

January 27, 2017

Gallatin Water Department

Sample Delivery Group: L884462
Samples Received: 01/18/2017
Project Number: 2927B
Description: Drinking Water - Inorganic Chemical Monitoring
Site: 0253
Report To: Mr. David Kellogg
239 Hancock Street
Gallatin, TN 37066

Entire Report Reviewed By:



Rodney Shinbaum
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.



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SAMPLE SUMMARY



RAW WATER L884462-01 DW

Collected by: T. Everett
 Collected date/time: 01/18/17 10:15
 Received date/time: 01/18/17 11:05

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-1997	WG944938	1	01/22/17 03:39	01/22/17 07:22	JM
Mercury by Method 245.1	WG946060	1	01/24/17 12:14	01/24/17 19:25	NJB
Metals (ICP) by Method 200.7	WG944806	1	01/21/17 08:47	01/23/17 13:13	CCE
Metals (ICPMS) by Method 200.8	WG944521	1	01/21/17 08:53	01/23/17 22:00	VSS
Metals (ICPMS) by Method 200.8	WG944521	1	01/21/17 08:53	01/24/17 11:42	LAT
Wet Chemistry by Method 2120B	WG944415	1	01/20/17 09:47	01/20/17 09:47	MHM
Wet Chemistry by Method 2150 B-2011	WG944414	1	01/18/17 17:12	01/18/17 17:12	MHM
Wet Chemistry by Method 300.0	WG944511	1	01/20/17 02:25	01/20/17 02:25	KCF
Wet Chemistry by Method 335.4	WG946724	1	01/25/17 22:16	01/26/17 18:18	ASK
Wet Chemistry by Method 5540 C-2000	WG944757	.25	01/20/17 07:30	01/20/17 08:27	MHM

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. 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.

Rodney Shinbaum
Technical Service Representative

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Additional Information

Analyte	Result	Units	Reference Limit
pH (On Site)	7.4		
Entry Point	A		
Sample Type	S		

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Gravimetric Analysis by Method 2540 C-1997

Analyte	Result	Qualifier	Det. Limit	Reference Limit	Dilution	Analysis date / time	Batch	Analyst
Dissolved Solids	127		10.0	500	1	01/22/2017 07:22	WG944938	JM

Wet Chemistry by Method 2120B

Analyte	Result	Qualifier	Det. Limit	Reference Limit	Dilution	Analysis date / time	Batch	Analyst
Color	20.0		1.00	15	1	01/20/2017 09:47	WG944415	MHM

Wet Chemistry by Method 2150 B-2011

Analyte	Result	Qualifier	Det. Limit	Reference Limit	Dilution	Analysis date / time	Batch	Analyst
Odor	1.00		1.00	3	1	01/18/2017 17:12	WG944414	MHM

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	Det. Limit	Reference Limit	Dilution	Analysis date / time	Batch	Analyst
Chloride	4.65		1.00	250	1	01/20/2017 02:25	WG944511	KCF
Fluoride	ND		0.100	2	1	01/20/2017 02:25	WG944511	KCF
Sulfate	20.0		5.00	250	1	01/20/2017 02:25	WG944511	KCF

Wet Chemistry by Method 335.4

Analyte	Result	Qualifier	Det. Limit	Reference Limit	Dilution	Analysis date / time	Batch	Analyst
Cyanide	ND		0.00500	0.20	1	01/26/2017 18:18	WG946724	ASK

Wet Chemistry by Method 5540 C-2000

Analyte	Result	Qualifier	Det. Limit	Reference Limit	Dilution	Analysis date / time	Batch	Analyst
MBAS	ND		0.0250	0.50	.25	01/20/2017 08:27	WG944757	MHM

Mercury by Method 245.1

Analyte	Result	Qualifier	Det. Limit	Reference Limit	Dilution	Analysis date / time	Batch	Analyst
Mercury	ND		0.000200	0.0020	1	01/24/2017 19:25	WG946060	NJB

