GW - 60

Release Report/ General Correspondence

Milagro Gas Plant

Date: 2015

56

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: Williams Four Corners LLC	Contact: Kelsey Christiansen
Address: 188 CR 4900, Bloomfield, NM 87413	Telephone No.: (505) 632-4606
Facility Name: Milagro Cogeneration & Gas Plant	Facility Type: Facility

Surface Owner: Williams	Mineral Owner	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	12	29N	11W					San Juan

Latitude 36.735966° N **Longitude** -107.942329° W

NATURE OF RELEASE

Type of Release: Amine/Water Mix	Volume of Release: 490 gallons	Volume Recovered: 0
Source of Release: Pressure Relief Valve	Date and Hour of Occurrence: 08/30/2015 at 11:00 PM MST	Date and Hour of Discovery: 08/30/2015 at 11:00 PM MST
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Jonathan Kelly, NMOCD	
By Whom? Kelsey Christiansen	Date and Hour: 08/31/2015 at 03:52 PM MST	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

OIL CONS. DIV DIST. 3

OCT 19 2015

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

The pressure relief valve lifted on Williams Train 3 causing approximately 490 gallons of amine/water mix liquid to release onto concrete containment with gravel base around Train 3. The valve relieved at set point and further investigation will be completed to determine the exact cause of the release.

Describe Area Affected and Cleanup Action Taken.*

Hand excavation of impacted area took place and two confirmation composite soil samples (SC-1 and SC-2) were collected to determine acceptable cleanup standards. One sample (SC-1) was slightly over the TPH remediation level of 100 mg/Kg. Additional excavation occurred in the area of SC-1 and a confirmation sample (SC-3) was collected to confirm cleanup. The laboratory analytical results for the two sampling events are attached along with a map depicting the release extents and sampling locations of confirmation samples SC-2 and SC-3.

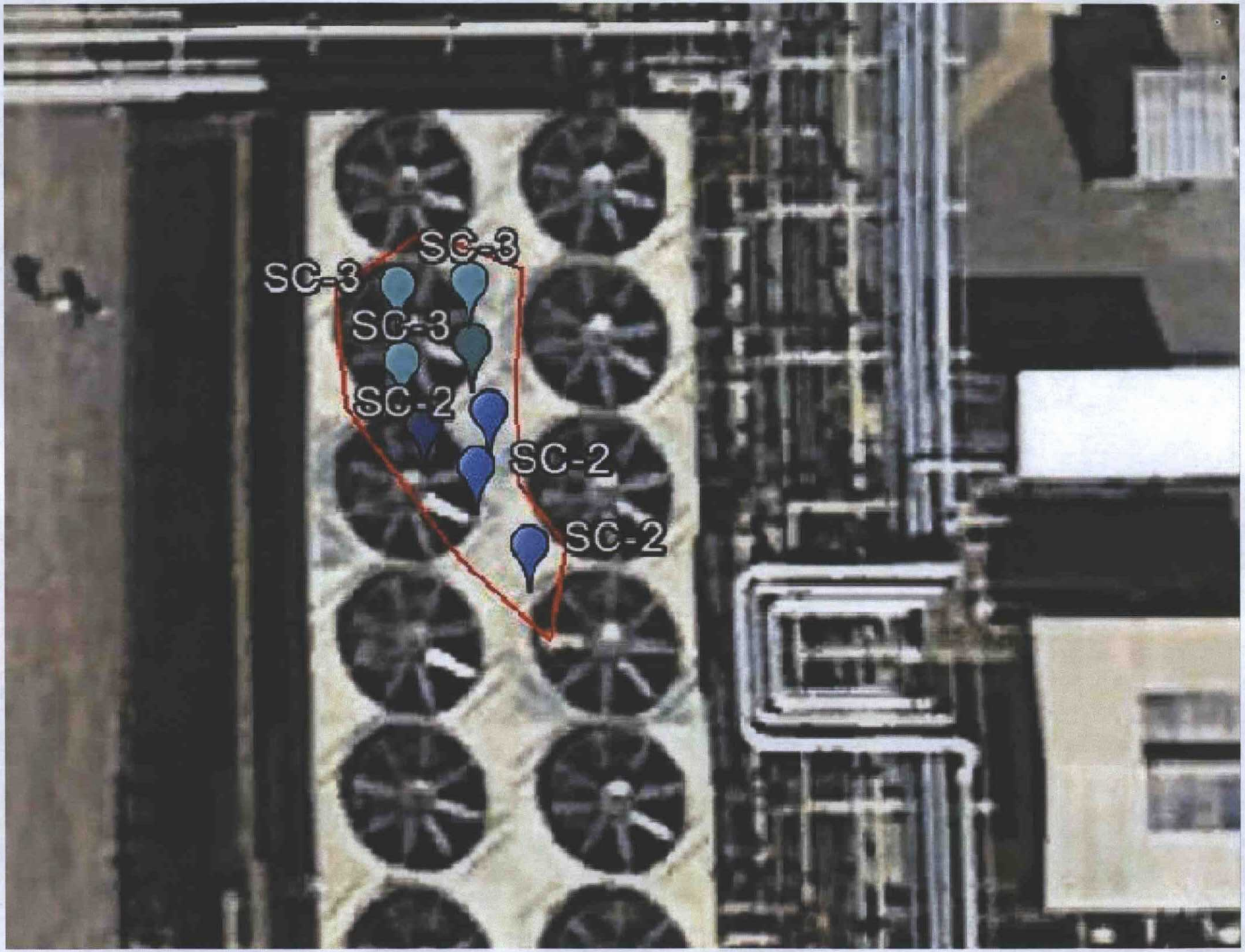
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger 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: Kelsey Christiansen	OIL CONSERVATION DIVISION Approved by Environmental Specialist:
Printed Name: Kelsey Christiansen	
Title: Environmental Specialist	Approval Date: 12/17/15 Expiration Date:
E-mail Address: kelsey.christiansen@williams.com	Conditions of Approval: Attached ☐
Date: 10/15/2015 Phone: (505) 634-4606	

* Attach Additional Sheets If Necessary

NCS 1535138472

18


SC-3
SC-3
SC-3
SC-2
SC-2
SC-2

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

September 15, 2015

Kelsey Christiansen
Williams Field Services
188 Co. Rd 4900
Bloomfield, NM 87413
TEL: (505) 632-4442
FAX

RE: Milagro Gas Plant OrderNo.: 1509240

Dear Kelsey Christiansen:

Hall Environmental Analysis Laboratory received 2 sample(s) on 9/5/2015 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.

Analytical Report
Lab Order **1509240**
Date Reported: **9/15/2015**

CLIENT: Williams Field Services
Project: Milagro Gas Plant
Lab ID: 1509240-001 **Matrix:** SOIL

Client Sample ID: SC-1
Collection Date: 9/4/2015 10:36:00 AM
Received Date: 9/5/2015 10:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **SRM**	
Chloride	ND	30		mg/Kg	20	9/10/2015 4:55:34 PM	21248
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	130	9.9		mg/Kg	1	9/9/2015 5:05:00 PM	21184
Surr: DNOP	107	57.9-140		%REC	1	9/9/2015 5:05:00 PM	21184
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	9/10/2015 2:59:51 AM	21175
Surr: BFB	95.4	75.4-113		%REC	1	9/10/2015 2:59:51 AM	21175
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.047		mg/Kg	1	9/10/2015 2:59:51 AM	21175
Toluene	ND	0.047		mg/Kg	1	9/10/2015 2:59:51 AM	21175
Ethylbenzene	ND	0.047		mg/Kg	1	9/10/2015 2:59:51 AM	21175
Xylenes, Total	ND	0.094		mg/Kg	1	9/10/2015 2:59:51 AM	21175
Surr: 4-Bromofluorobenzene	105	80-120		%REC	1	9/10/2015 2:59:51 AM	21175

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Williams Field Services
Project: Milagro Gas Plant
Lab ID: 1509240-002 **Matrix:** SOIL

Client Sample ID: SC-2
Collection Date: 9/4/2015 10:39:00 AM
Received Date: 9/5/2015 10:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **SRM**	
Chloride	ND	30		mg/Kg	20	9/10/2015 5:32:48 PM	21248
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	57	9.4		mg/Kg	1	9/9/2015 5:32:49 PM	21184
Surr: DNOP	120	57.9-140		%REC	1	9/9/2015 5:32:49 PM	21184
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	9/10/2015 3:25:04 AM	21175
Surr: BFB	91.9	75.4-113		%REC	1	9/10/2015 3:25:04 AM	21175
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	9/10/2015 3:25:04 AM	21175
Toluene	ND	0.048		mg/Kg	1	9/10/2015 3:25:04 AM	21175
Ethylbenzene	ND	0.048		mg/Kg	1	9/10/2015 3:25:04 AM	21175
Xylenes, Total	ND	0.096		mg/Kg	1	9/10/2015 3:25:04 AM	21175
Surr: 4-Bromofluorobenzene	106	80-120		%REC	1	9/10/2015 3:25:04 AM	21175

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1509240**

15-Sep-15

Client: Williams Field Services

Project: Milagro Gas Plant

Sample ID	**MB-21248**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**21248**	RunNo:	**28773**					
Prep Date:	**9/10/2015**	Analysis Date:	**9/10/2015**	SeqNo:	**872640**	Units:	**mg/Kg**			

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

Sample ID	**LCS-21248**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**21248**	RunNo:	**28773**					
Prep Date:	**9/10/2015**	Analysis Date:	**9/10/2015**	SeqNo:	**872641**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.3	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1509240**

15-Sep-15

Client: Williams Field Services

Project: Milagro Gas Plant

Sample ID **MB-21184**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **21184**	RunNo: **28716**
Prep Date: **9/8/2015**	Analysis Date: **9/9/2015**	SeqNo: **870365** 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	12		10.00		121	57.9	140			

Sample ID **LCS-21184**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **21184**	RunNo: **28716**
Prep Date: **9/8/2015**	Analysis Date: **9/9/2015**	SeqNo: **870367** 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	127	57.4	139			
Surr: DNOP	6.3		5.000		126	57.9	140			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1509240**

15-Sep-15

Client: Williams Field Services

Project: Milagro Gas Plant

Sample ID **MB-21175**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **21175**	RunNo: **28722**
Prep Date: **9/8/2015**	Analysis Date: **9/9/2015**	SeqNo: **870894** 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	910		1000		91.5	75.4	113			

Sample ID **LCS-21175**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **21175**	RunNo: **28722**
Prep Date: **9/8/2015**	Analysis Date: **9/9/2015**	SeqNo: **870895** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	94.1	79.6	122			
Surr: BFB	990		1000		98.6	75.4	113			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1509240**

15-Sep-15

Client: Williams Field Services

Project: Milagro Gas Plant

Sample ID **MB-21175**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **21175**	RunNo: **28722**
Prep Date: **9/8/2015**	Analysis Date: **9/9/2015**	SeqNo: **870940** 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	1.1		1.000		108	80	120			

Sample ID **LCS-21175**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **21175**	RunNo: **28722**
Prep Date: **9/8/2015**	Analysis Date: **9/9/2015**	SeqNo: **870941** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	101	80	120			
Toluene	1.0	0.050	1.000	0	101	80	120			
Ethylbenzene	1.0	0.050	1.000	0	100	80	120			
Xylenes, Total	3.1	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		115	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- 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
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

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: **WILLIAMS FIELD SERVI** Work Order Number: **1509240** RcptNo: **1**

Received by/date: 09/05/15

Logged By: **Lindsay Mangin** **9/5/2015 10:25:00 AM**

Completed By: **Lindsay Mangin** **9/5/2015 10:42:42 AM**

Reviewed By: 09/08/15

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?	Courier		

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 ☑	# of preserved bottles checked for pH: (<2 or >12 unless noted)
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 ☐	Adjusted?
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 ☐	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	4.4	Good	Yes			

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Client: Williams Field Service

Mailing Address: 188 CR 4900
Bloomfield, NM 87413

Phone #: 505-634-4606

Email or Fax#: kelsey.christiansen@williams.com

QA/QC Package:
[X] Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
[X] Standard ☐ Rush

Project Name: Milagro Gas Plant

Project #:

Project Manager: Kelsey Christiansen

Sampler: KC

On Ice: [X] Yes ☐ No

Sample Temperature: 4.1 + 0.2 = 4.4

HEAL No. 1509240

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	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)	Chloride 300.0				Air Bubbles (Y or N)
9/4/15	10:36	Soil	SC-1	jar	non	X		X									X				
9/4/15	10:39	Soil	SC-2	jar	non	X		X									X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
9/4/15	1306	Kelsey Christiansen	Chris Walls	9/4/15	1306
9/4/15	1722	Chris Walls		09/05/15	1025

Remarks:

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

October 12, 2015

Kelsey Christiansen
Williams Field Services
188 Co. Rd 4900
Bloomfield, NM 87413
TEL: (505) 632-4442
FAX

RE: Milagro Plant OrderNo.: 1510084

Dear Kelsey Christiansen:

Hall Environmental Analysis Laboratory received 1 sample(s) on 10/2/2015 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.

Analytical Report
Lab Order **1510084**
Date Reported: **10/12/2015**

CLIENT: Williams Field Services
Project: Milagro Plant
Lab ID: 1510084-001 **Matrix:** SOIL

Client Sample ID: SC-3
Collection Date: 10/1/2015 1:45:00 PM
Received Date: 10/2/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	13	10		mg/Kg	1	10/8/2015 11:57:45 PM	21629
Surr: DNOP	106	57.9-140		%REC	1	10/8/2015 11:57:45 PM	21629
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/6/2015 11:04:16 PM	21665
Surr: BFB	89.2	75.4-113		%REC	1	10/6/2015 11:04:16 PM	21665
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	10/6/2015 11:04:16 PM	21665
Toluene	ND	0.048		mg/Kg	1	10/6/2015 11:04:16 PM	21665
Ethylbenzene	ND	0.048		mg/Kg	1	10/6/2015 11:04:16 PM	21665
Xylenes, Total	ND	0.095		mg/Kg	1	10/6/2015 11:04:16 PM	21665
Surr: 4-Bromofluorobenzene	106	80-120		%REC	1	10/6/2015 11:04:16 PM	21665

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1510084**

12-Oct-15

Client: Williams Field Services

Project: Milagro Plant

Sample ID **MB-21652**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **21652**	RunNo: **29273**
Prep Date: **10/5/2015**	Analysis Date: **10/5/2015**	SeqNo: **890900** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	7.9		10.00		78.7	57.9	140			

Sample ID **LCS-21652**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **21652**	RunNo: **29273**
Prep Date: **10/5/2015**	Analysis Date: **10/5/2015**	SeqNo: **890901** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.7	57.9	140			

Sample ID **MB-21629**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **21629**	RunNo: **29273**
Prep Date: **10/2/2015**	Analysis Date: **10/6/2015**	SeqNo: **892312** 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	10		10.00		103	57.9	140			

Sample ID **LCS-21629**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **21629**	RunNo: **29273**
Prep Date: **10/2/2015**	Analysis Date: **10/6/2015**	SeqNo: **892314** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.7	57.4	139			
Surr: DNOP	5.3		5.000		107	57.9	140			

Sample ID **MB-21679**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **21679**	RunNo: **29273**
Prep Date: **10/6/2015**	Analysis Date: **10/8/2015**	SeqNo: **894236** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		105	57.9	140			

Sample ID **LCS-21679**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **21679**	RunNo: **29273**
Prep Date: **10/6/2015**	Analysis Date: **10/8/2015**	SeqNo: **894238** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.6		5.000		112	57.9	140			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- 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
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1510084**

12-Oct-15

Client: Williams Field Services

Project: Milagro Plant

Sample ID **MB-21665**	SampType: **MBLK**			TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID: **PBS**	Batch ID: **21665**			RunNo: **29332**					
Prep Date: **10/5/2015**	Analysis Date: **10/6/2015**			SeqNo: **892336**		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	880		1000		88.5	75.4	113			

Sample ID **LCS-21665**	SampType: **LCS**			TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID: **LCSS**	Batch ID: **21665**			RunNo: **29332**					
Prep Date: **10/5/2015**	Analysis Date: **10/6/2015**			SeqNo: **892337**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	95.4	79.6	122			
Surr: BFB	950		1000		95.5	75.4	113			

Sample ID **MB-21694**	SampType: **MBLK**			TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID: **PBS**	Batch ID: **21694**			RunNo: **29364**					
Prep Date: **10/6/2015**	Analysis Date: **10/7/2015**			SeqNo: **893258**		Units: **%REC**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	880		1000		88.0	75.4	113			

Sample ID **LCS-21694**	SampType: **LCS**			TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID: **LCSS**	Batch ID: **21694**			RunNo: **29364**					
Prep Date: **10/6/2015**	Analysis Date: **10/7/2015**			SeqNo: **893259**		Units: **%REC**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	960		1000		95.7	75.4	113			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- 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
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1510084**

12-Oct-15

Client: Williams Field Services
Project: Milagro Plant

Sample ID **MB-21665**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **21665**	RunNo: **29332**
Prep Date: **10/5/2015**	Analysis Date: **10/6/2015**	SeqNo: **892380** 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	1.1		1.000		106	80	120			

