BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D74440
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP16804
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/01/15

Metal	RL	IDL	MDL	MB raw	final

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D74440
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP16804
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/01/15

Metal	D74440-1F Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	275000	590000	250000	126.0N(a	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	39300	297000	250000	103.1	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium	181000	450000	250000	107.6	75-125
Selenium					
Silicon					
Silver					
Sodium	6320000	6940000	250000	248.0(b)	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP16804: D74440-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D74440
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP16804
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/01/15

Metal	D74440-1F Original MS	Spikelot ICPALL2	% Rec	QC Limits

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference.
(b) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

6.1.2

6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D74440
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP16804
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/01/15

Metal	D74440-1F Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	275000	626000	250000	140.4N(a	5.9	20
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium	39300	304000	250000	105.9	2.3	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium	181000	473000	250000	116.8	5.0	20
Selenium						
Silicon						
Silver						
Sodium	6320000	7590000	250000	508.0(b)	8.9	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP16804: D74440-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D74440
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP16804
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/01/15

Metal	D74440-1F Original MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference.
(b) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

6.1.2

6

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D74440
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP16804
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/01/15

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	26800	25000	107.2	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	25400	25000	101.6	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium	24900	25000	99.6	80-120
Selenium				
Silicon				
Silver				
Sodium	25900	25000	103.6	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP16804: D74440-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D74440
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP16804
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/01/15

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits

(anr) Analyte not requested

6.1.3

6

ACCUTEST LABORATORIES

D74440

SERIAL DILUTION RESULTS SUMMARY

Login Number: D74440
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP16804
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/01/15

Metal	D74440-1F Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	27500	25700	6.8	0-10
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	3930	3680	6.4	0-10
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium	18100	16200	10.6 (a)	0-10
Selenium				
Silicon				
Silver				
Sodium	632000	623000	1.4	0-10
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP16804: D74440-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D74440
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP16804
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/01/15

Metal	D74440-1F Original SDL 5:25 %DIF	QC Limits

(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

6.1.4 6

Mountain States ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D74440
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Bromide	GP16097/GN31363	0.050	0.0	mg/l	0.5	0.501	100.2	90-110%
Chloride	GP16097/GN31363	0.50	0.0	mg/l	5	5.36	107.2	90-110%
Fluoride	GP16097/GN31363	0.10	0.0	mg/l	1	1.10	110.0	90-110%
HEM Oil and Grease	GP16118/GN31393	5.0	0.0	mg/l	40	35.7	89.3	78-114%
Nitrogen, Nitrate	GP16097/GN31363	0.010	0.0	mg/l	0.1	0.109	109.0	90-110%
Nitrogen, Nitrite	GP16097/GN31363	0.0040	0.0	mg/l	0.05	0.0505	101.0	90-110%
Phosphate, Ortho	GP16097/GN31363	0.050	0.0	mg/l	0.5	0.507	101.4	90-110%
Solids, Total Dissolved	GN31388	10	0.0	mg/l				
Solids, Total Dissolved	GN31388	10	0.0	mg/l	400	388	97.0	90-110%
Sulfate	GP16097/GN31363	0.50	0.0	mg/l	5	5.05	101.0	90-110%
Total Organic Carbon	GP16127/GN31410	1.0	0.0	mg/l	5	4.98	99.6	90-110%
pH	GN31372			su	8.00	7.99	99.8	99.1-100

Associated Samples:
Batch GN31372: D74440-1
Batch GN31388: D74440-1
Batch GP16097: D74440-1
Batch GP16118: D74440-1
Batch GP16127: D74440-1
(*) Outside of QC limits

7.1 7

BLANK SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D74440
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
HEM Oil and Grease	GP16118/GN31393	mg/l	40	35.7	0.0	18%

Associated Samples:
Batch GP16118: D74440-1
(*) Outside of QC limits

7.2

7

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D74440
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN31388	D74445-1	mg/l	2690	2650	1.5	0-20%
Total Organic Carbon	GP16127/GN31410	D74324-2	mg/l	0.0	0.0	0.0	0-20%

Associated Samples:
Batch GN31388: D74440-1
Batch GP16127: D74440-1
(*) Outside of QC limits

7.3

7

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D74440
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Bromide	GP16097/GN31363	D74436-1	mg/l	0.50	10	10.8	103.0	80-120%
Chloride	GP16097/GN31363	D74436-1	mg/l	182	100	293	111.0	80-120%
Fluoride	GP16097/GN31363	D74436-1	mg/l	1.7	20	22.7	105.0	80-120%
HEM Oil and Grease	GP16118/GN31393	D74144-1	mg/l	2.0	40	38.1	90.3	78-114%
Nitrogen, Nitrate	GP16097/GN31363	D74436-1	mg/l	5.6	2	7.7	105.0	80-120%
Nitrogen, Nitrite	GP16097/GN31363	D74436-1	mg/l	0.089	1	1.0	91.1	80-120%
Phosphate, Ortho	GP16097/GN31363	D74436-1	mg/l	0.0	10	11.2	112.0	80-120%
Sulfate	GP16097/GN31363	D74436-1	mg/l	339	100	449	110.0	80-120%
Total Organic Carbon	GP16127/GN31410	D74324-2	mg/l	0.0	10	10.4	104.0	80-120%

Associated Samples:
Batch GP16097: D74440-1
Batch GP16118: D74440-1
Batch GP16127: D74440-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

7.4

7

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D74440
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Bromide	GP16097/GN31363	D74436-1	mg/l	0.50	10	11.0	1.8	20%
Chloride	GP16097/GN31363	D74436-1	mg/l	182	100	306	4.3	20%
Fluoride	GP16097/GN31363	D74436-1	mg/l	1.7	20	25.8	12.8	20%
Nitrogen, Nitrate	GP16097/GN31363	D74436-1	mg/l	5.6	2	7.8	1.3	20%
Nitrogen, Nitrite	GP16097/GN31363	D74436-1	mg/l	0.089	1	1.0	0.0	20%
Phosphate, Ortho	GP16097/GN31363	D74436-1	mg/l	0.0	10	11.8	5.2	20%
Sulfate	GP16097/GN31363	D74436-1	mg/l	339	100	452	0.7	20%
Total Organic Carbon	GP16127/GN31410	D74324-2	mg/l	0.0	10	10.2	1.9	20%

Associated Samples:
Batch GP16097: D74440-1
Batch GP16127: D74440-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

7.3

Mountain States
ACCUTEST
LABORATORIES

10/02/15

Technical Report for

K.P. Kauffman Company, Inc.

Wattenberg Tank

Accutest Job Number: D75646

Sampling Date: 09/28/15

Report to:

K.P. Kauffman Company, Inc.
1675 Broadway Suite 2800
Denver, CO 80202-4628
slaramesa@kpk.com; mhattel@msn.com

ATTN: Susana Lara-Mesa

Total number of pages in report: 29

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Scott Heideman
Laboratory Director

Client Service contact: Renea Lewis 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), LA (LA150028), TX (T104704511), WY
CO (CO00049), EPA 524.2 Provisional

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Sample Summary

K.P. Kauffman Company, Inc.

Job No: D75646

Wattenberg Tank

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D75646-1	09/28/15	10:50	MH	09/28/15	AQ	Water	TANK-I
D75646-1F	09/28/15	10:50	MH	09/28/15	AQ	Water Filtered	TANK-I

ACCUTEST LABORATORIES

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	K.P. Kauffman Company, Inc.	**Job No**	D75646
Site:	Wattenberg Tank	**Report Date**	10/2/2015 3:28:36 PM

On 09/28/2015, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 12.9 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D75646 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Metals By Method SW846 6010C

Matrix: AQ **Batch ID:** MP17048

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D75585-1FMS, D75585-1FMSD, D75585-1FSDL were used as the QC samples for the metals analysis.
- The serial dilution RPD(s) for Potassium are outside control limits for sample MP17048-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Wet Chemistry By Method ASTM D287

Matrix: ALL **Batch ID:** GN31802

- The data for ASTM D287 meets quality control requirements.

Wet Chemistry By Method EPA 1664A

Matrix: AQ **Batch ID:** GP16324

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D75617-1MS were used as the QC samples for the HEM Oil and Grease analysis.

Wet Chemistry By Method EPA 300.0/SW846 9056

Matrix: AQ **Batch ID:** GP16309

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D75657-3MS, D75657-3MSD were used as the QC samples for the Chloride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Chloride analysis.
- D75646-1 for Nitrogen, Nitrate: Elevated detection limit due to matrix interference.
- D75646-1 for Sulfate: Elevated detection limit due to matrix interference.

