

Prepared For

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

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

**Date Issued: November 14, 2019  
APEX Project Number 1-0025.030.00**

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Prepared By

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

November 14, 2019

Ms. Susana Lara-Mesa  
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**

Ms. Lara-Mesa:

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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- Appendix A Figures
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## **1.0 INTRODUCTION**

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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. On June 24, 2019, a Groundwater Monitoring Report was submitted to KPK. APEX recommends continuing with the quarterly groundwater monitoring program.

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## **2.0 FIELD ACTIVITIES**

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### **2.1 Groundwater and Surface Water Sampling**

Groundwater samples were collected for laboratory analyses from all the monitoring wells completed at the Property on October 17, 2019. 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 7.1 to 9.7 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 collected from monitoring wells MW-3, MW-4 and TH-11.

## **2.2 Surface Water Sampling**

A surface water sample (grab sample) was also collected from Godding Hollow on June 11, 2019. 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.

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## **3.0 ANALYTICAL METHODS AND RESULTS**

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### **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-1, MW-2, MW-3, MW-4 and MW-11. 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.

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#### **4.0 CONCLUSIONS, DISCUSSIONS AND RECOMMENDATIONS**

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Groundwater samples were collected from each of the monitoring wells and a surface water sample was collected from Godding Hollow on October 17, 2018. 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-1, MW2, MW-3, MW-4 and MW-11. Benzene was detected in the samples at respective concentration of 2.1, 120, 47, 53 and 3.4 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-4, MW-5 and MW11. Sulfate was detected above the COGCC standard in the samples collected from each of the monitoring wells. Finally, TDS were detected above the COGCC standard in samples collected from monitoring wells MW-3, MW-4 and MW-11.

BTEX compounds were not detected in the surface water sample collected from Godding Hollow. Chloride and sulfate were detected below the COGCC standard in the sample collected from monitoring Godding Hollow. TDS was detected above the COGCC standard and is likely due to runoff from recent storm events.

During this monitoring period, petroleum contaminated groundwater exceeding COGCC standards are present at the Property. Also, BTEX compounds were in the upgradient well this monitoring period. However, over the BTEX concentrations detected in the other 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 January 2020.