Metals (ICP) by Method 200.7

Analyte	Result	Qualifier	Det. Limit	Reference Limit	Dilution	Analysis date / time	Batch	Analyst
Aluminum	ND		0.200	0.20	1	01/23/2017 13:13	WG944806	CCE
Barium	0.0240		0.00500	2	1	01/23/2017 13:13	WG944806	CCE
Chromium	ND		0.0100	0.10	1	01/23/2017 13:13	WG944806	CCE
Copper	0.0445		0.0100	1	1	01/23/2017 13:13	WG944806	CCE
Iron	0.147		0.100	0.30	1	01/23/2017 13:13	WG944806	CCE
Manganese	0.0386		0.0100	0.05	1	01/23/2017 13:13	WG944806	CCE
Nickel	ND		0.0100	0.10	1	01/23/2017 13:13	WG944806	CCE
Silver	ND		0.00500	0.10	1	01/23/2017 13:13	WG944806	CCE



Metals (ICP) by Method 200.7

Analyte	Result	Qualifier	Det. Limit	Reference Limit	Dilution	Analysis	Batch	Analyst
	mg/l		mg/l	mg/l		date / time		
Sodium	5.08		1.00		1	01/23/2017 13:13	WG944806	CCE
Zinc	ND		0.0500	5	1	01/23/2017 13:13	WG944806	CCE

1 Cp

2 Tc

Metals (ICPMS) by Method 200.8

Analyte	Result	Qualifier	Det. Limit	Reference Limit	Dilution	Analysis	Batch	Analyst
	mg/l		mg/l	mg/l		date / time		
Antimony	ND		0.00100	0.0060	1	01/23/2017 22:00	WG944521	VSS
Arsenic	ND		0.00100	0.01	1	01/24/2017 11:42	WG944521	LAT
Beryllium	ND		0.00100	0.0040	1	01/23/2017 22:00	WG944521	VSS
Cadmium	ND		0.00100	0.0050	1	01/23/2017 22:00	WG944521	VSS
Selenium	ND		0.00100	0.05	1	01/24/2017 11:42	WG944521	LAT
Thallium	ND		0.00100	0.0020	1	01/24/2017 11:42	WG944521	LAT

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3192595-1 01/22/17 07:22

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2.82	10.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

L884458-01 Original Sample (OS) • Duplicate (DUP)

(OS) L884458-01 01/22/17 07:22 • (DUP) R3192595-4 01/22/17 07:22

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	195	192	1	1.55		5

⁷Gl

⁸Al

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

(LCS) R3192595-2 01/22/17 07:22 • (LCSD) R3192595-3 01/22/17 07:22

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Dissolved Solids	8800	8260	8480	93.9	96.4	85.0-115			2.63	5

⁹Sc



L884458-01 Original Sample (OS) • Duplicate (DUP)

(OS) L884458-01 01/20/17 09:47 • (DUP) WG944415-1 01/20/17 09:47

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	pcu	pcu		%		%
Color	1.00	1.00	1	0.000		20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) WG944414-1 01/18/17 17:12

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	T.O.N.		T.O.N.	T.O.N.
Odor	1.00		0.333	1.00

L884458-01 Original Sample (OS) • Duplicate (DUP)

(OS) L884458-01 01/18/17 17:12 • (DUP) WG944414-2 01/18/17 17:12

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	T.O.N.	T.O.N.		%		%
Odor	1.00	1.00	1	0.000		20

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3191795-1 01/19/17 17:43

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Chloride	U		0.0519	1.00
Fluoride	U		0.0099	0.100
Sulfate	U		0.0774	5.00

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L884477-01 Original Sample (OS) • Duplicate (DUP)

(OS) L884477-01 01/19/17 21:12 • (DUP) R3191795-6 01/19/17 21:26

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Chloride	10.4	10.5	1	0		20
Fluoride	0.399	0.400	1	0		20
Sulfate	10.4	10.4	1	0		20

L884592-01 Original Sample (OS) • Duplicate (DUP)

(OS) L884592-01 01/19/17 22:11 • (DUP) R3191795-7 01/19/17 23:26

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Chloride	28.4	28.5	1	0		20
Fluoride	0.214	0.202	1	6		20
Sulfate	32.2	32.3	1	0		20

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

(LCS) R3191795-2 01/19/17 17:58 • (LCSD) R3191795-3 01/19/17 18:12

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Chloride	40.0	39.3	39.2	98	98	90-110			0	20
Fluoride	8.00	7.89	7.89	99	99	90-110			0	20
Sulfate	40.0	39.2	39.1	98	98	90-110			0	20

L884316-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L884316-02 01/19/17 18:57 • (MS) R3191795-5 01/19/17 19:12

