

Prepared For

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

**GROUNDWATER INVESTIGATION FOR
UPRR 43 PAN AM G CONSOLIDATION RELEASE #2
SESE, SECTION 29, TOWNSHIP 1 NORTH, RANGE 67 WEST
WELD COUNTY, COLORADO**

**Date Issued: September 16, 2021
APEX Project Number 1-0025.036.01**

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

September 16, 2021

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

RE: Groundwater Investigation for UPRR 43 PAN AM G Consolidation Release #2, Township 1 North, Range 67 West, Weld County, Colorado

Dear Mr. Knop:

Apex Consulting Services, Inc. is pleased to provide the results of our Groundwater Investigation for the UPRR 43 PAN AM G Consolidation Release #2, Section 29, Township 1 North, Range 67 West, Weld County, Colorado, Colorado. The following report details the field methods and findings of the investigation.

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 groundwater investigation at the UPRR 43 PAN AM G Consolidation Release #2 located in the southeast quarter of the southeast quarter, Section 29, Township 1 North, Range 67 West in Weld County, Colorado (FACILITY). The FACILITY is located along and north of County Road 6 and west of County Road 17. The location of the FACILITY is illustrated on Figure 1 which is included in Appendix A. Contaminated soil impacted by the release were excavated and disposed by KPK. The excavation is currently open and secured with a fence. This investigation was requested by the Colorado Oil and Gas Conservation Commission (COGCC) to determine groundwater quality in vicinity of the release.

2.0 FIELD ACTIVITIES

2.1 Utility Locates and Notifications

Prior to initiating the field activities (soil borings), the State of Colorado law requires that, at least 48 hours prior to the initiation of any subsurface work (drilling, backhoe operation, etc.), a utility inspection be performed at the Property. This inspection consists of the marking of underground utility locations by authorized utility locating personnel. The utility inspection was performed prior to the probing activities. Additionally, a “Notice of Intent to Construct Monitoring Holes” was submitted to and approved by the Office of the State Engineer (62155-MH) prior to initiating field activities.

2.2 Soil Screening and Temporary Well Completion

On July 7, 2021, APEX contracted Drill Pro of Denver, Colorado to provide and operate probing equipment. Drill Pro, under the direction of APEX, advanced four probe boring (MW-1, MW-2, MW-3 and MW-4) with a direct-push, truck-mounted GeoProbe probe rig equipped with a four-foot-long stainless-steel system. All drilling rods and/or sampling equipment were decontaminated between samples and/or borings to prevent cross-contamination. The borings were installed to terminal depths ranging from 12 to 14 feet

below ground surface (BGS). The borings were to the north, northwest, east and west of the excavation. The location of the borings is illustrated on Figure 1 which is included in Appendix A.

Soil samples (cores) were continuously collected from the borings. The soil samples collected from the boring were field screened for the presence of staining, unusual odors and volatile organic compounds (VOCs) vapors with a photo-ionization detector (PID) equipped with a 10.8 electro-volt lamp. Unusual odors, staining or VOCs were not present in the samples or cores collected from the boring. Soil samples were not submitted for analysis since confirmatory soil samples were collected from the sidewalls of the excavation. The field boring log is included in Appendix B.

Top soil was present in the borings from the surface to a depth of approximately one (1) foot BGS. The top soil is underlain by silty clay to depths of 8.5 to 10 feet BGS in the borings. Fine to medium grained sand is present beneath the clay. Weathered claystone was present beneath the sand at depths of 11.5 feet BGS in borings MW-2 and MW-4. Field boring logs are included in Appendix B.

Following the completion of probing, the borings were completed as a temporary monitoring wells by placing polyvinyl chloride (PVC) casing and 10 feet of factory slotted screen in the boring. The boring was filled with 10/20 silica sand and then hydrated bentonite. Groundwater was present in each monitoring well. Well Forms submitted to

The top of the surface casing for each well were surveyed to a local datum (100 feet) utilizing a Bosch Self-Leveling Rotary Laser.

2.3 Groundwater Sampling and Analysis

On July 23, 2020, APEX collected a groundwater sample from the monitoring wells. Field parameters (pH, specific conductance, and temperature) were recorded during sampling.

The samples were handled with clean, new, nitrile gloves and placed in laboratory supplied vials and bottles. The samples (vials and bottles) were stored on ice in a cooler

and delivered to Summit Scientific (SUMMIT) of Golden, Colorado under chain-of-custody documentation. The samples were analyzed for volatile organic compounds (benzene, toluene, ethylbenzene, and total xylenes {BTEX}, naphthalene, 1,2,4-Trimethylbenzene {1,2,4-TMB}, and 1,3,5-Trimethylbenzene {1,3,5-TMB}) by EPA Method 8260B, chloride and sulfate by EPA Method 300 and total dissolved solids (TDS) by EPA Method SM 2540C. The laboratory reports provided by SUMMIT are included in Attachment A. The analytical results are also summarized on Table 1. Benzene was the only volatile organic compound detected in the groundwater samples. Benzene was detected at a concentration of 28 micrograms per liter (ug/L) in the sample collected from monitoring well MW-3.

3.0 CONCLUSIONS AND RECOMMENDATIONS

On July 7, 2021, four (4) probe borings were completed as a temporary monitoring wells at the FACILITY. Petroleum contaminated soils were not encountered in the borings. Groundwater samples were collected from the monitoring wells on July 27, 2021. Benzene was detected at a concentration of 28 micrograms per liter (ug/L) in the sample collected from monitoring well MW-3. The detected concentration exceeds the COGCC cleanup concentration of 5 ug/L. Consequently, additional work is warranted. APEX recommends installing an upgradient well (south of the FACILITY).

APPENDIX A

FIGURE

UPRR 43 PAN AM G Consolidation #2

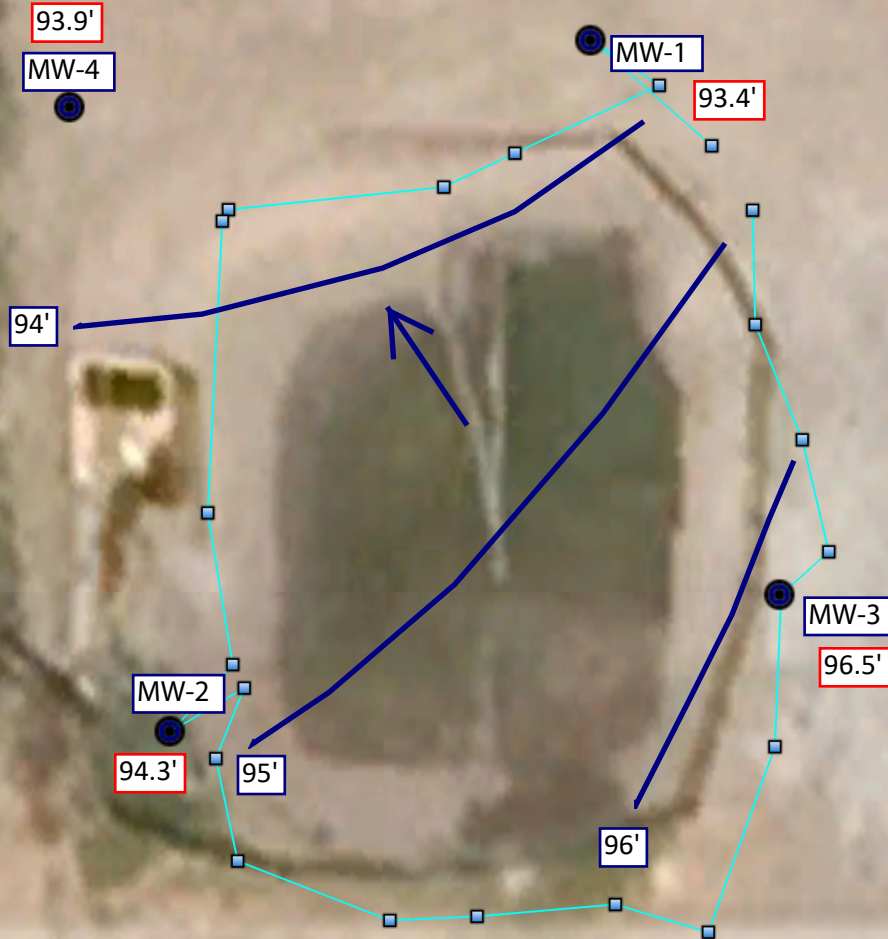
Legend

- 2021-09-01
- Monitoring Well
- Limits of Excavation

94.3' Groundwater Elevation

94' Groundwater Contour

Groundwater Flow Direction



Weld County Road 4

FIGURE 1
GROUNDWATER
FLOW MAP



60 ft

APPENDIX B

BORING LOGS AND WELL FORMS

[illegible]

[illegible]

Form No. GWS-31 02/2017		WELL CONSTRUCTION AND YIELD ESTIMATE REPORT State of Colorado, Office of the State Engineer 1313 Sherman St., Room 821, Denver, CO 80203 303.866.3581 www.water.state.co.us and dwrpermitsonline@state.co.us						For Office Use Only	
1. Well Permit Number: 62155-MH		Receipt Number:							
2. Owner's Well Designation: MW-3									
3. Well Owner Name: K.P. Kauffman Company, Inc.									
4. Well Location Street Address: 1675 Broadway, Suite 2800, Denver, CO 80202									
5. As Built GPS Well Location (required):		<input type="checkbox"/> Zone 12 <input checked="" type="checkbox"/> Zone 13 Easting: 508058.0 Northing: 4429421.0							
6. Legal Well Location: SE 1/4, SE 1/4, Sec., 29 Twp. 1		<input checked="" type="checkbox"/> N or S <input type="checkbox"/> Range 67 <input type="checkbox"/> E or W <input type="checkbox"/> 6 P.M.							
County: Weld									
Subdivision:									
7. Ground Surface Elevation: 5010 feet		Date Completed: 07/07/2021		Drilling Method: Direct Push					
8. Completed Aquifer Name : UNCONFINED		Total Depth: 12 feet		Depth Completed: 12 feet					
9. Advance Notification: Was Notification Required Prior to Construction?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, Date Notification Given: 06/14/2021							
10. Aquifer Type:		<input type="checkbox"/> Type I (One Confining Layer) <input checked="" type="checkbox"/> Type I (Multiple Confining Layers) <input type="checkbox"/> Laramie-Fox Hills							
(Check one)		<input type="checkbox"/> Type II (Not overlain by Type III) <input type="checkbox"/> Type II (Overlain by Type III) <input type="checkbox"/> Type III (alluvial/colluvial)							
11. Geologic Log:									
Depth	Type	Grain Size	Color	Water Loc.	12. Hole Diameter (in.)	From (ft)	To (ft)		
0-1	SOIL	NA	BROWN		2.0	0	12.0		
1-8	CLAY	SILTY	Y. BROWN						
8-12	SAND	MED-VC	BROWN	8'					
					13. Plain Casing				
					OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
					1	PVC	SCH 40	0	2
					Perforated Casing Screen Slot Size (in): .1				
					OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
					1	PVC	SCH 40	2	12
					14. Filter Pack:				
					Material	SAND		15. Packer Placement:	
					Size	10/20		Type	NONE
					Interval	2-12		Depth	
					16. Grouting Record				
					Material	Amount	Density	Interval	Method
					BENT.	20 LB		0-2	POUR
Remarks:									
17. Disinfection: Type NA					Amt. Used NA				
18. Well Yield Estimate Data:					<input type="checkbox"/> Check box if Test Data is submitted on Form Number GWS-39, Well Yield Test Report				
Well Yield Estimate Method:									
Static Level: 8.7					Estimated Yield (gpm) NA				
Date/Time measured: 07/23/21 0815					Estimate Length (hrs) NA				
Remarks:									
19. I have read the statements made herein and know the contents thereof, and they are true to my knowledge. This document is signed (or name entered if filing online) and certified in accordance with Rule 17.4 of the Water Well Construction Rules, 2 CCR 402.2. The filing of a document that contains false statements is a violation of section 37 91 108(1)(e), C.R.S., and is punishable by fines up to \$1,000 and/or revocation of the contracting license. If filing online the State Engineer considers the entry of the licensed contractor's name to be compliance with Rule 17.4.									
Company Name: Apex Consulting Services, Inc.			Email: mhattel@msn.com			Phone w/area code: (303) 665-1400		License Number: PG-706	
Mailing Address: Box 369, Louisville, CO 80027-0369									
Sign (or enter name if filing online) Michael Hattel			Print Name and Title Michael Hattel, PG				Date: 09/16/2021		

