ANALYTICAL REPORT

November 16, 2017

Churchill Energy, Inc.

Sample Delivery Group:	L949313
Samples Received:	11/08/2017
Project Number:	
Description:	Champlin Limon 1-19/2-19

Report To: Gary Kluksdahl
8177 South Norfolk Street
Englewood, CO 80112

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.

TABLE OF CONTENTS

1 L949313-01 Solid

Collected by	Collected date/time	Received date/time
Tim Rogers	11/06/17 11:00	11/08/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1041036	1	11/10/17 12:10	11/13/17 00:33	ST
Calculated Results	WG1041041	1	11/10/17 12:43	11/13/17 00:08	CCE
Wet Chemistry by Method 3060A/7196A	WG1040853	1	11/10/17 10:16	11/10/17 16:45	GB
Wet Chemistry by Method 9045D	WG1042084	1	11/13/17 07:35	11/14/17 08:21	ER
Wet Chemistry by Method 9050AMod	WG1042096	1	11/14/17 16:58	11/14/17 17:25	MA
Mercury by Method 7471A	WG1041187	1	11/12/17 13:12	11/13/17 08:53	EL
Metals (ICP) by Method 6010B	WG1041041	1	11/10/17 12:43	11/13/17 00:08	CCE
Volatile Organic Compounds (GC) by Method 8015/8021	WG1040785	1	11/09/17 09:15	11/09/17 13:46	JAH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1041470	10	11/10/17 16:34	11/11/17 01:44	DMG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1041973	1	11/15/17 10:05	11/15/17 19:39	DMG

2 L949313-02 Solid

Collected by	Collected date/time	Received date/time
Tim Rogers	11/06/17 11:00	11/08/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1041036	1	11/10/17 12:10	11/13/17 00:36	ST
Calculated Results	WG1041041	1	11/10/17 12:43	11/13/17 00:11	CCE
Wet Chemistry by Method 3060A/7196A	WG1040853	1	11/10/17 10:16	11/10/17 16:48	GB
Wet Chemistry by Method 9045D	WG1042084	1	11/13/17 07:35	11/14/17 08:21	ER
Wet Chemistry by Method 9050AMod	WG1042096	1	11/14/17 16:58	11/14/17 17:25	MA
Mercury by Method 7471A	WG1041187	1	11/12/17 13:12	11/13/17 09:34	EL
Metals (ICP) by Method 6010B	WG1041041	1	11/10/17 12:43	11/13/17 00:11	CCE
Volatile Organic Compounds (GC) by Method 8015/8021	WG1040785	1	11/09/17 09:15	11/09/17 14:08	JAH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1041470	10	11/10/17 16:34	11/11/17 01:55	DMG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1041973	1	11/15/17 10:05	11/15/17 20:00	DMG

3 L949313-03 Solid

Collected by	Collected date/time	Received date/time
Tim Rogers	11/06/17 11:00	11/08/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1041036	1	11/10/17 12:10	11/13/17 00:40	ST
Calculated Results	WG1041041	1	11/10/17 12:43	11/13/17 00:18	CCE
Wet Chemistry by Method 3060A/7196A	WG1040853	1	11/10/17 10:16	11/10/17 16:50	GB
Wet Chemistry by Method 9045D	WG1042084	1	11/13/17 07:35	11/14/17 08:21	ER
Wet Chemistry by Method 9050AMod	WG1042096	1	11/14/17 16:58	11/14/17 17:25	MA
Mercury by Method 7471A	WG1041187	1	11/12/17 13:12	11/13/17 10:05	EL
Metals (ICP) by Method 6010B	WG1041041	1	11/10/17 12:43	11/13/17 00:18	CCE
Volatile Organic Compounds (GC) by Method 8015/8021	WG1040785	1	11/09/17 09:15	11/09/17 14:30	JAH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1041470	2	11/10/17 16:34	11/11/17 02:06	DMG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1041973	1	11/15/17 10:05	11/15/17 20:22	DMG

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.107		1	11/13/2017 00:33	WG1041036

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	5.38		1.00	1	11/13/2017 00:08	WG1041041

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND		2.00	1	11/10/2017 16:45	WG1040853

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.06	T8	1	11/14/2017 08:21	WG1042084

Sample Narrative:

L949313-01 WG1042084: 7.06 at 20.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	36.6		10.0	1	11/14/2017 17:25	WG1042096

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND	J6 O1	0.0200	1	11/13/2017 08:53	WG1041187

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.07		2.00	1	11/13/2017 00:08	WG1041041
Barium	67.1		0.500	1	11/13/2017 00:08	WG1041041
Cadmium	ND		0.500	1	11/13/2017 00:08	WG1041041
Chromium	5.38		1.00	1	11/13/2017 00:08	WG1041041
Copper	4.81		2.00	1	11/13/2017 00:08	WG1041041
Lead	6.77		0.500	1	11/13/2017 00:08	WG1041041
Nickel	4.82		2.00	1	11/13/2017 00:08	WG1041041
Selenium	ND		2.00	1	11/13/2017 00:08	WG1041041
Silver	ND		1.00	1	11/13/2017 00:08	WG1041041
Zinc	21.8		5.00	1	11/13/2017 00:08	WG1041041

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	11/09/2017 13:46	WG1040785
Toluene	ND		0.00500	1	11/09/2017 13:46	WG1040785
Ethylbenzene	ND		0.000500	1	11/09/2017 13:46	WG1040785
Total Xylene	ND		0.00150	1	11/09/2017 13:46	WG1040785
TPH (GC/FID) Low Fraction	ND		0.100	1	11/09/2017 13:46	WG1040785

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	*97.1*		*77.0-120*		*11/09/2017 13:46*	WG1040785
(S) a,a,a-Trifluorotoluene(PID)	*88.5*		*75.0-128*		*11/09/2017 13:46*	WG1040785

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	ND		40.0	10	11/11/2017 01:44	WG1041470
(S) o-Terphenyl	*62.5*		*18.0-148*		*11/11/2017 01:44*	WG1041470

Sample Narrative:

L949313-01 WG1041470: Dilution due to matrix impact during extract concentration procedure

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	J3	0.00600	1	11/15/2017 19:39	WG1041973
Acenaphthene	ND	J3	0.00600	1	11/15/2017 19:39	WG1041973
Acenaphthylene	ND	J3	0.00600	1	11/15/2017 19:39	WG1041973
Benzo(a)anthracene	ND	J3	0.00600	1	11/15/2017 19:39	WG1041973
Benzo(a)pyrene	ND	J3	0.00600	1	11/15/2017 19:39	WG1041973
Benzo(b)fluoranthene	ND	J3	0.00600	1	11/15/2017 19:39	WG1041973
Benzo(g,h,i)perylene	ND	J3	0.00600	1	11/15/2017 19:39	WG1041973
Benzo(k)fluoranthene	ND	J3	0.00600	1	11/15/2017 19:39	WG1041973
Chrysene	ND	J3	0.00600	1	11/15/2017 19:39	WG1041973
Dibenz(a,h)anthracene	ND	J3	0.00600	1	11/15/2017 19:39	WG1041973
Fluoranthene	ND	J3	0.00600	1	11/15/2017 19:39	WG1041973
Fluorene	ND	J3	0.00600	1	11/15/2017 19:39	WG1041973
Indeno(1,2,3-cd)pyrene	ND	J3	0.00600	1	11/15/2017 19:39	WG1041973
Naphthalene	ND		0.0200	1	11/15/2017 19:39	WG1041973
Phenanthrene	ND	J3	0.00600	1	11/15/2017 19:39	WG1041973
Pyrene	ND	J3	0.00600	1	11/15/2017 19:39	WG1041973
1-Methylnaphthalene	ND		0.0200	1	11/15/2017 19:39	WG1041973
2-Methylnaphthalene	ND		0.0200	1	11/15/2017 19:39	WG1041973
2-Chloronaphthalene	ND		0.0200	1	11/15/2017 19:39	WG1041973
(S) p-Terphenyl-d14	*62.1*		*23.0-120*		*11/15/2017 19:39*	WG1041973
(S) Nitrobenzene-d5	*63.3*		*14.0-149*		*11/15/2017 19:39*	WG1041973
(S) 2-Fluorobiphenyl	*71.5*		*34.0-125*		*11/15/2017 19:39*	WG1041973

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.181		1	11/13/2017 00:36	WG1041036

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	6.62		1.00	1	11/13/2017 00:11	WG1041041

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND		2.00	1	11/10/2017 16:48	WG1040853

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.84	T8	1	11/14/2017 08:21	WG1042084

Sample Narrative:

L949313-02 WG1042084: 6.84 at 19.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	213		10.0	1	11/14/2017 17:25	WG1042096

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0200	1	11/13/2017 09:34	WG1041187

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.02		2.00	1	11/13/2017 00:11	WG1041041
Barium	66.7		0.500	1	11/13/2017 00:11	WG1041041
Cadmium	ND		0.500	1	11/13/2017 00:11	WG1041041
Chromium	6.62		1.00	1	11/13/2017 00:11	WG1041041
Copper	6.42		2.00	1	11/13/2017 00:11	WG1041041
Lead	9.09		0.500	1	11/13/2017 00:11	WG1041041
Nickel	5.66		2.00	1	11/13/2017 00:11	WG1041041
Selenium	ND		2.00	1	11/13/2017 00:11	WG1041041
Silver	ND		1.00	1	11/13/2017 00:11	WG1041041
Zinc	30.0		5.00	1	11/13/2017 00:11	WG1041041

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	11/09/2017 14:08	WG1040785
Toluene	ND		0.00500	1	11/09/2017 14:08	WG1040785
Ethylbenzene	ND		0.000500	1	11/09/2017 14:08	WG1040785
Total Xylene	ND		0.00150	1	11/09/2017 14:08	WG1040785
TPH (GC/FID) Low Fraction	ND		0.100	1	11/09/2017 14:08	WG1040785

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	*95.8*		*77.0-120*		*11/09/2017 14:08*	WG1040785
(S) a,a,a-Trifluorotoluene(PID)	*88.2*		*75.0-128*		*11/09/2017 14:08*	WG1040785

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	ND		40.0	10	11/11/2017 01:55	WG1041470
(S) o-Terphenyl	*64.4*		*18.0-148*		*11/11/2017 01:55*	WG1041470

Sample Narrative:

L949313-02 WG1041470: Dilution due to matrix impact during extract concentration procedure

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	J3	0.00600	1	11/15/2017 20:00	WG1041973
Acenaphthene	ND	J3	0.00600	1	11/15/2017 20:00	WG1041973
Acenaphthylene	ND	J3	0.00600	1	11/15/2017 20:00	WG1041973
Benzo(a)anthracene	ND	J3	0.00600	1	11/15/2017 20:00	WG1041973
Benzo(a)pyrene	ND	J3	0.00600	1	11/15/2017 20:00	WG1041973
Benzo(b)fluoranthene	ND	J3	0.00600	1	11/15/2017 20:00	WG1041973
Benzo(g,h,i)perylene	ND	J3	0.00600	1	11/15/2017 20:00	WG1041973
Benzo(k)fluoranthene	ND	J3	0.00600	1	11/15/2017 20:00	WG1041973
Chrysene	ND	J3	0.00600	1	11/15/2017 20:00	WG1041973
Dibenz(a,h)anthracene	ND	J3	0.00600	1	11/15/2017 20:00	WG1041973
Fluoranthene	ND	J3	0.00600	1	11/15/2017 20:00	WG1041973
Fluorene	ND	J3	0.00600	1	11/15/2017 20:00	WG1041973
Indeno(1,2,3-cd)pyrene	ND	J3	0.00600	1	11/15/2017 20:00	WG1041973
Naphthalene	ND		0.0200	1	11/15/2017 20:00	WG1041973
Phenanthrene	ND	J3	0.00600	1	11/15/2017 20:00	WG1041973
Pyrene	ND	J3	0.00600	1	11/15/2017 20:00	WG1041973
1-Methylnaphthalene	ND		0.0200	1	11/15/2017 20:00	WG1041973
2-Methylnaphthalene	ND		0.0200	1	11/15/2017 20:00	WG1041973
2-Chloronaphthalene	ND		0.0200	1	11/15/2017 20:00	WG1041973
(S) p-Terphenyl-d14	*62.6*		*23.0-120*		*11/15/2017 20:00*	WG1041973
(S) Nitrobenzene-d5	*68.3*		*14.0-149*		*11/15/2017 20:00*	WG1041973
(S) 2-Fluorobiphenyl	*76.8*		*34.0-125*		*11/15/2017 20:00*	WG1041973

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.0676		1	11/13/2017 00:40	WG1041036

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	6.82		1.00	1	11/13/2017 00:18	WG1041041

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND		2.00	1	11/10/2017 16:50	WG1040853

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.49	T8	1	11/14/2017 08:21	WG1042084

Sample Narrative:

L949313-03 WG1042084: 6.49 at 19.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	75.5		10.0	1	11/14/2017 17:25	WG1042096

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0200	1	11/13/2017 10:05	WG1041187

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.05		2.00	1	11/13/2017 00:18	WG1041041
Barium	73.1		0.500	1	11/13/2017 00:18	WG1041041
Cadmium	ND		0.500	1	11/13/2017 00:18	WG1041041
Chromium	6.82		1.00	1	11/13/2017 00:18	WG1041041
Copper	9.27		2.00	1	11/13/2017 00:18	WG1041041
Lead	9.00		0.500	1	11/13/2017 00:18	WG1041041
Nickel	5.06		2.00	1	11/13/2017 00:18	WG1041041
Selenium	ND		2.00	1	11/13/2017 00:18	WG1041041
Silver	ND		1.00	1	11/13/2017 00:18	WG1041041
Zinc	36.9		5.00	1	11/13/2017 00:18	WG1041041

