# **GW - 60**

# **Release Report/ General Correspondence**

## **Milagro Gas Plant**

## Date: 2015

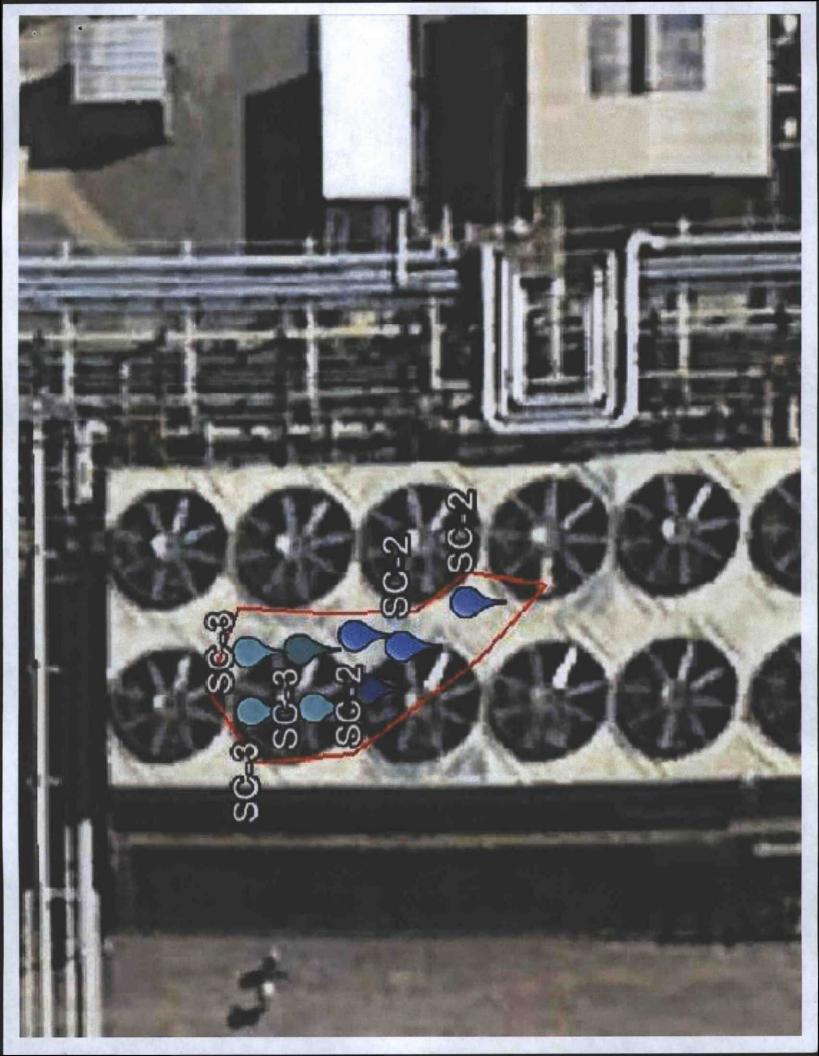
District I 1625 N. French Dr., Hobbs, NM 88240 District II 811 S. First St., Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 State of New Mexico Energy Minerals and Natural Resources

> 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.

			Rele	ease Notifi	cation	and Co	orrective A	ction			
						<b>OPERA</b>	TOR		Initi	al Report	Final Report
Name of Co	ompany: W	illiams Four	Corners	LLC	1	Contact: Ke	lsey Christianse	en			
	and the second se	, Bloomfield					No.: (505) 632-4	4606	Sec. 20	and the	Sel Charles
Facility Nai	me: Milagro	o Cogenerat	ion & Gas	s Plant		Facility Typ	e: Facility				A BALL MELL
Surface Ow	mer: Willian	ms		Mineral	Owner				API No	).	
				LOC	ATIO	OF RE	LEASE				
Unit Letter O	Section 12	Township 29N	Range 11W	Feet from the		South Line	Feet from the	East/V	West Line	County San Juan	
			1				e <u>-107.942329°</u>	W			
T AD L				NA	TURE	OF REL					the strike in
Type of Rele		Water Mix are Relief Val	110	har be			Release: 490 gal			Recovered: 0 Hour of Disc	
Source of Re	elease: Pressu	ire kener val	lve				Hour of Occurrent 5 at 11:00 PM MS			15 at 11:00 P	
Was Immedi	ate Notice G	liven?	-		PT I	If YES, To		51	00/30/20	15 at 11.00 I	IN MOT
			Yes 🗌	No Not	Required		Kelly, NMOCD			1.48	
By Whom?	Kelsey Chris	stiansen	1			Date and H	Hour: 08/31/2015	at 03:52	PM MST	1	
Was a Water		hed?	1.375			If YES, Vo	olume Impacting	the Wate	rcourse.	and the second	
			Yes 🛛	No						NS. DIV D	IST 3
If a Watercon	urse was Imp	acted, Descri	be Fully.*	5 S S S S		THE R		319	UIL UU	NO. DIV D	
									00	7 - 0 000	E
N/A									UL	119.20	13
The pressure	relief valve		iams Trair	1 3 causing appr			of amine/water m n will be completed		to release		e containment
Describe Cau The pressure with gravel b Describe Are Hand excav cleanup star and a confir a map depio I hereby certi regulations a public health should their o or the environ	relief valve base around T a Affected a vation of imp indards. One rmation samp cting the rele ify that the in Il operators a or the enviro operations ha nment. In ad	lifted on Will Frain 3. The v and Cleanup A facted area too sample (SC-1 ple (SC-3) wa ase extents ar formation gi are required to onment. The ave failed to a	liams Train ralve reliev Action Take ok place ar ) was slights collected ad samplin ven above o report an acceptance dequately CD accept	n 3 causing appr yed at set point a en.* nd two confirma htly over the TP d to confirm clea g locations of ca is true and com d/or file certain e of a C-141 rep investigate and	and further ation comp H remedia anup. The onfirmatio plete to th release no port by the remediate	oosite soil sar tion level of laboratory an n samples SC e best of my otifications ar NMOCD ma contaminatio	mples (SC-1 and 100 mg/Kg. Addi alytical results fo C-2 and SC-3. knowledge and u ad perform correc arked as "Final R on that pose a thre e the operator of r	ed to dete SC-2) w itional ex r the two nderstand tive actic eport" dc eat to gro responsib	to release ermine the cre collector cavation o sampling d that pursu ons for rele bes not relia und water, pility for co	onto concret exact cause of ed to determi ccurred in the events are att uant to NMO ases which n eve the opera surface wate ompliance with	e containment of the release. ne acceptable e area of SC-1 ached along with CD rules and nay endanger tor of liability r, human health th any other
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September 15, 2015

Kelsey Christiansen Williams Field Services 188 Co. Rd 4900 Bloomfield, NM 87413 TEL: (505) 632-4442 FAX Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: <u>www.hallenvironmental.com</u>

OrderNo.: 1509240

RE: Milagro Gas Plant

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 <u>www.hallenvironmental.com</u> 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,

Ander

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1509240

Date Reported: 9/15/2015

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Williams Field Services

Project: Milagro Gas Plant

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

Lab ID: 1509240-001	Matrix:	Received 1	Received Date: 9/5/2015 10:25:00 AM			
Analyses	Result	RL Qu	al 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 RAM	NGE ORGANIC	s			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 RA	NGE				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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank	
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1	l of 6
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range	1 01 0
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix			

**Analytical Report** 

Date Reported: 9/15/2015

Lab Order 1509240

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Williams Field Services

Project: Milagro Gas Plant

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

Lab ID: 1509240-002	Matrix:	Received	Received Date: 9/5/2015 10:25:00 AM				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch	
EPA METHOD 300.0: ANIONS	a start				Analyst	SRM	
Chloride	ND	30	mg/Kg	20	9/10/2015 5:32:48 PM	21248	
EPA METHOD 8015M/D: DIESEL RAM	IGE ORGANIC	s			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 RA	NGE				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	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	Н	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