Sample ID **LCS-21665**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **21665**	RunNo: **29332**
Prep Date: **10/5/2015**	Analysis Date: **10/6/2015**	SeqNo: **892381** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	103	80	120			
Toluene	0.99	0.050	1.000	0	99.1	80	120			
Ethylbenzene	1.0	0.050	1.000	0	100	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.8	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		113	80	120			

Sample ID **MB-21694**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **21694**	RunNo: **29364**
Prep Date: **10/6/2015**	Analysis Date: **10/7/2015**	SeqNo: **893314** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		105	80	120			

Sample ID **LCS-21694**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **21694**	RunNo: **29364**
Prep Date: **10/6/2015**	Analysis Date: **10/7/2015**	SeqNo: **893315** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		111	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

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: WILLIAMS FIELD SERVI Work Order Number: 1510084 RcptNo. 1

Received by/date: SA 10/02/15

Logged By: Lindsay Mangin 10/2/2015 8:00:00 AM

Completed By: Lindsay Mangin 10/2/2015 1:21:25 PM

Reviewed By: JA 10/05/15

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?	Courier		

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	1.0	Good	Yes			

Chain-of-Custody Record

Client: Williams Field Service

Mailing Address:

Phone #: 505-632-4606

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Milagro Plant

Project #:

Project Manager: Kelsey Christiansen

Sampler: K. C.

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1510084	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)	Air Bubbles (Y or N)
10/1/15	1345	Soil	SC-3	4oz jar	non	-001	X		X									

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Date	Time
10/1/15	1515	Kelsey Christiansen	Christ Walt	10/1/15	1515
10/1/15	1934	Christine Walter	Dat. Grant	10/02/15	0800

Remarks:

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.

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: Williams Four Corners LLC	Contact: Kelsey Christiansen
Address: 188 CR 4900, Bloomfield, NM 87413	Telephone No.: (505) 632-4606
Facility Name: Milagro Cogeneration & Gas Plant	Facility Type: Facility

Surface Owner: Williams	Mineral Owner	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	12	29N	11W					San Juan

Latitude 36.735966° N **Longitude** -107.942329° W

NATURE OF RELEASE

Type of Release: Amine	Volume of Release: 70 bbls Amine	Volume Recovered: Unknown
Source of Release: Pressure Relief Valve	Date and Hour of Occurrence: 06/09/2015 at 03:28 AM	Date and Hour of Discovery: 06/09/2015 at 03:28 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Cory Smith, NMOCD	
By Whom? Kelsey Christiansen	Date and Hour: 06/09/2015 at 12:30 AM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

OIL CONS. DIV DIST. 3

OCT 19 2015

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

The Milagro Gas Plant experienced a PSV which lifted on Train 3 rich Amine Filter causing amine to spill onto the cement containment as well as the surrounding area on both sides of Train 3. The volume released was determined by calculating event start and stop times using the DCS along with orifice area and head pressure on the Pressure relief valve 44306. The valve did relieve at set point and further investigation will be completed to determine the exact cause of the release.

Describe Area Affected and Cleanup Action Taken.*

Williams submitted a remediation plan to the NMOCD and upon approval began remediation activities. The attached report provides details on the sampling method and event. Once soil analytical results became available Williams got approval from the NMOCD to backfill all areas under the TPH and BTEX limits with the exception one area (SC-5) which was over the TPH limit. Additional excavation occurred and the area was resampled to insure cleanup. Results are also attached.

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: Kelsey Christiansen	Approved by Environmental Specialist:	
Title: Environmental Specialist	Approval Date: 12/17/15	Expiration Date:
E-mail Address: Kelsey.christiansen@williams.com	Conditions of Approval:	Attached ☐
Date: 10/15/2015 Phone: (505) 632-4606		

* Attach Additional Sheets If Necessary

NCS 1535153159

37

Rule Engineering, LLC
Solutions to Regulations for Industry

August 3, 2015

Kelsey Christiansen
Environmental Specialist
Williams Four Corners LLC
188 County Road 4900
Bloomfield, New Mexico 87413

RE: Williams Milagro Gas Plant Amine Release Sampling

Dear Ms Christiansen:

Rule Engineering, LLC (Rule) conducted sampling activities in accordance with the Williams Four Corners LLC (Williams) RFS 619321-NXM99 Amine Sampling at Milagro Gas Plant. This report summarizes the work which included establishing a grid over the affected area, collection of composite samples, organic vapor meter (OVM) field screening and submittal of samples for laboratory analyses. Figure 1 illustrates the location of the affected area within the Milagro Gas Plant.

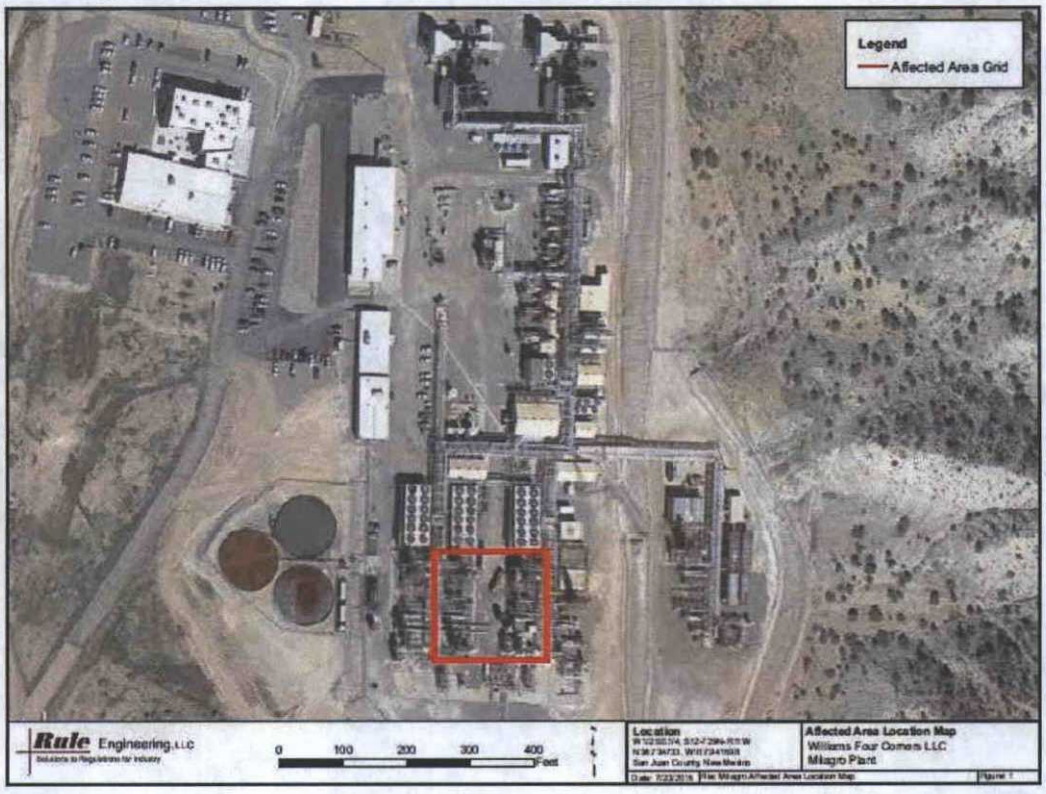


Figure 1 Milagro Plant Affected Area Map

786 Valley Court
Grand Junction, CO 81505
(970) 244-8500

1055 Kipling Street
Lakewood, CO 80215
(303) 431-8500
www.ruleengineering.com

501 Airport Drive, Ste 205
Farmington, NM 87401
(505) 325-1055

Site Activities

On July 22, 2015, a team of two Rule personnel met with Williams personnel at the Milagro Gas Plant and received plant safety training prior to accessing the plant. The team proceeded to the release area and established a 40' x 40' grid over the affected area. For simplicity in sampling, the grid areas were elongated to approximately 15 feet on the east and west sides of the affected area. The resulting grid consisted of 12 areas covering a total of 25,600 square feet. Samples in the excavated areas were collected from 0 to 6 inches at 5 points within each grid and composited into a representative sample for each grid. Figure 2 illustrates the gridded area, the sample composite locations and the resultant sample representing each grid.

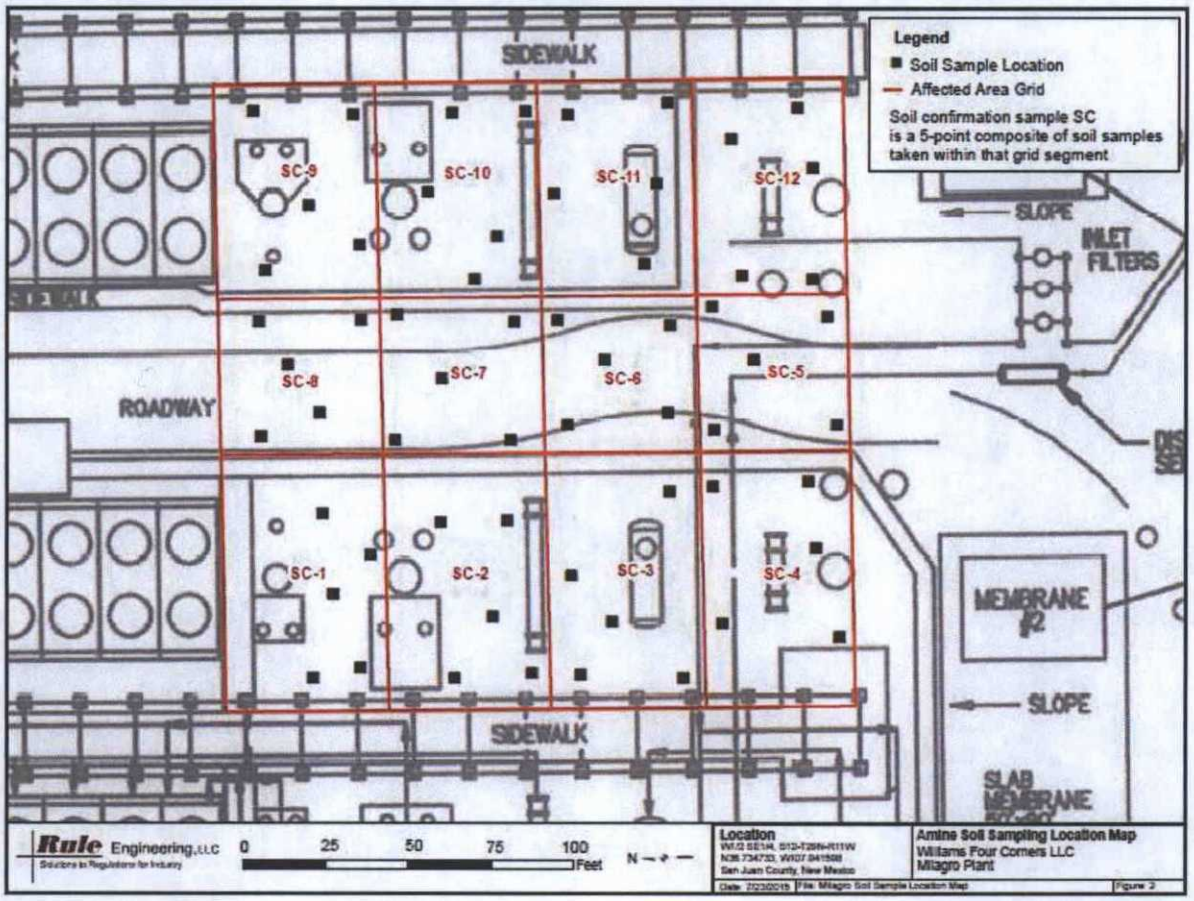


Figure 2 Amine Soil Sampling Location Map

Each composited sample was scanned in the field for hydrocarbons using an OVM, containerized and labeled for analysis.

Sample Laboratory Analysis

Samples collected for laboratory analysis were placed into laboratory supplied containers, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. The composite samples were analyzed for:

- Chloride per USEPA Method 300.0 Anions
- Total Kjeldahl Nitrogen per USEPA Method 4500-N-ORG C: TKN
- Diesel Range Organics (DRO) per USEPA Method 8015M/D
- Gasoline Range Organics (GRO) per USEPA Method 8015D
- Benzene, Ethylbenzene, Toluene, and Total Xylenes (BTEX) per USEPA Method 8021B

Laboratory analytical results are summarized in Table 1, and the analytical laboratory report is attached.

Table 1. Amine Soil Sampling Results-VOCs, TKN, TPH, Benzene, Total BTEX, and Chloride Milagro Gas Plant, Williams Four Corners LLC, San Juan County New Mexico

Sample ID	Date	Sample Type	Sample Depth (ft below surface)	Field Sampling VOCs OVM ppm	Laboratory Analytical Results TKN (mg/kg)	DRO (mg/kg)	GRO (mg/kg)	Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
NMOCD Action Levels**				----	---	1000		10	50	600
SC-1	7/22/2015	5-point	0.0-0.5	3.8	450	12	ND	ND	ND	38
SC-2	7/22/2015	5-point	0.0-0.5	3.2	910	ND	ND	ND	ND	14
SC-3	7/22/2015	5-point	0.0-0.5	6.6	1,800	17	ND	ND	ND	15
SC-4	7/22/2015	5-point	0.0-0.5	2.4	3,400	570	ND	ND	ND	3.7
SC-5	7/22/2015	5-point	0.0-0.5	3.6	4,100	2,000	ND	ND	ND	ND
SC-6	7/22/2015	5-point	0.0-0.5	3.0	1,700	170	ND	ND	ND	ND
SC-7	7/22/2015	5-point	0.0-0.5	2.7	730	52	ND	ND	ND	ND
SC-8	7/22/2015	5-point	0.0-0.5	3.7	700	74	ND	ND	ND	ND
SC-9	7/22/2015	5-point	0.0-0.5	34.8	2,300	600	ND	ND	ND	ND
SC-10	7/22/2015	5-point	0.0-0.5	24.1	2,700	110	ND	ND	ND	ND
SC-11	7/22/2015	5-point	0.0-0.5	28.0	4,300	880	ND	ND	ND	ND
SC-12	7/22/2015	5-point	0.0-0.5	12.8	2,300	450	ND	ND	ND	ND

Notes: VOCs - volatile organic compounds
OVM (PID) - photo-ionization detector
ppm - parts per million
mg/kg - milligrams/kilograms
BTEX - benzene, toluene, ethylbenzene, and xylenes
Site Ranking: 10

If you have any questions about this report, please contact me at (970) 244-8500 or Heather Woods at (505) 325-1055.

Sincerely,

Rule Engineering, LLC

Sean T. Norris

Sean T. Norris
Grand Junction Area Manager

cc: H. Woods - Rule

Attachments:
Figures 1 & 2
Hall Laboratory Analytical Reports

NMOCD Site Ranking Determination
Milagro Gas Plant
San Juan County, New Mexico
Williams Four Corners LLC

Ranking Criteria	Ranking Score	Site-Based Ranking Score	Basis for Determination	Data Sources
Depth to Groundwater				
<50 feet	20	0	A Cathodic Report for the Garrett Fed Com #1 and Garrett B #1, located between 500 and 1,000 feet northeast and east of the Milagro Gas Plant facility boundary, reports depth to water greater than 100 feet.	NMOCD Online database, Bloomfield Quadrangle (2013 7.5-Minute Series), Google Earth, and Visual Inspection
50-99 feet	10			
>100 feet	0			
Wellhead Protection Area				
<1,000 feet from a water source, or <200 feet from private domestic water source	20 (Yes)	0	No water source or recorded water wells within 1,000 feet radius of location. No private domestic water source within 200 feet radius of location.	NMOSE NMWRRS, Bloomfield Quadrangle (2013 7.5-Minute Series), Google Earth, and Visual Inspection
	0 (No)			
Distance to Surface Water Body				
<200 horizontal feet	20	10	Unnamed, ephemeral wash which drains to the San Juan River is located approximately 850 feet west of the release area.	Bloomfield Quadrangle (2013 7.5-Minute Series), Google Earth, and Visual Inspection
200 to 1,000 horizontal feet	10			
>1,000 horizontal feet	0			
Site Based Total Ranking Score		**10**		

Rule Engineering, LLC
Solutions to Regulations for Industry

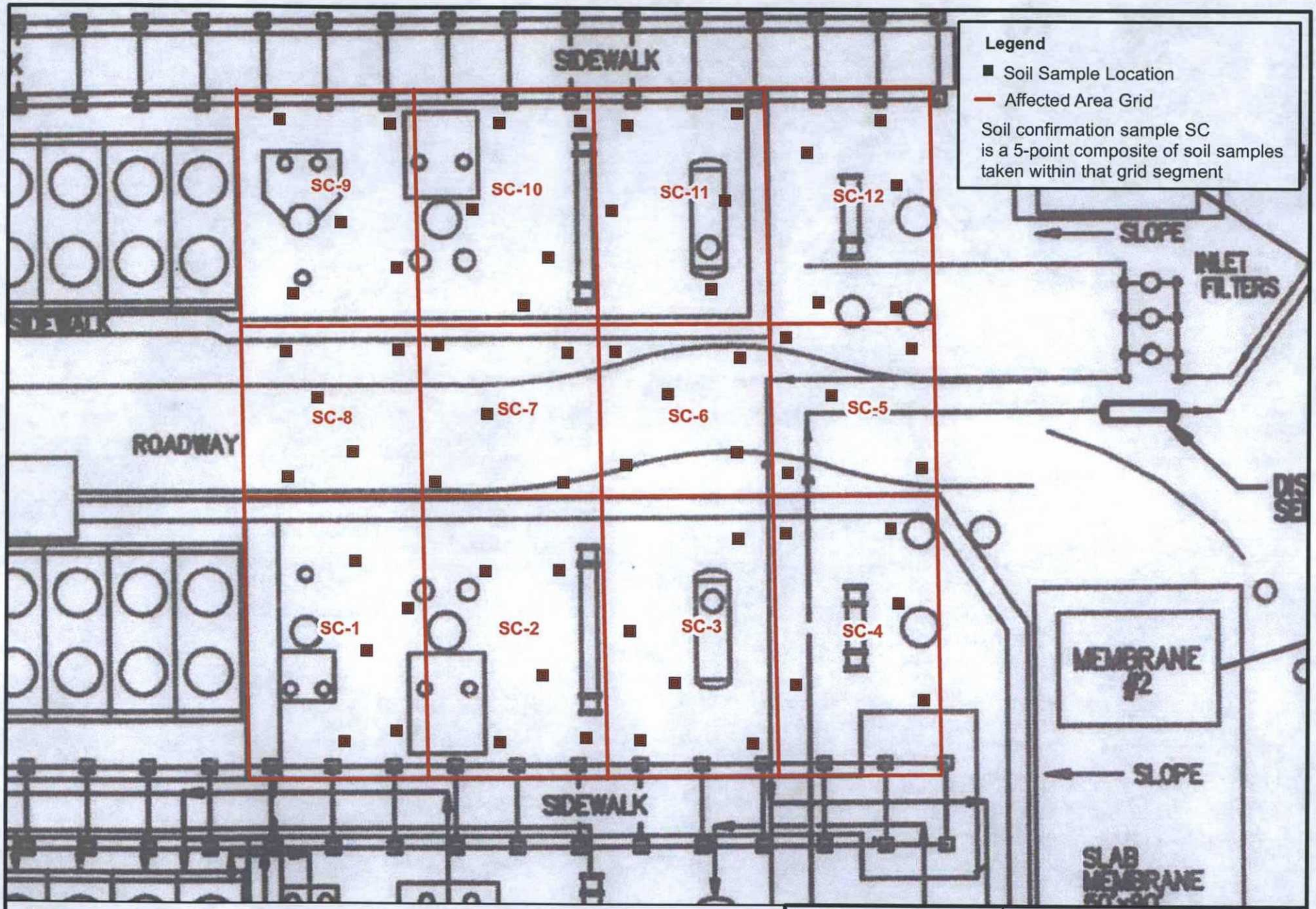
0 100 200 300 400 Feet

N

Location
W1/2 SE1/4, S12-T29N-R11W
N36.734733, W107.941598
San Juan County, New Mexico

Affected Area Location Map
Williams Four Corners LLC
Milagro Plant

Date: 7/23/2015 | File: Milagro Affected Area Location Map | Figure: 1


Legend
Soil Sample Location
Affected Area Grid
Soil confirmation sample SC is a 5-point composite of soil samples taken within that grid segment
SIDEWALK
SC-9
SC-10
SC-11
SC-12
SLOPE
INLET FILTERS
ROADWAY
SC-8
SC-7
SC-6
SC-5
SC-1
SC-2
SC-3
SC-4
MEMBRANE #2
SLOPE
SIDEWALK
SLAB MEMBRANE
Rule Engineering, LLC
Solutions to Regulations for Industry
0
25
50
75
100
Feet
N
Location
W1/2 SE1/4, S12-T29N-R11W
N36.734733, W107.941598
San Juan County, New Mexico
Amine Soil Sampling Location Map
Williams Four Corners LLC
Milagro Plant
Date: 7/23/2015
File: Milagro Soil Sample Location Map
Figure: 2

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

July 31, 2015

Deborah Watson
Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 860-2712
FAX

RE: Amine Samples Milagro Plant OrderNo.: 1507A53

Dear Deborah Watson:

Hall Environmental Analysis Laboratory received 12 sample(s) on 7/23/2015 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.

Analytical Report
Lab Order **1507A53**
Date Reported: **7/31/2015**

CLIENT: Rule Engineering LLC
Client Sample ID: SC-1
Project: Amine Samples Milagro Plant
Collection Date: 7/22/2015 2:15:00 PM
Lab ID: 1507A53-001 **Matrix:** SOIL
Received Date: 7/23/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	38	7.5		mg/Kg	5	7/29/2015 10:26:02 AM	20481
METHOD 4500-N-ORG C: TKN						Analyst: **SRM**	
Nitrogen, Total Kjeldahl	450	49		mg/Kg	1	7/30/2015 12:19:00 PM	20467
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	12	9.8		mg/Kg	1	7/27/2015 5:20:25 PM	20406
Surr: DNOP	126	57.9-140		%REC	1	7/27/2015 5:20:25 PM	20406
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/25/2015 3:57:02 AM	20408
Surr: BFB	88.6	75.4-113		%REC	1	7/25/2015 3:57:02 AM	20408
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.049		mg/Kg	1	7/25/2015 3:57:02 AM	20408
Toluene	ND	0.049		mg/Kg	1	7/25/2015 3:57:02 AM	20408
Ethylbenzene	ND	0.049		mg/Kg	1	7/25/2015 3:57:02 AM	20408
Xylenes, Total	ND	0.098		mg/Kg	1	7/25/2015 3:57:02 AM	20408
Surr: 4-Bromofluorobenzene	91.8	80-120		%REC	1	7/25/2015 3:57:02 AM	20408

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-2
Project: Amine Samples Milagro Plant
Collection Date: 7/22/2015 2:20:00 PM
Lab ID: 1507A53-002 **Matrix:** SOIL
Received Date: 7/23/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	14	7.5		mg/Kg	5	7/29/2015 10:38:27 AM	20481
METHOD 4500-N-ORG C: TKN						Analyst: **SRM**	
Nitrogen, Total Kjeldahl	910	49		mg/Kg	1	7/30/2015 12:19:00 PM	20467
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/27/2015 6:24:55 PM	20406
Surr: DNOP	93.6	57.9-140		%REC	1	7/27/2015 6:24:55 PM	20406
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/25/2015 4:25:44 AM	20408
Surr: BFB	88.1	75.4-113		%REC	1	7/25/2015 4:25:44 AM	20408
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	7/25/2015 4:25:44 AM	20408
Toluene	ND	0.048		mg/Kg	1	7/25/2015 4:25:44 AM	20408
Ethylbenzene	ND	0.048		mg/Kg	1	7/25/2015 4:25:44 AM	20408
Xylenes, Total	ND	0.095		mg/Kg	1	7/25/2015 4:25:44 AM	20408
Surr: 4-Bromofluorobenzene	91.3	80-120		%REC	1	7/25/2015 4:25:44 AM	20408

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-3
Project: Amine Samples Milagro Plant
Collection Date: 7/22/2015 2:25:00 PM
Lab ID: 1507A53-003 **Matrix:** SOIL
Received Date: 7/23/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	15	7.5		mg/Kg	5	7/29/2015 10:50:52 AM	20481
METHOD 4500-N-ORG C: TKN						Analyst: **SRM**	
Nitrogen, Total Kjeldahl	1800	52		mg/Kg	1	7/30/2015 12:19:00 PM	20467
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	17	9.9		mg/Kg	1	7/27/2015 6:46:25 PM	20406
Surr: DNOP	95.3	57.9-140		%REC	1	7/27/2015 6:46:25 PM	20406
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/25/2015 4:54:28 AM	20408
Surr: BFB	88.8	75.4-113		%REC	1	7/25/2015 4:54:28 AM	20408
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.050		mg/Kg	1	7/25/2015 4:54:28 AM	20408
Toluene	ND	0.050		mg/Kg	1	7/25/2015 4:54:28 AM	20408
Ethylbenzene	ND	0.050		mg/Kg	1	7/25/2015 4:54:28 AM	20408
Xylenes, Total	ND	0.10		mg/Kg	1	7/25/2015 4:54:28 AM	20408
Surr: 4-Bromofluorobenzene	92.2	80-120		%REC	1	7/25/2015 4:54:28 AM	20408

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-4
Project: Amine Samples Milagro Plant
Collection Date: 7/22/2015 2:30:00 PM
Lab ID: 1507A53-004 **Matrix:** SOIL
Received Date: 7/23/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	3.7	1.5		mg/Kg	1	7/28/2015 6:15:03 PM	20481
METHOD 4500-N-ORG C: TKN						Analyst: **SRM**	
Nitrogen, Total Kjeldahl	3400	49		mg/Kg	1	7/30/2015 12:19:00 PM	20467
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	570	9.5		mg/Kg	1	7/27/2015 7:07:56 PM	20406
Surr: DNOP	96.3	57.9-140		%REC	1	7/27/2015 7:07:56 PM	20406
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/25/2015 5:23:06 AM	20408
Surr: BFB	86.5	75.4-113		%REC	1	7/25/2015 5:23:06 AM	20408
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.050		mg/Kg	1	7/25/2015 5:23:06 AM	20408
Toluene	ND	0.050		mg/Kg	1	7/25/2015 5:23:06 AM	20408
Ethylbenzene	ND	0.050		mg/Kg	1	7/25/2015 5:23:06 AM	20408
Xylenes, Total	ND	0.10		mg/Kg	1	7/25/2015 5:23:06 AM	20408
Surr: 4-Bromofluorobenzene	87.9	80-120		%REC	1	7/25/2015 5:23:06 AM	20408

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-5
Project: Amine Samples Milagro Plant
Collection Date: 7/22/2015 2:35:00 PM
Lab ID: 1507A53-005 **Matrix:** SOIL
Received Date: 7/23/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	ND	30		mg/Kg	20	7/28/2015 7:04:40 PM	20490
METHOD 4500-N-ORG C: TKN						Analyst: **SRM**	
Nitrogen, Total Kjeldahl	4100	51		mg/Kg	1	7/30/2015 12:19:00 PM	20467
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	2000	99		mg/Kg	10	7/28/2015 3:43:54 PM	20406
Surr: DNOP	0	57.9-140	S	%REC	10	7/28/2015 3:43:54 PM	20406
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/25/2015 5:51:46 AM	20408
Surr: BFB	87.2	75.4-113		%REC	1	7/25/2015 5:51:46 AM	20408
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	7/25/2015 5:51:46 AM	20408
Toluene	ND	0.048		mg/Kg	1	7/25/2015 5:51:46 AM	20408
Ethylbenzene	ND	0.048		mg/Kg	1	7/25/2015 5:51:46 AM	20408
Xylenes, Total	ND	0.096		mg/Kg	1	7/25/2015 5:51:46 AM	20408
Surr: 4-Bromofluorobenzene	89.2	80-120		%REC	1	7/25/2015 5:51:46 AM	20408

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-6
Project: Amine Samples Milagro Plant
Collection Date: 7/22/2015 2:40:00 PM
Lab ID: 1507A53-006 **Matrix:** SOIL
Received Date: 7/23/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	ND	30		mg/Kg	20	7/28/2015 7:41:53 PM	20490
METHOD 4500-N-ORG C: TKN						Analyst: **SRM**	
Nitrogen, Total Kjeldahl	1700	50		mg/Kg	1	7/30/2015 12:19:00 PM	20467
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	170	9.8		mg/Kg	1	7/27/2015 7:50:46 PM	20406
Surr: DNOP	113	57.9-140		%REC	1	7/27/2015 7:50:46 PM	20406
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/25/2015 6:20:28 AM	20408
Surr: BFB	87.4	75.4-113		%REC	1	7/25/2015 6:20:28 AM	20408
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.050		mg/Kg	1	7/25/2015 6:20:28 AM	20408
Toluene	ND	0.050		mg/Kg	1	7/25/2015 6:20:28 AM	20408
Ethylbenzene	ND	0.050		mg/Kg	1	7/25/2015 6:20:28 AM	20408
Xylenes, Total	ND	0.10		mg/Kg	1	7/25/2015 6:20:28 AM	20408
Surr: 4-Bromofluorobenzene	89.9	80-120		%REC	1	7/25/2015 6:20:28 AM	20408

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-7
Project: Amine Samples Milagro Plant
Collection Date: 7/22/2015 2:45:00 PM
Lab ID: 1507A53-007 **Matrix:** SOIL **Received Date:** 7/23/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	ND	30		mg/Kg	20	7/28/2015 7:54:17 PM	20490
METHOD 4500-N-ORG C: TKN						Analyst: **SRM**	
Nitrogen, Total Kjeldahl	730	49		mg/Kg	1	7/30/2015 12:19:00 PM	20467
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	52	9.2		mg/Kg	1	7/27/2015 8:33:48 PM	20406
Surr: DNOP	104	57.9-140		%REC	1	7/27/2015 8:33:48 PM	20406
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/25/2015 6:49:06 AM	20408
Surr: BFB	87.0	75.4-113		%REC	1	7/25/2015 6:49:06 AM	20408
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.049		mg/Kg	1	7/25/2015 6:49:06 AM	20408
Toluene	ND	0.049		mg/Kg	1	7/25/2015 6:49:06 AM	20408
Ethylbenzene	ND	0.049		mg/Kg	1	7/25/2015 6:49:06 AM	20408
Xylenes, Total	ND	0.098		mg/Kg	1	7/25/2015 6:49:06 AM	20408
Surr: 4-Bromofluorobenzene	88.9	80-120		%REC	1	7/25/2015 6:49:06 AM	20408

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-8
Project: Amine Samples Milagro Plant
Collection Date: 7/22/2015 2:50:00 PM
Lab ID: 1507A53-008 **Matrix:** SOIL
Received Date: 7/23/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	ND	30		mg/Kg	20	7/28/2015 8:06:42 PM	20490
METHOD 4500-N-ORG C: TKN						Analyst: **SRM**	
Nitrogen, Total Kjeldahl	700	49		mg/Kg	1	7/30/2015 12:19:00 PM	20467
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	74	9.5		mg/Kg	1	7/28/2015 4:26:54 PM	20406
Surr: DNOP	91.7	57.9-140		%REC	1	7/28/2015 4:26:54 PM	20406
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/25/2015 9:13:01 AM	20408
Surr: BFB	87.2	75.4-113		%REC	1	7/25/2015 9:13:01 AM	20408
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.050		mg/Kg	1	7/25/2015 9:13:01 AM	20408
Toluene	ND	0.050		mg/Kg	1	7/25/2015 9:13:01 AM	20408
Ethylbenzene	ND	0.050		mg/Kg	1	7/25/2015 9:13:01 AM	20408
Xylenes, Total	ND	0.10		mg/Kg	1	7/25/2015 9:13:01 AM	20408
Surr: 4-Bromofluorobenzene	89.3	80-120		%REC	1	7/25/2015 9:13:01 AM	20408

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-9
Project: Amine Samples Milagro Plant
Collection Date: 7/22/2015 2:55:00 PM
Lab ID: 1507A53-009
Matrix: SOIL
Received Date: 7/23/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	ND	30		mg/Kg	20	7/28/2015 8:43:56 PM	20490
METHOD 4500-N-ORG C: TKN						Analyst: **SRM**	
Nitrogen, Total Kjeldahl	2300	49		mg/Kg	1	7/30/2015 12:19:00 PM	20467
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	600	9.9		mg/Kg	1	7/27/2015 9:16:49 PM	20406
Surr: DNOP	96.8	57.9-140		%REC	1	7/27/2015 9:16:49 PM	20406
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/25/2015 9:41:44 AM	20408
Surr: BFB	85.9	75.4-113		%REC	1	7/25/2015 9:41:44 AM	20408
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	7/25/2015 9:41:44 AM	20408
Toluene	ND	0.048		mg/Kg	1	7/25/2015 9:41:44 AM	20408
Ethylbenzene	ND	0.048		mg/Kg	1	7/25/2015 9:41:44 AM	20408
Xylenes, Total	ND	0.096		mg/Kg	1	7/25/2015 9:41:44 AM	20408
Surr: 4-Bromofluorobenzene	87.1	80-120		%REC	1	7/25/2015 9:41:44 AM	20408

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-10
Project: Amine Samples Milagro Plant
Collection Date: 7/22/2015 3:00:00 PM
Lab ID: 1507A53-010
Matrix: SOIL
Received Date: 7/23/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	ND	30		mg/Kg	20	7/28/2015 8:56:21 PM	20490
METHOD 4500-N-ORG C: TKN						Analyst: **SRM**	
Nitrogen, Total Kjeldahl	2700	52		mg/Kg	1	7/30/2015 12:19:00 PM	20467
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	110	9.9		mg/Kg	1	7/27/2015 9:38:16 PM	20406
Surr: DNOP	100	57.9-140		%REC	1	7/27/2015 9:38:16 PM	20406
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/25/2015 10:10:30 AM	20408
Surr: BFB	86.9	75.4-113		%REC	1	7/25/2015 10:10:30 AM	20408
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	7/25/2015 10:10:30 AM	20408
Toluene	ND	0.048		mg/Kg	1	7/25/2015 10:10:30 AM	20408
Ethylbenzene	ND	0.048		mg/Kg	1	7/25/2015 10:10:30 AM	20408
Xylenes, Total	ND	0.096		mg/Kg	1	7/25/2015 10:10:30 AM	20408
Surr: 4-Bromofluorobenzene	89.2	80-120		%REC	1	7/25/2015 10:10:30 AM	20408