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	11/09/2017 14:30	WG1040785
Toluene	ND		0.00500	1	11/09/2017 14:30	WG1040785
Ethylbenzene	ND		0.000500	1	11/09/2017 14:30	WG1040785
Total Xylene	ND		0.00150	1	11/09/2017 14:30	WG1040785
TPH (GC/FID) Low Fraction	ND		0.100	1	11/09/2017 14:30	WG1040785

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	*97.3*		*77.0-120*		*11/09/2017 14:30*	WG1040785
(S) a,a,a-Trifluorotoluene(PID)	*88.5*		*75.0-128*		*11/09/2017 14:30*	WG1040785

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	10.3		8.00	2	11/11/2017 02:06	WG1041470
(S) o-Terphenyl	*59.2*		*18.0-148*		*11/11/2017 02:06*	WG1041470

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	J3	0.00600	1	11/15/2017 20:22	WG1041973
Acenaphthene	ND	J3	0.00600	1	11/15/2017 20:22	WG1041973
Acenaphthylene	ND	J3	0.00600	1	11/15/2017 20:22	WG1041973
Benzo(a)anthracene	ND	J3	0.00600	1	11/15/2017 20:22	WG1041973
Benzo(a)pyrene	ND	J3	0.00600	1	11/15/2017 20:22	WG1041973
Benzo(b)fluoranthene	ND	J3	0.00600	1	11/15/2017 20:22	WG1041973
Benzo(g,h,i)perylene	ND	J3	0.00600	1	11/15/2017 20:22	WG1041973
Benzo(k)fluoranthene	ND	J3	0.00600	1	11/15/2017 20:22	WG1041973
Chrysene	ND	J3	0.00600	1	11/15/2017 20:22	WG1041973
Dibenz(a,h)anthracene	ND	J3	0.00600	1	11/15/2017 20:22	WG1041973
Fluoranthene	ND	J3	0.00600	1	11/15/2017 20:22	WG1041973
Fluorene	ND	J3	0.00600	1	11/15/2017 20:22	WG1041973
Indeno(1,2,3-cd)pyrene	ND	J3	0.00600	1	11/15/2017 20:22	WG1041973
Naphthalene	ND		0.0200	1	11/15/2017 20:22	WG1041973
Phenanthrene	ND	J3	0.00600	1	11/15/2017 20:22	WG1041973
Pyrene	ND	J3	0.00600	1	11/15/2017 20:22	WG1041973
1-Methylnaphthalene	ND		0.0200	1	11/15/2017 20:22	WG1041973
2-Methylnaphthalene	ND		0.0200	1	11/15/2017 20:22	WG1041973
2-Chloronaphthalene	ND		0.0200	1	11/15/2017 20:22	WG1041973
(S) p-Terphenyl-d14	*63.9*		*23.0-120*		*11/15/2017 20:22*	WG1041973
(S) Nitrobenzene-d5	*65.1*		*14.0-149*		*11/15/2017 20:22*	WG1041973
(S) 2-Fluorobiphenyl	*72.4*		*34.0-125*		*11/15/2017 20:22*	WG1041973

Method Blank (MB)

(MB) R3264745-1 11/10/17 16:44

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chromium,Hexavalent	U		0.64	2.00

L949313-02 Original Sample (OS) • Duplicate (DUP)

(OS) L949313-02 11/10/17 16:48 • (DUP) R3264745-8 11/10/17 16:50

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chromium,Hexavalent	ND	0.000	1	0		20

L949781-07 Original Sample (OS) • Duplicate (DUP)

(OS) L949781-07 11/10/17 17:02 • (DUP) R3264745-9 11/10/17 17:02

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chromium,Hexavalent	ND	1.64	1	0		20

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

(LCS) R3264745-2 11/10/17 16:44 • (LCSD) R3264745-3 11/10/17 16:44

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	36.6	37.2	64	65	30-170			2	20

L949313-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L949313-01 11/10/17 16:45 • (MS) R3264745-4 11/10/17 16:46 • (MSD) R3264745-5 11/10/17 16:46

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	21.4	20.2	101	95	1	75-125			6	20

L949313-01 Original Sample (OS) • Duplicate (DUP)

(OS) L949313-01 11/14/17 08:21 • (DUP) R3265324-3 11/14/17 08:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.06	7.06	1	0.000		1

Sample Narrative:

OS: 7.06 at 20.4C

DUP: 7.06 at 19.4C

L949313-02 Original Sample (OS) • Duplicate (DUP)

(OS) L949313-02 11/14/17 08:21 • (DUP) R3265324-4 11/14/17 08:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	6.84	6.84	1	0.000		1

Sample Narrative:

OS: 6.84 at 19.5C

DUP: 6.84 at 19.6C

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

(LCS) R3265324-1 11/14/17 08:21 • (LCSD) R3265324-2 11/14/17 08:21

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	5.96	5.96	5.96	100	100	98.3-102			0.000	1

Sample Narrative:

LCS: 5.96 at 20.4C

LCSD: 5.96 at 20.4C

Method Blank (MB)

(MB) WG1042096-1 11/14/17 17:25

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	umhos/cm		umhos/cm	umhos/cm
Specific Conductance	U		10.0	10.0

L949313-01 Original Sample (OS) • Duplicate (DUP)

(OS) L949313-01 11/14/17 17:25 • (DUP) WG1042096-4 11/14/17 17:25

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	umhos/cm	umhos/cm		%		%
Specific Conductance	36.6	36.8	1	0.545		20

L949781-07 Original Sample (OS) • Duplicate (DUP)

(OS) L949781-07 11/14/17 17:25 • (DUP) WG1042096-5 11/14/17 17:25

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	umhos/cm	umhos/cm		%		%
Specific Conductance	61.7	61.9	1	0.324		20

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

(LCS) WG1042096-2 11/14/17 17:25 • (LCSD) WG1042096-3 11/14/17 17:25

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	559	562	560	101	100	85.0-115			0.357	20

Method Blank (MB)

(MB) R3265119-1 11/13/17 08:45

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Mercury	0.00649	J	0.0028	0.0200

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

(LCS) R3265119-2 11/13/17 08:48 • (LCSD) R3265119-5 11/13/17 13:21

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	0.261	0.257	87	86	80-120			1	20

L949313-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L949313-01 11/13/17 08:53 • (MS) R3265119-3 11/13/17 08:55 • (MSD) R3265119-4 11/13/17 08:58

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 %
Mercury	0.300	ND	0.263	0.222	82	68	1	75-125		J6	17	20

Method Blank (MB)

(MB) R3265014-1 11/12/17 23:17

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	0.204	J	0.19	0.500
Nickel	U		0.49	2.00
Selenium	U		0.74	2.00
Silver	U		0.28	1.00
Zinc	U		0.59	5.00

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

(LCS) R3265014-2 11/12/17 23:19 • (LCSD) R3265014-3 11/12/17 23:22

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	97.1	97.6	97	98	80-120			1	20
Barium	100	104	104	104	104	80-120			0	20
Cadmium	100	98.3	98.1	98	98	80-120			0	20
Chromium	100	98.5	98.6	99	99	80-120			0	20
Copper	100	101	101	101	101	80-120			0	20
Lead	100	98.0	97.9	98	98	80-120			0	20
Nickel	100	99.8	99.3	100	99	80-120			1	20
Selenium	100	97.8	98.0	98	98	80-120			0	20
Silver	20.0	18.2	18.1	91	91	80-120			0	20
Zinc	100	98.2	98.1	98	98	80-120			0	20

L948284-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L948284-08 11/12/17 23:24 • (MS) R3265014-6 11/12/17 23:32 • (MSD) R3265014-7 11/12/17 23:34

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 %
Arsenic	119	5.58	122	125	98	101	1	75-125			3	20
Barium	119	176	251	287	63	94	1	75-125	J6		13	20
Cadmium	119	ND	118	122	99	102	1	75-125			3	20
Chromium	119	16.8	125	130	92	96	1	75-125			4	20
Copper	119	13.8	137	140	104	106	1	75-125			2	20
Lead	119	9.41	128	131	100	102	1	75-125			2	20

L948284-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L948284-08 11/12/17 23:24 • (MS) R3265014-6 11/12/17 23:32 • (MSD) R3265014-7 11/12/17 23:34

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 %
Nickel	119	15.9	137	141	102	105	1	75-125			3	20
Selenium	119	ND	117	121	99	102	1	75-125			3	20
Silver	23.7	ND	22	22.6	93	95	1	75-125			3	20
Zinc	119	52.5	160	165	90	95	1	75-125			3	20

Method Blank (MB)

(MB) R3265169-3 11/09/17 11:33

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	0.000296	J	0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*102*			*77.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*94.6*			*75.0-128*

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

(LCS) R3265169-1 11/09/17 10:26 • (LCSD) R3265169-2 11/09/17 10:48

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	5.84	6.36	106	116	70.0-136			8.66	20
(S) a,a,a-Trifluorotoluene(FID)				*103*	*105*	*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)				*102*	*104*	*75.0-128*				

