0091502

SAF-RC-074
100-D/DR Burial Grounds & Remaining Sites – Soil In-Process
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 10/25/10
INITIAL/DATE

COMMENTS:

SDG KP0009 SAF RC-074

Rad only ☑ Chem only Rad & Chem

☑ Complete Partial

Waste Site: 1607-D-5 Septic System

RECEIVED
NOV 01 2010
EDMC

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Shaw Environmental & Infrastructure

Geotechnical Laboratory
304 Directors Drive
Knoxville, TN 37923
(865) 690-3211

RECEIVED
OCT 2010

KP0009 JK 10/21/10

CERTIFICATE OF ANALYSIS

RC 074

Orlette Johnson
Lionville Laboratory
208 Welsh Pond Road
Exton, PA 19341

October 21, 2010

This is the Certificate of Analysis for the following samples:

Shaw Project ID:	**Lionville**
Shaw Project Number:	**135594.00160000**
Date Received by Lab:	10/15/10
Number of Samples:	One (1)
Sample Type:	Soil

I. Introduction/Case Narrative

One soil sample was received by the Shaw Geotechnical Laboratory on October 15, 2010. The sample was submitted for determination of modified proctor properties.

Please see Appendix A, Sample Number Cross Reference List; Appendix B, Analysis Results; and Appendix C, Chain-of-Custody/Sample Receipt Records.

Reviewed and Approved:

R. Gregory Bennett
Geotechnical Laboratory Manager, Technology Applications Group

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II. Analytical Results/Methodology

REFERENCES: United States Army Corps of Engineers (USACE), Engineer Manual 1110-2-1906, *Laboratory Soils Testing*, appendix II, 1970; United States Environmental Protection Agency, SW846, *Test Methods for Examining Solid Waste, Physical/Chemical Methods*, 3rd ed., Nov 1986 (EPA SW-846). Annual Book of ASTM Standards, Section 4, Construction, Volume 04.08, *Soil and Rock (I)*, and Volume 04.09, *Soil and Rock (II)*, 2003.

Laboratory Determination of Water (Moisture) Content of Soil and Rock..... **ASTM D 2216**
Compaction Characteristics of Soil Using Modified Effort.....**ASTM D 1557-09**

III. Quality Control

Quality control checks such as duplicates and spikes (QC samples), are not normally applicable to geotechnical testing. This is due largely to the inability of obtaining samples with known characteristics, the heterogenous nature of the samples, and quality control procedures built-in to the analytical method.

QC measures to ensure accuracy and precision of test results include the following:

- 100% verification of all numerical results - raw data entries, transcriptions and calculations entered by lab technicians are checked, recalculated and verified. Most data calculations are performed by computer programs.

- Data validation through test reasonableness - summaries of all test results for individual reports are reviewed to determine the overall reasonableness of data and to determine the presence of any data that may be considered outliers.

- Quality control procedures are built into most standardized geotechnical procedures. For example, liquid limit and plastic limit analyses call for re-analyses and specify acceptance criteria.

- Routine instrument calibration - instruments, gauges and equipment used in testing are calibrated on a routine basis. All instrument calibration follows ASTM or manufacturer guidelines.

- Maintenance of all past calibration records - calibration records and certification documents of all instruments, gauges and equipment are updated routinely and maintained in the Quality Control Coordinators Quality/Operations files.

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- Certified and trained personnel - all technicians are trained in the application of standard laboratory procedures for geotechnical analyses as well as the quality assurance measures implemented by Shaw.

- Quantitative analyses frequently used in geotechnical/physical testing programs do not use QC tools common to wet chemistry or radiochemistry laboratories. Measures not employed in the analysis of samples reported in this report include: laboratory control samples (LCS), blanks, matrix spikes (MS), duplicate analyses, dilutions, digestions, correction factors, surrogate sample analyses, detection limit determinations, control charts, and/or tentatively identified compounds (TICs).

IV. Data Qualification

None.

Appendix A
Sample Cross-Reference List

Report No.: LION1110030
Orlette Johnson
Client: Lionville
Shaw Project Name: Lionville
Shaw Project No. 135594.00160000

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SAMPLE NUMBER CROSS-REFERENCE LIST

LAB SAMPLE NO.	CLIENT SAMPLE NO.	MATRIX	DATE TESTED
SEK 5018	J1CD55	SOIL	10/19/2010

Appendix B
Data Results

Report No.: LION1110030
Orlette Johnson
Client: Lionville
Shaw Project Name: Lionville
Shaw Project No. 135594.00160000