- Analyte detected in the associated Method Blank В
- E Value above quantitation range
- Analyte detected below quantitation limits Page 2 of 6 J
- Sample pH Not In Range Ρ **Reporting Detection Limit** RL

	ms Field Services to Gas Plant		
Sample ID MB-21248	SampType: mblk	TestCode: EPA Method 300.0: Anions	No. of the Party of
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 S	SPK Ref Val %REC LowLimit HighLimit %RPE	D RPDLimit Qual
Chloride	ND 1.5		
Sample ID LCS-21248	SampType: Ics	TestCode: EPA Method 300.0: Anions	AN ALE OF
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 S	SPK Ref Val %REC LowLimit HighLimit %RPD	D RPDLimit Qual
Chloride	14 1.5 15.00	0 96.3 90 110	

#### **Qualifiers:**

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

Page 3 of 6

	ns Field Services o Gas Plant		and the second second	1
Sample ID MB-21184 Client ID: PBS Prep Date: 9/8/2015	SampType: MBLK Batch ID: 21184 Analysis Date: 9/9/2015	TestCode: EPA Method RunNo: 28716 SeqNo: 870365	8015M/D: Diesel Range Organics Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Q	ual
Diesel Range Organics (DRO) Surr: DNOP	ND 10 12 10.00	121 57.9	140	
Sample ID LCS-21184 Client ID: LCSS	SampType: LCS Batch ID: 21184	TestCode: EPA Method RunNo: 28716	8015M/D: Diesel Range Organics	
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 Q	ual
Diesel Range Organics (DRO) Surr: DNOP	63         10         50.00           6.3         5.000	0 127 57.4 126 57.9	139 140	

#### 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

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## QC SUMMARY REPORT

Hall	Environmental	Analysis	Laboratory,	Inc.
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	ns Field Services 9 Gas Plant		
Sample ID MB-21175 Client ID: PBS Prep Date: 9/8/2015	SampType: MBLK Batch ID: 21175 Analysis Date: 9/9/2015	TestCode: EPA Method RunNo: 28722 SeqNo: 870894	Units: mg/Kg
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Gasoline Range Organics (GRO) Surr: BFB	ND 5.0 910 1000	91.5 75.4	113
Sample ID LCS-21175 Client ID: LCSS Prep Date: 9/8/2015	SampType: LCS Batch ID: 21175 Analysis Date: 9/9/2015	TestCode: EPA Method RunNo: 28722 SeqNo: 870895	8015D: Gasoline Range Units: mg/Kg
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Gasoline Range Organics (GRO) Surr: BFB	24 5.0 25.00 990 1000		122 113

#### 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

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WO#:	1509240
	15-Sep-15

	ns Field Ser o Gas Plant	vices					1.15			
Sample ID MB-21175	Samp	Type: MI	BLK	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: PBS	Batc	h ID: 21	175	F	RunNo: 2	8722				
Prep Date: 9/8/2015	Analysis [	Date: 9/	9/2015	5	SeqNo: 8	70940	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050		C. Part						
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000	la la	108	80	120	14		1.15
Sample ID LCS-21175	Samp	Type: LC	s	Tes	tCode: El	PA Method	8021B: Vola	tiles	A Real	1.
Client ID: LCSS	Batc	h ID: 21	175	F	RunNo: 2	8722				
Prep Date: 9/8/2015	Analysis [	Date: 9/	9/2015	\$	SeqNo: 8	70941	Units: mg/k	٢g		
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		1999	100
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.
- 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

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HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental A Albu TEL: 505-345-3975 Website: www.hal	4901 Hawkin. querque, NM 87 FAX: 505-345-4	s NE 7109 <b>Samp</b> 4107	ble Log-In Check List
Client Name: WILLIAMS FIELD SERVI	Work Order Number:	1509240		RcptNo: 1
Received by/date:	09/05/15 9/5/2015 10:25:00 AM		June Harger	
Completed By: Lindsay Mangin Reviewed By:	9/5/2015 10:42:42 AM		Streed and Harden	
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 sample:	s?	Yes 🖻	No 🗌	NA 🗆
5. Were all samples received at a temperatu	re of >0° C to 6.0°C	Yes 🗷	No 🗆	
6. Sample(s) in proper container(s)?		Yes 🖻	No 🗆	
7. Sufficient sample volume for indicated test	t(s)?	Yes 🛃	No 🗆	
8. Are samples (except VOA and ONG) prop	erly 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 bro	ken?	Yes 🗌	No 🛃	# of preserved bottles checked
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes 🛃	No 🗆	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 wit	h 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			

-			eld Service	Turn-Around			HALL ENVIRONMENTAL													
			R 4900	Project Name	e: D Gas	Plant		10		v	www	.hall	lenv	rironi	men	tal.co	om			
BI	comfie	H, N	IM 87413	Project #:	0 0100					awkir 5-34		75	F	ax	505-	-345 ues	-410			
mail o A/QC {Star	r Fax#: } Package: idard	celsey.cl	-4606 nistiansen@williams. com	Project Mana	ger: Christ	hansu	TMB's (8021)	+ TPH (Gas only)	RO / MRO)			SIMS)	nary		PCB's	ues		6.0		
3 NEL	AP (Type)	🗆 Othe	r	Sampler: On Ice:	XC Yes		+	E + TPH	GRO / D	418.1)	504.1)	or 8270	als	NO3,NO	es / 808		(OA)	300		(Y or N)
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type		BTEX + MPBE	BTEX + MTBE	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270	<b>RCRA 8 Metals</b>	Anions (F,CI,NO <sub>3</sub> ,NO <sub>2</sub> ,PO <sub>4</sub> ,SO <sub>4</sub> )	8081 Pesticides / 8082	8260B (VOA)	8270 (Semi-VOA)	Chlandle		Air Bubbles (
4/15	10:36	Soil	SC-1	jar	non	-001	X		×									$\times$		
1115		the second s	SC-2	jor	nan	-002	X		×									X	-	
		2																		
	T	Relinquish		Received by:		Date Time	Der													
Date: 1115 Date: 1415	Time: 1360 Time: 1722	Relinquish	ay Unh	Received by:	Walt	9/4/15 1366 Date Time 2/05/15 1025	Rer	nark	5:											

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 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: <u>www.hallenvironmental.com</u>

October 12, 2015

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

OrderNo.: 1510084

and the second second

**RE:** Milagro Plant

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 <u>www.hallenvironmental.com</u> 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

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1510084

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 10/12/2015

		<b>Client Sampl</b>	e ID: SC	2-3	
		Collection 1	Date: 10	/1/2015 1:45:00 PM	
Matrix:	SOIL	Received 1	Date: 10,	/2/2015 8:00:00 AM	
Result	RL Qua	al Units	DF	Date Analyzed	Batch
E ORGANIC	S			Analys	t: KJH
13	10	mg/Kg	1	10/8/2015 11:57:45 PM	1 21629
106	57.9-140	%REC	1	10/8/2015 11:57:45 PM	1 21629
GE				Analys	t: NSB
ND	4.8	mg/Kg	1	10/6/2015 11:04:16 PM	1 21665
89.2	75.4-113	%REC	1	10/6/2015 11:04:16 PM	1 21665
				Analys	t: NSB
ND	0.048	mg/Kg	1	10/6/2015 11:04:16 PM	1 21665
ND	0.048	mg/Kg	1	10/6/2015 11:04:16 PM	1 21665
ND	0.048	mg/Kg	1	10/6/2015 11:04:16 PM	1 21665
ND	0.095	mg/Kg	1	10/6/2015 11:04:16 PM	1 21665
106	80-120	%REC	1	10/6/2015 11:04:16 PM	1 21665
	Result E ORGANIC 13 106 3E ND 89.2 ND ND ND ND ND ND	E ORGANICS 13 10 106 57.9-140 GE ND 4.8 89.2 75.4-113 ND 0.048 ND 0.048 ND 0.048 ND 0.048 ND 0.048 ND 0.048	Matrix:SOILCollection I Received IResultRLQualUnitsE ORGANICSIIIIIII1310mg/Kg %REC10657.9-140%RECSEND4.8mg/Kg %RECND4.8mg/Kg %RECND0.048mg/Kg MDND0.048mg/Kg MJND0.048mg/Kg mg/Kg MDND0.048mg/Kg mg/Kg MDND0.048mg/Kg mg/KgND0.048mg/KgND0.048mg/KgND0.048mg/KgND0.048mg/KgND0.048mg/Kg	Matrix:       SOIL       Collection Date:       10         Result       RL       Qual       Units       DF         E ORGANICS       13       10       mg/Kg       1         13       10       mg/Kg       1       106         57.9-140       %REC       1         MD       4.8       mg/Kg       1         89.2       75.4-113       %REC       1         ND       0.048       mg/Kg       1         ND       0.095       mg/Kg       1	Result         RL Qual         Units         DF         Date Analyzed           E ORGANICS         Analys           13         10         mg/Kg         1         10/8/2015 11:57:45 PM           106         57.9-140         %REC         1         10/8/2015 11:57:45 PM           106         57.9-140         %REC         1         10/8/2015 11:57:45 PM           3E         Analys           ND         4.8         mg/Kg         1         10/6/2015 11:04:16 PM           89.2         75.4-113         %REC         1         10/6/2015 11:04:16 PM           ND         0.048         mg/Kg         1         10/6/2015 11:04:16 PM           ND         0.095         mg/Kg         1         10/6/2015 11:04:16 PM

