Corrective Action Plan

Marathon Road Water Station
Marathon Road
Lea County, New Mexico

Prepared August 2015 for: New Mexico Oil Conservation Division

Atkins ENGINEERING ASSOCIATES INC.

2904 W 2ND ST.
Roswell NM 88201
(575) 624-2420

Contents

Table of Figures

1 Summary

Atkins Engineering Associates, Inc. (AEA) submits this Corrective Action Plan as required in NMAC 19.15.29.11 for the release discovered on the property known as Marathon Road Water Station (MRWS). The general coordinates for the station are 32.624903°, -103.514917° and it is located in Section 25, Township 19 South, Range 34 East N.M.P.M., 170 feet from the south line, and 2,237 feet from the west line of said section 25 in Lea County, New Mexico.

AEA was contacted by Zia Water LLLP to investigate a pool of apparent produced water discovered on the property. Upon investigation AEA deduced the dump was caused by unauthorized dumping of produced water behind fresh water filling ports at Marathon Road Water Station. Lea Dumping is believed to have occurred during the night of January 5, 2015-January 6, 2015. On January 6, 2015, AEA submitted a C-141 form in compliance with NMAC 19.15.29.10 and submitted it to the New Mexico Oil Conservation Division (NMOCD) see copy of notification attached in Appendix C**.** Vacuum extraction of the standing fluid was completed at approximately 12:40pm January 6, 2015. A dig and haul of the grossly contaminated soil was conducted on January 15-16, 2015. A small area of chloride contaminated soil remains. AEA recommends the remaining hot spots be removed, grades be restored, and portions of the affected area be revegetated.

2 Introduction

2.1 Location and Description

The subject property MRWS, a fresh water station, located south of the intersection of US Hwy 180/62 and Marathon Road. The general coordinate for the station is 32.624903°, -103.514917°. Driving directions to the station are as follows:

> From Hobbs at the intersection of US 180/62/Marland Blvd and Grimes Street, west on US 180/62 for 22.6 miles, south on Marathon Road (Co Rd 27-A) for 0.7 miles to Marathon Road Station on the east side of Marathon Road.

The property landowner is the Bureau of Land Management (BLM) and has a pending least to Zia Water LLLP.

2.2 Information Provided to Agency

On January 6, 2015 AEA provided the following information on a C-141 form, attached in Appendix C, to NMOCD as per NMAC 20.6.2.1203:

1) Description of Cause of Problem and Remedial Action Taken:
    a. Unauthorized dumping of apparent produced water behind fresh water filling ports at Marathon Road Water Station (MRWS). Lea County Sheriff contacted who forwarded to NM State Police. Voicemail left at BLM-Carlsbad office. Dumping believed to occur during the night of 1/05/2015-1/06/2015. Vacuum extraction of standing fluid completed at approximately 12:40pm 1/06/2015

2) Description of Area Affected and Cleanup Action Taken:
    a. Approximately 19,000 sq feet located on the south side of the Marathon Road Water Station. Vacuum Extraction and disposal of standing fluids. Fluid and top 1-2" soil samples sent to Hall Environmental Analysis Laboratory for characterization (BTEX, TPH, RCRA Metals, Chlorides-Aqueous; BTEX, TPH-soil). Contractor and disposal options being explored. Soil to be excavated with field screening of VOCs using Photo-ionization detector, regraded and restored to pre-dump condition. Possible fresh water leak in the vicinity of dump on station may result in more standing water on site in dump area.

3 Groundwater and Geological Conditions

The site is located approximately 15,000 feet west of the western edge of the Ogallala aquifer and no shallow regional groundwater is expected on site. According to the New Mexico State Engineer's Office there was an observation well installed in 1985. According to the legacy well log found in the archives of the State Engineer drill records, some groundwater was observed between 28-31 feet bgs in a sand bed. This sand bed is recorded on the drilling log to be on top of 60 ft of clay believed to be the Chinle formation. AEA considers this to be perched water and not indicative of groundwater on site. Regional groundwater in the area would be derived from Triassic Santa Rosa sandstone. This formation sits below the Chinle clay. If present water from the Santa Rosa would be expected at depths exceeding 100 feet bgs.

The soil across the site consists of Pyote soil and dune land. The National Resources Conservation Service (NRCS) considers the top 60 inches to be fine sand and fine sandy loam with a 0 – 3 percent slope. Soil has negligible run off and a high water transmitting capacity. Calcium carbonate in site is considered to be 5%, gypsum, 1% with a nonsaline to very slightly saline profile. Minor soil components include Kermit, Maljamar fs, Wink, and the Playas.

4 Investigation Activities

On January 6, 2015 AEA responded to document the extent of the dump, supervise vacuum truck activities, and take water and soil samples.

Vacuum removal of fluids was performed by Quality Transport Inc. and soil sampling was performed by AEA.

4.1 Soil sampling and Analysis

AEA conducted three (3) rounds of soil sampling: one pre-excavation, and two (2) post-exaction. During excavation of contaminated soil AEA took photo-ionization detector (PID) readings to confirm clean depth was achieved.

4.1.1 **Pre Excavation Sampling**

Prior to excavation, AEA took one (1) surface sample and one (1) composite water sample across the dump area. Samples were placed in lab provided containers with preservative as needed, sealed, labeled, and placed on ice. Samples were analyzed for EPA 8015D Diesel and Gasoline Range Organics, 8021B Volatiles (water samples), EPA 300 Chloride, EPA 7470 Mercury, and 6010B total metals. Table 2 summarized the lab results below:

Table 1.

ID	Matrix	Constitute	Result
Composite 1	Water	Diesel Range Organics	3,700 mg/L
		Gasoline Range Organics	57 mg/L
		Benzene	4,100 ug/L
		Toluene	4,700 ug/L
		Ethylbenzene	650 ug/L
		Total Xylenes	3,000 ug/L
		Chloride	40,000
Composite 2	Soil	Diesel Range Organics	19,000 mg/Kg
		Gasoline Range Organics	1,900 mg/Kg
		Benzene	19
		Toluene	51
		Ethylbenzene	15
		Total Xylenes	65
		Chloride	27,000

All heavy metal detections were below action levels. Soil and water samples revealed high amounts of chloride and hydrocarbon contamination.