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## **5.0 LIMITATIONS**

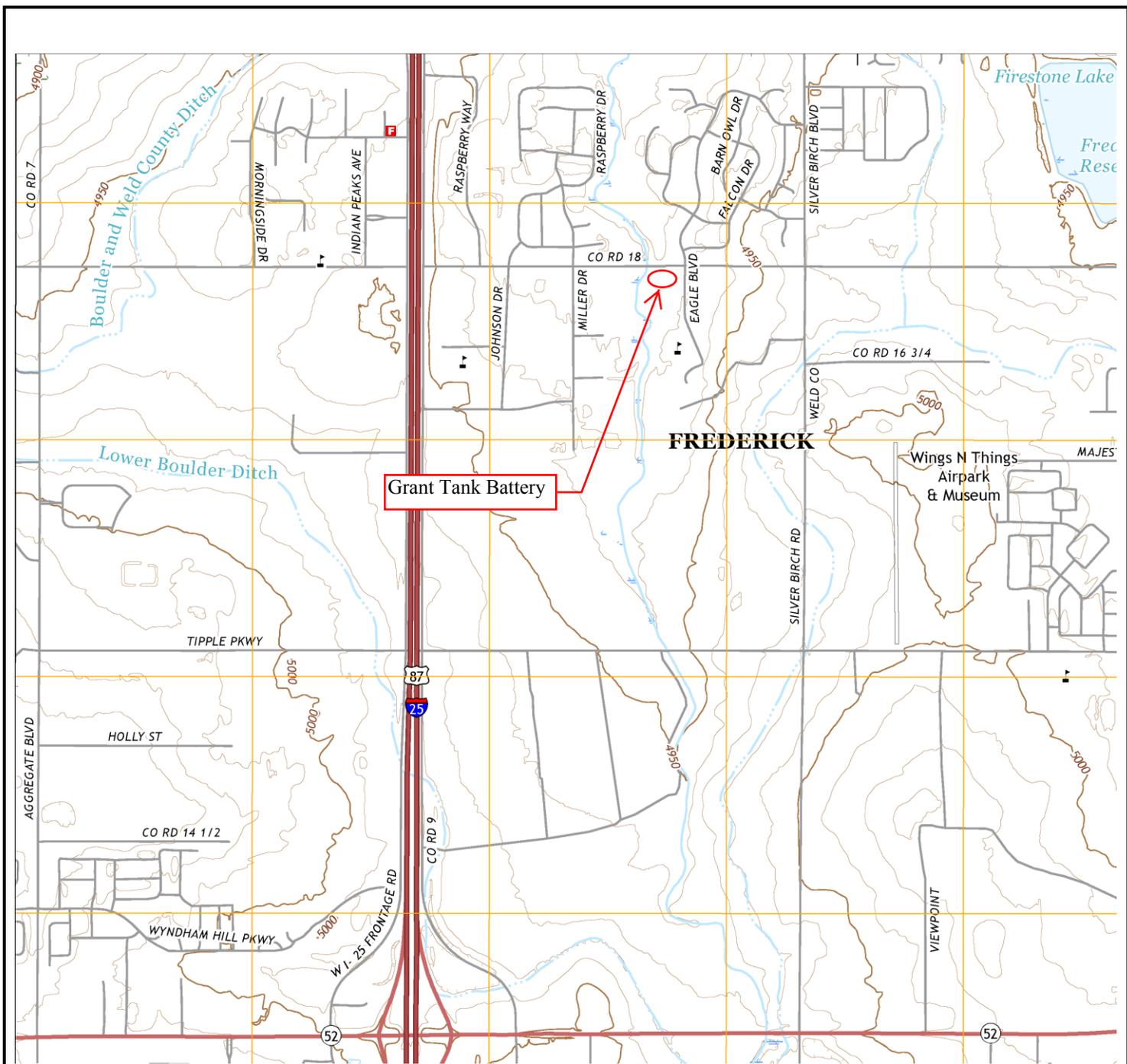
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This report presents a summary of work completed by APEX. The completed work includes observations of subsurface soil and groundwater conditions encountered and the analytical results provided by an independent third-party laboratory of samples collected 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**