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	mg/l	mg/l	mg/l	%		%	
Fluoride	5.00	8.70	13.1	87	1	80-120	E



L884601-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L884601-01 01/20/17 00:55 • (MS) R3191795-8 01/20/17 01:10 • (MSD) R3191795-9 01/20/17 01:25

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50.0	23.1	73.7	73.9	101	102	1	80-120			0	20
Fluoride	5.00	ND	5.12	5.18	102	104	1	80-120			1	20

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Method Blank (MB)

(MB) R3193100-1 01/26/17 18:11

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Cyanide	U		0.0018	0.00500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L884958-01 Original Sample (OS) • Duplicate (DUP)

(OS) L884958-01 01/26/17 18:24 • (DUP) R3193100-6 01/26/17 18:25

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Cyanide	ND	0.00394	1	0		20

L885180-06 Original Sample (OS) • Duplicate (DUP)

(OS) L885180-06 01/26/17 18:36 • (DUP) R3193100-7 01/26/17 18:37

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Cyanide	ND	0.000	1	0		20

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

(LCS) R3193100-2 01/26/17 18:12 • (LCSD) R3193100-3 01/26/17 18:13

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Cyanide	0.100	0.106	0.108	106	108	90-110			2	20

L884893-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L884893-02 01/26/17 18:19 • (MS) R3193100-4 01/26/17 18:20 • (MSD) R3193100-5 01/26/17 18:23

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Cyanide	0.200	ND	0.189	0.190	95	95	1	90-110			1	20



Method Blank (MB)

(MB) R3191808-1 01/20/17 08:22

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
MBAS	U		0.019	0.100

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

L884458-01 Original Sample (OS) • Duplicate (DUP)

(OS) L884458-01 01/20/17 08:26 • (DUP) R3191808-4 01/20/17 08:26

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
MBAS	ND	0.000	.25	0		20

⁷ Gl

⁸ Al

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

(LCS) R3191808-2 01/20/17 08:23 • (LCSD) R3191808-3 01/20/17 08:23

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
MBAS	1.00	0.929	0.909	93	91	90-110			2	20

⁹ Sc

L884767-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L884767-02 01/20/17 08:29 • (MS) R3191808-5 01/20/17 08:30 • (MSD) R3191808-6 01/20/17 08:30

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
MBAS	1.00	U	0.946	0.961	95	96	1	90-110			2	20



Method Blank (MB)

(MB) R3192564-1 01/24/17 19:02

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Mercury	U		0.000049	0.000200

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

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

(LCS) R3192564-2 01/24/17 19:04 • (LCSD) R3192564-3 01/24/17 19:06

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Mercury	0.00300	0.00297	0.00286	99	95	85-115			4	20

L884958-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L884958-01 01/24/17 19:09 • (MS) R3192564-4 01/24/17 19:11 • (MSD) R3192564-5 01/24/17 19:13

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Mercury	0.00300	ND	0.00306	0.00310	102	103	1	70-130			1	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3192216-1 01/23/17 12:49

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Aluminum	0.0292	J	0.0273	0.200
Barium	U		0.001	0.00500
Chromium	U		0.0018	0.0100
Copper	U		0.007	0.0100
Iron	U		0.0282	0.100
Manganese	U		0.002	0.0100
Nickel	U		0.0058	0.0100
Silver	U		0.0027	0.00500
Sodium	U		0.0939	1.00
Zinc	U		0.0034	0.0500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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

(LCS) R3192216-3 01/23/17 12:54 • (LCSD) R3192216-4 01/23/17 12:56

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Aluminum	10.0	10.3	10.2	103	102	85-115			1	20
Barium	1.00	1.05	1.03	105	103	85-115			1	20
Chromium	1.00	1.03	1.01	103	101	85-115			3	20
Copper	1.00	1.02	0.998	102	100	85-115			2	20
Iron	10.0	10.1	9.92	101	99	85-115			2	20
Manganese	1.00	0.992	0.977	99	98	85-115			1	20
Nickel	1.00	1.04	1.03	104	103	85-115			1	20
Silver	0.200	0.197	0.194	99	97	85-115			2	20
Sodium	10.0	10.1	9.93	101	99	85-115			2	20
Zinc	1.00	1.06	1.04	106	104	85-115			1	20

L884458-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L884458-01 01/23/17 12:59 • (MS) R3192216-6 01/23/17 13:05 • (MSD) R3192216-7 01/23/17 13:07

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Aluminum	10.0	ND	10.2	10.8	102	108	1	75-125			6	20
Barium	1.00	0.0211	1.05	1.11	103	109	1	75-125			6	20
Chromium	1.00	ND	1.01	1.07	101	107	1	75-125			5	20
Copper	1.00	ND	1.00	1.06	100	106	1	75-125			6	20
Iron	10.0	ND	9.91	10.5	99	105	1	75-125			6	20
Manganese	1.00	ND	0.971	1.02	97	102	1	75-125			5	20
Nickel	1.00	ND	1.03	1.09	103	109	1	75-125			6	20



[L884462-01](#)

L884458-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L884458-01 01/23/17 12:59 • (MS) R3192216-6 01/23/17 13:05 • (MSD) R3192216-7 01/23/17 13:07

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Silver	0.200	ND	0.195	0.205	97	103	1	75-125			5	20
Sodium	10.0	10.6	20.7	22.6	101	120	1	75-125			9	20
Zinc	1.00	ND	1.04	1.09	104	109	1	75-125			5	20

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3192306-1 01/23/17 19:49

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Antimony	U		0.000754	0.00100
Beryllium	U		0.00028	0.00100
Cadmium	U		0.00022	0.00100

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Method Blank (MB)

(MB) R3192467-1 01/24/17 11:14

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Arsenic	U		0.00017	0.00100
Selenium	U		0.00032	0.00100
Thallium	U		0.00028	0.00100

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

(LCS) R3192306-3 01/23/17 19:59 • (LCSD) R3192306-4 01/23/17 20:05

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Antimony	0.0579	0.0518	0.0516	89	89	85-115			0	20
Beryllium	0.0500	0.0477	0.0538	95	108	85-115			12	20
Cadmium	0.0500	0.0488	0.0473	98	95	85-115			3	20

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

(LCS) R3192467-3 01/24/17 11:21 • (LCSD) R3192467-4 01/24/17 11:24

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Arsenic	0.0500	0.0485	0.0477	97	95	85-115			2	20
Selenium	0.0500	0.0501	0.0496	100	99	85-115			1	20
Thallium	0.0500	0.0456	0.0481	91	96	85-115			5	20

L884190-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L884190-01 01/23/17 20:10 • (MS) R3192306-5 01/23/17 20:16 • (MSD) R3192306-6 01/23/17 20:21

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Antimony	0.0500	ND	0.0531	0.0514	106	103	1	70-130			3	20
Beryllium	0.0500	ND	0.0426	0.0451	85	90	1	70-130			6	20



[L884462-01](#)

L884190-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L884190-01 01/23/17 20:10 • (MS) R3192306-5 01/23/17 20:16 • (MSD) R3192306-6 01/23/17 20:21

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Cadmium	0.0500	ND	0.0472	0.0466	94	93	1	70-130			1	20

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



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.
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.
Rec.	Recovery.

Qualifier Description

E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



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
Connecticut	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		

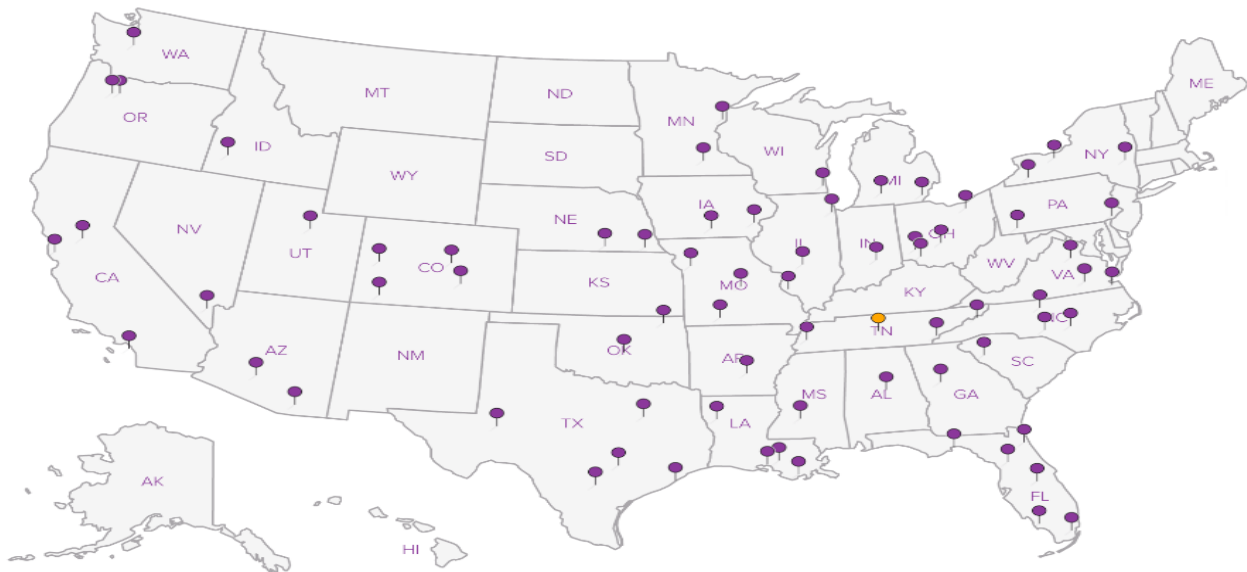
Third Party & Federal Accreditations

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.**



Gallatin Water Department

239 Hancock Street
Gallatin, TN 37066

Billing Information & Quote Number:

Accounts Payable
239 Hancock Street
Gallatin, TN 37066

Report to:
Mr. David Kellogg

Email To: dkellogg@gallatinutilities.com,
bbaggett@gallatinutilities.com,

Project
Description: Water Sample - IOC's

City/State
Collected: *Gallatin, TN*

Phone: 615-451-5922
Fax:

Client Project #
2927B

Lab Project #
GALL01-IOCS

Collected by (print):
J. Everett

Site/Facility ID #
0253

P.O. #

Collected by (signature):
J. Everett

Rush? (Lab MUST Be Notified)
 Same Day200%
 Next Day100%
 Two Day50%
 Three Day25%

Date Results Needed

Email? No Yes
FAX? No Yes

No. of
Cntrs

Immediately
Packed on Ice N Y

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CN 250mlHDPEAmb-NaOH	Chloride/Sulfate 1L-HDPE-NoPres	Color/TDS 1L-HDPE-NoPres	MBAS 1L-HDPE-NoPres	Metals 250mlHDPE-HNO3	ODOR 250mlAmb-NoPres						
ENTRY POINT	Grab	DW Raw		1-18-17	10:15AM	6	X	X	X	X	X	X						

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other
 Remarks: Please record your on-site pH 7.4 *Surface - Raw Water*

pH _____ Temp _____
Flow _____ Other CH

Relinquished by: (Signature) <i>J. Everett</i>	Date: 1-18-17	Time: 10:35 AM	Received by: (Signature) <i>Chris Brown</i>	Samples returned via: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/> _____	Hold #
Relinquished by: (Signature) <i>Chris Brown</i>	Date: 1-18-17	Time: 11:05 AM	Received by: (Signature) <i>MW</i>	Temp: 3.1 °C Bottles Received: 6	Condition: (lab use only) <i>once</i>
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1-18-17 Time: 11:05	COC Seal Intact: <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA pH Checked: <u>7.4</u> NCF: <u>7.12</u>

Chain of Custody Page ___ of ___



L.A.B S.C.I.E.N.C.E.S

YOUR LAB OF CHOICE

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



L# 1065

Acctnum: GALL01
Template: T3816
Prelogin: P584649
TSR: 530 - Rodney Shinbaum
PB: 1-13-17
Shipped Via: **FedEX Ground**



Cooler Receipt Form

Client: <u>GALLOI</u>	SDG# <u>2964462</u>		
Cooler Received/Opened On: <u>1/18/17</u>	Temperature Upon Receipt: <u>3-1 °C</u>		
Received By: <u>Michael Witherspoon</u>			
Signature: <u>MWot</u>			
Receipt Check List			
	Yes	No	N/A
Were custody seals on outside of cooler and intact?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Were custody papers properly filled out?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Did all bottles arrive in good condition?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Were correct bottles used for the analyses requested?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Was sufficient amount of sample sent in each bottle?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)		<input checked="" type="checkbox"/>	<input type="checkbox"/>
If applicable, was an observable VOA headspace present?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Non Conformance Generated. (If yes see attached NCF)		<input checked="" type="checkbox"/>	<input type="checkbox"/>