4.1.2 **Excavation and Post Excavation Sampling**

On January 15-17, 2015, AEA personal oversaw excavation of contaminated soil and took additional soil samples. AEA visually inspected soil and directed excavation until visually contaminated soils were removed. Soils were removed using a back hoe excavator, placed into belly dump trucks, and hauled to a permitted disposal facility. Once visual contamination was no longer present AEA used a calibrated PID to field screen soil to determine where additional excavation was necessary. Eight (8) soil samples were taken at 0.5 feet to 1.5 feet below pre-excavation surface across the dump area, see Figure 2 Site Map and Sampling Locations. Samples analyzed for TPH, VOCs, and Chlorides, sample results are listed in Table 2:

Table 2

Sample ID	Constituent	Detection (mg/kg)	Action Limit (mg/kg)
SS01	DRO	27	100
	Chloride	1,800	1,000
SS02	Chloride	170	1,000
SS03	Chloride	1,100	1,000
SS04	Chloride	2,600	1,000
SS05	Chloride	290	1,000
SS06	Chloride	81	1,000
SS07	Chloride	350	1,000
SS08	DRO	39	100
	Chloride	450	1,000

Total TPH detections were below action levels of 100 mg/kg, and total BTEX detections were below action levels of 50 mg/kg. Chloride levels above 1000 mg/kg are located in a depressed area between SS01 and SS04. This area contained the majority of the dumped water. Due to chloride levels being above 1,000 mg/kg in specific samples, AEA conducted an additional sampling event to determine the depth at which contamination was present.

4.1.3 **Additional Post Excavation Soil Sampling**

On February 26, 2015 AEA personnel took ten (10) additional soil samples at multiple depths to determine the vertical extent of the contamination depressed culvert. Samples were taken using a hand auger to reach 1.5 and 2.0 feet bgs. Samples were collected using decontaminated scoops,

placed in lab provided 4oz jars, labeled and placed on ice. Samples were shipped to Hall Environmental Analytical Laboratory (HEAL) and analyzed for EPA 300.0 Chlorides.

Results from the soil sampling show that contamination did not move much below the surface. All laboratory data sheets are located in Appendix B. Table 3 displays the lab results

Table 3

Sample ID	Sample Depth (ft.)	Constituent	Detection (mg/kg)
SS01	1	Chloride	240
SS01	2	Chloride	80
SS09	1	Chloride	46
SS09	2	Chloride	150
SS02	1	Chloride	530
SS10*	1	Chloride	390
SS03	1	Chloride	540
SS03	2	Chloride	23
SS04	1	Chloride	350
SS04	2	Chloride	3.1

*note: SB10 is located approximately 10 feet east of SS02

5 Recommendations

Due to the small amount of chloride contamination still remaining on the site, AEA proposes additional excavation to address contaminated soils.

AEA recommends excavating to 0.5 feet below known contamination surrounding SS01, SS03, and SS04 where chloride levels are still above 1000 mg/kg. Contaminated soils would be placed in a belly dump trucks and hauled to a permitted disposal facility. AEA recommends taking three (3) confirming soil samples post excavation to be analyzed for EPA 300.0 Chloride to confirm all contaminated soils have been removed. Once confirmation lab samples have been verified clean, AEA recommends back filling the excavated area with clean fill dirt, re-grading the excavated area and revegetating the portion of the affected area previously having vegetation. See Figure 3 Vegetation Map for area needing vegetation.