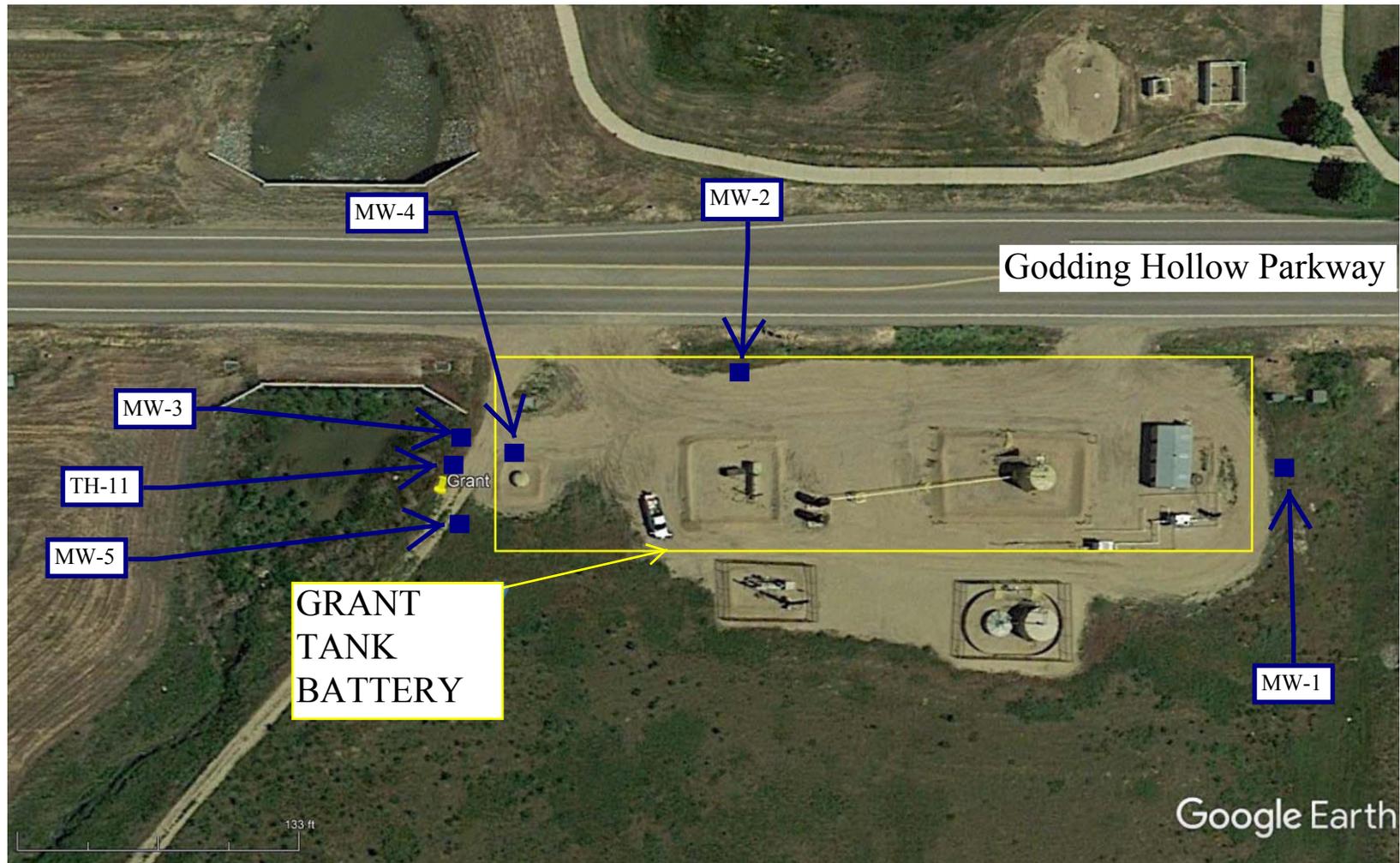
**FIGURE 1: VICINITY MAP**

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

**N**

USGS 7.5 Minute  
*Frederick 2016*  
 Created: 2019  
 Revised: None

**APEX  
 CONSULTING  
 SERVICES, INC.**



Monitoring Well  
& Number

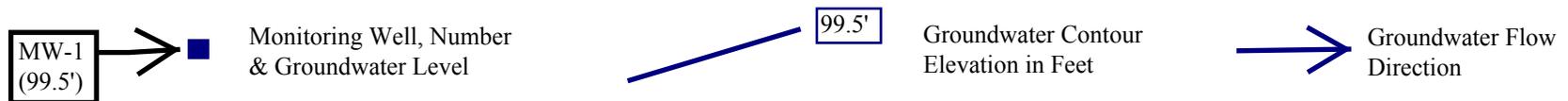
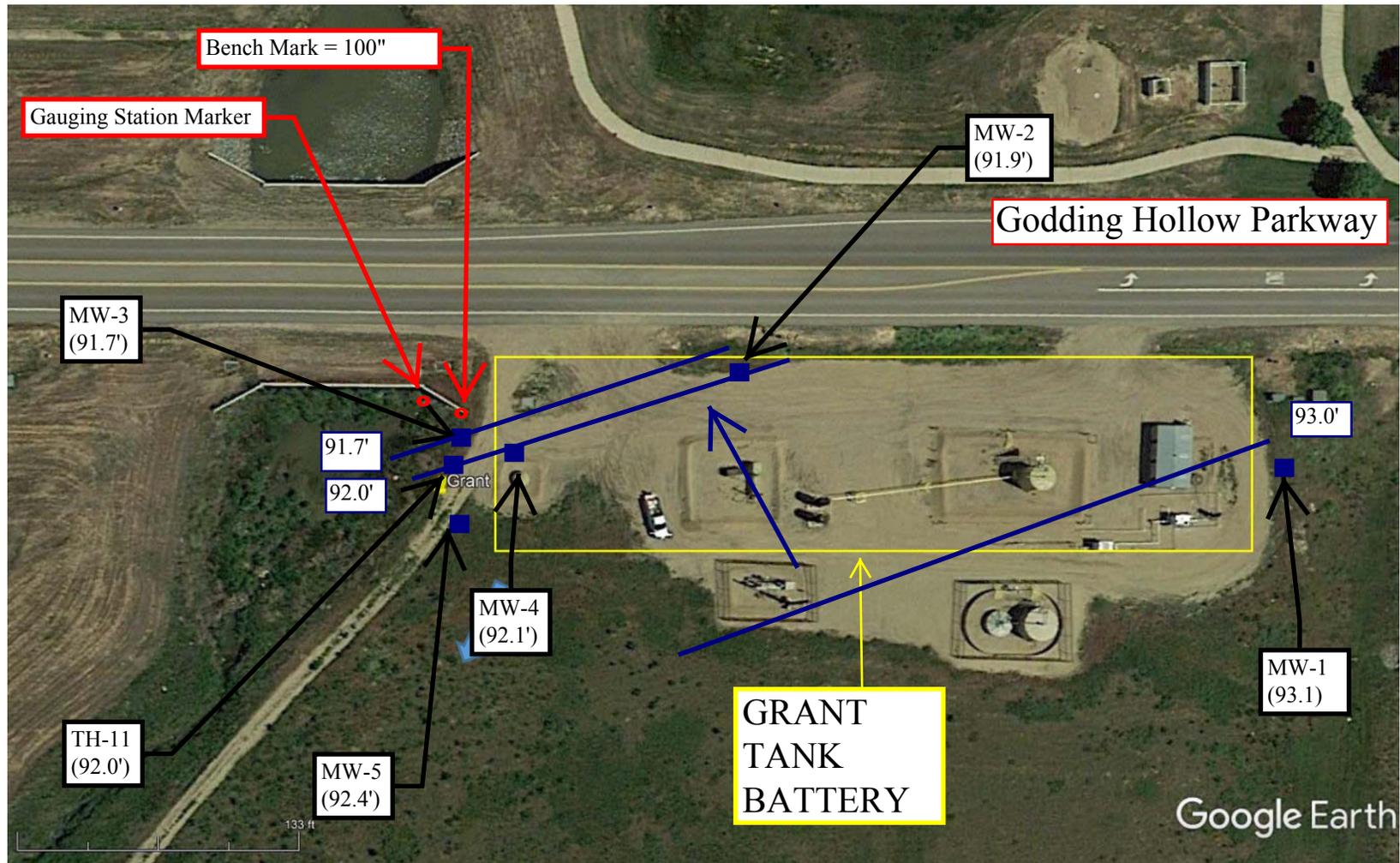
**FIGURE 2: SITE MAP**