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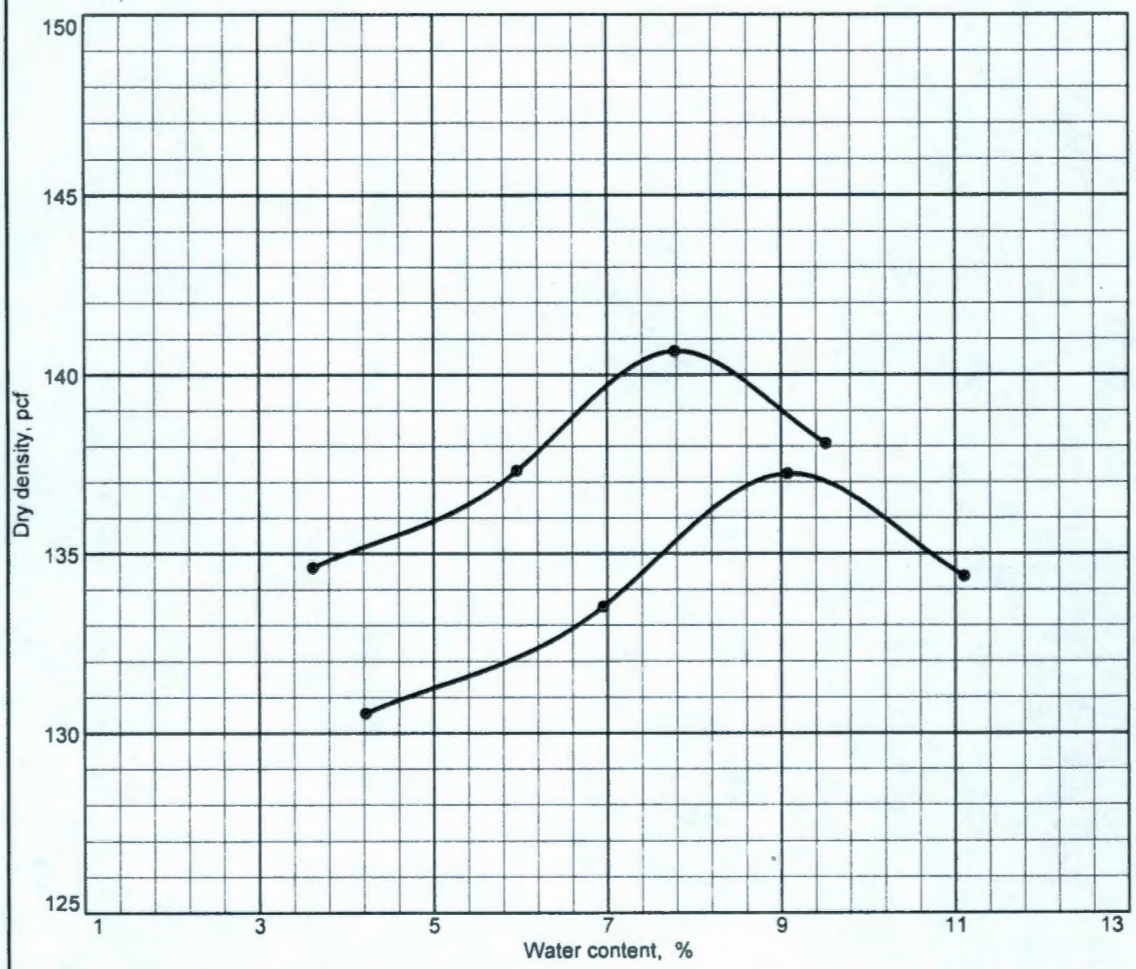

Test specification: ASTM D 1557-00 Method B Modified
Oversize correction applied to each point

Elev/ Depth	Classification USCS	Classification AASHTO	Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	GRAVEL W/ SOME FINES			2.65			14.3	

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 140.7 pcf	137.2 pcf	
Optimum moisture = 7.8 %	9.1 %	

Project No. 135594 **Client:** Lionville
Project: Lionville

● **Location:** Client Sample No. J1CD55 Shaw Sample No. SEK 5018

Standard Proctor Moisture/Density

Shaw E&I

Remarks:

Figure

Appendix C
Chain of Custody Records

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ANALYSIS REQUEST AND CHAIN-OF-CUSTODY RECORD

REFERENCE DOCUMENT NO.: 1010002

PAGE 1 OF 1

Project Name/No: WC-Hanford RC-074 KP0009
Sample Team Member:
Profit Center:
Project Manager:
Purchase Order No.: 7118
Required Report Date:

Sample Shipment Date:
Laboratory Destination: 304 Directors Drive, Knoxville, TN 37923
Laboratory Contact: Greg Bennett/865-694-7311
Project Contact/Phone: Orlette Johnson/610-280-3012
Carrier Waybill No.:

Bill To: ojohnson@lionvillelab.com via email acceptable
Lionville Laboratory
Attn: Orlette Johnson
264 Welsh Pool Road
Exton, PA 19341

Report To: ojohnson@lionvillelab.com via email acceptable
Orlette Johnson, Lionville Laboratory
264 Welsh Pool Road, Exton, PA 19341

Sample Number	Sample Type/ Description	Date/Time Collected	Container Type	Sample Volume	Preservative	Requested Testing Program	Condition on Receipt	Disposal Record
J1CD55	SOIL	10/6/10	Plastic Bag	1000g	None	Proctor Compaction D1557		SEK 5018

Special Instructions:

Possible Hazard Identification: None/Unknown
RAD Flammable: ____ Poison B: ____ Unknown: ____

Sample Disposal:
Return to Client: X Disposal by Lab: ____ Archive: ____

Turnaround Time: **7 day TAT**

Level of QC Required: I. ____ II. ____ III. ____

Project Specific:

1. Relinquished by: Victor Hernandez	Date: 10-13-10 Time: 11:45	1. Received by: Fred E. Howard	Date: 10-13-10 Time:
2. Relinquished by:	Date: Time:	2. Received by: Greg Bett	Date: 10-15-10 Time: 1210
3. Relinquished by:	Date: Time:	2. Received by:	Date: Time:

Comments: