

Prepared For

**K.P. KAUFFMAN COMPANY, INC.
WORLD TRADE CENTER
1675 BROADWAY, SUITE 2800
DENVER, CO 80202-4825**

**GROUNDWATER MONITORING REPORT GRANT TANK
BATTERY FACILITY NO. 446608 & REMEDIATION NO. 12158
4300 GODDING HOLLOW PARKWAY
FIRESTONE, WELD COUNTY, CO 80504**

**Date Issued: March 17, 2020
APEX Project Number 1-0025.030.00**

Prepared By

**APEX CONSULTING SERVICES, INC.
P.O. Box 369
LOUISVILLE, CO 80027-0369**

566 West Willow Court
Reply to: P.O. Box 369
Louisville, CO 80027-0369
Phone: 303-665-1400
Fax: 303-665-0620
email: apexcsi@comcast.net

March 17, 2020

Mr. Max Knop
K.P. Kauffman Company, Inc.
World Trade Center
1675 Broadway, Suite 2800
Denver, CO 80202-4825

Re: Groundwater Monitoring Report, Grant Tank Battery, Facility No. 446608, Remediation No. 12158, 4300 Godding Hollow Parkway, Firestone, Weld County, CO 80504

Mr. Knop:

Apex Consulting Services, Inc. (APEX) is pleased to provide the results of our groundwater monitoring at the Grant Tank Battery (Facility No. 446608 and Remediation No. 12158) located at 4300 Godding Hollow Parkway in Firestone, CO 80504 (Property). The following report details the field activities, methods and findings of the assessment.

We appreciate the opportunity to provide environmental services for this project. If you have any questions concerning this report, or if we can assist you in any other matter, please call.

Sincerely,

APEX CONSULTING SERVICES, INC.



Michael D. Hattel, P.G., R.E.A.
Principal

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1.0 INTRODUCTION

Apex Consulting Services, Inc. (APEX) was retained by K.P. Kauffman Company, Inc. (KPK) to perform a Phase II Environmental Site Assessment (ESA) at the Property. The location of the Property is illustrated on a vicinity map (Figure 1) which is included in Appendix A. A site map (Figure 2) is also included in Appendix A.

On January 15, 2019, KPK submitted a Site Investigation and Remediation Work plan (Supplemental Form 27) to the Colorado Oil and Gas Conservation Commission (COGCC) for approval. On January 31, 2019, COGCC requested the installation of an array of temporary groundwater monitoring wells, collection of soil and groundwater samples for analysis, installation of a surface water gauging station marker. Five groundwater monitoring wells and 4 probe borings were completed at the Property on February 25, 2019. The location of the monitoring wells and borings is included on Figure 2. A report that included field logs, maps and analytical tables was submitted on March 19, 2019. Since, petroleum contaminated soil and groundwater exceeding COGCC standards was identified at the Property, additional work was recommended (quarterly groundwater monitoring) in the report. Petroleum contaminated groundwater exceeding COGCC standards was identified in several wells at the Property. Quarterly groundwater monitoring commenced in June 2019.

2.0 FIELD ACTIVITIES

2.1 Groundwater and Surface Water Sampling

Groundwater samples were collected for laboratory analyses from all the monitoring wells completed at the Property on February 27, 2020. The location of all the wells that were sampled is illustrated on Figures 2 and 3 in Appendix A.

Prior to groundwater sampling, groundwater elevations were measured and recorded in each of the monitoring wells located at the Property. Shallow groundwater was present in the wells at depths ranging from approximately 6.9 to 9.2 feet BGS. Groundwater flow direction was determined to be to the west-northwest (Figure 3 in Appendix A). Very slight petroleum odors and a slight sheen of product were present on the groundwater samples collected from monitoring wells MW-3, MW-4, MW-5 and TH-11.

2.2 Surface Water Sampling

A surface water sample (grab sample) was also collected from Godding Hollow on February 27, 2020. The sample was collected adjacent to the surface water gauging marker. The location of the marker, the bench mark and the sample location are illustrated on Figure 3 in Appendix A.

3.0 ANALYTICAL METHODS AND RESULTS

3.1 Analytical Methods

The groundwater samples were handled with clean, new, nitrile gloves and placed in laboratory supplied sample containers and labeled. The samples were immediately placed in a cooler on ice. The samples were delivered under chain of custody to Summit Scientific laboratory in Golden, Colorado for analysis. Each groundwater sample was analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX) by EPA Method 8260. The groundwater samples were also analyzed for chloride and sulfate by EPA Method 300 and total dissolved solids (TDS) by EPA Method SM 540C. Finally, the surface water sample collected from Godding Hollow was analyzed for BTEX by EPA Method 8260 and Chloride by EPA Method 300.

3.2 Analytical Results

BTEX compounds were only detected in the groundwater sample collected from monitoring wells MW-3 and MW-5. Chloride, sulfate and TDS were detected in each of the groundwater samples submitted for analysis.

BTEX compounds were not detected in the surface water sample collected from Godding Hollow. However, chloride, sulfate and TDS were detected in the sample collected from Godding Hollow.

A summary of the analytical results for the groundwater samples are presented on Table 1 which is included in Appendix B. The laboratory analytical reports are also included in Appendix B.

4.0 CONCLUSIONS, DISCUSSIONS AND RECOMMENDATIONS

Groundwater samples were collected from each of the monitoring wells and a surface water sample was collected from Godding Hollow on February 27, 2020. The groundwater flow direction was calculated to be to the west-northwest.

BTEX compounds were detected in the groundwater sample collected from monitoring wells MW-3 and MW-5. Benzene was detected in the samples at respective concentration of 120 and 31 micrograms per liter (ug/L). The COGCC standard for benzene in groundwater is 5 ug/L. Chloride, sulfate and TDS were detected in each of the groundwater samples submitted for analysis. The COGCC standard for the aforementioned is 1.25 times the background concentration. Based on measured groundwater elevations, monitoring well MW-1 is upgradient. Consequently, chloride, sulfate and TDS concentrations in the samples collected from monitoring well MW-1 are considered to be background concentrations for this monitoring period. Chloride was detected above the COGCC standard in samples collected from monitoring wells MW-2, MW-3, MW-4 and MW-5. Sulfate was detected above the COGCC standard in the samples collected from monitoring wells MW-3 and MW-5. Finally, TDS were detected above the COGCC standard in samples collected from monitoring wells MW-2, MW-3, MW-4, MW-5 and MW-11.

BTEX compounds were not detected in the surface water sample collected from Godding Hollow. Chloride was detected below the COGCC standard in the sample collected from monitoring Godding Hollow. Sulfate was detected above the COGCC standard in the sample collected from monitoring Godding Hollow. Finally, TDS was detected above the COGCC standard.

During this monitoring period, petroleum contaminated groundwater exceeding COGCC standards are present at the Property. BTEX concentrations detected in the monitoring wells is lower than historical concentrations. The varying results may be due to the seasonal variations in the groundwater levels. APEX recommends continuing with the quarterly groundwater monitoring program in May 2020.

5.0 LIMITATIONS

This report presents a summary of work completed by APEX. The completed work includes observations of subsurface soil and groundwater conditions encountered and the analytical results provided by an independent third-party laboratory of samples collected during the course of the work. It cannot be assumed that the available data are representative of subsurface conditions in areas not sampled. APEX warrants that the environmental consulting services contained herein were accomplished in accordance with generally accepted practices in the environmental engineering, geology, and hydrogeology fields that exist at the time and location of work. No other warranties are implied or expressed.

APPENDIX A

FIGURES

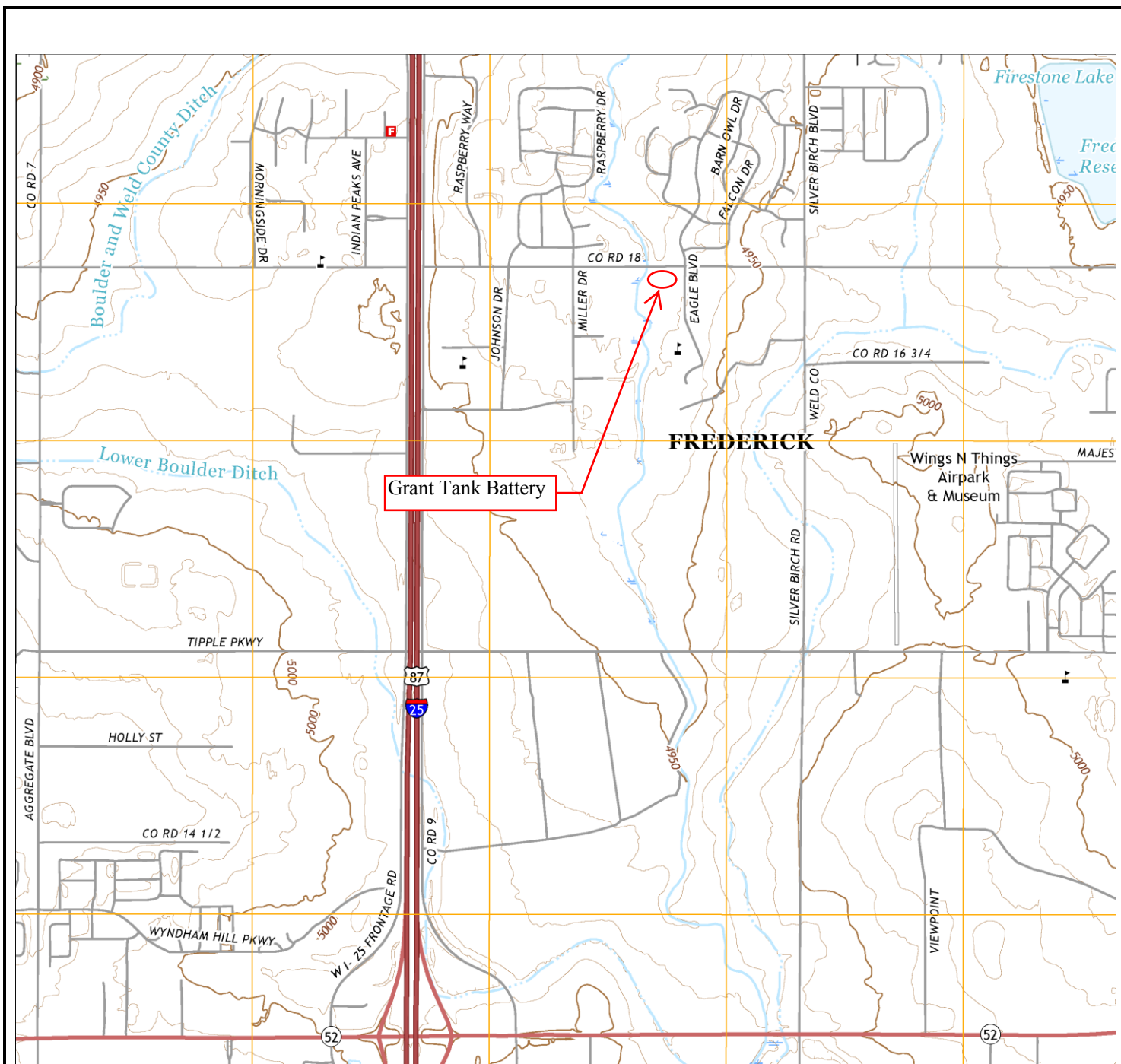
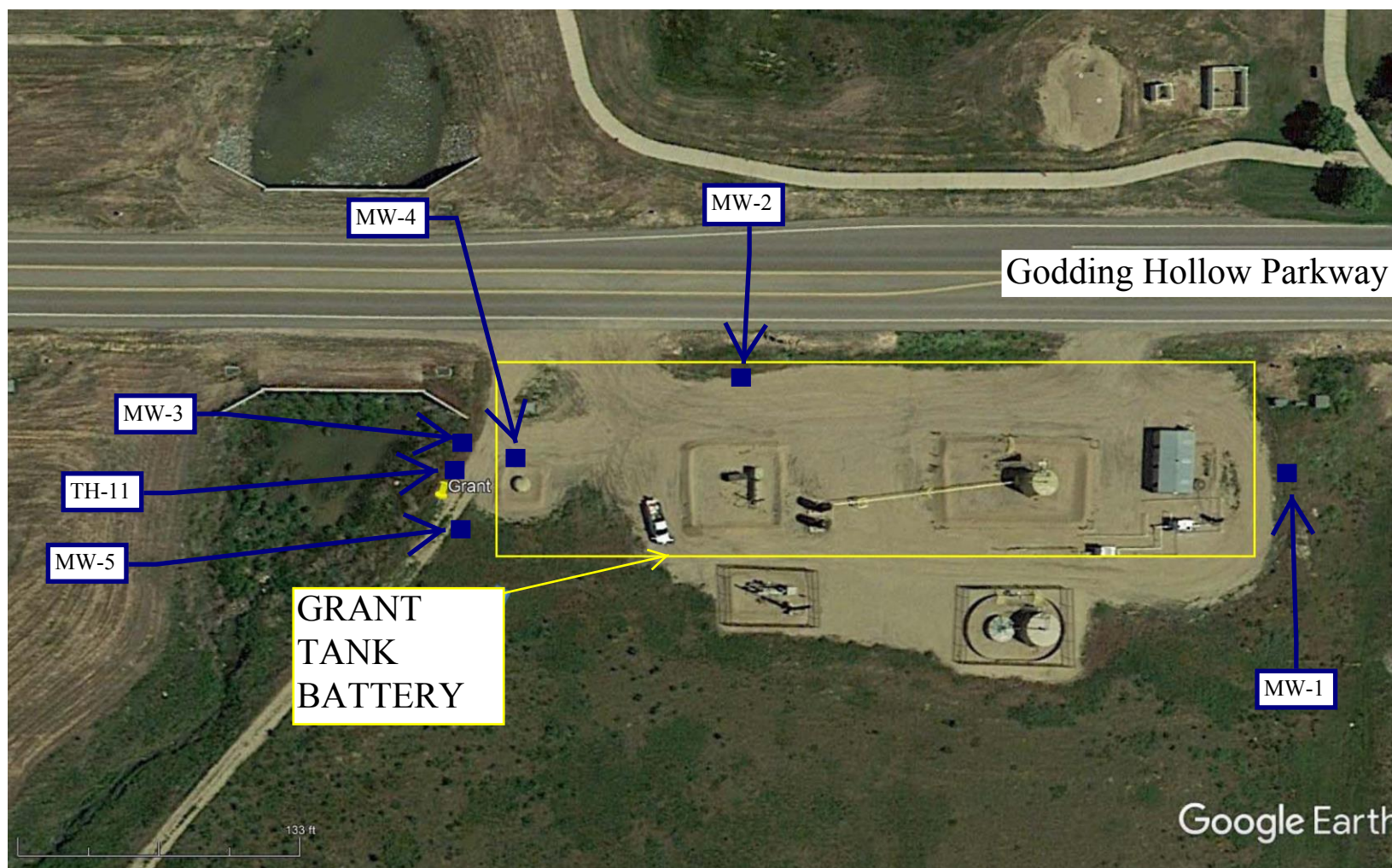


FIGURE 1: VICINITY MAP	<div> </div> <div> <p>USGS 7.5 Minute <i>Frederick</i> 2016 Created: 2019 Revised: None</p> </div>	<div> <p>APEX CONSULTING SERVICES, INC.</p> </div>
<div> <p>GRANT TANK BATTERY FACILITY NO. 446608 4300 GODDING HOLLOW PKWY FIRESTONE, WELD COUNTY, CO</p> </div>		



Monitoring Well
& Number



Probe Boring
& Number

FIGURE 2: SITE MAP

GRANT TANK BATTERY
FACILITY NO. 446608
4300 GODDING HOLLOW PKWY
FIRESTONE, WELD COUNTY, CO



Google Earth
Created: 2019
Revised: None

APEX CONSULTING SERVICES, INC.

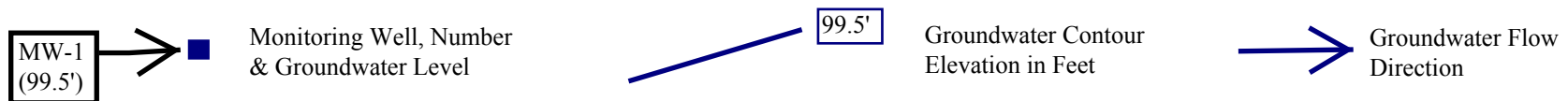
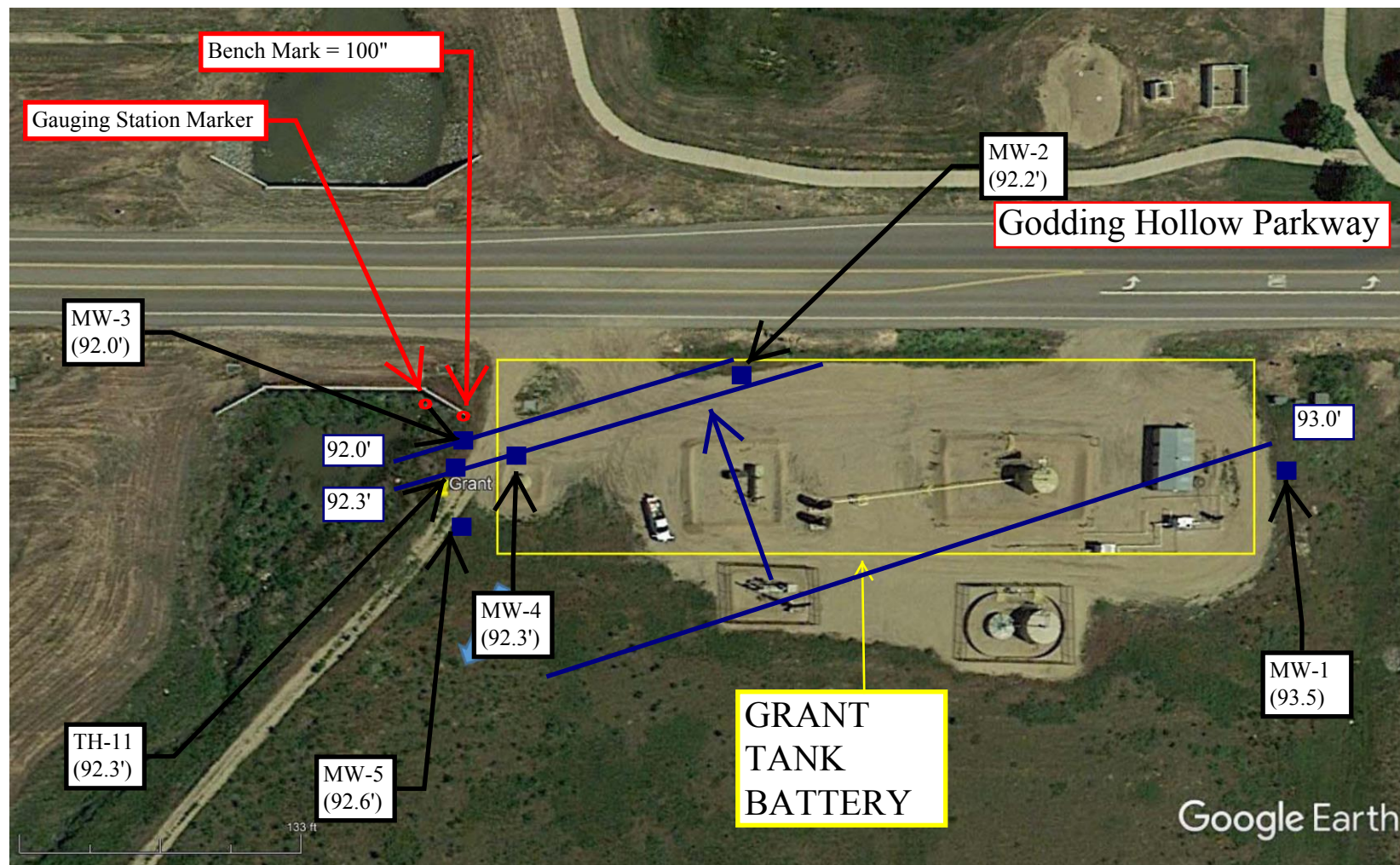


FIGURE 3: Groundwater MAP

GRANT TANK BATTERY
FACILITY NO. 446608
4300 GODDING HOLLOW PKWY
FIRESTONE, WELD COUNTY, CO



Google Earth
Created: 2019
Revised: None

APEX CONSULTING SERVICES, INC.

APPENDIX B

TABLE AND LABORATORY ANALYTICAL REPORT

TABLE 1

**SUMMARY OF LABORATORY RESULTS
FOR A SURFACE AND GROUNDWATER SAMPLES COLLECTED FROM
GRANT TANK BATTERY, WELD COUNTY, COLORADO**

Sample	Date	Benzene*	Toluene*	Ethyl- Benzene*	Total Xylenes*	Chloride**	Sulfate**	TDS**
MW-1	2/28/19	<1.0	<1.0	<1.0	<2.0	285.0	63.0	685
	6/11/19	<1.0	<1.0	<1.0	<2.0	154.0	27.0	458
	10/17/19	2.1	<1.0	<1.0	23	149.0	1030.0	656
	2/27/20	<1.0	1.9	<1.0	<2.0	39.1	191.0	532
MW-2	2/28/19	<1.0	<1.0	<1.0	<2.0	185.0	145.0	888
	6/11/19	190.0	<1.0	270.0	180.0	94.2	26.2	563
	10/17/19	120.0	<1.0	140.0	94.0	258.0	667.0	778
	2/27/20	<1.0	<1.0	<1.0	<2.0	91.5	38.8	671
MW-3	2/28/19	<1.0	<1.0	<1.0	<2.0	311.0	439.0	1810
	6/11/19	46.0	<1.0	16.0	7780.0	53.0	1160.0	1670
	10/17/19	47.0	<1.0	50.0	7.7	1620.0	706.0	2170
	2/27/20	120.0	<1.0	110.0	78.0	106.0	506.0	1670
MW-4	2/28/19	210.0	<1.0	140.0	350.0	7780.0	77.0	10400
	6/11/19	510.0	<1.0	510.0	2670.0	2670.0	30.8	2860
	10/17/19	53.0	<1.0	6.2	35.0	1220.0	809.0	6120
	2/27/20	<1.0	<1.0	<1.0	<2.0	1250.0	190.0	2820
MW-5	2/28/19	<1.0	<1.0	<1.0	<2.0	544.0	107.0	1040
	6/11/19	<1.0	<1.0	<1.0	<1.0	475.0	74.7	700
	10/17/19	<1.0	<1.0	<1.0	<1.0	1240.0	186.0	907
	2/27/20	31.0	<1.0	5.4	30	57.2	319.0	747

TABLE 1 (CONTINUED)

SUMMARY OF LABORATORY RESULTS

FOR A SURFACE AND GROUNDWATER SAMPLES COLLECTED FROM

GRANT TANK BATTERY, WELD COUNTY, COLORADO

MW-11	2/28/19	<1.0	<1.0	<1.0	<2.0	322.0	159.0	1800
	6/11/19	9.9	<1.0	30.0	<2.0	685.0	187.0	1220
	10/17/19	3.4	<1.0	6.3	<2.0	1040.0	951.0	1820
	2/27/20	<1.0	<1.0	<1.0	<2.0	350.0	204.0	1450
GH	2/28/19	<1.0	<1.0	<1.0	<2.0	44.0	NA	NA
	6/11/19	<1.0	<1.0	<1.0	<2.0	9.8	NA	NA
	10/17/19	<1.0	<1.0	<1.0	<2.0	146.0	1330.0	996
	2/27/20	<1.0	<1.0	<1.0	<2.0	63.0	494.0	946
Standard		5	1000	700	1400	***	***	***

Standard = Colorado Oil and Gas Conservation Commission (COGCC) and/or State of Colorado

* = Micrograms per liter (ug/L)

** = Milligrams per liter (mg/L)

*** = 1.25 x background for specific monitoring period (MW-1)

Benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8260

Chloride by EPA Method 300

Sulfate by EPA Method 300

TDS by EPA Method SM 540C

NA = Not Analyzed

BOLD = Concentration Exceeds Standard

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 06, 2020

Max Knop

K.P. Kauffman

1675 Broadway

Denver, CO 80202

RE: Grant

Work Order #2002295

Enclosed are the results of analyses for samples received by Summit Scientific on 02/27/20 14:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Grant
Project Number: [none]
Project Manager: Max Knop

Reported:
03/06/20 06:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	2002295-01	Water	02/27/20 08:50	02/27/20 14:50
MW-2	2002295-02	Water	02/27/20 13:00	02/27/20 14:50
MW-3	2002295-03	Water	02/27/20 13:35	02/27/20 14:50
MW-4	2002295-04	Water	02/27/20 13:45	02/27/20 14:50
MW-5	2002295-05	Water	02/27/20 13:15	02/27/20 14:50
TH-11	2002295-06	Water	02/27/20 13:25	02/27/20 14:50
GH	2002295-07	Water	02/27/20 14:00	02/27/20 14:50

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2002295

741 Corporate Circle Suite I ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Client:	K.P. Kauffman Company, Inc.	
Address:	1675 Broadway, Suite 2800	
City/State/Zip:	DENVER, CO80202	
Phone:	303-825-4822	Fax:
Sampler Name:	MIKE HATTEL (303-665-1400)	

Project Manager:	MAX KNOP
E-Mail:	mknop@kpk.com
Project Name:	GRANT
Project Number:	

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:								Special Instructions						
				HCl	HNO ₃	None	Other (Specify) <i>ILG</i>	Groundwater	Soil	<i>Surface water</i>	Air - Canister Serial #	Other (Specify)	BTEX	Sulfate	Chloride	TDS										
MW-1	<i>2/27/20</i>	<i>850</i>	<i>4</i>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
MW-2	<i>↓</i>	<i>1300</i>	<i>4</i>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
MW-3		<i>1335</i>	<i>3</i>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
MW-4		<i>1345</i>	<i>4</i>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
MW-5		<i>1345</i>	<i>4</i>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
TH-11		<i>1325</i>	<i>4</i>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
GH	<i>↓</i>	<i>1400</i>	<i>4</i>				<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
Relinquished by: <i>Matt Hattel</i> Date/Time: <i>2/27/20 1450</i>				Received by: <i>[Signature]</i> Date/Time: <i>02-27-2020 14:50</i>				Turn Around Time (Check)				Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 Hours <input type="checkbox"/>								* Copy to: Mike Hattel e mhattel@msn.com						
Relinquished by: _____ Date/Time: _____				Received by: _____ Date/Time: _____				Sample Integrity:				Temperature Upon Receipt: <i>3.7</i> Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>														
Relinquished by: _____ Date/Time: _____				Received in Lab by: _____ Date/Time: _____																						

