

July 22, 2015

Analytical Data Package Prepared For  
**CH2M Hill Plateau Remediation**

Chemical Analysis By  
**TestAmerica Inc**

*2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.*

Assigned Laboratory Code: TARL

Data Package Contains 8 Pages

Report No.: 66557

Results in this report relate only to the sample(s) analyzed.

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
WC0125	F13-002	B31MJ3 DUP	J5G070412-3	M67K01AE	M67K01AE	5188048
WC0126	F15-005	B31MN5	J5G070413-1	M67K21AA	M67K21AA	5188051
		B31MN5 DUP	J5G070413-1	M67K21AC	M67K21AC	5188051
		B31MN6	J5G070413-2	M67K31AA	M67K31AA	5188048

Sample Date: 7/6/2015

Receipt Date: 7/7/2015

Data Deliverable: 7/22/2015

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:

 Digitally signed by Whitney  
Ritari  
Date: 2015.07.22 14:30:50  
-07'00'

Project Manager

July 22, 2015



## Certificate of Analysis

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

July 22, 2015

Attention: Scot Fitzgerald

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SAF Number	:	F15-005
Date SDG Closed	:	July 7, 2015
Number of Samples	:	Two (2)
Sample Type	:	Water
SDG Number	:	WC0126
Data Deliverable	:	15- Day/ Summary

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### CASE NARRATIVE

#### **I. Introduction**

On July 7, 2015, two samples were received at TestAmerica (TARL). Upon receipt, the samples were assigned laboratory ID numbers to correspond with the CH2M specific IDs.

#### **II. Sample Receipt**

The samples were 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

Anions, Ion Chromatography by EPA method 300.0

#### **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.

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The sample/ sample duplicate agreement is not applicable if one or both results are less than five times the MDL.

QC and sample results are reported in the same units.

**V. Comments**

**Chemical Analysis**

Hexavalent Chromium by EPA method 7196A

No analytical or quality issues were noted. The sample results and associated batch QC results are within contractual requirements.

Anions, Ion Chromatography by EPA method 300.0

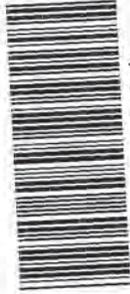
Sample B31MN6 Bromide Peak was manually integrated. No analytical or quality issues were noted. The sample results and associated batch QC results are within contractual requirements.

We certify that this data package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager (or designee) and the laboratory's client services representative as verified by their signatures on this report.

July 22, 2015

JS6070413  
WCO126

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST		FL5-005-214	PAGE 1 OF 1
COLLECTOR CHRIS FULTON CHPRC	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR EVANS, RT	PRICE CODE 7C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 289-T, Influent Tank, Valve V12-Y30	PROJECT DESIGNATION 200W Pump & Treat - Treatment Plant Water Sampling	FIELD LOGBOOK NO. HNF-N-4919	SAF NO. FL5-005	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE
ICE CHEST NO. (N/A)	ACTUAL SAMPLE DEPTH (N/A)	COA 303700	BILL OF LADING/AIR BILL NO. (N/A)		
SHIPPED TO TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO. (N/A)				



300-188 Chain of Custody

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	HOLDING TIME	TYPE OF CONTAINER	NO. OF CONTAINER(S)	VOLUME	SAMPLE ANALYSIS	SAMPLE DATE	SAMPLE TIME
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	*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	Cool <=6C	24 Hours	aG	1	60mL	7196_C06; COMMON;	JUL 06 2015	1405
	SPECIAL HANDLING AND/OR STORAGE N/A								

M67K2

CHAIN OF POSSESSION		SIGN / PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY / REMOVED FROM	DATE/TIME	RECEIVED BY / STORED IN	DATE/TIME	** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. TRVL-15-108	
CHRIS FULTON CHPRC	JUL 06 2015 1430	SSU-1 R.A. Shepard/CHPRC	JUL 06 2015 1430		
RELINQUISHED BY / REMOVED FROM	DATE/TIME	RECEIVED BY / STORED IN	DATE/TIME		
SSU-1 R.A. Shepard/CHPRC	JUL 07 2015 0800	J. Friesz, TARL	JUL 07 2015 0930		
RELINQUISHED BY / REMOVED FROM	DATE/TIME	RECEIVED BY / STORED IN	DATE/TIME		
RELINQUISHED BY / REMOVED FROM	DATE/TIME	RECEIVED BY / STORED IN	DATE/TIME		
RELINQUISHED BY / REMOVED FROM	DATE/TIME	RECEIVED BY / STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME		
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME		

July 22, 2015

J5G070413  
WCA26

m67K3

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		FLS-005-215	PAGE 1 OF 1
COLLECTOR CHRIS FULTON CHPRC	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR EVANS, RT	PRICE CODE 7C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 289-T, Influent Tank, Valve V12-Y30	PROJECT DESIGNATION 200W Pump & Treat - Treatment Plant Water Sampling	SAF NO. F15-005	COA 303700	AIR QUALITY	<input type="checkbox"/>
ICE CHEST NO. (N/A)	FIELD LOGBOOK NO. HNF-N-4919	ACTUAL SAMPLE DEPTH (N/A)	BILL OF LADING/AIR BILL NO. (N/A)	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO. (N/A)				

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WT=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/DATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	PRESERVATION Cool <=6C	
	HOLDING TIME 48 Hours		
	TYPE OF CONTAINER P		
	NO. OF CONTAINER(S) 1		
	VOLUME 500mL		
	SAMPLE ANALYSIS SEE ITEM (1) IN SPECIAL INSTRUCTIONS		
SAMPLE NO. B31MNG	MATRIX* WATER	SAMPLE DATE JUL 06 2015	SAMPLE TIME 1405

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. TRVL-15-108 (1) 300.0_ANTIONS_IC: COMMON; 300.0_ANTIONS_IC: COMMON (Add-on) {Bromide};	
CHPRC	JUL 06 2015 1430	SSU-1	JUL 06 2015 1430		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
SSU-1	JUL 07 2015 0800	R.A. Shepard/CHPRC	JUL 07 2015 0800		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
R.A. Shepard/CHPRC	JUL 07 2015 0830	J. Friesz, TARC	JUL 07 2015 0830		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME		
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME		

Date/Time Received: 7/7/15 0930 Container GM Screen Result: (Airlock) 0 cpm Initials [J]  
Sample GM Screen Result (Sample Receiving) 0 cpm Initials [J]

Client: FLH SDG #: WCO126 SAF #: F15-005 NA [ ]

Lot Number: J5G070413

Chain of Custody # F15-005-214215

Shipping Container ID or Air Bill Number : \_\_\_\_\_ NA [J]

Samples received inside shipping container/cooler/box Yes [J] Continue with 1 through 4. Initial appropriate response.  
No [ ] Go to 5, add comment to #16.

- 1. Custody Seals on shipping container intact? Yes [ ] No [ ] No Custody Seal [J]
- 2. Custody Seals dated and signed? Yes [ ] No [ ] No Custody Seal [J]
- 3. Cooler temperature: 6.1 °C ON ICE NA [ ]
- 4. Vermiculite/packing materials is NA [J] Wet [ ] Dry [ ]

Item 5 through 16 for samples. Initial appropriate response.

- 5. Chain of Custody record present? Yes [J] No [ ]
- 6. Number of samples received (Each sample may contain multiple bottles): 2
- 7. Containers received: 1x 60ml ag, 1x 500ml p

- 8. Sample holding times exceeded? NA [ ] Yes [ ] No [J]
- 9. Samples have: \_\_\_\_\_ tape \_\_\_\_\_ hazard labels J custody seals J appropriate sample labels
- 10. Matrix: \_\_\_\_\_ A (FLT, Wipe, Solid, Soil) J I (Water) \_\_\_\_\_ S (Air, Niosh 7400) \_\_\_\_\_ T (Biological, Ni-63)

- 11. Samples: J are in good condition \_\_\_\_\_ are leaking \_\_\_\_\_ are broken  
\_\_\_\_\_ have air bubbles (Only for samples requiring no head space) \_\_\_\_\_ Other \_\_\_\_\_

- 12. Sample pH appropriate for analysis requested Yes [J] No [ ] NA [ ]  
(If acidification is necessary go to pH area & document sample ID, initial pH, amount of HNO<sub>3</sub> added and pH after addition on table)

- 13. Were any anomalies identified in sample receipt? Yes [ ] No [J]

- 14. Description of anomalies (include sample numbers): NA [J]

- 15. Sample Location, Sample Collector Listed on COC? \* Yes [J] No [ ]  
\*For documentation only. No corrective action needed.

- 16. Additional Information: NIA

[ ] Client/Courier denied temperature check. [J] Client/Courier unpack cooler.

