

Appendix C1- Waste Delineation Soil Boring Logs

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SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-01

PROJECT NUMBER: 132E-15

PROJECT NAME: Adams County Shooting Range

LOCATION: 14451 Riverdale Road, Brighton, CO

DRILLING COMPANY: DrillPro Services, Inc.

DRILLING METHOD: 6" o.d. hollow stem auger

TOTAL BORING DEPTH: 8 feet

DRILLER: Blake Jones

GEOLOGIST: Chris Krajicek

DATE BEGUN: 5/16/16

DATE COMPLETED: 5/16/16

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0		CH	Silty Clay: Moist, dark gray, medium to high plasticity, soft; trace of fine to medium sand. Fill.	
1.0				
2.0		CL	Silty Clay: Moist, light brown, low plasticity, medium stiff.	
3.0				
4.0				
5.0		SC	Clayey Sand: Dry, yellowish orange, medium dense, well sorted, fine sands.	
6.0				
7.0				
8.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-02

PROJECT NUMBER: 132E-15

PROJECT NAME: Adams County Shooting Range

LOCATION: 14451 Riverdale Road, Brighton, CO

DRILLING COMPANY: DrillPro Services, Inc.

DRILLING METHOD: 6" o.d. hollow stem auger

TOTAL BORING DEPTH: 8 feet

DRILLER: Blake Jones

GEOLOGIST: Chris Krajicek

DATE BEGUN: 5/16/16

DATE COMPLETED: 5/16/16

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Clayey Sand: Moist, dark gray, loose, fine to coarse, subangular, poorly sorted arkosic sands; low cohesion and plasticity. Fill.	
1.0		SC		
2.0				
3.0			Silty Clay: with sand. Moist, light gray, low plasticity; very fine sand.	
4.0		CL		
5.0				
6.0				
7.0		CL	Silty Clay: Moist, light gray, medium plasticity, medium stiff.	
8.0				

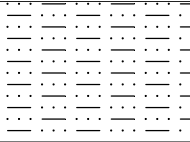
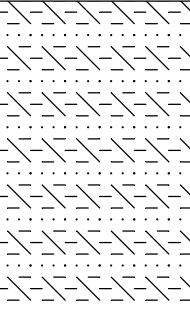
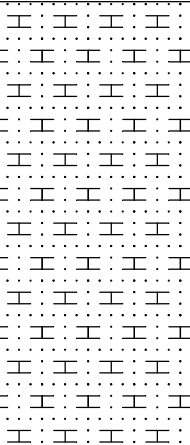


SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-03

PROJECT NUMBER: **132E-15** TOTAL BORING DEPTH: **8 feet**
PROJECT NAME: **Adams County Shooting Range** DRILLER: **Blake Jones**
LOCATION: **14451 Riverdale Road, Brighton, CO** GEOLOGIST: **Chris Krajicek**
DRILLING COMPANY: **DrillPro Services, Inc.** DATE BEGUN: **5/16/16**
DRILLING METHOD: **6" o.d. hollow stem auger** DATE COMPLETED: **5/16/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0	0	MH	Sandy Silt: Moist, olive gray, medium cohesion, slight plasticity; fine sand. Fill.	
1.0		CL	Sandy Clay: Moist,olive gray to black, low plasticity; no odor, plastic fragment and asphalt fragment present. Fill.	
2.0				
3.0				
4.0		CL	Silty Clay: Moist, light gray, low plasticity, medium stiff.	
5.0				
6.0				
7.0				
8.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-04

PROJECT NUMBER: **132E-15**

PROJECT NAME: **Adams County Shooting Range**

LOCATION: **14451 Riverdale Road, Brighton, CO**

DRILLING COMPANY: **DrillPro Services, Inc.**

DRILLING METHOD: **6" o.d. hollow stem auger**

TOTAL BORING DEPTH: **8 feet**

DRILLER: **Blake Jones**

GEOLOGIST: **Chris Krajicek**

DATE BEGUN: **5/16/16**

DATE COMPLETED: **5/16/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0		ML	Sandy Silt: Moist, olive gray, medium cohesion, slightly elastic; fine sand. Fill.	
1.0		CL	Sandy Clay: Moist, olive gray to black, low plasticity, low cohesion. No odor. Fill.	
2.0				
3.0		CL	Silty Clay: Moist, light gray, low plasticity, medium stiff.	
4.0				
5.0				
6.0				
7.0				
8.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-05

PROJECT NUMBER: **132E-15** TOTAL BORING DEPTH: **8 feet**
PROJECT NAME: **Adams County Shooting Range** DRILLER: **Blake Jones**
LOCATION: **14451 Riverdale Road, Brighton, CO** GEOLOGIST: **Chris Krajicek**
DRILLING COMPANY: **DrillPro Services, Inc.** DATE BEGUN: **5/16/16**
DRILLING METHOD: **6" o.d. hollow stem auger** DATE COMPLETED: **5/16/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0		SC	Clayey Sand: Moist, dark gray, loose, subangular poorly-sorted fine to coarse sand. 1-square inch rubber observed. Fill.	
1.0		SC	Clayey Sand: Moist, light brown, well sorted, fine sand; medium cohesion, muscovite flecks dispersed throughout, trace of fine cobbles. Fill.	
2.0				
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-06

PROJECT NUMBER: **132E-15** TOTAL BORING DEPTH: **10 feet**
PROJECT NAME: **Adams County Shooting Range** DRILLER: **Blake Jones**
LOCATION: **14451 Riverdale Road, Brighton, CO** GEOLOGIST: **Chris Krajicek**
DRILLING COMPANY: **DrillPro Services, Inc.** DATE BEGUN: **5/16/16**
DRILLING METHOD: **6" o.d. hollow stem auger** DATE COMPLETED: **5/16/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Asphalt	
1.0		SC	Clayey Sand: Moist, olive gray, loose, subangular, poorly sorted sand. Trace of muscovite flecks. Slight waste odor. Fill.	
2.0				
3.0	0	CH	Silty Clay: Moist, olive gray, high plasticity, medium stiff, trace of fine sand; slight waste odor, brick and glass fragments, piece of clothing. Fill.	
4.0				
5.0			Waste: Municipal solid waste. Plastic bags, styrofoam, plastic fragments, wire, metal lids.	
6.0				
7.0				
8.0				
9.0				
10.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-07

PROJECT NUMBER: **132E-15** TOTAL BORING DEPTH: **10 feet**
PROJECT NAME: **Adams County Shooting Range** DRILLER: **Blake Jones**
LOCATION: **14451 Riverdale Road, Brighton, CO** GEOLOGIST: **Chris Krajicek**
DRILLING COMPANY: **DrillPro Services, Inc.** DATE BEGUN: **5/16/16**
DRILLING METHOD: **6" o.d. hollow stem auger** DATE COMPLETED: **5/16/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0		CH	Clay: Moist, light brown, high plasticity, soft to medium stiff. Fill.	
1.0				
2.0			Waste: Municipal solid waste. Plastic bags, glass, shreds of clothing, scrap metal.	
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				
9.0				
10.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-08

PROJECT NUMBER: **132E-15** TOTAL BORING DEPTH: **10 feet**
PROJECT NAME: **Adams County Shooting Range** DRILLER: **Blake Jones**
LOCATION: **14451 Riverdale Road, Brighton, CO** GEOLOGIST: **Chris Krajicek**
DRILLING COMPANY: **DrillPro Services, Inc.** DATE BEGUN: **5/16/16**
DRILLING METHOD: **6" o.d. hollow stem auger** DATE COMPLETED: **5/16/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Clay: Moist, light brown, high plasticity, medium stiff to stiff. Fill.	
1.0		CH		
2.0				
3.0			Waste: Municipal solid waste. Plastic bags, glass, shreds of clothing, scrap metal.	
4.0				
5.0				
6.0				
7.0				
8.0				
9.0				
10.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-09

PROJECT NUMBER: **132E-15** TOTAL BORING DEPTH: **10 feet**
PROJECT NAME: **Adams County Shooting Range** DRILLER: **Blake Jones**
LOCATION: **14451 Riverdale Road, Brighton, CO** GEOLOGIST: **Chris Krajicek**
DRILLING COMPANY: **DrillPro Services, Inc.** DATE BEGUN: **5/25/16**
DRILLING METHOD: **6" o.d. hollow stem auger** DATE COMPLETED: **5/25/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Sandy Silt: Moist, light gray, yellowish orange, medium cohesion, very fine sands.	
1.0				
2.0				
3.0				
4.0		ML		
5.0				
6.0			With clay and slightly plastic at 5.5 feet bgs.	
7.0				
8.0			Claystone: Moist, dark gray, soft, massive, silty.	
9.0				
10.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-10

PROJECT NUMBER: **132E-15** TOTAL BORING DEPTH: **8 feet**
PROJECT NAME: **Adams County Shooting Range** DRILLER: **Blake Jones**
LOCATION: **14451 Riverdale Road, Brighton, CO** GEOLOGIST: **Chris Krajicek**
DRILLING COMPANY: **DrillPro Services, Inc.** DATE BEGUN: **5/25/16**
DRILLING METHOD: **6" o.d. hollow stem auger** DATE COMPLETED: **5/25/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Silty Sand: Moist, light gray, yellowish orange, medium cohesion; well sorted, subangular fine sands.	
1.0				
2.0				
3.0		SM		
4.0				
5.0				
6.0		SC	Clayey Sand: Moist, yellowish orange, low plasticity; well sorted, medium, subangular arkosic sands.	
7.0				
8.0			Claystone: Moist, dark gray, soft, massive.	



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-11

PROJECT NUMBER: 132E-15

PROJECT NAME: Adams County Shooting Range

LOCATION: 14451 Riverdale Road, Brighton, CO

DRILLING COMPANY: DrillPro Services, Inc.

DRILLING METHOD: 6" o.d. hollow stem auger

TOTAL BORING DEPTH: 8 feet

DRILLER: Blake Jones

GEOLOGIST: Chris Krajicek

DATE BEGUN: 5/25/16

DATE COMPLETED: 5/25/16

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0				
1.0		CH	Clay: Moist, light gray, soft, high plasticity.	
2.0			Claystone: Dry, dark gray, massive, brittle.	
3.0				
4.0				
5.0				
6.0				
7.0			Siltstone: Dry, light gray, poorly consolidated, thinly laminated.	
8.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-12

PROJECT NUMBER: **132E-15** TOTAL BORING DEPTH: **8 feet**
PROJECT NAME: **Adams County Shooting Range** DRILLER: **Blake Jones**
LOCATION: **14451 Riverdale Road, Brighton, CO** GEOLOGIST: **Chris Krajicek**
DRILLING COMPANY: **DrillPro Services, Inc.** DATE BEGUN: **5/25/16**
DRILLING METHOD: **6" o.d. hollow stem auger** DATE COMPLETED: **5/25/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0		ML	Sandy Silt: Moist, light brown, medium cohesion; very fine sand. Fill.	
1.0			Waste: Munciple solid waste. Styrofoam, black plastic bag; intermixed with moist, olive gray, medium stiff sandy clay of medium plasticity with fine sands.	
2.0				
3.0				
4.0				
5.0				
6.0				
7.0		CL	Clay: Moist, olive gray, medium stiff, medium plasticity.	
8.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-13

PROJECT NUMBER: **132E-15** TOTAL BORING DEPTH: **10 feet**
PROJECT NAME: **Adams County Shooting Range** DRILLER: **Blake Jones**
LOCATION: **14451 Riverdale Road, Brighton, CO** GEOLOGIST: **Chris Krajicek**
DRILLING COMPANY: **DrillPro Services, Inc.** DATE BEGUN: **5/25/16**
DRILLING METHOD: **6" o.d. hollow stem auger** DATE COMPLETED: **5/25/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0		ML	Sandy Silt: Moist, light brown, medium cohesion; poorly-sorted, subangular, fine to coarse sand. Fill.	
1.0			Waste: Municipal solid waste (plastic shopping bags, plastic fragments, clothing, shoe, scrap metal, newspaper) intermixed with moist, olive gray, sandy clay of medium plasticity and containing a trash odor. No suspect materials observed.	
2.0				
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				
9.0				
10.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-14

PROJECT NUMBER: **132E-15** TOTAL BORING DEPTH: **10 feet**
PROJECT NAME: **Adams County Shooting Range** DRILLER: **Blake Jones**
LOCATION: **14451 Riverdale Road, Brighton, CO** GEOLOGIST: **Chris Krajicek**
DRILLING COMPANY: **DrillPro Services, Inc.** DATE BEGUN: **5/25/16**
DRILLING METHOD: **6" o.d. hollow stem auger** DATE COMPLETED: **5/25/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0		SM	Silty Sand: Moist, light brown, low cohesion, poorly sorted, subangular, fine to medium sand. Trace of gravel. Fill.	
1.0			Waste: Municipal solid waste (plastic, clothing, scrap metal, wire, stained cloth with petroleum odor, trash odor) intermixed with about 5% moist, olive gray, clayey sand. No suspect materials observed.	
2.0				
3.0				
4.0	32			
5.0				
6.0				
7.0				
8.0				
9.0				
10.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-15

PROJECT NUMBER: **132E-15**

PROJECT NAME: **Adams County Shooting Range**

LOCATION: **14451 Riverdale Road, Brighton, CO**

DRILLING COMPANY: **DrillPro Services, Inc.**

DRILLING METHOD: **6" o.d. hollow stem auger**

TOTAL BORING DEPTH: **8 feet**

DRILLER: **Blake Jones**

GEOLOGIST: **Chris Krajicek**

DATE BEGUN: **5/25/16**

DATE COMPLETED: **5/25/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Silty Sand: Moist, light brown, yellowish orange, low cohesion, well-sorted, fine to medium sand.	
1.0		SM		
2.0			Silty Clay: Moist, yellowish orange, medium plasticity, medium stiff.	
3.0		CL		
4.0				
5.0			Clay: Moist, yellowish orange, high plasticity, soft.	
6.0		CH		
7.0				
8.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-16

PROJECT NUMBER: 132E-15

PROJECT NAME: Adams County Shooting Range

LOCATION: 14451 Riverdale Road, Brighton, CO

DRILLING COMPANY: DrillPro Services, Inc.

DRILLING METHOD: 6" o.d. hollow stem auger

TOTAL BORING DEPTH: 10 feet

DRILLER: Blake Jones

GEOLOGIST: Chris Krajicek

DATE BEGUN: 5/25/16

DATE COMPLETED: 5/25/16

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Silty Sand: Dry, light brown, low cohesion, well sorted, fine sand; about 10% angular to subrounded coarse sands and fine arkosic gravels. Trace of cobbles. Fill.	
1.0			Very little soil cutting recovery.	
2.0				
3.0				
4.0				
5.0		SM		
6.0				
7.0				
8.0				
9.0				
10.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-17

PROJECT NUMBER: **132E-15** TOTAL BORING DEPTH: **8 feet**
PROJECT NAME: **Adams County Shooting Range** DRILLER: **Blake Jones**
LOCATION: **14451 Riverdale Road, Brighton, CO** GEOLOGIST: **Chris Krajicek**
DRILLING COMPANY: **DrillPro Services, Inc.** DATE BEGUN: **5/25/16**
DRILLING METHOD: **6" o.d. hollow stem auger** DATE COMPLETED: **5/25/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0		CH	Sandy Clay: Moist, light brown to dark gray, high plasticity, soft; poorly sorted, fine to coarse sand. Fill.	
1.0			Waste: Municipal solid waste (newspaper, plastic bags, scrap metal, wood, plastic bottle) intermixed with about 30% sandy clay. Newspaper dated at 1976.	
2.0				
3.0				
4.0				
5.0	24			
6.0				
7.0				
8.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-18

PROJECT NUMBER: **132E-15** TOTAL BORING DEPTH: **8 feet**
PROJECT NAME: **Adams County Shooting Range** DRILLER: **Blake Jones**
LOCATION: **14451 Riverdale Road, Brighton, CO** GEOLOGIST: **Chris Krajicek**
DRILLING COMPANY: **DrillPro Services, Inc.** DATE BEGUN: **5/25/16**
DRILLING METHOD: **6" o.d. hollow stem auger** DATE COMPLETED: **5/25/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Silty Sand: Moist, light brown to dark gray, high plasticity, soft; poorly-sorted, fine to coarse sand. Fill.	
1.0				
2.0				
3.0		SM		
4.0				
5.0				
6.0				
6.0			Siltstone: Moist, dark gray, massive.	
7.0				
8.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-19

PROJECT NUMBER: **132E-15**

PROJECT NAME: **Adams County Shooting Range**

LOCATION: **14451 Riverdale Road, Brighton, CO**

DRILLING COMPANY: **DrillPro Services, Inc.**

DRILLING METHOD: **6" o.d. hollow stem auger**

TOTAL BORING DEPTH: **5 feet**

DRILLER: **Blake Jones**

GEOLOGIST: **Chris Krajicek**

DATE BEGUN: **5/25/16**

DATE COMPLETED: **5/25/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Silty Clay: Moist, yellowish orange, low cohesion, well-sorted, fine angular sand with a trace of coarse sand.	
1.0				
2.0		CL		
3.0				
4.0			Claystone: Moist, dark gray, poorly indurated, massive.	
5.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-20

PROJECT NUMBER: **132E-15**
PROJECT NAME: **Adams County Shooting Range**
LOCATION: **14451 Riverdale Road, Brighton, CO**
DRILLING COMPANY: **DrillPro Services, Inc.**
DRILLING METHOD: **6" o.d. hollow stem auger**

TOTAL BORING DEPTH: **10 feet**
DRILLER: **Blake Jones**
GEOLOGIST: **Chris Krajicek**
DATE BEGUN: **5/25/16**
DATE COMPLETED: **5/25/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0				
1.0		CH	Silty Clay: Moist, yellowish orange, high plasticity, soft; with about 10% medium subrounded sands. Fill.	
2.0				
3.0				
4.0	5		Waste: Municipal solid waste (newspaper, plastic, wood, rug shreds) intermixed with discolored black sandy clay. Petroleum odor.	
5.0				
6.0				
7.0				
8.0				
9.0				
10.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-21

PROJECT NUMBER: **132E-15**

PROJECT NAME: **Adams County Shooting Range**

LOCATION: **14451 Riverdale Road, Brighton, CO**

DRILLING COMPANY: **DrillPro Services, Inc.**

DRILLING METHOD: **6" o.d. hollow stem auger**

TOTAL BORING DEPTH: **8 feet**

DRILLER: **Blake Jones**

GEOLOGIST: **Chris Krajicek**

DATE BEGUN: **5/25/16**

DATE COMPLETED: **5/25/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Clayey Silt: Moist, yellowish orange, medium cohesion, low plasticity.	
1.0				
2.0				
3.0		ML		
4.0				
5.0				
6.0			Siltstone: Moist, dark gray, soft.	
7.0				
8.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-22

PROJECT NUMBER: **132E-15** TOTAL BORING DEPTH: **10 feet**
PROJECT NAME: **Adams County Shooting Range** DRILLER: **Blake Jones**
LOCATION: **14451 Riverdale Road, Brighton, CO** GEOLOGIST: **Chris Krajicek**
DRILLING COMPANY: **DrillPro Services, Inc.** DATE BEGUN: **5/25/16**
DRILLING METHOD: **6" o.d. hollow stem auger** DATE COMPLETED: **5/25/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Clayey Silt: with sand. Moist, yellowish orange, medium cohesion, low plasticity.	
1.0				
2.0		ML		
3.0				
4.0			Clayey Siltstone: Moist, low plasticity, medium stiff, weathered.	
5.0				
6.0				
7.0				
8.0				
9.0				
10.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-23

PROJECT NUMBER: **132E-15** TOTAL BORING DEPTH: **6 feet**
PROJECT NAME: **Adams County Shooting Range** DRILLER: **Blake Jones**
LOCATION: **14451 Riverdale Road, Brighton, CO** GEOLOGIST: **Chris Krajicek**
DRILLING COMPANY: **DrillPro Services, Inc.** DATE BEGUN: **5/25/16**
DRILLING METHOD: **6" o.d. hollow stem auger** DATE COMPLETED: **5/25/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Clayey Silt: with sand. Moist, yellowish orange, medium cohesion, low plasticity.	
1.0				
2.0		ML		
3.0				
4.0			Clayey Siltstone: Moist, low plasticity, medium stiff, weathered.	
5.0				
6.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-24

PROJECT NUMBER: 132E-15

PROJECT NAME: Adams County Shooting Range

LOCATION: 14451 Riverdale Road, Brighton, CO

DRILLING COMPANY: DrillPro Services, Inc.

DRILLING METHOD: 6" o.d. hollow stem auger

TOTAL BORING DEPTH: 5 feet

DRILLER: Blake Jones

GEOLOGIST: Chris Krajicek

DATE BEGUN: 5/25/16

DATE COMPLETED: 5/25/16

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Clayey Silt: with sand. Moist, yellowish orange, medium cohesion, low plasticity. Small angular brittle black fragments, possibly man-made.	
1.0				
2.0		ML		
3.0				
4.0			Clayey Siltstone: Moist, low plasticity, medium stiff, weathered.	
5.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-25

PROJECT NUMBER: **132E-15**

PROJECT NAME: **Adams County Shooting Range**

LOCATION: **14451 Riverdale Road, Brighton, CO**

DRILLING COMPANY: **DrillPro Services, Inc.**

DRILLING METHOD: **6" o.d. hollow stem auger**

TOTAL BORING DEPTH: **5 feet**

DRILLER: **Blake Jones**

GEOLOGIST: **Chris Krajicek**

DATE BEGUN: **5/25/16**

DATE COMPLETED: **5/25/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Clayey Silt: with sand. Moist, yellowish orange, medium cohesion, low plasticity. Small angular brittle black fragments, possibly man-made.	
1.0				
2.0		ML		
3.0				
4.0			Clayey Siltstone: Moist, low plasticity, medium stiff, weathered.	
5.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-26

PROJECT NUMBER: **132E-15** TOTAL BORING DEPTH: **10 feet**
PROJECT NAME: **Adams County Shooting Range** DRILLER: **Blake Jones**
LOCATION: **14451 Riverdale Road, Brighton, CO** GEOLOGIST: **Chris Krajicek**
DRILLING COMPANY: **DrillPro Services, Inc.** DATE BEGUN: **5/25/16**
DRILLING METHOD: **6" o.d. hollow stem auger** DATE COMPLETED: **5/25/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Silty Clay: Moist, light gray, high plasticity, medium stiff.	
1.0		CH		
2.0				
3.0			Becomes very moist at 2.5 feet bgs.	
4.0				
5.0	22		Waste: Municipal solid waste. Plastic, clothing, metal; intermixed with about 50% moist to wet silty clay. No suspect materials observed.	
6.0				
7.0				
8.0				
9.0				
10.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-27

PROJECT NUMBER: 132E-15

PROJECT NAME: Adams County Shooting Range

LOCATION: 14451 Riverdale Road, Brighton, CO

DRILLING COMPANY: DrillPro Services, Inc.

DRILLING METHOD: 6" o.d. hollow stem auger

TOTAL BORING DEPTH: 10 feet

DRILLER: Blake Jones

GEOLOGIST: Chris Krajicek

DATE BEGUN: 5/25/16

DATE COMPLETED: 5/25/16

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Silty Clay: Moist, light brown, medium plasticity, medium stiff. Fill.	
1.0			Little soil cutting recovery.	
2.0			Plastic bag fragment and hard plastic fragment at approximately 1.5 feet.	
3.0				
4.0				
5.0		CL		
6.0				
7.0				
8.0				
9.0				
10.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-28

PROJECT NUMBER: 132E-15

PROJECT NAME: Adams County Shooting Range

LOCATION: 14451 Riverdale Road, Brighton, CO

DRILLING COMPANY: DrillPro Services, Inc.

DRILLING METHOD: 6" o.d. hollow stem auger

TOTAL BORING DEPTH: 10 feet

DRILLER: Blake Jones

GEOLOGIST: Chris Krajicek

DATE BEGUN: 5/26/16

DATE COMPLETED: 5/26/16

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			No drill cuttings recovered: No drill cuttings recovered to a depth of 10 feet.	
1.0				
2.0				
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				
9.0				
10.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-29

PROJECT NUMBER: **132E-15** TOTAL BORING DEPTH: **8 feet**
PROJECT NAME: **Adams County Shooting Range** DRILLER: **Blake Jones**
LOCATION: **14451 Riverdale Road, Brighton, CO** GEOLOGIST: **Chris Krajicek**
DRILLING COMPANY: **DrillPro Services, Inc.** DATE BEGUN: **5/26/16**
DRILLING METHOD: **6" o.d. hollow stem auger** DATE COMPLETED: **5/26/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Silty Clay: Dry, olive gray, high plasticity, medium stiff. Fill.	
1.0				
2.0				
3.0				
4.0		CH		
5.0				
6.0				
7.0				
8.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-30

PROJECT NUMBER: **132E-15** TOTAL BORING DEPTH: **10 feet**
PROJECT NAME: **Adams County Shooting Range** DRILLER: **Blake Jones**
LOCATION: **14451 Riverdale Road, Brighton, CO** GEOLOGIST: **Chris Krajicek**
DRILLING COMPANY: **DrillPro Services, Inc.** DATE BEGUN: **5/26/16**
DRILLING METHOD: **6" o.d. hollow stem auger** DATE COMPLETED: **5/26/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Clay: Moist, olive gray, high plasticity, soft. Fill.	
1.0				
2.0				
3.0				
4.0				
5.0		CH		
6.0			Drilling becomes difficult at 6 feet bgs and man-processed wood chunks are present.	
7.0				
8.0				
9.0		CL	Silty Clay: Light colored rock flour on silty clay peds. Drilling becomes easier at 8.5 feet bgs.	
10.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-31

PROJECT NUMBER: 132E-15

PROJECT NAME: Adams County Shooting Range

LOCATION: 14451 Riverdale Road, Brighton, CO

DRILLING COMPANY: DrillPro Services, Inc.

DRILLING METHOD: 6" o.d. hollow stem auger

TOTAL BORING DEPTH: 7 feet

DRILLER: Blake Jones

GEOLOGIST: Chris Krajicek

DATE BEGUN: 5/26/16

DATE COMPLETED: 5/26/16

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Silty Clay: Dry, olive gray, medium plasticity, medium stiff. Trace of coarse subangular arkosic sand.	
1.0			Refusal on hard object at 7 feet bgs.	
2.0				
3.0				
4.0				
5.0				
6.0				
7.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-32

PROJECT NUMBER:

132E-15

TOTAL BORING DEPTH:

8 feet

PROJECT NAME:

Adams County Shooting Range

DRILLER:

Blake Jones

LOCATION:

14451 Riverdale Road, Brighton, CO

GEOLOGIST:

Chris Krajicek

DRILLING COMPANY:

DrillPro Services, Inc.

DATE BEGUN:

5/26/16

DRILLING METHOD:

6" o.d. hollow stem auger

DATE COMPLETED:

5/26/16

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Silty Clay: Moist, olive gray, medium plasticity, medium stiff. Contains some sand.	
1.0				
2.0			Difficult drilling from 4 feet to 8 feet bgs.	
3.0		CL		
4.0				
5.0				
6.0				
7.0		ML	Silt: Rock flour: Dry, light gray	
8.0			Siltstone: Weathered fragments of yellowish orange siltstone. Contains fine roots and evaporites.	



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-33

PROJECT NUMBER: 132E-15

PROJECT NAME: Adams County Shooting Range

LOCATION: 14451 Riverdale Road, Brighton, CO

DRILLING COMPANY: DrillPro Services, Inc.

DRILLING METHOD: 6" o.d. hollow stem auger

TOTAL BORING DEPTH: 10 Feet

DRILLER: Blake Jones

GEOLOGIST: Chris Krajicek

DATE BEGUN: 5/26/16

DATE COMPLETED: 5/26/16

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Silty Clay: Moist, olive gray, medium plasticity, stiff.	
1.0			Plastic bag fragments at 8 inches.	
2.0				
3.0		CL		
4.0				
5.0				
6.0				
7.0		CH	Waste: Wet, mottled (light gray, white, yellowish-green, orange), very soft clay of high plasticity; areas of white clay; trace of plastic bag fragments; trace of small brittle fragments.	
8.0				
9.0				
10.0		CL	Silty Clay: Dry to moist, yellowish orange, soft, medium plasticity.	



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-34

PROJECT NUMBER: **132E-15** TOTAL BORING DEPTH: **10 Feet**
PROJECT NAME: **Adams County Shooting Range** DRILLER: **Blake Jones**
LOCATION: **14451 Riverdale Road, Brighton, CO** GEOLOGIST: **Chris Krajicek**
DRILLING COMPANY: **DrillPro Services, Inc.** DATE BEGUN: **5/26/16**
DRILLING METHOD: **6" o.d. hollow stem auger** DATE COMPLETED: **5/26/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Silty Clay: Moist to wet, olive gray, medium plasticity, very soft. Trace of sand; small brittle black fragments dispersed throughout; areas of white clay-like material. Fill.	
1.0				
2.0				
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				
9.0				
10.0				
		CL		
		SC	Clayey Sand: Dry, olive gray, fine to medium sands, medium plasticity, medium cohesion.	



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-35

PROJECT NUMBER: 132E-15

PROJECT NAME: Adams County Shooting Range

LOCATION: 14451 Riverdale Road, Brighton, CO

DRILLING COMPANY: DrillPro Services, Inc.

DRILLING METHOD: 6" o.d. hollow stem auger

TOTAL BORING DEPTH: 6 inches

DRILLER: Blake Jones

GEOLOGIST: Chris Krajicek

DATE BEGUN: 5/26/16

DATE COMPLETED: 5/26/16

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
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0.0		CL	Silty Clay: Dry, light brown, low plasticity, medium stiff. Refusal on concrete at 6 inches. Hand dig several locations in vicinity of AC-SB-35 with a shovel and encountered concrete at approximately same depth.	
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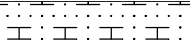
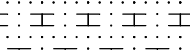
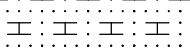
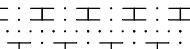
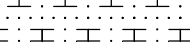
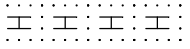
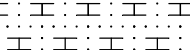
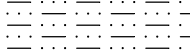
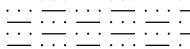
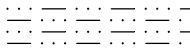
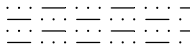
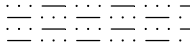
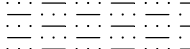
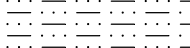
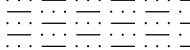
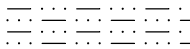
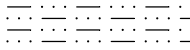


SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-36

PROJECT NUMBER: **132E-15** TOTAL BORING DEPTH: **8 feet**
PROJECT NAME: **Adams County Shooting Range** DRILLER: **Blake Jones**
LOCATION: **14451 Riverdale Road, Brighton, CO** GEOLOGIST: **Chris Krajicek**
DRILLING COMPANY: **DrillPro Services, Inc.** DATE BEGUN: **5/26/16**
DRILLING METHOD: **6" o.d. hollow stem auger** DATE COMPLETED: **5/26/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0		CL	Silty Clay: Moist, olive gray, medium plasticity, medium stiff. Small plastic bag fragment present in soil cuttings. Fill.	
				
1.0				
				
2.0				
				
3.0				
				
4.0		SC	Clayey Sand: Moist, yellowish orange, medium plasticity, well-sorted, subrounded medium sands.	
				
5.0				
				
6.0				
				
7.0				
				
8.0				
				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-37

PROJECT NUMBER: **132E-15** TOTAL BORING DEPTH: **7 feet**
PROJECT NAME: **Adams County Shooting Range** DRILLER: **Blake Jones**
LOCATION: **14451 Riverdale Road, Brighton, CO** GEOLOGIST: **Chris Krajicek**
DRILLING COMPANY: **DrillPro Services, Inc.** DATE BEGUN: **5/26/16**
DRILLING METHOD: **6" o.d. hollow stem auger** DATE COMPLETED: **5/26/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Silty Clay: Moist, light brown, medium plasticity, soft.	
1.0				
2.0			Cobbles present at 2.5 feet.	
3.0				
4.0		CL		
5.0				
6.0				
7.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-38

PROJECT NUMBER: **132E-15**

PROJECT NAME: **Adams County Shooting Range**

LOCATION: **14451 Riverdale Road, Brighton, CO**

DRILLING COMPANY: **DrillPro Services, Inc.**

DRILLING METHOD: **6" o.d. hollow stem auger**

TOTAL BORING DEPTH: **5 feet**

DRILLER: **Blake Jones**

GEOLOGIST: **Chris Krajicek**

DATE BEGUN: **5/26/16**

DATE COMPLETED: **5/26/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Silty Clay: Moist, light brown, medium plasticity, soft.	
1.0				
2.0			Cobbles present at 2.5 feet.	
3.0		CL		
4.0				
5.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-39

PROJECT NUMBER: **132E-15**

PROJECT NAME: **Adams County Shooting Range**

LOCATION: **14451 Riverdale Road, Brighton, CO**

DRILLING COMPANY: **DrillPro Services, Inc.**

DRILLING METHOD: **6" o.d. hollow stem auger**

TOTAL BORING DEPTH: **18 inches**

DRILLER: **Blake Jones**

GEOLOGIST: **Chris Krajicek**

DATE BEGUN: **5/26/16**

DATE COMPLETED: **5/26/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Silty Clay: Moist, light brown, medium to high plasticity, medium stiff; with poorly-sorted fine to medium sands and siltstone bedrock fragments.	
1.0		CL	Waste: Municipal solid waste	



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-40

PROJECT NUMBER: 132E-15

PROJECT NAME: Adams County Shooting Range

LOCATION: 14451 Riverdale Road, Brighton, CO

DRILLING COMPANY: DrillPro Services, Inc.

DRILLING METHOD: 6" o.d. hollow stem auger

TOTAL BORING DEPTH: 25 inches

DRILLER: Blake Jones

GEOLOGIST: Chris Krajicek

DATE BEGUN: 5/26/16

DATE COMPLETED: 5/26/16

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Silty Clay: Moist, light brown, medium plasticity, medium stiff; with some poorly-sorted, fine to medium subangular sand; about 10% gravel, 5% cobble, and trace of siltstone bedrock fragments. Fill.	
1.0		CL		
2.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-41

PROJECT NUMBER: **132E-15**

PROJECT NAME: **Adams County Shooting Range**

LOCATION: **14451 Riverdale Road, Brighton, CO**

DRILLING COMPANY: **DrillPro Services, Inc.**

DRILLING METHOD: **6" o.d. hollow stem auger**

TOTAL BORING DEPTH: **24 inches**

DRILLER: **Blake Jones**

GEOLOGIST: **Chris Krajicek**

DATE BEGUN: **5/26/16**

DATE COMPLETED: **5/26/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0		SC	Clayey Sand: Moist, light brown, poorly sorted, fine to coarse subrounded sand; medium cohesion, low plasticity. Fill.	
1.0				
2.0		ML	Silt: Moist to wet, olive gray, medium cohesion. Fill.	



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-42

PROJECT NUMBER: 132E-15

PROJECT NAME: Adams County Shooting Range

LOCATION: 14451 Riverdale Road, Brighton, CO

DRILLING COMPANY: DrillPro Services, Inc.

DRILLING METHOD: 6" o.d. hollow stem auger

TOTAL BORING DEPTH: 12 inches

DRILLER: Blake Jones

GEOLOGIST: Chris Krajicek

DATE BEGUN: 5/26/16

DATE COMPLETED: 5/26/16

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
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0.0		CL	Silty Clay: with sand. Moist, olive gray, medium plasticity, medium stiff; poorly-sorted, fine to medium sand. Fill.	
1.0			Waste: Municipal solid waste.	



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-43

PROJECT NUMBER: 132E-15

PROJECT NAME: Adams County Shooting Range

LOCATION: 14451 Riverdale Road, Brighton, CO

DRILLING COMPANY: DrillPro Services, Inc.

DRILLING METHOD: 6" o.d. hollow stem auger

TOTAL BORING DEPTH: 8 inches

DRILLER: Blake Jones

GEOLOGIST: Chris Krajicek

DATE BEGUN: 5/26/16

DATE COMPLETED: 5/26/16

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
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0.0		CL	Sandy Clay: Moist, olive gray, medium plasticity, medium stiff; poorly sorted fine to coarse sand.	
			Waste: Municipal solid waste.	



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-44

PROJECT NUMBER: **132E-15**
PROJECT NAME: **Adams County Shooting Range**
LOCATION: **14451 Riverdale Road, Brighton, CO**
DRILLING COMPANY: **DrillPro Services, Inc.**
DRILLING METHOD: **6" o.d. hollow stem auger**

TOTAL BORING DEPTH: **30 inches**
DRILLER: **Blake Jones**
GEOLOGIST: **Chris Krajicek**
DATE BEGUN: **5/26/16**
DATE COMPLETED: **5/26/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0			Silty Sand: Moist, light brown, well sorted, fine to medium sand.	
1.0		SM		
2.0		CL	Silty Clay: Moist, yellowish orange, medium plasticity, medium stiff.	