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**

<b>Sample</b>	<b>Date</b>	<b>Benzene*</b>	<b>Toluene*</b>	<b>Ethyl- Benzene*</b>	<b>Total Xylenes*</b>	<b>Chloride**</b>	<b>Sulfate**</b>	<b>TDS**</b>
<b>MW-1</b>	2/28/19	<1.0	<1	<1.0	<2	285.0	63.0	685
	6/11/19	<1.0	<1	<1.0	<2	154.0	27.0	458
	10/17/19	2.1	<1	<1.0	23	149.0	<b>1030.0</b>	656
<b>MW-2</b>	2/28/19	<1.0	<1	<1.0	<2	185.0	<b>145.0</b>	<b>888</b>
	6/11/19	<b>190.0</b>	<1	270.0	180.0	94.2	26.2	563
	10/17/19	<b>120.0</b>	<1	140.0	94.0	258.0	<b>667.0</b>	778
<b>MW-3</b>	2/28/19	<1.0	<1	<1	<2.0	311.0	<b>439.0</b>	<b>1810</b>
	6/11/19	<b>46.0</b>	<1	16.0	<b>7780.0</b>	53.0	<b>1160.0</b>	<b>1670</b>
	10/17/19	<b>47.0</b>	<1	50.0	7.7	<b>1620.0</b>	<b>706.0</b>	<b>2170</b>
<b>MW-4</b>	2/28/19	<b>210.0</b>	<1	140.0	350.0	<b>7780.0</b>	<b>77.0</b>	<b>10400</b>
	6/11/19	<b>510.0</b>	<1	510.0	2670.0	<b>2670.0</b>	30.8	<b>2860</b>
	10/17/19	<b>53.0</b>	<1	6.2	35.0	<b>1220.0</b>	<b>809.0</b>	<b>6120</b>
<b>MW-5</b>	2/28/19	<1.0	<1	<1	<2.0	<b>544.0</b>	<b>107.0</b>	<b>1040</b>
	6/11/19	<1.0	<1	<1	<1.0	<b>475.0</b>	74.7	700
	10/17/19	<1.0	<1	<1	<1.0	<b>1240.0</b>	<b>186.0</b>	<b>907</b>
<b>MW-11</b>	2/28/19	<1.0	<1	<1	<2.0	322.0	<b>159.0</b>	<b>1800</b>
	6/11/19	<b>9.9</b>	<1	30.0	<2.0	<b>685.0</b>	<b>187.0</b>	<b>1220</b>
	10/17/19	3.4	<1	6.3	<2.0	<b>1040.0</b>	<b>951.0</b>	<b>1820</b>
<b>GH</b>	2/28/19	<1.0	<1	<1	<2.0	44.0	NA	NA
	6/11/19	<1.0	<1	<1	<2.0	9.8	NA	NA
	10/17/19	<1.0	<1	<1	<2.0	146.0	1330.0	<b>996</b>
<b>Standard</b>		5	1000	700	1400	***	***	***

**TABLE 1 (CONTINUED)**

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

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

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

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 28, 2019

Susana Lara-Mesa

K.P. Kauffman

1675 Broadway

Denver, CO 80202

RE: Grant

Enclosed are the results of analyses for samples received by Summit Scientific on 10/17/19 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Shrewsbury', written in a cursive style.

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Grant

Project Number: [none]  
Project Manager: Susana Lara-Mesa

**Reported:**  
10/28/19 06:47

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	1910210-01	Water	10/17/19 10:30	10/17/19 16:30
MW-2	1910210-02	Water	10/17/19 13:15	10/17/19 16:30
MW-3	1910210-03	Water	10/17/19 13:45	10/17/19 16:30
MW-4	1910210-04	Water	10/17/19 14:00	10/17/19 16:30
MW-5	1910210-05	Water	10/17/19 13:30	10/17/19 16:30
TH-11 (MW-11)	1910210-06	Water	10/17/19 13:40	10/17/19 16:30
GH	1910210-07	Water	10/17/19 12:30	10/17/19 16:30

1910210

# Summit Scientific

S<sub>2</sub>

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

Page ( of )

Client: KP Kaufman Co Inc Project Manager: Susanatara Mesa  
 Address: 1675 Broadway Suite 2350 E-Mail: claramesa@kp.com  
 City/State/Zip: Denver CO 80202-4028  
 Phone: 303-325-4822 Fax: Project Name: Grant  
 Sampler Name: Mike Hatter Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested					Special Instructions
					HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Surface Water Air-Canister #	Other (Specify)	BTEX	Sulfide	Chloride	TDS	
1	MW-1	10/17/19	1030	3	X			X	X				X	X	X	X	
2	MW-2	↓	1315	3	X			X	X				X	X	X	X	
3	MW-3		1345	3	X			X	X				X	X	X	X	
4	MW-4		1400	3	X			X	X				X	X	X	X	
5	MW-5		1330	3	X			X	X				X	X	X	X	
6	TH-1 (MW-6)		1340	3	X			X	X				X	X	X	X	
7	GH	↓	1230	3	X			X			X		X	X	X	X	
8											X						
9																	
10																	