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

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 Page 1 of 4
- P Sample pH Not In Range
- RL Reporting Detection Limit

	ams Field Services ro 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.
- 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

Page 2 of 4

Client: William Project: Milagro	ns Field Services Plant			
Sample ID MB-21665 Client ID: PBS	SampType: MBLK Batch ID: 21665	TestCode: EPA Method RunNo: 29332	8015D: Gasoline Range	
Prep Date: 10/5/2015	Analysis Date: 10/6/2015	SegNo: 892336	Units: mg/Kg	
Analyte		SPK Ref Val %REC LowLimit		RPDLimit Qual
Gasoline Range Organics (GRO) Surr: BFB	ND 5.0 880 1000	88.5 75.4	113	
Sample ID LCS-21665	SampType: LCS	TestCode: EPA Method	8015D: Gasoline Range	C. Standard
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) Surr: BFB	24         5.0         25.00           950         1000	0 95.4 79.6 95.5 75.4	122 113	
Sample ID MB-21694	SampType: MBLK	TestCode: EPA Method	8015D: Gasoline Range	Marshare -
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	The Bally
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	ALL

#### **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

Page 3 of 4

WO#:	1510084
	12-Oct-15

	ms Field Services to Plant			
Sample ID MB-21665	SampType: MBLK	TestCode: EPA Method	8021B: Volatiles	1.1.2.20
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 F	RPDLimit Qual
Benzene	ND 0.050	THE REAL PROPERTY OF A DECK		
Toluene	ND 0.050			
Ethylbenzene	ND 0.050			
Xylenes, Total	ND 0.10			
Surr: 4-Bromofluorobenzene	1.1 1.000	106 80	120	1 Stranger
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 F	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	a anti-
Sample ID MB-21694	SampType: MBLK	TestCode: EPA Method	8021B: Volatiles	a ser a ser a ser
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 F	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 F	RPDLimit Qual
Surr: 4-Bromofluorobenzene	1.1 1.000	111 80	120	

#### **Qualifiers:**

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

Page 4 of 4

ANALTSIS LABORATORY TEL: 505-345-39	4901 Hawkir Ibuquerque, NM 8 75 FAX: 505-345- hallenvironmenta	4107 Sam	ple Log-In Check List
Client Name: WILLIAMS FIELD SERVI Work Order Numb	er. 1510084	8 8	RcplNo. 1
Received by/date: 5A 10 02 15	7		
Logged By: Lindsay Mangin 10/2/2015 8:00:00 A	м	dythe	
Completed By: Lindsay Mangin 10/2/2015 1:21:25 P	M	Andyther	
Reviewed By. JA 10/05/15		000	
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) property 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
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes 🗹	No 🗆	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	<b>I</b>	· · · · ·	
By Whom: Via:	C eMail	Phone 🗌 Fax	In Person
Regarding:			
Client Instructions:	4		
17. Additional remarks:			
18. Cooler Information	- 10 M		
Cooler No Temp °C Condition Seal Intact Seal No	Seal Date	Signed By	
1 1.0 Good Yes		and the second se	

Client:	Address	ms T	Field Service	Turn-Around	C Rush					P			Y	519	5 L	A	BO	1EN RA		RY
wanny	Address			Millo	igro P	lant	-	490	01 H	awki	ins M	NE -	Alb	ouqu	erqu	e, N	M 87	109		
	<b>F</b>	- 10.	2	Project #:	0			Te	el. 50	5-34	15-3	-					-4107	/		
and the second se		5- 630	2-4606		State "							A	naly	/sis	Req	uest	t			
email o				Project Mana	nger:		1	ylno	8					( <sup>4</sup> )	s					
A Stan	Package:		Level 4 (Full Validation)	Kelse	y Chri	stiansen	TMB's (8021)	Gas	10			SIMS)		0415	PCB's	2				
Accred				Sampler: 14			49.s	)) He	DR	-	(	IS 0.		O2,F	8082					
D NEL	AP	□ Othe	er	On Ice:	Yes	D No	- #	H +	202	18.1	04.1	8270		03,N	\$ / 8(		(A)			N N
	(Type)			Sample Tem	perature: ],	0	BE	BE	Ð	d 4	5 pc	0 or	etals	I'NG	ides	()	07-			2
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL NO.	BTEX + MTBE	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or	RCRA 8 Metals	Anions (F,CI,NO <sub>3</sub> ,NO <sub>2</sub> ,PO <sub>4</sub> ,SO <sub>4</sub> )	8081 Pesticides /	8260B (VOA)	8270 (Semi-VOA)			Air Bubbles (Y or N)
10/1/15	13:45	Soil	SC-3	402 jor	non	-001	X	-	X		-	-	-	-		*	~			T
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	1		a the second second						-				-			-		+	+	
Date: 2/1/15 Date:	Time: 1555 Time:	Relinquishe	es Ind	Received by: Must Received by:	Walt	Date Time 10//15 15/5 Date Time	Rem	narks	:											
liks	1934	M	stullater	Dot. a.	at 10	102/15 0800								1			4			
If	necessary,	samples subn	nitted to Hall Environmental may be subc	contracted to other ac	credited laboratories	s. This serves as notice of thi	is possib	bility. A	iny sut	b-contr	racted	data v	will be	clearly	y notat	ted on	the an	alvtical re	.troot	

 ⊡istrict 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.

51

	The Designation	1-1-1 P.F.	D-L	and the second sec	anta F	D have	A start and a start a	a4:	1			10.00
			Rele	ease Notille	catio	opera	orrective A	ction	🗆 Initi	al Report		Final Rep
Name of Co	omnany. W	/illiams Fou	r Corners	LLC			lsey Christianse	n l		ai Report		т шаг кер
		), Bloomfiel				the second s	No.: (505) 632-4		110	1		
		o Cogenerat				Facility Typ		1000	12.112	100		3.00
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Surface Ow	mer: Willia	ams	-	Mineral (	Jwner	the set	the state of the s		API No	).		
			I de la	LOCA	ATIO	N OF REI	LEASE				1.16	
Unit Letter	Section	Township	Range	Feet from the	North	/South Line	Feet from the	East/W	est Line	County		
0	12	29N	11W						1	San Juan		
			I	Latitude 36.735	966° N	Longitud	e <u>-107.942329°</u>	W				
				NAT	TURE	OF REL	EASE					
ype of Rele	ase: Amine	3			14	and the second second second second	Release: 70 bbls		Volume F	Recovered: L	Jnknow	m
Source of Re	lease Press	ure Relief Va	lve		1	Amine Date and H	lour of Occurrenc	·@*	Date and	Hour of Dis	covery:	
ource of Re	.icase. 1 1055	ure Rener va	IVC				5 at 03:28 AM			15 at 03:28 A		
Was Immedi	ate Notice (					If YES, To	Whom? Cory Sn	nith, NM	OCD		1	
. 8		and the second second	Yes L	No 🗌 Not R	equired			18.00	1200	1.21	Sec.	
By Whom?			11		1 - 1		Iour: 06/09/2015		and the second se			2 48 2
Vas a Water	course Read		Yes 🛛	1 No		If YES, VO	olume Impacting t					
		1411			1			OIL	CONS.	DIV DIST	: 3	12 m
f a Watercou	urse was Im	pacted, Descr	ibe Fully.*							0.0015		
N/A									0011	9 2015		
			PSV which				using amine to sp culating event star					
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## Rule Engineering, LLC

Solutions to Regulations for Industry

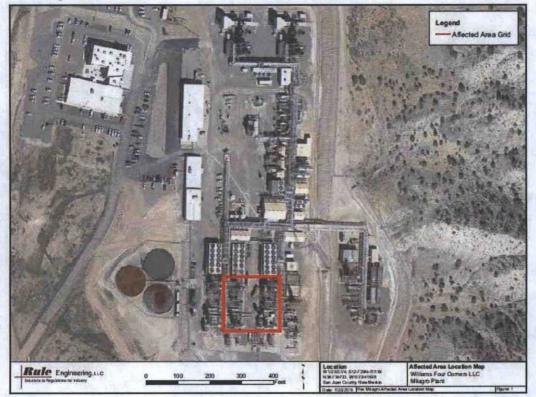
August 3, 2015

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.