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-45

PROJECT NUMBER: **132E-15**
PROJECT NAME: **Adams County Shooting Range**
LOCATION: **14451 Riverdale Road, Brighton, CO**
DRILLING COMPANY: **DrillPro Services, Inc.**
DRILLING METHOD: **Direct push with acetate liners**

TOTAL BORING DEPTH: **15 Feet**
DRILLER: **Terrance Apodaca**
GEOLOGIST: **Chris Krajicek**
DATE BEGUN: **9/26/16**
DATE COMPLETED: **9/26/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0		ML	Silt: Dry, light gray, no cohesion.	
1.0				
2.0	0	SM	Silty Sand: Dry, yellowish orange, loose, subangular, well sorted fine sand with silt. Contains dark gray siltstone bedrock fragments.	
3.0				
4.0				
5.0			Sandy Silt: Dry to moist, reddish brown, medium cohesion, very fine sands; trace of well rounded fine gravels, caliche and iron oxide staining present at 5.5 feet bgs and increasing with depth.	
6.0	0			
7.0				
8.0		ML	Becomes mottled (dark gray, yellowish orange, white) at 6.5 feet bgs.	
9.0				
10.0	0			



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-45

PROJECT NUMBER: **132E-15**

PROJECT NAME: **Adams County Shooting Range**

LOCATION: **14451 Riverdale Road, Brighton, CO**

DRILLING COMPANY: **DrillPro Services, Inc.**

DRILLING METHOD: **Direct push with acetate liners**

TOTAL BORING DEPTH: **15 Feet**

DRILLER: **Terrance Apodaca**

GEOLOGIST: **Chris Krajicek**

DATE BEGUN: **9/26/16**

DATE COMPLETED: **9/26/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
11.0	0	SP	Fine roots and dark maroon compacted organic matter at 11 feet bgs.	
12.0			Sand: Moist, reddish-brown to light brown, subangular, well sorted, fine sand.	
13.0	0	SP		
14.0				
15.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-46

PROJECT NUMBER: **132E-15**
PROJECT NAME: **Adams County Shooting Range**
LOCATION: **14451 Riverdale Road, Brighton, CO**
DRILLING COMPANY: **DrillPro Services, Inc.**
DRILLING METHOD: **Direct push with acetate liners**

TOTAL BORING DEPTH: **18 Feet**
DRILLER: **Terrance Apodaca**
GEOLOGIST: **Chris Krajicek**
DATE BEGUN: **9/26/16**
DATE COMPLETED: **9/26/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0	0	SM	Silty Sand: Dry, light brown, poorly sorted silty sand with about 10% rounded arkosic gravels. Contains plastic fragments in top 2". Fill.	
1.0		ML	Silt: Dry, light gray, low cohesion. Fill.	
2.0		CL	Silty Clay: Dry to moist, mottled (reddish brown, dark gray, yellowish brown), medium stiff, medium plasticity. Contains evaporites. Fill.	
3.0	0	CL	Silty Clay: Dry to moist, mottled (reddish brown, dark gray, yellowish brown), medium stiff, medium plasticity. Contains evaporites. Fill.	
4.0				
5.0				
6.0	0	MH	Waste: Wet; light gray, green, white; soft, low plasticity.	
7.0		CH	Waste: Wet, light brown to olive gray, soft to medium stiff, high plasticity.	
8.0		MH	Waste: Wet; light gray, green, white; soft, low plasticity.	
9.0	0	CL/SM	Silty Clay: Dry, mottled (orange and light to dark gray), intermixed with very fine silty sand. Coal and muscovite flecks present, strong iron oxide staining.	
10.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-46

PROJECT NUMBER: **132E-15**
PROJECT NAME: **Adams County Shooting Range**
LOCATION: **14451 Riverdale Road, Brighton, CO**
DRILLING COMPANY: **DrillPro Services, Inc.**
DRILLING METHOD: **Direct push with acetate liners**

TOTAL BORING DEPTH: **18 Feet**
DRILLER: **Terrance Apodaca**
GEOLOGIST: **Chris Krajicek**
DATE BEGUN: **9/26/16**
DATE COMPLETED: **9/26/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
11.0				
12.0				
13.0	0	SM	Silty Sand: Moist, light gray to reddish-brown, subangular, well sorted.	
14.0				
15.0	0			
16.0		SP	Sand: Moist, light to reddish-brown, loose, subangular, well sorted, fine sand. Muscovite flecks present from 16 to 18 feet bgs. Refusal at 18 feet due to compacted sand.	
17.0	0			
18.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-47

PROJECT NUMBER:	132E-15	TOTAL BORING DEPTH:	16.5 Feet
PROJECT NAME:	Adams County Shooting Range	DRILLER:	Terrance Apodaca
LOCATION:	14451 Riverdale Road, Brighton, CO	GEOLOGIST:	Chris Krajicek
DRILLING COMPANY:	DrillPro Services, Inc.	DATE BEGUN:	9/26/16
DRILLING METHOD:	Direct push with acetate liners	DATE COMPLETED:	9/26/16

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0	0	SM	Silty Sand: Dry, light brown, poorly sorted silty sand with about 10% rounded arkosic gravels. Fill.	
1.0		ML	Silt: Moist, olive gray, slight plasticity, medium cohesion, slightly brittle. Trace of small, black, brittle fragments and white fragments of unidentifiable crumbly material. Fill.	
2.0	0	ML	Waste: Wet, mottled (gray, green, yellow), very soft, high cohesion, low plasticity. Contains waste plastic at 5.5 and 8 feet bgs and small brittle black fragments.	
3.0				
4.0				
5.0	0	ML	Becomes light gray and homogeneous at 8 feet bgs.	
6.0				
7.0	0.1		Silty Clay: Dry, light gray, low plasticity, intermixed with areas of sand. Contains evaporites and strong iron oxide staining.	
8.0				
9.0				
10.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-47

PROJECT NUMBER: **132E-15**

PROJECT NAME: **Adams County Shooting Range**

LOCATION: **14451 Riverdale Road, Brighton, CO**

DRILLING COMPANY: **DrillPro Services, Inc.**

DRILLING METHOD: **Direct push with acetate liners**

TOTAL BORING DEPTH: **16.5 Feet**

DRILLER: **Terrance Apodaca**

GEOLOGIST: **Chris Krajicek**

DATE BEGUN: **9/26/16**

DATE COMPLETED: **9/26/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
11.0		CL/SM		
12.0				
13.0	0.1	SP	Sand: Moist, light gray to reddish-brown, subangular, well sorted. Strong iron oxide staining in upper portion and decreasing with depth.	
14.0				
15.0	0			
16.0				



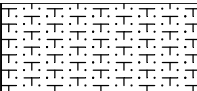
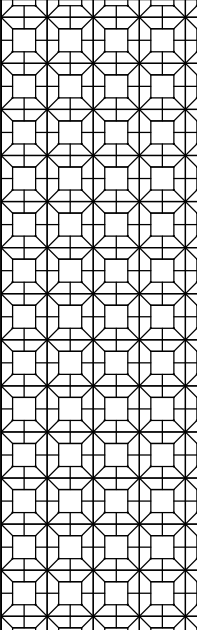
SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-48

PROJECT NUMBER: **132E-15**
PROJECT NAME: **Adams County Shooting Range**
LOCATION: **14451 Riverdale Road, Brighton, CO**
DRILLING COMPANY: **DrillPro Services, Inc.**
DRILLING METHOD: **Direct push with acetate liners**

TOTAL BORING DEPTH: **16.5 Feet**
DRILLER: **Terrance Apodaca**
GEOLOGIST: **Chris Krajicek**
DATE BEGUN: **9/26/16**
DATE COMPLETED: **9/26/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0	0	SM	Silty Sand: Dry, light brown, poorly sorted silty sand with about 10% rounded arkosic gravels. Fill.	
1.0		ML	Silt: Dry, light gray, no cohesion. Fill.	
2.0		ML	Silt: Moist, dark brown, medium cohesion. Fill.	
3.0				
4.0				
5.0	0	ML	Waste: Wet, mottled (light gray, green, yellow, white), very soft, high cohesion, low plasticity. Contains waste plastic at 6.5 feet bgs. Waste.	
6.0				
7.0				
8.0	0	ML		
9.0				
10.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-48

PROJECT NUMBER: **132E-15**

PROJECT NAME: **Adams County Shooting Range**

LOCATION: **14451 Riverdale Road, Brighton, CO**

DRILLING COMPANY: **DrillPro Services, Inc.**

DRILLING METHOD: **Direct push with acetate liners**

TOTAL BORING DEPTH: **16.5 Feet**

DRILLER: **Terrance Apodaca**

GEOLOGIST: **Chris Krajicek**

DATE BEGUN: **9/26/16**

DATE COMPLETED: **9/26/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
11.0				
12.0				
13.0	0		Sand: Moist, light brown, subangular, well sorted, fine sand. Dark green from 12 to 13 feet bgs.	
14.0				
15.0	0	SP		
16.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-49

PROJECT NUMBER: **132E-15**
PROJECT NAME: **Adams County Shooting Range**
LOCATION: **14451 Riverdale Road, Brighton, CO**
DRILLING COMPANY: **DrillPro Services, Inc.**
DRILLING METHOD: **Direct push with acetate liners**

TOTAL BORING DEPTH: **12 Feet**
DRILLER: **Terrance Apodaca**
GEOLOGIST: **Chris Krajicek**
DATE BEGUN: **9/26/16**
DATE COMPLETED: **9/26/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0	0	CL	Sandy Clay: Dry, light brown, stiff, low plasticity, poorly sorted sand. Fill.	
1.0				
2.0	17.4	ML	Waste: Municipal solid waste. Wood, plastic, rubber, newspaper, burned wood fragments, intermixed with about 20% poorly sorted sand.	
3.0				
4.0				
5.0				
6.0			Waste: Wet, dark gray, very soft, low plasticity.	
7.0				
8.0			Waste: Municipal solid waste. Wood, plastic, rubber, newspaper, burned wood fragments, intermixed with about 20% poorly sorted sand.	
9.0				
10.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-49

PROJECT NUMBER: 132E-15

PROJECT NAME: Adams County Shooting Range

LOCATION: 14451 Riverdale Road, Brighton, CO

DRILLING COMPANY: DrillPro Services, Inc.

DRILLING METHOD: Direct push with acetate liners

TOTAL BORING DEPTH: 12 Feet

DRILLER: Terrance Apodaca

GEOLOGIST: Chris Krajicek

DATE BEGUN: 9/26/16

DATE COMPLETED: 9/26/16

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
11.0				
12.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-50

PROJECT NUMBER: **132E-15**
PROJECT NAME: **Adams County Shooting Range**
LOCATION: **14451 Riverdale Road, Brighton, CO**
DRILLING COMPANY: **DrillPro Services, Inc.**
DRILLING METHOD: **Direct push with acetate liners**

TOTAL BORING DEPTH: **8 Feet**
DRILLER: **Terrance Apodaca**
GEOLOGIST: **Chris Krajicek**
DATE BEGUN: **9/26/16**
DATE COMPLETED: **9/26/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0	0	ML	Sandy Silt: with gravel. Dry, yellowish orange, fine sands. Fill.	
1.0		ML	Silt: Moist, dark brown, medium cohesion, slight plasticity. Fill.	
2.0	0	ML	Waste: Wet; light gray, green, white; soft, low plasticity.	
3.0				
4.0				
5.0	0	ML	Waste: Municipal solid waste. Wood, plastic. Refusal on hard object at 8 feet bgs.	
6.0				
7.0				
8.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-51

PROJECT NUMBER: **132E-15**
PROJECT NAME: **Adams County Shooting Range**
LOCATION: **14451 Riverdale Road, Brighton, CO**
DRILLING COMPANY: **DrillPro Services, Inc.**
DRILLING METHOD: **Direct push with acetate liners**

TOTAL BORING DEPTH: **16.5 Feet**
DRILLER: **Terrance Apodaca**
GEOLOGIST: **Chris Krajicek**
DATE BEGUN: **9/26/16**
DATE COMPLETED: **9/26/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
0.0	0	ML	Sandy Silt: with cobbles. Dry, yellowish orange, fine sands. Fill.	
1.0		ML	Silt: Moist, dark brown, medium cohesion, slight plasticity. Fill.	
2.0	Waste: Wet; light gray, green, white; soft, low plasticity.			
3.0				
4.0				
5.0	0	ML		
6.0				
7.0		ML		
8.0				
9.0				
10.0				



SOIL BORING LOG

BOREHOLE NUMBER

AC-SB-51

PROJECT NUMBER: **132E-15**
PROJECT NAME: **Adams County Shooting Range**
LOCATION: **14451 Riverdale Road, Brighton, CO**
DRILLING COMPANY: **DrillPro Services, Inc.**
DRILLING METHOD: **Direct push with acetate liners**

TOTAL BORING DEPTH: **16.5 Feet**
DRILLER: **Terrance Apodaca**
GEOLOGIST: **Chris Krajicek**
DATE BEGUN: **9/26/16**
DATE COMPLETED: **9/26/16**

DEPTH	PID (VOCs in PPM)	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY
11.0				
12.0				
13.0		CL	Silty Clay: with sand. Moist, light gray, stiff, low plasticity.	
14.0		SP	Sand: Moist, light brown to orange, subangular, well sorted, fine sands. Strong iron oxide staining in upper portion and decreasing with depth. Muscovite flecks present.	
15.0				
16.0				

Appendix C2 - Piezometer and Monitoring Well Construction Logs

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SOIL BORING AND WELL CONSTRUCTION LOG

BOREHOLE NUMBER

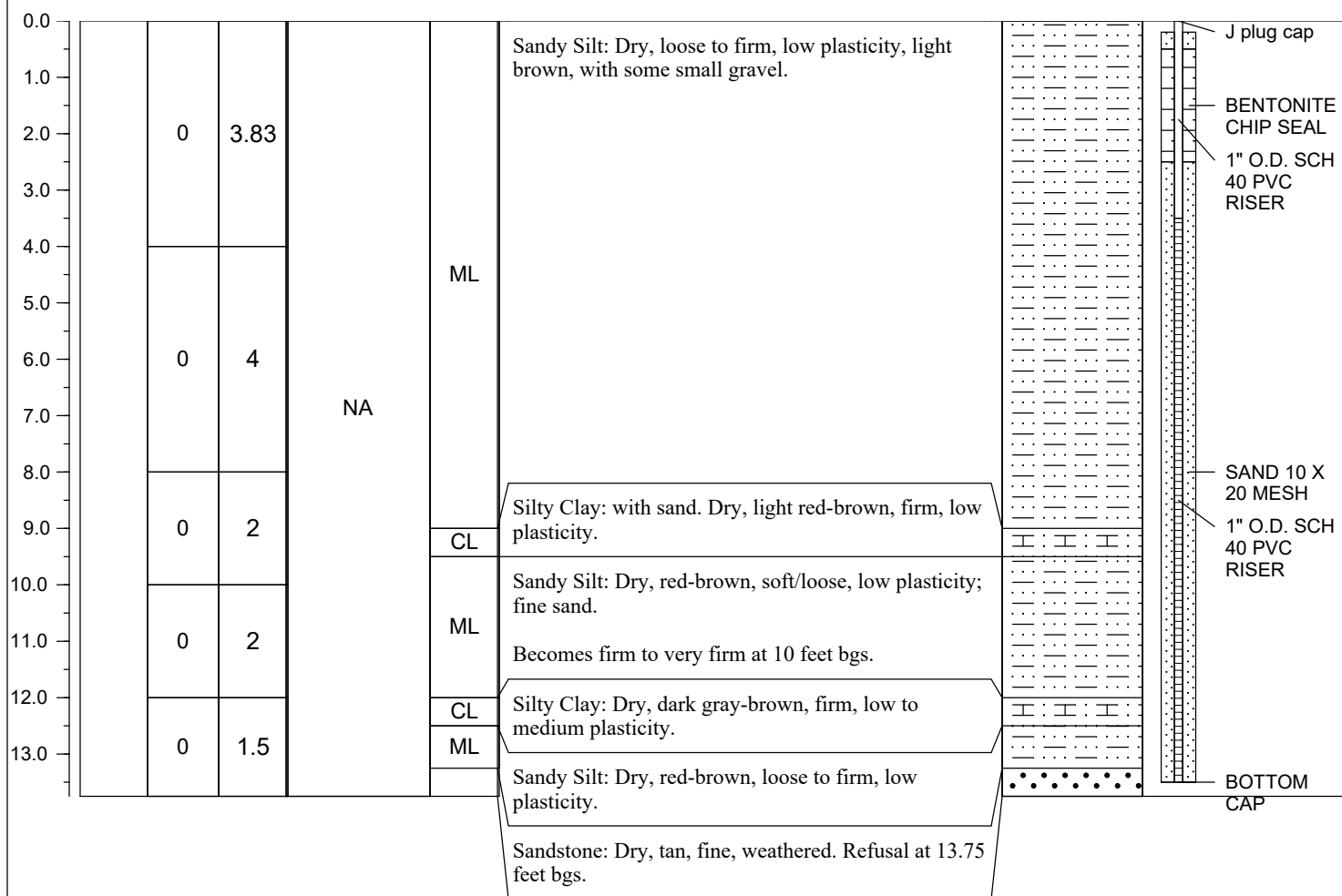
AC-P1

PROJECT NAME/NUMBER: **Adams County Shooting Range/132E-16**TOTAL BORING DEPTH: **13.75 feet**LOCATION: **14451 Riverdale Road, Brighton, CO**TOTAL WELL DEPTH: **13.5 feet**DRILLING COMPANY: **DrillPro Services, Inc.**DRILLING METHOD: **Direct Push with acetate liners**GEOLOGIST: **Travis Brown**DRILLER: **Terrance Apodaca**DATE BEGUN: **7/7/16**DATE COMPLETED: **7/7/16**

INITIAL (BGS) AND STATIC WATER LEVEL (BTOC)

Depth (ft)	Dry	Dry
Date	7/7/2016	8/24/2016

DEPTH	STATIC WATER	PID (VOCs in PPM)	RECOVERY (Ft.)	Soil Analysis	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
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SOIL BORING AND WELL CONSTRUCTION LOG

BOREHOLE NUMBER

AC-P2

PROJECT NAME/NUMBER: Adams County Shooting Range/132E-16

TOTAL BORING DEPTH: 20 feet

LOCATION: 14451 Riverdale Road, Brighton, CO

TOTAL WELL DEPTH: 20 feet

DRILLING COMPANY: DrillPro Services, Inc.

INITIAL (BGS) AND STATIC WATER LEVEL (BTOC)

DRILLING METHOD: Direct Push with acetate liners

GEOLOGIST: Travis Brown

DRILLER: Terrance Apodaca

DATE BEGUN: 7/7/16

DATE COMPLETED: 7/7/16

Depth (ft)

Dry

16.01

Date

7/7/2016

8/24/2016

DEPTH	STATIC WATER	PID (VOCs in PPM)	RECOVERY (Ft.)	Soil Analysis	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
0.0					ML	Sandy Silt: Dry, firm, low plasticity, red-brown, highly quartzose fine sand.		J plug cap
1.0					CL	Sandy Clay: with silt. Moist, red-brown, medium firm, medium plasticity, lighter brown toward 4 feet.		
2.0		0	3.8					
3.0								
4.0								
5.0					ML	Sandy Silt: with clay. Dry to moist, light brown, medium soft, low plasticity.		
6.0		0	4			Becomes reddish-brown, firmer, and micaceous with some coarse sand at 7.5 feet.		
7.0								
8.0								
9.0		0	2					
10.0					CL	Silty Clay: with sand. Dry, reddish-brown, firm, low plasticity.		
11.0		0	2					
12.0					ML	Sandy Silt: with clay. Dry, reddish-brown, medium soft to soft, low plasticity. Becomes firm to very firm at about 12.5 feet.		
13.0		0	2					
14.0					CH	Silty Clay: Dry to moist, dark gray to brown, medium to high plasticity, very firm.		
15.0		0	2					SAND 10 X 20 MESH
16.0					ML	Sandy Silt: with clay. Dry, reddish-brown, firm to soft/loose, low plasticity.		1" O.D. SCH 40 PVC RISER
17.0		0	2			with significant gypsum deposition at 17.5 feet.		
18.0					CL	Silty Clay: Dry to moist, dark gray to brown, medium plasticity, firm.		
19.0		0	2		ML	Sandy Silt: with clay. Dry to moist, dark gray brown,		



SOIL BORING AND WELL CONSTRUCTION LOG

BOREHOLE NUMBER

AC-P2

PROJECT NAME/NUMBER: **Adams County Shooting Range/132E-16**

TOTAL BORING DEPTH: **20 feet**

LOCATION: **14451 Riverdale Road, Brighton, CO**

TOTAL WELL DEPTH: **20 feet**

DRILLING COMPANY: **DrillPro Services, Inc.**

DRILLING METHOD: **Direct Push with acetate liners**

GEOLOGIST: **Travis Brown** DRILLER: **Terrance Apodaca**

DATE BEGUN: **7/7/16** DATE COMPLETED: **7/7/16**

INITIAL (BGS) AND STATIC WATER LEVEL (BTOC)

Depth (ft)

Dry

16.01

Date

7/7/2016

8/24/2016

DEPTH	STATIC WATER	PID (VOCs in PPM)	RECOVERY (Ft.)	Soil Analysis	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
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20.0					CL	medium soft to firm, low plasticity. Silty Clay: Dry, dark gray to brown, medium plasticity, firm. Refusal at 20 feet.		 BOTTOM CAP
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SOIL BORING AND WELL CONSTRUCTION LOG

BOREHOLE NUMBER

AC-P3

PROJECT NAME/NUMBER: **Adams County Shooting Range/132E-16**LOCATION: **14451 Riverdale Road, Brighton, CO**DRILLING COMPANY: **DrillPro Services, Inc.**DRILLING METHOD: **Direct Push with acetate liners**GEOLOGIST: **Travis Brown** DRILLER: **Terrance Apodaca**DATE BEGUN: **7/7/16** DATE COMPLETED: **7/7/16**TOTAL BORING DEPTH: **19 feet**TOTAL WELL DEPTH: **19 feet**

INITIAL (BGS) AND STATIC WATER LEVEL (BTOC)

Depth (ft)	16	11.09
Date	7/7/2016	8/24/2016

DEPTH	STATIC WATER	PID (VOCs in PPM)	RECOVERY (Ft.)	Soil Analysis	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
0.0					SM	Silty Sand: Dry, reddish-brown, loose, fine, micaceous; with some gravel. Asphalt present at 1 foot bgs.		J plug cap
1.0					MH	Silt: with fine sand. Dry, gray-brown, firm, low plasticity.		
2.0		0	4					
3.0					CL	Sandy Clay: with silt. Dry, gray-brown to reddish-brown, very firm, micaceous, low plasticity.		
4.0								BENTONITE CHIP SEAL
5.0					MH	Silt: with clay and sand. Dry, reddish-brown, soft, low plasticity, micaceous.		1" O.D. SCH 40 PVC RISER
6.0		0	4					
7.0					CL	Sandy Clay: with silt. Dry, gray-brown, firm to very firm, low plasticity.		
8.0								
9.0		0	3					
10.0				NA	MH	Silt: with fine sand. Moist, reddish-brown, soft, low plasticity.		
11.0					MH	Silt: with gravel and fine sand. Moist, reddish-brown, loose, low plasticity.		
12.0		0	2					
13.0					CL	Sandy Clay: with silt. Dry to moist, gray, very firm, low plasticity.		SAND 10 X 20 MESH
14.0					MH			1" O.D. SCH 40 PVC RISER
15.0		0	2		CL	Sandy Silt: Moist, reddish-brown, soft, micaceous; fine sands.		
16.0					MH	Sandy Clay: with silt. Moist, dark gray to brown, low plasticity, firm to medium firm. Some organics possible from 14.5 to 15 and 15.5 to 16 feet bgs.		
17.0						Gravelly from 15 to 15.5 feet bgs.		
18.0		0	3		CL	Sandy Silt: Very moist to wet, reddish-brown, soft; fine sands. Possible organic material near 16.5 feet		



SOIL BORING AND WELL CONSTRUCTION LOG

BOREHOLE NUMBER

AC-P3

PROJECT NAME/NUMBER: **Adams County Shooting Range/132E-16**

TOTAL BORING DEPTH: **19 feet**

LOCATION: **14451 Riverdale Road, Brighton, CO**

TOTAL WELL DEPTH: **19 feet**

DRILLING COMPANY: **DrillPro Services, Inc.**

INITIAL (BGS) AND STATIC WATER LEVEL (BTOC)

DRILLING METHOD: **Direct Push with acetate liners**

GEOLOGIST: **Travis Brown** DRILLER: **Terrance Apodaca**

Depth (ft)	16	11.09
Date	7/7/2016	8/24/2016

DATE BEGUN: **7/7/16** DATE COMPLETED: **7/7/16**

DEPTH	STATIC WATER	PID (VOCs in PPM)	RECOVERY (Ft.)	Soil Analysis	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
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19.0

bgs.

Sandy Clay: with silt. Dry to moist, gray to reddish-brown, firm to very firm, low plasticity.

BOTTOM
CAP



SOIL BORING AND WELL CONSTRUCTION LOG

BOREHOLE NUMBER

AC-P4

PROJECT NAME/NUMBER: **Adams County Shooting Range/132E-16**TOTAL BORING DEPTH: **13 feet**LOCATION: **14451 Riverdale Road, Brighton, CO**TOTAL WELL DEPTH: **13 feet**DRILLING COMPANY: **DrillPro Services, Inc.**DRILLING METHOD: **Direct Push with acetate liners**GEOLOGIST: **Travis Brown** DRILLER: **Terrance Apodaca**DATE BEGUN: **7/7/16** DATE COMPLETED: **7/7/16**

INITIAL (BGS) AND STATIC WATER LEVEL (BTOC)

Depth (ft)

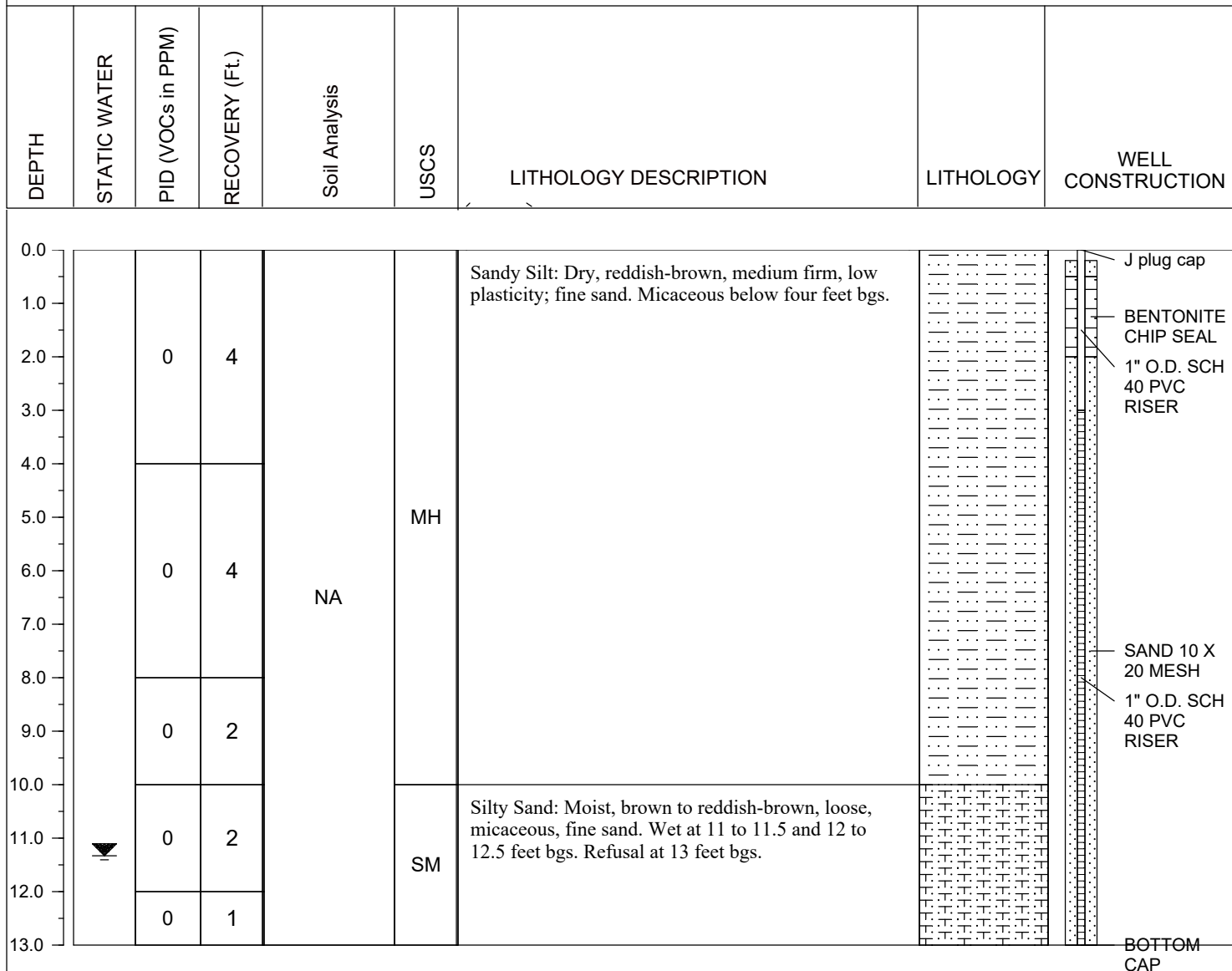
11

11.33

Date

7/7/2016

8/24/2016





SOIL BORING AND WELL CONSTRUCTION LOG

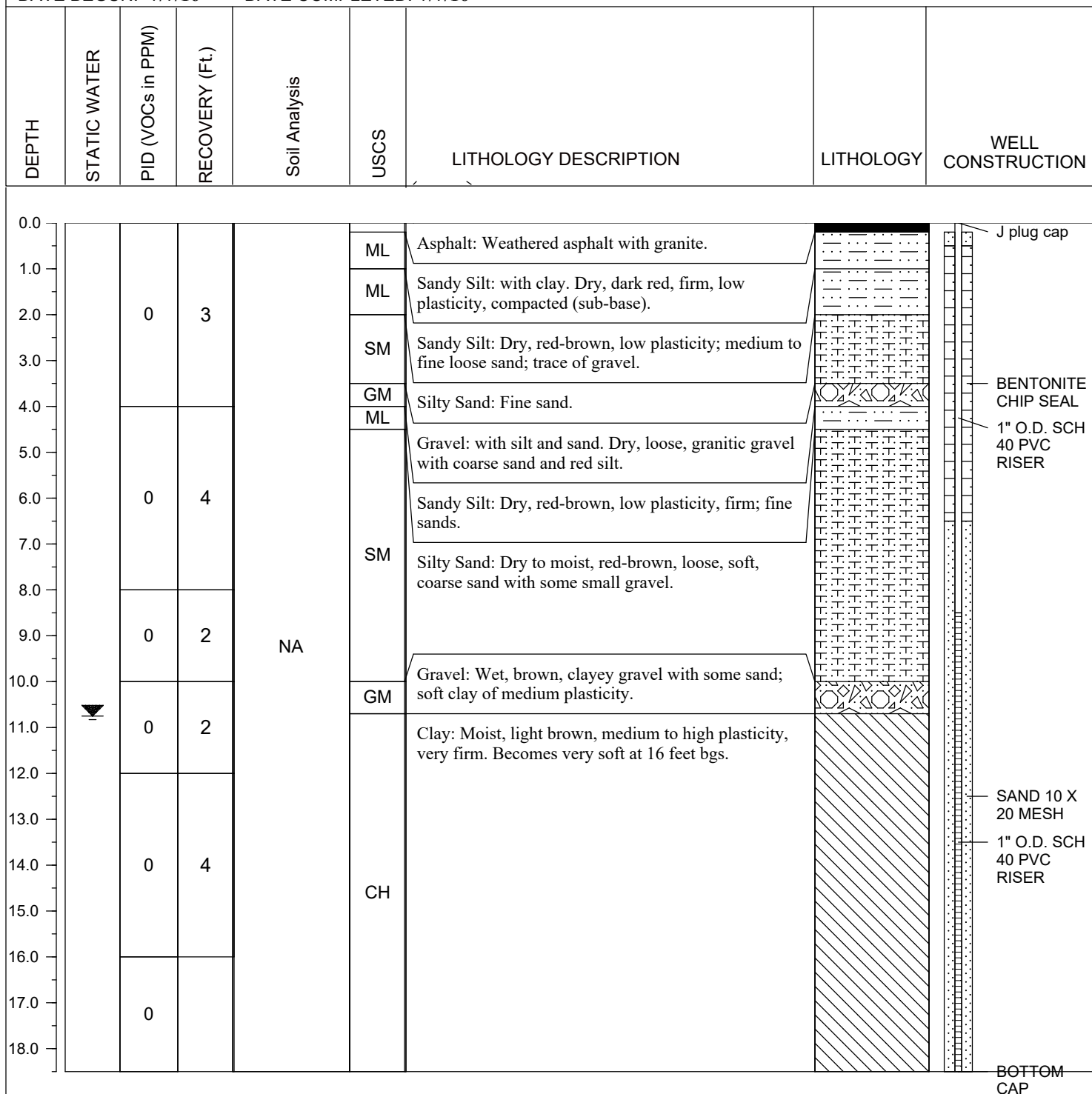
BOREHOLE NUMBER

AC-P5

PROJECT NAME/NUMBER: **Adams County Shooting Range/132E-16**TOTAL BORING DEPTH: **18.5 feet**LOCATION: **14451 Riverdale Road, Brighton, CO**TOTAL WELL DEPTH: **18.5 feet**DRILLING COMPANY: **DrillPro Services, Inc.**DRILLING METHOD: **Direct Push with acetate liners**GEOLOGIST: **Travis Brown** DRILLER: **Terrance Apodaca**DATE BEGUN: **7/7/16** DATE COMPLETED: **7/7/16**

INITIAL (BGS) AND STATIC WATER LEVEL (BTOC)

Depth (ft)	10	10.75
Date	7/7/2016	8/24/2016





SOIL BORING AND WELL CONSTRUCTION LOG

BOREHOLE NUMBER

AC-MW1

PROJECT NAME/NUMBER: Adams County Shooting Range/132E-16

TOTAL BORING DEPTH: 60 feet

LOCATION: 14451 Riverdale Road, Brighton, CO

TOTAL WELL DEPTH: 59 feet

DRILLING COMPANY: DrillPro Services, Inc.

DRILLING METHOD: 5.25" OD HSA with Split Spoon Samplers

GEOLOGIST: Travis Brown DRILLER: Blake Jones

DATE BEGUN: 7/13/16 DATE COMPLETED: 7/13/16

INITIAL (BGS) AND STATIC WATER LEVEL (BTOC)

Depth (ft)

Dry

31.27

Date

7/13/16

8/24/2016

DEPTH	STATIC WATER	PID (VOCs in PPM)	RECOVERY (Ft.)	Soil Analysis	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
0.0						Sandy Silt: with clay. Dry, tan to light gray, medium soft, low plasticity. Mottled orange and light gray from 5 to 6.5 feet bgs.		PVC STICK-UP (+3 FT) J plug cap CEMENT
1.0								
2.0								
3.0								
4.0								
5.0					ML			
6.0		0	1.5					
7.0								
8.0								
9.0								
10.0					CL	Silty Clay: with sand. Dry, light gray, medium firm, low plasticity.		
11.0		0	2		SM			
12.0					ML	Silty Sand: Moist, orange, soft, organics near top.		
13.0						Sandy Silt: Moist, light gray, medium soft, low plasticity.		
14.0					SM	Silty Sand: Moist, mottled orange and light gray with silt dispersed throughout.		
15.0						Sandy Silt: with clay. Dry, gray and orange, low plasticity, medium firm.		
16.0		0	1.83		ML			2" O.D. SCH 40 PVC RISER BENTONITE CHIP SEAL
17.0						Silty Sand: Dry to moist, light brown, loose, soft, micaceous, very fine to fine sand		
18.0								
19.0					SM			



SOIL BORING AND WELL CONSTRUCTION LOG

BOREHOLE NUMBER

AC-MW1

PROJECT NAME/NUMBER: **Adams County Shooting Range/132E-16**
LOCATION: **14451 Riverdale Road, Brighton, CO**
DRILLING COMPANY: **DrillPro Services, Inc.**
DRILLING METHOD: **5.25" OD HSA with Split Spoon Samplers**
GEOLOGIST: **Travis Brown** DRILLER: **Blake Jones**
DATE BEGUN: **7/13/16** DATE COMPLETED: **7/13/16**

TOTAL BORING DEPTH: **60 feet**
TOTAL WELL DEPTH: **59 feet**

INITIAL (BGS) AND STATIC WATER LEVEL (BTOC)

Depth (ft)	Dry	31.27
Date	7/13/16	8/24/2016

DEPTH	STATIC WATER	PID (VOCs in PPM)	RECOVERY (Ft.)	Soil Analysis	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
20.0								
21.0		0	1.5					
22.0					CL	Sandy Clay: with silt. Dark to light gray, medium firm, low plasticity. Trace of mica and pockets of orange sand.		
23.0								
24.0								
25.0								
26.0		0	2			Silty Sand: Dry to moist, light brown to orange, micaceous, medium to fine sand. Lense of gray silty sandy clay near 35.75 to 36 feet bgs.		
27.0								
28.0								
29.0								
30.0				NA				
31.0	▼	0	2					
32.0								
33.0					SM			
34.0								
35.0								
36.0		0	1					
37.0								
38.0								



SOIL BORING AND WELL CONSTRUCTION LOG

BOREHOLE NUMBER

AC-MW1

PROJECT NAME/NUMBER: Adams County Shooting Range/132E-16

TOTAL BORING DEPTH: 60 feet

LOCATION: 14451 Riverdale Road, Brighton, CO

TOTAL WELL DEPTH: 59 feet

DRILLING COMPANY: DrillPro Services, Inc.

INITIAL (BGS) AND STATIC WATER LEVEL (BTOC)

DRILLING METHOD: 5.25" OD HSA with Split Spoon Samplers

GEOLOGIST: Travis Brown DRILLER: Blake Jones

DATE BEGUN: 7/13/16 DATE COMPLETED: 7/13/16

Depth (ft)

Dry

31.27

Date

7/13/16

8/24/2016

DEPTH	STATIC WATER	PID (VOCs in PPM)	RECOVERY (Ft.)	Soil Analysis	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
39.0								
40.0								
41.0		0	2					
42.0					ML	Sandy Silt: Dry to moist, light brown to orange, medium firm, low plasticity. Becomes blue-gray at 45 feet bgs.		
43.0								
44.0								
45.0								
46.0		0	2			Sandy Clay: with silt. Dry, blue-gray, low plasticity, medium firm, very tight.		
47.0								
48.0								
49.0								
50.0					CL			
51.0		0	1					
52.0								
53.0								
54.0								
55.0								
56.0		0	1			Claystone: Dry, dark blue-gray, laminar, very firm.		
57.0								
58.0								

SAND 10 X 20 MESH
2" O.D. SCH 40 PVC RISER



SOIL BORING AND WELL CONSTRUCTION LOG

BOREHOLE NUMBER

AC-MW1

PROJECT NAME/NUMBER: **Adams County Shooting Range/132E-16**

TOTAL BORING DEPTH: **60 feet**

LOCATION: **14451 Riverdale Road, Brighton, CO**

TOTAL WELL DEPTH: **59 feet**

DRILLING COMPANY: **DrillPro Services, Inc.**

DRILLING METHOD: **5.25" OD HSA with Split Spoon Samplers**

GEOLOGIST: **Travis Brown** DRILLER: **Blake Jones**

DATE BEGUN: **7/13/16** DATE COMPLETED: **7/13/16**

INITIAL (BGS) AND STATIC WATER LEVEL (BTWC)

Depth (ft)

Dry

31.27

Date

7/13/16

8/24/2016

DEPTH	STATIC WATER	PID (VOCs in PPM)	RECOVERY (Ft.)	Soil Analysis	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
-------	--------------	-------------------	----------------	---------------	------	-----------------------	-----------	-------------------





SOIL BORING AND WELL CONSTRUCTION LOG

BOREHOLE NUMBER

AC-MW2

PROJECT NAME/NUMBER: **Adams County Shooting Range/132E-16**TOTAL BORING DEPTH: **26.5 feet**LOCATION: **14451 Riverdale Road, Brighton, CO**TOTAL WELL DEPTH: **24 feet**DRILLING COMPANY: **DrillPro Services, Inc.**DRILLING METHOD: **5.25" OD HSA with Split Spoon Samplers**GEOLOGIST: **Travis Brown** DRILLER: **Blake Jones**DATE BEGUN: **7/14/16** DATE COMPLETED: **7/14/16**

INITIAL (BGS) AND STATIC WATER LEVEL (BTOC)

Depth (ft)	Dry	Dry
Date	7/14/16	8/24/2016

DEPTH	STATIC WATER	PID (VOCs in PPM)	RECOVERY (Ft.)	Soil Analysis	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
0.0						Sandy Silt: Dry, tan, soft/loose.		PVC STICK-UP (+3 FT)
1.0					ML			J plug cap
2.0								CEMENT
3.0								
4.0								
5.0					CL	Silty Clay: Dry, dark gray, low plasticity, very firm.		2" O.D. SCH 40 PVC RISER
6.0		0	2			Clayey Silt: with sand. Dry; mixed orange, tan, and dary gray (clay); low plasticity, medium firm, intermittent clay lenses.		BENTONITE CHIP SEAL
7.0					ML			
8.0								
9.0								
10.0								
11.0		0	1.67		SM	Silty Sand: Dry, orange, soft.		
12.0						Sandy Clay: with silt. Dry, dary gray, medium firm to firm, low plasticity, lenses of orange sand.		
13.0					CL			
14.0								
15.0								
16.0		0	2		SM	Silty Sand: Dry to moist, light brown to orange, soft, medium to fine, well-graded sand.		SAND 10 X 20 MESH
17.0						Clay: Moist, olive gray, medium to high plasticity, medium firm to firm. Becomes dry at 20 feet bgs.		2" O.D. SCH 40 PVC RISER
18.0								
19.0					CH			



SOIL BORING AND WELL CONSTRUCTION LOG

BOREHOLE NUMBER

AC-MW2

PROJECT NAME/NUMBER: **Adams County Shooting Range/132E-16**

TOTAL BORING DEPTH: **26.5 feet**

LOCATION: **14451 Riverdale Road, Brighton, CO**

TOTAL WELL DEPTH: **24 feet**

DRILLING COMPANY: **DrillPro Services, Inc.**

DRILLING METHOD: **5.25" OD HSA with Split Spoon Samplers**

GEOLOGIST: **Travis Brown** DRILLER: **Blake Jones**

DATE BEGUN: **7/14/16** DATE COMPLETED: **7/14/16**

INITIAL (BGS) AND STATIC WATER LEVEL (BTOC)

Depth (ft)

Dry

Dry

Date

7/14/16

8/24/2016

DEPTH	STATIC WATER	PID (VOCs in PPM)	RECOVERY (Ft.)	Soil Analysis	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
20.0		0	1.5					
21.0								
22.0					CL	Silty Clay: Dry, light gray to blue, low plasticity, very firm, laminar.		
23.0								
24.0								
25.0								
26.0						Claystone: Dry, dark gray-blue, weathered, firm to very firm, laminar.		

BOTTOM CAP



SOIL BORING AND WELL CONSTRUCTION LOG

BOREHOLE NUMBER

AC-MW3

PROJECT NAME/NUMBER: **Adams County Shooting Range/132E-16**TOTAL BORING DEPTH: **36.5 feet**LOCATION: **14451 Riverdale Road, Brighton, CO**TOTAL WELL DEPTH: **36.5 feet**DRILLING COMPANY: **DrillPro Services, Inc.**DRILLING METHOD: **6.5" OD HSA with Split Spoon Samplers**GEOLOGIST: **Travis Brown** DRILLER: **Blake Jones**DATE BEGUN: **7/12/16** DATE COMPLETED: **7/12/16**

INITIAL (BGS) AND STATIC WATER LEVEL (BTOC)

Depth (ft)

Dry

33.75

Date

7/12/16

8/24/2016

DEPTH	STATIC WATER	PID (VOCs in PPM)	RECOVERY (Ft.)	Soil Analysis	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
0.0						Sandy Silt: Dry, tan to brown, low plasticity, medium firm; fine sands. Trace of black organics from 5 to 5.7 bgs.		PVC STICK-UP (+3 FT) J plug cap CEMENT
1.0								
2.0								
3.0								
4.0								
5.0								
6.0		0	1.5		ML			
7.0								
8.0								
9.0								
10.0								
11.0		0	1.5					
12.0								
13.0								
14.0								
15.0								
16.0		0	1.37		CL			
17.0								
18.0								
19.0				NA				



SOIL BORING AND WELL CONSTRUCTION LOG

BOREHOLE NUMBER

AC-MW3

PROJECT NAME/NUMBER: Adams County Shooting Range/132E-16

TOTAL BORING DEPTH: 36.5 feet

LOCATION: 14451 Riverdale Road, Brighton, CO

TOTAL WELL DEPTH: 36.5 feet

DRILLING COMPANY: DrillPro Services, Inc.

DRILLING METHOD: 6.5" OD HSA with Split Spoon Samplers

GEOLOGIST: Travis Brown DRILLER: Blake Jones

DATE BEGUN: 7/12/16 DATE COMPLETED: 7/12/16

INITIAL (BGS) AND STATIC WATER LEVEL (BTOC)

Depth (ft)

Dry

33.75

Date

7/12/16

8/24/2016

DEPTH	STATIC WATER	PID (VOCs in PPM)	RECOVERY (Ft.)	Soil Analysis	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
20.0		0	1.5		ML	Clayey Silt: Dry, light brown to orange, low plasticity, firm; moist with trace of gypsum from 20 to 20.5 feet bgs.		
21.0								
22.0								
23.0								
24.0								
25.0		0	1.5					
26.0								
27.0								
28.0								
29.0								
30.0								
31.0		0	1.37		CL	Silty Clay: Dry, dark gray to tan, firm, low plasticity.		
32.0								
33.0								
34.0								
35.0								
36.0		0	1			Claystone: Weathered, blue-gray, dry. Auger refusal at 36.5 feet bgs.		

SAND 10 X 20 MESH
2" O.D. SCH 40 PVC RISER

BOTTOM CAP



SOIL BORING AND WELL CONSTRUCTION LOG

BOREHOLE NUMBER

AC-MW4

PROJECT NAME/NUMBER: **Adams County Shooting Range/132E-16**TOTAL BORING DEPTH: **30 feet**LOCATION: **14451 Riverdale Road, Brighton, CO**TOTAL WELL DEPTH: **25 feet**DRILLING COMPANY: **DrillPro Services, Inc.**DRILLING METHOD: **6.5" OD HSA with Split Spoon Samplers**GEOLOGIST: **Travis Brown** DRILLER: **Blake Jones**DATE BEGUN: **7/13/16** DATE COMPLETED: **7/13/16**

INITIAL (BGS) AND STATIC WATER LEVEL (BTOC)

Depth (ft)

25

18.93

Date

7/13/16

8/24/2016

DEPTH	STATIC WATER	PID (VOCs in PPM)	RECOVERY (Ft.)	Soil Analysis	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
0.0						Silty Sand: Dry, tan, soft/loose; fine sands.		PVC STICK-UP (+3 FT)
1.0								J plug cap
2.0								CEMENT
3.0								
4.0								
5.0								
6.0		0	1.5		SM			2" O.D. SCH 40 PVC RISER
7.0								BENTONITE CHIP SEAL
8.0								
9.0								
10.0								
11.0		0	1.5					
12.0						Sandy Silt: Dry, light brown to orange, low plasticity, soft to medium firm; fine sand.		
13.0					ML			
14.0								
15.0				NA				
16.0		0	1.5			Silty Sand: Moist to very moist, light brown, loose, medium fine sand.		SAND 10 X 20 MESH
17.0								2" O.D. SCH 40 PVC RISER
18.0					SM			



SOIL BORING AND WELL CONSTRUCTION LOG

BOREHOLE NUMBER

AC-MW4

PROJECT NAME/NUMBER: **Adams County Shooting Range/132E-16**TOTAL BORING DEPTH: **30 feet**LOCATION: **14451 Riverdale Road, Brighton, CO**TOTAL WELL DEPTH: **25 feet**DRILLING COMPANY: **DrillPro Services, Inc.**DRILLING METHOD: **6.5" OD HSA with Split Spoon Samplers**GEOLOGIST: **Travis Brown**DRILLER: **Blake Jones**DATE BEGUN: **7/13/16**DATE COMPLETED: **7/13/16**

INITIAL (BGS) AND STATIC WATER LEVEL (BTOW)

Depth (ft)	25	18.93
Date	7/13/16	8/24/2016

DEPTH	STATIC WATER	PID (VOCs in PPM)	RECOVERY (Ft.)	Soil Analysis	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
19.0								
20.0								
21.0		0	1.2		ML	Sandy Silt: Moist, orange-brown, medium soft, low plasticity; fine sand.		
22.0								
23.0								
24.0								
25.0								
26.0		0	1.5		CL	Sandy Clay: Moist, light orange to light gray (mottled), low plasticity, medium soft; fine sands. Very moist to wet at 25 feet bgs. Gypsum precipitates at 26 feet bgs.		
27.0								
28.0								
29.0								
30.0								

BOTTOM
CAP



SOIL BORING AND WELL CONSTRUCTION LOG

BOREHOLE NUMBER

AC-MW5

PROJECT NAME/NUMBER: Adams County Shooting Range/132E-16

TOTAL BORING DEPTH: 21.5 feet

LOCATION: 14451 Riverdale Road, Brighton, CO

TOTAL WELL DEPTH: 20 feet

DRILLING COMPANY: DrillPro Services, Inc.

INITIAL (BGS) AND STATIC WATER LEVEL (BTOC)

DRILLING METHOD: 6.5" OD HSA with Split Spoon Samplers

GEOLOGIST: Travis Brown DRILLER: Blake Jones

DATE BEGUN: 7/12/16 DATE COMPLETED: 7/12/16

Depth (ft)

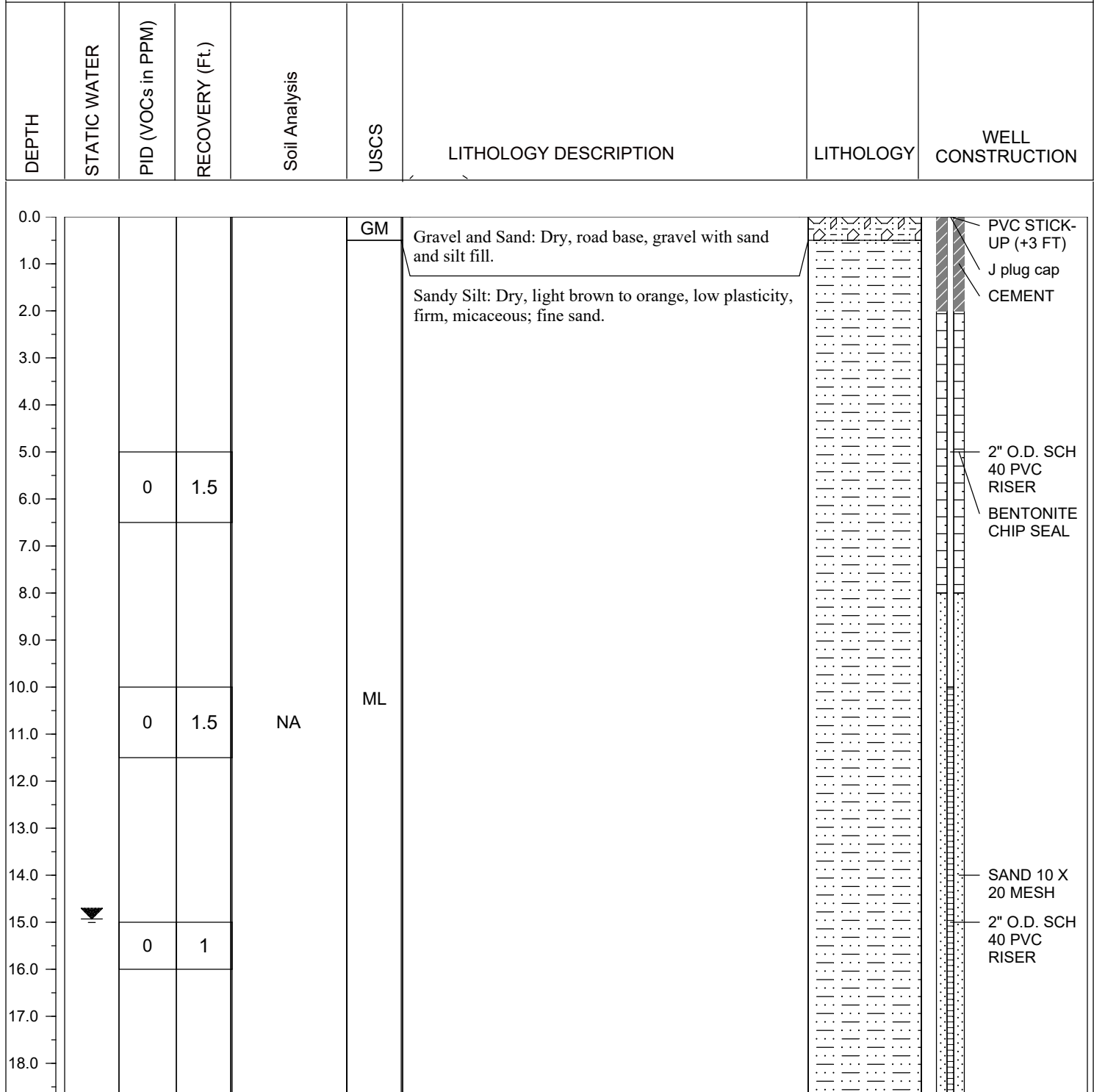
20

14.93

Date

7/12/16

8/24/2016





SOIL BORING AND WELL CONSTRUCTION LOG

BOREHOLE NUMBER

AC-MW5

PROJECT NAME/NUMBER: **Adams County Shooting Range/132E-16**

TOTAL BORING DEPTH: **21.5 feet**

LOCATION: **14451 Riverdale Road, Brighton, CO**

TOTAL WELL DEPTH: **20 feet**

DRILLING COMPANY: **DrillPro Services, Inc.**

DRILLING METHOD: **6.5" OD HSA with Split Spoon Samplers**

GEOLOGIST: **Travis Brown** DRILLER: **Blake Jones**

DATE BEGUN: **7/12/16** DATE COMPLETED: **7/12/16**

INITIAL (BGS) AND STATIC WATER LEVEL (BTOC)

Depth (ft)

20

14.93

Date

7/12/16

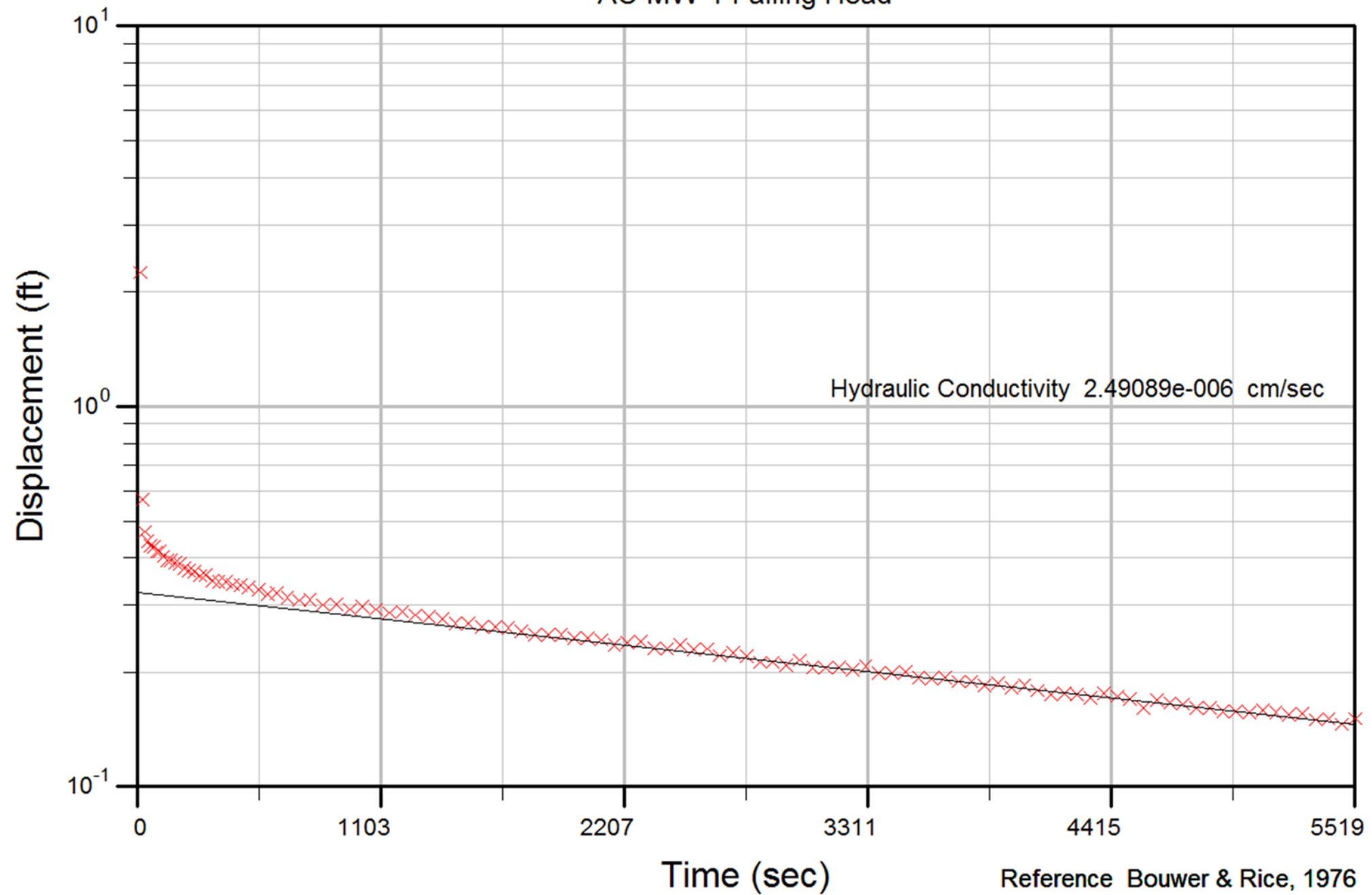
8/24/2016

DEPTH	STATIC WATER	PID (VOCs in PPM)	RECOVERY (Ft.)	Soil Analysis	USCS	LITHOLOGY DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
19.0								
20.0		0	1.5		CL	Sandy Clay: with silt. Wet, brown-orange, firm, low plasticity.		BOTTOM CAP
21.0								

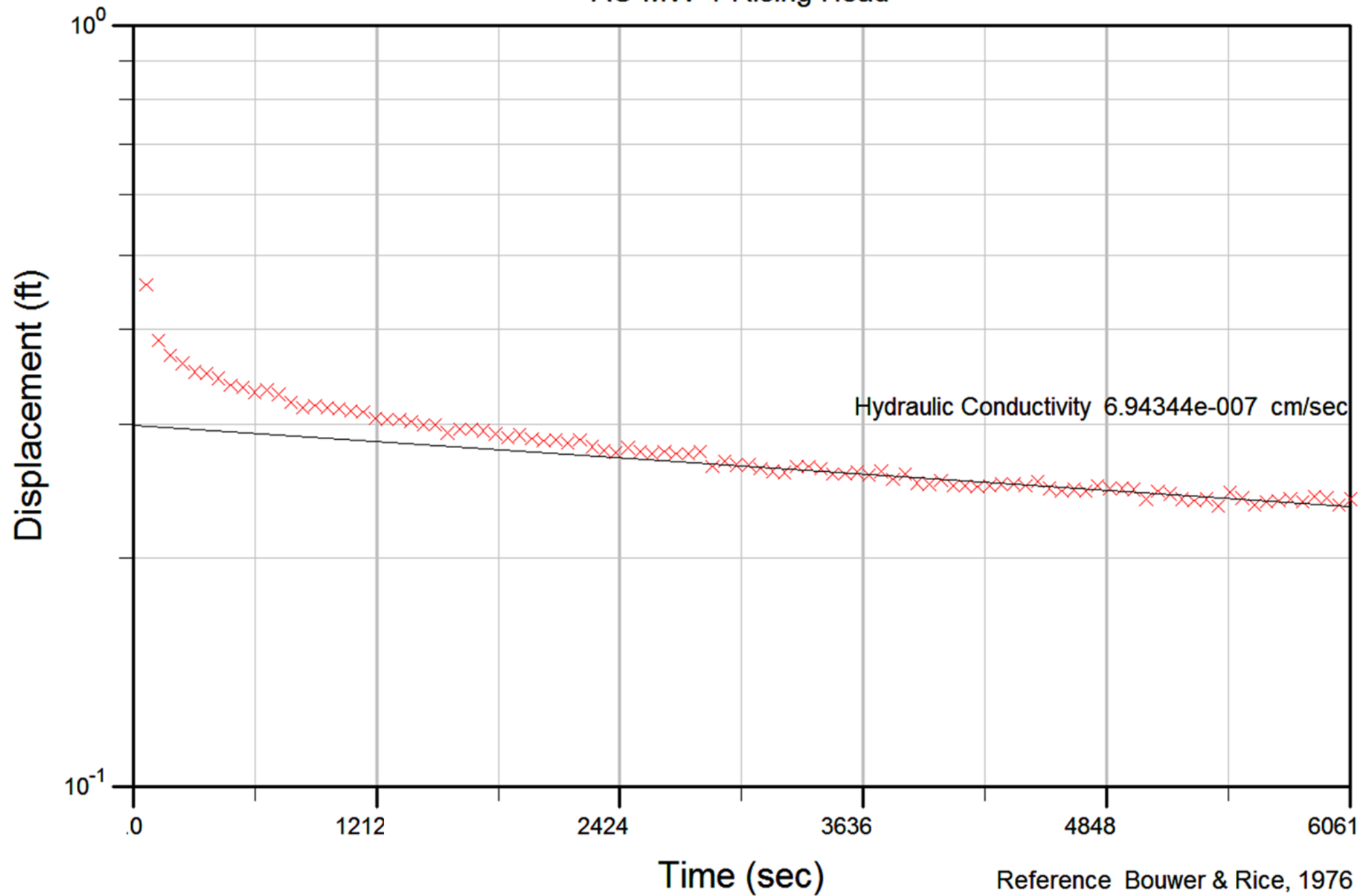
Appendix C3 - Slug Test Analyses

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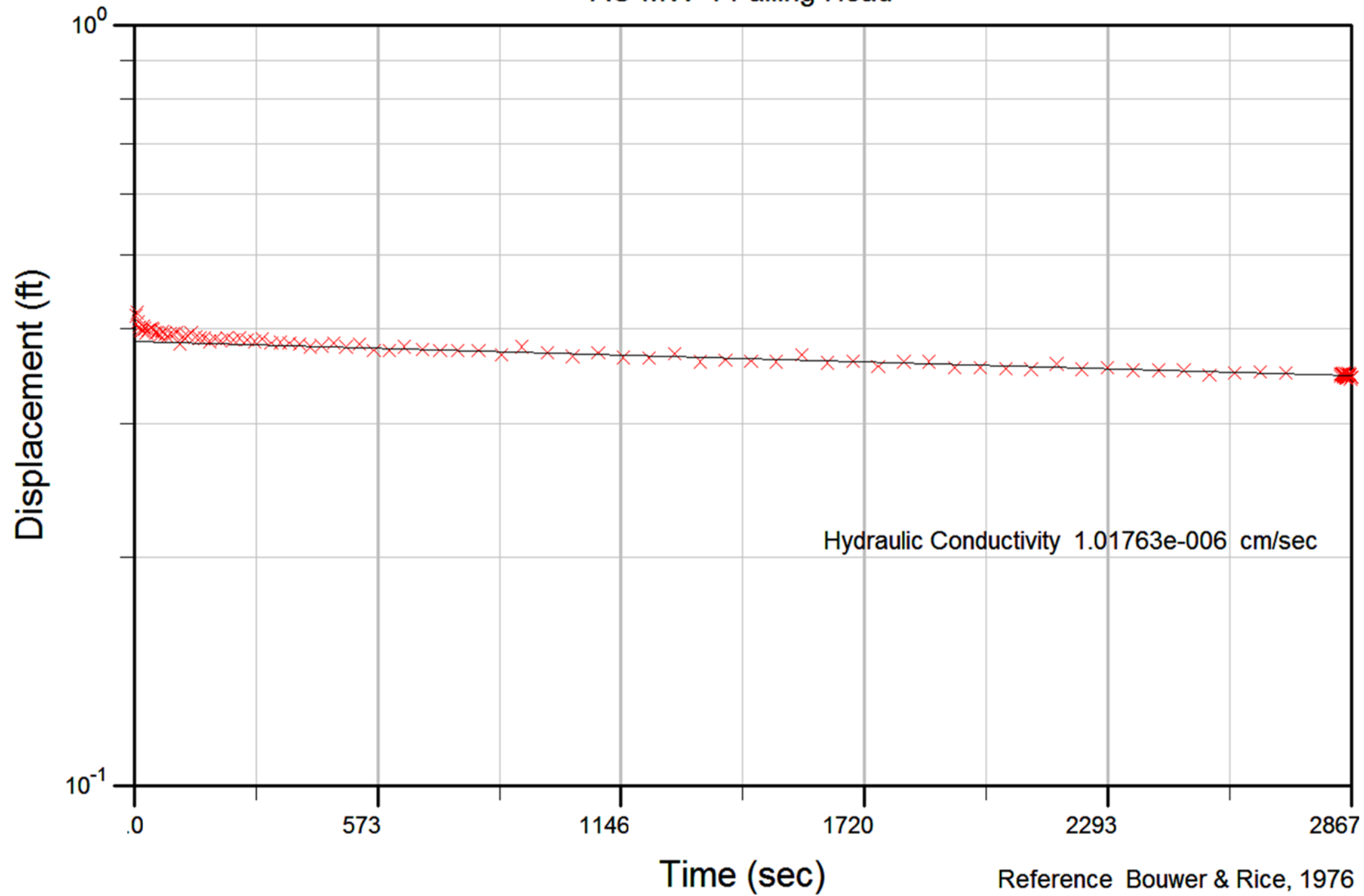
AC-MW-1 Falling Head



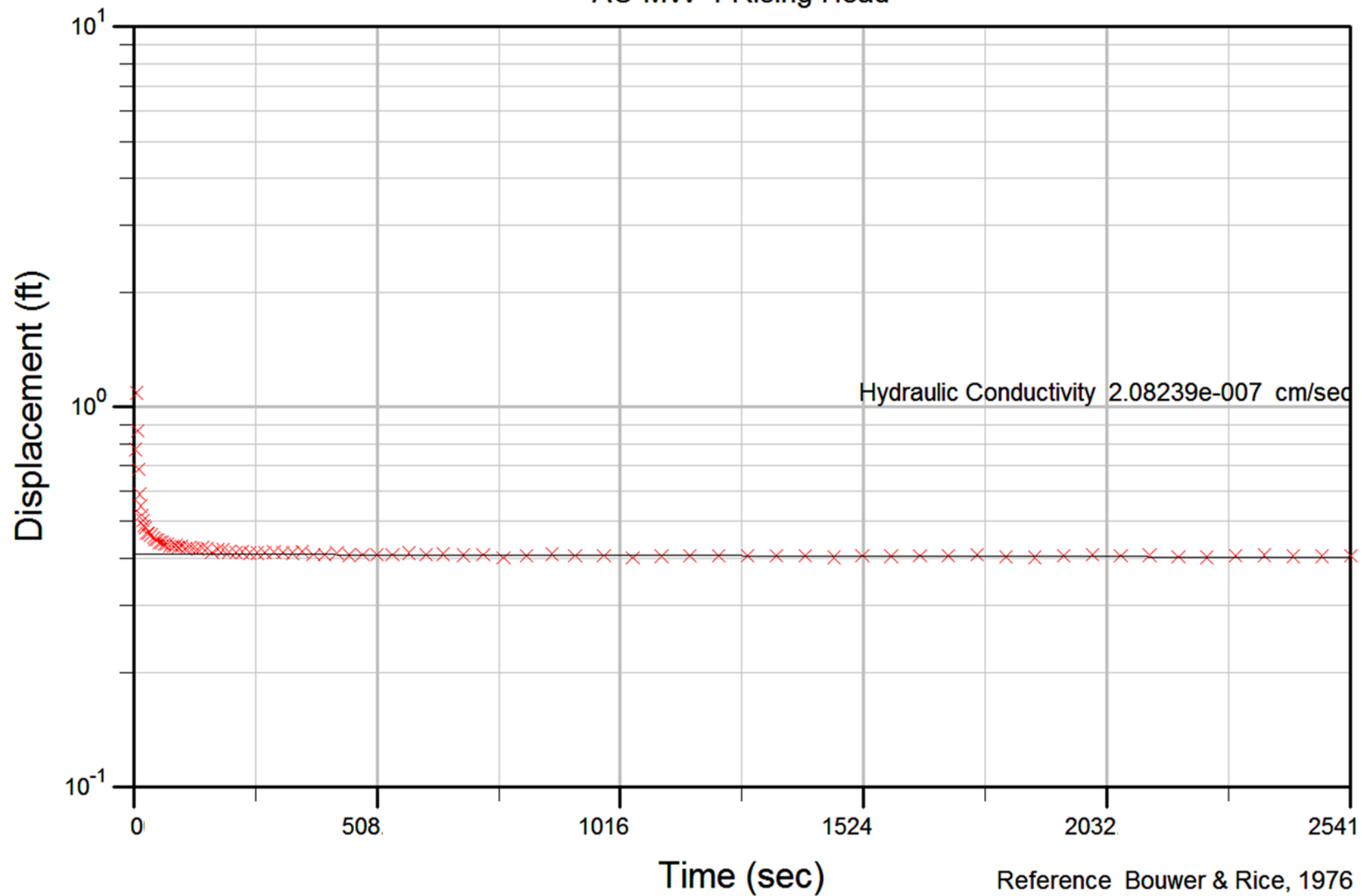
AC-MW-1 Rising Head



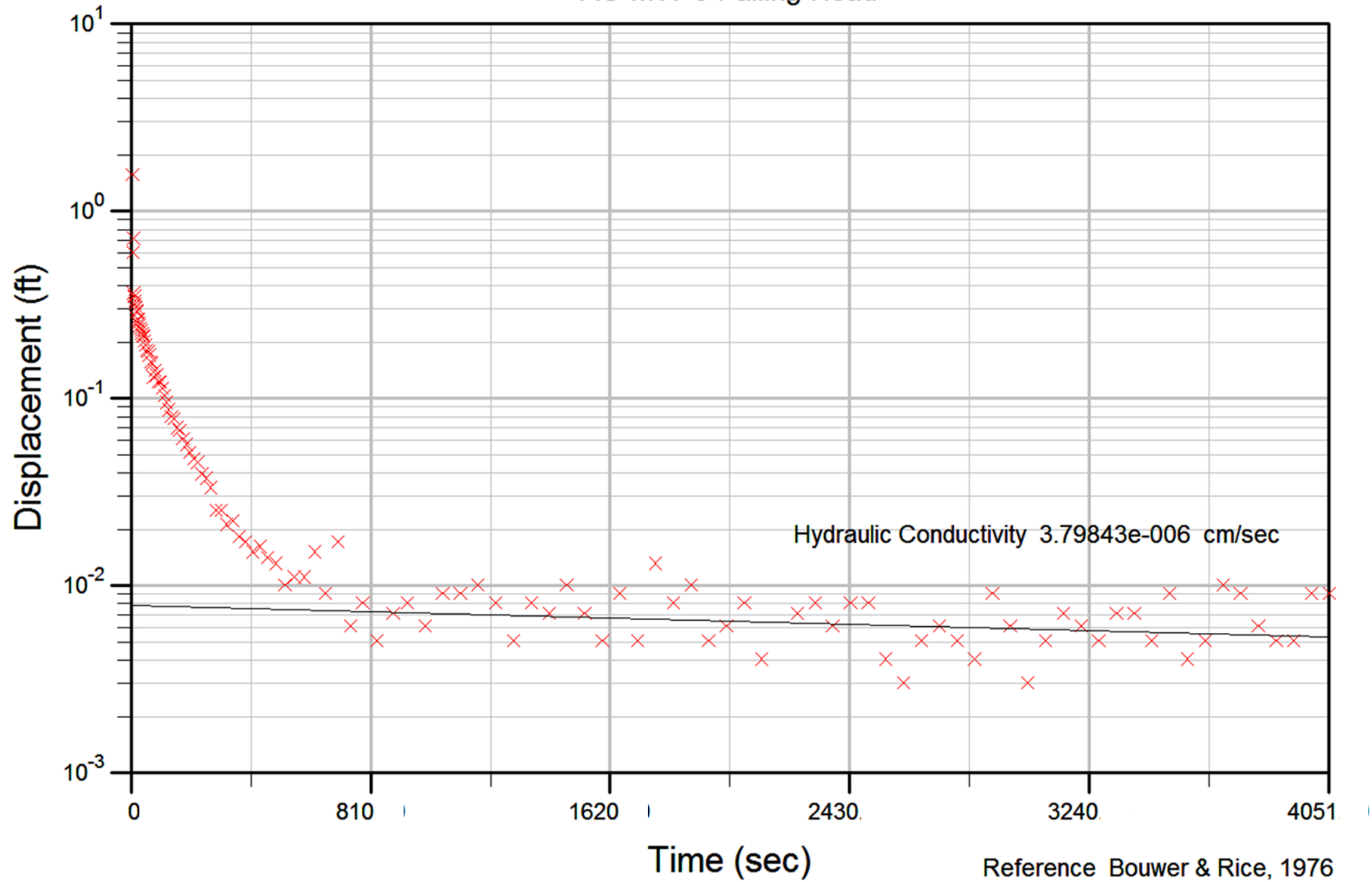
AC-MW-4 Falling Head



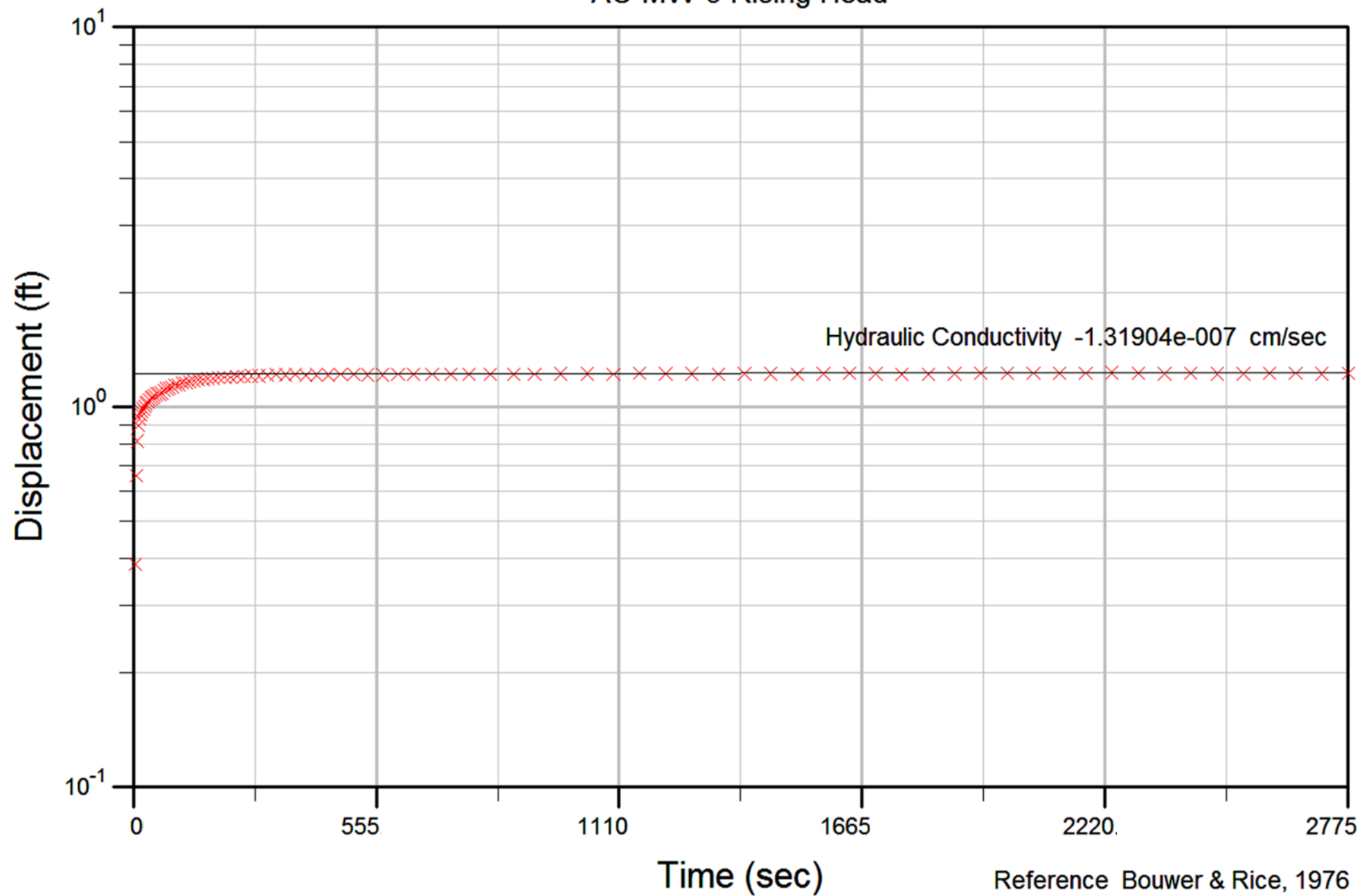
AC-MW-4 Rising Head



AC-MW-5 Falling Head



AC-MW-5 Rising Head



Appendix D - Photographs

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Armory building

3



North Shooting Range

4



North Shooting Range Backstop

5



Tactical Range

6



South Shooting Range

7



South Shooting Range Stormwater Basin

8



Septic tank and leach field within former skeet shooting area



Site Commercial Well



Munitions Magazine



Bullet Pile 1 on landfill area



Bullet Pile 2 on landfill area

13



Bullet Pile 3 on skeet shooting area

14



Burn Drum on landfill area



Fencing on landfill area



Telephone poles on landfill area



Wood beams on landfill area



Waste Tires on landfill area



Texas Tea Well on landfill area



Texas Tea Well separator pipes



Texas Tea produced oil tank pad



Texas Tea produced water tank pad



Texas Tea meter shed



Two Texas Tea electrical transformers



Anadarko 3" Pipeline Riser



30" CMP storm sewer drainage pipe inlet



CCTV sewer video from 30" storm sewer outlet



Installing groundwater monitoring wells



Developing groundwater monitoring well AC-MW1



Poison ivy patch located on north adjacent property immediately west of monitoring well AC-MW2



Off Site spring on south adjacent property

Appendix E - Domestic Well Construction Logs

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WELL CONSTRUCTION AND TEST REPORT
STATE OF COLORADO, OFFICE OF THE STATE ENGINEER

For Office Use only

RECEIVED

1. WELL PERMIT NUMBER 2582532. OWNER NAME(S) Gregg & Lisa McAlexander

NOV 05 2004

Mailing Address 5925 E 124th WayCity, St. Zip Brighton Co 80602

Phone (720) 977-4236

WATER RESOURCES
STATE ENGINEER
COLO.3. WELL LOCATION AS DRILLED: SW 1/4 SW 1/4, Sec. 14 Twp. 1 S, Range 67 W

DISTANCES FROM SEC. LINES:

650 ft. from South Sec. line. and 1100 ft. from West Sec. line. OR
(north or south) (east or west)

SUBDIVISION: _____ LOT _____ BLOCK _____ FILING(UNIT) _____

STREET ADDRESS AT WELL LOCATION: _____

4. GROUND SURFACE ELEVATION _____ ft. DRILLING METHOD RotaryDATE COMPLETED Oct 6 04 TOTAL DEPTH 320 ft. DEPTH COMPLETED 300 ft.