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

(LCS) R3265169-8 11/09/17 20:06 • (LCSD) R3265169-9 11/09/17 20:28

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	0.0500	0.0542	0.0515	108	103	71.0-121			5.06	20
Toluene	0.0500	0.0535	0.0503	107	101	72.0-120			6.19	20
Ethylbenzene	0.0500	0.0559	0.0527	112	105	76.0-121			5.92	20
Total Xylene	0.150	0.175	0.165	117	110	75.0-124			6.18	20
(S) a,a,a-Trifluorotoluene(FID)				*102*	*100*	*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)				*102*	*99.2*	*75.0-128*				

L949276-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L949276-01 11/09/17 12:39 • (MS) R3265169-4 11/09/17 18:38 • (MSD) R3265169-5 11/09/17 19:00

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 %
Benzene	0.0500	ND	0.617	0.628	49.4	50.2	25	10.0-146			1.65	29
Toluene	0.0500	ND	0.587	0.596	46.7	47.4	25	10.0-143			1.53	30
Ethylbenzene	0.0500	ND	0.609	0.619	48.7	49.6	25	10.0-147			1.65	31
Total Xylene	0.150	ND	1.88	1.89	49.8	50.1	25	10.0-149	J6	J6	0.637	30
(S) a,a,a-Trifluorotoluene(FID)					*102*	*104*		*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)					*101*	*101*		*75.0-128*				

L949276-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L949276-01 11/09/17 12:39 • (MS) R3265169-6 11/09/17 19:22 • (MSD) R3265169-7 11/09/17 19:44

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	62.4	67.6	45.4	49.2	25	10.0-147			8.00	30
(S) a,a,a-Trifluorotoluene(FID)					*103*	*103*		*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)					*111*	*112*		*75.0-128*				

Method Blank (MB)

(MB) R3264790-1 11/10/17 23:32

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	*53.3*			*18.0-148*

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

(LCS) R3264790-2 11/10/17 23:43 • (LCSD) R3264790-3 11/10/17 23:54

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	48.7	46.7	81.2	77.8	50.0-150			4.24	20
(S) o-Terphenyl				*70.3*	*70.6*	*18.0-148*				

L949208-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L949208-03 11/11/17 00:05 • (MS) R3264790-4 11/11/17 00:16 • (MSD) R3264790-5 11/11/17 00:27

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) High Fraction	60.0	5.37	54.9	52.7	82.6	78.9	1	50.0-150			4.20	20
(S) o-Terphenyl					*72.7*	*69.4*		*18.0-148*				

Method Blank (MB)

(MB) R3266036-3 11/15/17 16:00

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	0.000728	J	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) Nitrobenzene-d5	*60.0*			*14.0-149*
(S) 2-Fluorobiphenyl	*74.3*			*34.0-125*
(S) p-Terphenyl-d14	*63.6*			*23.0-120*

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

(LCS) R3266036-1 11/15/17 15:16 • (LCSD) R3266036-2 11/15/17 15:38

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	0.0454	0.0569	56.8	71.1	50.0-125		J3	22.4	20
Acenaphthene	0.0800	0.0449	0.0559	56.1	69.9	52.0-120		J3	22.0	20
Acenaphthylene	0.0800	0.0453	0.0560	56.6	70.0	51.0-120		J3	21.2	20
Benzo(a)anthracene	0.0800	0.0440	0.0543	55.0	67.9	46.0-121		J3	21.0	20
Benzo(a)pyrene	0.0800	0.0380	0.0514	47.5	64.3	42.0-121		J3	30.1	20
Benzo(b)fluoranthene	0.0800	0.0415	0.0522	51.9	65.2	42.0-123		J3	22.7	20
Benzo(g,h,i)perylene	0.0800	0.0462	0.0586	57.8	73.2	43.0-128		J3	23.6	20
Benzo(k)fluoranthene	0.0800	0.0477	0.0586	59.6	73.3	45.0-128		J3	20.5	20
Chrysene	0.0800	0.0446	0.0552	55.7	69.0	48.0-127		J3	21.2	20
Dibenz(a,h)anthracene	0.0800	0.0477	0.0598	59.6	74.7	43.0-132		J3	22.4	20
Fluoranthene	0.0800	0.0496	0.0610	62.0	76.3	49.0-129		J3	20.7	20