Relinquished by: <u>[Signature]</u>	Date/Time: <u>10/17/19 1630</u>	Received by: <u>[Signature]</u>	Date/Time: <u>10/17/19 1630</u>	<b>Turn Around Time</b> (Check) Same Day ___ 72 hours ___ 24 hours ___ Standard <u>X</u> 48 hours ___ <b>Sample Integrity:</b> Temperature Upon Receipt: <u>2.8</u> Intact: Yes <u>(X)</u> No ___	<b>Notes:</b>
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

**Sample Receipt Checklist**

S2 Work Order 1910210

Client: KP KAUFFMAN CO INC Client Project ID: GRANT

Shipped Via:  H.D./P.U./FedEx/UPS/USPS/Other \_\_\_\_\_ Airbill #: \_\_\_\_\_

Matrix (check all that apply):  Air  Soil/Solid  Water  Other: \_\_\_\_\_  
 (Describe)

Temp (°C)	2.8
-----------	-----

Thermometer ID: 61857155-K

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

Additional Comments (if any):

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

RZ  
 \_\_\_\_\_  
 Custodian Printed Name or Initials

*RZ*  
 \_\_\_\_\_  
 Signature of Custodian

10/17/19  
 \_\_\_\_\_  
 Date/Time



K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Grant

Project Number: [none]  
Project Manager: Susana Lara-Mesa

**Reported:**  
10/28/19 06:47

**MW-1**  
**1910210-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/17/19 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Benzene</b>	<b>2.1</b>	1.0		ug/l	1	1910290	10/21/19	10/26/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>23</b>	2.0		"	"	"	"	"	"	

Date Sampled: **10/17/19 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		109 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		73.9 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **10/17/19 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Sulfate</b>	<b>1030</b>	60.0		mg/L	200	1910273	10/18/19	10/18/19	EPA 300.0	
<b>Chloride</b>	<b>149</b>	12.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **10/17/19 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>656</b>	10.0		mg/L	1	1910266	10/18/19	10/18/19	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: Susana Lara-Mesa

**Reported:**  
10/28/19 06:47

**MW-2**  
**1910210-02 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/17/19 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Benzene</b>	<b>120</b>	1.0		ug/l	1	1910290	10/21/19	10/26/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>140</b>	1.0		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>94</b>	2.0		"	"	"	"	"	"	

Date Sampled: **10/17/19 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		90.7 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		96.1 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **10/17/19 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Chloride</b>	<b>258</b>	12.0		mg/L	200	1910273	10/18/19	10/18/19	EPA 300.0	
<b>Sulfate</b>	<b>667</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **10/17/19 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>778</b>	10.0		mg/L	1	1910266	10/18/19	10/18/19	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: Susana Lara-Mesa

**Reported:**  
10/28/19 06:47

**MW-3**  
**1910210-03 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/17/19 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Benzene</b>	<b>47</b>	1.0		ug/l	1	1910290	10/21/19	10/26/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>50</b>	1.0		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>7.7</b>	2.0		"	"	"	"	"	"	

Date Sampled: **10/17/19 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		111 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		76.4 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **10/17/19 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Sulfate</b>	<b>706</b>	60.0		mg/L	200	1910273	10/18/19	10/18/19	EPA 300.0	
<b>Chloride</b>	<b>1620</b>	12.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **10/17/19 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>2170</b>	10.0		mg/L	1	1910266	10/18/19	10/18/19	SM2540C	

Summit Scientific

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Grant

Project Number: [none]  
Project Manager: Susana Lara-Mesa

**Reported:**  
10/28/19 06:47

**MW-4**  
**1910210-04 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/17/19 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>53</b>	1.0	ug/l	1	1910290	10/21/19	10/26/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>6.2</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>35</b>	2.0	"	"	"	"	"	"	