5. GEOLOGIC LOG:

Depth Description of Material (Type, Size, Color, Water Location)

0-24	Clay
24-26	Sand
26-181	Shale
181-182	Rock
182-222	Sand w/ Shale
222-223	Rock
223-236	Shale w/ Sand
236-310	Sand w/ Shale
310-320	Shale

6. HOLE DIAM. (in.) From (ft) To (ft)
6 1/2 0 320

7. PLAIN CASING

OD (in)	Kind	Wall Size	From (ft)	To (ft)
<u>4</u>	<u>steel</u>	<u>.188</u>	<u>+1</u>	<u>20</u>
<u>4</u>	<u>Plastic</u>	<u>.237</u>	<u>20</u>	<u>140</u>

PERF. CASING: Screen Slot Size: 3/16

Kind	Wall Size	From (ft)	To (ft)
<u>4 Plastic</u>	<u>.237</u>	<u>140</u>	<u>300</u>

8. FILTER PACK:

Material _____
Size N/A
Interval _____

9. PACKER PLACEMENT:

Type Rubber
Depth 40 140

10. GROUTING RECORD:

Material	Amount	Density	Interval	Placement
<u>Cement</u>	<u>8</u>	<u>15.6</u>	<u>7-40</u>	<u>pumped</u>
<u>Cement</u>	<u>9</u>	<u>15.6</u>	<u>100-140</u>	<u>pumped</u>

REMARKS: _____

11. DISINFECTION: Type HTHAmt. Used 3 ounces12. WELL TEST DATA: ☐ Check box if Test Data is submitted on Form No. GWS 39 Supplemental Well Test.TESTING METHOD AirStatic Level 81 ft. Date/Time measured Oct 6 04 Production Rate 15 gpm.Pumping level 129 ft. Date/Time measured Oct 6 04 Test length (hrs.) 3 hrs

Remarks _____

13. I have read the statements made herein and know the contents thereof, and that they are true to my knowledge. [Pursuant to Section 24-4-104 (13)(a) C.R.S., the making of false statements herein constitutes perjury in the second degree and is punishable as a class 1 misdemeanor.]

CONTRACTOR Eastwood Drilling Phone (719) 775-2834 Lic. No. 1258
Mailing Address P.O. Box 1029 Limon Co 80826

Name/Title (Please type or print)

Robert Eastwood

Signature

Robert Eastwood

Date

10-29-04

FORM NO. ☒ GWS-32 11/90

PUMP INSTALLATION AND TEST REPORT
STATE OF COLORADO, OFFICE OF THE STATE ENGINEER

For Office Use only

RECEIVED

NOV 16 '93

**WATER RESOURCES
STATE ENGINEER
COLO.**

1.	WELL PERMIT NUMBER <u>164204</u>																	
2.	OWNER NAME(S) <u>Adams County Sheriff/C/O Lt. Hefel</u> Mailing Address <u>130 N 19th Avenue</u> City, St. Zip <u>Brighton, CO 80601</u> Phone (303) <u>659-1850</u>																	
3.	WELL LOCATION AS DRILLED: <u>SW 1/4 SW 1/4, Sec. 14 Twp. 1 S, Range 67 W</u> DISTANCES FROM SEC. LINES: <u>4875</u> ft. from <u>N</u> Sec. line. and <u>500</u> ft. from <u>W</u> Sec. line. (north or south) (east or west) SUBDIVISION: _____ LOT _____ BLOCK _____ FILING(UNIT) _____ STREET ADDRESS AT WELL LOCATION: _____																	
4.	PUMP DATA: Type <u>Submersible</u> Installation Completed <u>10-7-93</u> Pump Manufacturer <u>Jacuzzi</u> Pump Model No. <u>15B541019-52</u> Design GPM <u>10</u> at RPM <u>3450</u> , HP <u>1 1/2</u> , Volts <u>230</u> , Full Load Amps <u>11.5</u> Pump Intake Depth <u>365</u> Feet, Drop/Column Pipe Size <u>1"</u> Inches, Kind <u>Sch 80 PVC</u> ADDITIONAL INFORMATION FOR PUMPS GREATER THAN 50 GPM: TURBINE DRIVER TYPE: ☐ Electric ☐ Engine ☐ Other _____ Design Head _____ feet, Number of Stages _____, Shaft size _____ inches.																	
5.	OTHER EQUIPMENT: Airline Installed ☐ Yes ☒ No, Orifice Depth ft. _____, Monitor Tube Installed ☐ Yes ☒ No, Depth ft. _____ Flow Meter Mfg. <u>N/A</u> Meter Serial No. _____ Meter Readout ☐ Gallons, ☐ Thousand Gallons, ☐ Acre feet, ☐ Beginning Reading _____																	
6.	TEST DATA: ☐ Check box if Test data is submitted on Supplemental Form. <table border="0"><tr><td>Total Well Depth</td><td><u>400'</u></td><td>Date</td><td>_____</td></tr><tr><td>Static Level</td><td><u>185'</u></td><td>Time</td><td>_____</td></tr><tr><td>Date Measured</td><td><u>10-7-93</u></td><td>Rate (GPM)</td><td>_____</td></tr><tr><td></td><td></td><td>Pumping Lvl.</td><td>_____</td></tr></table>		Total Well Depth	<u>400'</u>	Date	_____	Static Level	<u>185'</u>	Time	_____	Date Measured	<u>10-7-93</u>	Rate (GPM)	_____			Pumping Lvl.	_____
Total Well Depth	<u>400'</u>	Date	_____															
Static Level	<u>185'</u>	Time	_____															
Date Measured	<u>10-7-93</u>	Rate (GPM)	_____															
		Pumping Lvl.	_____															
7.	DISINFECTION: Type <u>HTH Chlorine</u> Amt. Used <u>1/2 cup dissolved in water</u>																	
8.	Water Quality analysis available. ☐ Yes ☐ No																	
9.	Remarks _____ _____ _____ _____																	

I have read the statements made herein and know the contents thereof, and that they are true to my knowledge [Pursuant to Section 24-4-104 (13)(a) C.R.S., the making of false statements herein constitutes perjury in the second degree and is punishable as a class 1 misdemeanor.]

CONTRACTOR Spain's Service Inc. Phone (303) 659-1584 Lic. No. 715
Mailing Address 2021 WCR 27 Ft. Lupton, Co. 80621

Name/Title (Please type or print) <u>Tom W. Spain President</u>	Signature <u>Tom W. Spain</u>	Date <u>11-15-93</u>
--	----------------------------------	-------------------------

RECEIVED

OCT 14 93

WATER RESOURCES
STATE ENGINEER
COLORADO

1. WELL PERMIT NUMBER <u>164204</u>		
2. OWNER NAME(S) <u>Adams County Sheriff C/O Lt. Hibbard</u> Mailing Address <u>150 North 19th Avenue</u> City, St. Zip <u>Brighton, Co. 80601</u> Phone (<u>303</u>) <u>654-1850</u>		
3. WELL LOCATION AS DRILLED: <u>SW 1/4 SW 1/4, Sec. 14 Twp. 1 S</u> , Range <u>67</u> W DISTANCES FROM SEC. LINES: <u>4875</u> ft. from <u>N</u> Sec. line, and <u>500</u> ft. from <u>W</u> Sec. line, OR (north or south) (east or west) SUBDIVISION: _____ LOT _____ BLOCK _____ FILING(UNIT) _____ STREET ADDRESS AT WELL LOCATION: _____		
4. GROUND SURFACE ELEVATION _____ ft. DRILLING METHOD <u>Rotary</u> DATE COMPLETED <u>10-5-93</u> TOTAL DEPTH <u>400</u> ft. DEPTH COMPLETED <u>400</u> ft.		
5. GEOLOGIC LOG: Depth Description of Material (Type, Size, Color, Water Location) <u>0-12 Brown sandy clay</u> <u>12-22 Brown sand</u> <u>22-42 Brown sandy clay</u> <u>42-122 Blue sand</u> <u>122-230 Blue shale thin layers Water</u> <u>sand</u> <u>230-270 Blue sand</u> <u>270-400 Blue shale/layers of sand</u> <u>sandstone ledges</u>	6. HOLE DIAM. (In.) From (ft) To (ft) <u>8 3/4</u> <u>0</u> <u>105</u> <u>6 1/8</u> <u>105</u> <u>400</u>	
	7. PLAIN CASING OD (In) Kind Wall Size From(ft) To(ft) <u>6 5/8 Steel</u> <u>.188</u> <u>+1</u> <u>105</u> <u>4 1/2 Plastic</u> <u>.200</u> <u>85</u> <u>120</u> PERF. CASING: Screen Slot Size: <u>3/16" saw cuts</u> <u>4 1/2 Plastic</u> <u>.200</u> <u>120</u> <u>400</u>	
	8. FILTER PACK: Material <u>N/A</u> Size _____ Interval _____	9. PACKER PLACEMENT: Type <u>N/A</u> Depth _____
	10. GROUTING RECORD: Material Amount Density Interval Placement <u>cement</u> <u>150gal</u> <u>7gal/</u> <u>0-105</u> <u>Pump</u> <u>bag</u> _____ _____	
REMARKS: <u>5% Bentonite, 2% calcium Chloride</u> <u>added to cement.</u>		
11. DISINFECTION: Type <u>Granular Chlorine</u> Amt. Used <u>2 cups dissolved in 5 gallons water</u>		
12. WELL TEST DATA: ☐ poured through drill pipe & agitated through zone with air. Check box if Test Data is submitted on Supplemental Form. TESTING METHOD <u>Air</u> Static Level <u>180</u> ft. Date/Time measured <u>10-5-93</u> <u>3:00pm</u> , Production Rate <u>10</u> gpm. Pumping level <u>Jetting</u> ft. Date/Time measured _____, Test length (hrs.) <u>2.0hrs</u> Remarks <u>at 400'</u>		
13. I have read the statements made herein and know the contents thereof, and that they are true to my knowledge. (Pursuant to Section 24-4-104 (13)(a) C.R.S., the making of false statements herein constitutes perjury in the second degree and is punishable as a class 1 misdemeanor.) CONTRACTOR <u>John's Drilling Inc.</u> Phone (<u>303</u>) <u>423-5246</u> Lic. No. <u>827</u> Mailing Address <u>Rt. 1 Box 640 Golden Co. 80403</u>		
Name/Title (Please type or print) <u>Lloyd John</u> <u>Owner/President</u>	Signature <u>Lloyd John</u>	Date <u>10-13-93</u>

THIS FORM MUST BE SUBMITTED
WITHIN 60-DAYS OF COMPLETION
OF THE WORK DESCRIBED HERE-
ON. TYPE OR PRINT IN BLACK
INK.

COLORADO DIVISION OF WATER RESOURCES

300 Columbine Bldg., 1845 Sherman St.
Denver, Colorado 80203

WELL COMPLETION AND PUMP INSTALLATION REPORT

PERMIT NUMBER ~~8544~~ 78505-F

RECEIVED

SEP 23 '76

WATER RESOURCES
STATE ENGINEER
C.O.D.WELL OWNER ROY N. RENSLOWADDRESS 14331 RIVERDALE RD. BRIGHTONDATE COMPLETED SEPT. 15, 19 76NW 1/4 of the NW 1/4 of Sec. 23T. 1 S. 67 W. 6 P.M.

HOLE DIAMETER

7 7/8 in. from 0 to 120 ft.5 5/8 in. from 120 to 300 ft. in. from to ft.DRILLING METHOD RotaryCASING RECORD: Plain CasingSize 6 5/8 & kind steel from 0 to 120 ft.Size 4 1/2 & kind steel from 111 to 132 ft.Size 4 1/2 & kind steel from 174 to 258 ft.

Perforated Casing

Size 4 1/2 & kind steel from 132 to 174 ft.Size 4 1/2 & kind steel from 258 to 300 ft.Size & kind from to ft.

GROUTING RECORD

Material cementIntervals constantPlacement Method pumpedGRAVEL PACK: Size Interval

TEST DATA

Date Tested Sept. 15, 19 76Static Water Level Prior to Test 65' ft.Type of Test Pump ball edLength of Test 4hrs.Sustained Yield (Metered) 10Final Pumping Water Level 150'

WELL LOG

From	To	Type and Color of Material	Water Loc.
0	20	clay	
20	144	shale	x
144	154	sand	
154	257	shale	
257	258	rock	
258	268	shale	
268	271	sand	x
271	300	shale	
TOTAL DEPTH <u>300'</u>			

Use additional pages necessary to complete log.

PUMP INSTALLATION REPORT

Pump Make BERKELEY
Type SS

Powered by ELEC. HP 1

Pump Serial No. _____

Motor Serial No. _____

Date Installed SEPT. 16 1976

Pump Intake Depth 189'

Remarks _____

WELL TEST DATA WITH PERMANENT PUMP

Date Tested SEPT. 16 1976

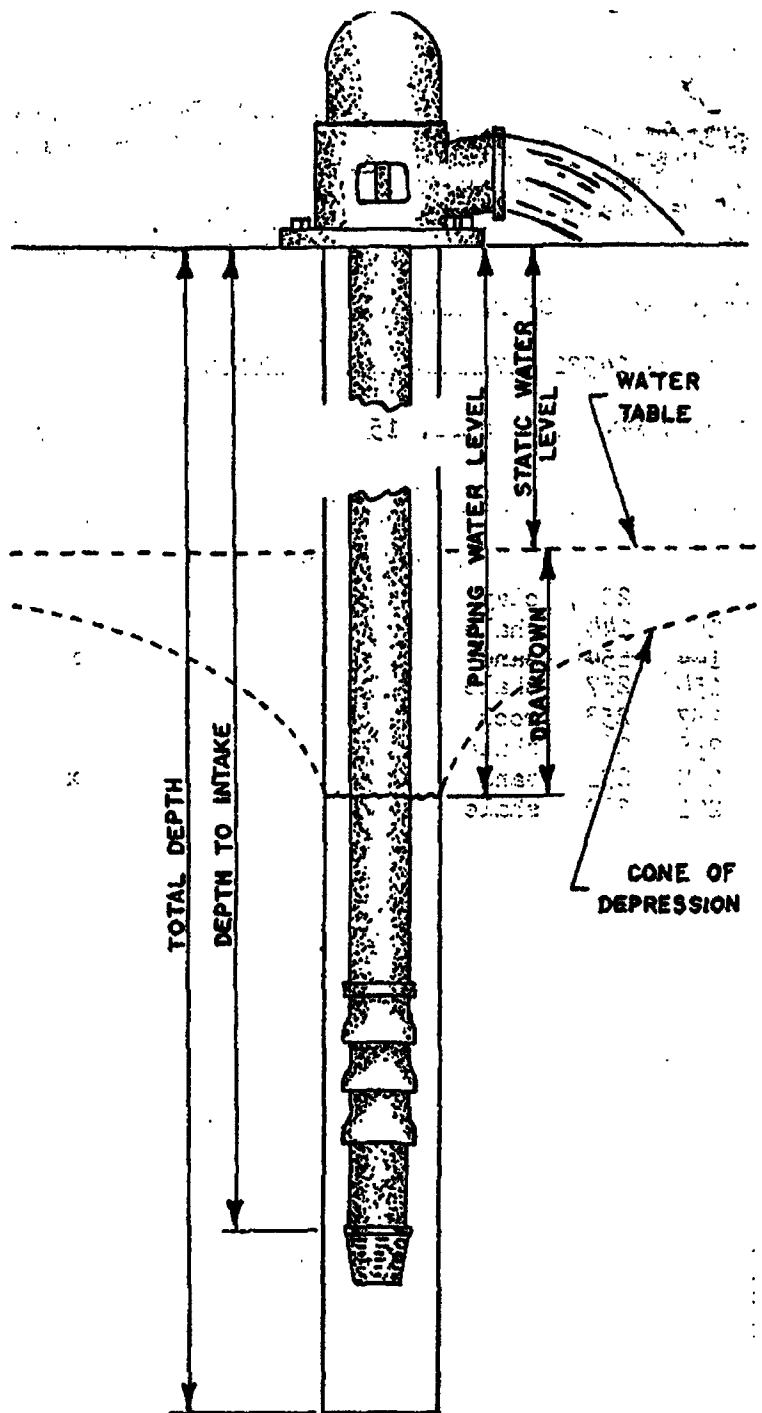
Static Water Level Prior to Test 65'

Length of Test 4 hrs. Hours

Sustained yield (Metered) 10 GPM

Pumping Water Level 150'

Remarks _____



CONTRACTORS STATEMENT

The undersigned, being duly sworn upon oath, deposes and says that he is the contractor of the well or pump installation described hereon; that he has read the statement made hereon; knows the content thereof, and that the same is true of his own knowledge.

Signature [Signature] License No. 403

State of Colorado, County of Adams SS

Subscribed and sworn to before me this 20 day of Sept., 1976.

My Commission expires: March 12, 1977.

Notary Public [Signature]

FORM TO BE MADE OUT IN QUADRUPPLICATE: WHITE FORM must be an original copy on both sides and signed, WHITE AND GREEN copies must be filed with the State Engineer, PINK COPY is for the Owner and YELLOW COPY is for the Driller.

**Appendix F1 - Laboratory
Analysis Reports - Off Site
Domestic Well**

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02/02/16

Effective January 1, 2016, SGS has acquired all of the assets of Accutest Laboratories and will continue to operate as SGS-Accutest. SGS-Accutest is part of SGS, the world's leading inspection, verification, testing and certification company.

Technical Report for

Quantum Water Consulting

Adams County Domestic Well Sampling (#258253)

SHOOTING RANGE

Accutest Job Number: D79252

Sampling Date: 01/23/16

Report to:

Quantum Water Consulting

john@quantumwaterco.com

ATTN: John Dellaport

Total number of pages in report: **33**



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.

A handwritten signature in black ink, appearing to read 'Scott Heideman'.

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 515.4 Provisional

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

Quantum Water Consulting

Job No: D79252

Adams County Domestic Well Sampling (#258253)
Project No: SHOOTING RANGE

Sample Number	Collected		Matrix Code	Type	Client Sample ID
	Date	Time By			
D79252-1	01/23/16	11:25 JD	01/25/16	AQ Water	258253-012316

Summary of Hits

Job Number: D79252
Account: Quantum Water Consulting
Project: Adams County Domestic Well Sampling (#258253)
Collected: 01/23/16

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D79252-1	258253-012316					
Barium		24.7	4.0		ug/l	EPA 200.8
Iron		25.0	20		ug/l	EPA 200.8
Lead		1.5	1.0		ug/l	EPA 200.8
Chloride		85.4	13		mg/l	EPA 300.0/SW846 9056
Fluoride		1.5	0.20		mg/l	EPA 300.0/SW846 9056
Sulfate		338	13		mg/l	EPA 300.0/SW846 9056

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	258253-012316	Date Sampled:	01/23/16
Lab Sample ID:	D79252-1	Date Received:	01/25/16
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	Adams County Domestic Well Sampling (#258253)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	4B59119.D	1	01/28/16	ANJ	n/a	n/a	N:V4B2478
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.3	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.19	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.37	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.23	ug/l	
75-25-2	Bromoform	ND	1.0	0.23	ug/l	
74-83-9	Bromomethane	ND	2.0	0.42	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	5.6	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	0.14	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	0.21	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	0.28	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.22	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.19	ug/l	
75-00-3	Chloroethane	ND	1.0	0.34	ug/l	
67-66-3	Chloroform	ND	1.0	0.19	ug/l	
74-87-3	Chloromethane	ND	1.0	0.41	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	0.19	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	0.20	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.99	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.15	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.23	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.19	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.23	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.27	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.90	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.17	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.18	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.51	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.27	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.65	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.39	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.15	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 258253-012316

Lab Sample ID: D79252-1

Matrix: AQ - Water

Method: SW846 8260C

Project: Adams County Domestic Well Sampling (#258253)

Date Sampled: 01/23/16

Date Received: 01/25/16

Percent Solids: n/a

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	1.0	0.33	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.21	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.27	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	0.26	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.23	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	0.21	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.24	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.27	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.73	ug/l	
91-20-3	Naphthalene	ND	5.0	0.20	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	0.21	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.18	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.21	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.40	ug/l	
108-88-3	Toluene	ND	1.0	0.16	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.23	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.21	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.21	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.22	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.43	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	0.45	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.22	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.29	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.15	ug/l	
	m,p-Xylene	ND	1.0	0.38	ug/l	
95-47-6	o-Xylene	ND	1.0	0.17	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.17	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		76-120%
17060-07-0	1,2-Dichloroethane-D4	100%		73-122%
2037-26-5	Toluene-D8	100%		84-119%
460-00-4	4-Bromofluorobenzene	105%		78-117%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 258253-012316			
Lab Sample ID: D79252-1		Date Sampled: 01/23/16	
Matrix: AQ - Water		Date Received: 01/25/16	
Method: SW846 8260C		Percent Solids: n/a	
Project: Adams County Domestic Well Sampling (#258253)			

CAS No.	Compound	Result	RL	MDL	Units	Q
---------	----------	--------	----	-----	-------	---

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.

ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	258253-012316	Date Sampled:	01/23/16
Lab Sample ID:	D79252-1	Date Received:	01/25/16
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	Adams County Domestic Well Sampling (#258253)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G128108.D	1	01/28/16	DC	01/27/16	OP13034	E1G1746
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

ABN Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	71	9.5	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	1.9	0.48	ug/l	
95-57-8	2-Chlorophenol	ND	1.9	0.48	ug/l	
120-83-2	2,4-Dichlorophenol	ND	1.9	0.48	ug/l	
105-67-9	2,4-Dimethylphenol	ND	1.9	0.69	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	9.5	7.1	ug/l	
51-28-5	2,4-Dinitrophenol	ND	9.5	7.1	ug/l	
95-48-7	2-Methylphenol	ND	1.9	0.48	ug/l	
106-44-5	4-Methylphenol	ND	1.9	0.48	ug/l	
88-75-5	2-Nitrophenol	ND	1.9	0.53	ug/l	
100-02-7	4-Nitrophenol	ND	19	7.1	ug/l	
87-86-5	Pentachlorophenol	ND	4.8	3.8	ug/l	
108-95-2	Phenol	ND	1.9	0.48	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	1.9	0.48	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	1.9	0.48	ug/l	
83-32-9	Acenaphthene	ND	1.9	0.48	ug/l	
208-96-8	Acenaphthylene	ND	1.9	0.48	ug/l	
62-53-3	Aniline	ND	4.8	3.8	ug/l	
120-12-7	Anthracene	ND	1.9	0.48	ug/l	
92-87-5	Benzidine	ND	19	7.1	ug/l	
56-55-3	Benzo(a)anthracene	ND	1.9	0.48	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	1.9	0.48	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	1.9	0.48	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	1.9	0.48	ug/l	
50-32-8	Benzo(a)pyrene	ND	1.9	0.48	ug/l	
100-51-6	Benzyl Alcohol	ND	1.9	0.48	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	1.9	0.53	ug/l	
85-68-7	Butyl benzyl phthalate	ND	1.9	0.48	ug/l	
86-74-8	Carbazole	ND	1.9	0.48	ug/l	
106-47-8	4-Chloroaniline	ND	1.9	0.56	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.9	0.48	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	1.9	0.62	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 258253-012316

Lab Sample ID: D79252-1

Date Sampled: 01/23/16

Matrix: AQ - Water

Date Received: 01/25/16

Method: SW846 8270C SW846 3510C

Percent Solids: n/a

Project: Adams County Domestic Well Sampling (#258253)

ABN Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-60-1	bis(2-Chloroisopropyl)ether	ND	1.9	0.48	ug/l	
91-58-7	2-Chloronaphthalene	ND	1.9	0.56	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.9	0.50	ug/l	
218-01-9	Chrysene	ND	1.9	0.48	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	1.9	0.48	ug/l	
132-64-9	Dibenzofuran	ND	1.9	0.48	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	0.69	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.9	0.48	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.9	0.48	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.9	0.48	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	1.9	0.48	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	0.48	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	0.48	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	1.9	0.48	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	1.9	0.48	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	0.48	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	1.9	0.48	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	0.48	ug/l	
206-44-0	Fluoranthene	ND	1.9	0.54	ug/l	
86-73-7	Fluorene	ND	1.9	0.48	ug/l	
118-74-1	Hexachlorobenzene	ND	1.9	0.48	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.9	0.48	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	1.9	0.48	ug/l	
67-72-1	Hexachloroethane	ND	1.9	0.48	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.8	0.48	ug/l	
78-59-1	Isophorone	ND	1.9	0.48	ug/l	
90-12-0	1-Methylnaphthalene	ND	1.9	0.71	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.9	0.71	ug/l	
91-20-3	Naphthalene	ND	1.9	0.48	ug/l	
88-74-4	2-Nitroaniline	ND	1.9	0.48	ug/l	
99-09-2	3-Nitroaniline	ND	4.8	3.8	ug/l	
100-01-6	4-Nitroaniline	ND	1.9	0.48	ug/l	
98-95-3	Nitrobenzene	ND	1.9	0.52	ug/l	
62-75-9	N-Nitrosodimethylamine	ND	4.8	3.8	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	1.9	0.48	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.9	0.52	ug/l	
85-01-8	Phenanthrene	ND	1.9	0.48	ug/l	
129-00-0	Pyrene	ND	1.9	0.48	ug/l	
110-86-1	Pyridine	ND	9.5	7.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.9	0.48	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 258253-012316**Lab Sample ID:** D79252-1**Matrix:** AQ - Water**Method:** SW846 8270C SW846 3510C**Project:** Adams County Domestic Well Sampling (#258253)**Date Sampled:** 01/23/16**Date Received:** 01/25/16**Percent Solids:** n/a

ABN Full List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	40%		10-130%
4165-62-2	Phenol-d5	24%		10-130%
118-79-6	2,4,6-Tribromophenol	77%		10-151%
4165-60-0	Nitrobenzene-d5	71%		25-130%
321-60-8	2-Fluorobiphenyl	70%		30-130%
1718-51-0	Terphenyl-d14	106%		19-140%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	258253-012316	
Lab Sample ID:	D79252-1	Date Sampled: 01/23/16
Matrix:	AQ - Water	Date Received: 01/25/16
Method:	SW846 8151A SW846 8151A	Percent Solids: n/a
Project:	Adams County Domestic Well Sampling (#258253)	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF27920.D	1	01/27/16	JJ	01/25/16	OP13006	GEF1152
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	10.0 ml
Run #2		

Herbicide List

CAS No.	Compound	Result	RL	MDL	Units	Q
94-75-7	2,4-D	ND	0.48	0.24	ug/l	
94-82-6	2,4-DB	ND	0.48	0.24	ug/l	
75-99-0	Dalapon	ND	0.48	0.24	ug/l	
1918-00-9	Dicamba	ND	0.48	0.24	ug/l	
120-36-5	Dichloroprop	ND	0.48	0.24	ug/l	
88-85-7	Dinoseb	ND	0.48	0.24	ug/l	
94-74-6	MCPA	ND	48	24	ug/l	
93-65-2	MCPP	ND	48	24	ug/l	
100-02-7	4-Nitrophenol	ND	0.48	0.24	ug/l	
87-86-5	Pentachlorophenol	ND	0.48	0.24	ug/l	
1918-02-1	Picloram	ND	0.48	0.24	ug/l	
93-76-5	2,4,5-T	ND	0.48	0.24	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	0.48	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	98%		39-150%
19719-28-9	2,4-DCAA	94%		39-150%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 258253-012316	Date Sampled: 01/23/16
Lab Sample ID: D79252-1	Date Received: 01/25/16
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8081A SW846 3510C	
Project: Adams County Domestic Well Sampling (#258253)	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE24235.D	1	01/29/16	TR	01/25/16	OP13007	GEE1623
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	10.0 ml
Run #2		

Pesticide PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.0019	0.0018	ug/l	
319-84-6	alpha-BHC	ND	0.0048	0.0013	ug/l	
319-85-7	beta-BHC	ND	0.019	0.0095	ug/l	
319-86-8	delta-BHC	ND	0.019	0.0095	ug/l	
58-89-9	gamma-BHC (Lindane)	ND	0.019	0.0048	ug/l	
5103-71-9	alpha-Chlordane	ND	0.019	0.0095	ug/l	
5103-74-2	gamma-Chlordane	ND	0.019	0.015	ug/l	
12789-03-6	Chlordane	ND	0.48	0.36	ug/l	
72-54-8	4,4' -DDD	ND	0.019	0.0048	ug/l	
72-55-9	4,4' -DDE	ND	0.019	0.0048	ug/l	
50-29-3	4,4' -DDT	ND	0.019	0.0048	ug/l	
60-57-1	Dieldrin	ND	0.0019	0.0010	ug/l	
72-20-8	Endrin	ND	0.019	0.0048	ug/l	
7421-93-4	Endrin aldehyde	ND	0.019	0.0048	ug/l	
53494-70-5	Endrin ketone	ND	0.019	0.0048	ug/l	
959-98-8	Endosulfan-I	ND	0.019	0.0095	ug/l	
33213-65-9	Endosulfan-II	ND	0.019	0.0095	ug/l	
1031-07-8	Endosulfan sulfate	ND	0.019	0.0095	ug/l	
76-44-8	Heptachlor	ND	0.019	0.0076	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.019	0.0038	ug/l	
72-43-5	Methoxychlor	ND	0.095	0.019	ug/l	
8001-35-2	Toxaphene	ND	1.4	0.95	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	89%		26-152%
877-09-8	Tetrachloro-m-xylene	93%		26-152%
2051-24-3	Decachlorobiphenyl	96%		10-154%
2051-24-3	Decachlorobiphenyl	95%		10-154%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	258253-012316	Date Sampled:	01/23/16
Lab Sample ID:	D79252-1	Date Received:	01/25/16
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8082A SW846 3510C		
Project:	Adams County Domestic Well Sampling (#258253)		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE24235A.D	1	01/29/16	TR	01/25/16	OP13008	GEE1624
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.24	0.13	ug/l	
11104-28-2	Aroclor 1221	ND	0.48	0.37	ug/l	
11141-16-5	Aroclor 1232	ND	0.48	0.24	ug/l	
53469-21-9	Aroclor 1242	ND	0.48	0.19	ug/l	
12672-29-6	Aroclor 1248	ND	0.48	0.19	ug/l	
11097-69-1	Aroclor 1254	ND	0.48	0.19	ug/l	
11096-82-5	Aroclor 1260	ND	0.24	0.086	ug/l	
37324-23-5	Aroclor 1262	ND	0.48	0.19	ug/l	
11100-14-4	Aroclor 1268	ND	0.48	0.19	ug/l	
1336-36-3	Total PCBs	ND	0.48	0.37	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	89%		31-154%
877-09-8	Tetrachloro-m-xylene	93%		31-154%
2051-24-3	Decachlorobiphenyl	96%		10-151%
2051-24-3	Decachlorobiphenyl	95%		10-151%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 258253-012316

Lab Sample ID: D79252-1

Matrix: AQ - Water

Date Sampled: 01/23/16

Date Received: 01/25/16

Percent Solids: n/a

Project: Adams County Domestic Well Sampling (#258253)

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 0.80	0.80	ug/l	2	01/27/16	01/28/16 NT	EPA 200.8 ²	EPA 200.8 ⁵
Arsenic	< 0.40	0.40	ug/l	2	01/27/16	01/28/16 NT	EPA 200.8 ²	EPA 200.8 ⁵
Barium	24.7	4.0	ug/l	2	01/27/16	01/28/16 NT	EPA 200.8 ²	EPA 200.8 ⁵
Beryllium	< 0.40	0.40	ug/l	2	01/27/16	01/28/16 NT	EPA 200.8 ²	EPA 200.8 ⁵
Cadmium	< 0.20	0.20	ug/l	2	01/27/16	01/28/16 NT	EPA 200.8 ²	EPA 200.8 ⁵
Chromium	< 4.0	4.0	ug/l	2	01/27/16	01/28/16 NT	EPA 200.8 ²	EPA 200.8 ⁵
Iron	25.0	20	ug/l	2	01/27/16	02/01/16 NT	EPA 200.8 ³	EPA 200.8 ⁵
Lead	1.5	1.0	ug/l	2	01/27/16	01/28/16 NT	EPA 200.8 ²	EPA 200.8 ⁵
Mercury	< 0.10	0.10	ug/l	1	01/27/16	01/27/16 BR	SW846 7470A ¹	SW846 7470A ⁴
Molybdenum	< 2.0	2.0	ug/l	2	01/27/16	01/28/16 NT	EPA 200.8 ²	EPA 200.8 ⁵
Nickel	< 4.0	4.0	ug/l	2	01/27/16	01/28/16 NT	EPA 200.8 ²	EPA 200.8 ⁵
Selenium	< 0.80	0.80	ug/l	2	01/27/16	01/28/16 NT	EPA 200.8 ²	EPA 200.8 ⁵
Silver	< 0.20	0.20	ug/l	2	01/27/16	01/28/16 NT	EPA 200.8 ²	EPA 200.8 ⁵
Thallium	< 0.40	0.40	ug/l	2	01/27/16	01/28/16 NT	EPA 200.8 ²	EPA 200.8 ⁵
Uranium	< 0.40	0.40	ug/l	2	01/27/16	02/01/16 NT	EPA 200.8 ³	EPA 200.8 ⁵

(1) Instrument QC Batch: MA6980

(2) Instrument QC Batch: MA6986

(3) Instrument QC Batch: MA6990

(4) Prep QC Batch: MP17940

(5) Prep QC Batch: MP17941

RL = Reporting Limit

Report of Analysis

Client Sample ID: 258253-012316**Lab Sample ID:** D79252-1**Matrix:** AQ - Water**Date Sampled:** 01/23/16**Date Received:** 01/25/16**Percent Solids:** n/a**Project:** Adams County Domestic Well Sampling (#258253)

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	85.4	13	mg/l	25	01/25/16 11:08	BF	EPA 300.0/SW846 9056
Fluoride	1.5	0.20	mg/l	2	01/25/16 10:40	BF	EPA 300.0/SW846 9056
Nitrogen, Nitrate ^a	< 0.020	0.020	mg/l	2	01/25/16 10:40	BF	EPA 300.0/SW846 9056
Nitrogen, Nitrate + Nitrite ^b	< 0.12	0.12	mg/l	1	01/25/16 11:08	BF	EPA 300.0/SW846 9056
Nitrogen, Nitrite	< 0.10	0.10	mg/l	25	01/25/16 11:08	BF	EPA 300.0/SW846 9056
Sulfate	338	13	mg/l	25	01/25/16 11:08	BF	EPA 300.0/SW846 9056

(a) Elevated detection limit due to matrix interference.

(b) Calculated as: (Nitrogen, Nitrate) + (Nitrogen, Nitrite)

RL = Reporting Limit

Subcontract Lab Data

Report of Analysis



Industrial Laboratories is your independent,
third-party analytical testing laboratory

To: Accutest Mountain States (AMS)
4036 Youngfield St.

Wheat Ridge CO 80033

Attn: Renea Rooks

TEST REPORT

ACCUTEST - M

Date Received: 1/25/2016

Date Reported: 1/28/2016

PO Number: D79252X

Lab No.	Sample Description	Test Method	Result	Units	MDL	Analysis Date/By
160125001-01A	D79252X-1, 1/23/6, 11:25am	* Total Coliforms MPN SMEWW 9221 B	<2 Total; <2 Fecal	MPN/100mL		NH 1/25/2016

Department Manager

Samples received in good condition unless otherwise noted in case narrative.

* = Scope Analysis

= Subcontracted Analysis

MDL = Method Detection Limit

ND = Not Detected at the Method Detection Limit

Page: 1 of 1

4046 Youngfield Street • Wheat Ridge, Colorado 80033 • (303) 287-9691 • (303) 287-0964 FAX • www.industrialabs.net

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CHAIN OF CUSTODY

Page 1 of 1

 4016 Youngfield Street, Wheat Ridge, CO 80033
 TEL: 303-425-6021 FAX: 303-425-6854
 www.acctest.com

Client / Reporting Information

Project Name:

Project Information

Company Name:

Accutest Laboratories

Street:

Street Address

City:

State:

Billing Information (if different from Request to)

City

State

City

Street Address

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Requested Analysis (see TEST CODE SHEET)

Many Codes

DW - Drinking Water

GW - Ground Water

WW - Wastewater

SW - Surface Water

SO - Soil

SL - Sludge

SED - Sediment

OI - Oil

LID - Other Liquid

AIR - Air

SOL - Other Solid

WP - Wipe

FB - Field Blank

EB - Equipment Blank

RB - Rinse Blank

TB - Trip Blank

LAB USE ONLY

Total Coliform MPN

X

February 01, 2016

Report to:

Kaila Gaither
SGS Accutest
4036 Youngfield Street
Wheat Ridge, CO 80033

Bill to:

Scott Heideman
SGS Accutest
4036 Youngfield Street
Wheat Ridge, CO 80033

cc: Vivian R, Janel M

Project ID:

ACZ Project ID: L28685

Kaila Gaither:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on January 26, 2016. This project has been assigned to ACZ's project number, L28685. Please reference this number in all future inquiries.

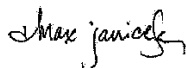
All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L28685. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after March 02, 2016. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Max Janicek has reviewed and
approved this report.



L28685-1602011647

Page 1 of 9

SGS Accutest

Project ID:

Sample ID: D79252XA-1

ACZ Sample ID: **L28685-01**

Date Sampled: 01/23/16 11:25

Date Received: 01/26/16

Sample Matrix: Waste Water

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, Free	D6888-09/OIA-1677-09	1		U	*	mg/L	0.003	0.01	02/01/16 12:44	mss2

Arizona license number: AZ0102

REPIN.02.06.05.01

* Please refer to Qualifier Reports for details.

L28685-1602011647

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Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

<i>Blanks</i>	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
<i>Control Samples</i>	Verifies the accuracy of the method, including the prep procedure.
<i>Duplicates</i>	Verifies the precision of the instrument and/or method.
<i>Spikes/Fortified Matrix</i>	Determines sample matrix interferences, if any.
<i>Standard</i>	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

<i>B</i>	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
<i>H</i>	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
<i>L</i>	Target analyte response was below the laboratory defined negative threshold.
<i>U</i>	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extqualist.pdf>

SGS Accutest

ACZ Project ID: **L28685**

Cyanide, Free

D6888-09/OIA-1677-09

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG397974													
WG397974ICV	ICV	02/01/16 12:36	WI160127-4	.3003		.2799	mg/L	93	90	110			
WG397974ICB	ICB	02/01/16 12:38				U	mg/L		-0.003	0.003			
WG397974LFB1	LFB	02/01/16 12:42	WI160127-5	.1001		.0937	mg/L	94	90	110			
L28717-06AS	AS	02/01/16 12:58	WI160127-5	.1001	U	.0955	mg/L	95	90	110			
L28717-06ASD	ASD	02/01/16 13:00	WI160127-5	.1001	U	.0978	mg/L	98	90	110	2	20	
WG397974LFB2	LFB	02/01/16 13:44	WI160127-5	.1001		.0951	mg/L	95	90	110			

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SGS Accutest

ACZ Project ID: **L28685**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
--------	---------	-----------	--------	------	-------------

No extended qualifiers associated with this analysis

REPAD.15.06.05.01

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SGS Accutest

ACZ Project ID: **L28685**

Wet Chemistry

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Cyanide, Free

D6886-09/OIA-1677-09

REPAD.05.06.05.01

L28685-1602011647

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SGS Accutest

ACZ Project ID: L28685

Date Received: 01/26/2016 09:55

Received By: ddp

Date Printed: 1/28/2016

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?			X
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate? The sample matrix was entered per the requested quotation.		X	
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? ¹			X
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Temp Criteria (°C)	Rad (µR/Hr)	Custody Seal Intact?
4704	1.4	<=6.0	14	N/A

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

SGS Accutest

ACZ Project ID: L28685

Date Received: 01/26/2016 09:55

Received By: ddp

Date Printed: 1/28/2016

¹ The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na₂S₂O₃ preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

REPAD LPII 2012-03

L28685-1602011647

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Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Chain of Custody (Accutest New Jersey)

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D79252 **Client:** QUANTUM WATER & ENVIRO **Project:** ADAMS COUNTY DOMESTIC WELL
Date / Time Received: 1/25/2016 7:58:00 AM **Delivery Method:** _____ **Airbill #'s:** HD
Cooler Temps (Initial/Adjusted): #1: (3.5/3.5);

Cooler Security
Y or N

- | | |
|--|---|
| 1. Custody Seals Present: ☒ Y ☐ N | 3. COC Present: ☒ Y ☐ N |
| 2. Custody Seals Intact: ☒ Y ☐ N | 4. Smpl Dates/Time OK: ☒ Y ☐ N |

Cooler Temperature
Y or N

- | | |
|---|---|
| 1. Temp criteria achieved: ☒ Y ☐ N | 2. Cooler temp verification: <u>IR Gun;</u> |
| 3. Cooler media: <u>Ice (Bag)</u> | |
| 4. No. Coolers: <u>1</u> | |

Quality Control Preservation
Y or N
N/A

- | | |
|---|--|
| 1. Trip Blank present / cooler: ☐ Y ☐ N | 2. Trip Blank listed on COC: ☐ Y ☐ N |
| 3. Samples preserved properly: ☒ Y ☐ N | 4. VOCs headspace free: ☐ Y ☐ N |

Comments

Sample Integrity - Documentation
Y or N

- | | |
|---|--|
| 1. Sample labels present on bottles: ☒ Y ☐ N | 2. Container labeling complete: ☒ Y ☐ N |
| 3. Sample container label / COC agree: ☒ Y ☐ N | |

Sample Integrity - Condition
Y or N

- | | |
|---|---|
| 1. Sample recvd within HT: ☒ Y ☐ N | 2. All containers accounted for: ☒ Y ☐ N |
| 3. Condition of sample: <u>Intact</u> | |

Sample Integrity - Instructions
Y or N N/A

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



CHAIN OF CUSTODY

Page 1 of 1

4036 Youngfield Street, Wheat Ridge, CO 80033
TEL: 303-425-6021 FAX: 303-425-6854
www.accutest.com

FED-EX Tracking # 6089 5706 5158		Bottle Order Control #	
Accutest Quote #		Accutest Job # D79252	
Requested Analysis (see TEST CODE sheet)			
Matrix Codes			
DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB-Field Blank EB-Equipment Blank RB- Rinse Blank TB-Trip Blank			
LAB USE ONLY			
V365			

Client / Reporting Information		Project Information	
Company Name: Accutest Laboratories		Project Name: Adams County Domestic Well Sampling (#258253)	
Street Address 4036 Youngfield Street		Street	
City State Zip Wheat Ridge, CO 80033		City State	
Project Contact jeremyd jeremyd@accutest.com		Billing Information (if different from Report to) Company Name	
Phone # 303-425-6021		Project #	
Fax #		Street Address	
Sampler(s) Name(s) JD		Client Purchase Order #	
Phone		City State Zip	
Project Manager		Attention:	
Collection		Number of preserved Bottles	
Field ID / Point of Collection		MEOHDI Vial #	
Date		Time	
Sampled by		Matrix	
# of bottles		HCl NaOH HNO3 H2SO4 NONE DI Water MICH ENCORE	
1 258253-012316		1/23/16 11:25:00 AM JD AQ	
2 Trip Blank		1/23/16 AQ	
Turnaround Time (Business days)		Data Deliverable Information	
Approved By (Accutest PM): / Date:		Comments / Special Instructions	
☐ Std. 10 Business Days ☐ 5 Day RUSH ☐ 3 Day EMERGENCY ☐ 2 Day EMERGENCY ☐ 1 Day EMERGENCY ☒ other Due 2/1/2016 Emergency & Rush T/A data available VIA Lablink		☐ Commercial "A" (Level 1) ☐ Commercial "B" (Level 2) ☐ FULLT1 (Level 3+4) ☐ NJ Reduced ☐ Commercial "C" ☐ NYASP Category A ☐ NYASP Category B ☒ State I CUMMA ☐ EDD Format ☐ Other Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data	
INITIAL ASSESSMENT HL 2A LABEL VERIFICATION NL			
Sample Custody must be documented below each time samples change possession, including courier delivery.			
Relinquished by Sampler: JD		Received By: FEL Ex	
Date Time: 1/25/16		Date Time: 1/24/16 12:30	
Relinquished by Sampler: 3		Received By: 2	
Date Time:		Date Time:	
Relinquished by: 5		Received By: 4	
Date Time:		Date Time:	
Custody Seal #		Intact Not Intact Preserved where applicable	
		☐ On Ice ☒ Cooler Temp: 6.3 CIP	

D79252: Chain of Custody

Page 1 of 2

Accutest New Jersey

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D79252 **Client:** _____ **Project:** _____
Date / Time Received: 1/26/2016 1:30:00 PM **Delivery Method:** _____ **Airbill #s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (1.3);
 Cooler Temps (Corrected) °C: Cooler 1: (1.7);

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



ACCUTEST
Mountain States

03/10/16

SGS ACCUTEST IS PART OF SGS, THE WORLD'S LEADING INSPECTION,
VERIFICATION, TESTING AND CERTIFICATION COMPANY.



e-Hardcopy 2.0
Automated Report

Technical Report for

Quantum Water Consulting

Adams County Domestic Well Sampling (#258253)

SHOOTING RANGE

SGS Accutest Job Number: D79252X

Sampling Date: 01/23/16

Report to:

Quantum Water Consulting
1746 Cole Blvd. Suite 340
Lakewood, CO 80401
john@quantumwaterco.com

ATTN: John Dellaport

Total number of pages in report: **18**



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 515.4 Provisional

This report shall not be reproduced, except in its entirety, without the written approval of SGS Accutest.
Test results relate only to samples analyzed.



Table of Contents

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Section 1: Sample Summary 3

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Section 3: Misc. Forms 16

3.1: Chain of Custody 17



Sample Summary

Quantum Water Consulting

Job No: D79252X

Adams County Domestic Well Sampling (#258253)
Project No: SHOOTING RANGE

Sample Number	Collected		Time By	Received	Matrix		Client Sample ID
	Date				Code	Type	
D79252-1X	01/23/16	11:25	JD	01/25/16	AQ	Water	258253-012316
D79252-1XA	01/23/16	11:25	JD	01/25/16	AQ	Water	258253-012316

Subcontract Lab Data

Report of Analysis

**Hazen Research, Inc.**

4801 Indiana Street
Golden, CO 80403 USA
Tel: (303) 279-4501
Fax: (303) 278-1528

DATE February 16, 2016
HRI PROJECT 009-93
HRI SERIES NO A231/16
DATE REC'D. 1/25/2016
CUST. P.O.# D79252X

Accutest Mountain States
Kaila Gaither
4036 Youngfield St
Wheat Ridge, CO 80033

REPORT OF ANALYSIS

SAMPLE NO. A231/16-1

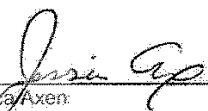
SAMPLE IDENTIFICATION: D79252XA-1 sampled on 01/23/2016 @ 1125 by JD

PARAMETER	RESULT	DETECTION LIMIT	METHOD	ANALYSIS DATE	ANALYST
Gross Alpha (+-Precision*), pCi/l (T)	0.0(+/-1.2)	1.3	SM 7110 B	2/11/2016 @ 0825	LD
Gross Beta (+-Precision*), pCi/l (T)	0.0(+/-2.0)	2.1	SM 7110 B	2/11/2016 @ 0825	LD
Total Solids, mg/l	957	10	EPA 160.3	1/27/2016	DJ

Certification ID's: CO/EPA C000008; CT PH-0152; KS E-10265; NJ C0008; NYSELAP (NELAC Certified) 11417; RI LA000284;
WI 998376610, TX T104704256-15-6

*Variability of the radioactive decay process (counting error) at the 95% confidence level, 1.96 sigma.

Report may only be copied in its entirety.
Results reported herein relate only to discrete samples submitted by the client. Hazen Research, Inc. does not warrant that the results are representative of anything other than the samples that were received in the laboratory.

By: 
Jessica Axen
Analytical Laboratories Manager

CODES: (T) = Total (D) = Dissolved (S) = Suspended (R) = Total Recoverable
(PD) = Potentially Dissolved < = Less Than

Page 1 of 1

An Employee-Owned Company

HAZEN RESEARCH, INC.
RADIOCHEMISTRY LABORATORY

Date: 02/11/2016

Batch QC Evaluation Form-Gross Alpha

Analyte: Gross Alpha

Control Standard/LFB: ID: C11 pCi/ml: 57.4 (use 1.0 ml diluted)

Spike Solution: ID: C11 pCi/ml: 57.4 (use 1.0 ml)

Spike Recovery Calculation: Sample: TAP

$$\text{Calculation: } \frac{(52.5)(1.0) - (0.7)(0.2)}{57.4} \times 100 = 91\%$$

Batch QC Evaluation:

Parameter	Criteria	Pass	Fail	N/A
Control Std./LFB	+/- 30 %	✓		
Spike Recovery	70 - 130 %	✓		
Blank	< or = 2 x MDL	✓		
Duplicate 1	95% confidence interval overlap	✓		
Duplicate 2 *	95% confidence interval overlap	✓		

* Required for batch size greater than 10 samples.

Conclusions:

- ☒ Batch Passes
☐ Batch Fails
☐ Batch Passes, with exceptions:

Reruns Required: _____

Narrative: _____

Batch Listing by Lab Control Number:

B109/16 _____
A231/16 _____
A257/16 _____
A258/16 _____
B61/16 _____
B60/16 _____

Evaluator:

M. J. W.

02/16/2016
Date

HAZEN RESEARCH, INC.
RADIOCHEMISTRY LABORATORY

Date: 02/11/2016

Batch QC Evaluation Form-Gross Beta

Analyte: Gross Beta

Control Standard/LFB: ID: C11 pCi/ml: 44.0 (use 1.0 ml diluted)

Spike Solution: ID: C11 pCi/ml: 44.0 (use 1.0 ml)

Spike Recovery Calculation: Sample: TAP

$$\text{Calculation: } \frac{(36.7)(1.0) - (0.0)(0.2)}{44.0} \times 100 = 83 \%$$

Batch QC Evaluation:

Parameter	Criteria	Pass	Fail	N/A
Control Std./LFB	+/- 20 %	✓		
Spike Recovery	80 - 120 %	✓		
Blank	< or = 2 x MDL	✓		
Duplicate 1	95% confidence interval overlap	✓		
Duplicate 2 *	95% confidence interval overlap	✓		

* Required for batch size greater than 10 samples.

Conclusions:

- ☒ Batch Passes
☐ Batch Fails
☐ Batch Passes, with exceptions:

Reruns Required: _____

Narrative: _____

Batch Listing by Lab Control Number:

B109/16 _____
A231/16 _____
A257/16 _____
A258/16 _____
B61/16 _____
B60/16 _____

Evaluator:

Michael W. [Signature]

02/16/2016
Date



6036 Youngfield Street, Wheat Ridge, CO 80033
TEL: 303-425-6021 FAX: 303-425-6854

Accutest Laboratories 4036 Youngfield Street, Wheat Ridge, CO 80033 TEL: 303-425-6021 FAX: 303-425-6854 www.acctest.com		FED-EX Tracking # _____ Boltz Order Control # _____ Accident Job # _____ Accident Date # _____	
Client / Reporting Information Company Name: Accutest Laboratories Street Address: 4036 Youngfield Street City: Wheat Ridge, CO State: 80033 Zip: _____ Project Contact: jeremyd@acctest.com E-mail: _____ Phone #: 303-425-6021 Fax #: _____ Sample(s) Name(s): JD		Project Information Project Name: _____ Billing Information: (if different from Report to) Company Name: _____ Street Address: _____ City: _____ State: _____ Zip: _____ Attention: _____ Client Purchase Order #: _____ Phone: _____ Project Manager: _____	
Field ID / Point of Collection Field ID: D79252XA-1 Date: 1/23/16 Time: 11:25:00 AM Method: MD-101		Collection Date: 1/23/16 Time: 11:25:00 AM Method: MD-101	
Analysis Sample 1XA D79252XA-1		Number of Preserved Bottles MD-101: _____ MECH: _____ DI Water: _____ NONE: _____ H2SO4: _____ HNO3: _____ HCl: _____ ENCORE: _____	
LAB USE ONLY Matrix Codes: DW - Drinking Water GW - Ground Water WW - Wastewater SW - Surface Water SO - Soil SL - Sludge SED - Sediment LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rise Blank TB - Trip Blank		Requested Analysis (see TEST CODE sheet) Gross alpha/beta + total solids: X	
Turnaround Time (Business days) ☐ Std. 10 Business Days ☐ 5 Day RUSH ☐ 3 Day EMERGENCY ☐ 2 Day EMERGENCY ☒ other Due 2/22/2016 Emergency & Rush T/A fee available via Lablink		Date Deliverable Information Commercial "A" (Level 1) ☐ NYASP Category A Commercial "B" (Level 2) ☐ NYASP Category B FULLY (Level 3-4) ☒ State I COMMA NJ Reduced ☐ EDD Format _____ Commercial "C" ☐ Other _____ Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data	
Approved By (Inches Print): Date: _____ _____ _____ _____		Comments / Special Instructions _____ _____ _____ _____	
Relinquished by: 1 JD Date Time: 1-23-16 11:25 Signature: [Signature]		Relinquished by: 3 JD Date Time: 1-23-16 11:25 Signature: [Signature]	
Relinquished by: 3 JD Date Time: 1-23-16 11:25 Signature: [Signature]		Relinquished by: 4 JD Date Time: 1-23-16 11:25 Signature: [Signature]	



February 1, 2016

Subcontract Number: NA
Laboratory Report: RES 341343-1
Project # / P.O. #: D79252X
Project Description: None Given

Accutest
4036 Youngfield St.
Wheatridge CO 80033

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 341343-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

A handwritten signature in black ink, appearing to read "Gina Vetrario".

Gina Vetrario for

Jeanne Spencer
President

P: 303-964-1986
F: 303-477-4275

5801 Logan Street, Suite 100 Denver, CO 80216

1-866-RESI-ENV
www.reilab.com

Page 1 of 2

RESERVOIRS ENVIRONMENTAL, INC.
NVLAP Lab Code 101896-0

TABLE I. TEM WATER SAMPLE ANALYTICAL RESULTS

RES Job Number: RES 341343-1
Client: Accutest
Client Project Number/P.O.: None Given
Client Project Description: D79252X
Date Samples Received: January 25, 2016
Analysis Type: TEM, Water
Turnaround: 3-5 Day
Date Samples Analyzed: January 25, 2016

Client ID Number	Lab ID Number	Aliquot Deposited on Filter (ml)	Dilution Factor	TOTAL Number of Asbestos Structures Detected	Greater than 10 Micron Length Asbestos Structures Detected	Analytical Sensitivity (million struct/liter)	TOTAL Asbestos Concentration (million struct/liter)	Greater than 10 Micron Length Asbestos Concentration (million struct/liter)
D79252X-1	EM 1661843	100	1	ND	ND	0.03	BAS	BAS

NA = Not Analyzed
ND = None Detected
BAS = Below Analytical Sensitivity

Data QA:


Gina Veltreino

Due Date: 2.1.16
Due Time: 17:00



Bella Reservoirs Environmental, Inc.
5801 Lynn St. Denver, CO 80216 • PH: 303.954.1988 • Fax: 303.477.4275 • Toll Free: 866.858.1597

RES 341343

INVOICE TO: (IF DIFFERENT)

After Hours Cell Phone: 720-339-9228

CONTACT INFORMATION:

SUBMITTED BY:		CONTACT INFORMATION:	
Company	Contact	Company	Contact
Address	Phone	Address	Phone
	Fax		Fax
	Cellular		Cellular
Project Number and/or P.O. #		Final Data Deliverable Email Address:	
DAGZSZX		jeremy@accutest.com	
Project Description/Location			

ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm & Sat. 8am - 5pm PLM / PCM / TEM: RUSH (Same Day) PRIORITY (Next Day) STANDARD (3-5 Day) (Rush PCM = 2hr, TEM = 6hr.)		VALID MATRIX CODES		LAB NOTES:	
CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm Metals / Dust: RUSH 24 hr 3-5 Day RCRA 8 / Metals & Welding: RUSH (3 Day) 5 Day 10 Day Fume Scan / TCLP: 24 hr 3 day 5 Day		REQUESTED ANALYSIS			
MICROBIOLOGY LABORATORY HOURS: Weekdays: 8am - 5pm Pathogens: 24-48 Hour Microbial Growth: 5-10 Day Legionella: 10 Day Mold: RUSH 24 hr 48 hr 3 Day 5 Day		SAMPLER'S INITIALS OR OTHER NOTES:			
Special Instructions:		MICROBIOLOGY			
Client sample ID number (Sample ID's must be unique)		ORGANICS - METH, TSS			
1 DAGZSZX-1		METALS - Analyte(s)			
		PCRA 8, TCLP, Working Fume, Metals Scan, pH			
		DUST - Total Respirable			
		PCM - 7400A, 7400B, OSHA			
		TEM - AHERA Level II, 7402, ISO, +/- Air, Bulk or Dust, Quant, Semi-Quant, Micro-sec, ISO-Indirect Preps			
		Pathogens: Aerobic Plate Count, Salmonella, E. coli O157:H7, Listeria, Staphylococcus, Campylobacter, +/- or Quantification			
		Microbial Growth: Aerobic Plate Count ID, Bacteria or Yeast & Mold, +/- or Quantification			
		Legionella: +/- or Quantification			
		Other: Bioterrorism, LAL or Environmental			
		Mold Spore Trap or Bulk: +/-, Identification, Quantification			
		Matrix Code			
		# Containers			
		Date Collected			
		Time Collected			
		Sample Volume (L) / Area			
		EM Number (Laboratory Use Only)			

Number of samples received: 1

(Additional samples shall be listed on attached log form)

NOTES: HGI will analyze incoming samples based upon information received and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing this laboratory representative agrees that submission of the following samples for requested analysis as indicated on this Chain of Custody shall constitute an analytical services agreement with payment terms of NET 30 days. Failure to comply with payment terms may result in a 1.5% monthly interest surcharge.

Relinquished By: Elisa Muri		Date/Time: 1-25-16 12:00 PM		Carrier	
Laboratory Use Only		Date/Time: 1-25-16 12:00 PM		Carrier	
Contact	Phone	Email	Fax	Contact	Phone
QA:	Contact	Phone	Email	Fax	Contact
Sample Condition:		On Ice		Sealed	
Temp (°F)		Yes / No		Yes / No	
Intact		Yes / No		Yes / No	
Date		Time		Date	
Initials		Initials		Initials	

Summary:

CHAIN OF CUSTODY



ACCUTEST LABORATORIES 4036 Youngfield Street, Wheat Ridge, CO 80033 TEL: 303-425-6021 FAX: 303-425-6014 www.accutest.com		Project Information Project Name: _____ Street: _____ City: _____ State: _____ Zip: _____ Project # _____ Project Contact: _____ Email: _____ Phone # _____ Fax # _____ Client Purchase Order # _____ Project Manager: _____ Attention: _____		Requested Analysis (See TEST CODE sheet) <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; height: 100px; vertical-align: top;"> DW - Drinking Water GW - Ground Water WW - Wastewater SW - Surface Water SO - Soil SL - Sludge SED - Sediment LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EQ - Equipment Blank RB - Rinse Blank TB - Tag Blank </td> <td style="width:50%; height: 100px; vertical-align: top;"> Matrix Codes LAB USE ONLY </td> </tr> </table>		DW - Drinking Water GW - Ground Water WW - Wastewater SW - Surface Water SO - Soil SL - Sludge SED - Sediment LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EQ - Equipment Blank RB - Rinse Blank TB - Tag Blank	Matrix Codes LAB USE ONLY						
DW - Drinking Water GW - Ground Water WW - Wastewater SW - Surface Water SO - Soil SL - Sludge SED - Sediment LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EQ - Equipment Blank RB - Rinse Blank TB - Tag Blank	Matrix Codes LAB USE ONLY												
Client / Reporting Information Company Name: _____ Street Address: _____ City: _____ State: _____ Zip: _____ Project Contact: _____ Email: _____ Phone # _____ Fax # _____ Sample(s) Name(s): _____		Field ID / Point of Collection Field ID: _____ D79252X.1											
Analysis Results <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Method</th> <th>Result</th> <th>Unit</th> <th>Remarks</th> </tr> <tr> <td>MECHANI</td> <td>11:25:00 AM</td> <td>JD AQ</td> <td></td> </tr> </table>		Method	Result	Unit	Remarks	MECHANI	11:25:00 AM	JD AQ		Asbestos <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; height: 100px; vertical-align: top;"> MECHANI NONE H2SO4 HNO3 HCl ENCORE </td> <td style="width:50%; height: 100px; vertical-align: top;"> Number of Preserved Bottles </td> </tr> </table>		MECHANI NONE H2SO4 HNO3 HCl ENCORE	Number of Preserved Bottles
Method	Result	Unit	Remarks										
MECHANI	11:25:00 AM	JD AQ											
MECHANI NONE H2SO4 HNO3 HCl ENCORE	Number of Preserved Bottles												
Delivery Information Approved By (Accutest PM): _____ Date: _____ Received By: _____ Date: _____ 3 Day RUSH 3 Day EMERGENCY 2 Day EMERGENCY 1 Day EMERGENCY ☒ Other Due 2/1/2015 Emergency & Rush T/A data available via Lablink		Date Deliverable Information Commercial "A" (Level 1) ☐ NYASP Category A Commercial "B" (Level 2) ☐ NYASP Category B FULLT1 (Level 3-4) ☒ State I COMMA NJ Reduced ☐ EDD Format Commercial "C" ☐ Other _____ Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data											
Sample Custody Date Rec'd: 1-25-16 Date Rec'd By: [Signature] Date Rec'd By: [Signature] Date Rec'd By: [Signature]		Comments / Special Instructions 											

Attachment I

Key to Count Sheets
Count Sheets
Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

<u>Asbestos Type</u>	<u>Structure Types</u>
A = Amosite	F = Fiber
An = Anthophyllite	B = Bundle
C = Chrysotile	C = Cluster
Cr = Crocidolite	M = Matrix
Trem-Act = Tremolite-Actinolite	

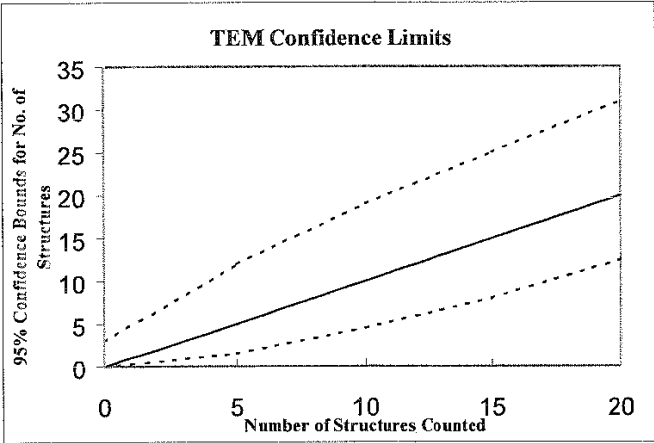
ND = no structures detected
M = other structure associated with a matrix
NAM = Non Asbestos Mineral
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne Spencer	Paul D. LoScalzo
Norberto Zimbleman	Sean Flynn
Nik Merrill	Cameron Powers



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

File: Shared on server T:\Offforms.sg\Attachment I
Revised: 2/2013

Lab Name	Reservoirs Environmental, Inc
Instrument	JEOL 100 CX (S)
Voltage	100KV
Magnification	20000
Primary Filter Area (mm2)	385
Secondary Filter Area (mm2)	346
Grid Opening Area (mm2)	0.01

Client	Accutest
Sample Type	Drinking H2O
Alliquot (mL)	100
Res Number	341343-1
EMI Number	1561843
Sample ID	D79252X-1
Method	EPA 100.2

Analyzed By:	SPF
Analysis Date:	1/25/2016
Prep Method:	Indirect
Date Recvd.	1/25/2016
Storage Loc.	January
Scope Align.	1/25/2016

Grid	GO	Type	Count	Total	Length	Width	ID	MineralClass	Comments	Photo	EDS
A	C3-3	ND									
	E3-3	F	0	0	2.8µm	0.056µm	NAM	NAM	Sample aliquot was 100mL's / 1L. (0.1L/1L)		✓
	F3-3	ND									
	G3-3	ND									
	H3-3	ND									
B	C3-3	ND									
	F3-3	ND									
	G3-3	ND									
	H3-3	ND									
	K3-3	ND									

*NAM = Non Asbestos Material

Analytical Procedures – AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber:	is a structure having a minimum length greater than or equal to 0.5 micron with an aspect ratio of 5:1 or greater with substantially parallel sides.
Bundle:	is a structure composed of three or more fibers in parallel arrangement, with each fiber closer than the diameter of one fiber.
Cluster:	is a structure with fibers in random arrangements such that all fibers are intermixed and no single fiber is isolated from the group.
Matrix:	is a fiber or fibers with one end free and the other end embedded or hidden by a particulate. The exposed fiber end must meet the fiber definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

$$\text{Area Analyzed, mm}^2 = \# \text{ GO counted} \times \text{Average GO Area (mm)}$$

$$\text{Concentration, s/cc} = \frac{\# \text{ Asbestos Structures}}{\# \text{ GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2\text{)}}{\text{Average GO area (mm}^2\text{)}} \times \frac{1\text{L}}{1000\text{cc}}$$

$$\text{Filter loading, s/mm}^2 = \frac{\# \text{ Asbestos structures}}{\text{Area Analyzed (mm}^2\text{)}}$$

$$\text{GO} = \text{TEM grid opening}$$

File: Shared on server T/Offforms.sg/AHERA Procedures
Revised: 02/27/02

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D79252 **Client:** QUANTUM WATER & ENVIRO **Project:** ADAMS COUNTY DOMESTIC WELL
Date / Time Received: 1/25/2016 7:58:00 AM **Delivery Method:** _____ **Airbill #'s:** HD
Cooler Temps (Initial/Adjusted): #1: (3.5/3.5);

Cooler Security
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: <u>IR Gun;</u> |
| 3. Cooler media: <u>Ice (Bag)</u> | |
| 4. No. Coolers: <u>1</u> | |

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: ☐ ☐ ☐ |

Comments

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: <u>Intact</u> | |

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: ☐ ☐ ☒ | |

**Appendix F2 - Laboratory
Analysis Reports - On-Site
Commercial Well**

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Denver

4955 Yarrow Street

Arvada, CO 80002

Tel: (303)736-0100

TestAmerica Job ID: 280-86728-1

Client Project/Site: Adams County Shooting Range

Revision: 1

For:

Quantum Water Consulting

1746 Cole Blvd

Suite 340

Lakewood, Colorado 80401

Attn: Mr. John Dellaport



Authorized for release by:

11/3/2016 11:13:54 AM

Stephanie Rothmeyer, Project Manager I

(303)736-0182

stephanie.rothmeyer@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

Job ID: 280-86728-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: Quantum Water Consulting

Project: Adams County Shooting Range

Report Number: 280-86728-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

REVISION 1 CHANGES

The report is revised to provide additional detail about sample dilution for Method 8260B.

RECEIPT

The samples were received on 8/10/2016 at 4:55 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.8° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples AC-164204-081016 (280-86728-1), TRIP BLANK (280-86728-2) and FIELD BLANK (280-86728-3) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 08/22/2016.

Sample AC-164204-081016 (280-86728-1) was diluted based on pre-screening results. The laboratory analyst mistakenly did not re-analyze the sample after it turned out to be over-diluted. We apologize for this oversight.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL METALS

Sample AC-164204-081016 (280-86728-1) was analyzed for total metals in accordance with EPA SW-846 Method 6010B. The samples were prepared on 08/19/2016 and analyzed on 08/20/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL METALS (ICPMS)

Sample AC-164204-081016 (280-86728-1) was analyzed for total metals (ICPMS) in accordance with SW846 6020A. The samples were prepared and analyzed on 08/16/2016.

Silver was detected in method blank MB 280-337863/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY

Sample AC-164204-081016 (280-86728-1) was analyzed for Alkalinity in accordance with SM20 2320B. The samples were analyzed on

Case Narrative

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

Job ID: 280-86728-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

08/12/2016.

Alkalinity was detected in method blank MB 280-337648/31 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ANIONS (28 DAYS)

Sample AC-164204-081016 (280-86728-1) was analyzed for anions (28 days) in accordance with EPA Method 300.0. The samples were analyzed on 08/10/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ANIONS (48 HOURS)

Sample AC-164204-081016 (280-86728-1) was analyzed for anions (48 hours) in accordance with EPA Method 300.0. The samples were analyzed on 08/10/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

Client Sample ID: AC-164204-081016

Lab Sample ID: 280-86728-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Calcium	2300		200	35	ug/L	1			6010B	Total/NA
Magnesium	230		200	11	ug/L	1			6010B	Total/NA
Potassium	1100	J	3000	240	ug/L	1			6010B	Total/NA
Sodium	150000		1000	92	ug/L	1			6010B	Total/NA
Barium	23		1.0	0.29	ug/L	1			6020A	Total/NA
Chromium	10		2.0	0.50	ug/L	1			6020A	Total/NA
Cobalt	1.3		1.0	0.054	ug/L	1			6020A	Total/NA
Copper	18		2.0	0.56	ug/L	1			6020A	Total/NA
Lead	1.8		1.0	0.18	ug/L	1			6020A	Total/NA
Nickel	6.9		2.0	0.30	ug/L	1			6020A	Total/NA
Vanadium	1.8	J	5.0	0.50	ug/L	1			6020A	Total/NA
Zinc	2.7	J	10	2.0	ug/L	1			6020A	Total/NA
Chloride	3.6		3.0	0.25	mg/L	1			300.0	Total/NA
Sulfate	0.98	J	5.0	0.23	mg/L	1			300.0	Total/NA
Alkalinity	300	B	5.0	1.1	mg/L	1			SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	270		5.0	1.1	mg/L	1			SM 2320B	Total/NA
Carbonate Alkalinity as CaCO3	31		5.0	1.1	mg/L	1			SM 2320B	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 280-86728-2

No Detections.

Client Sample ID: FIELD BLANK

Lab Sample ID: 280-86728-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Acetone	5.1	J	10	1.9	ug/L	1			8260B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Method Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
6010B	Metals (ICP)	SW846	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL DEN
300.0	Anions, Ion Chromatography	MCAWW	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-86728-1	AC-164204-081016	Water	08/10/16 15:25	08/10/16 16:55
280-86728-2	TRIP BLANK	Water	08/10/16 00:00	08/10/16 16:55
280-86728-3	FIELD BLANK	Water	08/10/16 15:00	08/10/16 16:55

Client Sample Results

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

Client Sample ID: AC-164204-081016

Lab Sample ID: 280-86728-1

Date Collected: 08/10/16 15:25

Matrix: Water

Date Received: 08/10/16 16:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		400	76	ug/L			08/22/16 20:57	1
Acrylonitrile	ND		800	56	ug/L			08/22/16 20:57	1
Benzene	ND		40	6.4	ug/L			08/22/16 20:57	1
Bromochloromethane	ND		40	4.0	ug/L			08/22/16 20:57	1
Bromodichloromethane	ND		40	6.8	ug/L			08/22/16 20:57	1
Bromoform	ND		40	7.6	ug/L			08/22/16 20:57	1
Bromomethane	ND		80	8.4	ug/L			08/22/16 20:57	1
2-Butanone (MEK)	ND		240	80	ug/L			08/22/16 20:57	1
Carbon disulfide	ND		80	18	ug/L			08/22/16 20:57	1
Carbon tetrachloride	ND		40	7.6	ug/L			08/22/16 20:57	1
Chlorobenzene	ND		40	6.8	ug/L			08/22/16 20:57	1
Chloroethane	ND		80	16	ug/L			08/22/16 20:57	1
Chloroform	ND		40	6.4	ug/L			08/22/16 20:57	1
Chloromethane	ND		80	12	ug/L			08/22/16 20:57	1
cis-1,2-Dichloroethene	ND		40	6.0	ug/L			08/22/16 20:57	1
cis-1,3-Dichloropropene	ND		40	6.4	ug/L			08/22/16 20:57	1
Cyclohexane	ND		80	11	ug/L			08/22/16 20:57	1
Dibromochloromethane	ND		40	6.8	ug/L			08/22/16 20:57	1
1,2-Dibromo-3-Chloropropane	ND		200	19	ug/L			08/22/16 20:57	1
1,2-Dibromoethane	ND		40	7.2	ug/L			08/22/16 20:57	1
Dibromomethane	ND		40	6.8	ug/L			08/22/16 20:57	1
1,2-Dichlorobenzene	ND		40	6.0	ug/L			08/22/16 20:57	1
1,3-Dichlorobenzene	ND		40	5.2	ug/L			08/22/16 20:57	1
1,4-Dichlorobenzene	ND		40	6.4	ug/L			08/22/16 20:57	1
Dichlorodifluoromethane	ND		80	12	ug/L			08/22/16 20:57	1
1,1-Dichloroethane	ND		40	8.8	ug/L			08/22/16 20:57	1
1,2-Dichloroethane	ND		40	5.2	ug/L			08/22/16 20:57	1
1,1-Dichloroethene	ND		40	9.2	ug/L			08/22/16 20:57	1
1,2-Dichloropropane	ND		40	7.2	ug/L			08/22/16 20:57	1
1,4-Dioxane	ND		8000	2300	ug/L			08/22/16 20:57	1
Ethylbenzene	ND		40	6.4	ug/L			08/22/16 20:57	1
2-Hexanone	ND		200	68	ug/L			08/22/16 20:57	1
Iodomethane	ND		40	9.2	ug/L			08/22/16 20:57	1
Isopropylbenzene	ND		40	7.6	ug/L			08/22/16 20:57	1
Methyl acetate	ND		200	66	ug/L			08/22/16 20:57	1
Methylcyclohexane	ND		40	14	ug/L			08/22/16 20:57	1
Methylene Chloride	ND		80	13	ug/L			08/22/16 20:57	1
4-Methyl-2-pentanone (MIBK)	ND		200	39	ug/L			08/22/16 20:57	1
Methyl tert-butyl ether	ND		200	10	ug/L			08/22/16 20:57	1
m-Xylene & p-Xylene	ND		80	14	ug/L			08/22/16 20:57	1
o-Xylene	ND		40	7.6	ug/L			08/22/16 20:57	1
Styrene	ND		40	6.8	ug/L			08/22/16 20:57	1
1,1,2,2-Tetrachloroethane	ND		40	8.4	ug/L			08/22/16 20:57	1
Tetrachloroethene	ND		40	8.0	ug/L			08/22/16 20:57	1
Toluene	ND		40	6.8	ug/L			08/22/16 20:57	1
trans-1,4-Dichloro-2-butene	ND		120	32	ug/L			08/22/16 20:57	1
trans-1,2-Dichloroethene	ND		40	6.0	ug/L			08/22/16 20:57	1
trans-1,3-Dichloropropene	ND		120	7.6	ug/L			08/22/16 20:57	1
1,2,3-Trichlorobenzene	ND		40	8.4	ug/L			08/22/16 20:57	1

TestAmerica Denver

Client Sample Results

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

Client Sample ID: AC-164204-081016

Lab Sample ID: 280-86728-1

Date Collected: 08/10/16 15:25

Matrix: Water

Date Received: 08/10/16 16:55

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		40	8.4	ug/L			08/22/16 20:57	1
1,1,1-Trichloroethane	ND		40	6.4	ug/L			08/22/16 20:57	1
1,1,2-Trichloroethane	ND		40	11	ug/L			08/22/16 20:57	1
Trichloroethene	ND		40	6.4	ug/L			08/22/16 20:57	1
Trichlorofluoromethane	ND		80	12	ug/L			08/22/16 20:57	1
1,1,2-Trichlorotrifluoroethane	ND		120	17	ug/L			08/22/16 20:57	1
Vinyl chloride	ND		40	4.0	ug/L			08/22/16 20:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		78 - 120		08/22/16 20:57	1
Dibromofluoromethane (Surr)	103		77 - 120		08/22/16 20:57	1
1,2-Dichloroethane-d4 (Surr)	118		70 - 127		08/22/16 20:57	1
Toluene-d8 (Surr)	101		80 - 125		08/22/16 20:57	1

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	2300		200	35	ug/L		08/19/16 14:45	08/20/16 01:59	1
Magnesium	230		200	11	ug/L		08/19/16 14:45	08/20/16 01:59	1
Potassium	1100	J	3000	240	ug/L		08/19/16 14:45	08/20/16 01:59	1
Sodium	150000		1000	92	ug/L		08/19/16 14:45	08/20/16 01:59	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0	0.40	ug/L		08/16/16 08:00	08/16/16 21:34	1
Arsenic	ND		5.0	0.33	ug/L		08/16/16 08:00	08/16/16 21:34	1
Barium	23		1.0	0.29	ug/L		08/16/16 08:00	08/16/16 21:34	1
Beryllium	ND		1.0	0.080	ug/L		08/16/16 08:00	08/16/16 21:34	1
Cadmium	ND		1.0	0.27	ug/L		08/16/16 08:00	08/16/16 21:34	1
Chromium	10		2.0	0.50	ug/L		08/16/16 08:00	08/16/16 21:34	1
Cobalt	1.3		1.0	0.054	ug/L		08/16/16 08:00	08/16/16 21:34	1
Copper	18		2.0	0.56	ug/L		08/16/16 08:00	08/16/16 21:34	1
Lead	1.8		1.0	0.18	ug/L		08/16/16 08:00	08/16/16 21:34	1
Nickel	6.9		2.0	0.30	ug/L		08/16/16 08:00	08/16/16 21:34	1
Selenium	ND		5.0	0.70	ug/L		08/16/16 08:00	08/16/16 21:34	1
Silver	ND		5.0	0.033	ug/L		08/16/16 08:00	08/16/16 21:34	1
Thallium	ND		1.0	0.050	ug/L		08/16/16 08:00	08/16/16 21:34	1
Vanadium	1.8	J	5.0	0.50	ug/L		08/16/16 08:00	08/16/16 21:34	1
Zinc	2.7	J	10	2.0	ug/L		08/16/16 08:00	08/16/16 21:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.6		3.0	0.25	mg/L			08/10/16 22:11	1
Nitrate as N	ND		0.50	0.042	mg/L			08/10/16 22:11	1
Nitrite as N	ND		0.50	0.049	mg/L			08/10/16 22:11	1
Sulfate	0.98	J	5.0	0.23	mg/L			08/10/16 22:11	1
Alkalinity	300	B	5.0	1.1	mg/L			08/12/16 08:35	1
Bicarbonate Alkalinity as CaCO3	270		5.0	1.1	mg/L			08/12/16 08:35	1
Carbonate Alkalinity as CaCO3	31		5.0	1.1	mg/L			08/12/16 08:35	1

TestAmerica Denver

Client Sample Results

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 280-86728-2

Date Collected: 08/10/16 00:00

Matrix: Water

Date Received: 08/10/16 16:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.9	ug/L			08/22/16 21:17	1
Acrylonitrile	ND		20	1.4	ug/L			08/22/16 21:17	1
Benzene	ND		1.0	0.16	ug/L			08/22/16 21:17	1
Bromochloromethane	ND		1.0	0.10	ug/L			08/22/16 21:17	1
Bromodichloromethane	ND		1.0	0.17	ug/L			08/22/16 21:17	1
Bromoform	ND		1.0	0.19	ug/L			08/22/16 21:17	1
Bromomethane	ND		2.0	0.21	ug/L			08/22/16 21:17	1
2-Butanone (MEK)	ND		6.0	2.0	ug/L			08/22/16 21:17	1
Carbon disulfide	ND		2.0	0.45	ug/L			08/22/16 21:17	1
Carbon tetrachloride	ND		1.0	0.19	ug/L			08/22/16 21:17	1
Chlorobenzene	ND		1.0	0.17	ug/L			08/22/16 21:17	1
Chloroethane	ND		2.0	0.41	ug/L			08/22/16 21:17	1
Chloroform	ND		1.0	0.16	ug/L			08/22/16 21:17	1
Chloromethane	ND		2.0	0.30	ug/L			08/22/16 21:17	1
cis-1,2-Dichloroethene	ND		1.0	0.15	ug/L			08/22/16 21:17	1
cis-1,3-Dichloropropene	ND		1.0	0.16	ug/L			08/22/16 21:17	1
Cyclohexane	ND		2.0	0.28	ug/L			08/22/16 21:17	1
Dibromochloromethane	ND		1.0	0.17	ug/L			08/22/16 21:17	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.47	ug/L			08/22/16 21:17	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			08/22/16 21:17	1
Dibromomethane	ND		1.0	0.17	ug/L			08/22/16 21:17	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			08/22/16 21:17	1
1,3-Dichlorobenzene	ND		1.0	0.13	ug/L			08/22/16 21:17	1
1,4-Dichlorobenzene	ND		1.0	0.16	ug/L			08/22/16 21:17	1
Dichlorodifluoromethane	ND		2.0	0.31	ug/L			08/22/16 21:17	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			08/22/16 21:17	1
1,2-Dichloroethane	ND		1.0	0.13	ug/L			08/22/16 21:17	1
1,1-Dichloroethene	ND		1.0	0.23	ug/L			08/22/16 21:17	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			08/22/16 21:17	1
1,4-Dioxane	ND		200	57	ug/L			08/22/16 21:17	1
Ethylbenzene	ND		1.0	0.16	ug/L			08/22/16 21:17	1
2-Hexanone	ND		5.0	1.7	ug/L			08/22/16 21:17	1
Iodomethane	ND		1.0	0.23	ug/L			08/22/16 21:17	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/22/16 21:17	1
Methyl acetate	ND		5.0	1.6	ug/L			08/22/16 21:17	1
Methylcyclohexane	ND		1.0	0.36	ug/L			08/22/16 21:17	1
Methylene Chloride	ND		2.0	0.32	ug/L			08/22/16 21:17	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.98	ug/L			08/22/16 21:17	1
Methyl tert-butyl ether	ND		5.0	0.25	ug/L			08/22/16 21:17	1
m-Xylene & p-Xylene	ND		2.0	0.34	ug/L			08/22/16 21:17	1
o-Xylene	ND		1.0	0.19	ug/L			08/22/16 21:17	1
Styrene	ND		1.0	0.17	ug/L			08/22/16 21:17	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/22/16 21:17	1
Tetrachloroethene	ND		1.0	0.20	ug/L			08/22/16 21:17	1
Toluene	ND		1.0	0.17	ug/L			08/22/16 21:17	1
trans-1,4-Dichloro-2-butene	ND		3.0	0.80	ug/L			08/22/16 21:17	1
trans-1,2-Dichloroethene	ND		1.0	0.15	ug/L			08/22/16 21:17	1
trans-1,3-Dichloropropene	ND		3.0	0.19	ug/L			08/22/16 21:17	1
1,2,3-Trichlorobenzene	ND		1.0	0.21	ug/L			08/22/16 21:17	1

TestAmerica Denver

Client Sample Results

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

Client Sample ID: TRIP BLANK

Date Collected: 08/10/16 00:00

Date Received: 08/10/16 16:55

Lab Sample ID: 280-86728-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		1.0	0.21	ug/L			08/22/16 21:17	1
1,1,1-Trichloroethane	ND		1.0	0.16	ug/L			08/22/16 21:17	1
1,1,2-Trichloroethane	ND		1.0	0.27	ug/L			08/22/16 21:17	1
Trichloroethene	ND		1.0	0.16	ug/L			08/22/16 21:17	1
Trichlorofluoromethane	ND		2.0	0.29	ug/L			08/22/16 21:17	1
1,1,2-Trichlorotrifluoroethane	ND		3.0	0.42	ug/L			08/22/16 21:17	1
Vinyl chloride	ND		1.0	0.10	ug/L			08/22/16 21:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		78 - 120		08/22/16 21:17	1
Dibromofluoromethane (Surr)	99		77 - 120		08/22/16 21:17	1
1,2-Dichloroethane-d4 (Surr)	120		70 - 127		08/22/16 21:17	1
Toluene-d8 (Surr)	104		80 - 125		08/22/16 21:17	1

Client Sample ID: FIELD BLANK

Date Collected: 08/10/16 15:00

Date Received: 08/10/16 16:55

Lab Sample ID: 280-86728-3

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	5.1	J	10	1.9	ug/L			08/22/16 21:38	1
Acrylonitrile	ND		20	1.4	ug/L			08/22/16 21:38	1
Benzene	ND		1.0	0.16	ug/L			08/22/16 21:38	1
Bromochloromethane	ND		1.0	0.10	ug/L			08/22/16 21:38	1
Bromodichloromethane	ND		1.0	0.17	ug/L			08/22/16 21:38	1
Bromoform	ND		1.0	0.19	ug/L			08/22/16 21:38	1
Bromomethane	ND		2.0	0.21	ug/L			08/22/16 21:38	1
2-Butanone (MEK)	ND		6.0	2.0	ug/L			08/22/16 21:38	1
Carbon disulfide	ND		2.0	0.45	ug/L			08/22/16 21:38	1
Carbon tetrachloride	ND		1.0	0.19	ug/L			08/22/16 21:38	1
Chlorobenzene	ND		1.0	0.17	ug/L			08/22/16 21:38	1
Chloroethane	ND		2.0	0.41	ug/L			08/22/16 21:38	1
Chloroform	ND		1.0	0.16	ug/L			08/22/16 21:38	1
Chloromethane	ND		2.0	0.30	ug/L			08/22/16 21:38	1
cis-1,2-Dichloroethene	ND		1.0	0.15	ug/L			08/22/16 21:38	1
cis-1,3-Dichloropropene	ND		1.0	0.16	ug/L			08/22/16 21:38	1
Cyclohexane	ND		2.0	0.28	ug/L			08/22/16 21:38	1
Dibromochloromethane	ND		1.0	0.17	ug/L			08/22/16 21:38	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.47	ug/L			08/22/16 21:38	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			08/22/16 21:38	1
Dibromomethane	ND		1.0	0.17	ug/L			08/22/16 21:38	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			08/22/16 21:38	1
1,3-Dichlorobenzene	ND		1.0	0.13	ug/L			08/22/16 21:38	1
1,4-Dichlorobenzene	ND		1.0	0.16	ug/L			08/22/16 21:38	1
Dichlorodifluoromethane	ND		2.0	0.31	ug/L			08/22/16 21:38	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			08/22/16 21:38	1
1,2-Dichloroethane	ND		1.0	0.13	ug/L			08/22/16 21:38	1
1,1-Dichloroethene	ND		1.0	0.23	ug/L			08/22/16 21:38	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			08/22/16 21:38	1
1,4-Dioxane	ND		200	57	ug/L			08/22/16 21:38	1

TestAmerica Denver

Client Sample Results

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

Client Sample ID: FIELD BLANK

Lab Sample ID: 280-86728-3

Date Collected: 08/10/16 15:00

Matrix: Water

Date Received: 08/10/16 16:55

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.16	ug/L			08/22/16 21:38	1
2-Hexanone	ND		5.0	1.7	ug/L			08/22/16 21:38	1
Iodomethane	ND		1.0	0.23	ug/L			08/22/16 21:38	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/22/16 21:38	1
Methyl acetate	ND		5.0	1.6	ug/L			08/22/16 21:38	1
Methylcyclohexane	ND		1.0	0.36	ug/L			08/22/16 21:38	1
Methylene Chloride	ND		2.0	0.32	ug/L			08/22/16 21:38	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.98	ug/L			08/22/16 21:38	1
Methyl tert-butyl ether	ND		5.0	0.25	ug/L			08/22/16 21:38	1
m-Xylene & p-Xylene	ND		2.0	0.34	ug/L			08/22/16 21:38	1
o-Xylene	ND		1.0	0.19	ug/L			08/22/16 21:38	1
Styrene	ND		1.0	0.17	ug/L			08/22/16 21:38	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/22/16 21:38	1
Tetrachloroethene	ND		1.0	0.20	ug/L			08/22/16 21:38	1
Toluene	ND		1.0	0.17	ug/L			08/22/16 21:38	1
trans-1,4-Dichloro-2-butene	ND		3.0	0.80	ug/L			08/22/16 21:38	1
trans-1,2-Dichloroethene	ND		1.0	0.15	ug/L			08/22/16 21:38	1
trans-1,3-Dichloropropene	ND		3.0	0.19	ug/L			08/22/16 21:38	1
1,2,3-Trichlorobenzene	ND		1.0	0.21	ug/L			08/22/16 21:38	1
1,2,4-Trichlorobenzene	ND		1.0	0.21	ug/L			08/22/16 21:38	1
1,1,1-Trichloroethane	ND		1.0	0.16	ug/L			08/22/16 21:38	1
1,1,2-Trichloroethane	ND		1.0	0.27	ug/L			08/22/16 21:38	1
Trichloroethene	ND		1.0	0.16	ug/L			08/22/16 21:38	1
Trichlorofluoromethane	ND		2.0	0.29	ug/L			08/22/16 21:38	1
1,1,2-Trichlorotrifluoroethane	ND		3.0	0.42	ug/L			08/22/16 21:38	1
Vinyl chloride	ND		1.0	0.10	ug/L			08/22/16 21:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		78 - 120		08/22/16 21:38	1
Dibromofluoromethane (Surr)	103		77 - 120		08/22/16 21:38	1
1,2-Dichloroethane-d4 (Surr)	122		70 - 127		08/22/16 21:38	1
Toluene-d8 (Surr)	98		80 - 125		08/22/16 21:38	1

TestAmerica Denver

Surrogate Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	BFB (78-120)	DBFM (77-120)	12DCE (70-127)	TOL (80-125)
280-86728-1	AC-164204-081016	96	103	118	101
280-86728-2	TRIP BLANK	106	99	120	104
280-86728-3	FIELD BLANK	97	103	122	98
LCS 280-338859/6	Lab Control Sample	93	94	103	95
MB 280-338859/8	Method Blank	97	93	98	95

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

12DCE = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-338859/8

Matrix: Water

Analysis Batch: 338859

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.9	ug/L			08/22/16 13:02	1
Acrylonitrile	ND		20	1.4	ug/L			08/22/16 13:02	1
Benzene	ND		1.0	0.16	ug/L			08/22/16 13:02	1
Bromochloromethane	ND		1.0	0.10	ug/L			08/22/16 13:02	1
Bromodichloromethane	ND		1.0	0.17	ug/L			08/22/16 13:02	1
Bromoform	ND		1.0	0.19	ug/L			08/22/16 13:02	1
Bromomethane	ND		2.0	0.21	ug/L			08/22/16 13:02	1
2-Butanone (MEK)	ND		6.0	2.0	ug/L			08/22/16 13:02	1
Carbon disulfide	ND		2.0	0.45	ug/L			08/22/16 13:02	1
Carbon tetrachloride	ND		1.0	0.19	ug/L			08/22/16 13:02	1
Chlorobenzene	ND		1.0	0.17	ug/L			08/22/16 13:02	1
Chloroethane	ND		2.0	0.41	ug/L			08/22/16 13:02	1
Chloroform	ND		1.0	0.16	ug/L			08/22/16 13:02	1
Chloromethane	ND		2.0	0.30	ug/L			08/22/16 13:02	1
cis-1,2-Dichloroethene	ND		1.0	0.15	ug/L			08/22/16 13:02	1
cis-1,3-Dichloropropene	ND		1.0	0.16	ug/L			08/22/16 13:02	1
Cyclohexane	ND		2.0	0.28	ug/L			08/22/16 13:02	1
Dibromochloromethane	ND		1.0	0.17	ug/L			08/22/16 13:02	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.47	ug/L			08/22/16 13:02	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			08/22/16 13:02	1
Dibromomethane	ND		1.0	0.17	ug/L			08/22/16 13:02	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			08/22/16 13:02	1
1,3-Dichlorobenzene	ND		1.0	0.13	ug/L			08/22/16 13:02	1
1,4-Dichlorobenzene	ND		1.0	0.16	ug/L			08/22/16 13:02	1
Dichlorodifluoromethane	ND		2.0	0.31	ug/L			08/22/16 13:02	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			08/22/16 13:02	1
1,2-Dichloroethane	ND		1.0	0.13	ug/L			08/22/16 13:02	1
1,1-Dichloroethene	ND		1.0	0.23	ug/L			08/22/16 13:02	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			08/22/16 13:02	1
1,4-Dioxane	ND		200	57	ug/L			08/22/16 13:02	1
Ethylbenzene	ND		1.0	0.16	ug/L			08/22/16 13:02	1
2-Hexanone	ND		5.0	1.7	ug/L			08/22/16 13:02	1
Iodomethane	ND		1.0	0.23	ug/L			08/22/16 13:02	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/22/16 13:02	1
Methyl acetate	ND		5.0	1.6	ug/L			08/22/16 13:02	1
Methylcyclohexane	ND		1.0	0.36	ug/L			08/22/16 13:02	1
Methylene Chloride	ND		2.0	0.32	ug/L			08/22/16 13:02	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.98	ug/L			08/22/16 13:02	1
Methyl tert-butyl ether	ND		5.0	0.25	ug/L			08/22/16 13:02	1
m-Xylene & p-Xylene	ND		2.0	0.34	ug/L			08/22/16 13:02	1
o-Xylene	ND		1.0	0.19	ug/L			08/22/16 13:02	1
Styrene	ND		1.0	0.17	ug/L			08/22/16 13:02	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/22/16 13:02	1
Tetrachloroethene	ND		1.0	0.20	ug/L			08/22/16 13:02	1
Toluene	ND		1.0	0.17	ug/L			08/22/16 13:02	1
trans-1,4-Dichloro-2-butene	ND		3.0	0.80	ug/L			08/22/16 13:02	1
trans-1,2-Dichloroethene	ND		1.0	0.15	ug/L			08/22/16 13:02	1
trans-1,3-Dichloropropene	ND		3.0	0.19	ug/L			08/22/16 13:02	1

TestAmerica Denver

QC Sample Results

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 280-338859/8

Matrix: Water

Analysis Batch: 338859

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	ND		1.0	0.21	ug/L			08/22/16 13:02	1
1,2,4-Trichlorobenzene	ND		1.0	0.21	ug/L			08/22/16 13:02	1
1,1,1-Trichloroethane	ND		1.0	0.16	ug/L			08/22/16 13:02	1
1,1,2-Trichloroethane	ND		1.0	0.27	ug/L			08/22/16 13:02	1
Trichloroethene	ND		1.0	0.16	ug/L			08/22/16 13:02	1
Trichlorofluoromethane	ND		2.0	0.29	ug/L			08/22/16 13:02	1
1,1,2-Trichlorotrifluoroethane	ND		3.0	0.42	ug/L			08/22/16 13:02	1
Vinyl chloride	ND		1.0	0.10	ug/L			08/22/16 13:02	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		78 - 120		08/22/16 13:02	1
Dibromofluoromethane (Surr)	93		77 - 120		08/22/16 13:02	1
1,2-Dichloroethane-d4 (Surr)	98		70 - 127		08/22/16 13:02	1
Toluene-d8 (Surr)	95		80 - 125		08/22/16 13:02	1

Lab Sample ID: LCS 280-338859/6

Matrix: Water

Analysis Batch: 338859

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	19.3		ug/L		97	39 - 156
Benzene	5.00	4.72		ug/L		94	65 - 135
Bromochloromethane	5.00	5.09		ug/L		102	65 - 135
Bromodichloromethane	5.00	5.38		ug/L		108	65 - 135
Bromoform	5.00	4.87		ug/L		97	62 - 135
Bromomethane	5.00	3.58		ug/L		72	45 - 135
2-Butanone (MEK)	20.0	23.6		ug/L		118	44 - 177
Carbon disulfide	5.00	4.27		ug/L		85	55 - 143
Carbon tetrachloride	5.00	4.84		ug/L		97	65 - 135
Chlorobenzene	5.00	4.70		ug/L		94	65 - 135
Chloroethane	5.00	3.99		ug/L		80	46 - 136
Chloroform	5.00	4.85		ug/L		97	65 - 135
Chloromethane	5.00	3.95		ug/L		79	34 - 145
cis-1,2-Dichloroethene	5.00	4.69		ug/L		94	65 - 135
cis-1,3-Dichloropropene	5.00	4.58		ug/L		92	65 - 135
Dibromochloromethane	5.00	4.92		ug/L		98	65 - 135
1,2-Dibromo-3-Chloropropane	5.00	4.24	J	ug/L		85	57 - 135
1,2-Dibromoethane	5.00	4.93		ug/L		99	65 - 135
Dibromomethane	5.00	5.44		ug/L		109	65 - 135
1,2-Dichlorobenzene	5.00	5.27		ug/L		105	65 - 135
1,3-Dichlorobenzene	5.00	4.59		ug/L		92	65 - 135
1,4-Dichlorobenzene	5.00	4.60		ug/L		92	65 - 135
Dichlorodifluoromethane	5.00	3.98		ug/L		80	43 - 142
1,1-Dichloroethane	5.00	4.46		ug/L		89	65 - 135
1,2-Dichloroethane	5.00	5.64		ug/L		113	65 - 135
1,1-Dichloroethene	5.00	4.20		ug/L		84	65 - 136
1,2-Dichloropropane	5.00	5.17		ug/L		103	64 - 135
1,4-Dioxane	100	96.2	J	ug/L		96	31 - 147

TestAmerica Denver

QC Sample Results

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-338859/6

Matrix: Water

Analysis Batch: 338859

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	5.00	4.36		ug/L		87	65 - 135
2-Hexanone	20.0	20.1		ug/L		101	57 - 139
Isopropylbenzene	5.00	3.92		ug/L		78	65 - 135
Methyl acetate	25.0	22.4		ug/L		89	52 - 135
Methylcyclohexane	5.00	4.49		ug/L		90	63 - 135
Methylene Chloride	5.00	4.73		ug/L		95	54 - 141
4-Methyl-2-pentanone (MIBK)	20.0	24.7		ug/L		123	60 - 150
Methyl tert-butyl ether	5.00	5.47		ug/L		109	54 - 135
m-Xylene & p-Xylene	5.00	4.53		ug/L		91	65 - 135
o-Xylene	5.00	4.73		ug/L		95	65 - 135
Styrene	5.00	4.68		ug/L		94	65 - 135
1,1,2,2-Tetrachloroethane	5.00	4.50		ug/L		90	58 - 135
Tetrachloroethene	5.00	4.26		ug/L		85	65 - 135
Toluene	5.00	5.47		ug/L		109	65 - 135
trans-1,2-Dichloroethene	5.00	4.51		ug/L		90	65 - 135
trans-1,3-Dichloropropene	5.00	5.67		ug/L		113	65 - 135
1,2,3-Trichlorobenzene	5.00	4.88		ug/L		98	60 - 135
1,2,4-Trichlorobenzene	5.00	4.73		ug/L		95	58 - 135
1,1,1-Trichloroethane	5.00	4.83		ug/L		97	65 - 135
1,1,2-Trichloroethane	5.00	5.67		ug/L		113	64 - 135
Trichloroethene	5.00	4.88		ug/L		98	65 - 135
Trichlorofluoromethane	5.00	4.19		ug/L		84	53 - 137
1,1,2-Trichlorotrifluoroethane	5.00	4.78		ug/L		96	65 - 140
Vinyl chloride	5.00	3.90		ug/L		78	40 - 137

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	93		78 - 120
Dibromofluoromethane (Surr)	94		77 - 120
1,2-Dichloroethane-d4 (Surr)	103		70 - 127
Toluene-d8 (Surr)	95		80 - 125

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 280-338554/1-A

Matrix: Water

Analysis Batch: 338863

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 338554

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		200	35	ug/L		08/19/16 14:45	08/20/16 01:39	1
Magnesium	ND		200	11	ug/L		08/19/16 14:45	08/20/16 01:39	1
Potassium	ND		3000	240	ug/L		08/19/16 14:45	08/20/16 01:39	1
Sodium	ND		1000	92	ug/L		08/19/16 14:45	08/20/16 01:39	1

TestAmerica Denver

QC Sample Results

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 280-338554/2-A

Matrix: Water

Analysis Batch: 338863

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 338554

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	50000	51700		ug/L		103	90 - 111
Magnesium	50000	52300		ug/L		105	90 - 113
Potassium	50000	52700		ug/L		105	89 - 114
Sodium	50000	52600		ug/L		105	90 - 115

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 280-337863/1-A

Matrix: Water

Analysis Batch: 338275

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 337863

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0	0.40	ug/L		08/16/16 08:00	08/16/16 20:23	1
Arsenic	ND		5.0	0.33	ug/L		08/16/16 08:00	08/16/16 20:23	1
Barium	ND		1.0	0.29	ug/L		08/16/16 08:00	08/16/16 20:23	1
Beryllium	ND		1.0	0.080	ug/L		08/16/16 08:00	08/16/16 20:23	1
Cadmium	ND		1.0	0.27	ug/L		08/16/16 08:00	08/16/16 20:23	1
Chromium	ND		2.0	0.50	ug/L		08/16/16 08:00	08/16/16 20:23	1
Cobalt	ND		1.0	0.054	ug/L		08/16/16 08:00	08/16/16 20:23	1
Copper	ND		2.0	0.56	ug/L		08/16/16 08:00	08/16/16 20:23	1
Lead	ND		1.0	0.18	ug/L		08/16/16 08:00	08/16/16 20:23	1
Nickel	ND		2.0	0.30	ug/L		08/16/16 08:00	08/16/16 20:23	1
Selenium	ND		5.0	0.70	ug/L		08/16/16 08:00	08/16/16 20:23	1
Silver	0.0490	J	5.0	0.033	ug/L		08/16/16 08:00	08/16/16 20:23	1
Thallium	ND		1.0	0.050	ug/L		08/16/16 08:00	08/16/16 20:23	1
Vanadium	ND		5.0	0.50	ug/L		08/16/16 08:00	08/16/16 20:23	1
Zinc	ND		10	2.0	ug/L		08/16/16 08:00	08/16/16 20:23	1

Lab Sample ID: LCS 280-337863/2-A

Matrix: Water

Analysis Batch: 338275

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 337863

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	40.0	41.2		ug/L		103	85 - 115
Arsenic	40.0	40.2		ug/L		101	85 - 117
Barium	40.0	42.2		ug/L		105	85 - 118
Beryllium	40.0	38.2		ug/L		96	80 - 125
Cadmium	40.0	40.1		ug/L		100	85 - 115
Chromium	40.0	40.4		ug/L		101	84 - 121
Cobalt	40.0	40.4		ug/L		101	85 - 120
Copper	40.0	41.9		ug/L		105	85 - 119
Lead	40.0	41.8		ug/L		104	85 - 118
Nickel	40.0	40.9		ug/L		102	85 - 119
Selenium	40.0	40.3		ug/L		101	77 - 122
Silver	40.0	44.3		ug/L		111	85 - 115
Thallium	40.0	41.1		ug/L		103	85 - 118
Vanadium	40.0	40.0		ug/L		100	85 - 120
Zinc	40.0	42.3		ug/L		106	83 - 122

TestAmerica Denver

QC Sample Results

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 280-337863/3-A

Matrix: Water

Analysis Batch: 338275

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 337863

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	40.0	41.9		ug/L		105	85 - 115	2	20
Arsenic	40.0	40.3		ug/L		101	85 - 117	0	20
Barium	40.0	41.8		ug/L		104	85 - 118	1	20
Beryllium	40.0	38.0		ug/L		95	80 - 125	1	20
Cadmium	40.0	41.9		ug/L		105	85 - 115	4	20
Chromium	40.0	40.8		ug/L		102	84 - 121	1	20
Cobalt	40.0	41.2		ug/L		103	85 - 120	2	20
Copper	40.0	41.5		ug/L		104	85 - 119	1	20
Lead	40.0	41.4		ug/L		103	85 - 118	1	20
Nickel	40.0	40.7		ug/L		102	85 - 119	1	20
Selenium	40.0	39.6		ug/L		99	77 - 122	2	20
Silver	40.0	45.0		ug/L		113	85 - 115	2	20
Thallium	40.0	40.8		ug/L		102	85 - 118	1	20
Vanadium	40.0	39.2		ug/L		98	85 - 120	2	20
Zinc	40.0	40.9		ug/L		102	83 - 122	3	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 280-337240/6

Matrix: Water

Analysis Batch: 337240

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.50	0.042	mg/L			08/10/16 11:56	1
Nitrite as N	ND		0.50	0.049	mg/L			08/10/16 11:56	1

Lab Sample ID: LCS 280-337240/4

Matrix: Water

Analysis Batch: 337240

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	5.00	4.89		mg/L		98	90 - 110
Nitrite as N	5.00	4.77		mg/L		95	90 - 110

Lab Sample ID: LCSD 280-337240/5

Matrix: Water

Analysis Batch: 337240

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	5.00	4.88		mg/L		98	90 - 110	0	10
Nitrite as N	5.00	4.77		mg/L		95	90 - 110	0	10

Lab Sample ID: MRL 280-337240/3

Matrix: Water

Analysis Batch: 337240

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.200	0.182	J	mg/L		91	50 - 150
Nitrite as N	0.200	0.209	J	mg/L		105	50 - 150

TestAmerica Denver

QC Sample Results

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

Lab Sample ID: MB 280-337241/6

Matrix: Water

Analysis Batch: 337241

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	0.25	mg/L			08/10/16 11:56	1
Sulfate	ND		5.0	0.23	mg/L			08/10/16 11:56	1

Lab Sample ID: LCS 280-337241/4

Matrix: Water

Analysis Batch: 337241

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	98.1		mg/L		98	90 - 110
Sulfate	100	97.6		mg/L		98	90 - 110

Lab Sample ID: LCSD 280-337241/5

Matrix: Water

Analysis Batch: 337241

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	98.1		mg/L		98	90 - 110	0	10
Sulfate	100	97.7		mg/L		98	90 - 110	0	10

Lab Sample ID: MRL 280-337241/3

Matrix: Water

Analysis Batch: 337241

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	2.39	J	mg/L		96	50 - 150
Sulfate	2.50	2.54	J	mg/L		101	50 - 150

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-337648/31

Matrix: Water

Analysis Batch: 337648

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	1.91	J	5.0	1.1	mg/L			08/12/16 07:19	1
Bicarbonate Alkalinity as CaCO3	ND		5.0	1.1	mg/L			08/12/16 07:19	1
Carbonate Alkalinity as CaCO3	ND		5.0	1.1	mg/L			08/12/16 07:19	1

Lab Sample ID: LCS 280-337648/30

Matrix: Water

Analysis Batch: 337648

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	196		mg/L		98	90 - 110

TestAmerica Denver

QC Association Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

GC/MS VOA

Analysis Batch: 338859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86728-1	AC-164204-081016	Total/NA	Water	8260B	
280-86728-2	TRIP BLANK	Total/NA	Water	8260B	
280-86728-3	FIELD BLANK	Total/NA	Water	8260B	
MB 280-338859/8	Method Blank	Total/NA	Water	8260B	
LCS 280-338859/6	Lab Control Sample	Total/NA	Water	8260B	

Metals

Prep Batch: 337863

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86728-1	AC-164204-081016	Total/NA	Water	3020A	
MB 280-337863/1-A	Method Blank	Total/NA	Water	3020A	
LCS 280-337863/2-A	Lab Control Sample	Total/NA	Water	3020A	
LCSD 280-337863/3-A	Lab Control Sample Dup	Total/NA	Water	3020A	

Analysis Batch: 338275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86728-1	AC-164204-081016	Total/NA	Water	6020A	337863
MB 280-337863/1-A	Method Blank	Total/NA	Water	6020A	337863
LCS 280-337863/2-A	Lab Control Sample	Total/NA	Water	6020A	337863
LCSD 280-337863/3-A	Lab Control Sample Dup	Total/NA	Water	6020A	337863

Prep Batch: 338554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86728-1	AC-164204-081016	Total/NA	Water	3010A	
MB 280-338554/1-A	Method Blank	Total/NA	Water	3010A	
LCS 280-338554/2-A	Lab Control Sample	Total/NA	Water	3010A	

Analysis Batch: 338863

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86728-1	AC-164204-081016	Total/NA	Water	6010B	338554
MB 280-338554/1-A	Method Blank	Total/NA	Water	6010B	338554
LCS 280-338554/2-A	Lab Control Sample	Total/NA	Water	6010B	338554

General Chemistry

Analysis Batch: 337240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86728-1	AC-164204-081016	Total/NA	Water	300.0	
MB 280-337240/6	Method Blank	Total/NA	Water	300.0	
LCS 280-337240/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-337240/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 280-337240/3	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 337241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86728-1	AC-164204-081016	Total/NA	Water	300.0	
MB 280-337241/6	Method Blank	Total/NA	Water	300.0	
LCS 280-337241/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-337241/5	Lab Control Sample Dup	Total/NA	Water	300.0	

TestAmerica Denver

QC Association Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

General Chemistry (Continued)

Analysis Batch: 337241 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MRL 280-337241/3	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 337648

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86728-1	AC-164204-081016	Total/NA	Water	SM 2320B	
MB 280-337648/31	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-337648/30	Lab Control Sample	Total/NA	Water	SM 2320B	

Lab Chronicle

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

Client Sample ID: AC-164204-081016

Date Collected: 08/10/16 15:25

Date Received: 08/10/16 16:55

Lab Sample ID: 280-86728-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	338859	08/22/16 20:57	JLS	TAL DEN
Total/NA	Prep	3010A			338554	08/19/16 14:45	SEJ	TAL DEN
Total/NA	Analysis	6010B		1	338863	08/20/16 01:59	CRR	TAL DEN
Total/NA	Prep	3020A			337863	08/16/16 08:00	SUR	TAL DEN
Total/NA	Analysis	6020A		1	338275	08/16/16 21:34	JM	TAL DEN
Total/NA	Analysis	300.0		1	337240	08/10/16 22:11	AFB	TAL DEN
Total/NA	Analysis	300.0		1	337241	08/10/16 22:11	AFB	TAL DEN
Total/NA	Analysis	SM 2320B		1	337648	08/12/16 08:35	IEU	TAL DEN

Client Sample ID: TRIP BLANK

Date Collected: 08/10/16 00:00

Date Received: 08/10/16 16:55

Lab Sample ID: 280-86728-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	338859	08/22/16 21:17	JLS	TAL DEN

Client Sample ID: FIELD BLANK

Date Collected: 08/10/16 15:00

Date Received: 08/10/16 16:55

Lab Sample ID: 280-86728-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	338859	08/22/16 21:38	JLS	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Certification Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86728-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Oregon	NELAP	10	4025	01-09-17

The following analytes are included in this report, but are not certified under this certification:

Analysis Method	Prep Method	Matrix	Analyte
SM 2320B		Water	Carbonate Alkalinity as CaCO ₃

Login Sample Receipt Checklist

Client: Quantum Water Consulting

Job Number: 280-86728-1

Login Number: 86728

List Source: TestAmerica Denver

List Number: 1

Creator: Muniz, Ashley T

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

**Appendix F3 - Laboratory
Analysis Reports -
Groundwater Samples**

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Denver

4955 Yarrow Street

Arvada, CO 80002

Tel: (303)736-0100

TestAmerica Job ID: 280-85740-1

Client Project/Site: Adams County Shooting Range

For:

Quantum Water & Environment

1746 Cole Boulevard, Suite 340

Lakewood, Colorado 80401

Attn: Mr. John Dellaport



Authorized for release by:

8/1/2016 3:53:09 PM

Stephanie Kupper, Project Manager I

(303)736-0182

stephanie.kupper@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD is outside acceptance limits.
X	Surrogate is outside control limits
B	Compound was found in the blank and sample.

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Job ID: 280-85740-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: Quantum Water & Environment

Project: Adams County Shooting Range

Report Number: 280-85740-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 7/19/2016 at 10:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.8° C.

The laboratory received two sets of VOA vials for sample AC-MW5; one set had Rinse 1 on cap - those vials were logged with sample Rinse 1, since that sample was missing VOA volume.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples AC-MW5 (280-85740-1), DUPE1 (280-85740-2), RINSE1 (280-85740-3) and MW-H05 (280-85740-4) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 07/29/2016.

