



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 horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



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:



Trust our People. Trust our Data.
www.energylab.com

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

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

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

1200123

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:	Time:	Received By:	Date:	Time:	REPORT TRANSMITTAL DESIRED:	
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	<input type="checkbox"/> HARD COPY (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	
TAT: Standard			RUSH			Temp of samples	Attempt to Cool?
			Next BD			Comments:	



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: 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 $>0^{\circ}\text{C}$ 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?
(Note discrepancies on chain of custody) Yes ☒ No ☐
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?
(If no, notify customer for authorization.) Yes ☒ No ☐
- # of preserved bottles checked for pH: 7
(<2 or >12 unless noted)
Adjusted? 7
Checked by: gmc 10/11/23

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 $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	N/A	Good	Yes			

Client: Western Refining

Mailing Address: 50 CR 4990

Bloomfield, NM 87413

Phone #: 678-594-6377

email or Fax: gfrussell@marathonpetroleum.com

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Sampler:

On Ice: ☒ Yes ☐ No

of Coolers: 1

Cooler Temp (including CF): 42-42

Container Type and #

Preservative Type

HEAL No. 2310539

1 bag

none

001

Sample Name

Well Casing Gas Sample

Date

10/10/2023

Time

8:45

Matrix

gas

Relinquished by:

Time: 2:30 pm

Date: 10/10/23

Relinquished by:

Time:

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

Injection Well Casing

Project #:

PO # 4900110659

Project Manager:

Gary Russell

Analysis Request

Carbon dioxide

Nitrogen

methane, ethane, propane, iso-

butane, n-butane, i-pentane, n-

pentane, hexane +

Remarks:

Preserve and filter C/A Balance dissolved in the lab.

Received by:

Via: Counter

Date: 10/11/23

Time: 6:40

Received by:

Via:

Date:

Time:

Received by:

Via:

Date:

Time:

Received by:

Via:

Date:

Time:

Received by:

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: www.hallenvironmental.com

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	TW10041
Toluene	ND	100		mg/L	200	10/13/2023 6:48:50 PM	TW10041
Ethylbenzene	ND	100		mg/L	200	10/13/2023 6:48:50 PM	TW10041
Xylenes, Total	ND	100		mg/L	200	10/13/2023 6:48:50 PM	TW10041
1,2-Dichloroethane (EDC)	ND	100		mg/L	200	10/13/2023 6:48:50 PM	TW10041
2-Butanone	ND	40000		mg/L	200	10/13/2023 6:48:50 PM	TW10041
Carbon Tetrachloride	ND	100		mg/L	200	10/13/2023 6:48:50 PM	TW10041
Chloroform	ND	1200		mg/L	200	10/13/2023 6:48:50 PM	TW10041
1,4-Dichlorobenzene	ND	1500		mg/L	200	10/13/2023 6:48:50 PM	TW10041
1,1-Dichloroethene	ND	140		mg/L	200	10/13/2023 6:48:50 PM	TW10041
Tetrachloroethene (PCE)	ND	140		mg/L	200	10/13/2023 6:48:50 PM	TW10041
Trichloroethene (TCE)	ND	100		mg/L	200	10/13/2023 6:48:50 PM	TW10041
Vinyl chloride	ND	40		mg/L	200	10/13/2023 6:48:50 PM	TW10041
Chlorobenzene	ND	20000		mg/L	200	10/13/2023 6:48:50 PM	TW10041
Surr: 1,2-Dichloroethane-d4	82.6	70-130		%Rec	200	10/13/2023 6:48:50 PM	TW10041

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.		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order 2310542
Date Reported: 10/31/2023

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 ☒ 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 $>0^{\circ}\text{C}$ 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?
(Note discrepancies on chain of custody) Yes ☒ No ☐
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?
(If no, notify customer for authorization.) Yes ☒ No ☐
- # of preserved bottles checked for pH: *7mL 10/11/23*
(<2 or >12 unless noted)
Adjusted?
Checked by: *mmc 10/11/23*

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: *Sodium Thio. VOAs were sent, not HCL - mmc 10/11/23*

16. Additional remarks:

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

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
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