Wet Chemistry By Method SM 2540C-2011

Matrix: AQ **Batch ID:** GN31739

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D75541-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

Wet Chemistry By Method SM 5310B-2011

Matrix: AQ	Batch ID: GP16336

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D75569-1DUP, D75569-1MS, D75569-1MSD were used as the QC samples for the Total Organic Carbon analysis.

Wet Chemistry By Method SM4500HB+-2011/9040C

Matrix: AQ	Batch ID: GN31778

- The following samples were run outside of holding time for method SM4500HB+-2011/9040C: D75646-1 Analysis performed past the required 15 minutes from collection time/holding time.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits

Job Number: D75646
Account: K.P. Kauffman Company, Inc.
Project: Wattenberg Tank
Collected: 09/28/15

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D75646-1	**TANK-I**					
Chloride		11500	500		mg/l	EPA 300.0/SW846 9056
HEM Oil and Grease		23.0	4.8		mg/l	EPA 1664A
Nitrogen, Nitrite		4.3	4.0		mg/l	EPA 300.0/SW846 9056
Solids, Total Dissolved		20300	10		mg/l	SM 2540C-2011
Specific Gravity by Hydrometer		1.0165				ASTM D287
Total Organic Carbon		71.1	5.0		mg/l	SM 5310B-2011
pH [a]		7.20			su	SM4500HB+ -2011/9040C
D75646-1F	**TANK-I**					
Calcium		220000	20000		ug/l	SW846 6010C
Magnesium		32200	10000		ug/l	SW846 6010C
Potassium		160000	50000		ug/l	SW846 6010C
Sodium		6490000	20000		ug/l	SW846 6010C

(a) Analysis performed past the required 15 minutes from collection time/holding time.

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	TANK-I		
Lab Sample ID:	D75646-1	**Date Sampled:**	09/28/15
Matrix:	AQ - Water	**Date Received:**	09/28/15
		Percent Solids:	n/a
Project:	Wattenberg Tank		

4.1.4

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	11500	500	mg/l	1000	09/29/15 15:30	JB	EPA 300.0/SW846 9056
HEM Oil and Grease	23.0	4.8	mg/l	1	10/02/15	SWT	EPA 1664A
Nitrogen, Nitrate [a]	< 0.50	0.50	mg/l	50	09/29/15 11:29	JB	EPA 300.0/SW846 9056
Nitrogen, Nitrite	4.3	4.0	mg/l	1000	09/29/15 15:30	JB	EPA 300.0/SW846 9056
Solids, Total Dissolved	20300	10	mg/l	1	09/29/15	TJ	SM 2540C-2011
Specific Gravity by Hydromete	1.0165			1	10/02/15	MM	ASTM D287
Sulfate [a]	< 25	25	mg/l	50	09/29/15 11:29	JB	EPA 300.0/SW846 9056
Total Organic Carbon	71.1	5.0	mg/l	5	10/01/15 13:32	JB	SM 5310B-2011
pH [b]	7.20		su	1	10/01/15 15:00	AK	SM4500HB+ -2011/9040C

(a) Elevated detection limit due to matrix interference.
(b) Analysis performed past the required 15 minutes from collection time/holding time.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TANK-I		
Lab Sample ID:	D75646-1F	**Date Sampled:**	09/28/15
Matrix:	AQ - Water Filtered	**Date Received:**	09/28/15
		Percent Solids:	n/a
Project:	Wattenberg Tank		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	220000	20000	ug/l	50	09/29/15	09/30/15	LH	SW846 6010C [1]	SW846 3010A [2]
Magnesium	32200	10000	ug/l	50	09/29/15	09/30/15	LH	SW846 6010C [1]	SW846 3010A [2]
Potassium	160000	50000	ug/l	50	09/29/15	09/30/15	LH	SW846 6010C [1]	SW846 3010A [2]
Sodium	6490000	20000	ug/l	50	09/29/15	09/30/15	LH	SW846 6010C [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA6580
(2) Prep QC Batch: MP17048

RL = Reporting Limit

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST Laboratories

4036 Youngfield St., Wheat Ridge, CO 80033
303-425-6021 FAX: 303-425-6854

FED-EX Tracking #:
Bottle Order Control #:
Accutest Quote #:
Accutest Job #: D75646

Client / Reporting Information

Company Name: K.P. Kauffman Company, Inc.
Address: 1675 Broadway, Suite 2800
City: Denver State: CO Zip: 80202-4628
Project Contact: Susana Lara-Mesa SLaraMesa@kpk.com
Phone #: 303-825-4822
Samplers's Name: MICHAEL HATTEL (303-665-1400)

Project Information

Project Name: WATTENBERG TANK
Street:
City: Fort Lupton State: CO
Project #:
Fax #:
Client Purchase Order #: 7591

Requested Analysis

Accutest Sample #	Field ID / Point of Collection	SUMMA # / MEOH Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	NaHSO4	MEOH	DI/DW	OIL & GREASE 1664	ANIONS (NITRATE, NITRITE, SULFATE, CHLORIDE)	pH	CATIONS (Ca, K, Mg, NA)	SPECIFIC GRAVITY	TDS	TOC					LAB USE ONLY
	TANK - I		9/24/15	1050	MDH	LIQ	7	X			X					X	X	X	X	X	X	X					01

Matrix Codes: DW- Drinking Water; GW- Ground Water; WW- Water; SW- Surface Water; SO- Soil; SL-Sludge; OI-Oil; LIQ- Other Liquid; AIR- Air; SOL-Other Solid; WP-Wipe

Turnaround Time (Business days)

- [X] Std. 10 Business Days
- Approved By:/ Date:

Date Deliverable Information

- [ ] Commercial "A"
- [ ] Commercial "B"
- [ ] NJ Reduced
- [ ] NJ Full
- [x] Hard Copy
- [ ] FULL CLP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [x] PDF

Comments / Remarks

within 2 hrs

PDF copy to Mike Hattel with APEX at mhattel@msn.com

PDF copy to Susan Lara-Mesa with KPK at Slaramesa@kpk.com

Emergency T/A data available VIA Lablink

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	9/24/15 1200	1 9/24/15 12:00	2		2
Relinquished By: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished By: 5	Date Time:	Received By: 5	Custody Seal # HB	Preserved where applicable ☐	On Ice ☐ Cooler Temp. 12.9 1080

D75646: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D75646 **Client:** KP KAUFFMAN **Project:** WATTENBERG TANK

Date / Time Received: 9/28/2015 12:00:00 PM **Delivery Method:** **Airbill #'s:** hd

Cooler Temps (Initial/Adjusted): #1: (12.9/12.9);

Cooler Security	Y or N		Y or N
1. Custody Seals Present:	☑ ☐	3. COC Present:	☑ ☐
2. Custody Seals Intact:	☑ ☐	4. Smpl Dates/Time OK	☑ ☐

Cooler Temperature	Y or N
1. Temp criteria achieved:	☑ ☐
2. Cooler temp verification:	IR Gun;
3. Cooler media:	Ice (Bag)
4. No. Coolers:	1

Quality Control Preservation	Y	or N	N/A
1. Trip Blank present / cooler:	☐	☐	☑
2. Trip Blank listed on COC:	☐	☐	☑
3. Samples preserved properly:	☑	☐	
4. VOCs headspace free:	☐	☐	☑

Sample Integrity - Documentation	Y or N
1. Sample labels present on bottles:	☑ ☐
2. Container labeling complete:	☑ ☐
3. Sample container label / COC agree:	☑ ☐

Sample Integrity - Condition	Y or N
1. Sample recvd within HT:	☑ ☐
2. All containers accounted for:	☑ ☐
3. Condition of sample:	Intact

Sample Integrity - Instructions	Y	or N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Comments

5.1

5

Accutest Laboratories
V:(303) 425-6021

4036 Youngfield Street
F: (303) 425-6854

Wheat Ridge, CO
www/accutest.com

D75646: Chain of Custody
Page 2 of 2

Mountain States ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D75646
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP17048
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/29/15

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	11	13		
Antimony	30	2.1	8.7		
Arsenic	25	3.8	12		
Barium	10	.2	.4		
Beryllium	10	.9	1.6		
Boron	50	.8	3.6		
Cadmium	10	.2	.8		
Calcium	400	2.4	10	10.1	<400
Chromium	10	.3	.7		
Cobalt	5.0	.5	1.2		
Copper	10	.8	3.8		
Iron	70	1.5	6.9		
Lead	50	2.1	4.9		
Lithium	5.0	.4	.7		
Magnesium	200	6.8	39	6.9	<200
Manganese	5.0	.5	.9		
Molybdenum	10	.4	3.6		
Nickel	30	.5	2.7		
Phosphorus	100	15	34		
Potassium	1000	99	71	32.6	<1000
Selenium	50	7.1	10		
Silicon	50	4.7	8.4		
Silver	30	.3	.6		
Sodium	400	7.3	14	12.7	<400
Strontium	5.0	.01	.3		
Thallium	10	1.8	8		
Tin	50	12	12		
Titanium	10	.1	2.7		
Uranium	50	2.9	4.4		
Vanadium	10	.4	.6		
Zinc	30	.4	3.5		

Associated samples MP17048: D75646-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D75646
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP17048
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/29/15

Metal	RL	IDL	MDL	MB raw	final

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D75646
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP17048
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/29/15

Metal	D75585-1F Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium	anr				
Calcium	5000	30700	25000	102.8	75-125
Chromium					
Cobalt					
Copper	anr				
Iron					
Lead	anr				
Lithium					
Magnesium	739	27600	25000	107.4	75-125
Manganese	anr				
Molybdenum					
Nickel					
Phosphorus					
Potassium	687	26400	25000	102.9	75-125
Selenium					
Silicon					
Silver					
Sodium	2040	27700	25000	102.6	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	anr				

Associated samples MP17048: D75646-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D75646
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP17048
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/29/15

Metal	D75585-1F Original MS	Spikelot ICPALL2	% Rec	QC Limits

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

6.1.2 6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D75646
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP17048
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/29/15

Metal	D75585-1F Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium	anr					
Calcium	5000	30600	25000	102.4	0.3	20
Chromium						
Cobalt						
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium	739	27500	25000	107.0	0.4	20
Manganese	anr					
Molybdenum						
Nickel						
Phosphorus						
Potassium	687	26200	25000	102.1	0.8	20
Selenium						
Silicon						
Silver						
Sodium	2040	27600	25000	102.2	0.4	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP17048: D75646-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D75646
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP17048
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/29/15

Metal	D75585-1F Original MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

6.1.2 6

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D75646
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP17048
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/29/15

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium	anr			
Calcium	25700	25000	102.8	80-120
Chromium				
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Lithium				
Magnesium	26600	25000	106.4	80-120
Manganese	anr			
Molybdenum				
Nickel				
Phosphorus				
Potassium	25400	25000	101.6	80-120
Selenium				
Silicon				
Silver				
Sodium	25700	25000	102.8	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP17048: D75646-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D75646
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP17048
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/29/15

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits

(anr) Analyte not requested

6.1.3

6

SERIAL DILUTION RESULTS SUMMARY

Login Number: D75646
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP17048
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/29/15

Metal	D75585-1F Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium	anr			
Calcium	5000	5140	2.6	0-10
Chromium				
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Lithium				
Magnesium	739	699	5.4	0-10
Manganese	anr			
Molybdenum				
Nickel				
Phosphorus				
Potassium	687	829	20.7 (a)	0-10
Selenium				
Silicon				
Silver				
Sodium	2040	1980	3.3	0-10
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP17048: D75646-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D75646
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP17048
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/29/15

Metal	D75585-1F Original	SDL 1:5	%DIF	QC Limits

(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

6.1.4 6

Mountain States ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D75646
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Bromide	GP16309/GN31748	0.050	0.0	mg/l	0.5	0.521	104.2	90-110%
Chloride	GP16309/GN31748	0.50	0.0	mg/l	5	5.11	102.2	90-110%
HEM Oil and Grease	GP16324/GN31776	5.0	0.0	mg/l	40	33.1	82.8	78-114%
Nitrogen, Nitrate	GP16309/GN31748	0.010	0.0	mg/l	0.1	0.103	103.0	90-110%
Nitrogen, Nitrite	GP16309/GN31748	0.0040	0.0	mg/l	0.05	0.0519	103.8	90-110%
Solids, Total Dissolved	GN31739	10	0.0	mg/l	400	396	99.0	90-110%
Solids, Total Dissolved	GN31739	10	0.0	mg/l				
Sulfate	GP16309/GN31748	0.50	0.0	mg/l	5	5.01	100.2	90-110%
Total Organic Carbon	GP16336/GN31797	1.0	0.0	mg/l	5	4.99	99.8	90-110%
pH	GN31778			su	8.00	7.98	99.7	99.1-100.9%

Associated Samples:
Batch GN31739: D75646-1
Batch GN31778: D75646-1
Batch GP16309: D75646-1
Batch GP16324: D75646-1
Batch GP16336: D75646-1
(*) Outside of QC limits

7

BLANK SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D75646
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
HEM Oil and Grease	GP16324/GN31776	mg/l	40	32.9	0.6	18%

Associated Samples:
Batch GP16324: D75646-1
(*) Outside of QC limits

7.2
7

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D75646
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN31739	D75541-1	mg/l	687	685	0.3	0-20%
Total Organic Carbon	GP16336/GN31797	D75569-1	mg/l	2.2	2.1	4.7	0-20%

Associated Samples:
Batch GN31739: D75646-1
Batch GP16336: D75646-1
(*) Outside of QC limits

7.3
7

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D75646
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Bromide	GP16309/GN31748	D75657-3	mg/l	0.0	0.5	0.52	104.0	80-120%
Chloride	GP16309/GN31748	D75657-3	mg/l	0.0	5	5.6	112.0	80-120%
HEM Oil and Grease	GP16324/GN31776	D75617-1	mg/l	0.0	40	34.7	86.8	78-114%
Nitrogen, Nitrate	GP16309/GN31748	D75657-3	mg/l	0.16	0.1	0.26	100.0	80-120%
Nitrogen, Nitrite	GP16309/GN31748	D75657-3	mg/l	0.0	0.05	0.050	100.0	80-120%
Sulfate	GP16309/GN31748	D75657-3	mg/l	25.0	5	29.8	96.0	80-120%
Total Organic Carbon	GP16336/GN31797	D75569-1	mg/l	2.2	10	12.2	100.0	80-120%

Associated Samples:
Batch GP16309: D75646-1
Batch GP16324: D75646-1
Batch GP16336: D75646-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

7.4
7

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D75646
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Bromide	GP16309/GN31748	D75657-3	mg/l	0.0	0.5	0.56	7.4	20%
Chloride	GP16309/GN31748	D75657-3	mg/l	0.0	5	5.6	0.0	20%
Nitrogen, Nitrate	GP16309/GN31748	D75657-3	mg/l	0.16	0.1	0.26	0.0	20%
Nitrogen, Nitrite	GP16309/GN31748	D75657-3	mg/l	0.0	0.05	0.051	2.0	20%
Sulfate	GP16309/GN31748	D75657-3	mg/l	25.0	5	29.7	0.3	20%
Total Organic Carbon	GP16336/GN31797	D75569-1	mg/l	2.2	10	11.8	3.3	20%

Associated Samples:
Batch GP16309: D75646-1
Batch GP16336: D75646-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

7.5

Suckla Farms #1 Well 2nd Qtr. Waste Fluid Analysis Data - 2015
Baseline Comparison

	General Chemistry									Dissolved Metals			
Date	Chloride (mg/l)	HEM Oil & Grease (mg/l)	Nitrogen, Nitrate (mg/l)	Nitrogen, Nitrite (mg/l)	TDS (mg/l)	SG	Sulfate (mg/l)	Total Organic Carbon (mg/l)	pH	Calcium (ug/l)	Magnesium (ug/l)	Potassium (ug/l)	Sodium (ug/l)
7/31/2015	11000	75.1	<4.0	<1.0	14100	1.0129	<50	60	7.33	151000	23700	295000	3940000
8/27/2015	12300	858	<1.0	<4.0	20300	1.0158	<50	80.5	7.23	275000	39300	181000	6320000
9/28/2015	11200	23	<0.50	4.3	20300	1.0165	<25	71.1	7.2	220000	32200	160000	6490000

Baseline data based on three (3) years of monitoring events (2014-2012)

	TDS (mg/l)	pH	SG
Average:	16778.571	7.374	1.011

Baseline Data Comparison

Date	pH	TDS	TDS Difference	SG	SG Difference
	<2 and/or <12.5	20% > Baseline	TDS/Baseline	10% > Baseline	SG/Baseline
7/31/2015	No	No	-16.0%	No	0.2%
8/27/2015	No	Yes	21.0%	No	0.5%
9/28/2015	No	Yes	21.0%	No	0.6%