ANALYTICAL REPORT

July 20, 2016

HRL Compliance Solutions- CO

Sample Delivery Group:	L846437
Samples Received:	07/12/2016
Project Number:	
Description:	Gonzo Hoagland Tank Facility Release
Site:	HOAGLAND TANK FACILITY
Report To:	Mark Mumby 2385 F ½ Road Grand Junction, CO 81505

Entire Report Reviewed By:

Shane Gambill
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

SS 01 3IN L846437-01 Solid

Collected by: Casey Richardson
Collected date/time: 07/11/16 07:55
Received date/time: 07/12/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG888244	1	07/13/16 11:41	07/14/16 16:15	BRJ
Calculated Results	WG888372	1	07/13/16 11:40	07/15/16 16:38	KK
Mercury by Method 7471A	WG888091	1	07/13/16 08:33	07/13/16 11:19	TRB
Metals (ICP) by Method 6010B	WG888372	1	07/13/16 11:40	07/13/16 16:09	LTB
Metals (ICP) by Method 6010B	WG888372	5	07/13/16 11:40	07/14/16 09:56	CCE
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG890438	1	07/19/16 17:41	07/20/16 07:03	KMP
Semi-Volatile Organic Compounds (GC) by Method 8015	WG890030	5	07/20/16 01:51	07/20/16 12:05	ACM
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG888572	1	07/13/16 17:41	07/13/16 21:49	DWR
Volatile Organic Compounds (GC/MS) by Method 8260B	WG888974	1	07/14/16 23:10	07/15/16 16:25	BMB
Wet Chemistry by Method 3060A/7196A	WG888129	1	07/13/16 10:43	07/15/16 16:38	KK
Wet Chemistry by Method 9045D	WG888106	1	07/13/16 14:01	07/13/16 14:01	MHM
Wet Chemistry by Method 9050AMod	WG888113	1	07/13/16 10:15	07/13/16 10:15	AMC

BKGD 01 6IN L846437-02 Solid

Collected by: Casey Richardson
Collected date/time: 07/11/16 08:11
Received date/time: 07/12/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG888372	1	07/13/16 11:40	07/13/16 16:12	LTB

BKGD 02 6IN L846437-03 Solid

Collected by: Casey Richardson
Collected date/time: 07/11/16 08:15
Received date/time: 07/12/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG888372	1	07/13/16 11:40	07/13/16 15:29	LTB

BKGD 03 6IN L846437-04 Solid

Collected by: Casey Richardson
Collected date/time: 07/11/16 08:19
Received date/time: 07/12/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG888244	1	07/13/16 11:41	07/14/16 12:02	CCE
Metals (ICP) by Method 6010B	WG888372	1	07/13/16 11:40	07/13/16 16:14	LTB
Wet Chemistry by Method 9045D	WG888106	1	07/13/16 14:01	07/13/16 14:01	MHM
Wet Chemistry by Method 9050AMod	WG888113	1	07/13/16 10:15	07/13/16 10:15	AMC

All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Shane Gambill
Technical Service Representative

Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

ESC Sample ID	Project Sample ID	Method
L846437-01	SS 01_3IN	9045D
L846437-04	BKGD 03_6IN	9045D

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	37.0		1	07/14/2016 16:15	WG888244

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	8.44		2.00	1	07/15/2016 16:38	WG888372

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND	J6	2.00	1	07/15/2016 16:38	WG888129

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.10		1	07/13/2016 14:01	WG888106

Sample Narrative:

9045D L846437-01 WG888106: 8.10 at 21.4c

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	Dilution	Analysis date / time	Batch
Specific Conductance	20100		1	07/13/2016 10:15	WG888113

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0200	1	07/13/2016 11:19	WG888091