2002295

Sample Receipt Checklist

S2 Work Order _____

Client: KP Kauffman Client Project ID: GRANTShipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____
☒ ☐ ☐ ☐ ☐
Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☒ Water ☐ Other: _____
(Describe)

Temp (°C)	3.7
-----------	-----

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	On Ice
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any): 				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

MP

Custodian Printed Name or Initials

Muri Premer
Signature of Custodian

2/27/20

Date/Time



K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Grant
Project Number: [none]
Project Manager: Max Knop

Reported:
03/06/20 06:48

MW-1
2002295-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/27/20 08:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2003009	03/02/20	03/04/20	EPA 8260B	
Toluene	1.9	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **02/27/20 08:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **02/27/20 08:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	191	30.0	mg/L	100	2002312	02/28/20	02/28/20	EPA 300.0	
Chloride	39.1	6.00	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **02/27/20 08:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	532	10.0	mg/L	1	2002303	02/28/20	02/28/20	SM2540C	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Grant
Project Number: [none]
Project Manager: Max Knop

Reported:
03/06/20 06:48

MW-2
2002295-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/27/20 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	2003009	03/02/20	03/04/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **02/27/20 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		96.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **02/27/20 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	91.5	6.00	mg/L	100	2002312	02/28/20	02/28/20	EPA 300.0	
Sulfate	38.8	30.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **02/27/20 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	671	10.0	mg/L	1	2002303	02/28/20	02/28/20	SM2540C	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Grant
Project Number: [none]
Project Manager: Max Knop

Reported:
03/06/20 06:48

MW-3
2002295-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/27/20 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	120	1.0	ug/l	1	2003009	03/02/20	03/04/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	110	1.0	"	"	"	"	"	"	
Xylenes (total)	78	2.0	"	"	"	"	"	"	

Date Sampled: **02/27/20 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		88.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **02/27/20 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Sulfate	106	30.0	mg/L	100	2002312	02/28/20	02/28/20	EPA 300.0	
Chloride	506	6.00	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **02/27/20 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	1670	10.0	mg/L	1	2002303	02/28/20	02/28/20	SM2540C	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Grant
Project Number: [none]
Project Manager: Max Knop

Reported:
03/06/20 06:48

MW-4
2002295-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/27/20 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	2003009	03/02/20	03/04/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **02/27/20 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		95.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		90.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **02/27/20 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	1250	6.00	mg/L	100	2002312	02/28/20	02/28/20	EPA 300.0	
Sulfate	190	30.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **02/27/20 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	2820	10.0	mg/L	1	2002303	02/28/20	02/28/20	SM2540C	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Grant
Project Number: [none]
Project Manager: Max Knop

Reported:
03/06/20 06:48

MW-5
2002295-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/27/20 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	31	1.0	ug/l	1	2003009	03/02/20	03/04/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	5.4	1.0	"	"	"	"	"	"	
Xylenes (total)	30	2.0	"	"	"	"	"	"	

Date Sampled: **02/27/20 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **02/27/20 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	319	30.0	mg/L	100	2002312	02/28/20	02/28/20	EPA 300.0	
Chloride	57.2	6.00	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **02/27/20 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	747	10.0	mg/L	1	2002303	02/28/20	02/28/20	SM2540C	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Grant
Project Number: [none]
Project Manager: Max Knop

Reported:
03/06/20 06:48

TH-11
2002295-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/27/20 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	2003009	03/02/20	03/04/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **02/27/20 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		93.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **02/27/20 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Sulfate	204	30.0	mg/L	100	2002312	02/28/20	02/28/20	EPA 300.0	
Chloride	350	6.00	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **02/27/20 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	1450	10.0	mg/L	1	2002303	02/28/20	02/28/20	SM2540C	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Grant
Project Number: [none]
Project Manager: Max Knop

Reported:
03/06/20 06:48

GH
2002295-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/27/20 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	2003009	03/02/20	03/04/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **02/27/20 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		94.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **02/27/20 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	63.6	6.00	mg/L	100	2002312	02/28/20	02/28/20	EPA 300.0	
Sulfate	494	30.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **02/27/20 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	946	10.0	mg/L	1	2002303	02/28/20	02/28/20	SM2540C	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Grant
Project Number: [none]
Project Manager: Max Knop

Reported:
03/06/20 06:48

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 2003009 - EPA 5030 Water MS

Blank (2003009-BLK1)

Prepared: 03/02/20 Analyzed: 03/04/20

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	12.4		"	13.3		92.9	23-173			
Surrogate: Toluene-d8	12.6		"	13.3		94.8	20-170			
Surrogate: 4-Bromofluorobenzene	14.0		"	13.3		105	21-167			

LCS (2003009-BS1)

Prepared: 03/02/20 Analyzed: 03/04/20

Benzene	37.0	1.0	ug/l	33.3		111	51-132			
Toluene	38.1	1.0	"	33.3		114	51-138			
Ethylbenzene	43.9	1.0	"	33.3		132	58-146			
m,p-Xylene	84.1	2.0	"	66.7		126	57-144			
o-Xylene	39.9	1.0	"	33.3		120	53-146			
Surrogate: 1,2-Dichloroethane-d4	12.8		"	13.3		96.2	23-173			
Surrogate: Toluene-d8	12.9		"	13.3		96.5	20-170			
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3		101	21-167			

Matrix Spike (2003009-MS1)

Source: 2002294-01

Prepared: 03/02/20 Analyzed: 03/04/20

Benzene	37.9	1.0	ug/l	33.3	ND	114	34-141			
Toluene	40.1	1.0	"	33.3	ND	120	27-151			
Ethylbenzene	45.8	1.0	"	33.3	ND	137	29-160			
m,p-Xylene	88.0	2.0	"	66.7	ND	132	20-166			
o-Xylene	42.2	1.0	"	33.3	ND	127	33-159			
Surrogate: 1,2-Dichloroethane-d4	13.1		"	13.3		98.4	23-173			
Surrogate: Toluene-d8	12.9		"	13.3		96.6	20-170			
Surrogate: 4-Bromofluorobenzene	13.6		"	13.3		102	21-167			

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Grant
Project Number: [none]
Project Manager: Max Knop

Reported:
03/06/20 06:48

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 2003009 - EPA 5030 Water MS

Matrix Spike Dup (2003009-MSD1)		Source: 2002294-01			Prepared: 03/02/20 Analyzed: 03/04/20					
Benzene	38.2	1.0	ug/l	33.3	ND	115	34-141	0.762	30	
Toluene	39.7	1.0	"	33.3	ND	119	27-151	1.10	30	
Ethylbenzene	45.5	1.0	"	33.3	ND	136	29-160	0.570	30	
m,p-Xylene	86.5	2.0	"	66.7	ND	130	20-166	1.79	30	
o-Xylene	41.0	1.0	"	33.3	ND	123	33-159	2.89	30	
Surrogate: 1,2-Dichloroethane-d4	13.3		"	13.3		99.8	23-173			
Surrogate: Toluene-d8	12.9		"	13.3		96.8	20-170			
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		99.6	21-167			

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Grant
Project Number: [none]
Project Manager: Max Knop

Reported:
03/06/20 06:48

Anions by EPA Method 300.0 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 2002312 - General Preparation

Blank (2002312-BLK1)

Prepared & Analyzed: 02/28/20

Sulfate	ND	0.300	mg/L
Chloride	ND	0.0600	"

LCS (2002312-BS1)

Prepared & Analyzed: 02/28/20

Sulfate	15.0	0.300	mg/L	15.0	99.8	90-110
Chloride	2.88	0.0600	"	3.00	95.9	90-110

Duplicate (2002312-DUP1)

Source: 2002289-01

Prepared & Analyzed: 02/28/20

Sulfate	0.390	0.300	mg/L	0.392	0.512	20
Chloride	ND	0.0600	"	254	20	QM-02

Matrix Spike (2002312-MS1)

Source: 2002289-01

Prepared & Analyzed: 02/28/20

Sulfate	15.2	0.300	mg/L	15.0	0.392	99.0	80-120	
Chloride	ND	0.0600	"	3.00	254	NR	80-120	QM-02

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Grant
Project Number: [none]
Project Manager: Max Knop

Reported:
03/06/20 06:48

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch 2002303 - General Preparation

Blank (2002303-BLK1)

Prepared & Analyzed: 02/28/20

Total Dissolved Solids ND 10.0 mg/L

Duplicate (2002303-DUP1)

Source: 2002289-01

Prepared & Analyzed: 02/28/20

Total Dissolved Solids 814 10.0 mg/L 815 0.0737 20

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Grant
Project Number: [none]
Project Manager: Max Knop

Reported:
03/06/20 06:48

Notes and Definitions

QM-02	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference