



PWS\_1120014\_AC\_20201208\_Analysis Report  
LCRA Environmental Laboratory Services  
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December 18, 2020

MICHAEL RAWSON  
PO BOX 1160  
SULPHUR SPRINGS, TX 75483

RE: Final Analytical Report Q2049090

Attn: MICHAEL RAWSON

Enclosed are the analytical results for sample(s) received by LCRA Environmental Laboratory Services. Results reported herein conform to the most current NELAP standards, where applicable, unless otherwise narrated in the body of the report. This final report provides results related only to the sample(s) as received for the above referenced work order.

Thank you for selecting ELS for your analytical needs. If you have any questions regarding this report, please contact us at (512) 730-6022. We look forward to assisting you again.

Authorized for release by:

Bhanu Acharya  
Account Manager  
bhanu.acharya@lcra.org



Enclosures:



## Sample Summary

Lab ID	Sample ID	Matrix	Method	Date Collected	Date Received
Q2049090001	2061488	DW	552.2 Haloacetic Acids by GC	12/8/2020 14:52	12/10/2020 09:30
Q2049090001	2061488	DW	E524.2 Volatiles by GC/MS	12/8/2020 14:52	12/10/2020 09:30
Q2049090002	2061489	DW	552.2 Haloacetic Acids by GC	12/8/2020 15:09	12/10/2020 09:30
Q2049090002	2061489	DW	E524.2 Volatiles by GC/MS	12/8/2020 15:09	12/10/2020 09:30

## Report Definitions

- MRL - Minimum Reporting Limit**
- LOD - Limit of Detection**
- ML - Maximum Limit - Client Specified**
- MCL - Maximum Contaminant Level**
- MDL - Method Detection Limit**
- LOQ - Limit of Quantitation - Client Specified**
- DF - Dilution Factor**
- Qual - Qualifier**
- (S) - Surrogate Spike**
- QC Qual - red font indicates Result Value outside acceptable range**
- B- Analyte detected in method blank**
- S - Spike recovery outside limit**
- R - RPD outside duplicate precision limit**
- J - Analyte detected below quantitation limit**
- RPD - Relative Percent Difference**
- SL - Spike Recovery Low**
- SH - Spike Recovery High**



## Project Summary

### Sample Analysis Comments

**Lab ID:** Q2049090001

**Sample ID:** 2061488

- Not Accredited - Bromochloroacetic Acid
- Not Accredited - Bromodichloromethane
- Not Accredited - Bromoform
- Not Accredited - Chloroform
- Not Accredited - Dibromoacetic Acid
- Not Accredited - Dibromochloromethane
- Not Accredited - Dichloroacetic Acid
- Not Accredited - Monobromoacetic Acid
- Not Accredited - Monochloroacetic Acid
- Not Accredited - Trichloroacetic acid

**Lab ID:** Q2049090002

**Sample ID:** 2061489

- Not Accredited - Bromochloroacetic Acid
- Not Accredited - Bromodichloromethane
- Not Accredited - Bromoform
- Not Accredited - Chloroform
- Not Accredited - Dibromoacetic Acid
- Not Accredited - Dibromochloromethane
- Not Accredited - Dichloroacetic Acid
- Not Accredited - Monobromoacetic Acid
- Not Accredited - Monochloroacetic Acid
- Not Accredited - Trichloroacetic acid



## Analytical Results

Lab ID: Q2049090001	Date Received: 12/10/2020 09:30	Matrix: Drinking Water
Sample ID: 2061488	Date Collected: 12/8/2020 14:52	Sample Type: SAMPLE
Project ID: DRINKING WATER PROGRAM	Location: 145 CR 4701, SULPHUR SPRINGS	
Facility: DS01	Client ID: TX1120014	
Sample Point: DBP2-01		

Parameter	Results Units	MRL	LOD	MCL	DF	Prepared	By	Analyzed	By	Qual
<b>HALOACETIC ACIDS (552.2 Haloacetic Acids by GC)</b>										
Bromochloroacetic Acid	2.00 ug/L	1.00	0.500		1	12/11/20 13:40	KGL	12/12/20 02:42	MF	*
Dibromoacetic Acid	<1.00 ug/L	1.00	0.500		1	12/11/20 13:40	KGL	12/12/20 02:42	MF	*
Dichloroacetic Acid	8.00 ug/L	1.00	0.500		1	12/11/20 13:40	KGL	12/12/20 02:42	MF	*
Monobromoacetic Acid	<1.00 ug/L	1.00	0.500		1	12/11/20 13:40	KGL	12/12/20 02:42	MF	*
Monochloroacetic Acid	2.00 ug/L	1.00	0.500		1	12/11/20 13:40	KGL	12/12/20 02:42	MF	*
Total Regulated HAA	16.0 ug/L	1.00	0.500	60		12/11/20 13:40	KGL	12/12/20 02:42	MF	
Trichloroacetic acid	6.00 ug/L	1.00	0.500		1	12/11/20 13:40	KGL	12/12/20 02:42	MF	*