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.24		2.00	1	07/13/2016 16:09	WG888372
Barium	2620		2.50	5	07/14/2016 09:56	WG888372
Cadmium	0.550		0.500	1	07/13/2016 16:09	WG888372
Chromium	8.44		1.00	1	07/13/2016 16:09	WG888372
Copper	8.71		2.00	1	07/13/2016 16:09	WG888372
Lead	7.98		0.500	1	07/13/2016 16:09	WG888372
Nickel	10.7		2.00	1	07/13/2016 16:09	WG888372
Selenium	ND		2.00	1	07/13/2016 16:09	WG888372
Silver	ND		1.00	1	07/13/2016 16:09	WG888372
Zinc	31.0		5.00	1	07/13/2016 16:09	WG888372

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND	J3 J6	0.100	1	07/13/2016 21:49	WG888572
(S) a,a,a-Trifluorotoluene(FID)	*97.1*		*59.0-128*		*07/13/2016 21:49*	WG888572

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	07/15/2016 16:25	WG888974
Toluene	ND		0.00500	1	07/15/2016 16:25	WG888974
Ethylbenzene	ND		0.00100	1	07/15/2016 16:25	WG888974
Total Xylenes	ND		0.00300	1	07/15/2016 16:25	WG888974
(S) Toluene-d8	*107*		*88.7-115*		*07/15/2016 16:25*	WG888974
(S) Dibromofluoromethane	*108*		*76.3-123*		*07/15/2016 16:25*	WG888974
(S) α,α,α-Trifluorotoluene	*102*		*87.2-117*		*07/15/2016 16:25*	WG888974
(S) 4-Bromofluorobenzene	*100*		*69.7-129*		*07/15/2016 16:25*	WG888974

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	74.6	B	20.0	5	07/20/2016 12:05	WG890030
(S) o-Terphenyl	*82.1*		*50.0-150*		*07/20/2016 12:05*	WG890030

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	07/20/2016 07:03	WG890438
Acenaphthene	ND		0.00600	1	07/20/2016 07:03	WG890438
Acenaphthylene	ND		0.00600	1	07/20/2016 07:03	WG890438
Benzo(a)anthracene	ND		0.00600	1	07/20/2016 07:03	WG890438
Benzo(a)pyrene	ND		0.00600	1	07/20/2016 07:03	WG890438
Benzo(b)fluoranthene	ND		0.00600	1	07/20/2016 07:03	WG890438
Benzo(g,h,i)perylene	ND		0.00600	1	07/20/2016 07:03	WG890438
Benzo(k)fluoranthene	ND		0.00600	1	07/20/2016 07:03	WG890438
Chrysene	ND		0.00600	1	07/20/2016 07:03	WG890438
Dibenz(a,h)anthracene	ND		0.00600	1	07/20/2016 07:03	WG890438
Fluoranthene	0.00748		0.00600	1	07/20/2016 07:03	WG890438
Fluorene	ND		0.00600	1	07/20/2016 07:03	WG890438
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	07/20/2016 07:03	WG890438
Naphthalene	ND		0.0200	1	07/20/2016 07:03	WG890438
Phenanthrene	0.0148		0.00600	1	07/20/2016 07:03	WG890438
Pyrene	0.0130		0.00600	1	07/20/2016 07:03	WG890438
1-Methylnaphthalene	ND		0.0200	1	07/20/2016 07:03	WG890438
2-Methylnaphthalene	0.0254		0.0200	1	07/20/2016 07:03	WG890438
2-Chloronaphthalene	ND		0.0200	1	07/20/2016 07:03	WG890438
(S) p-Terphenyl-d14	*99.7*		*32.2-131*		*07/20/2016 07:03*	WG890438
(S) Nitrobenzene-d5	*97.3*		*22.1-146*		*07/20/2016 07:03*	WG890438
(S) 2-Fluorobiphenyl	*104*		*40.6-122*		*07/20/2016 07:03*	WG890438

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	5.66		2.00	1	07/13/2016 16:12	WG888372

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	4.90		2.00	1	07/13/2016 15:29	WG888372

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.741		1	07/14/2016 12:02	WG888244

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	su				
pH	7.57		1	07/13/2016 14:01	WG888106