Methylene Chloride was detected in method blank MB 280-335587/6 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

4-Bromofluorobenzene (Surr) failed the surrogate recovery criteria high for RINSE1 (280-85740-3). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Trichlorofluoromethane failed the recovery criteria high for LCS 280-335587/4. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL METALS

Samples AC-MW5 (280-85740-1), DUPE1 (280-85740-2), RINSE1 (280-85740-3) and MW-H05 (280-85740-4) were analyzed for total metals in accordance with EPA SW-846 Method 6010B. The samples were prepared on 07/26/2016 and analyzed on 07/28/2016 and 07/29/2016.

Sodium was detected in method blank MB 280-334753/1-A at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Sodium failed the recovery criteria high for the MS and MSD of sample DUPE1 (280-85740-2) in batch 280-335634. The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. Refer to the QC report for details.

Case Narrative

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Job ID: 280-85740-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

The continuing calibration verification (CCV) associated with batch 280-335634 recovered above the upper control limit for Na. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data have been reported.

The instrument blank for analytical batch 280-335634 contained Na greater than one-half the reporting limit (RL), and was not re-analyzed because the samples were greater than 10x the blank. The data have been qualified and reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL METALS (ICPMS)

Samples AC-MW5 (280-85740-1), DUPE1 (280-85740-2), RINSE1 (280-85740-3) and MW-H05 (280-85740-4) were analyzed for total metals (ICPMS) in accordance with SW846 6020A. The samples were prepared and analyzed on 07/25/2016.

Antimony failed the recovery criteria low for the MS of sample AC-MW5 (280-85740-1) in batch 280-335117. Several analytes failed the recovery criteria low for the MSD of sample AC-MW5 (280-85740-1) in batch 280-335117. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY

Samples AC-MW5 (280-85740-1), DUPE1 (280-85740-2), RINSE1 (280-85740-3) and MW-H05 (280-85740-4) were analyzed for Alkalinity in accordance with SM20 2320B. The samples were analyzed on 07/20/2016.

Alkalinity was detected in method blank MB 280-334393/31 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Alkalinity and Carbonate Alkalinity as CaCO₃ were detected in method blank MB 280-334393/5 at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ANIONS (28 DAYS)

Samples AC-MW5 (280-85740-1), DUPE1 (280-85740-2), RINSE1 (280-85740-3) and MW-H05 (280-85740-4) were analyzed for anions (28 days) in accordance with EPA Method 300.0. The samples were analyzed on 07/19/2016.

Samples AC-MW5 (280-85740-1)[2X], AC-MW5 (280-85740-1)[50X], DUPE1 (280-85740-2)[2X], DUPE1 (280-85740-2)[50X] and MW-H05 (280-85740-4)[50X] required dilution prior to analysis due to the Matrix Conductivity Threshold (MCT) of the instrument. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ANIONS (48 HOURS)

Samples AC-MW5 (280-85740-1), DUPE1 (280-85740-2), RINSE1 (280-85740-3) and MW-H05 (280-85740-4) were analyzed for anions (48 hours) in accordance with EPA Method 300.0. The samples were analyzed on 07/19/2016.

Samples AC-MW5 (280-85740-1)[2X], DUPE1 (280-85740-2)[2X] and MW-H05 (280-85740-4)[2X] required dilution prior to analysis due to the Matrix Conductivity Threshold (MCT) of the instrument. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Client Sample ID: AC-MW5

Lab Sample ID: 280-85740-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Acetone	2.4	J	10	1.9	ug/L	1			8260B	Total/NA
Calcium	370000		200	35	ug/L	1			6010B	Total/NA
Magnesium	85000		200	11	ug/L	1			6010B	Total/NA
Potassium	8900		3000	240	ug/L	1			6010B	Total/NA
Sodium	1500000	B	1000	92	ug/L	1			6010B	Total/NA
Antimony	0.92	J F1	2.0	0.40	ug/L	1			6020A	Total/NA
Arsenic	0.79	J	5.0	0.33	ug/L	1			6020A	Total/NA
Barium	56	F1	1.0	0.29	ug/L	1			6020A	Total/NA
Beryllium	0.18	J	1.0	0.080	ug/L	1			6020A	Total/NA
Chromium	3.8	F1	2.0	0.50	ug/L	1			6020A	Total/NA
Cobalt	2.4	F1	1.0	0.054	ug/L	1			6020A	Total/NA
Copper	2.6	F1	2.0	0.56	ug/L	1			6020A	Total/NA
Lead	1.6		1.0	0.18	ug/L	1			6020A	Total/NA
Nickel	2.7	F1	2.0	0.30	ug/L	1			6020A	Total/NA
Selenium	31		5.0	0.70	ug/L	1			6020A	Total/NA
Silver	0.057	J	5.0	0.033	ug/L	1			6020A	Total/NA
Thallium	0.073	J F1	1.0	0.050	ug/L	1			6020A	Total/NA
Vanadium	11	F1	5.0	0.50	ug/L	1			6020A	Total/NA
Zinc	15	F1	10	2.0	ug/L	1			6020A	Total/NA
Chloride	190		6.0	0.51	mg/L	2			300.0	Total/NA
Nitrate as N	5.8		1.0	0.084	mg/L	2			300.0	Total/NA
Sulfate	3700		250	12	mg/L	50			300.0	Total/NA
Alkalinity	320	B	5.0	1.1	mg/L	1			SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	320		5.0	1.1	mg/L	1			SM 2320B	Total/NA

Client Sample ID: DUPE1

Lab Sample ID: 280-85740-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Calcium	350000		200	35	ug/L	1			6010B	Total/NA
Magnesium	82000		200	11	ug/L	1			6010B	Total/NA
Potassium	8900		3000	240	ug/L	1			6010B	Total/NA
Sodium	1500000	B	1000	92	ug/L	1			6010B	Total/NA
Antimony	0.69	J	2.0	0.40	ug/L	1			6020A	Total/NA
Arsenic	1.1	J	5.0	0.33	ug/L	1			6020A	Total/NA
Barium	78		1.0	0.29	ug/L	1			6020A	Total/NA
Beryllium	0.52	J	1.0	0.080	ug/L	1			6020A	Total/NA
Chromium	6.2		2.0	0.50	ug/L	1			6020A	Total/NA
Cobalt	5.5		1.0	0.054	ug/L	1			6020A	Total/NA
Copper	4.7		2.0	0.56	ug/L	1			6020A	Total/NA
Lead	3.8		1.0	0.18	ug/L	1			6020A	Total/NA
Nickel	4.7		2.0	0.30	ug/L	1			6020A	Total/NA
Selenium	32		5.0	0.70	ug/L	1			6020A	Total/NA
Silver	0.056	J	5.0	0.033	ug/L	1			6020A	Total/NA
Thallium	0.13	J	1.0	0.050	ug/L	1			6020A	Total/NA
Vanadium	19		5.0	0.50	ug/L	1			6020A	Total/NA
Zinc	29		10	2.0	ug/L	1			6020A	Total/NA
Chloride	190		6.0	0.51	mg/L	2			300.0	Total/NA
Nitrate as N	6.3		1.0	0.084	mg/L	2			300.0	Total/NA
Sulfate	3800		250	12	mg/L	50			300.0	Total/NA
Alkalinity	320	B	5.0	1.1	mg/L	1			SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Detection Summary

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Client Sample ID: DUPE1 (Continued)

Lab Sample ID: 280-85740-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bicarbonate Alkalinity as CaCO3	320		5.0	1.1	mg/L	1		SM 2320B	Total/NA

Client Sample ID: RINSE1

Lab Sample ID: 280-85740-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	4.0	J	10	1.9	ug/L	1		8260B	Total/NA
Carbon disulfide	0.54	J	2.0	0.45	ug/L	1		8260B	Total/NA
Calcium	300		200	35	ug/L	1		6010B	Total/NA
Magnesium	260		200	11	ug/L	1		6010B	Total/NA
Sodium	1100	B	1000	92	ug/L	1		6010B	Total/NA
Barium	7.2		1.0	0.29	ug/L	1		6020A	Total/NA
Chromium	1.1	J	2.0	0.50	ug/L	1		6020A	Total/NA
Cobalt	0.29	J	1.0	0.054	ug/L	1		6020A	Total/NA
Lead	0.30	J	1.0	0.18	ug/L	1		6020A	Total/NA
Nickel	0.68	J	2.0	0.30	ug/L	1		6020A	Total/NA
Vanadium	1.8	J	5.0	0.50	ug/L	1		6020A	Total/NA
Zinc	8.4	J	10	2.0	ug/L	1		6020A	Total/NA
Chloride	0.59	J	3.0	0.25	mg/L	1		300.0	Total/NA
Sulfate	0.50	J	5.0	0.23	mg/L	1		300.0	Total/NA
Alkalinity	1.8	J B	5.0	1.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	1.8	J	5.0	1.1	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-H05

Lab Sample ID: 280-85740-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	20		1.0	0.15	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	0.33	J	1.0	0.16	ug/L	1		8260B	Total/NA
1,2-Dichloroethane	0.20	J	1.0	0.13	ug/L	1		8260B	Total/NA
1,2-Dichloropropane	0.58	J	1.0	0.18	ug/L	1		8260B	Total/NA
Methylene Chloride	0.32	J B	2.0	0.32	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	0.36	J	1.0	0.15	ug/L	1		8260B	Total/NA
Trichloroethene	0.20	J	1.0	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	1.3		1.0	0.10	ug/L	1		8260B	Total/NA
Calcium	560000		200	35	ug/L	1		6010B	Total/NA
Magnesium	120000		200	11	ug/L	1		6010B	Total/NA
Potassium	2500	J	3000	240	ug/L	1		6010B	Total/NA
Sodium	1200000	B	1000	92	ug/L	1		6010B	Total/NA
Antimony	0.88	J	2.0	0.40	ug/L	1		6020A	Total/NA
Arsenic	0.80	J	5.0	0.33	ug/L	1		6020A	Total/NA
Barium	45		1.0	0.29	ug/L	1		6020A	Total/NA
Cadmium	0.46	J	1.0	0.27	ug/L	1		6020A	Total/NA
Chromium	0.74	J	2.0	0.50	ug/L	1		6020A	Total/NA
Cobalt	2.0		1.0	0.054	ug/L	1		6020A	Total/NA
Copper	4.7		2.0	0.56	ug/L	1		6020A	Total/NA
Lead	15		1.0	0.18	ug/L	1		6020A	Total/NA
Nickel	25		2.0	0.30	ug/L	1		6020A	Total/NA
Selenium	4.0	J	5.0	0.70	ug/L	1		6020A	Total/NA
Silver	0.056	J	5.0	0.033	ug/L	1		6020A	Total/NA
Vanadium	1.6	J	5.0	0.50	ug/L	1		6020A	Total/NA
Zinc	9.7	J	10	2.0	ug/L	1		6020A	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Detection Summary

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Client Sample ID: MW-H05 (Continued)

Lab Sample ID: 280-85740-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	730		150	13	mg/L	50		300.0	Total/NA
Nitrate as N	0.32	J	1.0	0.084	mg/L	2		300.0	Total/NA
Sulfate	4300		250	12	mg/L	50		300.0	Total/NA
Alkalinity	840	B	5.0	1.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	840		5.0	1.1	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Method Summary

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
6010B	Metals (ICP)	SW846	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL DEN
300.0	Anions, Ion Chromatography	MCAWW	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-85740-1	AC-MW5	Water	07/18/16 12:10	07/19/16 10:25
280-85740-2	DUPE1	Water	07/18/16 12:10	07/19/16 10:25
280-85740-3	RINSE1	Water	07/18/16 12:10	07/19/16 10:25
280-85740-4	MW-H05	Water	07/18/16 17:30	07/19/16 10:25

Client Sample Results

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: AC-MW5
Date Collected: 07/18/16 12:10
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	2.4	J	10	1.9	ug/L			07/29/16 04:01	1
Acrylonitrile	ND		20	1.4	ug/L			07/29/16 04:01	1
Benzene	ND		1.0	0.16	ug/L			07/29/16 04:01	1
Bromochloromethane	ND		1.0	0.10	ug/L			07/29/16 04:01	1
Bromodichloromethane	ND		1.0	0.17	ug/L			07/29/16 04:01	1
Bromoform	ND		1.0	0.19	ug/L			07/29/16 04:01	1
Bromomethane	ND		2.0	0.21	ug/L			07/29/16 04:01	1
2-Butanone (MEK)	ND		6.0	2.0	ug/L			07/29/16 04:01	1
Carbon disulfide	ND		2.0	0.45	ug/L			07/29/16 04:01	1
Carbon tetrachloride	ND		1.0	0.19	ug/L			07/29/16 04:01	1
Chlorobenzene	ND		1.0	0.17	ug/L			07/29/16 04:01	1
Chloroethane	ND		2.0	0.41	ug/L			07/29/16 04:01	1
Chloroform	ND		1.0	0.16	ug/L			07/29/16 04:01	1
Chloromethane	ND		2.0	0.30	ug/L			07/29/16 04:01	1
cis-1,2-Dichloroethene	ND		1.0	0.15	ug/L			07/29/16 04:01	1
cis-1,3-Dichloropropene	ND		1.0	0.16	ug/L			07/29/16 04:01	1
Cyclohexane	ND		2.0	0.28	ug/L			07/29/16 04:01	1
Dibromochloromethane	ND		1.0	0.17	ug/L			07/29/16 04:01	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.47	ug/L			07/29/16 04:01	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			07/29/16 04:01	1
Dibromomethane	ND		1.0	0.17	ug/L			07/29/16 04:01	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			07/29/16 04:01	1
1,3-Dichlorobenzene	ND		1.0	0.13	ug/L			07/29/16 04:01	1
1,4-Dichlorobenzene	ND		1.0	0.16	ug/L			07/29/16 04:01	1
Dichlorodifluoromethane	ND		2.0	0.31	ug/L			07/29/16 04:01	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			07/29/16 04:01	1
1,2-Dichloroethane	ND		1.0	0.13	ug/L			07/29/16 04:01	1
1,1-Dichloroethene	ND		1.0	0.23	ug/L			07/29/16 04:01	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			07/29/16 04:01	1
1,4-Dioxane	ND		200	57	ug/L			07/29/16 04:01	1
Ethylbenzene	ND		1.0	0.16	ug/L			07/29/16 04:01	1
2-Hexanone	ND		5.0	1.7	ug/L			07/29/16 04:01	1
Iodomethane	ND		1.0	0.23	ug/L			07/29/16 04:01	1
Isopropylbenzene	ND		1.0	0.19	ug/L			07/29/16 04:01	1
Methyl acetate	ND		5.0	1.6	ug/L			07/29/16 04:01	1
Methylcyclohexane	ND		1.0	0.36	ug/L			07/29/16 04:01	1
Methylene Chloride	ND		2.0	0.32	ug/L			07/29/16 04:01	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.98	ug/L			07/29/16 04:01	1
Methyl tert-butyl ether	ND		5.0	0.25	ug/L			07/29/16 04:01	1
m-Xylene & p-Xylene	ND		2.0	0.34	ug/L			07/29/16 04:01	1
o-Xylene	ND		1.0	0.19	ug/L			07/29/16 04:01	1
Styrene	ND		1.0	0.17	ug/L			07/29/16 04:01	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			07/29/16 04:01	1
Tetrachloroethene	ND		1.0	0.20	ug/L			07/29/16 04:01	1
Toluene	ND		1.0	0.17	ug/L			07/29/16 04:01	1
trans-1,4-Dichloro-2-butene	ND		3.0	0.80	ug/L			07/29/16 04:01	1
trans-1,2-Dichloroethene	ND		1.0	0.15	ug/L			07/29/16 04:01	1
trans-1,3-Dichloropropene	ND		3.0	0.19	ug/L			07/29/16 04:01	1
1,2,3-Trichlorobenzene	ND		1.0	0.21	ug/L			07/29/16 04:01	1

TestAmerica Denver

Client Sample Results

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: AC-MW5
Date Collected: 07/18/16 12:10
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		1.0	0.21	ug/L			07/29/16 04:01	1
1,1,1-Trichloroethane	ND		1.0	0.16	ug/L			07/29/16 04:01	1
1,1,2-Trichloroethane	ND		1.0	0.27	ug/L			07/29/16 04:01	1
Trichloroethene	ND		1.0	0.16	ug/L			07/29/16 04:01	1
Trichlorofluoromethane	ND	*	2.0	0.29	ug/L			07/29/16 04:01	1
1,1,2-Trichlorotrifluoroethane	ND		3.0	0.42	ug/L			07/29/16 04:01	1
Vinyl chloride	ND		1.0	0.10	ug/L			07/29/16 04:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		78 - 120		07/29/16 04:01	1
Dibromofluoromethane (Surr)	93		77 - 120		07/29/16 04:01	1
1,2-Dichloroethane-d4 (Surr)	83		70 - 127		07/29/16 04:01	1
Toluene-d8 (Surr)	111		80 - 125		07/29/16 04:01	1

Client Sample ID: DUPE1
Date Collected: 07/18/16 12:10
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.9	ug/L			07/29/16 04:20	1
Acrylonitrile	ND		20	1.4	ug/L			07/29/16 04:20	1
Benzene	ND		1.0	0.16	ug/L			07/29/16 04:20	1
Bromochloromethane	ND		1.0	0.10	ug/L			07/29/16 04:20	1
Bromodichloromethane	ND		1.0	0.17	ug/L			07/29/16 04:20	1
Bromoform	ND		1.0	0.19	ug/L			07/29/16 04:20	1
Bromomethane	ND		2.0	0.21	ug/L			07/29/16 04:20	1
2-Butanone (MEK)	ND		6.0	2.0	ug/L			07/29/16 04:20	1
Carbon disulfide	ND		2.0	0.45	ug/L			07/29/16 04:20	1
Carbon tetrachloride	ND		1.0	0.19	ug/L			07/29/16 04:20	1
Chlorobenzene	ND		1.0	0.17	ug/L			07/29/16 04:20	1
Chloroethane	ND		2.0	0.41	ug/L			07/29/16 04:20	1
Chloroform	ND		1.0	0.16	ug/L			07/29/16 04:20	1
Chloromethane	ND		2.0	0.30	ug/L			07/29/16 04:20	1
cis-1,2-Dichloroethene	ND		1.0	0.15	ug/L			07/29/16 04:20	1
cis-1,3-Dichloropropene	ND		1.0	0.16	ug/L			07/29/16 04:20	1
Cyclohexane	ND		2.0	0.28	ug/L			07/29/16 04:20	1
Dibromochloromethane	ND		1.0	0.17	ug/L			07/29/16 04:20	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.47	ug/L			07/29/16 04:20	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			07/29/16 04:20	1
Dibromomethane	ND		1.0	0.17	ug/L			07/29/16 04:20	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			07/29/16 04:20	1
1,3-Dichlorobenzene	ND		1.0	0.13	ug/L			07/29/16 04:20	1
1,4-Dichlorobenzene	ND		1.0	0.16	ug/L			07/29/16 04:20	1
Dichlorodifluoromethane	ND		2.0	0.31	ug/L			07/29/16 04:20	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			07/29/16 04:20	1
1,2-Dichloroethane	ND		1.0	0.13	ug/L			07/29/16 04:20	1
1,1-Dichloroethene	ND		1.0	0.23	ug/L			07/29/16 04:20	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			07/29/16 04:20	1
1,4-Dioxane	ND		200	57	ug/L			07/29/16 04:20	1
Ethylbenzene	ND		1.0	0.16	ug/L			07/29/16 04:20	1
2-Hexanone	ND		5.0	1.7	ug/L			07/29/16 04:20	1

TestAmerica Denver

Client Sample Results

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: DUPE1
Date Collected: 07/18/16 12:10
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iodomethane	ND		1.0	0.23	ug/L			07/29/16 04:20	1
Isopropylbenzene	ND		1.0	0.19	ug/L			07/29/16 04:20	1
Methyl acetate	ND		5.0	1.6	ug/L			07/29/16 04:20	1
Methylcyclohexane	ND		1.0	0.36	ug/L			07/29/16 04:20	1
Methylene Chloride	ND		2.0	0.32	ug/L			07/29/16 04:20	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.98	ug/L			07/29/16 04:20	1
Methyl tert-butyl ether	ND		5.0	0.25	ug/L			07/29/16 04:20	1
m-Xylene & p-Xylene	ND		2.0	0.34	ug/L			07/29/16 04:20	1
o-Xylene	ND		1.0	0.19	ug/L			07/29/16 04:20	1
Styrene	ND		1.0	0.17	ug/L			07/29/16 04:20	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			07/29/16 04:20	1
Tetrachloroethene	ND		1.0	0.20	ug/L			07/29/16 04:20	1
Toluene	ND		1.0	0.17	ug/L			07/29/16 04:20	1
trans-1,4-Dichloro-2-butene	ND		3.0	0.80	ug/L			07/29/16 04:20	1
trans-1,2-Dichloroethene	ND		1.0	0.15	ug/L			07/29/16 04:20	1
trans-1,3-Dichloropropene	ND		3.0	0.19	ug/L			07/29/16 04:20	1
1,2,3-Trichlorobenzene	ND		1.0	0.21	ug/L			07/29/16 04:20	1
1,2,4-Trichlorobenzene	ND		1.0	0.21	ug/L			07/29/16 04:20	1
1,1,1-Trichloroethane	ND		1.0	0.16	ug/L			07/29/16 04:20	1
1,1,2-Trichloroethane	ND		1.0	0.27	ug/L			07/29/16 04:20	1
Trichloroethene	ND		1.0	0.16	ug/L			07/29/16 04:20	1
Trichlorofluoromethane	ND *		2.0	0.29	ug/L			07/29/16 04:20	1
1,1,2-Trichlorotrifluoroethane	ND		3.0	0.42	ug/L			07/29/16 04:20	1
Vinyl chloride	ND		1.0	0.10	ug/L			07/29/16 04:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	113		78 - 120		07/29/16 04:20	1
Dibromofluoromethane (Surr)	91		77 - 120		07/29/16 04:20	1
1,2-Dichloroethane-d4 (Surr)	81		70 - 127		07/29/16 04:20	1
Toluene-d8 (Surr)	110		80 - 125		07/29/16 04:20	1

Client Sample ID: RINSE1
Date Collected: 07/18/16 12:10
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	4.0	J	10	1.9	ug/L			07/29/16 04:40	1
Acrylonitrile	ND		20	1.4	ug/L			07/29/16 04:40	1
Benzene	ND		1.0	0.16	ug/L			07/29/16 04:40	1
Bromochloromethane	ND		1.0	0.10	ug/L			07/29/16 04:40	1
Bromodichloromethane	ND		1.0	0.17	ug/L			07/29/16 04:40	1
Bromoform	ND		1.0	0.19	ug/L			07/29/16 04:40	1
Bromomethane	ND		2.0	0.21	ug/L			07/29/16 04:40	1
2-Butanone (MEK)	ND		6.0	2.0	ug/L			07/29/16 04:40	1
Carbon disulfide	0.54	J	2.0	0.45	ug/L			07/29/16 04:40	1
Carbon tetrachloride	ND		1.0	0.19	ug/L			07/29/16 04:40	1
Chlorobenzene	ND		1.0	0.17	ug/L			07/29/16 04:40	1
Chloroethane	ND		2.0	0.41	ug/L			07/29/16 04:40	1
Chloroform	ND		1.0	0.16	ug/L			07/29/16 04:40	1
Chloromethane	ND		2.0	0.30	ug/L			07/29/16 04:40	1
cis-1,2-Dichloroethene	ND		1.0	0.15	ug/L			07/29/16 04:40	1

TestAmerica Denver

Client Sample Results

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: RINSE1
Date Collected: 07/18/16 12:10
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		1.0	0.16	ug/L			07/29/16 04:40	1
Cyclohexane	ND		2.0	0.28	ug/L			07/29/16 04:40	1
Dibromochloromethane	ND		1.0	0.17	ug/L			07/29/16 04:40	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.47	ug/L			07/29/16 04:40	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			07/29/16 04:40	1
Dibromomethane	ND		1.0	0.17	ug/L			07/29/16 04:40	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			07/29/16 04:40	1
1,3-Dichlorobenzene	ND		1.0	0.13	ug/L			07/29/16 04:40	1
1,4-Dichlorobenzene	ND		1.0	0.16	ug/L			07/29/16 04:40	1
Dichlorodifluoromethane	ND		2.0	0.31	ug/L			07/29/16 04:40	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			07/29/16 04:40	1
1,2-Dichloroethane	ND		1.0	0.13	ug/L			07/29/16 04:40	1
1,1-Dichloroethene	ND		1.0	0.23	ug/L			07/29/16 04:40	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			07/29/16 04:40	1
1,4-Dioxane	ND		200	57	ug/L			07/29/16 04:40	1
Ethylbenzene	ND		1.0	0.16	ug/L			07/29/16 04:40	1
2-Hexanone	ND		5.0	1.7	ug/L			07/29/16 04:40	1
Iodomethane	ND		1.0	0.23	ug/L			07/29/16 04:40	1
Isopropylbenzene	ND		1.0	0.19	ug/L			07/29/16 04:40	1
Methyl acetate	ND		5.0	1.6	ug/L			07/29/16 04:40	1
Methylcyclohexane	ND		1.0	0.36	ug/L			07/29/16 04:40	1
Methylene Chloride	ND		2.0	0.32	ug/L			07/29/16 04:40	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.98	ug/L			07/29/16 04:40	1
Methyl tert-butyl ether	ND		5.0	0.25	ug/L			07/29/16 04:40	1
m-Xylene & p-Xylene	ND		2.0	0.34	ug/L			07/29/16 04:40	1
o-Xylene	ND		1.0	0.19	ug/L			07/29/16 04:40	1
Styrene	ND		1.0	0.17	ug/L			07/29/16 04:40	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			07/29/16 04:40	1
Tetrachloroethene	ND		1.0	0.20	ug/L			07/29/16 04:40	1
Toluene	ND		1.0	0.17	ug/L			07/29/16 04:40	1
trans-1,4-Dichloro-2-butene	ND		3.0	0.80	ug/L			07/29/16 04:40	1
trans-1,2-Dichloroethene	ND		1.0	0.15	ug/L			07/29/16 04:40	1
trans-1,3-Dichloropropene	ND		3.0	0.19	ug/L			07/29/16 04:40	1
1,2,3-Trichlorobenzene	ND		1.0	0.21	ug/L			07/29/16 04:40	1
1,2,4-Trichlorobenzene	ND		1.0	0.21	ug/L			07/29/16 04:40	1
1,1,1-Trichloroethane	ND		1.0	0.16	ug/L			07/29/16 04:40	1
1,1,2-Trichloroethane	ND		1.0	0.27	ug/L			07/29/16 04:40	1
Trichloroethene	ND		1.0	0.16	ug/L			07/29/16 04:40	1
Trichlorofluoromethane	ND *		2.0	0.29	ug/L			07/29/16 04:40	1
1,1,2-Trichlorotrifluoroethane	ND		3.0	0.42	ug/L			07/29/16 04:40	1
Vinyl chloride	ND		1.0	0.10	ug/L			07/29/16 04:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	125	X	78 - 120		07/29/16 04:40	1
Dibromofluoromethane (Surr)	97		77 - 120		07/29/16 04:40	1
1,2-Dichloroethane-d4 (Surr)	88		70 - 127		07/29/16 04:40	1
Toluene-d8 (Surr)	113		80 - 125		07/29/16 04:40	1

TestAmerica Denver

Client Sample Results

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: MW-H05
Date Collected: 07/18/16 17:30
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.9	ug/L			07/29/16 04:59	1
Acrylonitrile	ND		20	1.4	ug/L			07/29/16 04:59	1
Benzene	ND		1.0	0.16	ug/L			07/29/16 04:59	1
Bromochloromethane	ND		1.0	0.10	ug/L			07/29/16 04:59	1
Bromodichloromethane	ND		1.0	0.17	ug/L			07/29/16 04:59	1
Bromoform	ND		1.0	0.19	ug/L			07/29/16 04:59	1
Bromomethane	ND		2.0	0.21	ug/L			07/29/16 04:59	1
2-Butanone (MEK)	ND		6.0	2.0	ug/L			07/29/16 04:59	1
Carbon disulfide	ND		2.0	0.45	ug/L			07/29/16 04:59	1
Carbon tetrachloride	ND		1.0	0.19	ug/L			07/29/16 04:59	1
Chlorobenzene	ND		1.0	0.17	ug/L			07/29/16 04:59	1
Chloroethane	ND		2.0	0.41	ug/L			07/29/16 04:59	1
Chloroform	ND		1.0	0.16	ug/L			07/29/16 04:59	1
Chloromethane	ND		2.0	0.30	ug/L			07/29/16 04:59	1
cis-1,2-Dichloroethene	0.20		1.0	0.15	ug/L			07/29/16 04:59	1
cis-1,3-Dichloropropene	ND		1.0	0.16	ug/L			07/29/16 04:59	1
Cyclohexane	ND		2.0	0.28	ug/L			07/29/16 04:59	1
Dibromochloromethane	ND		1.0	0.17	ug/L			07/29/16 04:59	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.47	ug/L			07/29/16 04:59	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			07/29/16 04:59	1
Dibromomethane	ND		1.0	0.17	ug/L			07/29/16 04:59	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			07/29/16 04:59	1
1,3-Dichlorobenzene	ND		1.0	0.13	ug/L			07/29/16 04:59	1
1,4-Dichlorobenzene	0.33	J	1.0	0.16	ug/L			07/29/16 04:59	1
Dichlorodifluoromethane	ND		2.0	0.31	ug/L			07/29/16 04:59	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			07/29/16 04:59	1
1,2-Dichloroethane	0.20	J	1.0	0.13	ug/L			07/29/16 04:59	1
1,1-Dichloroethene	ND		1.0	0.23	ug/L			07/29/16 04:59	1
1,2-Dichloropropane	0.58	J	1.0	0.18	ug/L			07/29/16 04:59	1
1,4-Dioxane	ND		200	57	ug/L			07/29/16 04:59	1
Ethylbenzene	ND		1.0	0.16	ug/L			07/29/16 04:59	1
2-Hexanone	ND		5.0	1.7	ug/L			07/29/16 04:59	1
Iodomethane	ND		1.0	0.23	ug/L			07/29/16 04:59	1
Isopropylbenzene	ND		1.0	0.19	ug/L			07/29/16 04:59	1
Methyl acetate	ND		5.0	1.6	ug/L			07/29/16 04:59	1
Methylcyclohexane	ND		1.0	0.36	ug/L			07/29/16 04:59	1
Methylene Chloride	0.32	J B	2.0	0.32	ug/L			07/29/16 04:59	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.98	ug/L			07/29/16 04:59	1
Methyl tert-butyl ether	ND		5.0	0.25	ug/L			07/29/16 04:59	1
m-Xylene & p-Xylene	ND		2.0	0.34	ug/L			07/29/16 04:59	1
o-Xylene	ND		1.0	0.19	ug/L			07/29/16 04:59	1
Styrene	ND		1.0	0.17	ug/L			07/29/16 04:59	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			07/29/16 04:59	1
Tetrachloroethene	ND		1.0	0.20	ug/L			07/29/16 04:59	1
Toluene	ND		1.0	0.17	ug/L			07/29/16 04:59	1
trans-1,4-Dichloro-2-butene	ND		3.0	0.80	ug/L			07/29/16 04:59	1
trans-1,2-Dichloroethene	0.36	J	1.0	0.15	ug/L			07/29/16 04:59	1
trans-1,3-Dichloropropene	ND		3.0	0.19	ug/L			07/29/16 04:59	1
1,2,3-Trichlorobenzene	ND		1.0	0.21	ug/L			07/29/16 04:59	1

TestAmerica Denver

Client Sample Results

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: MW-H05
Date Collected: 07/18/16 17:30
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		1.0	0.21	ug/L			07/29/16 04:59	1
1,1,1-Trichloroethane	ND		1.0	0.16	ug/L			07/29/16 04:59	1
1,1,2-Trichloroethane	ND		1.0	0.27	ug/L			07/29/16 04:59	1
Trichloroethene	0.20	J	1.0	0.16	ug/L			07/29/16 04:59	1
Trichlorofluoromethane	ND	*	2.0	0.29	ug/L			07/29/16 04:59	1
1,1,2-Trichlorotrifluoroethane	ND		3.0	0.42	ug/L			07/29/16 04:59	1
Vinyl chloride	1.3		1.0	0.10	ug/L			07/29/16 04:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	113		78 - 120		07/29/16 04:59	1
Dibromofluoromethane (Surr)	94		77 - 120		07/29/16 04:59	1
1,2-Dichloroethane-d4 (Surr)	86		70 - 127		07/29/16 04:59	1
Toluene-d8 (Surr)	109		80 - 125		07/29/16 04:59	1

Method: 6010B - Metals (ICP)

Client Sample ID: AC-MW5
Date Collected: 07/18/16 12:10
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	370000		200	35	ug/L		07/26/16 14:20	07/28/16 22:19	1
Magnesium	85000		200	11	ug/L		07/26/16 14:20	07/28/16 22:19	1
Potassium	8900		3000	240	ug/L		07/26/16 14:20	07/28/16 22:19	1
Sodium	1500000	B	1000	92	ug/L		07/26/16 14:20	07/28/16 22:19	1

Client Sample ID: DUPE1
Date Collected: 07/18/16 12:10
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	350000		200	35	ug/L		07/26/16 14:20	07/28/16 22:22	1
Magnesium	82000		200	11	ug/L		07/26/16 14:20	07/28/16 22:22	1
Potassium	8900		3000	240	ug/L		07/26/16 14:20	07/28/16 22:22	1
Sodium	1500000	B	1000	92	ug/L		07/26/16 14:20	07/28/16 22:22	1

Client Sample ID: RINSE1
Date Collected: 07/18/16 12:10
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	300		200	35	ug/L		07/26/16 14:20	07/28/16 22:44	1
Magnesium	260		200	11	ug/L		07/26/16 14:20	07/28/16 22:44	1
Potassium	ND		3000	240	ug/L		07/26/16 14:20	07/28/16 22:44	1
Sodium	1100	B	1000	92	ug/L		07/26/16 14:20	07/29/16 16:47	1

Client Sample ID: MW-H05
Date Collected: 07/18/16 17:30
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	560000		200	35	ug/L		07/26/16 14:20	07/28/16 22:47	1
Magnesium	120000		200	11	ug/L		07/26/16 14:20	07/28/16 22:47	1
Potassium	2500	J	3000	240	ug/L		07/26/16 14:20	07/28/16 22:47	1
Sodium	1200000	B	1000	92	ug/L		07/26/16 14:20	07/28/16 22:47	1

TestAmerica Denver

Client Sample Results

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Method: 6020A - Metals (ICP/MS)

Client Sample ID: AC-MW5
Date Collected: 07/18/16 12:10
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.92	J F1	2.0	0.40	ug/L		07/25/16 08:00	07/25/16 14:10	1
Arsenic	0.79	J	5.0	0.33	ug/L		07/25/16 08:00	07/25/16 14:10	1
Barium	56	F1	1.0	0.29	ug/L		07/25/16 08:00	07/25/16 14:10	1
Beryllium	0.18	J	1.0	0.080	ug/L		07/25/16 08:00	07/25/16 14:10	1
Cadmium	ND		1.0	0.27	ug/L		07/25/16 08:00	07/25/16 14:10	1
Chromium	3.8	F1	2.0	0.50	ug/L		07/25/16 08:00	07/25/16 14:10	1
Cobalt	2.4	F1	1.0	0.054	ug/L		07/25/16 08:00	07/25/16 14:10	1
Copper	2.6	F1	2.0	0.56	ug/L		07/25/16 08:00	07/25/16 14:10	1
Lead	1.6		1.0	0.18	ug/L		07/25/16 08:00	07/25/16 14:10	1
Nickel	2.7	F1	2.0	0.30	ug/L		07/25/16 08:00	07/25/16 14:10	1
Selenium	31		5.0	0.70	ug/L		07/25/16 08:00	07/25/16 14:10	1
Silver	0.057	J	5.0	0.033	ug/L		07/25/16 08:00	07/25/16 14:10	1
Thallium	0.073	J F1	1.0	0.050	ug/L		07/25/16 08:00	07/25/16 14:10	1
Vanadium	11	F1	5.0	0.50	ug/L		07/25/16 08:00	07/25/16 14:10	1
Zinc	15	F1	10	2.0	ug/L		07/25/16 08:00	07/25/16 14:10	1

Client Sample ID: DUPE1
Date Collected: 07/18/16 12:10
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.69	J	2.0	0.40	ug/L		07/25/16 08:00	07/25/16 14:29	1
Arsenic	1.1	J	5.0	0.33	ug/L		07/25/16 08:00	07/25/16 14:29	1
Barium	78		1.0	0.29	ug/L		07/25/16 08:00	07/25/16 14:29	1
Beryllium	0.52	J	1.0	0.080	ug/L		07/25/16 08:00	07/25/16 14:29	1
Cadmium	ND		1.0	0.27	ug/L		07/25/16 08:00	07/25/16 14:29	1
Chromium	6.2		2.0	0.50	ug/L		07/25/16 08:00	07/25/16 14:29	1
Cobalt	5.5		1.0	0.054	ug/L		07/25/16 08:00	07/25/16 14:29	1
Copper	4.7		2.0	0.56	ug/L		07/25/16 08:00	07/25/16 14:29	1
Lead	3.8		1.0	0.18	ug/L		07/25/16 08:00	07/25/16 14:29	1
Nickel	4.7		2.0	0.30	ug/L		07/25/16 08:00	07/25/16 14:29	1
Selenium	32		5.0	0.70	ug/L		07/25/16 08:00	07/25/16 14:29	1
Silver	0.056	J	5.0	0.033	ug/L		07/25/16 08:00	07/25/16 14:29	1
Thallium	0.13	J	1.0	0.050	ug/L		07/25/16 08:00	07/25/16 14:29	1
Vanadium	19		5.0	0.50	ug/L		07/25/16 08:00	07/25/16 14:29	1
Zinc	29		10	2.0	ug/L		07/25/16 08:00	07/25/16 14:29	1

Client Sample ID: RINSE1
Date Collected: 07/18/16 12:10
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0	0.40	ug/L		07/25/16 08:00	07/25/16 14:32	1
Arsenic	ND		5.0	0.33	ug/L		07/25/16 08:00	07/25/16 14:32	1
Barium	7.2		1.0	0.29	ug/L		07/25/16 08:00	07/25/16 14:32	1
Beryllium	ND		1.0	0.080	ug/L		07/25/16 08:00	07/25/16 14:32	1
Cadmium	ND		1.0	0.27	ug/L		07/25/16 08:00	07/25/16 14:32	1
Chromium	1.1	J	2.0	0.50	ug/L		07/25/16 08:00	07/25/16 14:32	1
Cobalt	0.29	J	1.0	0.054	ug/L		07/25/16 08:00	07/25/16 14:32	1
Copper	ND		2.0	0.56	ug/L		07/25/16 08:00	07/25/16 14:32	1
Lead	0.30	J	1.0	0.18	ug/L		07/25/16 08:00	07/25/16 14:32	1
Nickel	0.68	J	2.0	0.30	ug/L		07/25/16 08:00	07/25/16 14:32	1

TestAmerica Denver

Client Sample Results

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Method: 6020A - Metals (ICP/MS) (Continued)

Client Sample ID: RINSE1
Date Collected: 07/18/16 12:10
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		5.0	0.70	ug/L		07/25/16 08:00	07/25/16 14:32	1
Silver	ND		5.0	0.033	ug/L		07/25/16 08:00	07/25/16 14:32	1
Thallium	ND		1.0	0.050	ug/L		07/25/16 08:00	07/25/16 14:32	1
Vanadium	1.8	J	5.0	0.50	ug/L		07/25/16 08:00	07/25/16 14:32	1
Zinc	8.4	J	10	2.0	ug/L		07/25/16 08:00	07/25/16 14:32	1

Client Sample ID: MW-H05
Date Collected: 07/18/16 17:30
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.88	J	2.0	0.40	ug/L		07/25/16 08:00	07/25/16 14:36	1
Arsenic	0.80	J	5.0	0.33	ug/L		07/25/16 08:00	07/25/16 14:36	1
Barium	45		1.0	0.29	ug/L		07/25/16 08:00	07/25/16 14:36	1
Beryllium	ND		1.0	0.080	ug/L		07/25/16 08:00	07/25/16 14:36	1
Cadmium	0.46	J	1.0	0.27	ug/L		07/25/16 08:00	07/25/16 14:36	1
Chromium	0.74	J	2.0	0.50	ug/L		07/25/16 08:00	07/25/16 14:36	1
Cobalt	2.0		1.0	0.054	ug/L		07/25/16 08:00	07/25/16 14:36	1
Copper	4.7		2.0	0.56	ug/L		07/25/16 08:00	07/25/16 14:36	1
Lead	15		1.0	0.18	ug/L		07/25/16 08:00	07/25/16 14:36	1
Nickel	25		2.0	0.30	ug/L		07/25/16 08:00	07/25/16 14:36	1
Selenium	4.0	J	5.0	0.70	ug/L		07/25/16 08:00	07/25/16 14:36	1
Silver	0.056	J	5.0	0.033	ug/L		07/25/16 08:00	07/25/16 14:36	1
Thallium	ND		1.0	0.050	ug/L		07/25/16 08:00	07/25/16 14:36	1
Vanadium	1.6	J	5.0	0.50	ug/L		07/25/16 08:00	07/25/16 14:36	1
Zinc	9.7	J	10	2.0	ug/L		07/25/16 08:00	07/25/16 14:36	1

General Chemistry

Client Sample ID: AC-MW5
Date Collected: 07/18/16 12:10
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	190		6.0	0.51	mg/L			07/19/16 14:19	2
Nitrate as N	5.8		1.0	0.084	mg/L			07/19/16 14:19	2
Nitrite as N	ND		1.0	0.098	mg/L			07/19/16 14:19	2
Sulfate	3700		250	12	mg/L			07/19/16 20:55	50
Alkalinity	320	B	5.0	1.1	mg/L			07/20/16 09:44	1
Bicarbonate Alkalinity as CaCO3	320		5.0	1.1	mg/L			07/20/16 09:44	1
Carbonate Alkalinity as CaCO3	ND		5.0	1.1	mg/L			07/20/16 09:44	1

Client Sample ID: DUPE1
Date Collected: 07/18/16 12:10
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	190		6.0	0.51	mg/L			07/19/16 14:39	2
Nitrate as N	6.3		1.0	0.084	mg/L			07/19/16 14:39	2
Nitrite as N	ND		1.0	0.098	mg/L			07/19/16 14:39	2
Sulfate	3800		250	12	mg/L			07/19/16 21:15	50
Alkalinity	320	B	5.0	1.1	mg/L			07/20/16 09:50	1
Bicarbonate Alkalinity as CaCO3	320		5.0	1.1	mg/L			07/20/16 09:50	1

TestAmerica Denver

Client Sample Results

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

General Chemistry (Continued)

Client Sample ID: DUPE1
Date Collected: 07/18/16 12:10
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbonate Alkalinity as CaCO3	ND		5.0	1.1	mg/L			07/20/16 09:50	1

Client Sample ID: RINSE1
Date Collected: 07/18/16 12:10
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.59	J	3.0	0.25	mg/L			07/19/16 21:35	1
Nitrate as N	ND		0.50	0.042	mg/L			07/19/16 21:35	1
Nitrite as N	ND		0.50	0.049	mg/L			07/19/16 21:35	1
Sulfate	0.50	J	5.0	0.23	mg/L			07/19/16 21:35	1
Alkalinity	1.8	J B	5.0	1.1	mg/L			07/20/16 09:56	1
Bicarbonate Alkalinity as CaCO3	1.8	J	5.0	1.1	mg/L			07/20/16 09:56	1
Carbonate Alkalinity as CaCO3	ND		5.0	1.1	mg/L			07/20/16 09:56	1

Client Sample ID: MW-H05
Date Collected: 07/18/16 17:30
Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	730		150	13	mg/L			07/19/16 21:55	50
Nitrate as N	0.32	J	1.0	0.084	mg/L			07/19/16 15:19	2
Nitrite as N	ND		1.0	0.098	mg/L			07/19/16 15:19	2
Sulfate	4300		250	12	mg/L			07/19/16 21:55	50
Alkalinity	840	B	5.0	1.1	mg/L			07/20/16 10:04	1
Bicarbonate Alkalinity as CaCO3	840		5.0	1.1	mg/L			07/20/16 10:04	1
Carbonate Alkalinity as CaCO3	ND		5.0	1.1	mg/L			07/20/16 10:04	1

Surrogate Summary

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		BFB (78-120)	DBFM (77-120)	12DCE (70-127)	TOL (80-125)
280-85740-1	AC-MW5	117	93	83	111
280-85740-2	DUPE1	113	91	81	110
280-85740-3	RINSE1	125 X	97	88	113
280-85740-4	MW-H05	113	94	86	109
LCS 280-335587/4	Lab Control Sample	113	92	85	110
MB 280-335587/6	Method Blank	117	87	79	109

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

12DCE = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-335587/6

Matrix: Water

Analysis Batch: 335587

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.9	ug/L			07/28/16 22:30	1
Acrylonitrile	ND		20	1.4	ug/L			07/28/16 22:30	1
Benzene	ND		1.0	0.16	ug/L			07/28/16 22:30	1
Bromochloromethane	ND		1.0	0.10	ug/L			07/28/16 22:30	1
Bromodichloromethane	ND		1.0	0.17	ug/L			07/28/16 22:30	1
Bromoform	ND		1.0	0.19	ug/L			07/28/16 22:30	1
Bromomethane	ND		2.0	0.21	ug/L			07/28/16 22:30	1
2-Butanone (MEK)	ND		6.0	2.0	ug/L			07/28/16 22:30	1
Carbon disulfide	ND		2.0	0.45	ug/L			07/28/16 22:30	1
Carbon tetrachloride	ND		1.0	0.19	ug/L			07/28/16 22:30	1
Chlorobenzene	ND		1.0	0.17	ug/L			07/28/16 22:30	1
Chloroethane	ND		2.0	0.41	ug/L			07/28/16 22:30	1
Chloroform	ND		1.0	0.16	ug/L			07/28/16 22:30	1
Chloromethane	ND		2.0	0.30	ug/L			07/28/16 22:30	1
cis-1,2-Dichloroethene	ND		1.0	0.15	ug/L			07/28/16 22:30	1
cis-1,3-Dichloropropene	ND		1.0	0.16	ug/L			07/28/16 22:30	1
Cyclohexane	ND		2.0	0.28	ug/L			07/28/16 22:30	1
Dibromochloromethane	ND		1.0	0.17	ug/L			07/28/16 22:30	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.47	ug/L			07/28/16 22:30	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			07/28/16 22:30	1
Dibromomethane	ND		1.0	0.17	ug/L			07/28/16 22:30	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			07/28/16 22:30	1
1,3-Dichlorobenzene	ND		1.0	0.13	ug/L			07/28/16 22:30	1
1,4-Dichlorobenzene	ND		1.0	0.16	ug/L			07/28/16 22:30	1
Dichlorodifluoromethane	ND		2.0	0.31	ug/L			07/28/16 22:30	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			07/28/16 22:30	1
1,2-Dichloroethane	ND		1.0	0.13	ug/L			07/28/16 22:30	1
1,1-Dichloroethene	ND		1.0	0.23	ug/L			07/28/16 22:30	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			07/28/16 22:30	1
1,4-Dioxane	ND		200	57	ug/L			07/28/16 22:30	1
Ethylbenzene	ND		1.0	0.16	ug/L			07/28/16 22:30	1
2-Hexanone	ND		5.0	1.7	ug/L			07/28/16 22:30	1
Iodomethane	ND		1.0	0.23	ug/L			07/28/16 22:30	1
Isopropylbenzene	ND		1.0	0.19	ug/L			07/28/16 22:30	1
Methyl acetate	ND		5.0	1.6	ug/L			07/28/16 22:30	1
Methylcyclohexane	ND		1.0	0.36	ug/L			07/28/16 22:30	1
Methylene Chloride	0.388	J	2.0	0.32	ug/L			07/28/16 22:30	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.98	ug/L			07/28/16 22:30	1
Methyl tert-butyl ether	ND		5.0	0.25	ug/L			07/28/16 22:30	1
m-Xylene & p-Xylene	ND		2.0	0.34	ug/L			07/28/16 22:30	1
o-Xylene	ND		1.0	0.19	ug/L			07/28/16 22:30	1
Styrene	ND		1.0	0.17	ug/L			07/28/16 22:30	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			07/28/16 22:30	1
Tetrachloroethene	ND		1.0	0.20	ug/L			07/28/16 22:30	1
Toluene	ND		1.0	0.17	ug/L			07/28/16 22:30	1
trans-1,4-Dichloro-2-butene	ND		3.0	0.80	ug/L			07/28/16 22:30	1
trans-1,2-Dichloroethene	ND		1.0	0.15	ug/L			07/28/16 22:30	1
trans-1,3-Dichloropropene	ND		3.0	0.19	ug/L			07/28/16 22:30	1

TestAmerica Denver

QC Sample Results

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 280-335587/6

Matrix: Water

Analysis Batch: 335587

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	ND		1.0	0.21	ug/L			07/28/16 22:30	1
1,2,4-Trichlorobenzene	ND		1.0	0.21	ug/L			07/28/16 22:30	1
1,1,1-Trichloroethane	ND		1.0	0.16	ug/L			07/28/16 22:30	1
1,1,2-Trichloroethane	ND		1.0	0.27	ug/L			07/28/16 22:30	1
Trichloroethene	ND		1.0	0.16	ug/L			07/28/16 22:30	1
Trichlorofluoromethane	ND		2.0	0.29	ug/L			07/28/16 22:30	1
1,1,2-Trichlorotrifluoroethane	ND		3.0	0.42	ug/L			07/28/16 22:30	1
Vinyl chloride	ND		1.0	0.10	ug/L			07/28/16 22:30	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		78 - 120		07/28/16 22:30	1
Dibromofluoromethane (Surr)	87		77 - 120		07/28/16 22:30	1
1,2-Dichloroethane-d4 (Surr)	79		70 - 127		07/28/16 22:30	1
Toluene-d8 (Surr)	109		80 - 125		07/28/16 22:30	1

Lab Sample ID: LCS 280-335587/4

Matrix: Water

Analysis Batch: 335587

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	22.9		ug/L		115	39 - 156
Benzene	5.00	4.54		ug/L		91	65 - 135
Bromochloromethane	5.00	3.77		ug/L		75	65 - 135
Bromodichloromethane	5.00	4.24		ug/L		85	65 - 135
Bromoform	5.00	3.54		ug/L		71	62 - 135
Bromomethane	5.00	5.38		ug/L		108	45 - 135
2-Butanone (MEK)	20.0	21.6		ug/L		108	44 - 177
Carbon disulfide	5.00	4.67		ug/L		93	55 - 143
Carbon tetrachloride	5.00	4.87		ug/L		97	65 - 135
Chlorobenzene	5.00	4.73		ug/L		95	65 - 135
Chloroethane	5.00	5.52		ug/L		110	46 - 136
Chloroform	5.00	4.51		ug/L		90	65 - 135
Chloromethane	5.00	5.11		ug/L		102	34 - 145
cis-1,2-Dichloroethene	5.00	4.30		ug/L		86	65 - 135
cis-1,3-Dichloropropene	5.00	4.10		ug/L		82	65 - 135
Dibromochloromethane	5.00	3.79		ug/L		76	65 - 135
1,2-Dibromo-3-Chloropropane	5.00	3.80	J	ug/L		76	57 - 135
1,2-Dibromoethane	5.00	4.10		ug/L		82	65 - 135
Dibromomethane	5.00	3.85		ug/L		77	65 - 135
1,2-Dichlorobenzene	5.00	4.56		ug/L		91	65 - 135
1,3-Dichlorobenzene	5.00	4.81		ug/L		96	65 - 135
1,4-Dichlorobenzene	5.00	4.73		ug/L		95	65 - 135
Dichlorodifluoromethane	5.00	6.69		ug/L		134	43 - 142
1,1-Dichloroethane	5.00	4.40		ug/L		88	65 - 135
1,2-Dichloroethane	5.00	4.18		ug/L		84	65 - 135
1,1-Dichloroethene	5.00	4.68		ug/L		94	65 - 136
1,2-Dichloropropane	5.00	4.59		ug/L		92	64 - 135
1,4-Dioxane	100	83.2	J	ug/L		83	31 - 147

TestAmerica Denver

QC Sample Results

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-335587/4

Matrix: Water

Analysis Batch: 335587

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	5.00	5.03		ug/L		101	65 - 135
2-Hexanone	20.0	18.9		ug/L		94	57 - 139
Isopropylbenzene	5.00	5.53		ug/L		111	65 - 135
Methyl acetate	25.0	19.8		ug/L		79	52 - 135
Methylcyclohexane	5.00	5.24		ug/L		105	63 - 135
Methylene Chloride	5.00	4.23		ug/L		85	54 - 141
4-Methyl-2-pentanone (MIBK)	20.0	19.0		ug/L		95	60 - 150
Methyl tert-butyl ether	5.00	3.59	J	ug/L		72	54 - 135
m-Xylene & p-Xylene	5.00	4.88		ug/L		98	65 - 135
o-Xylene	5.00	4.90		ug/L		98	65 - 135
Styrene	5.00	4.65		ug/L		93	65 - 135
1,1,2,2-Tetrachloroethane	5.00	4.68		ug/L		94	58 - 135
Tetrachloroethene	5.00	4.95		ug/L		99	65 - 135
Toluene	5.00	4.77		ug/L		95	65 - 135
trans-1,2-Dichloroethene	5.00	4.71		ug/L		94	65 - 135
trans-1,3-Dichloropropene	5.00	3.78		ug/L		76	65 - 135
1,2,3-Trichlorobenzene	5.00	3.99		ug/L		80	60 - 135
1,2,4-Trichlorobenzene	5.00	4.15		ug/L		83	58 - 135
1,1,1-Trichloroethane	5.00	4.65		ug/L		93	65 - 135
1,1,2-Trichloroethane	5.00	3.94		ug/L		79	64 - 135
Trichloroethene	5.00	4.53		ug/L		91	65 - 135
Trichlorofluoromethane	5.00	7.31	*	ug/L		146	53 - 137
1,1,2-Trichlorotrifluoroethane	5.00	4.62		ug/L		92	65 - 140
Vinyl chloride	5.00	5.51		ug/L		110	40 - 137

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	113		78 - 120
Dibromofluoromethane (Surr)	92		77 - 120
1,2-Dichloroethane-d4 (Surr)	85		70 - 127
Toluene-d8 (Surr)	110		80 - 125

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 280-334753/1-A

Matrix: Water

Analysis Batch: 335634

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 334753

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		200	35	ug/L		07/26/16 14:20	07/28/16 22:14	1
Magnesium	ND		200	11	ug/L		07/26/16 14:20	07/28/16 22:14	1
Potassium	ND		3000	240	ug/L		07/26/16 14:20	07/28/16 22:14	1
Sodium	523	J ^	1000	92	ug/L		07/26/16 14:20	07/28/16 22:14	1

TestAmerica Denver

QC Sample Results

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 280-334753/2-A

Matrix: Water

Analysis Batch: 335634

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 334753

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Calcium	50000	47400		ug/L		95	90 - 111
Magnesium	50000	48400		ug/L		97	90 - 113
Potassium	50000	49400		ug/L		99	89 - 114
Sodium	50000	52500		ug/L		105	90 - 115

Lab Sample ID: 280-85740-2 MS

Matrix: Water

Analysis Batch: 335634

Client Sample ID: DUPE1

Prep Type: Total/NA

Prep Batch: 334753

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Calcium	350000		50000	413000	4	ug/L		118	48 - 153
Magnesium	82000		50000	133000		ug/L		101	62 - 146
Potassium	8900		50000	60500		ug/L		103	76 - 132
Sodium	1500000	B	50000	1580000	4	ug/L		223	70 - 203

Lab Sample ID: 280-85740-2 MSD

Matrix: Water

Analysis Batch: 335634

Client Sample ID: DUPE1

Prep Type: Total/NA

Prep Batch: 334753

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Calcium	350000		50000	403000	4	ug/L		99	48 - 153	2	20
Magnesium	82000		50000	131000		ug/L		98	62 - 146	1	20
Potassium	8900		50000	61000		ug/L		104	76 - 132	1	20
Sodium	1500000	B	50000	1580000	4	ug/L		233	70 - 203	0	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 280-334939/1-A

Matrix: Water

Analysis Batch: 335117

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 334939

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0	0.40	ug/L		07/25/16 08:00	07/25/16 14:02	1
Arsenic	ND		5.0	0.33	ug/L		07/25/16 08:00	07/25/16 14:02	1
Barium	ND		1.0	0.29	ug/L		07/25/16 08:00	07/25/16 14:02	1
Beryllium	ND		1.0	0.080	ug/L		07/25/16 08:00	07/25/16 14:02	1
Cadmium	ND		1.0	0.27	ug/L		07/25/16 08:00	07/25/16 14:02	1
Chromium	ND		2.0	0.50	ug/L		07/25/16 08:00	07/25/16 14:02	1
Cobalt	ND		1.0	0.054	ug/L		07/25/16 08:00	07/25/16 14:02	1
Copper	ND		2.0	0.56	ug/L		07/25/16 08:00	07/25/16 14:02	1
Lead	ND		1.0	0.18	ug/L		07/25/16 08:00	07/25/16 14:02	1
Nickel	ND		2.0	0.30	ug/L		07/25/16 08:00	07/25/16 14:02	1
Selenium	ND		5.0	0.70	ug/L		07/25/16 08:00	07/25/16 14:02	1
Silver	ND		5.0	0.033	ug/L		07/25/16 08:00	07/25/16 14:02	1
Thallium	ND		1.0	0.050	ug/L		07/25/16 08:00	07/25/16 14:02	1
Vanadium	ND		5.0	0.50	ug/L		07/25/16 08:00	07/25/16 14:02	1
Zinc	ND		10	2.0	ug/L		07/25/16 08:00	07/25/16 14:02	1

TestAmerica Denver

QC Sample Results

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 280-334939/2-A

Matrix: Water

Analysis Batch: 335117

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 334939

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	40.0	37.3		ug/L		93	85 - 115
Arsenic	40.0	39.9		ug/L		100	85 - 117
Barium	40.0	41.0		ug/L		102	85 - 118
Beryllium	40.0	38.0		ug/L		95	80 - 125
Cadmium	40.0	41.4		ug/L		103	85 - 115
Chromium	40.0	42.0		ug/L		105	84 - 121
Cobalt	40.0	41.2		ug/L		103	85 - 120
Copper	40.0	41.4		ug/L		103	85 - 119
Lead	40.0	41.5		ug/L		104	85 - 118
Nickel	40.0	42.8		ug/L		107	85 - 119
Selenium	40.0	39.8		ug/L		100	77 - 122
Silver	40.0	42.8		ug/L		107	85 - 115
Thallium	40.0	40.9		ug/L		102	85 - 118
Vanadium	40.0	41.7		ug/L		104	85 - 120
Zinc	40.0	41.0		ug/L		103	83 - 122

Lab Sample ID: 280-85740-1 MS

Matrix: Water

Analysis Batch: 335117

Client Sample ID: AC-MW5

Prep Type: Total/NA

Prep Batch: 334939

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	0.92	J F1	40.0	33.4	F1	ug/L		81	85 - 115
Arsenic	0.79	J	40.0	39.4		ug/L		96	85 - 117
Barium	56	F1	40.0	92.5		ug/L		91	85 - 118
Beryllium	0.18	J	40.0	40.3		ug/L		100	80 - 125
Cadmium	ND		40.0	36.7		ug/L		92	85 - 115
Chromium	3.8	F1	40.0	41.1		ug/L		93	84 - 121
Cobalt	2.4	F1	40.0	38.6		ug/L		90	85 - 120
Copper	2.6	F1	40.0	39.0		ug/L		91	85 - 119
Lead	1.6		40.0	37.7		ug/L		90	85 - 118
Nickel	2.7	F1	40.0	39.1		ug/L		91	85 - 119
Selenium	31		40.0	69.6		ug/L		97	77 - 122
Silver	0.057	J	40.0	37.0		ug/L		92	85 - 115
Thallium	0.073	J F1	40.0	36.0		ug/L		90	85 - 118
Vanadium	11	F1	40.0	49.5		ug/L		96	85 - 120
Zinc	15	F1	40.0	55.1		ug/L		101	83 - 122

Lab Sample ID: 280-85740-1 MSD

Matrix: Water

Analysis Batch: 335117

Client Sample ID: AC-MW5

Prep Type: Total/NA

Prep Batch: 334939

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	0.92	J F1	40.0	33.1	F1	ug/L		80	85 - 115	1	20
Arsenic	0.79	J	40.0	34.7		ug/L		85	85 - 117	13	20
Barium	56	F1	40.0	85.5	F1	ug/L		73	85 - 118	8	20
Beryllium	0.18	J	40.0	37.9		ug/L		94	80 - 125	6	20
Cadmium	ND		40.0	34.1		ug/L		85	85 - 115	7	20
Chromium	3.8	F1	40.0	36.0	F1	ug/L		81	84 - 121	13	20

TestAmerica Denver

QC Sample Results

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-85740-1 MSD

Matrix: Water

Analysis Batch: 335117

Client Sample ID: AC-MW5

Prep Type: Total/NA

Prep Batch: 334939

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cobalt	2.4	F1	40.0	34.8	F1	ug/L		81	85 - 120	10	20
Copper	2.6	F1	40.0	34.2	F1	ug/L		79	85 - 119	13	20
Lead	1.6		40.0	35.6		ug/L		85	85 - 118	6	20
Nickel	2.7	F1	40.0	34.6	F1	ug/L		80	85 - 119	12	20
Selenium	31		40.0	66.5		ug/L		89	77 - 122	5	20
Silver	0.057	J	40.0	34.4		ug/L		86	85 - 115	7	20
Thallium	0.073	J F1	40.0	33.8	F1	ug/L		84	85 - 118	6	20
Vanadium	11	F1	40.0	44.9	F1	ug/L		84	85 - 120	10	20
Zinc	15	F1	40.0	45.2	F1	ug/L		76	83 - 122	20	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 280-334147/6

Matrix: Water

Analysis Batch: 334147

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.50	0.042	mg/L			07/19/16 11:13	1
Nitrite as N	ND		0.50	0.049	mg/L			07/19/16 11:13	1

Lab Sample ID: LCS 280-334147/4

Matrix: Water

Analysis Batch: 334147

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	5.00	4.88		mg/L		98	90 - 110
Nitrite as N	5.00	4.87		mg/L		97	90 - 110

Lab Sample ID: LCSD 280-334147/5

Matrix: Water

Analysis Batch: 334147

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	5.00	4.90		mg/L		98	90 - 110	0	10
Nitrite as N	5.00	4.87		mg/L		97	90 - 110	0	10

Lab Sample ID: MRL 280-334147/3

Matrix: Water

Analysis Batch: 334147

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.200	0.188	J	mg/L		94	50 - 150
Nitrite as N	0.200	0.225	J	mg/L		112	50 - 150

TestAmerica Denver

QC Sample Results

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 280-334148/6

Matrix: Water

Analysis Batch: 334148

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	0.25	mg/L			07/19/16 11:13	1
Sulfate	ND		5.0	0.23	mg/L			07/19/16 11:13	1

Lab Sample ID: LCS 280-334148/4

Matrix: Water

Analysis Batch: 334148

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	98.2		mg/L		98	90 - 110
Sulfate	100	97.3		mg/L		97	90 - 110

Lab Sample ID: LCSD 280-334148/5

Matrix: Water

Analysis Batch: 334148

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	98.2		mg/L		98	90 - 110	0	10
Sulfate	100	97.1		mg/L		97	90 - 110	0	10

Lab Sample ID: MRL 280-334148/3

Matrix: Water

Analysis Batch: 334148

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	2.35	J	mg/L		94	50 - 150
Sulfate	2.50	2.48	J	mg/L		99	50 - 150

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-334393/31

Matrix: Water

Analysis Batch: 334393

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	1.89	J	5.0	1.1	mg/L			07/20/16 10:54	1
Bicarbonate Alkalinity as CaCO3	ND		5.0	1.1	mg/L			07/20/16 10:54	1
Carbonate Alkalinity as CaCO3	ND		5.0	1.1	mg/L			07/20/16 10:54	1

Lab Sample ID: MB 280-334393/5

Matrix: Water

Analysis Batch: 334393

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	2.64	J	5.0	1.1	mg/L			07/20/16 08:17	1
Bicarbonate Alkalinity as CaCO3	ND		5.0	1.1	mg/L			07/20/16 08:17	1
Carbonate Alkalinity as CaCO3	2.11	J	5.0	1.1	mg/L			07/20/16 08:17	1

TestAmerica Denver

QC Sample Results

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 280-334393/30

Matrix: Water

Analysis Batch: 334393

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	198		mg/L		99	90 - 110

Lab Sample ID: LCS 280-334393/4

Matrix: Water

Analysis Batch: 334393

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	200		mg/L		100	90 - 110

QC Association Summary

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

GC/MS VOA

Analysis Batch: 335587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-85740-1	AC-MW5	Total/NA	Water	8260B	
280-85740-2	DUPE1	Total/NA	Water	8260B	
280-85740-3	RINSE1	Total/NA	Water	8260B	
280-85740-4	MW-H05	Total/NA	Water	8260B	
MB 280-335587/6	Method Blank	Total/NA	Water	8260B	
LCS 280-335587/4	Lab Control Sample	Total/NA	Water	8260B	

Metals

Prep Batch: 334753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-85740-1	AC-MW5	Total/NA	Water	3010A	
280-85740-2	DUPE1	Total/NA	Water	3010A	
280-85740-3	RINSE1	Total/NA	Water	3010A	
280-85740-4	MW-H05	Total/NA	Water	3010A	
MB 280-334753/1-A	Method Blank	Total/NA	Water	3010A	
LCS 280-334753/2-A	Lab Control Sample	Total/NA	Water	3010A	
280-85740-2 MS	DUPE1	Total/NA	Water	3010A	
280-85740-2 MSD	DUPE1	Total/NA	Water	3010A	

Prep Batch: 334939

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-85740-1	AC-MW5	Total/NA	Water	3020A	
280-85740-2	DUPE1	Total/NA	Water	3020A	
280-85740-3	RINSE1	Total/NA	Water	3020A	
280-85740-4	MW-H05	Total/NA	Water	3020A	
MB 280-334939/1-A	Method Blank	Total/NA	Water	3020A	
LCS 280-334939/2-A	Lab Control Sample	Total/NA	Water	3020A	
280-85740-1 MS	AC-MW5	Total/NA	Water	3020A	
280-85740-1 MSD	AC-MW5	Total/NA	Water	3020A	

Analysis Batch: 335117

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-85740-1	AC-MW5	Total/NA	Water	6020A	334939
280-85740-2	DUPE1	Total/NA	Water	6020A	334939
280-85740-3	RINSE1	Total/NA	Water	6020A	334939
280-85740-4	MW-H05	Total/NA	Water	6020A	334939
MB 280-334939/1-A	Method Blank	Total/NA	Water	6020A	334939
LCS 280-334939/2-A	Lab Control Sample	Total/NA	Water	6020A	334939
280-85740-1 MS	AC-MW5	Total/NA	Water	6020A	334939
280-85740-1 MSD	AC-MW5	Total/NA	Water	6020A	334939

Analysis Batch: 335634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-85740-1	AC-MW5	Total/NA	Water	6010B	334753
280-85740-2	DUPE1	Total/NA	Water	6010B	334753
280-85740-3	RINSE1	Total/NA	Water	6010B	334753
280-85740-4	MW-H05	Total/NA	Water	6010B	334753
MB 280-334753/1-A	Method Blank	Total/NA	Water	6010B	334753
LCS 280-334753/2-A	Lab Control Sample	Total/NA	Water	6010B	334753

TestAmerica Denver

QC Association Summary

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Metals (Continued)

Analysis Batch: 335634 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-85740-2 MS	DUPE1	Total/NA	Water	6010B	334753
280-85740-2 MSD	DUPE1	Total/NA	Water	6010B	334753

Analysis Batch: 335818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-85740-3	RINSE1	Total/NA	Water	6010B	334753

General Chemistry

Analysis Batch: 334147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-85740-1	AC-MW5	Total/NA	Water	300.0	
280-85740-2	DUPE1	Total/NA	Water	300.0	
280-85740-3	RINSE1	Total/NA	Water	300.0	
280-85740-4	MW-H05	Total/NA	Water	300.0	
MB 280-334147/6	Method Blank	Total/NA	Water	300.0	
LCS 280-334147/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-334147/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 280-334147/3	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 334148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-85740-1	AC-MW5	Total/NA	Water	300.0	
280-85740-1	AC-MW5	Total/NA	Water	300.0	
280-85740-2	DUPE1	Total/NA	Water	300.0	
280-85740-2	DUPE1	Total/NA	Water	300.0	
280-85740-3	RINSE1	Total/NA	Water	300.0	
280-85740-4	MW-H05	Total/NA	Water	300.0	
MB 280-334148/6	Method Blank	Total/NA	Water	300.0	
LCS 280-334148/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-334148/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 280-334148/3	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 334393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-85740-1	AC-MW5	Total/NA	Water	SM 2320B	
280-85740-2	DUPE1	Total/NA	Water	SM 2320B	
280-85740-3	RINSE1	Total/NA	Water	SM 2320B	
280-85740-4	MW-H05	Total/NA	Water	SM 2320B	
MB 280-334393/31	Method Blank	Total/NA	Water	SM 2320B	
MB 280-334393/5	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-334393/30	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 280-334393/4	Lab Control Sample	Total/NA	Water	SM 2320B	

TestAmerica Denver

Lab Chronicle

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Client Sample ID: AC-MW5

Date Collected: 07/18/16 12:10

Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	335587	07/29/16 04:01	JNL	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	334753	07/26/16 14:20	MLS	TAL DEN
Total/NA	Analysis	6010B		1			335634	07/28/16 22:19	CRR	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	334939	07/25/16 08:00	TEB	TAL DEN
Total/NA	Analysis	6020A		1			335117	07/25/16 14:10	LMT	TAL DEN
Total/NA	Analysis	300.0		2	5 mL	5 mL	334147	07/19/16 14:19	AFB	TAL DEN
Total/NA	Analysis	300.0		2	5 mL	5 mL	334148	07/19/16 14:19	AFB	TAL DEN
Total/NA	Analysis	300.0		50	5 mL	5 mL	334148	07/19/16 20:55	AFB	TAL DEN
Total/NA	Analysis	SM 2320B		1			334393	07/20/16 09:44	IEU	TAL DEN

Client Sample ID: DUPE1

Date Collected: 07/18/16 12:10

Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	335587	07/29/16 04:20	JNL	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	334753	07/26/16 14:20	MLS	TAL DEN
Total/NA	Analysis	6010B		1			335634	07/28/16 22:22	CRR	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	334939	07/25/16 08:00	TEB	TAL DEN
Total/NA	Analysis	6020A		1			335117	07/25/16 14:29	LMT	TAL DEN
Total/NA	Analysis	300.0		2	5 mL	5 mL	334147	07/19/16 14:39	AFB	TAL DEN
Total/NA	Analysis	300.0		2	5 mL	5 mL	334148	07/19/16 14:39	AFB	TAL DEN
Total/NA	Analysis	300.0		50	5 mL	5 mL	334148	07/19/16 21:15	AFB	TAL DEN
Total/NA	Analysis	SM 2320B		1			334393	07/20/16 09:50	IEU	TAL DEN

Client Sample ID: RINSE1

Date Collected: 07/18/16 12:10

Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	335587	07/29/16 04:40	JNL	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	334753	07/26/16 14:20	MLS	TAL DEN
Total/NA	Analysis	6010B		1			335634	07/28/16 22:44	CRR	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	334753	07/26/16 14:20	MLS	TAL DEN
Total/NA	Analysis	6010B		1			335818	07/29/16 16:47	CRR	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	334939	07/25/16 08:00	TEB	TAL DEN
Total/NA	Analysis	6020A		1			335117	07/25/16 14:32	LMT	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	334147	07/19/16 21:35	AFB	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	334148	07/19/16 21:35	AFB	TAL DEN
Total/NA	Analysis	SM 2320B		1			334393	07/20/16 09:56	IEU	TAL DEN

TestAmerica Denver

Lab Chronicle

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Client Sample ID: MW-H05

Date Collected: 07/18/16 17:30

Date Received: 07/19/16 10:25

Lab Sample ID: 280-85740-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	335587	07/29/16 04:59	JNL	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	334753	07/26/16 14:20	MLS	TAL DEN
Total/NA	Analysis	6010B		1			335634	07/28/16 22:47	CRR	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	334939	07/25/16 08:00	TEB	TAL DEN
Total/NA	Analysis	6020A		1			335117	07/25/16 14:36	LMT	TAL DEN
Total/NA	Analysis	300.0		2	5 mL	5 mL	334147	07/19/16 15:19	AFB	TAL DEN
Total/NA	Analysis	300.0		50	5 mL	5 mL	334148	07/19/16 21:55	AFB	TAL DEN
Total/NA	Analysis	SM 2320B		1			334393	07/20/16 10:04	IEU	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Certification Summary

Client: Quantum Water & Environment
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-85740-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Oregon	NELAP	10	4025	01-09-17

The following analytes are included in this report, but are not certified under this certification:

Analysis Method	Prep Method	Matrix	Analyte
SM 2320B		Water	Carbonate Alkalinity as CaCO3

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
300.0		Water	Chloride
300.0		Water	Nitrate as N
300.0		Water	Nitrite as N
300.0		Water	Sulfate

Chain of Custody Record

Client Information Client Contact: Mr. John Dellaport Company: Quantum Water & Environment Address: 1746 Cole Boulevard, Suite 340 City: Lakewood State: CO, Zip: 80401 Phone: 720-524-4294 (Tel) Email: John@quantumwaterco.com Project Name: Adams County Shooting Range Site: MONITORING WELLS		Sampler: Travis Brown Lab PM: Kupper, Stephanie K Phone: 720.524.4294 E-Mail: stephanie.kupper@testamericainc.com		Carrier Tracking No(s): COC No: 280-55170-19558.1 Page: Job #:	
Due Date Requested: TAT Requested (days): 14 PO #: Purchase Order Requested WO #: 132E-15 Project #: 28014702 - Groundwater APP I SSOW#:		Analysis Requested  280-85740 Chain of Custody			
Sample Identification AC-MW5 DUPEL RINSE I MW-HØ5		Sample Date 7/18/16 7/18/16 7/18/16 7/18/16	Sample Time 1210 1210 1210 1730	Sample Type (C=Comp, G=grab) G G G G	Matrix (W=water, S=solid, O=waste/oil, AT=tissue A=air) W W W W
Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) Total Metals (6010B/6020) NO3(C)/NO2(IC)/Cl/SO4/Alks		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) Total Metals (6010B/6020) NO3(C)/NO2(IC)/Cl/SO4/Alks			
Total Number of Containers		Total Number of Containers			
Special Instructions/Note: short holds: NO3 and NO2 (IC) see Appendix I		Special Instructions/Note: short holds: NO3 and NO2 (IC) see Appendix I			

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant Deliverable Requested: I, II, III, IV, Other (specify)		☐ Poison B ☐ Unknown ☐ Radiological	
Empty Kit Relinquished by: COY DELAPORT Relinquished by:		Date: 7/19/16 10:25 Date/Time:	
Relinquished by:		Date/Time:	
Relinquished by:		Date/Time:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:	

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months		Special Instructions/QC Requirements:	
Method of Shipment:		Received by: Rand RND Date/Time: 7-19-16 1025 Company: THD	
Received by:		Date/Time:	
Received by:		Date/Time:	
Received by:		Date/Time:	
Cooler Temperature(s) °C and Other Remarks: 5.8, 12.5, 60.0 transferred SPL 7-19-16		Company:	

Login Sample Receipt Checklist

Client: Quantum Water & Environment

Job Number: 280-85740-1

Login Number: 85740

List Source: TestAmerica Denver

List Number: 1

Creator: Woodworth, Sean P

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	IDs on containers do not match the COC. Logged in per COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	