Date Sampled: **10/17/19 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		78.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.6 %	21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **10/17/19 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Chloride</b>	<b>1220</b>	12.0	mg/L	200	1910273	10/18/19	10/18/19	EPA 300.0	
<b>Sulfate</b>	<b>809</b>	60.0	"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **10/17/19 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Total Dissolved Solids</b>	<b>6120</b>	10.0	mg/L	1	1910266	10/18/19	10/18/19	SM2540C	

Summit Scientific

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1675 Broadway  
Denver CO, 80202

Project: Grant

Project Number: [none]  
Project Manager: Susana Lara-Mesa

**Reported:**  
10/28/19 06:47

**MW-5**  
**1910210-05 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/17/19 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1910290	10/21/19	10/26/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **10/17/19 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		155 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.8 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **10/17/19 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Sulfate	<b>1240</b>	60.0		mg/L	200	1910273	10/18/19	10/18/19	EPA 300.0	
Chloride	<b>186</b>	12.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **10/17/19 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	<b>907</b>	10.0		mg/L	1	1910266	10/18/19	10/18/19	SM2540C	

Summit Scientific

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Grant

Project Number: [none]  
Project Manager: Susana Lara-Mesa

**Reported:**  
10/28/19 06:47

**TH-11 (MW-11)**  
**1910210-06 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/17/19 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Benzene</b>	<b>3.4</b>	1.0		ug/l	1	1910290	10/21/19	10/26/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>6.3</b>	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **10/17/19 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		88.4 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		79.7 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **10/17/19 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Sulfate</b>	<b>951</b>	60.0		mg/L	200	1910273	10/18/19	10/18/19	EPA 300.0	
<b>Chloride</b>	<b>1040</b>	12.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **10/17/19 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>1820</b>	10.0		mg/L	1	1910266	10/18/19	10/18/19	SM2540C	

Summit Scientific

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Grant

Project Number: [none]  
Project Manager: Susana Lara-Mesa

**Reported:**  
10/28/19 06:47

**GH**  
**1910210-07 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/17/19 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1910290	10/21/19	10/26/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **10/17/19 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		90.4 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		79.1 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.8 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **10/17/19 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>146</b>	12.0		mg/L	200	1910273	10/18/19	10/18/19	EPA 300.0	
Sulfate	<b>1330</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **10/17/19 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	<b>996</b>	10.0		mg/L	1	1910266	10/18/19	10/18/19	SM2540C	

Summit Scientific

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Grant

Project Number: [none]  
Project Manager: Susana Lara-Mesa

Reported:  
10/28/19 06:47

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### Summit Scientific

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

#### Batch 1910290 - EPA 5030 Water MS

##### Blank (1910290-BLK1)

Prepared: 10/21/19 Analyzed: 10/23/19

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.9		"	13.3		111	23-173			
Surrogate: Toluene-d8	13.2		"	13.3		98.6	20-170			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.4	21-167			

##### LCS (1910290-BS1)

Prepared: 10/21/19 Analyzed: 10/23/19

Benzene	27.4	1.0	ug/l	33.3		82.3	51-132			
Toluene	27.0	1.0	"	33.3		80.9	51-138			
Ethylbenzene	28.2	1.0	"	33.3		84.6	58-146			
m,p-Xylene	54.2	2.0	"	66.7		81.2	57-144			
o-Xylene	26.8	1.0	"	33.3		80.4	53-146			
Surrogate: 1,2-Dichloroethane-d4	15.5		"	13.3		116	23-173			
Surrogate: Toluene-d8	13.4		"	13.3		101	20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		100	21-167			

##### Matrix Spike (1910290-MS1)

Source: 1910192-01

Prepared: 10/21/19 Analyzed: 10/23/19

Benzene	27.9	1.0	ug/l	33.3	ND	83.8	34-141			
Toluene	27.0	1.0	"	33.3	ND	81.0	27-151			
Ethylbenzene	28.5	1.0	"	33.3	ND	85.4	29-160			
m,p-Xylene	54.3	2.0	"	66.7	ND	81.4	20-166			
o-Xylene	27.0	1.0	"	33.3	ND	80.9	33-159			
Surrogate: 1,2-Dichloroethane-d4	14.6		"	13.3		110	23-173			
Surrogate: Toluene-d8	13.4		"	13.3		100	20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		101	21-167			

Summit Scientific

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1675 Broadway  
Denver CO, 80202

Project: Grant

Project Number: [none]  
Project Manager: Susana Lara-Mesa

**Reported:**  
10/28/19 06:47

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

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

**Batch 1910290 - EPA 5030 Water MS**

<b>Matrix Spike Dup (1910290-MSD1)</b>	<b>Source: 1910192-01</b>			Prepared: 10/21/19 Analyzed: 10/23/19					
Benzene	27.6	1.0	ug/l	33.3	ND	83.0	34-141	0.972	30
Toluene	26.8	1.0	"	33.3	ND	80.3	27-151	0.893	30
Ethylbenzene	27.8	1.0	"	33.3	ND	83.5	29-160	2.27	30
m,p-Xylene	52.6	2.0	"	66.7	ND	78.8	20-166	3.20	30
o-Xylene	26.4	1.0	"	33.3	ND	79.3	33-159	2.02	30
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>16.4</i>		<i>"</i>	<i>13.3</i>		<i>123</i>	<i>23-173</i>		
<i>Surrogate: Toluene-d8</i>	<i>13.2</i>		<i>"</i>	<i>13.3</i>		<i>98.9</i>	<i>20-170</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.4</i>		<i>"</i>	<i>13.3</i>		<i>100</i>	<i>21-167</i>		

Summit Scientific

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1675 Broadway  
Denver CO, 80202

Project: Grant

Project Number: [none]  
Project Manager: Susana Lara-Mesa

**Reported:**  
10/28/19 06:47

**Anions by EPA Method 300.0 - Quality Control**  
**Summit Scientific**

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

**Batch 1910273 - General Preparation**

**Blank (1910273-BLK1)**

Prepared & Analyzed: 10/18/19

Sulfate	ND	0.300	mg/L							
Chloride	ND	0.0600	"							

**LCS (1910273-BS1)**

Prepared & Analyzed: 10/18/19

Sulfate	15.3	0.300	mg/L	15.0	102	90-110				
Chloride	2.88	0.0600	"	3.00	95.9	90-110				

**Duplicate (1910273-DUP1)**

Source: 1910212-01

Prepared & Analyzed: 10/18/19

Sulfate	105	0.300	mg/L		105		0.337	20		
Chloride	ND	0.0600	"		ND			20		QM-02

**Matrix Spike (1910273-MS1)**

Source: 1910212-01

Prepared & Analyzed: 10/18/19

Sulfate	118	0.300	mg/L	15.0	105	86.9	80-120			
Chloride	ND	0.0600	"	3.00	ND		80-120			QM-02

Summit Scientific

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 Denver CO, 80202

Project: Grant

Project Number: [none]  
 Project Manager: Susana Lara-Mesa

**Reported:**  
 10/28/19 06:47

**Total Dissolved Solids by SM2540C - Quality Control**  
**Summit Scientific**

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

**Batch 1910266 - General Preparation**

**Blank (1910266-BLK1)**

Prepared & Analyzed: 10/18/19

Total Dissolved Solids      ND      10.0      mg/L

**Duplicate (1910266-DUP1)**

**Source: 1910210-01**

Prepared & Analyzed: 10/18/19

Total Dissolved Solids      664      10.0      mg/L      656      1.30      20

Summit Scientific

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Grant

Project Number: [none]  
Project Manager: Susana Lara-Mesa

**Reported:**  
10/28/19 06:47

### 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