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-11
Project: Amine Samples Milagro Plant
Collection Date: 7/22/2015 3:05:00 PM
Lab ID: 1507A53-011 **Matrix:** SOIL
Received Date: 7/23/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	ND	30		mg/Kg	20	7/28/2015 9:08:46 PM	20490
METHOD 4500-N-ORG C: TKN						Analyst: **SRM**	
Nitrogen, Total Kjeldahl	4300	51		mg/Kg	1	7/30/2015 12:19:00 PM	20467
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	880	9.6		mg/Kg	1	7/27/2015 9:59:49 PM	20406
Surr: DNOP	98.1	57.9-140		%REC	1	7/27/2015 9:59:49 PM	20406
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/25/2015 10:39:14 AM	20408
Surr: BFB	87.3	75.4-113		%REC	1	7/25/2015 10:39:14 AM	20408
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.049		mg/Kg	1	7/25/2015 10:39:14 AM	20408
Toluene	ND	0.049		mg/Kg	1	7/25/2015 10:39:14 AM	20408
Ethylbenzene	ND	0.049		mg/Kg	1	7/25/2015 10:39:14 AM	20408
Xylenes, Total	ND	0.098		mg/Kg	1	7/25/2015 10:39:14 AM	20408
Surr: 4-Bromofluorobenzene	89.3	80-120		%REC	1	7/25/2015 10:39:14 AM	20408

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-12
Project: Amine Samples Milagro Plant
Collection Date: 7/22/2015 3:10:00 PM
Lab ID: 1507A53-012 **Matrix:** SOIL
Received Date: 7/23/2015 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	ND	30		mg/Kg	20	7/28/2015 9:21:10 PM	20490
METHOD 4500-N-ORG C: TKN						Analyst: **SRM**	
Nitrogen, Total Kjeldahl	2300	50		mg/Kg	1	7/30/2015 12:19:00 PM	20467
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	450	9.7		mg/Kg	1	7/27/2015 10:21:09 PM	20406
Surr: DNOP	100	57.9-140		%REC	1	7/27/2015 10:21:09 PM	20406
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/25/2015 11:07:58 AM	20408
Surr: BFB	87.4	75.4-113		%REC	1	7/25/2015 11:07:58 AM	20408
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.050		mg/Kg	1	7/25/2015 11:07:58 AM	20408
Toluene	ND	0.050		mg/Kg	1	7/25/2015 11:07:58 AM	20408
Ethylbenzene	ND	0.050		mg/Kg	1	7/25/2015 11:07:58 AM	20408
Xylenes, Total	ND	0.10		mg/Kg	1	7/25/2015 11:07:58 AM	20408
Surr: 4-Bromofluorobenzene	89.4	80-120		%REC	1	7/25/2015 11:07:58 AM	20408

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507A53**

31-Jul-15

Client: Rule Engineering LLC

Project: Amine Samples Milagro Plant

Sample ID	**MB-20481**	SampType:	**MBLK**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**20481**		RunNo:	**27833**				
Prep Date:	**7/28/2015**	Analysis Date:	**7/28/2015**		SeqNo:	**836878**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-20481**	SampType:	**LCS**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**20481**		RunNo:	**27833**				
Prep Date:	**7/28/2015**	Analysis Date:	**7/28/2015**		SeqNo:	**836879**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.3	90	110			

Sample ID	**MB-20490**	SampType:	**MBLK**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**20490**		RunNo:	**27838**				
Prep Date:	**7/28/2015**	Analysis Date:	**7/28/2015**		SeqNo:	**836982**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-20490**	SampType:	**LCS**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**20490**		RunNo:	**27838**				
Prep Date:	**7/28/2015**	Analysis Date:	**7/28/2015**		SeqNo:	**836983**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.1	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- 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
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507A53**

31-Jul-15

Client: Rule Engineering LLC

Project: Amine Samples Milagro Plant

Sample ID **MB-20406**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **20406**	RunNo: **27765**
Prep Date: **7/23/2015**	Analysis Date: **7/27/2015**	SeqNo: **835536** 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	12		10.00		118	57.9	140			

Sample ID **LCS-20406**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **20406**	RunNo: **27765**
Prep Date: **7/23/2015**	Analysis Date: **7/27/2015**	SeqNo: **835538** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	101	57.4	139			
Surr: DNOP	5.3		5.000		105	57.9	140			

Sample ID **1507A53-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SC-1**	Batch ID: **20406**	RunNo: **27765**
Prep Date: **7/23/2015**	Analysis Date: **7/27/2015**	SeqNo: **835550** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	9.5	47.57	12.22	59.4	42.3	146			
Surr: DNOP	4.5		4.757		94.5	57.9	140			

Sample ID **1507A53-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SC-1**	Batch ID: **20406**	RunNo: **27765**
Prep Date: **7/23/2015**	Analysis Date: **7/27/2015**	SeqNo: **835551** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	9.8	48.88	12.22	65.5	42.3	146	8.86	28.9	
Surr: DNOP	4.5		4.888		91.4	57.9	140	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- 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
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507A53**

31-Jul-15

Client: Rule Engineering LLC

Project: Amine Samples Milagro Plant

Sample ID **MB-20408**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **20408**	RunNo: **27749**
Prep Date: **7/23/2015**	Analysis Date: **7/24/2015**	SeqNo: **834250** 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	880		1000		87.9	75.4	113			

Sample ID **LCS-20408**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **20408**	RunNo: **27749**
Prep Date: **7/23/2015**	Analysis Date: **7/24/2015**	SeqNo: **834251** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	92.5	79.6	122			
Surr: BFB	960		1000		95.7	75.4	113			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- 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
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507A53**

31-Jul-15

Client: Rule Engineering LLC

Project: Amine Samples Milagro Plant

Sample ID **MB-20408**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **20408**	RunNo: **27749**
Prep Date: **7/23/2015**	Analysis Date: **7/24/2015**	SeqNo: **834297** 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	0.94		1.000		93.7	80	120			

Sample ID **LCS-20408**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **20408**	RunNo: **27749**
Prep Date: **7/23/2015**	Analysis Date: **7/24/2015**	SeqNo: **834298** 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	110	76.6	128			
Toluene	1.0	0.050	1.000	0	102	75	124			
Ethylbenzene	1.0	0.050	1.000	0	105	79.5	126			
Xylenes, Total	3.2	0.10	3.000	0	106	78.8	124			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507A53**

31-Jul-15

Client: Rule Engineering LLC

Project: Amine Samples Milagro Plant

Sample ID	**MB-20467**	SampType: **MBLK**			TestCode: **Method 4500-N-org C: TKN**					
Client ID:	**PBS**	Batch ID: **20467**			RunNo: **27860**					
Prep Date:	**7/27/2015**	Analysis Date: **7/30/2015**			SeqNo: **838022**		Units: **mg/Kg**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Total Kjeldahl		ND	50								

Sample ID	**LCS-20467**	SampType: **LCS**			TestCode: **Method 4500-N-org C: TKN**					
Client ID:	**LCSS**	Batch ID: **20467**			RunNo: **27860**					
Prep Date:	**7/27/2015**	Analysis Date: **7/30/2015**			SeqNo: **838023**		Units: **mg/Kg**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Total Kjeldahl		1000	50	1000	0	105	80	120			

Sample ID	**1507A53-001AMS**	SampType: **MS**			TestCode: **Method 4500-N-org C: TKN**					
Client ID:	**SC-1**	Batch ID: **20467**			RunNo: **27860**					
Prep Date:	**7/27/2015**	Analysis Date: **7/30/2015**			SeqNo: **838025**		Units: **mg/Kg**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Total Kjeldahl		1400	51	1010	448.5	98.4	75	125			

Sample ID	**1507A53-001AMSD**	SampType: **MSD**			TestCode: **Method 4500-N-org C: TKN**					
Client ID:	**SC-1**	Batch ID: **20467**			RunNo: **27860**					
Prep Date:	**7/27/2015**	Analysis Date: **7/30/2015**			SeqNo: **838026**		Units: **mg/Kg**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Total Kjeldahl		1400	51	1020	448.5	96.0	75	125	0.965	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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: RULE ENGINEERING LL Work Order Number: 1507A53 RcptNo: 1