### Surrogate(s)

Parameter	Units	% Spike Recovery	Control Limits %
2,3-Dibromopropionic acid (S)	%	112	70 - 130

### Volatiles (E524.2 Volatiles by GC/MS)

Parameter	Results Units	MRL	LOD	MCL	DF	Prepared	By	Analyzed	By	Qual
Chloroform	11.5 ug/L	1.00	0.500		1			12/10/20 18:49	MH	*
Bromodichloromethane	6.23 ug/L	1.00	0.500		1			12/10/20 18:49	MH	*
Dibromochloromethane	1.65 ug/L	1.00	0.500		1			12/10/20 18:49	MH	*
Bromoform	<1.00 ug/L	1.00	0.500		1			12/10/20 18:49	MH	*
Total Trihalomethanes	19.4 ug/L	1.00	0.500	80				12/10/20 18:49	MH	

### Surrogate(s)

Parameter	Units	% Spike Recovery	Control Limits %
1,2-Dichlorobenzene-d4 (S)	%	97.8	70 - 130
4-Bromofluorobenzene (S)	%	88	70 - 130



## Analytical Results (cont.)

<b>Lab ID:</b> Q2049090002	<b>Date Received:</b> 12/10/2020 09:30	<b>Matrix:</b> Drinking Water
<b>Sample ID:</b> 2061489	<b>Date Collected:</b> 12/8/2020 15:09	<b>Sample Type:</b> SAMPLE
<b>Project ID:</b> DRINKING WATER PROGRAM	<b>Location:</b> 6839 HWY 11 W, SULPHUR SPRINGS	
<b>Facility:</b> DS01	<b>Client ID:</b> TX1120014	
<b>Sample Point:</b> DBP2-02		

Parameter	Results Units	MRL	LOD	MCL	DF	Prepared	By	Analyzed	By	Qual
<b>HALOACETIC ACIDS (552.2 Haloacetic Acids by GC)</b>										
Bromochloroacetic Acid	2.00 ug/L	1.00	0.500		1	12/11/20 13:40	KGL	12/12/20 02:58	MF	*
Dibromoacetic Acid	7.00 ug/L	1.00	0.500		1	12/11/20 13:40	KGL	12/12/20 02:58	MF	*
Dichloroacetic Acid	<1.00 ug/L	1.00	0.500		1	12/11/20 13:40	KGL	12/12/20 02:58	MF	*
Monobromoacetic Acid	<1.00 ug/L	1.00	0.500		1	12/11/20 13:40	KGL	12/12/20 02:58	MF	*
Monochloroacetic Acid	<1.00 ug/L	1.00	0.500		1	12/11/20 13:40	KGL	12/12/20 02:58	MF	*
Total Regulated HAA	7.00 ug/L	1.00	0.500	60		12/11/20 13:40	KGL	12/12/20 02:58	MF	
Trichloroacetic acid	<1.00 ug/L	1.00	0.500		1	12/11/20 13:40	KGL	12/12/20 02:58	MF	*

### Surrogate(s)

Parameter	Units	% Spike Recovery	Control Limits %
2,3-Dibromopropionic acid (S)	%	102	70 - 130

### Volatiles (E524.2 Volatiles by GC/MS)

Parameter	Results Units	MRL	LOD	MCL	DF	Prepared	By	Analyzed	By	Qual
Chloroform	1.49 ug/L	1.00	0.500		1			12/10/20 19:14	MH	*
Bromodichloromethane	5.06 ug/L	1.00	0.500		1			12/10/20 19:14	MH	*
Dibromochloromethane	20.9 ug/L	1.00	0.500		1			12/10/20 19:14	MH	*
Bromoform	40.3 ug/L	1.00	0.500		1			12/10/20 19:14	MH	*
Total Trihalomethanes	67.8 ug/L	1.00	0.500	80				12/10/20 19:14	MH	

### Surrogate(s)

Parameter	Units	% Spike Recovery	Control Limits %
1,2-Dichlorobenzene-d4 (S)	%	98.2	70 - 130
4-Bromofluorobenzene (S)	%	93.1	70 - 130

## Quality Control

**Preparation Batch:** OEXT / 8325

**Analysis Method:** 552.2 Haloacetic Acids by GC

**Preparation Method:** 552.2 Haloacetic Acids by GC

**Associated Lab IDs:** Q2049090001, Q2049090002

### Laboratory Reagent Blank (1550739)

Parameter	Results	Units	MRL	LOD	Qualifier
Monochloroacetic Acid	<1.00	ug/L	1.00	0.500	
Monobromoacetic Acid	<1.00	ug/L	1.00	0.500	
Dichloroacetic Acid	<1.00	ug/L	1.00	0.500	
Trichloroacetic acid	<1.00	ug/L	1.00	0.500	
Bromochloroacetic Acid	<1.00	ug/L	1.00	0.500	
Dibromoacetic Acid	<1.00	ug/L	1.00	0.500	

### Surrogate(s)

Parameter	Units	% Spike Recovery	Control Limits %
2,3-Dibromopropionic acid (S)	%	102	70 - 130

### Method Reporting Limit Check (1550742)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Monochloroacetic Acid	ug/L	1	1	100	50 - 150	
Monobromoacetic Acid	ug/L	1	1	100	50 - 150	
Dichloroacetic Acid	ug/L	1	1	100	50 - 150	
Trichloroacetic acid	ug/L	1	1	100	50 - 150	
Bromochloroacetic Acid	ug/L	1	1	100	50 - 150	
Dibromoacetic Acid	ug/L	1	1	100	50 - 150	

### Surrogate(s)

Parameter	Units	% Spike Recovery	Control Limits %	% Dup Recovery
2,3-Dibromopropionic acid (S)	%	98	50 - 150	

### Laboratory Fortified Blank (1550747); Lab Fortified Blank Duplicate (1550748)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %	Qual
Monochloroacetic Acid	ug/L	50	52	104	70 - 130	52	104	0	30	
Monobromoacetic Acid	ug/L	50	50	100	70 - 130	50	100	0	30	
Dichloroacetic Acid	ug/L	50	51	102	70 - 130	51	102	0	30	
Trichloroacetic acid	ug/L	50	48	96	70 - 130	48	96	0	30	
Bromochloroacetic Acid	ug/L	50	48	96	70 - 130	48	96	0	30	
Dibromoacetic Acid	ug/L	50	47	94	70 - 130	47	94	0	30	

### Surrogate(s)

Parameter	Units	% Spike Recovery	Control Limits %	% Dup Recovery
2,3-Dibromopropionic acid (S)	%	100	70 - 130	96

### Laboratory Fortified Matrix (1550749) Original: Q2049088004

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Monochloroacetic Acid	ug/L	100	99	99	70 - 130	
Monobromoacetic Acid	ug/L	100	101	101	70 - 130	
Dichloroacetic Acid	ug/L	100	101	101	70 - 130	
Trichloroacetic acid	ug/L	100	100	100	70 - 130	
Bromochloroacetic Acid	ug/L	100	100	99	70 - 130	
Dibromoacetic Acid	ug/L	100	100	97	70 - 130	



## Quality Control (cont.)

<b>Preparation Batch:</b> OEXT / 8325	<b>Analysis Method:</b> 552.2 Haloacetic Acids by GC
<b>Preparation Method:</b> 552.2 Haloacetic Acids by GC	
<b>Associated Lab IDs:</b> Q2049090001, Q2049090002	

(continued)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
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### Surrogate(s)

Parameter	Units	% Spike Recovery	Control Limits %	% Dup Recovery	Control Limits %
2,3-Dibromopropionic acid (S)	%	92	70 - 130		70 - 130

### Laboratory Fortified Blank (1550750); Lab Fortified Blank Duplicate (1550751)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %	Qual
Monochloroacetic Acid	ug/L	50	52	104	70 - 130	52	104	0	30	
Monobromoacetic Acid	ug/L	50	50	100	70 - 130	50	100	0	30	
Dichloroacetic Acid	ug/L	50	51	102	70 - 130	51	102	0	30	
Trichloroacetic acid	ug/L	50	48	96	70 - 130	49	98	2.06	30	
Bromochloroacetic Acid	ug/L	50	48	96	70 - 130	49	98	2.06	30	
Dibromoacetic Acid	ug/L	50	47	94	70 - 130	48	96	2.11	30	

### Surrogate(s)

Parameter	Units	% Spike Recovery	Control Limits %	% Dup Recovery
2,3-Dibromopropionic acid (S)	%	96	70 - 130	96

### Laboratory Fortified Matrix (1550752) Original: Q2049121001

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Monochloroacetic Acid	ug/L	100	97	97	70 - 130	
Monobromoacetic Acid	ug/L	100	100	100	70 - 130	
Dichloroacetic Acid	ug/L	100	101	99	70 - 130	
Trichloroacetic acid	ug/L	100	98	97	70 - 130	
Bromochloroacetic Acid	ug/L	100	102	99	70 - 130	
Dibromoacetic Acid	ug/L	100	101	97	70 - 130	

### Surrogate(s)

Parameter	Units	% Spike Recovery	Control Limits %	% Dup Recovery	Control Limits %
2,3-Dibromopropionic acid (S)	%	86	70 - 130		70 - 130

## Quality Control (cont.)

**Preparation Batch:** OVOL / 4971

**Analysis Method:** E524.2 Volatiles by GC/MS

**Preparation Method:** E524.2 Volatiles by GC/MS

**Associated Lab IDs:** Q2049090001, Q2049090002

### Laboratory Fortified Blank (1550633); Lab Fortified Blank Duplicate (1550634)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %	Qual
Chloroform	ug/L	50	46.7	93.4	70 - 130	45.8	91.6	1.95	30	
Bromodichloromethane	ug/L	50	45.7	91.3	70 - 130	45.1	90.2	1.32	30	
Dibromochloromethane	ug/L	50	44.1	88.2	70 - 130	44.2	88.3	.227	30	
Bromoform	ug/L	50	45.3	90.6	70 - 130	45.2	90.4	.221	30	

#### Surrogate(s)

Parameter	Units	% Spike Recovery	Control Limits %	% Dup Recovery
1,2-Dichlorobenzene-d4 (S)	%	104	70 - 130	103
4-Bromofluorobenzene (S)	%	96.5	70 - 130	96.4

### Laboratory Reagent Blank (1550635)

Parameter	Results	Units	MRL	LOD	Qualifier
Chloroform	<1.00	ug/L	1.00	0.500	
Bromodichloromethane	<1.00	ug/L	1.00	0.500	
Dibromochloromethane	<1.00	ug/L	1.00	0.500	
Bromoform	<1.00	ug/L	1.00	0.500	

#### Surrogate(s)

Parameter	Units	% Spike Recovery	Control Limits %
1,2-Dichlorobenzene-d4 (S)	%	102	70 - 130
4-Bromofluorobenzene (S)	%	86.2	70 - 130

### Method Reporting Limit Check (1550636)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Chloroform	ug/L	1	1	100	50 - 150	
Bromodichloromethane	ug/L	1	.84	84	50 - 150	
Dibromochloromethane	ug/L	1	.77	77	50 - 150	
Bromoform	ug/L	1	.71	71	50 - 150	

#### Surrogate(s)

Parameter	Units	% Spike Recovery	Control Limits %	% Dup Recovery
1,2-Dichlorobenzene-d4 (S)	%	99.8	50 - 150	
4-Bromofluorobenzene (S)	%	86	50 - 150	

### Laboratory Fortified Blank (1550638); Lab Fortified Blank Duplicate (1550639)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %	Qual
Chloroform	ug/L	50	44.5	89	70 - 130	46.2	92.3	3.75	30	
Bromodichloromethane	ug/L	50	43	86	70 - 130	45.9	91.8	6.52	30	
Dibromochloromethane	ug/L	50	42.6	85.2	70 - 130	44.9	89.8	5.26	30	
Bromoform	ug/L	50	42.7	85.5	70 - 130	45.2	90.5	5.69	30	

#### Surrogate(s)

Parameter	Units	% Spike Recovery	Control Limits %	% Dup Recovery
1,2-Dichlorobenzene-d4 (S)	%	101	70 - 130	100
4-Bromofluorobenzene (S)	%	95.6	70 - 130	96.3



## Quality Control (cont.)

**Preparation Batch:** OVOL / 4971

**Analysis Method:** E524.2 Volatiles by GC/MS

**Preparation Method:** E524.2 Volatiles by GC/MS

**Associated Lab IDs:** Q2049090001, Q2049090002

### Laboratory Reagent Blank (1550640)

Parameter	Results	Units	MRL	LOD	Qualifier
Chloroform	<1.00	ug/L	1.00	0.500	
Bromodichloromethane	<1.00	ug/L	1.00	0.500	
Dibromochloromethane	<1.00	ug/L	1.00	0.500	
Bromoform	<1.00	ug/L	1.00	0.500	

### Surrogate(s)

Parameter	Units	% Spike Recovery	Control Limits %
1,2-Dichlorobenzene-d4 (S)	%	98.8	70 - 130
4-Bromofluorobenzene (S)	%	84.2	70 - 130



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## Quality Control Cross Reference

### *ORG/9786 - 552.2 Haloacetic Acids by GC*

Lab ID	Sample ID	Prep Batch	Prep Method
Q2049090001	2061488	OEXT/8325	552.2 Haloacetic Acids by GC
Q2049090002	2061489	OEXT/8325	552.2 Haloacetic Acids by GC

### *OVOL/4971 - E524.2 Volatiles by GC/MS*

Lab ID	Sample ID	Prep Batch	Prep Method
Q2049090001	2061488		
Q2049090002	2061489		