



12065 Lebanon Rd.  
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Tax I.D. 62-0814289

Est. 1970

Stuart Hall  
Olsson Associates - GJ, CO  
826 21 1/2 Road  
Grand Junction, CO 81505

### Report Summary

Monday June 21, 2010

Report Number: L464128

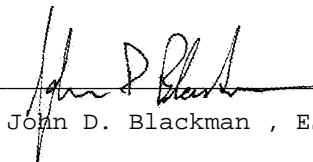
Samples Received: 06/12/10

Client Project: 009-2418

Description: Delta Bogue Gulch

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

  
John D. Blackman , ESC Representative

### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487  
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140  
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233  
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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# REPORT OF ANALYSIS

Stuart Hall  
Olsson Associates - GJ, CO  
826 21 1/2 Road  
Grand Junction, CO 81505

June 21, 2010

Date Received : June 12, 2010  
Description : Delta Bogue Gulch

Sample ID : DELTA POND

Collected By : Stuart Hall  
Collection Date : 06/11/10 11:45

ESC Sample # : L464128-01

Site ID :

Project # : 009-2418

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	7.6	1.0	mg/l	9056	06/16/10	1
Sulfate	BDL	5.0	mg/l	9056	06/16/10	1
pH	9.3		su	9040C	06/15/10	1
Specific Conductance	190		umhos/cm	9050A	06/18/10	1
Dissolved Solids	170	10.	mg/l	2540C	06/18/10	1
Benzene	BDL	0.00050	mg/l	8021B	06/20/10	1
Toluene	BDL	0.0050	mg/l	8021B	06/20/10	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	06/20/10	1
Total Xylene	BDL	0.0015	mg/l	8021B	06/20/10	1
Surrogate Recovery(%) a,a,a-Trifluorotoluene(PID)	99.1		% Rec.	8021B	06/20/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 06/21/10 17:12 Printed: 06/21/10 17:12  
L464128-01 (PH) - 9.3@24.1c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L464128-01	WG483274	SAMP	pH	R1252754	T8

## Attachment B Explanation of QC Qualifier Codes

Qualifier	Meaning
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

### Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

### Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

# Received 6/29/2010 Rifle COGCC

Summary of Remarks For Samples Printed  
06/21/10 at 17:12:57

TSR Signing Reports: 151  
R5 - Desired TAT

Client sends unpreserved vials for all projects; Run BTEXM by 8260 on separate dash. DO NOT  
RUSH ALK!!!

Sample: L464128-01 Account: CORCOMGCO Received: 06/12/10 09:00 Due Date: 06/18/10 00:00 RPT Date: 06/21/10 17:12  
BTEX is NP



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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
pH	4.60	su			WG483274	06/15/10 13:34
Chloride	< 1	mg/l			WG483691	06/15/10 20:29
Sulfate	< 5	mg/l			WG483691	06/15/10 20:29
Dissolved Solids	< 10	mg/l			WG483905	06/18/10 12:42
Benzene	< .0005	mg/l			WG484520	06/20/10 10:13
Ethylbenzene	< .0005	mg/l			WG484520	06/20/10 10:13
Toluene	< .005	mg/l			WG484520	06/20/10 10:13
Total Xylene	< .0015	mg/l			WG484520	06/20/10 10:13
a,a,a-Trifluorotoluene(PID)		% Rec.	99.43	55-122	WG484520	06/20/10 10:13

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
pH	su	5.70	5.60	1.77*	1	L463926-01	WG483274
pH	su	9.30	9.30	0	1	L464128-01	WG483274
Chloride	mg/l	75.0	75.0	0	20	L464085-03	WG483691
Specific Conductance	umhos/cm	490.	490.	0.813	20	L463502-01	WG483619
Specific Conductance	umhos/cm	190.	190.	0.368	20	L464128-01	WG483619
Dissolved Solids	mg/l	84.0	86.0	2.35	5	L463778-01	WG483905

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
pH	su	9.36	9.30	99.4	98.9-102.0	WG483274
Chloride	mg/l	40	40.5	101.	90-110	WG483691
Sulfate	mg/l	40	39.8	99.5	90-110	WG483691
Specific Conductance	umhos/cm	406	410.	101.	85-115	WG483619
Dissolved Solids	mg/l	8800	8850	101.	85-115	WG483905
Benzene	mg/l	.05	0.0554	111.	79-114	WG484520
Ethylbenzene	mg/l	.05	0.0546	109.	80-116	WG484520
Toluene	mg/l	.05	0.0544	109.	79-112	WG484520
Total Xylene	mg/l	.15	0.163	109.	84-118	WG484520
a,a,a-Trifluorotoluene(PID)				101.3	55-122	WG484520

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
pH	su	9.30	9.30	99.0	98.9-102.0	0	20	WG483274

\* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Chloride	mg/l	40.4	40.5	101.	90-110	0.247	20	WG483691
Sulfate	mg/l	39.6	39.8	99.0	90-110	0.504	20	WG483691
Specific Conductance	umhos/	410.	410.	101.	85-115	0	20	WG483619
Dissolved Solids	mg/l	8880	8850	101.	85-115	0.406	20	WG483905
Benzene	mg/l	0.0494	0.0554	99.0	79-114	11.4	20	WG484520
Ethylbenzene	mg/l	0.0498	0.0546	100.	80-116	9.33	20	WG484520
Toluene	mg/l	0.0493	0.0544	98.0	79-112	9.78	20	WG484520
Total Xylene	mg/l	0.149	0.163	99.0	84-118	8.97	20	WG484520
a,a,a-Trifluorotoluene(PID)				99.46	55-122			WG484520

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
Chloride	mg/l	94.4	47.0	50	94.8	80-120	L463780-01	WG483691
Benzene	mg/l	0.0521	0	.05	104.	35-147	L463815-01	WG484520
Ethylbenzene	mg/l	0.0518	0	.05	104.	39-141	L463815-01	WG484520
Toluene	mg/l	0.0515	0	.05	103.	35-148	L463815-01	WG484520
Total Xylene	mg/l	0.155	0	.15	103.	33-151	L463815-01	WG484520
a,a,a-Trifluorotoluene(PID)					99.00	55-122		WG484520

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
Chloride	mg/l	94.4	94.4	94.8	80-120	0	20	L463780-01	WG483691
Benzene	mg/l	0.0529	0.0521	106.	35-147	1.50	20	L463815-01	WG484520
Ethylbenzene	mg/l	0.0525	0.0518	105.	39-141	1.30	20	L463815-01	WG484520
Toluene	mg/l	0.0523	0.0515	104.	35-148	1.44	20	L463815-01	WG484520
Total Xylene	mg/l	0.156	0.155	104.	33-151	1.18	20	L463815-01	WG484520
a,a,a-Trifluorotoluene(PID)				100.3	55-122				WG484520

Batch number /Run number / Sample number cross reference

WG483274: R1252754: L464128-01  
WG483691: R1253128: L464128-01  
WG483619: R1256068: L464128-01  
WG483905: R1256431: L464128-01  
WG484520: R1259741: L464128-01

\* \* Calculations are performed prior to rounding of reported values .  
\* Performance of this Analyte is outside of established criteria.  
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.