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 Kelsey Christiansen Williams Milagro Gas Plant Amine Release Sampling Report August 3, 2015 Page 2 of 4

#### **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.

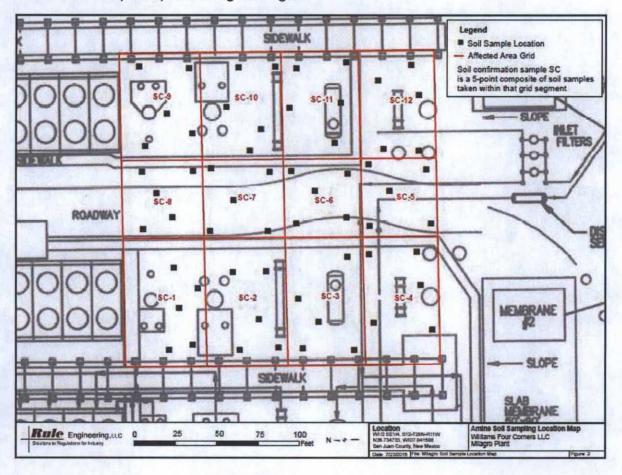


Figure 2 Amine Soil Sampling Location Map

Rule

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

Kelsey Christiansen Williams Milagro Gas Plant Amine Release Sampling Report August 3, 2015 Page 3 of 4

#### 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.

	1 TAC		Sample	Field		Labo	ratory A	nalytical F	Results	
Sample ID	Date	Sample Type	Depth (ft below surface)	Sampling VOCs OVM ppm		DRO (mg/kg)			Total BTEX (mg/kg)	Chloride (mg/kg)
	NMO	CD Action	Levels**				000	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

#### 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

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

Rule

Kelsey Christiansen Williams Milagro Gas Plant Amine Release Sampling Report August 3, 2015 Page 4 of 4

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

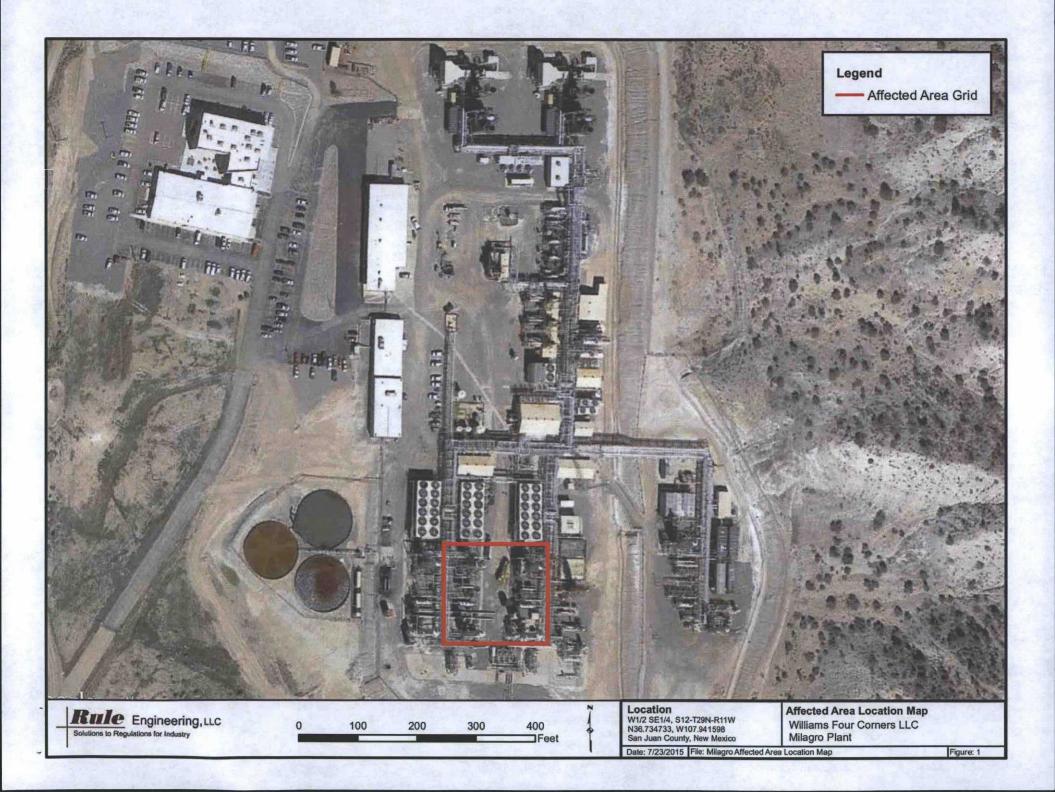
Attachments: Figures 1 & 2 Hall Laboratory Analytical Reports

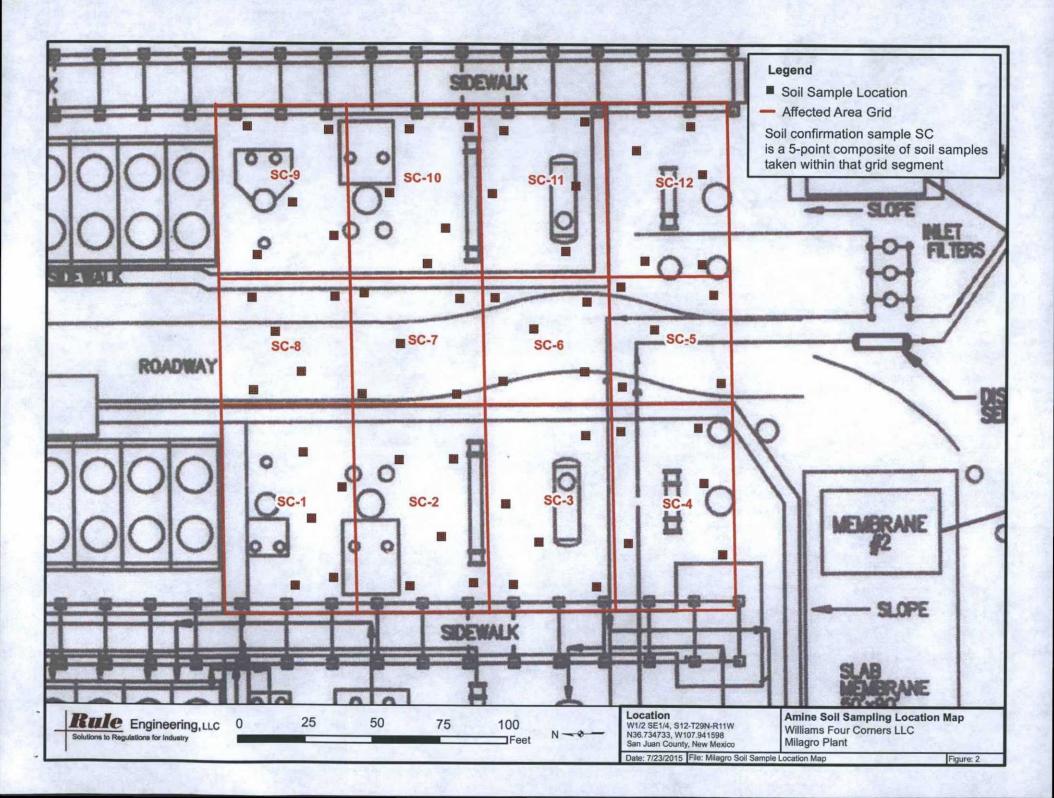


#### NMOCD Site Ranking Determination Milagro Gas Plant San Juan County, New Mexico Williams Four Corners LLC

Ranking Criteria	Ranking Score	Site-Based Ranking Score	Basis for Determination	Data Sources	
Depth to Groundwater					
<50 feet	20		A Cathodic Report for the Garrett Fed Com #1 and	NMOCD Online database,	
50-99 feet	10	0	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.	Bloomfield Quadrangle (2013 7.5-Minute Series), Google Earth, and Visual	
>100 feet	0	Sec. Park	boundary, reporte departe water grouter main ree reet.	Inspection	
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	NMOSE NMWRRS, Bloomfield Quadrangle (2013 7.5-Minute Series),	
	0 (No)		source within 200 feet radius of location.	Google Earth, and Visual Inspection	
Distance to Surface Water Body					
<200 horizontal feet	20	Constanting	Unnamed, ephemeral wash which drains to the San	Bloomfield Quadrangle	
200 to 1,000 horizontal feet	10	10	Juan River is located approximately 850 feet west of	(2013 7.5-Minute Series), Google Earth, and Visual	
>1,000 horizontal feet	0	101 The 1	the release area.	Inspection	
Site Based Total Rank	ing Score	10			









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 <u>www.hallenvironmental.com</u> 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

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

**Analytical Report** 

Lab Order 1507A53 Date Reported: 7/31/2015

### Hall Environmental Analysis Laboratory, Inc.

Amine Samples Milagro Plant

**CLIENT:** Rule Engineering LLC

Project:

Client Sample ID: SC-1 Collection Date: 7/22/2015 2:15:00 PM Received Date: 7/23/2015 8:05:00 AM

Lab ID: 1507A53-001	Matrix:	SOIL	Received 1	Date: 7/2	23/2015 8:05:00 AM	
Analyses	Result	RL Qu	al 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 RA	NGE ORGANIC	S			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 R	ANGE				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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	I
	D	Sample Diluted Due to Matrix	I
	Н	Holding times for preparation or analysis exceeded	
	ND	Not Detected at the Reporting Limit	3
	R	RPD outside accepted recovery limits	R
	S	% Recovery outside of range due to dilution or matrix	

- Analyte detected in the associated Method Blank В
- Value above quantitation range E
- Analyte detected below quantitation limits Page 1 of 17 J
- P Sample pH Not In Range RL Reporting Detection Limit

Analytical Report

Lab Order 1507A53

Date Reported: 7/31/2015

#### Hall Environmental Analysis Laboratory, Inc.

Amine Samples Milagro Plant

**CLIENT:** Rule Engineering LLC

Project:

Client Sample ID: SC-2 Collection Date: 7/22/2015 2:20:00 PM Received Date: 7/23/2015 8:05:00 AM

Lab ID: 1507A53-002	Matrix:	Received	Received Date: 7/23/2015 8:05:00 AM			
Analyses	Result	RL Qu	al 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 RAN	GE ORGANIC	S			Analyst:	КЈН
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 RA	NGE				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.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 Page 2 of 17
- P Sample pH Not In Range
- RL Reporting Detection Limit

Analytical Report Lab Order 1507A53

Date Reported: 7/31/2015

#### Hall Environmental Analysis Laboratory, Inc.

Amine Samples Milagro Plant

**CLIENT:** Rule Engineering LLC

1507A53-003

**Project:** 

Lab ID:

Client Sample ID: SC-3 Collection Date: 7/22/2015 2:25:00 PM

Received Date: 7/23/2015 8:05:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS	0.361	1.1- 1	The gal the		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	ORGANIC	S			Analyst:	КЈН
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 RANG	E				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

Matrix: SOIL

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

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 Page 3 of 17
- P Sample pH Not In RangeRL Reporting Detection Limit

**Analytical Report** Lab Order 1507A53

Date Reported: 7/31/2015

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC **Client Sample ID: SC-4** Amine Samples Milagro Plant Collection Date: 7/22/2015 2:30:00 PM **Project:** 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 7/28/2015 6:15:03 PM 3.7 1.5 mg/Kg 20481 1 METHOD 4500-N-ORG C: TKN Analyst: SRM Nitrogen, Total Kjeldahl 3400 7/30/2015 12:19:00 PM 20467 49 mg/Kg 1 **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: KJH 7/27/2015 7:07:56 PM **Diesel Range Organics (DRO)** 570 9.5 20406 mg/Kg 1 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) 7/25/2015 5:23:06 AM ND 5.0 20408 mg/Kg 1 Surr: BFB 86.5 75.4-113 %REC 1 7/25/2015 5:23:06 AM 20408

## E

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

	-			
Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detec

- 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
- % Recovery outside of range due to dilution or matrix S
- Analyte detected in the associated Method Blank
- Ε Value above quantitation range
- Analyte detected below quantitation limits Page 4 of 17 J
- P Sample pH Not In Range RL **Reporting Detection Limit**

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

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Lab ID: 1507A53-005

Amine Samples Milagro Plant

Project:

Client Sample ID: SC-5 Collection Date: 7/22/2015 2:35:00 PM Received Date: 7/23/2015 8:05:00 AM

		TENERO DE L					
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 RANG	GE ORGANIC	S				Analyst:	JME
Diesel Range Organics (DRO)	2000	99	1.1	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 RAN	IGE					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	100	%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

Matrix: SOIL

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte
	D	Sample Diluted Due to Matrix	E	Value a
	Н	Holding times for preparation or analysis exceeded	J	Analyte
	ND	Not Detected at the Reporting Limit	Р	Sample
	R	RPD outside accepted recovery limits	RL	Reporti
	S	% Recovery outside of range due to dilution or matrix		

- te detected in the associated Method Blank
- above quantitation range
- te detected below quantitation limits Page 5 of 17
- le pH Not In Range
- ting Detection Limit

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

7/25/2015 6:20:28 AM

1

20408

## Hall Environmental Analysis Laboratory, Inc.

Surr: 4-Bromofluorobenzene

CLIENT: Rule Engineering LLCProject: Amine Samples Milagro PlantLab ID: 1507A53-006	Matrix:	SOIL			Date: 7/2	2-6 22/2015 2:40:00 PM 23/2015 8:05:00 AM	
Analyses	Result	RL (	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS		and the second				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		S				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 RANG	E					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

80-120

%REC

89.9

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	в	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 6 of 17
	ND	Not Detected at the Reporting Limit	Р	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		

Analytical Report

Date Reported: 7/31/2015

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Lab Order 1507A53

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

**Project:** 

Amine Samples Milagro Plant

Client Sample ID: SC-7 Collection Date: 7/22/2015 2:45:00 PM Received Date: 7/23/2015 8:05:00 AM

Lab ID: 1507A53-007	Matrix:	SOIL	Receiv	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 RAN	GE ORGANIC	S			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 RAI	NGE				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	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	в	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 7
	ND	Not Detected at the Reporting Limit	Р	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		

**Analytical Report** 

#### Lab Order 1507A53 Date Reported: 7/31/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Lab ID: 1507A53-008

Amine Samples Milagro Plant

**Project:** 

**Client Sample ID: SC-8** Collection Date: 7/22/2015 2:50:00 PM Received Date: 7/23/2015 8:05:00 AM

Analyses	Result	RL Qual	Units	DF	Date Analyzed	Batch		
EPA METHOD 300.0: ANIONS	12				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	ORGANIC	S			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	E				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		

Matrix: SOIL

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in
	D	Sample Diluted Due to Matrix	Е	Value above quantit
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected be
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In F
	R	RPD outside accepted recovery limits	RL	Reporting Detection
	S	% Recovery outside of range due to dilution or matrix		

- n the associated Method Blank
- itation range
- pelow quantitation limits Page 8 of 17
- Range
- on Limit

**Analytical Report** 

Lab Order 1507A53 Date Reported: 7/31/2015

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

**Project:** 

Amine Samples Milagro Plant

Client Sample ID: SC-9 Collection Date: 7/22/2015 2:55:00 PM Received Date: 7/23/2015 8:05:00 AM

Lab ID: 1507A53-009	Matrix:	SOIL	Received Date: 7/23/2015 8:05:00 AM				
Analyses	Result	RL Q	ual 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 RA	NGE ORGANIC	s			Analyst:	КЈН	
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 RA	ANGE				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	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	1	Analyte detected below quantitation limits Page 9 of 17
	ND	Not Detected at the Reporting Limit	Р	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		

Analytical Report Lab Order 1507A53

Date Reported: 7/31/2015

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

1507A53-010

**Project:** 

Lab ID:

Amine Samples Milagro Plant

Client Sample ID: SC-10 Collection Date: 7/22/2015 3:00:00 PM Received Date: 7/23/2015 8:05:00 AM

Analyses	Result	RL	Qual U	nits	DF	Date Analyzed	Batch	
EPA METHOD 300.0: ANIONS		1.00				Analyst:	LGT	
Chloride	ND	30	n	ng/Kg	20	7/28/2015 8:56:21 PM	20490	
METHOD 4500-N-ORG C: TKN						Analyst:	SRM	
Nitrogen, Total Kjeldahl	2700	52	n	ng/Kg	1	7/30/2015 12:19:00 PM	20467	
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	s				Analyst:	KJH	
Diesel Range Organics (DRO)	110	9.9	n	ng/Kg	1	7/27/2015 9:38:16 PM	20406	
Surr: DNOP	100	57.9-140	9	%REC	1	7/27/2015 9:38:16 PM	20406	
EPA METHOD 8015D: GASOLINE RAI	NGE					Analyst:	NSB	
Gasoline Range Organics (GRO)	ND	4.8	n	ng/Kg	1	7/25/2015 10:10:30 AM	20408	
Surr: BFB	86.9	75.4-113	9	%REC	1	7/25/2015 10:10:30 AM	20408	
EPA METHOD 8021B: VOLATILES						Analyst:	NSB	
Benzene	ND	0.048	n	ng/Kg	1	7/25/2015 10:10:30 AM	20408	
Toluene	ND	0.048	n	ng/Kg	1	7/25/2015 10:10:30 AM	20408	
Ethylbenzene	ND	0.048	n	ng/Kg	1	7/25/2015 10:10:30 AM	20408	
Xylenes, Total	ND	0.096	r	ng/Kg	1	7/25/2015 10:10:30 AM	20408	
Surr: 4-Bromofluorobenzene	89.2	80-120	0	%REC	1	7/25/2015 10:10:30 AM	20408	

Matrix: SOIL

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В
	D	Sample Diluted Due to Matrix	E
	Н	Holding times for preparation or analysis exceeded	J
	ND	Not Detected at the Reporting Limit	Р
	R	RPD outside accepted recovery limits	RL
	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 Page 10 of 17
- P Sample pH Not In Range
- RL Reporting Detection Limit

Analytical Report Lab Order 1507A53

Date Reported: 7/31/2015

## Hall Environmental Analysis Laboratory, Inc.

Amine Samples Milagro Plant

**CLIENT:** Rule Engineering LLC

**Project:** 

Client Sample ID: SC-11 Collection Date: 7/22/2015 3:05:00 PM Received Date: 7/23/2015 8:05:00 AM

Lab ID: 1507A53-011	Matrix:	Received Date: 7/23/2015 8:05:00 AM				
Analyses	Result	RL Qua	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 RAM	NGE ORGANIC	s			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 RA	NGE				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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	в	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit Page 11 of 17
	ND	Not Detected at the Reporting Limit	Р	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		

Analytical Report Lab Order 1507A53

Date Reported: 7/31/2015

### Hall Environmental Analysis Laboratory, Inc.

Amine Samples Milagro Plant

**CLIENT:** Rule Engineering LLC

1507A53-012

Project: Lab ID: Client Sample ID: SC-12 Collection Date: 7/22/2015 3:10:00 PM Received Date: 7/23/2015 8:05:00 AM

Euro ID. 1507/155 012	In a de la companya de la	JOIL	Received	Received Date: 1/25/2015 0.05.00 Mill				
Analyses	Result	RL Q	ual 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 RAN	GE ORGANIC	s			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 RAM	NGE				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		

Matrix: SOIL

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 12 of 17
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range

- RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

R

RL Reporting Detection Limit

WO#:	1507A53
	31-Jul-15

Client: Project:		Engineering LLC 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 Qua
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 Qua
Chloride	12. 1 Sec.	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 Qua
Chloride	135.814	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 Qua

#### 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

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1.1

WO#:	1507A53
	31-Jul-15

Client: Project:		ineering LLC mples Milag		ant							
Sample ID	MB-20406	SampType	e: Me	BLK	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	12.1
Client ID:	PBS	Batch ID	: 20	406	F	RunNo: 2	7765				
Prep Date:	7/23/2015	Analysis Date	: 7/	27/2015	5	SeqNo: 8	35536	Units: mg/k	(g		
Analyte		Result F	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	Organics (DRO)	ND	10	3 2 2 1							
Surr: DNOP		12		10.00	12,250	118	57.9	140		ar 255	1.1
Sample ID	LCS-20406	SampType	e: LC	S	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	12
Client ID:	LCSS	Batch ID	: 20	406	F	RunNo: 2	7765				
Prep Date:	7/23/2015	Analysis Date	: 7/	27/2015	5	SegNo: 8	35538	Units: mg/k	(g		
Analyte		Result F	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	Organics (DRO)	51	10	50.00	0	101	57.4	139	761 XF D	IN DEIM	Quar
Surr: DNOP		5.3		5.000		105	57.9	140			
Sample ID	1507A53-001AMS	SampType	e: MS	3	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	199.00
Client ID:	SC-1	Batch ID	: 20	406	F	RunNo: 2	7765				
Prep Date:	7/23/2015	Analysis Date	: 7/	27/2015	5	SeqNo: 8	35550	Units: mg/k	(g		
Analyte		Result F	QL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	Organics (DRO)	40	9.5	47.57	12.22	59.4	42.3	146	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		-
Surr: DNOP		4.5		4.757		94.5	57.9	140			1
Sample ID	1507A53-001AMSI	SampType	e: MS	D	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID:	SC-1	Batch ID	: 20	406	F	RunNo: 2	7765				
Prep Date:	7/23/2015	Analysis Date	: 7/	27/2015	5	SeqNo: 8	35551	Units: mg/k	٢g		
Analyte		Result F	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	Draganice (DPO)	44	9.8	48.88	12.22	65.5	42.3	146	8.86	28.9	
Diesel Range (	Jiganics (DRO)	-1-1	0.0	10.00	I don t die die	00.0	12	110	0.00	20.0	

#### 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

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	ngineering LLC Samples Milagro Plant	
Sample ID MB-20408 Client ID: PBS Prep Date: 7/23/2015	SampType: MBLK Batch ID: 20408 Analysis Date: 7/24/2015	TestCode: EPA Method 8015D: Gasoline Range RunNo: 27749 SeqNo: 834250 Units: mg/Kg
Analyte	Result PQL SPK value S	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Gasoline Range Organics (GRO) Surr: BFB	ND 5.0 880 1000	87.9 75.4 113
Sample ID LCS-20408 Client ID: LCSS Prep Date: 7/23/2015	SampType: LCS Batch ID: 20408 Analysis Date: 7/24/2015	TestCode: EPA Method 8015D: Gasoline Range RunNo: 27749 SeqNo: 834251 Units: mg/Kg
Analyte		SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Gasoline Range Organics (GRO) Surr: BFB	23 5.0 25.00 960 1000	0 92.5 79.6 122 95.7 75.4 113

- \* 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

	ngineering L Samples Mi		ant		10 M					
Sample ID MB-20408	Samp	Гуре: МЕ	BLK	Tes	tCode: E	PA Method	8021B: Vola	tiles		30
Client ID: PBS	Batc	h ID: 20	408	F	RunNo: 2	7749				
Prep Date: 7/23/2015	Analysis [	Date: 7/	24/2015	S	SeqNo: 8	34297	Units: mg/k	٨g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050			1. 20				07134	
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.94	al.	1.000	1 here and	93.7	80	120	( and	1000	
Sample ID LCS-20408	Samp	Гуре: LC	S	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: LCSS	Batc	h ID: 20	408	F	RunNo: 2	7749				
Prep Date: 7/23/2015	Analysis [	Date: 7/	24/2015	S	SeqNo: 8	34298	Units: mg/k	٢g		
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	1.46	114	1100
Toluene	1.0	0.050	1.000	0	102	75	124			
Ethylbenzene	1.0	0.050	1.000	0	105	79.5	126			
Kylenes, 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

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Hall Environmental Analysis Laboratory, Inc.

Client: Project:		neering LLC mples Milagr	o Plant							
Sample ID N	MB-20467	SampType	MBLK	Tes	tCode: Me	thod 4500	-N-org C: TK	N	dia dia	
Client ID: F	PBS	Batch ID:	20467	F	RunNo: 27	860				
Prep Date:	7/27/2015	Analysis Date:	7/30/2015	5	SeqNo: 83	8022	Units: mg/K	g		
Analyte		Result P	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Total K	jeldahl	ND	50	or renter that	701120	LOWLING	- Igriciant	Jor G	Tu Deime	Quar
Sample ID L	-CS-20467	SampType	LCS	Tes	tCode: Me	thod 4500	-N-org C: TK	N	1.25.177	E. S
Client ID: L	css	Batch ID:	20467	F	RunNo: 27	860				
Prep Date:	7/27/2015	Analysis Date:	7/30/2015	5	SeqNo: 83	8023	Units: mg/K	g		
Analyte		Result P	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Total K	jeldahl	1000	50 1000	0	105	80	120		10.884.8	
Sample ID 1	507A53-001AMS	SampType	MS	Tes	tCode: Me	thod 4500	-N-org C: TK	N	Sta An	18
Client ID: S	SC-1	Batch ID:	20467	F	RunNo: 27	860				
Prep Date:	7/27/2015	Analysis Date:	7/30/2015	5	SeqNo: 83	8025	Units: mg/K	g		
Analyte		Result Po	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Total Kj	jeldahl	1400	51 1010	448.5	98.4	75	125	1.27	NEMEN	
Sample ID 1	507A53-001AMSD	SampType	MSD	Tes	tCode: Me	thod 4500	-N-org C: TK	N	1215	-
Client ID: S	SC-1	Batch ID:	20467	F	RunNo: 27	860				
Prep Date:	7/27/2015	Analysis Date:	7/30/2015	5	SeqNo: 83	8026	Units: mg/K	g		
Analyte		Result Po	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Total K	jeldahl	1400	51 1020	448.5	96.0	75	125	0.965	20	

#### 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

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ENVIRONMENTAL ANALYSIS	Hall Environmental A Albu TEL: 505-345-3975 I Websue: www.halt	4901 H querque, FAX: 505	awkins NE NM 87109 -345-4107	Sam	ole Log-In Check List
Client Name: RULE ENGINEERING LL W	ork Order Number:	1507A5	3		ReptNo: 1
Received by/date: A	7/23/15				e vener i i
Logged By: Lindsay Mangin 7/23/	/2015 8:05:00 AM		0	the sythese	
Completed By: Lindsay Mangin 7/23/	/2015 8:35:23 AM		0	+ ythe	
Reviewed By: 0	7/23/15	5*	v		The second states and
Chain of Custody	11-21.				
1. Custody seals intact on sample bottles?		Yes [	7	No 🗆	Not Present
2. Is Chain of Custody complete?		Yes 8	8	No 🗆	Not Present
3. How was the sample delivered?		Courie	1		
Log In					
4. Was an attempt made to cool the samples?		Yes [	Z	No 🗆	
5. Were all samples received at a temperature of >	0° C to 6.0°C	Yes 5	2	No 🗌	NA 🗆
6. Sample(s) in proper container(s)?		Yes [	2	No 🗆	
7. Sufficient sample volume for indicated test(s)?		Yes 6	2	No 🗌	
8. Are samples (except VOA and ONG) properly pre	served?	Yes B		No 🗆	
9. Was preservative added to bottles?		Yes	٦	No 12	NA 🗆
10. VOA vials have zero headspace?		Yes [	3	No 🗆	No VOA Vials
11. Were any sample containers received broken?		Yes [	2	No M	# of preserved
				-	bottles checked
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes 8		No 🗆	for pH: (<2 or >12 unless noted
13. Are matrices correctly identified on Chain of Custo	ody?	Yes B	2	NO 🗆	Adjusted?
14. Is it clear what analyses were requested?	300	Yes 8	8	No 🗆	
15. Were all holding times able to be met? (If no, notify customer for authorization.)		Yes 5	2	No 🗆	Checked by:
Special Handling (if applicable)					
16. Was client notified of all discrepancies with this of	rder?	Yes [	3	No 🗆	NA 🗹
Person Notified: By Whom:	Date Via:	eMail	Phon	e 🗌 Fax	In Person
Regarding	Sec Sec.	-			
Client Instructions:					
17. Additional remarks:					

GOOIDI HIIOII			The second		and the second second	2
Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Aailing	Address	501 501 NA	Aurport Dr. A 87401	Turn-Around 5 day X Standard Project Name Am ine Sa Project #:	C Rush	agro Plant			01 H	<b>A</b> awki	WWW	AL v.hal NE - 975	YS lenv Alb	iron	nent arqui	AE al.ca e, Ni 345-	30 m M 87 4107	<b>R</b> /	NT		
Phone #:       50 5 86 6 2712         smail or Fax#:       2A/QC Package:         2A/QC Package:       Image: Comparison of the second se				+ 1021)	TPH (Gas only)	(ORO (MRO)	(1)	(1)			Anions (F,CI,NO <sub>3</sub> ,NO <sub>2</sub> ,PO <sub>4</sub> ,SO <sub>4</sub> )							N)			
	AP (Type)_		ır	On Ice: Sample Tem	A Yes perature: /. 0	No	Tus	+	GRO	d 418	d 504	or 8:	als	NO3	des /	0	VOA	5			(Y or
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type		BTEX + NEE	BTEX + MTBE	TPH 8015B(GRO	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	<b>RCRA 8 Metals</b>	Anions (F,CI	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chlovides	1XN		Air Bubbles (Y or N)
12-15	1415	soil	SC-1	1-40z	cold	-101	X		X								1	X	X		
1	1420		SC-2	1.1	1	-007	X		X					2.44				¥	X		1
	1425		SC-3			-103	X		X				1	1985				x	X		
	1430		SC-4			-004	X		X					- 6	2 -			X	X	7	
	1435		SC-S			-005	X		×									×	X		
	1440		SC-6			-006	X	18	X				2				C.	X	X		
9	1445		SC-7			-007	×	1	X									X	X		
3	1450		SC-8			-008	X	is.h	×							1		X	X		
	1455		SC-9			-109	×		X									X	X		
	1500		82-10		11 8 m	-010	X		×			-						X	X		
	1505		sc-11			-011	X	14	×									X	X		
1	1510	1	SC-12	1	4	-012	X		X						1			X	X		
Date: 22/15 Date 22/15	Time: 1700 Time: 1745/	Relinquish Belinquish Mus	h Water	Received by: Antiatic Act. Act	Waet	Date Time 7/22/15 /700 Date Time 07/23/15 0805	135	nark	s: A	sree	.10	wil	le	enec							

If necessary, samples submitted to Hall Envronmental 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 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: <u>www.hallenvironmental.com</u>

August 13, 2015

Heather Woods

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

OrderNo.: 1508492

RE: Williams Amine Spill

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 <u>www.hallenvironmental.com</u> 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,

male

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

**Analytical Report** 

### Hall Environmental Analysis Laboratory, Inc.

Lab Order 1508492 Date Reported: 8/13/2015

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

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS	and and	1			Analys	: LGT
Chloride	2.9	1.5	mg/Kg	1	8/12/2015 12:37:08 PM	20742
METHOD 4500-N-ORG C: TKN					Analys	: SRM
Nitrogen, Total Kjeldahl	670	49	mg/Kg	1	8/13/2015 10:47:00 AM	20756
EPA METHOD 8015M/D: DIESEL RANG	E ORGANIC	S			Analysi	: 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 RAN	GE				Analys	: 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 AN	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 AN	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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	
	D	Sample Diluted Due to Matrix	Е	
	Н	Holding times for preparation or analysis exceeded	J	
	ND	Not Detected at the Reporting Limit	Р	
	R	RPD outside accepted recovery limits	RL	
	S	% Recovery outside of range due to dilution or matrix		

- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits Page 1 of 6
- Sample pH Not In Range **Reporting Detection Limit**