Appendix A: Figures

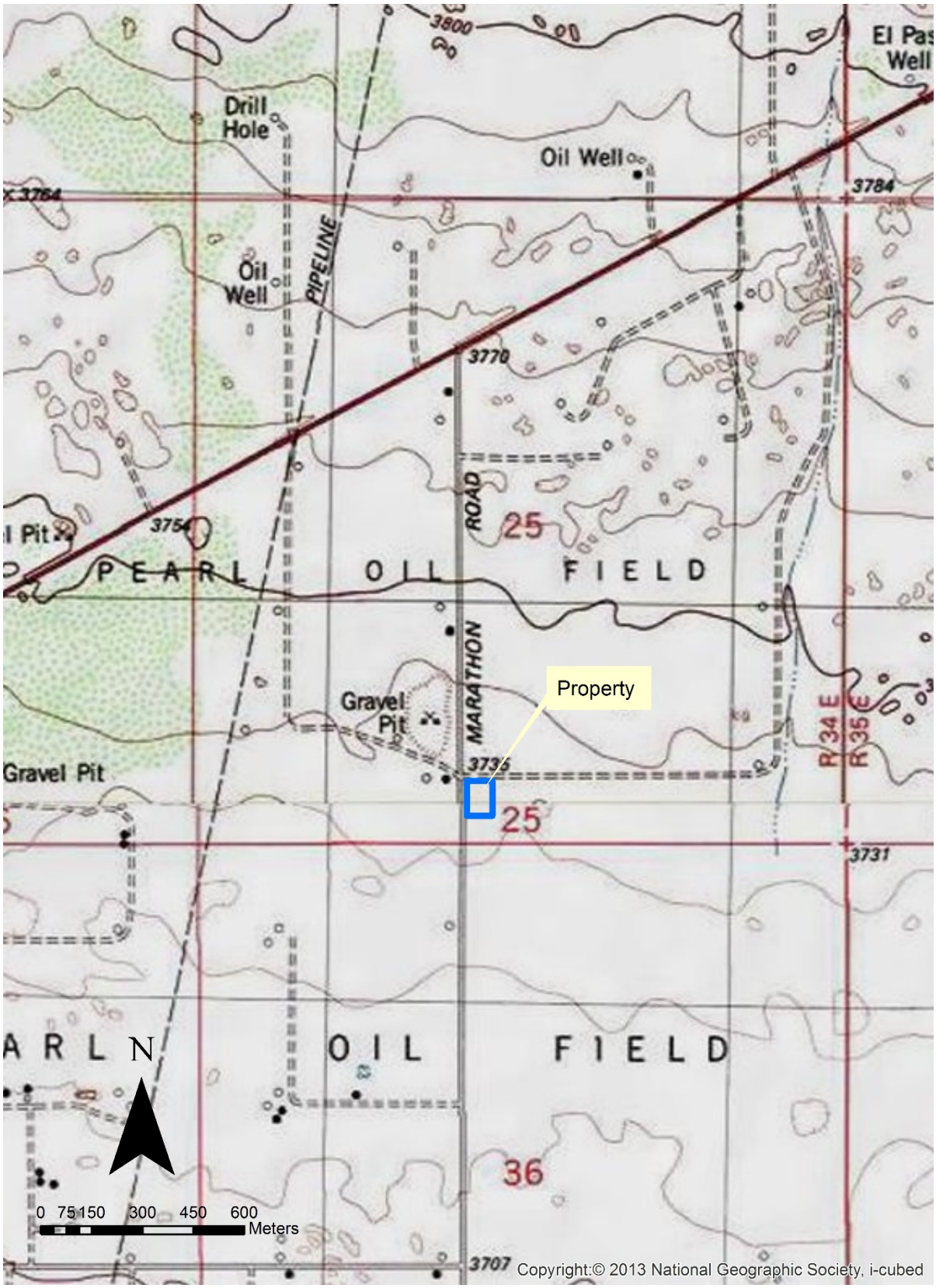

Figure 1: Site Vicinity Map

Figure 2: Soil Sample and Dump Location Map

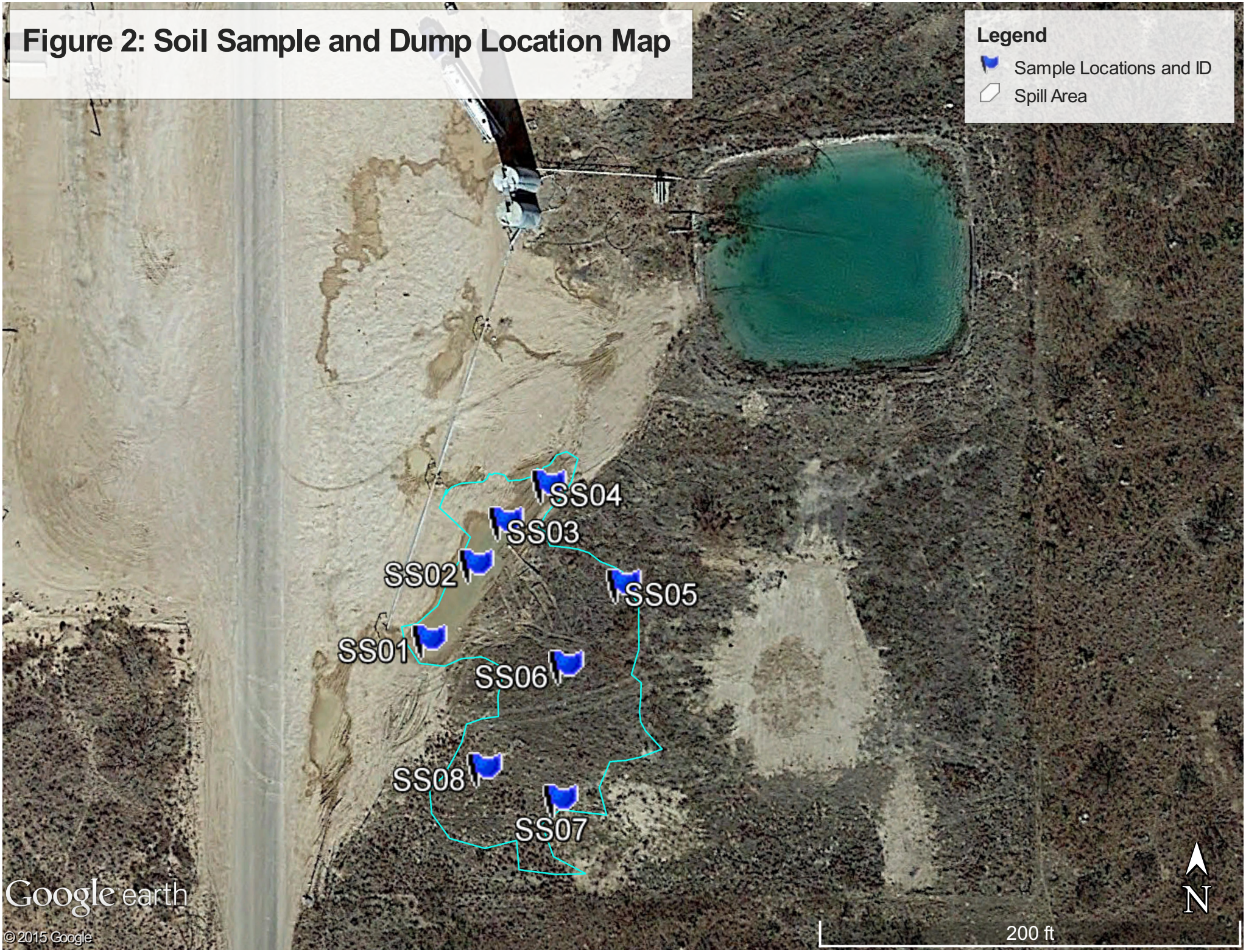

Figure 3: Vegitation Map

Appendix B: Laboratory Analytical Datasheets

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 14, 2015

Christopher Cortez

Atkins Engineering Associates
2904 West Second Street
Roswell, NM 88201
TEL: (575) 624-2420
FAX (575) 624-2421

RE: MRWS OrderNo.: 1501145

Dear Christopher Cortez:

Hall Environmental Analysis Laboratory received 2 sample(s) on 1/7/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1501145**
Date Reported: **1/14/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Atkins Engineering Associates
Client Sample ID: Composite #1
Project: MRWS
Collection Date: 1/6/2015 12:25:00 PM
Lab ID: 1501145-001 **Matrix:** AQUEOUS **Received Date:** 1/7/2015 9:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **JME**	
Diesel Range Organics (DRO)	3700	1000		mg/L	1E	1/14/2015 9:28:20 AM	17106
Surr: DNOP	0	76.5-150	S	%REC	1E	1/14/2015 9:28:20 AM	17106
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	57	2.5		mg/L	50	1/9/2015 11:52:36 AM	R23573
Surr: BFB	138	80-120	S	%REC	50	1/9/2015 11:52:36 AM	R23573
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	4100	50		µg/L	50	1/9/2015 11:52:36 AM	R23573
Toluene	4700	50		µg/L	50	1/9/2015 11:52:36 AM	R23573
Ethylbenzene	650	50		µg/L	50	1/9/2015 11:52:36 AM	R23573
Xylenes, Total	3000	100		µg/L	50	1/9/2015 11:52:36 AM	R23573
Surr: 4-Bromofluorobenzene	97.5	66.6-167		%REC	50	1/9/2015 11:52:36 AM	R23573
EPA METHOD 300.0: ANIONS						Analyst: **lgp**	
Chloride	40000	2500	*	mg/L	5E	1/12/2015 5:00:53 PM	R23606
EPA METHOD 7470: MERCURY						Analyst: **MMD**	
Mercury	ND	0.00020		mg/L	1	1/12/2015 5:47:21 PM	17179
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: **ELS**	
Arsenic	ND	0.10		mg/L	5	1/11/2015 3:49:57 PM	17151
Barium	3.4	0.10		mg/L	5	1/11/2015 3:49:57 PM	17151
Cadmium	ND	0.010		mg/L	5	1/11/2015 3:49:57 PM	17151
Chromium	0.094	0.030		mg/L	5	1/11/2015 3:49:57 PM	17151
Lead	ND	0.025		mg/L	5	1/11/2015 3:49:57 PM	17151
Selenium	ND	0.25		mg/L	5	1/11/2015 3:49:57 PM	17151
Silver	ND	0.025		mg/L	5	1/11/2015 3:49:57 PM	17151

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Atkins Engineering Associates
Client Sample ID: Composite #2
Project: MRWS
Collection Date: 1/6/2015 12:10:00 PM
Lab ID: 1501145-002
Matrix: SOIL
Received Date: 1/7/2015 9:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	19000	9900		mg/Kg	1E	1/14/2015 9:58:55 AM	17105
Surr: DNOP	0	63.5-128	S	%REC	1E	1/14/2015 9:58:55 AM	17105
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	1900	240		mg/Kg	50	1/8/2015 12:19:05 PM	17107
Surr: BFB	170	80-120	S	%REC	50	1/8/2015 12:19:05 PM	17107
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	19	2.4		mg/Kg	50	1/8/2015 12:19:05 PM	17107
Toluene	51	2.4		mg/Kg	50	1/8/2015 12:19:05 PM	17107
Ethylbenzene	15	2.4		mg/Kg	50	1/8/2015 12:19:05 PM	17107
Xylenes, Total	65	4.8		mg/Kg	50	1/8/2015 12:19:05 PM	17107
Surr: 4-Bromofluorobenzene	118	80-120		%REC	50	1/8/2015 12:19:05 PM	17107
EPA METHOD 300.0: ANIONS						Analyst: **lgp**	
Chloride	27000	1500		mg/Kg	1E	1/13/2015 12:49:10 PM	17200

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501145**

14-Jan-15

Client: Atkins Engineering Associates

Project: MRWS

Sample ID	**MB-17200**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**17200**	RunNo:	**23626**					
Prep Date:	**1/13/2015**	Analysis Date:	**1/13/2015**	SeqNo:	**697573**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-17200**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**17200**	RunNo:	**23626**					
Prep Date:	**1/13/2015**	Analysis Date:	**1/13/2015**	SeqNo:	**697574**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.8	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501145**

14-Jan-15

Client: Atkins Engineering Associates

Project: MRWS

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R23606**	RunNo: **23606**
Prep Date:	Analysis Date: **1/12/2015**	SeqNo: **697173** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R23606**	RunNo: **23606**
Prep Date:	Analysis Date: **1/12/2015**	SeqNo: **697174** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.6	0.50	5.000	0	92.9	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501145**

14-Jan-15

Client: Atkins Engineering Associates

Project: MRWS

Sample ID	**MB-17105**	SampType:	**MBLK**		TestCode:	**EPA Method 8015D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**17105**		RunNo:	**23536**				
Prep Date:	**1/7/2015**	Analysis Date:	**1/8/2015**		SeqNo:	**695364**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	9.5		10.00		94.5	63.5	128			

Sample ID	**LCS-17105**	SampType:	**LCS**		TestCode:	**EPA Method 8015D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**17105**		RunNo:	**23536**				
Prep Date:	**1/7/2015**	Analysis Date:	**1/8/2015**		SeqNo:	**695365**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	63	10	50.00	0	125	67.8	130			
Surr: DNOP	4.7		5.000		94.4	63.5	128			

Sample ID	**LCS-17189**	SampType:	**LCS**		TestCode:	**EPA Method 8015D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**17189**		RunNo:	**23634**				
Prep Date:	**1/13/2015**	Analysis Date:	**1/14/2015**		SeqNo:	**697805**	Units:	**%REC**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.7		5.000		74.1	63.5	128			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501145**

14-Jan-15

Client: Atkins Engineering Associates

Project: MRWS

Sample ID	**LCS-17106**	SampType: **LCS**		TestCode: **EPA Method 8015D: Diesel Range**					
Client ID:	**LCSW**	Batch ID: **17106**		RunNo: **23562**					
Prep Date:	**1/7/2015**	Analysis Date: **1/9/2015**		SeqNo: **696099**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	4.9	1.0	5.000	0	97.6	69.7	142			
Surr: DNOP	0.59		0.5000		117	76.5	150			

Sample ID	**MB-17106**	SampType: **MBLK**		TestCode: **EPA Method 8015D: Diesel Range**					
Client ID:	**PBW**	Batch ID: **17106**		RunNo: **23580**					
Prep Date:	**1/7/2015**	Analysis Date: **1/12/2015**		SeqNo: **697268**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	0.82		1.000		81.8	76.5	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501145**

14-Jan-15

Client: Atkins Engineering Associates

Project: MRWS

Sample ID	**MB-17107**	SampType:	**MBLK**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**PBS**	Batch ID:	**17107**		RunNo:	**23541**				
Prep Date:	**1/7/2015**	Analysis Date:	**1/8/2015**		SeqNo:	**695642**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	920		1000		92.4	80	120			

Sample ID	**LCS-17107**	SampType:	**LCS**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**LCSS**	Batch ID:	**17107**		RunNo:	**23541**				
Prep Date:	**1/7/2015**	Analysis Date:	**1/8/2015**		SeqNo:	**695643**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	82.1	65.8	139			
Surr: BFB	1000		1000		101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501145**

14-Jan-15

Client: Atkins Engineering Associates

Project: MRWS

Sample ID	**5ML RB**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBW**	Batch ID:	**R23573**	RunNo:	**23573**					
Prep Date:		Analysis Date:	**1/9/2015**	SeqNo:	**696294**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	16		20.00		82.4	80	120			

Sample ID	**2.5UG GRO LCS**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSW**	Batch ID:	**R23573**	RunNo:	**23573**					
Prep Date:		Analysis Date:	**1/9/2015**	SeqNo:	**696295**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.45	0.050	0.5000	0	90.2	80	120			
Surr: BFB	19		20.00		93.6	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501145**

14-Jan-15

Client: Atkins Engineering Associates

Project: MRWS

Sample ID **MB-17107**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **17107**	RunNo: **23541**
Prep Date: **1/7/2015**	Analysis Date: **1/8/2015**	SeqNo: **695657** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.2		1.000		116	80	120			

Sample ID **LCS-17107**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **17107**	RunNo: **23541**
Prep Date: **1/7/2015**	Analysis Date: **1/8/2015**	SeqNo: **695658** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.050	1.000	0	91.2	80	120			
Toluene	0.93	0.050	1.000	0	93.1	80	120			
Ethylbenzene	0.98	0.050	1.000	0	97.6	80	120			
Xylenes, Total	3.1	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluorobenzene	1.3		1.000		126	80	120			S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501145**

14-Jan-15

Client: Atkins Engineering Associates

Project: MRWS

Sample ID	**5ML RB**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBW**	Batch ID:	**R23573**	RunNo:	**23573**					
Prep Date:		Analysis Date:	**1/9/2015**	SeqNo:	**696301**	Units:	**µg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	20		20.00		99.6	66.6	167			

Sample ID	**100NG BTEX LCS**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSW**	Batch ID:	**R23573**	RunNo:	**23573**					
Prep Date:		Analysis Date:	**1/9/2015**	SeqNo:	**696302**	Units:	**µg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	109	80	120			
Toluene	22	1.0	20.00	0	108	80	120			
Ethylbenzene	22	1.0	20.00	0	109	80	120			
Xylenes, Total	66	2.0	60.00	0	110	80	120			
Surr: 4-Bromofluorobenzene	23		20.00		113	66.6	167			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501145**

14-Jan-15

Client: Atkins Engineering Associates

Project: MRWS

Sample ID	**MB-17179**	SampType:	**MBLK**	TestCode:	**EPA Method 7470: Mercury**				
Client ID:	**PBW**	Batch ID:	**17179**	RunNo:	**23600**				
Prep Date:	**1/12/2015**	Analysis Date:	**1/12/2015**	SeqNo:	**697007**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-17179**	SampType:	**LCS**	TestCode:	**EPA Method 7470: Mercury**				
Client ID:	**LCSW**	Batch ID:	**17179**	RunNo:	**23600**				
Prep Date:	**1/12/2015**	Analysis Date:	**1/12/2015**	SeqNo:	**697008**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0054	0.00020	0.005000	0	107	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501145**

14-Jan-15

Client: Atkins Engineering Associates

Project: MRWS

Sample ID	**MB-17151**	SampType:	**MBLK**	TestCode:	**EPA 6010B: Total Recoverable Metals**
Client ID:	**PBW**	Batch ID:	**17151**	RunNo:	**23570**
Prep Date:	**1/9/2015**	Analysis Date:	**1/11/2015**	SeqNo:	**696153** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Lead	ND	0.0050								
Selenium	ND	0.050								
Silver	ND	0.0050								

Sample ID	**LCS-17151**	SampType:	**LCS**	TestCode:	**EPA 6010B: Total Recoverable Metals**
Client ID:	**LCSW**	Batch ID:	**17151**	RunNo:	**23570**
Prep Date:	**1/9/2015**	Analysis Date:	**1/11/2015**	SeqNo:	**696154** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.52	0.020	0.5000	0	103	80	120			
Barium	0.48	0.020	0.5000	0	95.6	80	120			
Cadmium	0.48	0.0020	0.5000	0	95.4	80	120			
Chromium	0.47	0.0060	0.5000	0	94.4	80	120			
Lead	0.47	0.0050	0.5000	0	94.1	80	120			
Selenium	0.49	0.050	0.5000	0	97.8	80	120			
Silver	0.10	0.0050	0.1000	0	103	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: ATK | Work Order Number: 1501145 | RcptNo: 1

Received by/date: CS 01/07/15

Logged By: **Lindsay Mangin** 1/7/2015 9:50:00 AM

Completed By: **Lindsay Mangin** 1/7/2015 10:01:01 AM

Reviewed By: CS 01/07/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	UPS		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 1 (<2 or >12 unless noted)

Adjusted? No

Checked by: CS

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

Chain-of-Custody Record

Client: Atkins Engineering Associates, Inc.

Mailing Address: 2904 W 2ND St

Phone #: 575.624.2420

email or Fax#: sampling@atkinseng.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☒ Rush _____

Project Name: MRWS

Project #: trainer-spy-15

Project Manager: Christopher Cortez

Sampler: Z. Alvarez

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.1°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1501145	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F^-, Cl^-, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	8015 - FULL RANGE				Air Bubbles (Y or N)
1/6/15	12:25	AQ	Composite #1	1 250mL HDPE	HNO_3	-001							X									
"	"	"	"	1 500mL HDPE	NONE	-001								X								
"	"	"	"	3 AMBER 40mL VOA	$HgCl_2$ NONE	-001	X		X													
1/6/15	12:30	Soil	Composite #2	2 4oz soil	NONE	-002	X		X													

Date:	Time:	Relinquished by:	Received by:	Date	Time
1/6/15	17:20		Celina Sena	01/07/15	0950
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: BTEX ONLY / FULL RANGE ORGANICS

TIME = 12:10 ON SOIL Per Chris add chloride to the soil 1/1

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 29, 2015

Christopher Cortez

Atkins Engineering Associates
2904 West Second Street
Roswell, NM 88201
TEL: (575) 624-2420
FAX (575) 624-2421

RE: MRWS OrderNo.: 1501644

Dear Christopher Cortez:

Hall Environmental Analysis Laboratory received 8 sample(s) on 1/20/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1501644**
Date Reported: **1/29/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Atkins Engineering Associates
Client Sample ID: SS01
Project: MRWS
Collection Date: 1/16/2015 2:50:00 PM
Lab ID: 1501644-001 **Matrix:** SOIL **Received Date:** 1/20/2015 1:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **WL**	
Diesel Range Organics (DRO)	27	10		mg/Kg	1	1/22/2015 2:13:21 PM	17319
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/22/2015 2:13:21 PM	17319
Surr: DNOP	81.8	63.5-128		%REC	1	1/22/2015 2:13:21 PM	17319
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/21/2015 2:05:59 PM	17313
Surr: BFB	93.2	80-120		%REC	1	1/21/2015 2:05:59 PM	17313
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	1/21/2015 2:05:59 PM	17313
Toluene	ND	0.048		mg/Kg	1	1/21/2015 2:05:59 PM	17313
Ethylbenzene	ND	0.048		mg/Kg	1	1/21/2015 2:05:59 PM	17313
Xylenes, Total	ND	0.097		mg/Kg	1	1/21/2015 2:05:59 PM	17313
Surr: 4-Bromofluorobenzene	104	80-120		%REC	1	1/21/2015 2:05:59 PM	17313
EPA METHOD 300.0: ANIONS						Analyst: **lgp**	
Chloride	1800	75		mg/Kg	50	1/27/2015 12:56:47 AM	17363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Atkins Engineering Associates
Client Sample ID: SS02
Project: MRWS
Collection Date: 1/16/2015 2:52:00 PM
Lab ID: 1501644-002
Matrix: SOIL
Received Date: 1/20/2015 1:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	1/22/2015 2:09:05 PM	17319
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/22/2015 2:09:05 PM	17319
Surr: DNOP	81.0	63.5-128		%REC	1	1/22/2015 2:09:05 PM	17319
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	1/21/2015 3:32:04 PM	17313
Surr: BFB	90.8	80-120		%REC	1	1/21/2015 3:32:04 PM	17313
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.047		mg/Kg	1	1/21/2015 3:32:04 PM	17313
Toluene	ND	0.047		mg/Kg	1	1/21/2015 3:32:04 PM	17313
Ethylbenzene	ND	0.047		mg/Kg	1	1/21/2015 3:32:04 PM	17313
Xylenes, Total	ND	0.094		mg/Kg	1	1/21/2015 3:32:04 PM	17313
Surr: 4-Bromofluorobenzene	103	80-120		%REC	1	1/21/2015 3:32:04 PM	17313
EPA METHOD 300.0: ANIONS						Analyst: **lgp**	
Chloride	170	7.5		mg/Kg	5	1/22/2015 2:40:43 PM	17363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Atkins Engineering Associates
Client Sample ID: SS03
Project: MRWS
Collection Date: 1/16/2015 2:54:00 PM
Lab ID: 1501644-003
Matrix: SOIL
Received Date: 1/20/2015 1:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	1/22/2015 2:30:45 PM	17319
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/22/2015 2:30:45 PM	17319
Surr: DNOP	84.5	63.5-128		%REC	1	1/22/2015 2:30:45 PM	17319
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/21/2015 4:00:54 PM	17313
Surr: BFB	90.8	80-120		%REC	1	1/21/2015 4:00:54 PM	17313
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.049		mg/Kg	1	1/21/2015 4:00:54 PM	17313
Toluene	ND	0.049		mg/Kg	1	1/21/2015 4:00:54 PM	17313
Ethylbenzene	ND	0.049		mg/Kg	1	1/21/2015 4:00:54 PM	17313
Xylenes, Total	ND	0.098		mg/Kg	1	1/21/2015 4:00:54 PM	17313
Surr: 4-Bromofluorobenzene	102	80-120		%REC	1	1/21/2015 4:00:54 PM	17313
EPA METHOD 300.0: ANIONS						Analyst: **lgp**	
Chloride	1100	30		mg/Kg	20	1/22/2015 3:17:56 PM	17363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Atkins Engineering Associates
Client Sample ID: SS04
Project: MRWS
Collection Date: 1/16/2015 2:56:00 PM
Lab ID: 1501644-004 **Matrix:** SOIL **Received Date:** 1/20/2015 1:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/22/2015 2:52:15 PM	17319
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/22/2015 2:52:15 PM	17319
Surr: DNOP	86.9	63.5-128		%REC	1	1/22/2015 2:52:15 PM	17319
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/21/2015 4:29:37 PM	17313
Surr: BFB	89.7	80-120		%REC	1	1/21/2015 4:29:37 PM	17313
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.049		mg/Kg	1	1/21/2015 4:29:37 PM	17313
Toluene	ND	0.049		mg/Kg	1	1/21/2015 4:29:37 PM	17313
Ethylbenzene	ND	0.049		mg/Kg	1	1/21/2015 4:29:37 PM	17313
Xylenes, Total	ND	0.097		mg/Kg	1	1/21/2015 4:29:37 PM	17313
Surr: 4-Bromofluorobenzene	99.2	80-120		%REC	1	1/21/2015 4:29:37 PM	17313
EPA METHOD 300.0: ANIONS						Analyst: **lgp**	
Chloride	2600	75		mg/Kg	50	1/27/2015 1:09:12 AM	17363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Atkins Engineering Associates
Client Sample ID: SS05
Project: MRWS
Collection Date: 1/16/2015 2:58:00 PM
Lab ID: 1501644-005 **Matrix:** SOIL **Received Date:** 1/20/2015 1:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	1/22/2015 3:13:48 PM	17319
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/22/2015 3:13:48 PM	17319
Surr: DNOP	83.8	63.5-128		%REC	1	1/22/2015 3:13:48 PM	17319
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	1/21/2015 9:16:45 PM	17313
Surr: BFB	86.1	80-120		%REC	1	1/21/2015 9:16:45 PM	17313
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.046		mg/Kg	1	1/21/2015 9:16:45 PM	17313
Toluene	ND	0.046		mg/Kg	1	1/21/2015 9:16:45 PM	17313
Ethylbenzene	ND	0.046		mg/Kg	1	1/21/2015 9:16:45 PM	17313
Xylenes, Total	ND	0.093		mg/Kg	1	1/21/2015 9:16:45 PM	17313
Surr: 4-Bromofluorobenzene	93.5	80-120		%REC	1	1/21/2015 9:16:45 PM	17313
EPA METHOD 300.0: ANIONS						Analyst: **lgp**	
Chloride	290	30		mg/Kg	20	1/22/2015 4:32:24 PM	17363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Atkins Engineering Associates
Client Sample ID: SS06
Project: MRWS
Collection Date: 1/16/2015 3:00:00 PM
Lab ID: 1501644-006
Matrix: SOIL
Received Date: 1/20/2015 1:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	1/22/2015 3:34:59 PM	17319
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/22/2015 3:34:59 PM	17319
Surr: DNOP	78.4	63.5-128		%REC	1	1/22/2015 3:34:59 PM	17319
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/21/2015 9:45:29 PM	17313
Surr: BFB	86.4	80-120		%REC	1	1/21/2015 9:45:29 PM	17313
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.049		mg/Kg	1	1/21/2015 9:45:29 PM	17313
Toluene	ND	0.049		mg/Kg	1	1/21/2015 9:45:29 PM	17313
Ethylbenzene	ND	0.049		mg/Kg	1	1/21/2015 9:45:29 PM	17313
Xylenes, Total	ND	0.099		mg/Kg	1	1/21/2015 9:45:29 PM	17313
Surr: 4-Bromofluorobenzene	94.5	80-120		%REC	1	1/21/2015 9:45:29 PM	17313
EPA METHOD 300.0: ANIONS						Analyst: **lgp**	
Chloride	81	30		mg/Kg	20	1/22/2015 4:57:13 PM	17363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Atkins Engineering Associates
Client Sample ID: SS07
Project: MRWS
Collection Date: 1/16/2015 3:02:00 PM
Lab ID: 1501644-007
Matrix: SOIL
Received Date: 1/20/2015 1:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/22/2015 3:56:22 PM	17319
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/22/2015 3:56:22 PM	17319
Surr: DNOP	89.4	63.5-128		%REC	1	1/22/2015 3:56:22 PM	17319
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/21/2015 10:14:08 PM	17313
Surr: BFB	85.7	80-120		%REC	1	1/21/2015 10:14:08 PM	17313
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.049		mg/Kg	1	1/21/2015 10:14:08 PM	17313
Toluene	ND	0.049		mg/Kg	1	1/21/2015 10:14:08 PM	17313
Ethylbenzene	ND	0.049		mg/Kg	1	1/21/2015 10:14:08 PM	17313
Xylenes, Total	ND	0.099		mg/Kg	1	1/21/2015 10:14:08 PM	17313
Surr: 4-Bromofluorobenzene	93.1	80-120		%REC	1	1/21/2015 10:14:08 PM	17313
EPA METHOD 300.0: ANIONS						Analyst: **lgp**	
Chloride	350	30		mg/Kg	20	1/22/2015 5:22:02 PM	17363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Atkins Engineering Associates
Client Sample ID: SS08
Project: MRWS
Collection Date: 1/16/2015 3:04:00 PM
Lab ID: 1501644-008 **Matrix:** SOIL **Received Date:** 1/20/2015 1:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **WL**	
Diesel Range Organics (DRO)	39	10		mg/Kg	1	1/22/2015 2:43:56 PM	17319
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/22/2015 2:43:56 PM	17319
Surr: DNOP	74.0	63.5-128		%REC	1	1/22/2015 2:43:56 PM	17319
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/21/2015 10:42:50 PM	17313
Surr: BFB	86.1	80-120		%REC	1	1/21/2015 10:42:50 PM	17313
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	1/21/2015 10:42:50 PM	17313
Toluene	ND	0.048		mg/Kg	1	1/21/2015 10:42:50 PM	17313
Ethylbenzene	ND	0.048		mg/Kg	1	1/21/2015 10:42:50 PM	17313
Xylenes, Total	ND	0.097		mg/Kg	1	1/21/2015 10:42:50 PM	17313
Surr: 4-Bromofluorobenzene	94.5	80-120		%REC	1	1/21/2015 10:42:50 PM	17313
EPA METHOD 300.0: ANIONS						Analyst: **lgp**	
Chloride	450	30		mg/Kg	20	1/22/2015 5:46:51 PM	17363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501644**

29-Jan-15

Client: Atkins Engineering Associates

Project: MRWS

Sample ID	**MB-17363**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**17363**	RunNo:	**23848**					
Prep Date:	**1/22/2015**	Analysis Date:	**1/22/2015**	SeqNo:	**703479**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-17363**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**17363**	RunNo:	**23848**					
Prep Date:	**1/22/2015**	Analysis Date:	**1/22/2015**	SeqNo:	**703480**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.5	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501644**

29-Jan-15

Client: Atkins Engineering Associates

Project: MRWS

Sample ID	**MB-17319**	SampType:	**MBLK**		TestCode:	**EPA Method 8015D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**17319**		RunNo:	**23817**				
Prep Date:	**1/20/2015**	Analysis Date:	**1/22/2015**		SeqNo:	**702614**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.9		10.00		78.9	63.5	128			

Sample ID	**LCS-17319**	SampType:	**LCS**		TestCode:	**EPA Method 8015D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**17319**		RunNo:	**23817**				
Prep Date:	**1/20/2015**	Analysis Date:	**1/22/2015**		SeqNo:	**702618**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	105	67.8	130			
Surr: DNOP	5.2		5.000		104	63.5	128			

Sample ID	**1501644-008AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8015D: Diesel Range Organics**				
Client ID:	**SS08**	Batch ID:	**17319**		RunNo:	**23817**				
Prep Date:	**1/20/2015**	Analysis Date:	**1/22/2015**		SeqNo:	**702981**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	68	9.9	49.55	38.65	58.3	29.2	176	7.80	23	
Surr: DNOP	4.9		4.955		98.4	63.5	128	0	0	

Sample ID	**1501644-008AMS**	SampType:	**MS**		TestCode:	**EPA Method 8015D: Diesel Range Organics**				
Client ID:	**SS08**	Batch ID:	**17319**		RunNo:	**23817**				
Prep Date:	**1/20/2015**	Analysis Date:	**1/22/2015**		SeqNo:	**703296**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	73	10	50.20	38.65	68.4	29.2	176			
Surr: DNOP	5.0		5.020		99.8	63.5	128			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501644**

29-Jan-15

Client: Atkins Engineering Associates

Project: MRWS

Sample ID **MB-17313**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **17313**	RunNo: **23812**
Prep Date: **1/20/2015**	Analysis Date: **1/21/2015**	SeqNo: **702354** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	900		1000		90.2	80	120			

Sample ID **LCS-17313**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **17313**	RunNo: **23812**
Prep Date: **1/20/2015**	Analysis Date: **1/21/2015**	SeqNo: **702355** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	100	65.8	139			
Surr: BFB	980		1000		97.7	80	120			

Sample ID **1501644-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SS01**	Batch ID: **17313**	RunNo: **23812**
Prep Date: **1/20/2015**	Analysis Date: **1/21/2015**	SeqNo: **702357** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.8	24.20	0	112	47.9	144			
Surr: BFB	970		968.1		100	80	120			

Sample ID **1501644-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SS01**	Batch ID: **17313**	RunNo: **23812**
Prep Date: **1/20/2015**	Analysis Date: **1/21/2015**	SeqNo: **702358** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	4.8	24.22	0	118	47.9	144	4.79	29.9	
Surr: BFB	1000		969.0		105	80	120	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501644**

29-Jan-15

Client: Atkins Engineering Associates

Project: MRWS

Sample ID **MB-17313**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **17313**	RunNo: **23812**
Prep Date: **1/20/2015**	Analysis Date: **1/21/2015**	SeqNo: **702387** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Sample ID **LCS-17313**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **17313**	RunNo: **23812**
Prep Date: **1/20/2015**	Analysis Date: **1/21/2015**	SeqNo: **702388** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	114	80	120			
Toluene	1.1	0.050	1.000	0	109	80	120			
Ethylbenzene	1.1	0.050	1.000	0	112	80	120			
Xylenes, Total	3.3	0.10	3.000	0	111	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: ATK | Work Order Number: 1501644 | RcptNo: 1

Received by/date: 01/20/15

Logged By: **Lindsay Mangin** 1/20/2015 1:25:00 PM

Completed By: **Lindsay Mangin** 1/20/2015 1:35:27 PM

Reviewed By: 01/20/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	UPS		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.6	Good	Yes			

Chain-of-Custody Record

Client: Atkins Engineering Associates, Inc

Mailing Address: 2904 W 2nd St. Roswell, NM 88201

Phone #: 575-624-2420

email or Fax#: sampling@atkinseng.com

QA/QC Package: ☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ NELAP ☐ Other ____

☐ EDD (Type) ____

Turn-Around Time: ☒ Standard ☐ Rush ____

Project Name: MRWS

Project #: zw1mrws-env-15

Project Manager: Chris Carter

Sampler: G. Alvarez

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1501644	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Cl				Air Bubbles (Y or N)
1/6/15	14:50	SOIL	SS01	4oz. glass	NONE	-001	X		X									X				
	14:52		SS02			-002																
	14:54		SS03			-003																
	14:56		SS04			-004																
	14:58		SS05			-005																
	15:00		SS06			-006																
	15:02		SS07			-007																
	15:04		SS08			-008																

Date: 1/9/15 Time: 14:30 Relinquished by: [signature]

Received by: [signature] Date: 01/20/15 Time: 1325

Date: Time: Relinquished by:

Received by: Date: Time:

Remarks: Btex only on 8021.

Thank You

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

March 11, 2015

Christopher Cortez

Atkins Engineering Associates
2904 West Second Street
Roswell, NM 88201
TEL: (575) 624-2420
FAX (575) 624-2421

RE: ZWLMRWS_ENV_15 OrderNo.: 1503087

Dear Christopher Cortez:

Hall Environmental Analysis Laboratory received 10 sample(s) on 3/3/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Atkins Engineering Associates
Project: ZWLMRWS_ENV_15
Lab Order: 1503087

Lab ID: 1503087-001 **Collection Date:** 2/26/2015 12:00:00 PM
Client Sample ID: SS01 (1') **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	240	30		mg/Kg	20	3/5/2015 11:28:55 AM	18006

Lab ID: 1503087-002 **Collection Date:** 2/26/2015 12:10:00 PM
Client Sample ID: SS01 (2') **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	80	30		mg/Kg	20	3/5/2015 12:06:07 PM	18006

Lab ID: 1503087-003 **Collection Date:** 2/26/2015 12:27:00 PM
Client Sample ID: SS09 (1') **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	46	30		mg/Kg	20	3/5/2015 12:18:32 PM	18006

Lab ID: 1503087-004 **Collection Date:** 2/26/2015 12:40:00 PM
Client Sample ID: SS09 (2') **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	150	30		mg/Kg	20	3/5/2015 12:30:56 PM	18006

