

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: June 24, 2019
APEX Project Number 1-0025.030.00**

Prepared By

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

June 24, 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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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.

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 June 11, 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 6.6 to 9.1 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.

Monitoring well MW-1 was prepared for sampling by purging three (3) well volumes with a polyethylene bailer. Monitoring wells MW-2, MW-3, MW-4, MW-5 and TH-11 were prepared for sampling by purging the wells dry with a polyethylene bailer. Thereafter, the groundwater was sampled from the monitoring wells with the bailers. Groundwater purged from the monitoring wells was placed in the on-site produced water tank.

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 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-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 was 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 June 11, 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-2, MW-3, MW-4 and MW-11. Benzene was detected in the samples at respective concentration of 190, 46, 510 and 9.9 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. Chloride was detected above the COGCC standard in samples collected from monitoring wells MW-4, MW-5 and MW-11. Sulfate was detected above the COGCC standard in the sample collected from monitoring wells MW-3 and MW-11. 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 was detected below the COGCC standard in the sample collected from monitoring Godding Hollow.

Based on the analytical results for soil and groundwater sample collected during this ESA, petroleum contaminated groundwater exceeding COGCC standards are present at the Property. The In March 2019, BTEX compounds were only detected in the groundwater sample collected from monitoring well MW-4. During this monitoring period, BTEX compounds were detected in groundwater samples collected from MW-2, MW-3, MW-4 and MW-11. The varying results may

be due to the seasonal rise in the groundwater levels. APEX recommends continuing with the quarterly groundwater monitoring program in September 2019.

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

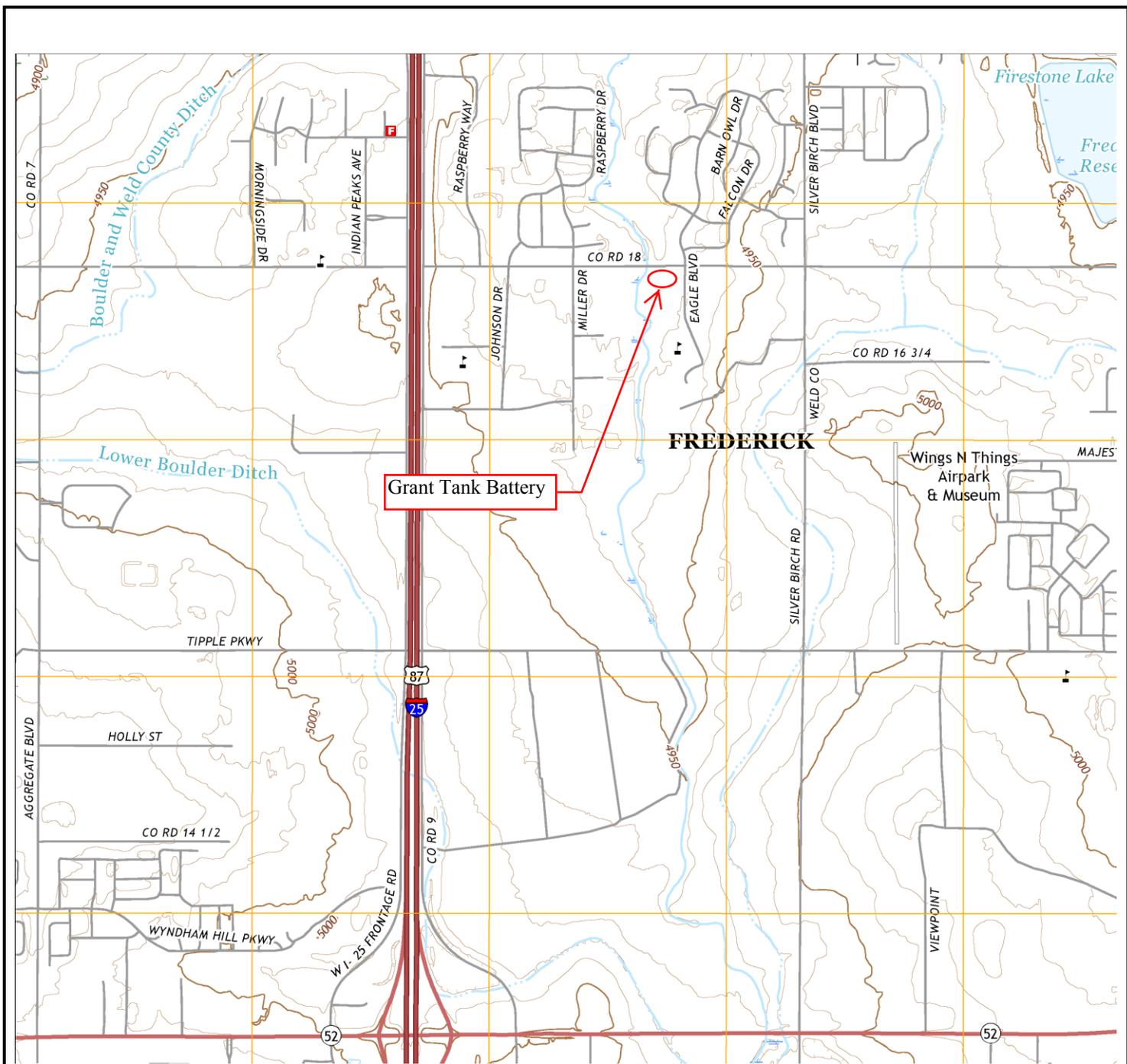


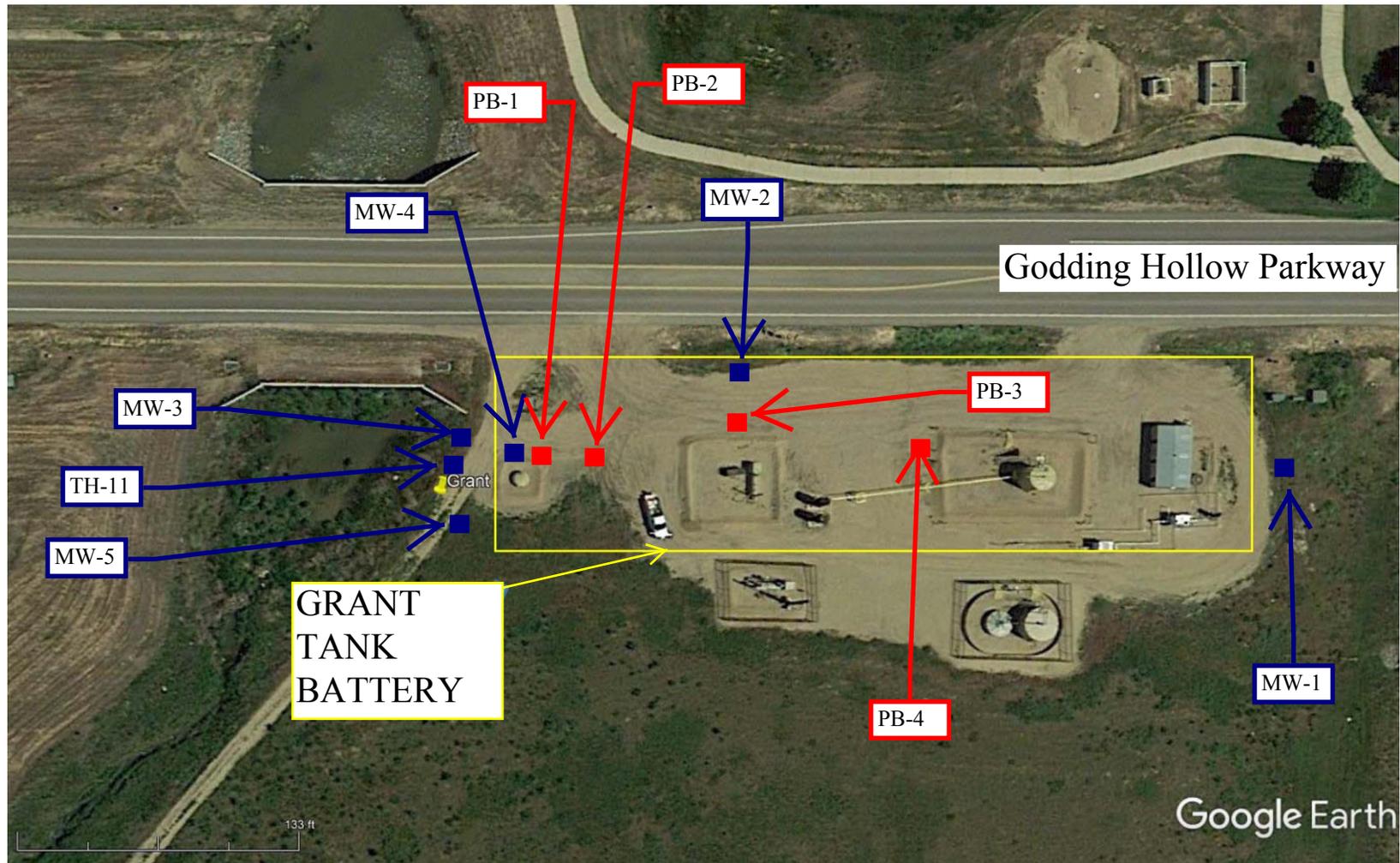
FIGURE 1: VICINITY MAP

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.**



MW-1 → ■ Monitoring Well & Number

PB-1 → ■ 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.

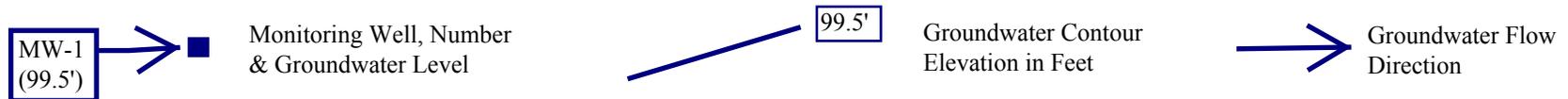
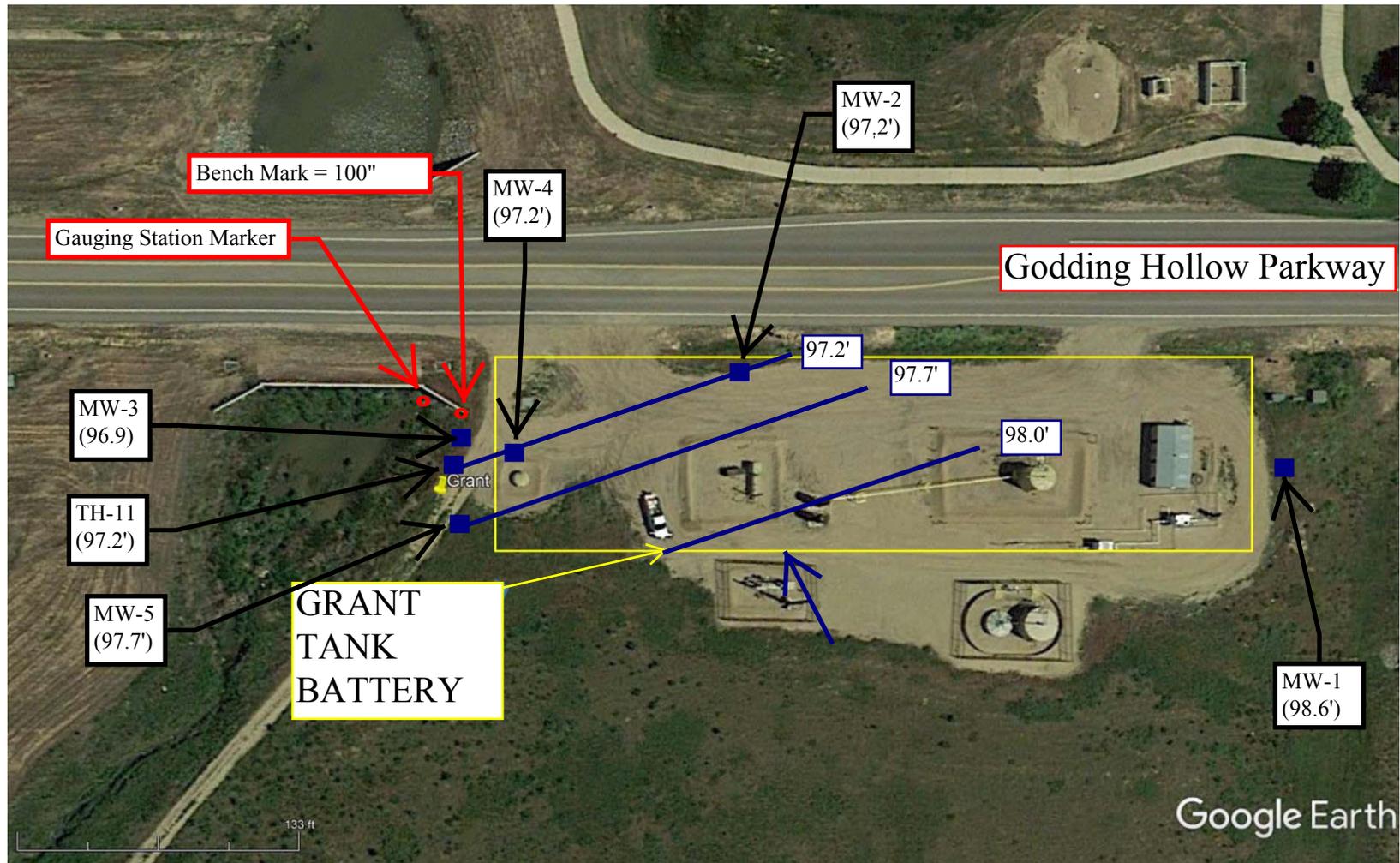


FIGURE 3: Groundwater MAP

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 REPORTS

TABLE 1
SUMMARY OF LABORATORY RESULTS
FOR 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	43523.0	<1	<1	<1	<2	285.0	63.0	685
	43626.0	<1	<1	<1	<1	154.0	27.0	458
MW-2	43523.0	<1	<1	<1	<2	185.0	145.0	888
	43626.0	190.0	<1	270	180	94.2	26.2	563
MW-3	43523.0	<1	<1	<1	<2	311.0	439.0	1810
	43626.0	46.0	<1	16	7780	53.0	1160.0	1670
MW-4	43523.0	210.0	<1	140	350	7780.0	77.0	10400
	43626.0	510.0	<1	510	2670	2670.0	30.8	2860
MW-5	43523.0	<1	<1	<1	<2	544.0	107.0	1040
	43626.0	<1	<1	<1	<2	475.0	74.7	700
MW-11	43523.0	<1	<1	<1	<2	322.0	159.0	1800
	43626.0	9.9	<1	30	<2	685.0	187.0	1220
GH	43523.0	<1	<1	<1	<2	44.0	NA	NA
	43626.0	<1	<1	<1	<2	9.8	NA	NA
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

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

June 19, 2019

Susana Lara-Mesa

K.P. Kauffman

1675 Broadway

Denver, CO 80202

RE: Grant

Work Order # 1906135

Enclosed are the results of analyses for samples received by Summit Scientific on 06/11/19 16:00. 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:
06/19/19 06:05

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	1906135-01	Water	06/11/19 11:30	06/11/19 16:00
MW-2	1906135-02	Water	06/11/19 13:15	06/11/19 16:00
MW-3	1906135-03	Water	06/11/19 14:45	06/11/19 16:00
MW-4	1906135-04	Water	06/11/19 13:45	06/11/19 16:00
MW-5	1906135-05	Water	06/11/19 13:25	06/11/19 16:00
TH-11	1906135-06	Water	06/11/19 14:00	06/11/19 16:00
GH	1906135-07	Water	06/11/19 13:05	06/11/19 16:00

Summit Scientific

S₂

1906135

741 Corporate Circle, Suite J ♦ Golden, Colorado 80401

303-277-9310 ♦ 303-374-5933

Page 1 of 1

Client: KP Kaufman Co, Inc Project Manager: Susana-Cana Mesa
 Address: 1075 Broadway Suite 2800 E-Mail: slaramesa@kpk.com
 City/State/Zip: Denver, CO 80202-4688
 Phone: 303-825-4822 Fax: _____ Project Name: Grant
 Sampler Name: _____ Project Number: _____

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions
					HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	BTEX	Sulfate	Chloride	TPS	
1	MW-1	6/11/19	1130	4	X			X	X				X	X	X	X	
2	MW-2	↓	1315	3	X			X	X				X	X	X	X	
3	MW-3		1445	3	X			X	X				X	X	X	X	
4	MW-4		1345	4	X			X	X				X	X	X	X	
5	MW-5		1325	4	X			X	X				X	X	X	X	
6	TH-11		1400	4	X			X	X				X	X	X	X	
7																	
8																	
9																	
10																	

Relinquished by: <u>[Signature]</u> Date/Time: <u>6/11/19 1600</u>	Received by: <u>[Signature]</u> Date/Time: <u>06/11/19 1600</u>	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 hours <input type="checkbox"/> Sample Integrity: Temperature Upon Receipt: <u>5.7</u> Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes:
Relinquished by: _____ Date/Time: _____	Received by: _____ Date/Time: _____		
Relinquished by: _____ Date/Time: _____	Received by: _____ Date/Time: _____		

Sample Receipt Checklist

S2 Work Order 1906135

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 X Water Other: _____
 (Describe)

Temp (°C)	5.7
-----------	-----

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.	X			
Were all samples received intact ⁽¹⁾ ?	X			
Was adequate sample volume provided ⁽¹⁾ ?	X			
If custody seals are present, are they intact ⁽¹⁾ ?			X	
Are samples with holding times due within 48 hours sample due within 48 hours present?			X	No TAT.
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	X			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	X			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	X			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	X			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			X	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	X			HCl
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			X	
If dissolved metals are requested, were samples field filtered?			X	

Additional Comments (if any):

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

TCZ
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

06/11/19 1920
Date/Time



K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Grant

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

Reported:
06/19/19 06:05

MW-1
1906135-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/11/19 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1906150	06/12/19	06/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **06/11/19 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		94.2 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		98.4 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.5 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/11/19 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Sulfate	154	15.0		mg/L	50	1906153	06/12/19	06/12/19	EPA 300.0	
Chloride	27.0	3.00		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/11/19 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	458	10.0		mg/L	1	1906145	06/12/19	06/12/19	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:
06/19/19 06:05

MW-2
1906135-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/11/19 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	190	100		ug/l	100	1906150	06/12/19	06/16/19	EPA 8260B	
Toluene	ND	1.0		"	1	"	"	"	"	
Ethylbenzene	270	100		"	100	"	"	"	"	
Xylenes (total)	180	2.0		"	1	"	"	"	"	

Date Sampled: **06/11/19 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		104 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		98.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/11/19 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	94.2	3.00		mg/L	50	1906153	06/12/19	06/12/19	EPA 300.0	
Sulfate	26.2	15.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/11/19 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	563	10.0		mg/L	1	1906145	06/12/19	06/12/19	SM2540C	

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Grant

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

Reported:
06/19/19 06:05

MW-3
1906135-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/11/19 14:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	46	1.0		ug/l	1	1906150	06/12/19	06/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	16	1.0		"	"	"	"	"	"	
Xylenes (total)	2000	2.0		"	"	"	"	"	"	

Date Sampled: **06/11/19 14:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		101 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		95.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/11/19 14:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Sulfate	53.0	15.0		mg/L	50	1906153	06/12/19	06/12/19	EPA 300.0	
Chloride	1160	3.00		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/11/19 14:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	1670	10.0		mg/L	1	1906145	06/12/19	06/12/19	SM2540C	

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Grant

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

Reported:
06/19/19 06:05

MW-4
1906135-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/11/19 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	510	100		ug/l	100	1906150	06/12/19	06/16/19	EPA 8260B	
Toluene	ND	1.0		"	1	"	"	"	"	
Ethylbenzene	510	100		"	100	"	"	"	"	
Xylenes (total)	2300	200		"	"	"	"	"	"	

Date Sampled: **06/11/19 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		101 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		97.8 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/11/19 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	2670	3.00		mg/L	50	1906153	06/12/19	06/12/19	EPA 300.0	
Sulfate	30.8	15.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/11/19 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	2860	10.0		mg/L	1	1906145	06/12/19	06/12/19	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:
06/19/19 06:05

MW-5
1906135-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/11/19 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1906150	06/12/19	06/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **06/11/19 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		93.0 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		91.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.2 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/11/19 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Sulfate	475	15.0		mg/L	50	1906153	06/12/19	06/12/19	EPA 300.0	
Chloride	74.7	3.00		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/11/19 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	706	10.0		mg/L	1	1906145	06/12/19	06/12/19	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:
06/19/19 06:05

TH-11
1906135-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/11/19 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	9.9	1.0		ug/l	1	1906150	06/12/19	06/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	30	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **06/11/19 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		94.7 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/11/19 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	685	3.00		mg/L	50	1906153	06/12/19	06/12/19	EPA 300.0	
Sulfate	187	15.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/11/19 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	1220	10.0		mg/L	1	1906145	06/12/19	06/12/19	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:
06/19/19 06:05

GH
1906135-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/11/19 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1906150	06/12/19	06/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **06/11/19 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		93.5 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		99.0 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/11/19 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	9.76	3.00		mg/L	50	1906230	06/18/19	06/18/19	EPA 300.0	

Summit Scientific

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1675 Broadway
Denver CO, 80202

Project: Grant

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

Reported:
06/19/19 06:05

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 1906150 - EPA 5030 Water MS

Blank (1906150-BLK1)

Prepared: 06/12/19 Analyzed: 06/16/19

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.2		"	13.3		99.2	23-173			
Surrogate: Toluene-d8	13.0		"	13.3		97.7	20-170			
Surrogate: 4-Bromofluorobenzene	13.6		"	13.3		102	21-167			

LCS (1906150-BS1)

Prepared: 06/12/19 Analyzed: 06/16/19

Benzene	32.8	1.0	ug/l	33.3		98.3	70-130			
Toluene	34.0	1.0	"	33.3		102	70-130			
Ethylbenzene	36.8	1.0	"	33.3		110	70-130			
m,p-Xylene	71.5	2.0	"	66.7		107	70-130			
o-Xylene	34.3	1.0	"	33.3		103	70-130			
Surrogate: 1,2-Dichloroethane-d4	12.8		"	13.3		96.2	23-173			
Surrogate: Toluene-d8	13.4		"	13.3		101	20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.4	21-167			

Matrix Spike (1906150-MS1)

Source: 1906125-01

Prepared: 06/12/19 Analyzed: 06/16/19

Benzene	1000	1.0	ug/l	33.3	1000	0.00	70-130			E
Toluene	80.0	1.0	"	33.3	44.6	106	70-130			
Ethylbenzene	1000	1.0	"	33.3	1000	0.00	70-130			E
m,p-Xylene	1500	2.0	"	66.7	1500	0.00	70-130			E
o-Xylene	500	1.0	"	33.3	500	0.00	70-130			E
Surrogate: 1,2-Dichloroethane-d4	14.9		"	13.3		112	23-173			
Surrogate: Toluene-d8	13.7		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		99.5	21-167			

Summit Scientific

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Denver CO, 80202

Project: Grant

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

Reported:
06/19/19 06:05

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1906150 - EPA 5030 Water MS

Matrix Spike Dup (1906150-MSD1)	Source: 1906125-01			Prepared: 06/12/19 Analyzed: 06/16/19						
Benzene	1000	1.0	ug/l	33.3	1000	0.00	70-130	0.00	30	E
Toluene	72.6	1.0	"	33.3	44.6	84.0	70-130	9.63	30	
Ethylbenzene	1000	1.0	"	33.3	1000	0.00	70-130	0.00	30	E
m,p-Xylene	1500	2.0	"	66.7	1500	0.00	70-130	0.00	30	E
o-Xylene	1000	1.0	"	33.3	500	NR	70-130	66.7	30	E
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>14.3</i>		<i>"</i>	<i>13.3</i>		<i>107</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.6</i>		<i>"</i>	<i>13.3</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.0</i>		<i>"</i>	<i>13.3</i>		<i>97.6</i>	<i>21-167</i>			

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:
06/19/19 06:05

Anions by EPA Method 300.0 - Quality Control
Summit Scientific

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

Batch 1906153 - General Preparation

LCS (1906153-BS1)

Prepared & Analyzed: 06/12/19

Chloride	2.97	0.0600	mg/L	3.00		99.0	90-110			
Sulfate	15.7	0.300	"	15.0		105	90-110			

Duplicate (1906153-DUP1)

Source: 1906125-01

Prepared & Analyzed: 06/12/19

Chloride	218	0.0600	mg/L		219			0.338	20	
Sulfate	1210	0.300	"		881			31.2	20	QM-02

Matrix Spike (1906153-MS1)

Source: 1906125-01

Prepared & Analyzed: 06/12/19

Sulfate	1210	0.300	mg/L	15.0	881	NR	80-120			QM-02
Chloride	212	0.0600	"	3.00	219	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: Susana Lara-Mesa

Reported:
 06/19/19 06:05

Total Dissolved Solids by SM2540C - Quality Control

Summit Scientific

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

Batch 1906145 - General Preparation

Blank (1906145-BLK1)

Prepared & Analyzed: 06/12/19

Total Dissolved Solids ND 10.0 mg/L

Duplicate (1906145-DUP1)

Source: 1906115-01

Prepared & Analyzed: 06/12/19

Total Dissolved Solids 162 10.0 mg/L 161 0.310 20

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Grant

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

Reported:
06/19/19 06:05

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.
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
- 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