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

(LCS) R3266036-1 11/15/17 15:16 • (LCSD) R3266036-2 11/15/17 15:38

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	0.0454	0.0556	56.8	69.5	50.0-120		J3	20.2	20
Indeno(1,2,3-cd)pyrene	0.0800	0.0468	0.0584	58.5	73.0	44.0-131		J3	22.0	20
Naphthalene	0.0800	0.0451	0.0546	56.3	68.2	50.0-120			19.1	20
Phenanthrene	0.0800	0.0430	0.0536	53.7	67.0	48.0-120		J3	22.0	20
Pyrene	0.0800	0.0408	0.0521	50.9	65.1	48.0-135		J3	24.4	20
1-Methylnaphthalene	0.0800	0.0467	0.0566	58.3	70.7	52.0-122			19.2	20
2-Methylnaphthalene	0.0800	0.0455	0.0551	56.9	68.9	52.0-120			19.1	20
2-Chloronaphthalene	0.0800	0.0464	0.0566	58.0	70.8	50.0-120			20.0	20
(S) Nitrobenzene-d5				*63.3*	*69.3*	*14.0-149*				
(S) 2-Fluorobiphenyl				*65.6*	*75.3*	*34.0-125*				
(S) p-Terphenyl-d14				*56.4*	*66.0*	*23.0-120*				

L949374-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L949374-02 11/15/17 16:44 • (MS) R3266036-4 11/15/17 17:05 • (MSD) R3266036-5 11/15/17 17:27

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	0.0989	ND	0.0584	0.0748	59.0	75.6	1	20.0-136		J3	24.7	24
Acenaphthene	0.0989	ND	0.0561	0.0711	56.7	71.9	1	29.0-124		J3	23.6	20
Acenaphthylene	0.0989	ND	0.0563	0.0721	56.9	72.8	1	35.0-120		J3	24.6	20
Benzo(a)anthracene	0.0989	ND	0.0563	0.0678	53.8	65.4	1	13.0-132			18.5	27
Benzo(a)pyrene	0.0989	ND	0.0583	0.0732	54.2	69.3	1	14.0-138			22.7	27
Benzo(b)fluoranthene	0.0989	ND	0.0553	0.0695	51.2	65.6	1	10.0-129			22.8	31
Benzo(g,h,i)perylene	0.0989	ND	0.0611	0.0767	56.7	72.5	1	10.0-133			22.7	30
Benzo(k)fluoranthene	0.0989	ND	0.0568	0.0690	55.2	67.6	1	15.0-131			19.5	27
Chrysene	0.0989	ND	0.0573	0.0724	54.6	69.9	1	15.0-137			23.4	25
Dibenz(a,h)anthracene	0.0989	ND	0.0608	0.0750	61.4	75.8	1	15.0-132			20.9	27
Fluoranthene	0.0989	ND	0.0641	0.0800	60.9	77.0	1	13.0-139			22.1	28
Fluorene	0.0989	ND	0.0567	0.0709	57.3	71.6	1	27.0-122		J3	22.2	22
Indeno(1,2,3-cd)pyrene	0.0989	ND	0.0600	0.0742	57.4	71.7	1	11.0-133			21.2	29
Naphthalene	0.0989	ND	0.0536	0.0699	54.1	70.6	1	18.0-136		J3	26.4	21
Phenanthrene	0.0989	ND	0.0553	0.0682	55.9	69.0	1	15.0-133			21.0	25
Pyrene	0.0989	ND	0.0536	0.0671	49.9	63.5	1	11.0-146			22.3	29
1-Methylnaphthalene	0.0989	ND	0.0563	0.0725	57.0	73.3	1	24.0-137		J3	25.1	22
2-Methylnaphthalene	0.0989	ND	0.0547	0.0700	55.3	70.7	1	23.0-136		J3	24.5	22
2-Chloronaphthalene	0.0989	ND	0.0570	0.0729	57.6	73.7	1	36.0-120		J3	24.5	20
(S) Nitrobenzene-d5					*57.4*	*69.6*		*14.0-149*				
(S) 2-Fluorobiphenyl					*65.9*	*76.9*		*34.0-125*				
(S) p-Terphenyl-d14					*57.9*	*66.6*		*23.0-120*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(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.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
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.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
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.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
T8	Sample(s) received past/too close to holding time expiration.

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 [1 4]	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		

