



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

October 19, 2023

Gary Russell

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX: (505) 632-3911

RE: Injection Well Casing

OrderNo.: 2310539

Dear Gary Russell:

Hall Environmental Analysis Laboratory received 1 sample(s) on 10/11/2023 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers 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 #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



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Billings, MT 406.252.6325 • Casper, WY 307.235.0515
Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

ANALYTICAL SUMMARY REPORT

October 18, 2023

Hall Environmental
4901 Hawkins St NE Ste D
Albuquerque, NM 87109-4372

Work Order: B23100987 Quote ID: B15626

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 10/12/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B23100987-001	2310539-001A, Well Casing Gas	10/10/23 8:45	10/12/23	Air	Air Correction Calculations Appearance and Comments Calculated Properties GPM @ std cond./1000 cu. ft., moist. Free Natural Gas Analysis Specific Gravity @ 60/60

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:



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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: B23100987-001
Client Sample ID: 2310539-001A, Well Casing Gas

Report Date: 10/18/23
Collection Date: 10/10/23 08:45
Date Received: 10/12/23
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	2.23	Mol %		0.01		GPA 2261-95	10/13/23 10:08 / jrj
Nitrogen	48.24	Mol %		0.01		GPA 2261-95	10/13/23 10:08 / jrj
Carbon Dioxide	<0.01	Mol %		0.01		GPA 2261-95	10/13/23 10:08 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	10/13/23 10:08 / jrj
Methane	49.45	Mol %		0.01		GPA 2261-95	10/13/23 10:08 / jrj
Ethane	<0.01	Mol %		0.01		GPA 2261-95	10/13/23 10:08 / jrj
Propane	<0.01	Mol %		0.01		GPA 2261-95	10/13/23 10:08 / jrj
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	10/13/23 10:08 / jrj
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	10/13/23 10:08 / jrj
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	10/13/23 10:08 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	10/13/23 10:08 / jrj
Hexanes plus	0.08	Mol %		0.01		GPA 2261-95	10/13/23 10:08 / jrj
Propane	< 0.001	gpm		0.001		GPA 2261-95	10/13/23 10:08 / jrj
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	10/13/23 10:08 / jrj
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	10/13/23 10:08 / jrj
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	10/13/23 10:08 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	10/13/23 10:08 / jrj
Hexanes plus	0.034	gpm		0.001		GPA 2261-95	10/13/23 10:08 / jrj
GPM Total	0.034	gpm		0.001		GPA 2261-95	10/13/23 10:08 / jrj
GPM Pentanes plus	0.034	gpm		0.001		GPA 2261-95	10/13/23 10:08 / jrj

CALCULATED PROPERTIES

Gross BTU per cu ft @ Std Cond. (HHV)	505			1		GPA 2261-95	10/13/23 10:08 / jrj
Net BTU per cu ft @ std cond. (LHV)	455			1		GPA 2261-95	10/13/23 10:08 / jrj
Pseudo-critical Pressure, psia	584			1		GPA 2261-95	10/13/23 10:08 / jrj
Pseudo-critical Temperature, deg R	286			1		GPA 2261-95	10/13/23 10:08 / jrj
Specific Gravity @ 60/60F	0.768			0.001		D3588-81	10/13/23 10:08 / jrj
Air, %	10.17			0.01		GPA 2261-95	10/13/23 10:08 / jrj

- The analysis was not corrected for air.

COMMENTS

- 10/13/23 10:08 / jrj

- BTU, GPM, and specific gravity are corrected for deviation from ideal gas behavior.
- GPM = gallons of liquid at standard conditions per 1000 cu. ft. of moisture free gas @ standard conditions.
- To convert BTU to a water-saturated basis @ standard conditions, multiply by 0.9825.
- Standard conditions: 60 F & 14.73 psi on a dry basis.

Report Definitions: RL - Analyte Reporting Limit
QCL - Quality Control Limit

MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental

Work Order: B23100987

Report Date: 10/18/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
Method: GPA 2261-95											
Batch: R410482											
Lab ID: B23100987-001ADUP	12 Sample Duplicate			Run: GCNGA-B_231013A				10/13/23 10:42			
Oxygen		1.87	Mol %	0.01				18	20		
Nitrogen		47.6	Mol %	0.01				1.4	20		
Carbon Dioxide		<0.01	Mol %	0.01					20		
Hydrogen Sulfide		<0.01	Mol %	0.01					20		
Methane		50.5	Mol %	0.01				2.0	20		
Ethane		<0.01	Mol %	0.01					20		
Propane		<0.01	Mol %	0.01					20		
Isobutane		<0.01	Mol %	0.01					20		
n-Butane		<0.01	Mol %	0.01					20		
Isopentane		<0.01	Mol %	0.01					20		
n-Pentane		<0.01	Mol %	0.01					20		
Hexanes plus		0.09	Mol %	0.01				12	20		
Lab ID: LCS101323											
11 Laboratory Control Sample											
Run: GCNGA-B_231013A											
10/13/23 11:19											
Oxygen		0.60	Mol %	0.01	120	70	130				
Nitrogen		6.01	Mol %	0.01	100	70	130				
Carbon Dioxide		1.00	Mol %	0.01	101	70	130				
Methane		74.5	Mol %	0.01	100	70	130				
Ethane		6.05	Mol %	0.01	101	70	130				
Propane		4.96	Mol %	0.01	100	70	130				
Isobutane		2.01	Mol %	0.01	100	70	130				
n-Butane		2.02	Mol %	0.01	101	70	130				
Isopentane		1.04	Mol %	0.01	104	70	130				
n-Pentane		1.02	Mol %	0.01	102	70	130				
Hexanes plus		0.83	Mol %	0.01	104	70	130				

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



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Work Order Receipt Checklist

Hall Environmental

B23100987

Login completed by: Addison A. Gilbert

Date Received: 10/12/2023

Reviewed by: rshular

Received by: lel

Reviewed Date: 10/18/2023

Carrier name: FedEx

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on all shipping container(s)/cooler(s)? Yes No Not Present
- Custody seals intact on all sample bottles? Yes No Not Present
- Chain of custody present? Yes No
- Chain of custody signed when relinquished and received? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time?
(Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) Yes No
- Temp Blank received in all shipping container(s)/cooler(s)? Yes No Not Applicable
- Container/Temp Blank temperature: 16.6°C No Ice
- Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4"). Yes No No VOA vials submitted
- Water - pH acceptable upon receipt? Yes No Not Applicable

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Contact and Corrective Action Comments:

None



CHAIN OF CUSTODY RECORD

PAGE: 1 OF 1

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

SUB CONTRACTOR: Energy Labs - Billings COMPANY: Energy Laboratories PHONE: (406) 869-6253 FAX: (406) 252-6069
 ADDRESS: 1120 South 27th Street ACCOUNT #
 CITY, STATE, ZIP: Billings, MT 59107

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	ANALYTICAL COMMENTS
1	2310539-001A	Well Casing Gas	TEDLAR	Air	10/10/2023 8:45:00 AM	1 Fixed Gases

B23100987
 A6
 12 Oct 23

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 10/11/2023	Time: 10:22 AM	Received By:	Date:	Time:	REPORT TRANSMITTAL DESIRED: <input type="checkbox"/> HARDCOPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	FOR LAB USE ONLY
Relinquished By:	Date:	Time:	Received By: <i>Lydia Lehone</i>	Date: 10/10/23	Time: 10:05	Temp of samples: C Attempt to Cool?
TAT:	Standard:	RUSH	Next BD:	2nd BD	3rd BD	Comments:



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Albuquerque, NM 87109
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Sample Log-In Check List

Client Name: **Western Refining Southwest, Inc.** Work Order Number: **2310539** RcptNo: **1**
Received By: **Tracy Casarrubias** 10/11/2023 6:40:00 AM
Completed By: **Tracy Casarrubias** 10/11/2023 10:07:36 AM
Reviewed By: **DAD 10/11/23**

Chain of Custody

- 1. Is Chain of Custody complete? Yes No Not Present
- 2. How was the sample delivered? Courier

Log In

- 3. Was an attempt made to cool the samples? Yes No NA
- 4. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
- 5. Sample(s) in proper container(s)? Yes No
- 6. Sufficient sample volume for indicated test(s)? Yes No
- 7. Are samples (except VOA and ONG) properly preserved? Yes No
- 8. Was preservative added to bottles? Yes No NA
- 9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes No NA
- 10. Were any sample containers received broken? Yes No
- 11. Does paperwork match bottle labels? Yes No # of preserved bottles checked for pH: (<2 or >12 unless noted) Adjusted?
- 12. Are matrices correctly identified on Chain of Custody? Yes No
- 13. Is it clear what analyses were requested? Yes No
- 14. Were all holding times able to be met? Yes No Checked by: gmc 10/11/23
(If no, notify customer for authorization.)

Special Handling (if applicable)

- 15. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____
 By Whom: _____ Via: eMail Phone Fax In Person
 Regarding: _____
 Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	N/A	Good	Yes			



Hall Environmental Analysis Laboratory
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October 31, 2023

Gary Russell

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX: (505) 632-3911

RE: Injection Well Casing

OrderNo.: 2310542

Dear Gary Russell:

Hall Environmental Analysis Laboratory received 1 sample(s) on 10/11/2023 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers 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 #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order **2310542**

Date Reported: **10/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Injection Well Casing

Project: Injection Well Casing

Collection Date: 10/10/2023 8:40:00 AM

Lab ID: 2310542-001

Matrix: AQUEOUS

Received Date: 10/11/2023 6:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C TCLP							Analyst: JME
2-Methylphenol	ND	200		mg/L	1	10/16/2023 6:55:42 PM	78119
3+4-Methylphenol	ND	200		mg/L	1	10/16/2023 6:55:42 PM	78119
2,4-Dinitrotoluene	ND	0.13		mg/L	1	10/16/2023 6:55:42 PM	78119
Hexachlorobenzene	ND	0.13		mg/L	1	10/16/2023 6:55:42 PM	78119
Hexachlorobutadiene	ND	0.50		mg/L	1	10/16/2023 6:55:42 PM	78119
Hexachloroethane	ND	3.0		mg/L	1	10/16/2023 6:55:42 PM	78119
Nitrobenzene	ND	2.0		mg/L	1	10/16/2023 6:55:42 PM	78119
Pentachlorophenol	ND	100		mg/L	1	10/16/2023 6:55:42 PM	78119
Pyridine	ND	5.0		mg/L	1	10/16/2023 6:55:42 PM	78119
2,4,5-Trichlorophenol	ND	400		mg/L	1	10/16/2023 6:55:42 PM	78119
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	10/16/2023 6:55:42 PM	78119
Cresols, Total	ND	200		mg/L	1	10/16/2023 6:55:42 PM	78119
Surr: 2-Fluorophenol	38.3	20.8-71.9		%Rec	1	10/16/2023 6:55:42 PM	78119
Surr: Phenol-d5	29.1	16.2-54.5		%Rec	1	10/16/2023 6:55:42 PM	78119
Surr: 2,4,6-Tribromophenol	63.6	18.8-117		%Rec	1	10/16/2023 6:55:42 PM	78119
Surr: Nitrobenzene-d5	46.9	33-85.9		%Rec	1	10/16/2023 6:55:42 PM	78119
Surr: 2-Fluorobiphenyl	40.0	26.3-79.6		%Rec	1	10/16/2023 6:55:42 PM	78119
Surr: 4-Terphenyl-d14	58.4	53.9-124		%Rec	1	10/16/2023 6:55:42 PM	78119
SPECIFIC GRAVITY							Analyst: RBC
Specific Gravity	1.002	0			1	10/19/2023 4:03:00 PM	R100593
SM4500-H+B / 9040C: PH							Analyst: RBC
pH	9.54		*H	pH units	1	10/26/2023 1:41:49 PM	R100775
TCLP VOLATILES BY 8260B							Analyst: JR
Benzene	ND	100		mg/L	200	10/13/2023 6:48:50 PM	TW1004t
Toluene	ND	100		mg/L	200	10/13/2023 6:48:50 PM	TW1004t
Ethylbenzene	ND	100		mg/L	200	10/13/2023 6:48:50 PM	TW1004t
Xylenes, Total	ND	100		mg/L	200	10/13/2023 6:48:50 PM	TW1004t
1,2-Dichloroethane (EDC)	ND	100		mg/L	200	10/13/2023 6:48:50 PM	TW1004t
2-Butanone	ND	40000		mg/L	200	10/13/2023 6:48:50 PM	TW1004t
Carbon Tetrachloride	ND	100		mg/L	200	10/13/2023 6:48:50 PM	TW1004t
Chloroform	ND	1200		mg/L	200	10/13/2023 6:48:50 PM	TW1004t
1,4-Dichlorobenzene	ND	1500		mg/L	200	10/13/2023 6:48:50 PM	TW1004t
1,1-Dichloroethene	ND	140		mg/L	200	10/13/2023 6:48:50 PM	TW1004t
Tetrachloroethene (PCE)	ND	140		mg/L	200	10/13/2023 6:48:50 PM	TW1004t
Trichloroethene (TCE)	ND	100		mg/L	200	10/13/2023 6:48:50 PM	TW1004t
Vinyl chloride	ND	40		mg/L	200	10/13/2023 6:48:50 PM	TW1004t
Chlorobenzene	ND	20000		mg/L	200	10/13/2023 6:48:50 PM	TW1004t
Surr: 1,2-Dichloroethane-d4	82.6	70-130		%Rec	200	10/13/2023 6:48:50 PM	TW1004t

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report

Lab Order **2310542**

Date Reported: **10/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Injection Well Casing

Project: Injection Well Casing

Collection Date: 10/10/2023 8:40:00 AM

Lab ID: 2310542-001

Matrix: AQUEOUS

Received Date: 10/11/2023 6:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
TCLP VOLATILES BY 8260B							Analyst: JR
Surr: 4-Bromofluorobenzene	100	70-130	%Rec	200	10/13/2023 6:48:50 PM	TW1004	
Surr: Dibromofluoromethane	96.7	70-130	%Rec	200	10/13/2023 6:48:50 PM	TW1004	
Surr: Toluene-d8	98.1	70-130	%Rec	200	10/13/2023 6:48:50 PM	TW1004	

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2310542

31-Oct-23

Client: Western Refining Southwest, Inc.

Project: Injection Well Casing

Sample ID: 100ng lcs	SampType: LCS		TestCode: TCLP Volatiles by 8260B							
Client ID: LCSW	Batch ID: TW100468		RunNo: 100468							
Prep Date:	Analysis Date: 10/13/2023		SeqNo: 3680910		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.020	0.010	0.02000	0	102	70	130			
1,1-Dichloroethene	0.020	0.010	0.02000	0	99.2	70	130			
Trichloroethene (TCE)	0.019	0.010	0.02000	0	95.6	70	130			
Chlorobenzene	0.020	0.010	0.02000	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	0.0090		0.01000		90.5	70	130			
Surr: 4-Bromofluorobenzene	0.010		0.01000		104	70	130			
Surr: Dibromofluoromethane	0.0098		0.01000		98.5	70	130			
Surr: Toluene-d8	0.0097		0.01000		96.9	70	130			

Sample ID: mb	SampType: MBLK		TestCode: TCLP Volatiles by 8260B							
Client ID: PBW	Batch ID: TW100468		RunNo: 100468							
Prep Date:	Analysis Date: 10/13/2023		SeqNo: 3680912		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
1,2-Dichloroethane (EDC)	ND	0.50								
2-Butanone	ND	200								
Carbon Tetrachloride	ND	0.50								
Chloroform	ND	6.0								
1,4-Dichlorobenzene	ND	7.5								
1,1-Dichloroethene	ND	0.70								
Tetrachloroethene (PCE)	ND	0.70								
Trichloroethene (TCE)	ND	0.50								
Vinyl chloride	ND	0.20								
Chlorobenzene	ND	100								
Surr: 1,2-Dichloroethane-d4	0.0088		0.01000		88.1	70	130			
Surr: 4-Bromofluorobenzene	0.010		0.01000		102	70	130			
Surr: Dibromofluoromethane	0.010		0.01000		103	70	130			
Surr: Toluene-d8	0.010		0.01000		100	70	130			

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
- PQL Practical Quantitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2310542

31-Oct-23

Client: Western Refining Southwest, Inc.

Project: Injection Well Casing

Sample ID: MB-78119	SampType: MBLK	TestCode: EPA Method 8270C TCLP								
Client ID: PBW	Batch ID: 78119	RunNo: 100483								
Prep Date: 10/12/2023	Analysis Date: 10/16/2023	SeqNo: 3682313			Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	ND	200								
3+4-Methylphenol	ND	200								
2,4-Dinitrotoluene	ND	0.13								
Hexachlorobenzene	ND	0.13								
Hexachlorobutadiene	ND	0.50								
Hexachloroethane	ND	3.0								
Nitrobenzene	ND	2.0								
Pentachlorophenol	ND	100								
Pyridine	ND	5.0								
2,4,5-Trichlorophenol	ND	400								
2,4,6-Trichlorophenol	ND	2.0								
Cresols, Total	ND	200								
Surr: 2-Fluorophenol	0.069		0.2000		34.5	20.8	71.9			
Surr: Phenol-d5	0.055		0.2000		27.4	16.2	54.5			
Surr: 2,4,6-Tribromophenol	0.069		0.2000		34.7	18.8	117			
Surr: Nitrobenzene-d5	0.041		0.1000		40.7	33	85.9			
Surr: 2-Fluorobiphenyl	0.031		0.1000		31.3	26.3	79.6			
Surr: 4-Terphenyl-d14	0.063		0.1000		62.7	53.9	124			

Sample ID: LCS-78119	SampType: LCS	TestCode: EPA Method 8270C TCLP								
Client ID: LCSW	Batch ID: 78119	RunNo: 100483								
Prep Date: 10/12/2023	Analysis Date: 10/16/2023	SeqNo: 3682314			Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.043	0.00010	0.1000	0	43.3	26.8	92.9			
3+4-Methylphenol	0.089	0.00010	0.2000	0	44.3	23.7	100			
2,4-Dinitrotoluene	0.031	0.00010	0.1000	0	31.2	22.3	71.2			
Hexachlorobenzene	0.044	0.00010	0.1000	0	43.8	26.1	91.6			
Hexachlorobutadiene	0.024	0.00010	0.1000	0	24.3	15	74.2			
Hexachloroethane	0.027	0.00010	0.1000	0	26.6	15	85.4			
Nitrobenzene	0.045	0.00010	0.1000	0	45.2	26.1	89.6			
Pentachlorophenol	0.040	0.00010	0.1000	0	40.1	21.7	89.4			
Pyridine	0.029	0.00010	0.1000	0	29.4	15	68.4			
2,4,5-Trichlorophenol	0.044	0.00010	0.1000	0	43.9	27	97.9			
2,4,6-Trichlorophenol	0.044	0.00010	0.1000	0	44.2	27.9	92.6			
Cresols, Total	0.13	0.00010	0.3000	0	43.9	24.8	97.7			
Surr: 2-Fluorophenol	0.071		0.2000		35.6	20.8	71.9			
Surr: Phenol-d5	0.054		0.2000		27.1	16.2	54.5			
Surr: 2,4,6-Tribromophenol	0.077		0.2000		38.6	18.8	117			

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
- PQL Practical Quantitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2310542

31-Oct-23

Client: Western Refining Southwest, Inc.

Project: Injection Well Casing

Sample ID: LCS-78119	SampType: LCS	TestCode: EPA Method 8270C TCLP								
Client ID: LCSW	Batch ID: 78119	RunNo: 100483								
Prep Date: 10/12/2023	Analysis Date: 10/16/2023	SeqNo: 3682314	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	0.044		0.1000		44.3	33	85.9			
Surr: 2-Fluorobiphenyl	0.033		0.1000		33.5	26.3	79.6			
Surr: 4-Terphenyl-d14	0.054		0.1000		54.3	53.9	124			

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
- PQL Practical Quantitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2310542

31-Oct-23

Client: Western Refining Southwest, Inc.

Project: Injection Well Casing

Sample ID: 2310542-001C DUP	SampType: DUP	TestCode: SM4500-H+B / 9040C: pH								
Client ID: Injection Well Casin	Batch ID: R100775	RunNo: 100775								
Prep Date:	Analysis Date: 10/26/2023	SeqNo: 3696509	Units: pH units							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	9.55							0.105		*H

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
- PQL Practical Quantitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit



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

Sample Log-In Check List

Client Name: Western Refining Southwest, Inc. Work Order Number: 2310542 RcptNo: 1

Received By: Tracy Casarrubias 10/11/2023 6:40:00 AM

Completed By: Tracy Casarrubias 10/11/2023 10:26:27 AM

Reviewed By: [Signature] 10/11/23

Chain of Custody

1. Is Chain of Custody complete? Yes [checked] No [] Not Present []

2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes [checked] No [] NA []

4. Were all samples received at a temperature of >0° C to 6.0°C Yes [checked] No [] NA []

5. Sample(s) in proper container(s)? Yes [] No [checked]

6. Sufficient sample volume for indicated test(s)? Yes [checked] No []

7. Are samples (except VOA and ONG) properly preserved? Yes [checked] No []

8. Was preservative added to bottles? Yes [] No [checked] NA []

9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes [checked] No [] NA []

10. Were any sample containers received broken? Yes [] No [checked]

11. Does paperwork match bottle labels? Yes [checked] No []

(Note discrepancies on chain of custody)

12. Are matrices correctly identified on Chain of Custody? Yes [checked] No []

13. Is it clear what analyses were requested? Yes [checked] No []

14. Were all holding times able to be met? Yes [checked] No []

(If no, notify customer for authorization.)

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

Adjusted?

Checked by: TMC 10/11/23

TMC 10/11/23

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes [] No [] NA [checked]

Person Notified: [] Date: []
By Whom: [] Via: [] eMail [] Phone [] Fax [] In Person []

Regarding: []

Client Instructions: Sodium Thio. VOAs were sent, not HCL - TMC 10/11/23

16. Additional remarks:

For sample 001C, ~500mL were poured off into a 500mL HDPE bottle from original 1L Amber provided. - TMC 10/11/23

17. Cooler Information

Table with 7 columns: Cooler No, Temp °C, Condition, Seal Intact, Seal No, Seal Date, Signed By. Row 1: 1, 4.2, Good, Yes, Yogi, [], []

District I
 1625 N. French Dr., Hobbs, NM 88240
 Phone:(575) 393-6161 Fax:(575) 393-0720

District II
 811 S. First St., Artesia, NM 88210
 Phone:(575) 748-1283 Fax:(575) 748-9720

District III
 1000 Rio Brazos Rd., Aztec, NM 87410
 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
 1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS
 Action 332269

CONDITIONS

Operator: Western Refining Southwest LLC 539 South Main Street Findlay, OH 45840	OGRID: 267595
	Action Number: 332269
	Action Type: [UF-GA] Gas Analysis (GAS ANALYSIS)

CONDITIONS

Created By	Condition	Condition Date
mkuehling	None	4/26/2024