Lab ID: 1503087-005 **Collection Date:** 2/26/2015 12:55:00 PM
Client Sample ID: SS02 (1') **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	530	30		mg/Kg	20	3/5/2015 12:43:21 PM	18006

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
E	Value above quantitation range
J	Analyte detected below quantitation limits
O	RSD is greater than RSDlimit
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Atkins Engineering Associates
Project: ZWLMRWS_ENV_15
Lab Order: 1503087

Lab ID: 1503087-006 **Collection Date:** 2/26/2015 1:13:00 PM
Client Sample ID: SS10 (1') **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	390	30		mg/Kg	20	3/5/2015 1:20:34 PM	18006

Lab ID: 1503087-007 **Collection Date:** 2/26/2015 1:25:00 PM
Client Sample ID: SS03 (1') **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	540	30		mg/Kg	20	3/5/2015 1:32:58 PM	18006

Lab ID: 1503087-008 **Collection Date:** 2/26/2015 1:38:00 PM
Client Sample ID: SS03 (2') **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	23	1.5		mg/Kg	1	3/6/2015 9:21:59 PM	18006

Lab ID: 1503087-009 **Collection Date:** 2/26/2015 1:58:00 PM
Client Sample ID: SS04 (1') **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	350	30		mg/Kg	20	3/5/2015 1:57:47 PM	18006

Lab ID: 1503087-010 **Collection Date:** 2/26/2015 2:10:00 PM
Client Sample ID: SS04 (2') **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	3.1	1.5		mg/Kg	1	3/6/2015 9:34:23 PM	18006

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
E	Value above quantitation range
J	Analyte detected below quantitation limits
O	RSD is greater than RSDlimit
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1503087**

11-Mar-15

Client: Atkins Engineering Associates

Project: ZWLMRWS_ENV_15

Sample ID	**MB-18006**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**18006**	RunNo:	**24667**					
Prep Date:	**3/5/2015**	Analysis Date:	**3/5/2015**	SeqNo:	**726998**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-18006**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**18006**	RunNo:	**24667**					
Prep Date:	**3/5/2015**	Analysis Date:	**3/5/2015**	SeqNo:	**726999**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.9	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: ATK | Work Order Number: 1503087 | RcptNo: 1

Received by/date: JA 03/03/15

Logged By: **Anne Thorne** 3/3/2015 9:55:00 AM Anne Thorne

Completed By: **Anne Thorne** 3/3/2015 Anne Thorne

Reviewed By: JA 03/03/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	UPS		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.3	Good	Yes			

Chain-of-Custody Record

Client: Atkins Engineering Associates, INC.

Mailing Address: 2904 W. 2nd Street Roswell, NM 88201

Phone #: (575) 624-2420

Email or Fax#: sampling@atkinseng.com

QA/QC Package: ☑ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time: ☒ Standard ☐ Rush

Project Name: ZWLMRWS_ENV_15

Project #: ZWLMRWS_ENV_15

Project Manager: Chris Cortez

Sampler: GA

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.3

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1503087
3/6/15	12:00	Soil	SS01 (1 foot)	4oz Glass	None	-001
	12:10		SS01 (2 feet)			-002
	12:27		SS09 (1 foot)			-003
	12:40		SS09 (2 feet)			-004
	12:55		SS02 (1 foot)			-005
	13:13		SS10 (1 foot)			-006
	13:25		SS03 (1 foot)			-007
	13:38		SS03 (2 feet)			-008
	13:58		SS04 (1 foot)			-009
	14:10		SS04 (2 feet)			-010

Analysis Request	
BTEX + MTBE + TMB's (8021)	
BTEX + MTBE + TPH (Gas only)	
TPH 8015B (GRO / DRO / MRO)	
TPH (Method 418.1)	
EDB (Method 504.1)	
PAH's (8310 or 8270 SIMS)	
RCRA 8 Metals	
Anions (F,(Cl),NO_3,NO_2,PO_4,SO_4)	X
8081 Pesticides / 8082 PCB's	
8260B (VOA)	
8270 (Semi-VOA)	
Air Bubbles (Y or N)	

Date	Time	Relinquished by:	Received by:	Date	Time
3/6/15	4:00			03/07/15	0955
Date:	Time:	Relinquished by:	Received by:	Date:	Time:

Remarks: Thanks! (Cl ONLY)

Appendix C: Regulatory Correspondence

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☑ Initial Report ☐ Final Report

Name of Company Zia Water LLLP c/o Atkins Engineering Associates, Inc.	Contact Christopher Cortez (Atkins Engineering Associates, Inc.)
Address 2904 W 2nd St, Roswell, NM 88201	Telephone No. 575.624.2420
Facility Name Marathon Road Water Station (MRWS)	Facility Type Fresh Water Station

Surface Owner BLM	Mineral Owner unknown	API No. n/a

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	25	19S	34E	170	South	2237	West	Lea

Latitude 32°37'28.46"N Longitude 103°30'54.33"W

NATURE OF RELEASE

Type of Release Apparent Produced Water	Volume of Release unknown	Volume Recovered 110 bbl
Source of Release Unknown Truck Dump	Date and Hour of Occurrence unk.	Date and Hour of Discovery 1/6/15 7-8am
Was Immediate Notice Given? ☑ Yes ☐ No ☐ Not Required	If YES, To Whom? Thomas Oberding NMOCD Hobbs Office, lvm with BLM Carlsbad	
By Whom? Christopher Cortez	Date and Hour 1/06/2015 at 10:03 am.	
Was a Watercourse Reached? ☐ Yes ☑ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.* n/a

Describe Cause of Problem and Remedial Action Taken.* Unauthorized dumping of apparent produced water behind fresh water filling ports at Marathon Road Water Station (MRWS). Lea County Sheriff contacted who forwarded to NM State Police. Voicemail left at BLM-Carlsbad office. Dumping believed to occur during the night of 1/05/2015 -1/06/2015. Vacuum extraction of standing fluid completed at approximately 12:40pm 1/06/2015

Describe Area Affected and Cleanup Action Taken.*
Approximately 19,000 sq feet located on the south side of the Marathon Road Water Station. Vacuum Extraction and disposal of standing fluids. Fluid and top 1-2" soil samples sent to Hall Environmental Analysis Laboratory for characterization (BTEX, TPH, RCRA Metals, Chlorides-Aqueous; BTEX, TPH-soil). Contractor and disposal options being explored. Soil to be excavated with field screening of VOCs using Photo-ionization detector, regraded and restored to pre-dump condition. Possible fresh water leak in the vicinity of dump on station may result in more standing water on site in spill area.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Christopher Cortez	Approved by Environmental Specialist:	
Title: Operations Manager	Approval Date:	Expiration Date:
E-mail Address: chris@atkinseng.com	Conditions of Approval:	Attached ☐
Date: 1/06/2015 Phone: 575.624.2420		

* Attach Additional Sheets If Necessary