[illegible]

ENVIRONMENTAL BORING LOG						BORING No. <u>U-1</u>	
Project No: <u>KPK</u>			Location: <u>U PPR 43</u>			Page <u>1</u> of <u>1</u>	
Date: <u>10-17-21</u>		Weather Conditions: <u>Sunny, Warm, = 75°F</u>			Personnel: <u>MOR / Drill P. Terrence</u>		
Comments: <u>PID w 10.8 ev cal. to 100ppm</u>							
Depth (feet)	Description	Lithology	Well Construction	Water Level	Organic Vapors	Samples	
						Type/ Interval	Recovery
1	<u>TOP SOIL</u>	X			<1		
4	<u>Clay, brown, silty, med str. No staining or odors (CV)</u>	/			<1		
8		/			<1		
12	<u>Sand, yellow-brown, med to very coarse grained. No cont. (SW)</u>	.		9'	<1		
16		.			<1		
20		.			<1		
24		.			<1		
28		.			<1		
32		.			<1		
36		.			<1		
40		.			<1		
44		.			<1		
48		.			<1		
52		.			<1		
56		.			<1		
60		.			<1		
64		.			<1		
68		.			<1		
72		.			<1		
76		.			<1		
80		.			<1		
84		.			<1		
88		.			<1		
92		.			<1		
96		.			<1		
100		.			<1		
104		.			<1		
108		.			<1		
112		.			<1		
116		.			<1		
120		.			<1		
124		.			<1		
128		.			<1		
132		.			<1		
136		.			<1		
140		.			<1		
144		.			<1		
148		.			<1		
152		.			<1		
156		.			<1		
160		.			<1		
164		.			<1		
168		.			<1		
172		.			<1		
176		.			<1		
180		.			<1		
184		.			<1		
188		.			<1		
192		.			<1		
196		.			<1		
200		.			<1		
204		.			<1		
208		.			<1		
212		.			<1		
216		.			<1		
220		.			<1		
224		.			<1		
228		.			<1		
232		.			<1		
236		.			<1		
240		.			<1		
244		.			<1		
248		.			<1		
252		.			<1		
256		.			<1		
260		.			<1		
264		.			<1		
268		.			<1		
272		.			<1		
276		.			<1		
280		.			<1		
284		.			<1		
288		.			<1		
292		.			<1		
296		.			<1		
300		.			<1		
304		.			<1		
308		.			<1		
312		.			<1		
316		.			<1		
320		.			<1		
324		.			<1		
328		.			<1		
332		.			<1		
336		.			<1		
340		.			<1		
344		.			<1		
348		.			<1		
352		.			<1		
356		.			<1		
360		.			<1		
364		.			<1		
368		.			<1		
372		.			<1		
376		.			<1		
380		.			<1		
384		.			<1		
388		.			<1		
392		.			<1		
396		.			<1		
400		.			<1		
404		.			<1		
408		.			<1		
412		.			<1		
416		.			<1		
420		.			<1		
424		.			<1		
428		.			<1		
432		.			<1		
436		.			<1		
440		.			<1		
444		.			<1		
448		.			<1		
452		.			<1		
456		.			<1		
460		.			<1		
464		.			<1		
468		.			<1		
472		.			<1		
476		.			<1		
480		.			<1		
484		.			<1		
488		.			<1		
492		.			<1		
496		.			<1		
500		.			<1		
504		.			<1		
508		.			<1		
512		.			<1		
516		.			<1		
520		.			<1		
524		.			<1		
528		.			<1		
532		.			<1		
536		.			<1		
540		.			<1		
544		.			<1		
548		.			<1		
552		.			<1		
556		.			<1		
560		.			<1		
564		.			<1		
568		.			<1		
572		.			<1		
576		.			<1		
580		.			<1		
584		.			<1		
588		.			<1		
592		.			<1		
596		.			<1		
600		.			<1		
604		.			<1		
608		.			<1		
612		.			<1		
616		.			<1		
620		.			<1		
624		.			<1		

ENVIRONMENTAL BORING LOG						BORING No. 11-2	
Project No: KPK			Location: UPPR 43			Page 1 of 1	
Date: 7/7/21		Weather Conditions: Sunny, muggy, ~70°F			Personnel: MWA/Dell P. Terence		
Comments: PID w/ 10.8 EV cal to 100ppm. SW 7 exc							
Depth (feet)	Description	Lithology	Well Construction	Water Level	Organic Vapors	Samples	
						Type/Interval	Recovery
1	Top soil	X					
7	Clay, brown, stiff, cat/silty @ 8-10'. No evidence of petro cont. (CI)	/			<1		
8		/			<1		
9		/			<1		
10		/			<1		
11	Sand, brown fine to med (SW)	.			<1		
11.5	Weathered claystone/shale gray	///					
12							
10	TD = 121						

Signature of Field Personnel:

MWA

APEX CONSULTING SERVICES, INC.

Louisville, CO (303) 665-1400

OVER

ENVIRONMENTAL BORING LOG						BORING No. <u>U-3</u>		
Project No: <u>KPK</u>			Location: <u>U PPR 43</u>			Page <u>1</u> of <u>1</u>		
Date: <u>7-7-21</u>		Weather Conditions: <u>Sunny, Muggy, ~70F</u>			Personnel: <u>MMA DrillPro-Terrano</u>			
Comments: <u>PFD w/ 10.8 EV lamp cal to 100 ppm (SE & Exc)</u>								
Depth (feet)	Description	Lithology	Well Construction	Water Level	Organic Vapors	Samples		
						Type/ Interval	Recovery	Blows/ 6 inches
5	<u>Top Soil</u>	<u>X</u>						
1	Clay, brown, stiff, NO evidence of petro cont. (CI) Silty 7-8'				<1			
4								
8								
12								
8	Sand, yellow brown, med to vc gravel (SW)			~8'	<1			
12								
16								
	TD=12'							

Signature of Field Personnel: MMA

APEX CONSULTING SERVICES, INC.
Louisville, CO (303) 665-1400

OVER

ENVIRONMENTAL BORING LOG						BORING No. <u>12-41</u>	
Project No: <u>KPK</u>			Location: <u>ULPPR 413</u>			Page <u>1</u> of <u>1</u>	
Date: <u>7/7/21</u>		Weather Conditions: <u>Sunny, muggy, ≈ 75°F</u>			Personnel: <u>MRB/DJ/RD Tennant</u>		
Comments: <u>PID 10 EV w Cal to 100ppm</u>							
Depth (feet)	Description	Lithology	Well Construction	Water Level	Organic Vapors	Samples	
						Type/ Interval	Recovery
1	Top Soil	X					
4	Clay, brown, stiff, NO contamination (CI)	/			< 1		
8	Silty & bottom of run	/			< 1		
8.5	Sand, brown-yellow, med - coarse NO cont.	/		~8'	< 1		
12	Weathered shale/claystone, grey	/			< 1		
TD = 12'							

Signature of Field Personnel: MRB

APEX CONSULTING SERVICES, INC.
Louisville, CO (303) 665-1400

OVER

APPENDIX C

LABORATORY REPORT

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 09, 2021

Max Knop

K.P. Kauffman

1675 Broadway

Denver, CO 80202

RE: UPPR

Work Order #2107354

Enclosed are the results of analyses for samples received by Summit Scientific on 07/23/21 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 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



K.P. Kauffman
1675 Broadway
Denver CO, 80202

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

Reported:
08/09/21 09:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
UMW-1	2107354-01	Water	07/23/21 07:15	07/23/21 16:30
UMW-2	2107354-02	Water	07/23/21 07:55	07/23/21 16:30
UMW-3	2107354-03	Water	07/23/21 08:15	07/23/21 16:30
UMW-4	2107354-04	Water	07/23/21 07:35	07/23/21 16:30

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.

Summit Scientific



2107354

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Page 1 of 1

Client: K.P. Kauffman Company, Inc.

Project Manager: Max Knop

Address: 1675 Broadway, Suite 2800

E-Mail: MKnop@kpk.com

City/State/Zip: Denver, CO 80202-4628

Phone: 303-825-4822

Project Name: UAPR

Sampler Name: Mike Hattel (mhattel@msn.com)

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	9/15-1 VOC	TD5	CI-	Sulfate					
1	UMW-1	7/23/21	715	4	X				X				X	X	X	X					
2	UMW-2		755	4	X				X				X	X	X	X					
3	UMW-3		815	4	X				X				X	X	X	X					
4	UMW-4		735	4	X				X				X	X	X	X					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: <u>Mike Hattel</u> Date/Time: <u>7/23/21 1405</u>	Received by: <u>John Ben</u> Date/Time: <u>7/23/21 1630</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>6</u> Samples Intact: <input checked="" type="checkbox"/> No <input type="checkbox"/>	Notes: PDF copy also to Mike Hattel @ mhattel@msn.com
Relinquished by: _____ Date/Time: _____	Received by: _____ Date/Time: _____		
Relinquished by: _____ Date/Time: _____	Received by: _____ Date/Time: _____		

Sample Receipt Checklist

S2 Work Order 2107354

Client: K.P. Kaufman Client Project ID: UPPR

Shipped Via: ☐ H.D. ☒ P.U. ☐ FedEx ☐ UPS ☐ USPS ☐ Other _____ Airbill #: _____

Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☒ Water ☐ Other: _____
(Describe)

Temp (°C)	6
-----------	---

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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCl
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.

JB
Custodian Printed Name or Initials

John B...
Signature of Custodian

7/23/21
Date/Time



K.P. Kauffman
1675 Broadway
Denver CO, 80202

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

Reported:
08/09/21 09:15

UMW-1
2107354-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/23/21 07:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BEG0452	07/26/21	07/27/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **07/23/21 07:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		83.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		128 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		128 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **07/23/21 07:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chloride	212	12.0	mg/L	200	BEG0498	07/28/21	07/28/21	EPA 300.0	
Sulfate	1150	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **07/23/21 07:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Total Dissolved Solids	1520	10.0	mg/L	1	BEG0504	07/28/21	07/29/21	SM2540C	

Summit Scientific

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K.P. Kauffman
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Denver CO, 80202

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

Reported:
08/09/21 09:15

UMW-2
2107354-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/23/21 07:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEG0452	07/26/21	07/27/21	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **07/23/21 07:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		82.4 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		128 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		128 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **07/23/21 07:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	175	12.0		mg/L	200	BEG0498	07/28/21	07/28/21	EPA 300.0	
Sulfate	681	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **07/23/21 07:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	1170	10.0		mg/L	1	BEG0504	07/28/21	07/29/21	SM2540C	

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

Reported:
08/09/21 09:15

UMW-3
2107354-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/23/21 08:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	28	1.0		ug/l	1	BEG0452	07/26/21	07/27/21	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **07/23/21 08:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		87.8 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		129 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		129 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **07/23/21 08:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	175	12.0		mg/L	200	BEG0498	07/28/21	07/28/21	EPA 300.0	
Sulfate	531	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **07/23/21 08:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	1240	10.0		mg/L	1	BEG0504	07/28/21	07/29/21	SM2540C	

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

Reported:
08/09/21 09:15

UMW-4
2107354-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/23/21 07:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BEG0452	07/26/21	07/27/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **07/23/21 07:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		86.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		130 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		130 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **07/23/21 07:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chloride	389	12.0	mg/L	200	BEG0498	07/28/21	07/28/21	EPA 300.0	
Sulfate	1780	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **07/23/21 07:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Total Dissolved Solids	2140	10.0	mg/L	1	BEG0504	07/28/21	07/29/21	SM2540C	

Summit Scientific

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

Reported:
08/09/21 09:15

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 BEG0452 - EPA 5030 Water MS

Blank (BEG0452-BLK1)

Prepared: 07/26/21 Analyzed: 07/27/21

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	11.6		"	13.3		87.0	23-173			
Surrogate: Toluene-d8	14.2		"	13.3		107	20-170			
Surrogate: 4-Bromofluorobenzene	13.6		"	13.3		102	21-167			

LCS (BEG0452-BS1)

Prepared: 07/26/21 Analyzed: 07/27/21

Benzene	49.8	1.0	ug/l	50.0		99.6	51-132			
Toluene	51.6	1.0	"	50.0		103	51-138			
Ethylbenzene	48.7	1.0	"	50.0		97.4	58-146			
m,p-Xylene	105	2.0	"	100		105	57-144			
o-Xylene	54.2	1.0	"	50.0		108	53-146			
Naphthalene	65.2	1.0	"	50.0		130	70-130			
1,2,4-Trimethylbenzene	46.2	1.0	"	50.0		92.4	70-130			
1,3,5-Trimethylbenzene	42.2	1.0	"	50.0		84.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	16.1		"	13.3		121	23-173			
Surrogate: Toluene-d8	15.0		"	13.3		113	20-170			
Surrogate: 4-Bromofluorobenzene	14.2		"	13.3		107	21-167			

Matrix Spike (BEG0452-MS1)

Source: 2107348-21

Prepared: 07/26/21 Analyzed: 07/27/21

Benzene	56.1	1.0	ug/l	50.0	ND	112	34-141			
Toluene	50.5	1.0	"	50.0	ND	101	27-151			
Ethylbenzene	51.5	1.0	"	50.0	ND	103	29-160			
m,p-Xylene	105	2.0	"	100	ND	105	20-166			
o-Xylene	52.3	1.0	"	50.0	ND	105	33-159			
Naphthalene	54.7	1.0	"	50.0	ND	109	70-130			
1,2,4-Trimethylbenzene	51.1	1.0	"	50.0	ND	102	70-130			
1,3,5-Trimethylbenzene	51.6	1.0	"	50.0	ND	103	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.3		"	13.3		99.8	23-173			
Surrogate: Toluene-d8	13.6		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3		101	21-167			

Summit Scientific

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

Reported:
08/09/21 09:15

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 BEG0452 - EPA 5030 Water MS

Matrix Spike Dup (BEG0452-MSD1)		Source: 2107348-21			Prepared: 07/26/21 Analyzed: 07/27/21					
Benzene	57.7	1.0	ug/l	50.0	ND	115	34-141	2.81	30	
Toluene	52.2	1.0	"	50.0	ND	104	27-151	3.25	30	
Ethylbenzene	52.1	1.0	"	50.0	ND	104	29-160	1.18	30	
m,p-Xylene	106	2.0	"	100	ND	106	20-166	0.984	30	
o-Xylene	52.7	1.0	"	50.0	ND	105	33-159	0.781	30	
Naphthalene	56.6	1.0	"	50.0	ND	113	70-130	3.36	30	
1,2,4-Trimethylbenzene	52.9	1.0	"	50.0	ND	106	70-130	3.44	30	
1,3,5-Trimethylbenzene	53.4	1.0	"	50.0	ND	107	70-130	3.49	30	
Surrogate: 1,2-Dichloroethane-d4	12.8		"	13.3		96.4	23-173			
Surrogate: Toluene-d8	13.7		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		99.9	21-167			

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Reported:
08/09/21 09:15

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 BEG0498 - General Preparation

Blank (BEG0498-BLK1)

Prepared & Analyzed: 07/28/21

Chloride	ND	0.0600	mg/L
Sulfate	ND	0.300	"

LCS (BEG0498-BS1)

Prepared & Analyzed: 07/28/21

Chloride	2.92	0.0600	mg/L	3.00	97.3	90-110
Sulfate	14.6	0.300	"	15.0	97.1	90-110

Duplicate (BEG0498-DUP1)

Source: 2107379-01

Prepared & Analyzed: 07/28/21

Chloride	162	0.0600	mg/L	163	0.441	20
Sulfate	ND	0.300	"	ND		20

Matrix Spike (BEG0498-MS1)

Source: 2107379-01

Prepared & Analyzed: 07/28/21

Chloride	160	0.0600	mg/L	3.00	163	NR	80-120	QM-02
Sulfate	ND	0.300	"	15.0	ND		80-120	QM-02

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

Reported:
08/09/21 09:15

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

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

Batch BEG0504 - General Preparation

Blank (BEG0504-BLK1)

Prepared: 07/28/21 Analyzed: 07/29/21

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BEG0504-DUP1)

Source: 2107353-01

Prepared: 07/28/21 Analyzed: 07/29/21

Total Dissolved Solids 652 10.0 mg/L 650 0.322 20

Summit Scientific

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1675 Broadway
Denver CO, 80202

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

Reported:
08/09/21 09:15

Notes and Definitions

QM-02	The RPD and/or percent recovery for this QC 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