Sample Check-in List completed by Sample Custodian:  
Signature: \_\_\_\_\_ Date: 7/7/15

Client Notification needed? Yes [ ] No [J] Date: \_\_\_\_\_  
By: \_\_\_\_\_  
Person contacted: \_\_\_\_\_

SA No action necessary; process as is  
Project Manager Shirley Cupell Date 7/13/15

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Sample Results Summary

Date: 22-Jul-15

TestAmerica Inc TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 66557

SDG No: WC0126

Batch Client ID	Date Sampled	Work Order No.	Parameter	Result	Qual	Units	MDL	RL	Date Analyzed	Dil Fct
<b>5188048 300.0_ANIONS_IC ,WATER</b>										
B31MN6	07/06/15 14:05	M67K31AA	Bromide	0.225	D B	mg/L	0.125	0.25	07/08/15 0:56	2
			Chloride	27.4	D	mg/L	0.2	0.4		2
			Fluoride	0.348	D	mg/L	0.05	0.1		2
			Nitrite as N	<0.0380	U D	mg/L	0.038	0.076		2
			Nitrate as N	25.2	D	mg/L	0.07	0.14	07/08/15 2:41	5
			PO4_P	<0.0820	U D	mg/L	0.082	0.163	07/08/15 0:56	2
			Sulfate	49.8	D	mg/L	0.25	0.5		2
<b>5188051 7196_CR6 ,WATER</b>										
B31MN5	07/06/15 14:05	M67K21AA	HEXCHROME	0.0246		mg/L	0.0015	0.004	07/07/15 13:15	1

No. of Results: 8

TestAmerica Inc  
rptTALRchSample  
SumC2 V5.3.8  
A2002

B Qual - The analyte was detected at a value less than the reporting limit (RL), but greater than or equal to the MDL.  
D Qual - The reported value is from a dilution  
U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

July 22, 2015

QC Results Summary  
 TestAmerica Inc TARL  
 Ordered by Method, Batch No, QC Type,.

Date: 22-Jul-15

Report No. : 66557

SDG No.: WC0125

Batch	Work Work No.	Parameter	Result	Qual	Units	LCS Recovery	MDL	RL	RPD	Dil Fct
<b>300.0_ANIONS_IC</b>										
5188048 MS, B31MJ3	M67K01AD	Bromide	0.293		mg/L	83%	0.0625	0.125		1
		Chloride	23.0		mg/L	99%	0.1	0.2		1
		Fluoride	0.222		mg/L	97%	0.025	0.05		1
		Nitrite as N	0.0670		mg/L	87%	0.019	0.038		1
		Nitrate as N	4.20		mg/L	100%	0.014	0.028		1
		Sulfate	23.8		mg/L	100%	0.125	0.25		1
5188048 DUP, B31MJ3 DUP	M67K01AE	Bromide	0.220 D B		mg/L		0.125	0.25	0.0	2
		Chloride	50.2 D		mg/L		0.2	0.4	0.8	2
		Fluoride	0.279 D		mg/L		0.05	0.1	0.7	2
		Nitrite as N	<0.0380 U D		mg/L		0.038	0.076		2
		Nitrate as N	22.9 D		mg/L		0.07	0.14	0.3	5
		Sulfate	51.5 D		mg/L		0.25	0.5	0.8	2
5188048 BLANK,	M67LE1AA	Bromide	<0.0625 U		mg/L		0.0625	0.125		1
		Chloride	<0.100 U		mg/L		0.1	0.2		1
		Fluoride	<0.0250 U		mg/L		0.025	0.05		1
		Nitrite as N	<0.0190 U		mg/L		0.019	0.038		1
		Nitrate as N	<0.0140 U		mg/L		0.014	0.028		1
		Sulfate	<0.125 U		mg/L		0.125	0.25		1
5188048 LCS,	M67LE1AC	Bromide	2.39		mg/L	95%	0.0625	0.125		1
		Chloride	3.96		mg/L	99%	0.1	0.2		1
		Fluoride	0.986		mg/L	99%	0.025	0.05		1
		Nitrite as N	0.735		mg/L	97%	0.019	0.038		1
		Nitrate as N	0.543		mg/L	96%	0.014	0.028		1
		Sulfate	4.90		mg/L	98%	0.125	0.25		1
<b>7196_CR6</b>										
5188051 DUP, B31MN5 DUP	M67K21AC	HEXCHROME	0.0202		mg/L		0.0015	0.004	19.6	1
5188051 MS, B31TN4	M67KH1AC	HEXCHROME	0.0506		mg/L	101%	0.0015	0.004		1
5188051 BLANK,	M67L21AA	HEXCHROME	<0.00150 U		mg/L		0.0015	0.004		1
5188051 LCS,	M67L21AC	HEXCHROME	0.256		mg/L	102%	0.0015	0.004		1

No. of Results: 28

TestAmerica Inc  
 rptTALRchQcSummaryC V5.3.8  
 A2002

B Qual - The analyte was detected at a value less than the reporting limit (RL), but greater than or equal to the MDL.  
 D Qual - The reported value is from a dilution  
 U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.