Received by/date: JA 07/23/15

Logged By: Lindsay Mangin 7/23/2015 8:05:00 AM

Completed By: Lindsay Mangin 7/23/2015 8:35:23 AM

Reviewed By: JA 07/23/15

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?	Courier		

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	1.0	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering LLC

Mailing Address: 501 Airport Dr.
Farmington NM 87401

Phone #: 505 860 2712

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
5 day
☒ Standard ☐ Rush

Project Name:
Amine Samples Milagro Plant

Project #:

Project Manager:
D Watson

Sampler: DW / SN

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

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. 1507A53	BTEX + MTBE + TPH (GRO / DRO / MRO) (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)	Chlorides	TKN			Air Bubbles (Y or N)
7-22-15	1415	soil	SC-1	1-4oz	cold	-001	X		X									X	X			
	1420		SC-2			-002	X		X									X	X			
	1425		SC-3			-003	X		X									X	X			
	1430		SC-4			-004	X		X									X	X			
	1435		SC-5			-005	X		X									X	X			
	1440		SC-6			-006	X		X									X	X			
	1445		SC-7			-007	X		X									X	X			
	1450		SC-8			-008	X		X									X	X			
	1455		SC-9			-009	X		X									X	X			
	1500		SC-10			-010	X		X									X	X			
	1505		SC-11			-011	X		X									X	X			
	1510		SC-12			-012	X		X									X	X			

Date:	Time:	Relinquished by:	Received by:	Date	Time
7/22/15	1700	Debra Watson	Christie Walker	7/22/15	1700
7/22/15	1748	Christie Walker	[illegible]	07/23/15	0805

Remarks: Brett Williams

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

August 13, 2015

Heather Woods
Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX

RE: Williams Amine Spill OrderNo.: 1508492

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/12/2015 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.

Analytical Report
Lab Order **1508492**
Date Reported: **8/13/2015**

CLIENT: Rule Engineering LLC
Project: Williams Amine Spill
Lab ID: 1508492-001
Matrix: MEOH (SOIL)
Client Sample ID: CS-5-081115
Collection Date: 8/11/2015 3:30:00 PM
Received Date: 8/12/2015 7:53:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	2.9	1.5		mg/Kg	1	8/12/2015 12:37:08 PM	20742
METHOD 4500-N-ORG C: TKN						Analyst: **SRM**	
Nitrogen, Total Kjeldahl	670	49		mg/Kg	1	8/13/2015 10:47:00 AM	20756
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	54	9.7		mg/Kg	1	8/12/2015 11:31:22 AM	20735
Surr: DNOP	117	57.9-140		%REC	1	8/12/2015 11:31:22 AM	20735
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	8/12/2015 11:09:02 AM	20727
Surr: BFB	86.9	75.4-113		%REC	1	8/12/2015 11:09:02 AM	20727
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.040		mg/Kg	1	8/12/2015 11:09:02 AM	20727
Toluene	ND	0.040		mg/Kg	1	8/12/2015 11:09:02 AM	20727
Ethylbenzene	ND	0.040		mg/Kg	1	8/12/2015 11:09:02 AM	20727
Xylenes, Total	ND	0.080		mg/Kg	1	8/12/2015 11:09:02 AM	20727
Surr: 4-Bromofluorobenzene	93.6	80-120		%REC	1	8/12/2015 11:09:02 AM	20727

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
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1508492**

13-Aug-15

Client: Rule Engineering LLC

Project: Williams Amine Spill

Sample ID	**MB-20742**	SampType:	**MBLK**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**20742**		RunNo:	**28161**				
Prep Date:	**8/12/2015**	Analysis Date:	**8/12/2015**		SeqNo:	**848526**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-20742**	SampType:	**LCS**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**20742**		RunNo:	**28161**				
Prep Date:	**8/12/2015**	Analysis Date:	**8/12/2015**		SeqNo:	**848527**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.2	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1508492**

13-Aug-15

Client: Rule Engineering LLC

Project: Williams Amine Spill

Sample ID **MB-20735**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **20735**	RunNo: **28122**
Prep Date: **8/12/2015**	Analysis Date: **8/12/2015**	SeqNo: **847381** 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	11		10.00		113	57.9	140			

Sample ID **LCS-20735**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **20735**	RunNo: **28122**
Prep Date: **8/12/2015**	Analysis Date: **8/12/2015**	SeqNo: **847676** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	57.4	139			
Surr: DNOP	5.4		5.000		109	57.9	140			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1508492**

13-Aug-15

Client: Rule Engineering LLC

Project: Williams Amine Spill

Sample ID **MB-20727**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **20727**	RunNo: **28140**
Prep Date: **8/11/2015**	Analysis Date: **8/12/2015**	SeqNo: **848345** 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	840		1000		84.2	75.4	113			

Sample ID **LCS-20727**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **20727**	RunNo: **28140**
Prep Date: **8/11/2015**	Analysis Date: **8/12/2015**	SeqNo: **848346** 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	98.7	79.6	122			
Surr: BFB	930		1000		92.6	75.4	113			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1508492**

13-Aug-15

Client: Rule Engineering LLC
Project: Williams Amine Spill

Sample ID	**MB-20727**	SampType: **MBLK**		TestCode: **EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID: **20727**		RunNo: **28140**					
Prep Date:	**8/11/2015**	Analysis Date: **8/12/2015**		SeqNo: **848378**		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	0.91		1.000		90.9	80	120			

Sample ID	**LCS-20727**	SampType: **LCS**		TestCode: **EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID: **20727**		RunNo: **28140**					
Prep Date:	**8/11/2015**	Analysis Date: **8/12/2015**		SeqNo: **848379**		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	107	76.6	128			
Toluene	1.0	0.050	1.000	0	104	75	124			
Ethylbenzene	1.0	0.050	1.000	0	104	79.5	126			
Xylenes, Total	3.3	0.10	3.000	0	110	78.8	124			
Surr: 4-Bromofluorobenzene	0.96		1.000		96.2	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- 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
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1508492**

13-Aug-15

Client: Rule Engineering LLC

Project: Williams Amine Spill

Sample ID	**MB-20756**	SampType:	**MBLK**		TestCode:	**Method 4500-N-org C: TKN**				
Client ID:	**PBS**	Batch ID:	**20756**		RunNo:	**28170**				
Prep Date:	**8/13/2015**	Analysis Date:	**8/13/2015**		SeqNo:	**848858**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Total Kjeldahl	ND	50								

Sample ID	**LCS-20756**	SampType:	**LCS**		TestCode:	**Method 4500-N-org C: TKN**				
Client ID:	**LCSS**	Batch ID:	**20756**		RunNo:	**28170**				
Prep Date:	**8/13/2015**	Analysis Date:	**8/13/2015**		SeqNo:	**848859**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Total Kjeldahl	1000	50	1000	0	101	80	120			

Sample ID	**1508492-001BMS**	SampType:	**MS**		TestCode:	**Method 4500-N-org C: TKN**				
Client ID:	**CS-5-081115**	Batch ID:	**20756**		RunNo:	**28170**				
Prep Date:	**8/13/2015**	Analysis Date:	**8/13/2015**		SeqNo:	**848862**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Total Kjeldahl	1600	48	961.5	672.5	92.5	75	125			

Sample ID	**1508492-001BMSD**	SampType:	**MSD**		TestCode:	**Method 4500-N-org C: TKN**				
Client ID:	**CS-5-081115**	Batch ID:	**20756**		RunNo:	**28170**				
Prep Date:	**8/13/2015**	Analysis Date:	**8/13/2015**		SeqNo:	**848863**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Total Kjeldahl	1600	48	961.5	672.5	93.9	75	125	0.858	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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: RULE ENGINEERING LL Work Order Number: 1508492 RcptNo: 1

Received by/date: 08/12/15

Logged By: Ashley Gallegos 8/12/2015 7:53:00 AM

Completed By: Ashley Gallegos 8/12/2015 8:26:15 AM

Reviewed By: 08/12/15

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?	Courier		

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 ☐	# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? _____
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 ☐	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	2.0	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering

Mailing Address: Farmington, NM

Phone #: (505) 716 2787

email or Fax#: ~~hwoods~~ hwoods@Ruleengineering.com

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

Accreditation
☐ NELAP ☐ Other _____
☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☒ Rush 24 hour

Project Name: Aztec Spill
Williams ~~M. Hagero~~

Project #:

Project Manager: Heather Woods

Sampler: Chris Bale

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.0

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. 1508492	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)	Chloride	TKN			Air Bubbles (Y or N)
8/11/15	1530	Soil	CS-5-081115	4oz glass(2)	None	-001	X		X									X	X			

Date:	Time:	Relinquished by:	Received by:	Date Time
8/11/15	1700			8/11/15 1700
8/11/15	2106			08/12/15 0753

Remarks:

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.