RECEIVED NOVEMBER 17, 2008

Shaw Environmental & Infrastructure, Inc.

Geotechnical Laboratory
1570 Bear Creek Road
Kingston TN 37763
(865) 482-6497

CERTIFICATE OF ANALYSIS

Stephen Trent
Fluor Hanford, Inc.
825 Jadwin Avenue
Richland, Washington 99352

October 30, 2008

This is the Certificate of Analysis for the following samples:

Shaw Project ID:	**Eberline - Hanford**
Shaw Project Number:	**100846.7500000**
Client SDG Number:	H3753
Date Received by Lab:	May 19 and May 27, 2008
Number of Samples:	Two (2)
Sample Type:	Soil

I. Introduction/Case Narrative

Two soil samples were received by the Shaw Geotechnical Laboratory on May 19, 2008. The samples were submitted for determination of moisture content. The sample numbers received were B1V2J3 and B1VJ4. Results for the latter sample have been reported under another SDG.

One soil sample was received by the Shaw Geotechnical Laboratory on May 27, 2008. The sample was submitted for determination of moisture content. The sample number received was B1V2J2.

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

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Reviewed and Approved:

Ralph Cole
Laboratory Manager, Geotechnical Services

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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)*, 2008. Shaw Environmental and infrastructure, Standard Operating Procedures.

Moisture Content of Soil and Rock .....**ASTM D 2216**

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.

- 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.

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- 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

The entire contents of the sample container was used to determine the moisture content of the sample.

Appendix A
Sample Cross-Reference List

October 30, 2008
Stephen Trent
Fluor Hanford, Inc.
Shaw Project Name: Eberline Hanford
Shaw Project No. 100846.75000000
SDG No. H3753

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SAMPLE NUMBER CROSS-REFERENCE LIST

LAB SAMPLE NO.	CLIENT SAMPLE NO.	MATRIX
BC1378	B1V2J4	Soil
BC1385	B1V2J2	Soil

Appendix B
Data Results

October 30, 2008
Stephen Trent
Fluor Hanford, Inc.
Shaw Project Name: Eberline Hanford
Shaw Project No. 100846.75000000
SDG No. H3753

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MOISTURE CONTENT
ASTM D 2216

PROJECT NAME
Eberline Hanford

PROJECT NUMBER
100846.75000000

LAB SAMPLE NO.	CLIENT SAMPLE NO.	MOISTURE, % ASTM D 2216	MOISTURE , % SW846	SOLIDS, % SW846
BC1378	B1V2J4	2.6	2.5	97.5
BC1385	B1V2J2	6.3	5.9	94.1

ASTM D 2216 results are based on dry sample weight.
SW846 results are based on wet sample weight.
Solids content is determined by subtracting the SW846 moisture (%) from 100.

Appendix C
Chain of Custody Records

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F08-056-111	PAGE 1 OF 1
COLLECTOR NCO Sampler Fulton	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR WIDRIG, DL	PRICE CODE 8N AIR QUALITY ☐	DATA TURNAROUND 45 Days / 45 Days
SAMPLING LOCATION C5936, I-SSP1	PROJECT DESIGNATION GW Monitoring Wells at 100-HR-3 (100-D OU)		SAF NO. F08-056		
ICE CHEST NO. GRP-08-01	FIELD LOGBOOK NO. HNF-N-585-4	ACTUAL SAMPLE DEPTH 81.9 - 83.6'	COA 122577ES10	METHOD OF SHIPMENT FEDERAL EXPRESS	
SHIPPED TO Shaw Group	OFFSITE PROPERTY NO. See PTR		BILL OF LADING/AIR BILL NO. See PTR		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None
TYPE OF CONTAINER	Moisture Resistant Cont
NO. OF CONTAINER(S)	1
VOLUME	200g
SAMPLE ANALYSIS	Moisture Content - D2216;

BC 1378

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1V2J4	SOIL	5-14-08	0940	✓

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Chris Fulton	5-14-08 1030	MO745 Fridge #1	5-14-08 1030
MO-745 - REF #1	5/15/08 11:00	Brothers	5/15/08 11:00
Brothers	5/15/8 13:00	FED EX	

SPECIAL INSTRUCTIONS
** Samples are being collected by Fluor Hanford for Washington Closure Hanford. They will be placed in the bottles labeled "Generic Testing".

Sample @ 83 to 85 Feet

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
	DON HUSKEY SHAW E+I/ETOC	SR. LAB TECH.	5/19/08 0930
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618(01/06)

13165

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F08-056-109	PAGE 1 OF 1

COLLECTOR NCO Sampler WOTS, CHACON, CANO	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** WIDRIG, DL	**PRICE CODE** 8N
SAMPLING LOCATION C5933, I-SSP1	**PROJECT DESIGNATION** GW Monitoring Wells at 100-HR-3 (100-D OU)		**SAF NO.** F08-056	**AIR QUALITY** ☐
ICE CHEST NO. GW0-07-010	**FIELD LOGBOOK NO.** HNF-N-5854	**ACTUAL SAMPLE DEPTH** 83.7'—85.2	**COA** 122577ES10	**METHOD OF SHIPMENT** FEDERAL EXPRESS
SHIPPED TO Shaw Group	**OFFSITE PROPERTY NO.** See PTR		**BILL OF LADING/AIR BILL NO.** See PTR 7984 4731 6325	

DATA TURNAROUND 45 Days / 45 Days

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None
TYPE OF CONTAINER	Moisture Resistant Cont
NO. OF CONTAINER(S)	1
VOLUME	200g
SAMPLE ANALYSIS	Moisture Content - D2216;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1V2J2	SOIL	3-28-08	1305	X
				✓

BC 1385

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
DW WOTS / DW Wots	3-28-08 / 1400	MO 745 FRIDGE #1	3-28-08 / 1400
MO745 Fridge #1	5-28 0900	DConnolly	5-28-08 0900
DConnolly	5-28 1400	Fed Ex	

SPECIAL INSTRUCTIONS
** Samples are being collected by Fluor Hanford for Washington Closure Hanford. They will be placed in the bottles labeled "Generic Testing".

Sample @ 83 to 85 Feet

LABORATORY SECTION	**RECEIVED BY** Don Huskey DON HUSKEY SHAW/ETDC	**TITLE** SR. LAB. TECH	**DATE/TIME** 5/27/08 @0930
FINAL SAMPLE DISPOSITION	**DISPOSAL METHOD**	**DISPOSED BY**	**DATE/TIME**

A-6003-618(01/06)