PED-GW05-DUP	Along South Wall of Building 464
B6	PED-SS06 PED-SS06-DUP	Along East Wall of Building 464, in same proximity as past elevated concentration of arsenic in soil.
SU1	PED-SLAG01	From surface of roadway between Building 464 and Building 434
SU2	PED-SLAG02	From observed coal slag material in Boring B4, southeast of Building 464

The samples were immediately containerized, labeled, iced, and prepared for overnight shipment to the STL Laboratory located in North Canton, Ohio. At the direction of Mr. Soe Aung (and upon request by Mr. Gregory Zalaskus, Case Manager for the New

Jersey Department of Environmental Protection), the samples were analyzed for ICP Metals (Methods SW846 6010B, SW846 7471A, and SW846 7470A). Preliminary data for the soil samples was provided from the lab on Thursday, 31 August 2006, and forwarded to the United States Army Corps of Engineers (USACE). Preliminary groundwater data was made available and forwarded to the USACE on Friday, 1 September 2006. A TCLP extraction was later requested by the USACE for the PED-SLAG01 and PED-SLAG02 samples for total metals. Results for the TCLP analysis were forwarded to the USACE on 12 September 2006.

### **3.0 SAMPLING RESULTS**

Data from the sampling is presented in Table 1: Sampling Summary, Soil Samples; and Table 2: Sampling Summary, Groundwater Samples. The laboratory results were compared to appropriate regulatory criteria, specifically the New Jersey Department of Environmental Protection Soil Cleanup Criteria (Revised 12 May 1999) and the New Jersey Ground Water Quality Standards N.J.A.C. 7:9C (Dated November 7, 2005)

Reported concentrations that exceed the New Jersey DEP Soil Cleanup Criteria and New Jersey Ground Water Quality Standards are bolded and highlighted. Exceedances of the arsenic standard were observed in the soil and groundwater samples, with a reported concentration of 24.6 mg/kg observed in the coal slag material collected from boring B4 and a reported concentration of 10.9 ug/L observed in sample PED-GW03 collected from the north side of Building 464. Lead also exceeded the groundwater criteria in sample PED-GW03. Complete laboratory reports are contained in the attached CD.

### **4.0 SITE RESTORATION**

Following completion of the soil borings and sample collection, the peizometer casings were removed and each borehole was backfilled with the chipped bentonite until a positive crown in the borehole area was achieved. The bentonite was allowed to hydrate naturally. All debris and waste generated during the site activities was bagged and properly disposed of. Photos were collected during all phases of the site activities to document work elements and site conditions. Digital photos were collected during the field activities, and are presented in the attached CD.

**SAMPLING SUMMARY**  
**CAMP PEDRICKTOWN, NEW JERSEY**  
**SOIL SAMPLES**  
**SAMPLE DATE: 28 August 2006**  
**SAMPLE METHOD: SW846 6010B, SW846 7471A**

PARAMETER	REPORTED CONCENTRATIONS, (mg/kg)										REPORTING LIMIT	UNIT	NEW JERSEY CRITERIA	
	SAMPLE ID	PED-SS01	PED-SS02	PED-SS03	PED-SS04	PED-SS05	PED-SS06	PED-SS06 DUP	PED-SLAG01	PED-SLAG02			DIRECT CONTACT	IMPACT TO GROUNDWATER
	SAMPLE LOCATION	B1@SW of BLDG 464	B2@NW of BLDG 464	B3@N Side of BLDG 464	B4@SE of BLDG 464	B5@S Side of BLDG 464	B6@ E Side of BLDG 464, Historic Exceedance	B6@ E Side of BLDG 464, Historic Exceedance	Sample of Coal Slag in Roadway South of BLDG 464	Sample of Coal Slag from B4@SE of BLDG 464				
Antimony (Total)		ND	ND	ND	ND	ND	ND	ND	ND	ND	6.0	mg/kg	14	(h)
Arsenic (Total)		2.3	2.2	3.6	1.4	2.3	2.8	2.9	7.7	<b>24.6</b>	1.0	mg/kg	<b>20(e)</b>	(h)
Beryllium (Total)		ND	ND	ND	ND	ND	ND	ND	ND	ND	0.50	mg/kg	[1(f)] 2(e)	(h)
Cadmium (Total)		ND	ND	ND	ND	ND	ND	ND	ND	ND	0.50	mg/kg	[1] 39	(h)
Chromium (Total)		6.8	5.8	5.7	4.7	6.7	5.8	5.7	3.6	7.9	1.0	mg/kg	240; 270(g); (i)	(h)
Copper (Total)		4.3	3.2	2.9	2.6	2.7	4.1	3.8	13	19.1	2.5	mg/kg	600(m)	(h)
Lead (Total)		2.9	2.1	2.1	1.6	1.7	2.7	2.8	12.4	51	0.30	mg/kg	400(p)	(h)
Mercury (Total)		ND	ND	ND	ND	ND	ND	ND	ND	0.13	0.10	mg/kg	14	(h)
Nickel (Total)		5.7	ND	ND	ND	ND	4.8	4.4	ND	6.7	4.0	mg/kg	250	(h)
Selenium (Total)		ND	ND	ND	ND	ND	ND	ND	ND	ND	0.50	mg/kg	63	(h)
Silver (Total)		ND	ND	ND	ND	ND	ND	ND	ND	ND	1.0	mg/kg	110	(h)
Thallium (Total)		ND	ND	ND	ND	ND	ND	ND	ND	ND	1.0	mg/kg	2(f)	(h)
Zinc (Total)		15.1	9.5	8.5	10.2E	8.2	12.3	11.5	4.9	48.7	2.0	mg/kg	1500(m)	(h)
Arsenic (TCLP)								ND	ND	ND	0.50	mg/L		
Barium (TCLP)								ND	ND	ND	10.0	mg/L		
Cadmium (TCLP)								ND	ND	ND	0.10	mg/L		
Chromium (TCLP)								ND	ND	ND	0.50	mg/L		
Lead (TCLP)								ND	ND	ND	0.50	mg/L		
Mercury (TCLP)								ND	ND	ND	0.0020	mg/L		
Selenium (TCLP)								ND	ND	ND	0.25	mg/L		
Silver (TCLP)								ND	ND	ND	0.50	mg/L		

Note: Shaded and bolded cells indicate the reported concentration exceeds the criteria.

**SAMPLING SUMMARY**  
**CAMP PEDRICKTOWN, NEW JERSEY**  
**GROUNDWATER SAMPLES**  
**SAMPLE DATE: 28 August 2006**  
**SAMPLE METHOD: SW846 6010B, SW846 7470A**

REPORTED CONCENTRATIONS									
SAMPLE ID SAMPLE LOCATION	PED-GW01 B1@SW of BLDG 464	PED-GW02 B2@NW of BLDG 464	PED-GW03 B3@N Side of BLDG 464	PED-GW04 B4@SE of BLDG 464	PED-GW05 B5@S Side of BLDG 464	PED-GW05DUP B6@E Side of BLDG 464 (Historic Exceedance Area)	UNIT	METHOD DETECTION LIMIT	NEW JERSEY GROUNDWATER QUALITY CRITERIA
PARAMETER									
Antimony (Total)	ND	ND	ND	ND	ND	ND	µg/L	4.1	6.0
Arsenic (Total)	ND	ND	<b>10.9</b>	ND	ND	ND	µg/L	4.3	<b>3.0</b>
Beryllium (Total)	ND	ND	ND	ND	ND	ND	µg/L	0.30	1.0
Cadmium (Total)	ND	ND	ND	ND	ND	ND	µg/L	0.42	4.0
Chromium (Total)	ND	ND	22.6	ND	ND	ND	µg/L	1.6	70.0
Copper (Total)	ND	ND	ND	ND	ND	ND	µg/L	1.8	1,300
Lead (Total)	ND	ND	<b>10.8</b>	ND	ND	ND	µg/L	1.7	<b>5.0</b>
Mercury (Total)	ND	ND	ND	ND	ND	ND	µg/L	0.090	2.0
Nickel (Total)	ND	ND	ND	ND	ND	ND	µg/L	1.4	100.0
Selenium (Total)	ND	ND	ND	ND	ND	ND	µg/L	2.4	40.0
Silver (Total)	ND	ND	ND	ND	ND	ND	µg/L	2.1	40.0
Thallium (Total)	ND	ND	ND	ND	ND	ND	µg/L	4.7	2.0
Zinc (Total)	ND	26.7	35.8	ND	37.1	25.6	µg/L	6.6	2,000

Note: Shaded and bolded cells indicate the reported concentration exceeds the criteria.