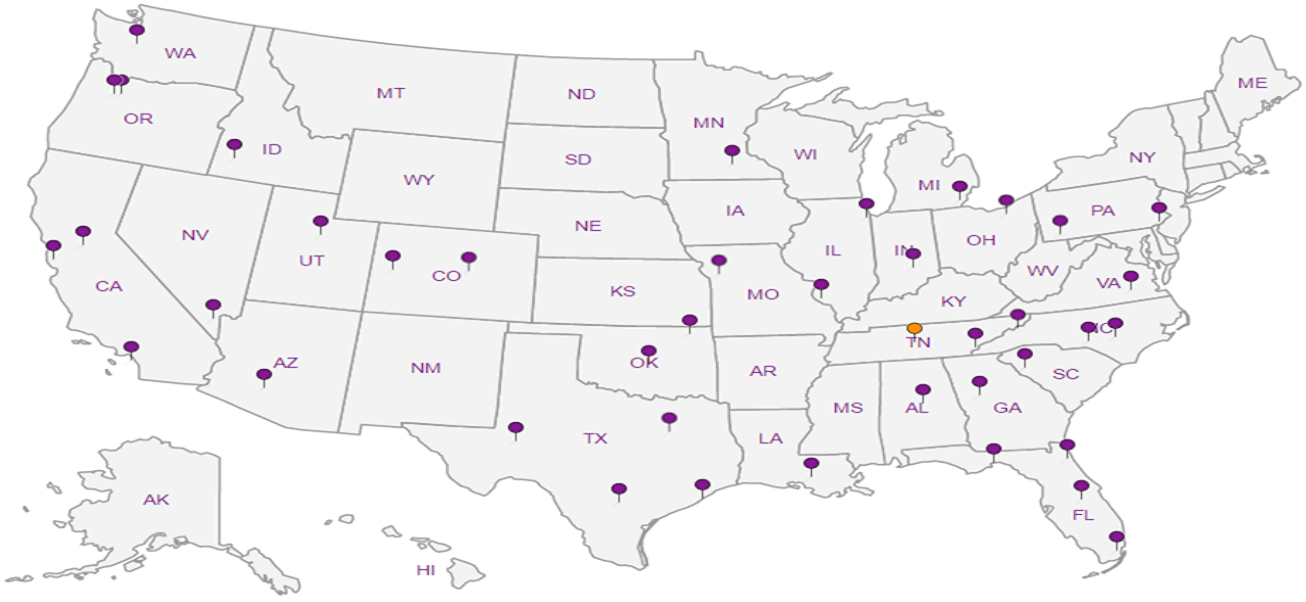
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	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.**



Churchill Energy, Inc.
8177 S. Norfolk St.
Englewood, CO 80112

Billing Information:

Report to: **Gary Kluksdahl**

Email To: **gary.kluksdahl@comcast.net**

Project Description: Champlin Limon 1-19/2-19

City/State Collected: Limon Co.

Phone: **303-840-7000**
Fax:

Client Project #

Lab Project #

Collected by (print): Tim L Rogers

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: Accoon Elan

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEX/GRO - 4oz Soil Jar	PAHSIM/DRO - 4oz Soil Jar	CR6/Metals - 4oz Soil Jar	SAR, pH, SPCON - 8oz Soil Jar	Remarks	Sample # (lab only)
1) N39° 14' 57.34" W103° 42' 42.62"		SS	0'6"	11-06-17	11AM	4	X	X	X	X		-01
2) N39° 15' 10.29" W103° 42' 43.75"		SS	0'6"	11-06-17	11AM	4	X	X	X	X		02
3) N39° 15' 01.70" W103° 42' 44.17"		SS	0'6"	11-06-17	11AM	4	X	X	X	X		03
		SS									–	
		SS										
		SS										
		SS										
		SS										
		SS										
		SS										

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# L949313

M066

Acctnum: **CHUENGECO**
Template:
Prelogin:
TSR: **Shane Gambill**
PB:
Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS X FedEx __ Courier __ _____

Tracking # 4094 8307 6662

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 0.2 °C Bottles Received: 12
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 11-8-17 Time: 0845

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Jeremy W. Watkins

ESC Lab Sciences
Non-Conformance Form

Login #: L949313	Client: CHUENGECO	Date: 11/08/17	Evaluated by: Jeremy

Non-Conformance (check applicable items)

	Sample Integrity		Chain of Custody Clarification		
	Parameter(s) past holding time		Login Clarification Needed		**If Broken Container:**
	Improper temperature		Chain of custody is incomplete		Insufficient packing material around container
	Improper container type	x	Please specify Metals requested.		Insufficient packing material inside cooler
	Improper preservation		Please specify TCLP requested.		Improper handling by carrier (FedEx / UPS / Courie
	Insufficient sample volume.		Received additional samples not listed on coc.		Sample was frozen
	Sample is biphasic.		Sample ids on containers do not match ids on coc		Container lid not intact
	Vials received with headspace.		Trip Blank not received.		**If no Chain of Custody:**
	Broken container		Client did not "X" analysis.		Received by:
	Broken container:		Chain of Custody is missing		Date/Time:
	Sufficient sample remains				Temp./Cont. Rec./pH:
					Carrier:
					Tracking#

Login Comments: What Metals?

Client informed by:		Call		Email		Voice Mail		Date: 11/08/17	Time:
TSR Initials: CSG	Client Contact:								

Login Instructions:

Metals = 910 metals MRCRA8 + Cu, Ni, Zn