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0088533

Analytical Data Package Prepared For

CH2M Hill Plateau Remediation Company

Analysis Provided By

TestAmerica
2800 George Washington Way
Richland WA, 99354
(509)375-3131
Assigned Laboratory Code: TARL

SDG Number: W05801

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

TestAmerica Laboratories, Inc.

CH2M Hill Plateau Remediation Company
P.O. Box 1600
Mail Stop – R3-60
Richland, WA 99352

February 8, 2010

Attention: Mike Neely

SAF Number	:	F10-065
Date SDG Closed	:	February 5, 2010
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	W05801
Data Deliverable	:	24 Hour / 15 Day

CASE NARRATIVE

I. Introduction

On February 5, 2010 one sample was received at TestAmerica for chemical analysis. Upon receipt, the sample was assigned to lot J0B050607 and assigned the following laboratory ID number to correspond with the CH2M specific ID:

CH2M ID#	TARL ID#	MATRIX	DATE OF RECEIPT
B23CV8	LVA3X	WATER	02/05/10

II. Sample Receipt

The sample was received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Chemical Analysis
Hexavalent Chromium by EPA method 7196A

*SOP ID's changed effective 7-01-2008. Attached is a cross reference until SOP ID's are changed in all systems.

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

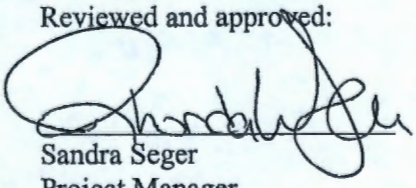
QC and sample results are reported in the same units.

V. Comments

Chemical Analysis
Hexavalent Chromium by EPA method 7196A
The LCS, batch blank, samples, sample duplicate (B23CV8), sample matrix spike (B23CV8), and matrix spike duplicate (B23CV8) results are within contractual requirements.

I certify that this Certificate of Analysis 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 hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:



Sandra Seger
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TA Richland
Hexavalent Chromium - Water

Analyst:	E. BROWE	**Calibration Curve Information**				**SOP Information**		**BATCH #**	0039233
Start Date:	2/5/2010		**Amount**	**Conc.(mg/L)**	**ABS.**	RL-WC-003		**SDG #**	W05801
Start Time:		**Blank**	0.000	0.000	0.000	Revision 0		**Matrix**	Water
End Date:	2/5/2010	**Std. 1**	0.100	0.050	0.100				
End Time		**Std. 2**	0.500	0.250	0.493			**Instrument Information**	
		Std. 3	0.750	0.375	0.722	**MDL (mg/L)**	0.0037	Instrument:	Hach DR2010
Analyst Signature:	Emil Browe	**Std. 4**	1.500	0.750	1.418			Wavelength:	540
		Std 5	2.000	1.000	1.888			**R Squared**	0.99988
Date:	02/05/10	**Standard Volume (mL):**			100.000			**Slope:**	1.88173
		Date of Curve:			2/5/2010			**Intercept:**	0.00963

	Calibration Information:	**ICV Information:**		**LCS Information:**		**Matrix Spike Information:**	
Dilution ID #	Cr-10-00045	Cr-10-00046		Cr-10-00045		Cr-10-00045	
Prep Date:	02/05/10	02/05/10		02/05/10		02/05/10	
Concentration (mg/L)	50	50		50		50	
Expiration Date:	02/06/10	02/06/10		02/06/10		02/06/10	
Pipettor(s)	70,190	190		190		190	
Volume Used (Expected Value		1.000	0.50000	1.00	0.50000	0.50	0.26316

Expected values are only amounts added in mg and not final concentrations

Sample ID	Client ID	Type	Sample Volume (mL)	Sample ABS.	Blank ABS.	Corrected ABS.	Dilution Factor	Curve Conc. (mg/L)	Final Conc. (mg/L)	% Rec. / RPD
n/a	n/a	ICV	100.000	0.952	0.000	0.952	1	0.5008	0.501	100.16%
n/a	n/a	ICB	100.000	0.003	0.000	0.003	1	-0.0035	<MDL	
LVD601AA	n/a	Prep Blank	100.000	0.004		0.004	1	-0.0030	<MDL	
LVD601AC	n/a	LCS	100.000	0.963		0.963	1	0.5066	0.507	101.33%
LVA3X1AA	R23LV2		100.000	0.002		0.002	1	-0.0041	<MDL	
LVA3X1AC-S	-MS	MS	100.000	0.514		0.514	1	0.2680	0.268	101.85%
LVA3X1AD-D	-MSD	MSD	100.000	0.511		0.511	1	0.2664	0.266	101.25%
LVA3X1AE-X	-DUP	Duplicate	100.000	0.001		0.001	1	-0.0046	<MDL	
			100.000				1			
			100.000				1			
			100.000				1			
			100.000				1			
n/a	n/a	CCV	100.000	0.952		0.952	1	0.5008	0.501	100.16%
n/a	n/a	CCB	100.000	0.003		0.003	1	-0.0035	<MDL	
			100.000				1			
			100.000				1			
			100.000				1			
			100.000				1			
			100.000				1			

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THE LEADER IN ENVIRONMENTAL TESTING

Richland Laboratory
Data Review Check List
Hexavalent Chromium

Batch Number: 0039233

Lab Sample Numbers or SDG: W05801

Method/Test/Parameter: **Cr+6 in Water / RL-WC-003**

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
A. Initial Calibration 1. Performed at required frequency with required number of levels?	✓			✓
2. Correlation coefficient within QC limits?	✓			✓
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within QC limits?	✓			✓
4. Initial calibration blank (ICB) analyzed immediately after ICV and concentrations of all parameters ≤ reporting limit?	✓			✓
B. Continuing Calibration 1. CCV analyzed at required frequency and all parameters within QC limits?	✓			✓
2. CCB analyzed at required frequency and all results ≤ reporting limit?	✓			✓
C. Sample Analysis 1. Were any samples with concentrations above the linear range for any parameter diluted and reanalyzed?	✓			✓
2. Were all sample holding times met?	✓			✓
D. QC Samples 1. All results for the preparation blank below limits?	✓			✓
2. MS or MS/MSD recoveries within QC limits and %RPD (for MSD) acceptable?	✓			✓
3. LCS percent recovery within QC limits and %RPD (for LCSD) acceptable?	✓			✓
4. Analytical spikes within QC limits where applicable?	✓			✓
5. ICP only: One serial dilution performed per SDG?			✓	N/A
6. ICP only: CRDL standard (CRI or CRA) analyzed at required frequency?			✓	N/A
7. ICP only: Interference check samples (ICSA, ICSAB) and HICAL analyzed at the required frequencies and within QC limits?			✓	N/A

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
E. Other 1. Are all nonconformances included and noted?			✓	N/A
2. Is the correct date and time of analysis shown?	✓			✓
3. Did the analyst sign and date the front page of the analytical run?	✓			✓
4. Correct methodology used?	✓			✓
5. Transcriptions checked?	✓			✓
6. Calculations checked at minimum frequency?	✓			✓
7. Units checked?	✓			✓

Comments on any "No":

Analyst: Ernie Brown Date 2/5/10

Second-Level Review: [signature] Date: 2/8/10

TestAmerica Laboratories, Inc.

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CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F10-065-140	PAGE 1 OF 1
COLLECTOR Bates/Crow	**COMPANY CONTACT** DYEKMAN, DL	**TELEPHONE NO.** 373-2530	**PROJECT COORDINATOR** DYEKMAN, DL	**PRICE CODE** 1A **DATA TURNAROUND**
SAMPLING LOCATION EW-12 (C7019, 299-W11-49); I-001 FLH	**PROJECT DESIGNATION** ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		**SAF NO.** F10-065	**AIR QUALITY** ☐ 24 Hours / 15 Days
ICE CHEST NO. Lunch 3584	**FIELD LOGBOOK NO.** HNF-N-5858 PG 74	**ACTUAL SAMPLE DEPTH** 287'	**COA** 300194ES10	**METHOD OF SHIPMENT** GOVERNMENT VEHICLE
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A	

J0B050607

LVA3X kw 2/5/10

DUE - 2/25/10

SDGW05801

J0B050607

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

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
TYPE OF CONTAINER	aG
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	Chromium Hex - 7196;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B23CV8	WATER	2-5-10	1150

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R Crow/R Crow	2-5-10 1345	L.D. Wall CHPRC L.D. Wall	FEB 05 2010 1345
L.D. Wall CHPRC L.D. Wall	FEB 05 2010 1430	[signature]	FEB 05 2010 1430

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401648ES20.☐** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem.☐☐** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

☐ ORIGINAL

LABORATORY SECTION	**RECEIVED BY**		**TITLE**	**DATE/TIME**
FINAL SAMPLE DISPOSITION	**DISPOSAL METHOD**		**DISPOSED BY**	**DATE/TIME**

A-6003-618(01/06)

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Sample Check-in List

Date/Time Received: 2.5.10 @ 1430 GM Screen Results (out) .3 (in) .3 Initials [ ]

Client: FLH SDG #: W05801 NA [ ] SAF #: F10-065 NA [ ]

Work Order Number: JOB050607 Chain of Custody # F10-065-140

Shipping Container ID Handdelivery NA [ ] Air Bill # _____ NA [ ]

Lunch 3584

Item 1 through 5 for shipping container only. Initial appropriate response.

1. Custody Seals on shipping container intact? Yes [ ] No [ ] No Custody Seal [ ]
2. Custody Seals dated and signed? Yes [ ] No [ ] No Custody Seal [ ]
3. Chain of Custody record present? Yes [ ] No [ ]
4. Cooler temperature: 4°C NA [ ] 5. Vermiculite/packing materials is NA [ ] Wet [ ] Dry [ ]

Item 6 through 10 for samples. Initial appropriate response.

6. Number of samples in shipping container (Each sample may contain multiple bottles): 1
7. Sample holding times exceeded? NA [ ] Yes [ ] No [ ]
8. Samples have:
   - ____ tape
   - ____ custody seals
   - ____ hazard labels
   - ____ appropriate sample labels
9. Samples are:
   - ____ in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

   (Only for samples requiring head space)

(CS6)

10. Sample pH taken? NA [ ] pH<2 [ ] pH>2 [ ] pH>9 [ ] Amount of HNO3 Added _____
11. Sample Location, Sample Collector Listed? * Yes [ ] No [ ]
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No [ ]
13. Description of anomalies (include sample numbers): NA [ ] _____

see other side for additional comments

Sample Custodian: _____ Date: 2.5.10 @ 1430

Client Informed on N/A by N/A Person contacted N/A

[ ] No action necessary; process as is.

Project Manager _____ Date 2/6/10

2/8/2010 10:04:43 AM

Sample Preparation/Analysis

Balance Id:

108302, CH2M Hill Plateau Remediation DOE RL
, Waste Management Federal Servi

88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION
EA Chromium, Hexavalent (7196A)

Pipet #: _____

AnalyDueDate: 02/22/2010

01 STANDARD TEST SET

Sep1 DT/Tm Tech:

Batch: 0039233 **WATER** **ug/L**

PM, Quote: SS , 29754

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech:

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 LVA3X-1-AA								
J0B050607-1-SAMP								
02/05/2010 11:50		AmtRec: 1X500MLAG	#Containers: 1			Scr:	Alpha:	Beta:
2 LVA3X-1-AC-S								
J0B050607-1-MS								
02/05/2010 11:50		AmtRec: 1X500MLAG	#Containers: 1			Scr:	Alpha:	Beta:
3 LVA3X-1-AD-D								
J0B050607-1-MSD								
02/05/2010 11:50		AmtRec: 1X500MLAG	#Containers: 1			Scr:	Alpha:	Beta:
4 LVA3X-1-AE-X								
J0B050607-1-DUP								
02/05/2010 11:50		AmtRec: 1X500MLAG	#Containers: 1			Scr:	Alpha:	Beta:
5 LVD60-1-AA-B								
J0B080000-233-BLK								
02/08/2010 10:07 pd		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
6 LVD60-1-AC-C								
J0B080000-233-LCS								
02/08/2010 10:07 pd		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:

2/8/2010 10:04:44 AM

Sample Preparation/Analysis

88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION
EA Chromium, Hexavalent (7196A)
01 STANDARD TEST SET

Balance Id:
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech:

AnalyDueDate: 02/22/2010

Batch: 0039233 ug/L
SEQ Batch, Test: None

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

Comments:

All Clients for Batch:
108302, CH2M Hill Plateau Remediation DOE RL Waste Management Federal Servi, SS , 29754

LVA3X1AA-SAMP Constituent List:
HEXCHROME RDL:0.0037 ug/L LCL:85 UCL:115 RPD:20
LVA3X1AC-MS Constituent List:

LVA3X1AD-MSD:

LVD601AA-BLK:

LVD601AC-LCS:

LVA3X1AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
LVA3X1AC-MS Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
LVA3X1AD-MSD:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
LVD601AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
LVD601AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____