### Hall Environmental Analysis Laboratory, Inc.

WO#:	1508492
	13-Aug-15

	Engineering LLC ams Amine Spill
Sample ID MB-20742 Client ID: PBS Prep Date: 8/12/2015	SampType:         MBLK         TestCode:         EPA Method 300.0:         Anions           Batch ID:         20742         RunNo:         28161           Analysis Date:         8/12/2015         SeqNo:         848526         Units:         mg/Kg
Analyte Chloride	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual ND 1.5
Sample ID LCS-20742 Client ID: LCSS	SampType: LCS TestCode: EPA Method 300.0: Anions Batch ID: 20742 RunNo: 28161
Prep Date: 8/12/2015 Analyte Chloride	Analysis Date:         8/12/2015         SeqNo:         848527         Units:         mg/Kg           Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         %RPD         RPDLimit         Qual           14         1.5         15.00         0         94.2         90         110

- \* 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

### Hall Environmental Analysis Laboratory, Inc.

	ingineering LLC ms Amine Spill			
Sample ID MB-20735 Client ID: PBS Prep Date: 8/12/2015	SampType: MBLK Batch ID: 20735 Analysis Date: 8/12/2015	TestCode: EPA Method RunNo: 28122 SeqNo: 847381	8015M/D: Diesel Range Organics Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit	Qual
Diesel Range Organics (DRO) Surr: DNOP	ND 10 11 10.00	113 57.9	140	14
Sample ID LCS-20735 Client ID: LCSS Prep Date: 8/12/2015	SampType: LCS Batch ID: 20735 Analysis Date: 8/12/2015	TestCode: EPA Method RunNo: 28122 SeqNo: 847676	8015M/D: Diesel Range Organics Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit	Qual
Diesel Range Organics (DRO) Surr: DNOP	511050.005.45.000	0 102 57.4 109 57.9	139 140	

### 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

Page 3 of 6

	ngineering LLC ns 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			11.5
Surr: BFB	840 1000	84.2 75.4	113	and a lot
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	6 B. 1970
Surr: BFB	930 1000	92.6 75.4	113	

- \* 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

### Hall Environmental Analysis Laboratory, Inc.

WO#:	1508492
mon.	1500472

13-Aug-15

	Rule Engineering LLC Williams Amine Spill									
Sample ID MB-20727	ample ID MB-20727 SampType: MBLK TestCode: EPA Method 8021B: Volatiles									
Client ID: PBS	Batch ID: 20727 RunNo: 28140									
Prep Date: 8/11/2015	Analysis E	Date: 8/	12/2015	2015 SeqNo: 848378			Units: mg/k	(g		
Analyte	Result	PQL SPK value		SPK Ref Val	%REC LowLimit		HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050		1200	1.10		1 - N			1.5
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.91		1.000	11.2	90.9	80	120	12.1.2	1. P.	
Sample ID LCS-20727	SampT	Type: LC	s	Tes	tCode: E	PA Method	8021B: Vola	tiles	14	
Client ID: LCSS	Batcl	h ID: 20	727	F	RunNo: 2	8140				
Prep Date: 8/11/2015	Analysis E	Date: 8/	12/2015	5	SeqNo: 8	48379	Units: mg/h	٢g		
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			1916.51
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.
- 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

Page 5 of 6

Client: Project:	-	ineering LLC Amine Spill										
Sample ID	MB-20756	SampType	MBLK	Tes	TestCode: Method 4500-N-org C: TKN							
Client ID:	PBS	Batch ID:	20756	F	RunNo: 281							
Prep Date:	8/13/2015	13/2015 Analysis Date: 8/13/2015 SeqNo: 848858 U					Units: mg/K					
Analyte		Result P	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Nitrogen, Total	Kjeldahl	ND	50	or render var	MILEO	LOWEIIII	rightint		Tu Denne	Quar		
Sample ID	LCS-20756	SampType	LCS	Tes	tCode: Met	thod 4500	-N-org C: TK	N				
Client ID:	LCSS	Batch ID:	20756	F	RunNo: 281	170						
Prep Date:	8/13/2015	Analysis Date:	8/13/2015	5	SeqNo: 848	8859	Units: mg/K	g				
Analyte		Result P	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Nitrogen, Total	Kjeldahl	1000	50 1000	0	101	80	120		AN ST	4		
Sample ID	1508492-001BMS	SampType	MS	Tes	tCode: Met	thod 4500	N-org C: TK	N		1		
Client ID:	CS-5-081115	Batch ID:	20756	F	RunNo: 281	170						
Prep Date:	8/13/2015	Analysis Date:	8/13/2015	5	SeqNo: 848	8862	Units: mg/K	g				
Analyte		Result P	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Nitrogen, Total	Kjeldahl	1600	48 961.5	672.5	92.5	75	125	a straight				
Sample ID	1508492-001BMSE	SampType	MSD	Tes	tCode: Met	thod 4500	-N-org C: TK	N	1911 - 1913 - 1914 - 19	100		
Client ID:	CS-5-081115	Batch ID:	20756	F	RunNo: 281	170						
Prep Date:	8/13/2015	Analysis Date:	8/13/2015	5	SeqNo: 848	3863	Units: mg/K	g				
Analyte		Result P	QL 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	2220		

- \* 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

1	HALL
_	ENVIRONMENTAL
1	ANALYSIS
	LABORATORY

#### Hall Environmental Analysis Laboratory 4961 Hawkins NE Albuquerque NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

# Albuquerque NM 87109 Sample Log-In Check List

Client Name: RULE ENGINEERING LL Work Order Numb	er: 1508492		RcptNo: 1	
Received by/date: A 08 12	5	NET	A CONTRACT	
Logged By: Ashley Gallegos 8/12/2015 7:53:00 A	M	Az		
Completed By: Ashley Gallegos 8/12/2015 8:26:15 A	M	A		
Reviewed By:		0		
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 🗌		
6. Sample(s) in proper container(s)?	Yes 🔽	No 🗌		
7. Sufficient sample volume for indicated test(s)?	Yes M	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	1.1.8
	-		botties checked	
12. Docs paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes 🗹	No	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)	Yes	No 🗌	NA 🗹	
16. Was client notified of all discrepancies with this order?	-	NO	NA 122	
Person Notified: Date	the shear with		The Designation	
By Whom. Vis:	eMail	Phone E Fax	In Person	
Regarding: Client Instructions:	1-1-1			
17. Additional remarks:				
18. Cooler Information				
Cooler No Temp °C Condition Seal Intact Seal No	Seal Date	Signed By	1.200	
1 2.0 Good Yes				

1ailing	01		ustody Record							NP	ME	NT	AL	•							
	Ilient: Rule Engineering Iailing Address: Farmington, NM Thone #: (SOS)716 2787				Distandard Rush 24400/ Project Name: My, //1ams M. Hagero Project #:				ANALYSIS LABORATOR												
ihone :									4901 Hawkins NE - Albuquerque, NM 87109 Tel. 505-345-3975 Fax 505-345-4107												
none									Analysis Request												
Mail or Fax#: Litter and serving, C A/QC Package: hwood serving, C I Standard I Level 4 (Full Validation)			Project Manager: Tom Heather Woods				(Gas only)	RO (MRQ)		A States	SIMS)		PO4,SO4)	PCB's							
vccreditation				nris Bale	19 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	B	LPH	/ DF	(1)	(1.	8270 5		NO2,	8082						î	
NELAP      Other			On Ice:		□ No	I.I.	+	GRO	418	504	or 82	Is	VO <sub>3</sub> ,	es /	22	(YO			2	IO J	
Date	D (Type)	Matrix	Sample Request ID	Type and #	Preservative Type	D 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	RCRA 8 Metals	Anions (F,CI,NO <sub>3</sub> ,NO <sub>2</sub> ,PO <sub>4</sub> ,SO <sub>4</sub> )	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chloride	FKN	Air Duthhod V	Air Bubbles (Y or N)
11/15	1530	5011	C5-5-081115	Moz glass(z)	None	-001	X		×									X	×		
	-																				
-				1																	
		1	1 and and	1990					X				1								
24												-									
-		-					1				1			_					-		_
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	1.1.1.		12 Section Section	a la sure										1.5							
		0.497																			
)ato:	Time	Relinquish	ed the la	Despined by Data Time			Por	nork								-					
11/13	1700	C	OR	Muth	Jack	8/11/15-1700	Rei	IIdik	5.												
Date:	Time: 2100	Reliquish	bt. Daller 1	Received by:	ulico	Date / Time 08/13/15 8 0753															
	2.	Relinquish	OR	Received by: Received by: Received by:	Joet	Date / Time 08/12/15 8 0753	Rer	nark													

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