Sample Narrative:

9045D L846437-04 WG888106: 7.57 at 21.7c

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	umhos/cm				
Specific Conductance	701		1	07/13/2016 10:15	WG888113

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	7.26		2.00	1	07/13/2016 16:14	WG888372

Method Blank (MB)

(MB) R3150105-1 07/15/16 16:25

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chromium,Hexavalent	U		0.640	2.00

L846437-01 Original Sample (OS) • Duplicate (DUP)

(OS) L846437-01 07/15/16 16:38 • (DUP) R3150105-4 07/15/16 16:38

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chromium,Hexavalent	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3150105-2 07/15/16 16:26 • (LCSD) R3150105-3 07/15/16 16:26

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chromium,Hexavalent	56.9	49.4	49.4	87.0	87.0	80.0-120			0.000	20

L846437-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L846437-01 07/15/16 16:38 • (MS) R3150105-5 07/15/16 16:38 • (MSD) R3150105-6 07/15/16 16:40

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chromium,Hexavalent	20.0	ND	13.2	13.7	66.0	68.0	1	75.0-125	J6	J6	4.00	20

L846390-02 Original Sample (OS) • Duplicate (DUP)

(OS) L846390-02 07/13/16 14:01 • (DUP) WG888106-3 07/13/16 14:01

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.90	8.91	1	0.112		1

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG888106-1 07/13/16 14:01 • (LCSD) WG888106-2 07/13/16 14:01

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.12	6.04	6.02	98.7	98.4	98.4-102			0.332	1

Method Blank (MB)

(MB) WG888113-4 07/13/16 10:15

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	umhos/cm		umhos/cm	umhos/cm
Specific Conductance	2.00			

L846437-01 Original Sample (OS) • Duplicate (DUP)

(OS) L846437-01 07/13/16 10:15 • (DUP) WG888113-1 07/13/16 10:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	umhos/cm	umhos/cm		%		%
Specific Conductance	20100	20000	1	0.349		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG888113-2 07/13/16 10:15 • (LCSD) WG888113-3 07/13/16 10:15

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	umhos/cm	umhos/cm	umhos/cm	%	%	%			%	%
Specific Conductance	653	667	668	102	102	90.0-110			0.150	20

Method Blank (MB)

(MB) R3149402-1 07/13/16 10:35

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Mercury	U		0.0028	0.0200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3149402-2 07/13/16 10:38 • (LCSD) R3149402-3 07/13/16 10:40

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Mercury	0.300	0.282	0.281	94	94	80-120			0	20

L846418-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L846418-01 07/13/16 10:43 • (MS) R3149402-4 07/13/16 10:46 • (MSD) R3149402-5 07/13/16 10:49

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.337	0.0246	0.347	0.343	96	95	1	75-125			1	20

Method Blank (MB)

(MB) R3149576-1 07/13/16 15:21

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.65	2.00
Barium	U		0.17	0.500
Cadmium	U		0.07	0.500
Chromium	U		0.14	1.00
Copper	U		0.53	2.00
Lead	U		0.19	0.500
Nickel	U		0.49	2.00
Selenium	U		0.74	2.00
Silver	U		0.28	1.00
Zinc	1.68	J	0.59	5.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3149576-2 07/13/16 15:24 • (LCSD) R3149576-3 07/13/16 15:26

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	100	103	99.8	103	100	80-120			3	20
Barium	100	106	103	106	103	80-120			3	20
Cadmium	100	102	99.1	102	99	80-120			3	20
Chromium	100	102	99.1	102	99	80-120			3	20
Copper	100	100	98.1	100	98	80-120			2	20
Lead	100	104	101	104	101	80-120			3	20
Nickel	100	104	100	104	100	80-120			3	20
Selenium	100	106	103	106	103	80-120			3	20
Silver	100	100	97.7	100	98	80-120			2	20
Zinc	100	105	100	105	100	80-120			4	20

L846437-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L846437-03 07/13/16 15:29 • (MS) R3149576-6 07/13/16 15:37 • (MSD) R3149576-7 07/13/16 15:39

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	4.90	103	104	98	99	1	75-125			1	20
Barium	100	375	470	474	95	99	1	75-125			1	20
Cadmium	100	ND	98.8	99.5	98	99	1	75-125			1	20
Chromium	100	13.3	108	110	95	97	1	75-125			2	20
Copper	100	12.5	112	112	99	100	1	75-125			1	20
Lead	100	19.7	123	123	103	104	1	75-125			0	20
Nickel	100	16.9	121	121	104	104	1	75-125			1	20

L846437-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L846437-03 07/13/16 15:29 • (MS) R3149576-6 07/13/16 15:37 • (MSD) R3149576-7 07/13/16 15:39

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Selenium	100	ND	98.1	100	98	100	1	75-125			2	20
Silver	100	ND	98.3	99.4	98	99	1	75-125			1	20
Zinc	100	58.8	152	152	93	93	1	75-125			0	20

Method Blank (MB)

(MB) R3149681-3 07/13/16 19:45

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*99.3*			*59.0-128*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3149681-1 07/13/16 18:42 • (LCSD) R3149681-2 07/13/16 19:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	6.12	6.44	111	117	63.5-137			5.13	20
(S) a,a,a-Trifluorotoluene(FID)				*102*	*101*	*59.0-128*				

L846437-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L846437-01 07/13/16 21:49 • (MS) R3149681-4 07/13/16 20:46 • (MSD) R3149681-5 07/13/16 21:07

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	ND	0.0372	0.531	0.676	9.65	1	28.5-138	J6	J3 J6	174	23.6
(S) a,a,a-Trifluorotoluene(FID)					*99.9*	*96.2*		*59.0-128*				

Method Blank (MB)

(MB) R3150037-3 07/15/16 10:17

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000270	0.00100
Ethylbenzene	U		0.000297	0.00100
Toluene	U		0.000434	0.00500
Xylenes, Total	U		0.000698	0.00300
(S) Toluene-d8	*106*			*88.7-115*
(S) Dibromofluoromethane	*106*			*76.3-123*
(S) a,a,a-Trifluorotoluene	*104*			*87.2-117*
(S) 4-Bromofluorobenzene	*102*			*69.7-129*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3150037-1 07/15/16 08:39 • (LCSD) R3150037-2 07/15/16 08:59

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0225	0.0222	89.9	88.8	72.6-120			1.27	20
Ethylbenzene	0.0250	0.0228	0.0234	91.4	93.4	78.6-124			2.20	20
Toluene	0.0250	0.0224	0.0226	89.7	90.4	76.7-116			0.760	20
Xylenes, Total	0.0750	0.0704	0.0711	93.8	94.8	78.1-123			0.970	20
(S) Toluene-d8				*106*	*107*	*88.7-115*				
(S) Dibromofluoromethane				*108*	*107*	*76.3-123*				
(S) a,a,a-Trifluorotoluene				*102*	*103*	*87.2-117*				
(S) 4-Bromofluorobenzene				*101*	*101*	*69.7-129*				

L846220-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L846220-03 07/15/16 14:47 • (MS) R3150037-4 07/15/16 16:44 • (MSD) R3150037-5 07/15/16 17:03

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0309	U	0.165	0.166	88.7	89.5	6	47.8-131			0.900	22.8
Ethylbenzene	0.0309	U	0.167	0.168	89.8	90.3	6	44.8-135			0.530	26.9
Toluene	0.0309	U	0.167	0.168	90.1	90.6	6	47.8-127			0.610	24.3
Xylenes, Total	0.0928	U	0.516	0.515	92.7	92.5	6	42.7-135			0.200	26.6
(S) Toluene-d8					*108*	*108*		*88.7-115*				
(S) Dibromofluoromethane					*107*	*109*		*76.3-123*				
(S) a,a,a-Trifluorotoluene					*103*	*103*		*87.2-117*				
(S) 4-Bromofluorobenzene					*106*	*102*		*69.7-129*				

Method Blank (MB)

(MB) R3150977-1 07/20/16 11:32

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	1.93	J	0.769	4.00
(S) o-Terphenyl	*87.9*			*50.0-150*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3150977-2 07/20/16 11:43 • (LCSD) R3150977-3 07/20/16 11:54

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) High Fraction	60.0	53.1	50.7	88.5	84.5	50.0-150			4.56	20
(S) o-Terphenyl				*89.2*	*83.0*	*50.0-150*				

Method Blank (MB)

(MB) R3150938-3 07/20/16 02:30

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.000600	0.00600
Acenaphthene	U		0.000600	0.00600
Acenaphthylene	U		0.000600	0.00600
Benzo(a)anthracene	U		0.000600	0.00600
Benzo(a)pyrene	U		0.000600	0.00600
Benzo(b)fluoranthene	U		0.000600	0.00600
Benzo(g,h,i)perylene	U		0.000600	0.00600
Benzo(k)fluoranthene	U		0.000600	0.00600
Chrysene	U		0.000600	0.00600
Dibenz(a,h)anthracene	U		0.000600	0.00600
Fluoranthene	U		0.000600	0.00600
Fluorene	U		0.000600	0.00600
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600
Naphthalene	U		0.00200	0.0200
Phenanthrene	U		0.000600	0.00600
Pyrene	U		0.000600	0.00600
1-Methylnaphthalene	U		0.00200	0.0200
2-Methylnaphthalene	U		0.00200	0.0200
2-Chloronaphthalene	U		0.00200	0.0200
(S) p-Terphenyl-d14	*101*			*32.2-131*
(S) Nitrobenzene-d5	*103*			*22.1-146*
(S) 2-Fluorobiphenyl	*98.1*			*40.6-122*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3150938-1 07/20/16 01:48 • (LCSD) R3150938-2 07/20/16 02:09

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0800	0.0847	0.0813	106	102	50.3-130			4.18	20
Acenaphthene	0.0800	0.0816	0.0799	102	99.8	52.4-120			2.13	20
Acenaphthylene	0.0800	0.0808	0.0792	101	99.1	49.6-120			1.91	20
Benzo(a)anthracene	0.0800	0.0911	0.0859	114	107	46.7-125			5.86	20
Benzo(a)pyrene	0.0800	0.0860	0.0833	107	104	42.3-119			3.18	20
Benzo(b)fluoranthene	0.0800	0.0909	0.0890	114	111	43.6-124			2.10	20
Benzo(g,h,i)perylene	0.0800	0.0887	0.0844	111	105	45.1-132			5.04	20
Benzo(k)fluoranthene	0.0800	0.0863	0.0815	108	102	46.1-131			5.70	20
Chrysene	0.0800	0.0873	0.0824	109	103	49.5-131			5.82	20
Dibenz(a,h)anthracene	0.0800	0.0886	0.0839	111	105	44.8-133			5.45	20
Fluoranthene	0.0800	0.0796	0.0776	99.5	97.0	49.3-128			2.63	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3150938-1 07/20/16 01:48 • (LCSD) R3150938-2 07/20/16 02:09

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Fluorene	0.0800	0.0780	0.0752	97.5	94.0	50.6-121			3.70	20
Indeno(1,2,3-cd)pyrene	0.0800	0.0886	0.0847	111	106	46.1-135			4.43	20
Naphthalene	0.0800	0.0763	0.0769	95.4	96.1	49.6-115			0.700	20
Phenanthrene	0.0800	0.0852	0.0811	107	101	48.8-121			5.00	20
Pyrene	0.0800	0.0882	0.0856	110	107	44.7-130			2.95	20
1-Methylnaphthalene	0.0800	0.0840	0.0849	105	106	50.6-122			1.09	20
2-Methylnaphthalene	0.0800	0.0824	0.0875	103	109	50.4-120			5.96	20
2-Chloronaphthalene	0.0800	0.0808	0.0786	101	98.3	53.9-121			2.72	20
(S) p-Terphenyl-d14				*85.6*	*83.6*	*32.2-131*				
(S) Nitrobenzene-d5				*98.7*	*105*	*22.1-146*				
(S) 2-Fluorobiphenyl				*100*	*98.7*	*40.6-122*				

L847806-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L847806-01 07/20/16 05:38 • (MS) R3150938-4 07/20/16 05:59 • (MSD) R3150938-5 07/20/16 06:20

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0941	U	0.0925	0.0855	98.3	90.8	1	26.5-141			7.88	21.2
Acenaphthene	0.0941	0.00324	0.0922	0.0861	94.5	88.0	1	31.9-130			6.88	20
Acenaphthylene	0.0941	0.00247	0.0919	0.0855	95.1	88.3	1	33.7-129			7.21	20
Benzo(a)anthracene	0.0941	0.000873	0.0948	0.0893	99.8	93.9	1	18.3-136			6.04	24.6
Benzo(a)pyrene	0.0941	U	0.0986	0.0940	105	99.9	1	16.9-135			4.77	25.2
Benzo(b)fluoranthene	0.0941	U	0.0959	0.0829	102	88.1	1	10.0-134			14.5	30.9
Benzo(g,h,i)perylene	0.0941	U	0.0924	0.105	98.2	112	1	14.1-140			13.1	25.5
Benzo(k)fluoranthene	0.0941	U	0.0835	0.0875	88.7	93.0	1	18.2-138			4.69	25.6
Chrysene	0.0941	U	0.0909	0.0856	96.6	91.0	1	17.1-145			5.95	24.2
Dibenz(a,h)anthracene	0.0941	U	0.0917	0.105	97.5	112	1	18.5-138			13.7	24.3
Fluoranthene	0.0941	0.00108	0.101	0.0806	107	84.5	1	15.4-144			22.8	27.1
Fluorene	0.0941	0.00166	0.0874	0.0949	91.1	99.0	1	23.5-136			8.21	20
Indeno(1,2,3-cd)pyrene	0.0941	U	0.0919	0.105	97.6	111	1	14.5-142			13.3	25.8
Naphthalene	0.0941	1.17	1.33	0.922	173	0.000	1	29.2-128	V	J3 V	36.2	20
Phenanthrene	0.0941	0.00164	0.0940	0.0867	98.2	90.4	1	20.1-134			8.13	23.6
Pyrene	0.0941	0.00118	0.111	0.103	117	108	1	11.0-148			8.06	26.1
1-Methylnaphthalene	0.0941	0.352	0.462	0.338	117	0.000	1	28.4-137		J3 J6	31.1	20
2-Methylnaphthalene	0.0941	0.850	0.971	0.677	129	0.000	1	26.6-137		J3 V	35.7	20
2-Chloronaphthalene	0.0941	U	0.0891	0.0828	94.7	87.9	1	38.6-126			7.38	20
(S) p-Terphenyl-d14					*93.8*	*89.5*		*32.2-131*				
(S) Nitrobenzene-d5					*187*	*160*		*22.1-146*	J1	J1		
(S) 2-Fluorobiphenyl					*99.1*	*93.4*		*40.6-122*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**
***** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [14]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

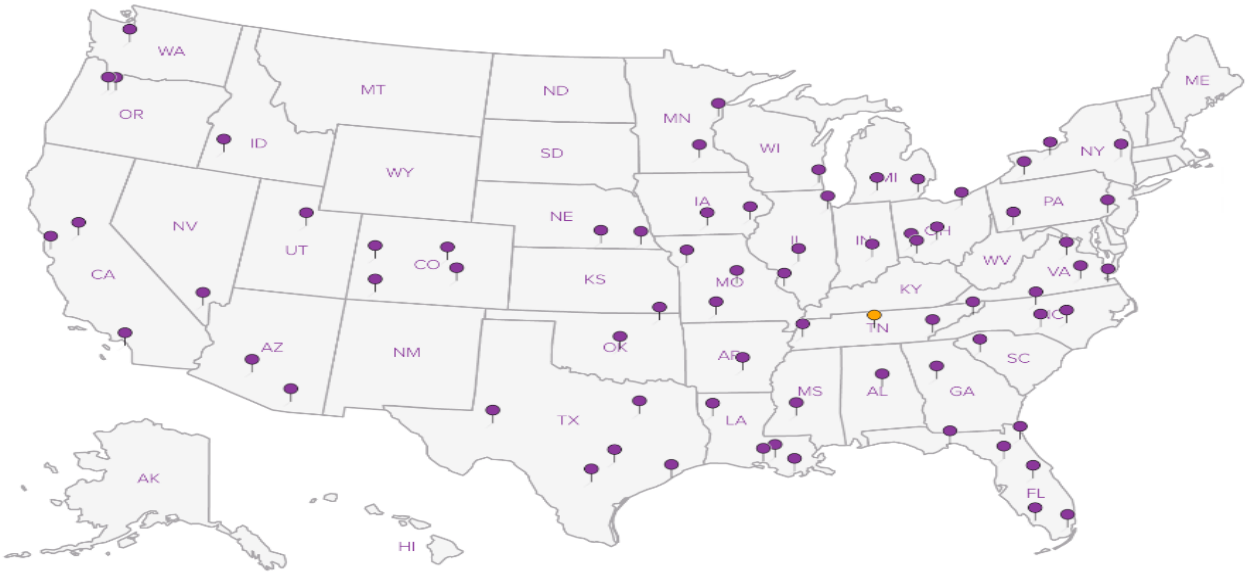
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Company Name/Address:
HRL Compliance Solutions
2385 F ½ Road
Grand Junction, CO 81505

Billing Information:
HRL Compliance Solutions
2385 F ½ Road
Grand Junction, CO 81505
Quote #: HRLCSCO - 042015S

Report to: Mark Mumby, Casey Richardson

Email To: mmumby@hrlcomp.com, crichardson@hrlcomp.com

Project Description: **Gonzo Hoagland Tank Facility Release**

City/State Collected: **Rulison, CO**

Phone: **970-243-3271**
Fax:

Client Project #

Lab Project #

Collected by (print): **Casey Richardson**

Site/Facility ID #: **Hoagland Tank Facility**

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed: 7/18/16

Email? ___No ✓Yes
FAX? ✓No ___Yes

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEX	GRO / DRO	PAH	910-1 Metals	910-1 Metals Cont	EC / SAR /pH	Arsenic				Rem./Contaminant	Sample # (lab only)
SS 01	Grab	SS	**3 in**	**7/11/16**	**755**	3	X	X	X	X	X	X						-01
BKGD 01	Grab	SS	**6 in**	**7/11/16**	**811**	1							X					-02
BKGD 02	Grab	SS	**6 in**	**7/11/16**	**815**	1							X					-03
BKGD 03	Grab	SS	**6 in**	**7/11/16**	**819**	2						X	X					-04

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

ESC LAB SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L # L846437
A128
Acctnum: **HRLCSCO**
Template:
Prelogin:
TSR: **Shane Gambill**
Cooler:
Shipped Via:

* Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

6777 0002 3545 7

Hold #

Relinquished by : (Signature) — Date: 7-11-16 — Time: 1400 — Received by: (Signature)

Relinquished by : (Signature) — Date: 7/11/16 — Time: 230 — Received by: (Signature)

Relinquished by : (Signature) — Date: — Time: — Received for lab by: (Signature)

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ _____

Temp: 3.2 °C Bottles Received: 7

Date: 7/12/16 Time: 0900

Condition: (lab use only) MR OK

COC Seal Intact: ___Y ___N ___NA

pH Checked: NCF: