

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 04, 2022

Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: AC McLaughlin 93 Closure

Work Order #2204255

Enclosed are the results of analyses for samples received by Summit Scientific on 04/18/22 10:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury
President



Whiting Oil & Gas
retail
Denver CO, 80215

Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20220414_ACMcLaughlin93_WH@6ft	2204255-01	Soil	04/14/22 11:35	04/18/22 10:40
20220414_ACMcLaughlin93_AOC@4ft	2204255-02	Soil	04/14/22 11:45	04/18/22 10:40
20220414_ACMcLaughlin93_TP_Comp	2204255-03	Soil	04/14/22 11:50	04/18/22 10:40
20220414_ACMcLaughlin93_TP_Dis	2204255-04	Soil	04/14/22 11:55	04/18/22 10:40

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2204255

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Client: Whiting Oil & Gas

Project Manager: Vince DeCianne

Address: 707 17th Street, Suite 3000

E-Mail: jveith@kleinfelder.com

City/State/Zip: Denver, CO 80202

kyle.waggoner@whiting.com

Phone: 970-309-6553

Project Name: AC McLaughlin 93 Closure

Sampler Name: Jordan Veith

Project Number: 20221740.001A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic	COGCC Table 915-1	MINUS PAHs			
1	20220414_AC McLaughlin 93_WHG <i>6ft</i>	4/14/2022	11:35	1			X			X								X					
2	20220414_AC McLaughlin 93_AOC	4/14/2022	11:45	3			X			X			X										
3	20220414_AC McLaughlin 93_TP_COMP	4/14/2022	11:50	3			X			X			X										
4	20220414_AC McLaughlin 93_TP_DIS	4/14/2022	11:55	3			X			X			X										
5	<i>Jordan Veith</i>																						
6	<i>4/14/2022</i>																						
7	<i>4/14/2022</i>																						
8	<i>4/14/2022</i>																						
9	<i>4/14/2022</i>																						
10	<i>4/14/2022</i>																						
Relinquished by: <i>[Signature]</i>		Date/Time:		Received by: <i>[Signature]</i>		Date/Time:		Turn Around Time (Check)				Same				Notes:							
Relinquished by:		Date/Time:		Received by:		Date/Time:		Day _____ 72 hours _____ 24 hours _____				Standard _____ 48 hours _____				Sample Integrity:							
Relinquished by:		Date/Time:		Received by:		Date/Time:		Temperature Upon Receipt: <u>2.2</u> Samples				Intact: <u>Yes</u> No											

S₂

2204255

Sample Receipt Checklist

S2 Work Order#

Client: Whiting Client Project ID: AL McLaughlin 93 Closure

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

Matrix (Check all that apply) Air Soil/Solid Water Other

Temp (°C)

Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6 °C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>			<i>On ice.</i>
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?			<input checked="" type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

JB

Custodian Printed Name

4/18/22

Date/Time



Whiting Oil & Gas
 retail
 Denver CO, 80215

Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A
 Project Manager: Vince DeCianne

Reported:
 05/04/22 12:28

**20220414_ACMcLaughlin93_WH@6ft
 2204255-01 (Soil)**

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.80		pH Units	1	BFD0676	04/29/22	05/02/22	EPA 9045D	

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retail
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Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

20220414_ACMcLaughlin93_AOC@4ft
2204255-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFD0445	04/21/22	04/22/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.5 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0448	04/21/22	04/22/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Number: 20221740.001A

Project Manager: Vince DeCianne

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20220414_ACMcLaughlin93_AOC@4ft
2204255-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0457	04/21/22	04/25/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		57.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		63.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.455	0.0100	mg/L	1	BFD0523	04/25/22	04/30/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Denver CO, 80215

Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

20220414_ACMcLaughlin93_AOC@4ft
2204255-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	8.16	0.255	mg/kg dry	1	BFD0468	04/21/22	04/30/22	EPA 6020B	
Barium	56.7	0.509	"	"	"	"	"	"	
Cadmium	ND	0.255	"	"	"	"	"	"	
Copper	11.9	0.509	"	"	"	"	"	"	
Lead	13.3	0.255	"	"	"	"	"	"	
Nickel	15.6	0.509	"	"	"	"	"	"	
Selenium	1.49	0.331	"	"	"	"	"	"	
Silver	0.0919	0.0255	"	"	"	"	"	"	
Zinc	74.6	0.509	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0526	04/25/22	04/25/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	378	0.0637	mg/L dry	1	BFD0562	04/26/22	05/02/22	EPA 6020B	
Magnesium	60.7	0.0637	"	"	"	"	"	"	
Sodium	74.3	0.0637	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.936	0.00100	units	1	BFE0018	05/02/22	05/02/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Reported:
05/04/22 12:28

**20220414_ACMcLaughlin93_AOC@4ft
2204255-02 (Soil)**

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	78.5	%	1	BFD0495	04/22/22	04/26/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.24	0.0100	mmhos/cm	1	BFD0591	04/27/22	04/27/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.71		pH Units	1	BFD0589	04/27/22	04/27/22	EPA 9045D	

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Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

20220414_ACMcLaughlin93_TP_Comp
2204255-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/14/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFD0445	04/21/22	04/22/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/14/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.7 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/14/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0448	04/21/22	04/22/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/14/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

20220414_ACMcLaughlin93_TP_Comp
2204255-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/14/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0457	04/21/22	04/25/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/14/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		67.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		68.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/14/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.332	0.0100	mg/L	1	BFD0523	04/25/22	04/30/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/14/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A
Project Manager: Vince DeCianne

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05/04/22 12:28

**20220414_ACMcLaughlin93_TP_Comp
2204255-03 (Soil)**

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	9.68	0.236	mg/kg dry	1	BFD0468	04/21/22	04/30/22	EPA 6020B
Barium	36.8	0.472	"	"	"	"	"	"
Cadmium	0.238	0.236	"	"	"	"	"	"
Copper	13.5	0.472	"	"	"	"	"	"
Lead	17.1	0.236	"	"	"	"	"	"
Nickel	25.8	0.472	"	"	"	"	"	"
Selenium	1.78	0.307	"	"	"	"	"	"
Silver	0.117	0.0236	"	"	"	"	"	"
Zinc	87.2	0.472	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 04/14/22 11:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0526	04/25/22	04/25/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: 04/14/22 11:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	329	0.0590	mg/L dry	1	BFD0562	04/26/22	05/02/22	EPA 6020B	
Magnesium	72.8	0.0590	"	"	"	"	"	"	
Sodium	104	0.0590	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 04/14/22 11:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.35	0.00100	units	1	BFE0018	05/02/22	05/02/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 04/14/22 11:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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retail
Denver CO, 80215

Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

**20220414_ACMcLaughlin93_TP_Comp
2204255-03 (Soil)**

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	84.8	%	1	BFD0495	04/22/22	04/26/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.53	0.0100	mmhos/cm	1	BFD0591	04/27/22	04/27/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.71		pH Units	1	BFD0589	04/27/22	04/27/22	EPA 9045D	

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Denver CO, 80215

Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

20220414_ACMcLaughlin93_TP_Dis
2204255-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/14/22 11:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BFD0445	04/21/22	04/22/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/14/22 11:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/14/22 11:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0448	04/21/22	04/22/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/14/22 11:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		106 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Whiting Oil & Gas
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Denver CO, 80215

Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

20220414_ACMcLaughlin93_TP_Dis
2204255-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/14/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0457	04/21/22	04/25/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/14/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		41.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		47.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/14/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.639	0.0100	mg/L	1	BFD0523	04/25/22	04/30/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/14/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

**20220414_ACMcLaughlin93_TP_Dis
2204255-04 (Soil)**

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	8.02	0.245	mg/kg dry	1	BFD0468	04/21/22	04/30/22	EPA 6020B	
Barium	53.8	0.489	"	"	"	"	"	"	
Cadmium	0.291	0.245	"	"	"	"	"	"	
Copper	13.7	0.489	"	"	"	"	"	"	
Lead	16.7	0.245	"	"	"	"	"	"	
Nickel	16.7	0.489	"	"	"	"	"	"	
Selenium	1.62	0.318	"	"	"	"	"	"	
Silver	0.126	0.0245	"	"	"	"	"	"	
Zinc	84.7	0.489	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 04/14/22 11:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0526	04/25/22	04/25/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: 04/14/22 11:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	295	0.0612	mg/L dry	1	BFD0562	04/26/22	05/02/22	EPA 6020B	
Magnesium	134	0.0612	"	"	"	"	"	"	
Sodium	182	0.0612	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 04/14/22 11:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.21	0.00100	units	1	BFE0018	05/02/22	05/02/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 04/14/22 11:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

**20220414_ACMcLaughlin93_TP_Dis
2204255-04 (Soil)**

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	81.7	%	1	BFD0495	04/22/22	04/26/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.03	0.0100	mmhos/cm	1	BFD0591	04/27/22	04/27/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.80		pH Units	1	BFD0589	04/27/22	04/27/22	EPA 9045D	

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Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BFD0445 - EPA 5030 Soil MS

Blank (BFD0445-BLK1)

Prepared: 04/21/22 Analyzed: 04/22/22

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
Naphthalene	ND	0.0038	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0414		"	0.0400		103	50-150				
<i>Surrogate: Toluene-d8</i>	0.0409		"	0.0400		102	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0383		"	0.0400		95.7	50-150				

LCS (BFD0445-BS1)

Prepared: 04/21/22 Analyzed: 04/22/22

Benzene	0.0583	0.0020	mg/kg	0.0750		77.7	70-130				
Toluene	0.0611	0.0050	"	0.0750		81.4	70-130				
Ethylbenzene	0.0586	0.0050	"	0.0750		78.2	70-130				
m,p-Xylene	0.123	0.010	"	0.150		81.8	70-130				
o-Xylene	0.0702	0.0050	"	0.0750		93.6	70-130				
1,2,4-Trimethylbenzene	0.0666	0.0050	"	0.0750		88.8	70-130				
1,3,5-Trimethylbenzene	0.0626	0.0050	"	0.0750		83.4	70-130				
Naphthalene	0.0867	0.0038	"	0.0750		116	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0399		"	0.0400		99.8	50-150				
<i>Surrogate: Toluene-d8</i>	0.0404		"	0.0400		101	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0405		"	0.0400		101	50-150				

Matrix Spike (BFD0445-MS1)

Source: 2204254-01

Prepared: 04/21/22 Analyzed: 04/22/22

Benzene	0.0589	0.0020	mg/kg	0.0750	ND	78.5	70-130				
Toluene	0.0619	0.0050	"	0.0750	ND	82.5	70-130				
Ethylbenzene	0.0568	0.0050	"	0.0750	ND	75.8	70-130				
m,p-Xylene	0.121	0.010	"	0.150	ND	80.4	70-130				
o-Xylene	0.0681	0.0050	"	0.0750	ND	90.8	70-130				
1,2,4-Trimethylbenzene	0.0656	0.0050	"	0.0750	ND	87.5	70-130				
1,3,5-Trimethylbenzene	0.0600	0.0050	"	0.0750	ND	80.0	70-130				
Naphthalene	0.0891	0.0038	"	0.0750	ND	119	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0426		"	0.0400		106	50-150				
<i>Surrogate: Toluene-d8</i>	0.0417		"	0.0400		104	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0402		"	0.0400		101	50-150				

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Denver CO, 80215

Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BFD0445 - EPA 5030 Soil MS

Matrix Spike Dup (BFD0445-MSD1)	Source: 2204254-01			Prepared: 04/21/22 Analyzed: 04/22/22						
Benzene	0.0571	0.0020	mg/kg	0.0750	ND	76.1	70-130	3.16	30	
Toluene	0.0613	0.0050	"	0.0750	ND	81.8	70-130	0.877	30	
Ethylbenzene	0.0576	0.0050	"	0.0750	ND	76.8	70-130	1.31	30	
m,p-Xylene	0.123	0.010	"	0.150	ND	81.8	70-130	1.75	30	
o-Xylene	0.0700	0.0050	"	0.0750	ND	93.4	70-130	2.78	30	
1,2,4-Trimethylbenzene	0.0655	0.0050	"	0.0750	ND	87.4	70-130	0.137	30	
1,3,5-Trimethylbenzene	0.0618	0.0050	"	0.0750	ND	82.4	70-130	2.96	30	
Naphthalene	0.0937	0.0038	"	0.0750	ND	125	70-130	5.09	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0404</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>		<i>98.6</i>	<i>50-150</i>			

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Whiting Oil & Gas
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Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BFD0448 - EPA 3550A

Blank (BFD0448-BLK1)

Prepared: 04/21/22 Analyzed: 04/22/22

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								

LCS (BFD0448-BS1)

Prepared: 04/21/22 Analyzed: 04/22/22

C10-C28 (DRO)	450	50	mg/kg	500	90.0	70-130					
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Matrix Spike (BFD0448-MS1)

Source: 2204254-01

Prepared: 04/21/22 Analyzed: 04/22/22

C10-C28 (DRO)	405	50	mg/kg	500	9.41	79.1	70-130				
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Matrix Spike Dup (BFD0448-MSD1)

Source: 2204254-01

Prepared: 04/21/22 Analyzed: 04/22/22

C10-C28 (DRO)	388	50	mg/kg	500	9.41	75.8	70-130	4.17	20		
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Whiting Oil & Gas
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Denver CO, 80215

Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike	Source	%REC		RPD		Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BFD0457 - EPA 5030 Soil MS

Blank (BFD0457-BLK1)

Prepared: 04/21/22 Analyzed: 04/23/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0265		"	0.0333		79.6	40-150			
Surrogate: Fluoranthene-d10	0.0236		"	0.0333		70.9	40-150			

LCS (BFD0457-BS1)

Prepared: 04/21/22 Analyzed: 04/23/22

Acenaphthene	0.0264	0.00500	mg/kg	0.0333		79.1	31-137			
Anthracene	0.0289	0.00500	"	0.0333		86.6	30-120			
Benzo (a) anthracene	0.0248	0.00500	"	0.0333		74.4	30-120			
Benzo (a) pyrene	0.0272	0.00500	"	0.0333		81.5	30-120			
Benzo (b) fluoranthene	0.0282	0.00500	"	0.0333		84.5	30-120			
Benzo (k) fluoranthene	0.0350	0.00500	"	0.0333		105	30-120			
Chrysene	0.0353	0.00500	"	0.0333		106	30-120			
Dibenz (a,h) anthracene	0.0293	0.00500	"	0.0333		87.9	30-120			
Fluoranthene	0.0326	0.00500	"	0.0333		97.7	30-120			
Fluorene	0.0305	0.00500	"	0.0333		91.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0195	0.00500	"	0.0333		58.6	30-120			
Pyrene	0.0277	0.00500	"	0.0333		83.0	35-142			
1-Methylnaphthalene	0.0300	0.00500	"	0.0333		89.9	35-142			
2-Methylnaphthalene	0.0292	0.00500	"	0.0333		87.7	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0300		"	0.0333		90.1	40-150			
Surrogate: Fluoranthene-d10	0.0310		"	0.0333		93.1	40-150			

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Whiting Oil & Gas
retail
Denver CO, 80215

Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BFD0457 - EPA 5030 Soil MS

Matrix Spike (BFD0457-MS1)	Source: 2203402-01			Prepared: 04/21/22 Analyzed: 04/23/22						
Acenaphthene	0.0185	0.00500	mg/kg	0.0333	ND	55.6	31-137			
Anthracene	0.0250	0.00500	"	0.0333	ND	74.9	30-120			
Benzo (a) anthracene	0.0209	0.00500	"	0.0333	ND	62.6	30-120			
Benzo (a) pyrene	0.0209	0.00500	"	0.0333	ND	62.7	30-120			
Benzo (b) fluoranthene	0.0226	0.00500	"	0.0333	ND	67.8	30-120			
Benzo (k) fluoranthene	0.0272	0.00500	"	0.0333	ND	81.7	30-120			
Chrysene	0.0259	0.00500	"	0.0333	ND	77.6	30-120			
Dibenz (a,h) anthracene	0.0242	0.00500	"	0.0333	ND	72.6	30-120			
Fluoranthene	0.0259	0.00500	"	0.0333	ND	77.7	30-120			
Fluorene	0.0194	0.00500	"	0.0333	ND	58.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0155	0.00500	"	0.0333	ND	46.4	30-120			
Pyrene	0.0221	0.00500	"	0.0333	ND	66.4	35-142			
1-Methylnaphthalene	0.0250	0.00500	"	0.0333	ND	75.0	15-130			
2-Methylnaphthalene	0.0247	0.00500	"	0.0333	ND	74.0	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0248</i>		<i>"</i>	<i>0.0333</i>		<i>74.3</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0261</i>		<i>"</i>	<i>0.0333</i>		<i>78.4</i>	<i>40-150</i>			

Matrix Spike Dup (BFD0457-MSD1)	Source: 2203402-01			Prepared: 04/21/22 Analyzed: 04/23/22						
Acenaphthene	0.0221	0.00500	mg/kg	0.0333	ND	66.2	31-137	17.5	30	
Anthracene	0.0264	0.00500	"	0.0333	ND	79.2	30-120	5.60	30	
Benzo (a) anthracene	0.0263	0.00500	"	0.0333	ND	78.9	30-120	23.0	30	
Benzo (a) pyrene	0.0192	0.00500	"	0.0333	ND	57.5	30-120	8.71	30	
Benzo (b) fluoranthene	0.0205	0.00500	"	0.0333	ND	61.6	30-120	9.64	30	
Benzo (k) fluoranthene	0.0266	0.00500	"	0.0333	ND	79.7	30-120	2.50	30	
Chrysene	0.0226	0.00500	"	0.0333	ND	67.7	30-120	13.6	30	
Dibenz (a,h) anthracene	0.0183	0.00500	"	0.0333	ND	54.9	30-120	27.7	30	
Fluoranthene	0.0236	0.00500	"	0.0333	ND	70.8	30-120	9.28	30	
Fluorene	0.0190	0.00500	"	0.0333	ND	57.0	30-120	1.92	30	
Indeno (1,2,3-cd) pyrene	0.0189	0.00500	"	0.0333	ND	56.7	30-120	20.0	30	
Pyrene	0.0201	0.00500	"	0.0333	ND	60.4	35-142	9.48	30	
1-Methylnaphthalene	0.0180	0.00500	"	0.0333	ND	54.0	15-130	32.5	50	
2-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.3	15-130	38.1	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0143</i>		<i>"</i>	<i>0.0333</i>		<i>42.8</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0175</i>		<i>"</i>	<i>0.0333</i>		<i>52.5</i>	<i>40-150</i>			

Summit Scientific

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Whiting Oil & Gas
retail
Denver CO, 80215

Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BFD0523 - EPA 3050B

Blank (BFD0523-BLK1)

Prepared: 04/25/22 Analyzed: 04/30/22

Boron ND 0.0100 mg/L

LCS (BFD0523-BS1)

Prepared: 04/25/22 Analyzed: 04/30/22

Boron 4.54 0.0100 mg/L 5.00 90.8 80-120

Duplicate (BFD0523-DUP1)

Source: 2204253-01

Prepared: 04/25/22 Analyzed: 04/30/22

Boron 0.675 0.0100 mg/L 0.709 4.81 20

Matrix Spike (BFD0523-MS1)

Source: 2204253-01

Prepared: 04/25/22 Analyzed: 04/30/22

Boron 5.48 0.0100 mg/L 5.00 0.709 95.5 75-125

Matrix Spike Dup (BFD0523-MSD1)

Source: 2204253-01

Prepared: 04/25/22 Analyzed: 04/30/22

Boron 5.39 0.0100 mg/L 5.00 0.709 93.6 75-125 1.68 25

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Whiting Oil & Gas
retail
Denver CO, 80215

Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BFD0468 - EPA 3050B

Blank (BFD0468-BLK1)

Prepared: 04/21/22 Analyzed: 04/29/22

Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Cadmium	ND	0.200	"							
Copper	ND	0.400	"							
Lead	ND	0.200	"							
Nickel	ND	0.400	"							
Selenium	ND	0.260	"							
Silver	ND	0.0200	"							
Zinc	ND	0.400	"							

LCS (BFD0468-BS1)

Prepared: 04/21/22 Analyzed: 04/29/22

Arsenic	35.0	0.200	mg/kg wet	20.0		175	80-120			
Barium	33.4	0.400	"	20.0		167	80-120			
Cadmium	1.90	0.200	"	1.00		190	80-120			
Copper	33.8	0.400	"	20.0		169	80-120			
Lead	19.5	0.200	"	10.0		195	80-120			
Nickel	33.7	0.400	"	20.0		168	80-120			
Selenium	3.48	0.260	"	2.00		174	80-120			
Silver	1.87	0.0200	"	1.00		187	80-120			
Zinc	34.8	0.400	"	20.0		174	80-120			

Duplicate (BFD0468-DUP1)

Source: 2204241-21

Prepared: 04/21/22 Analyzed: 04/29/22

Arsenic	2.71	0.233	mg/kg dry	2.97		9.24	20			
Barium	40.7	0.465	"	40.7		0.150	20			
Cadmium	0.101	0.233	"	0.145		35.4	20			QR-01
Copper	6.54	0.465	"	7.37		11.9	20			
Lead	5.64	0.233	"	6.88		19.8	20			
Nickel	6.72	0.465	"	7.51		11.1	20			
Selenium	0.681	0.302	"	0.718		5.32	20			
Silver	0.0325	0.0233	"	0.0387		17.5	20			
Zinc	26.2	0.465	"	28.6		9.02	20			

Summit Scientific

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Whiting Oil & Gas
retail
Denver CO, 80215

Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

Batch BFD0468 - EPA 3050B

Matrix Spike (BFD0468-MS1)

Source: 2204241-21

Prepared: 04/21/22 Analyzed: 04/29/22

Arsenic	42.8	0.233	mg/kg dry	23.3	2.97	171	75-125		
Barium	80.7	0.465	"	23.3	40.7	172	75-125		
Cadmium	2.30	0.233	"	1.16	0.145	185	75-125		
Copper	46.5	0.465	"	23.3	7.37	168	75-125		
Lead	30.6	0.233	"	11.6	6.88	204	75-125		
Nickel	45.0	0.465	"	23.3	7.51	161	75-125		
Selenium	4.31	0.302	"	2.33	0.718	155	75-125		
Silver	2.00	0.0233	"	1.16	0.0387	169	75-125		
Zinc	67.5	0.465	"	23.3	28.6	167	75-125		

Matrix Spike Dup (BFD0468-MSD1)

Source: 2204241-21

Prepared: 04/21/22 Analyzed: 04/29/22

Arsenic	41.9	0.233	mg/kg dry	23.3	2.97	167	75-125	2.03	25
Barium	78.6	0.465	"	23.3	40.7	163	75-125	2.64	25
Cadmium	2.30	0.233	"	1.16	0.145	185	75-125	0.0493	25
Copper	42.5	0.465	"	23.3	7.37	151	75-125	9.07	25
Lead	29.5	0.233	"	11.6	6.88	194	75-125	3.70	25
Nickel	43.9	0.465	"	23.3	7.51	156	75-125	2.58	25
Selenium	4.37	0.302	"	2.33	0.718	157	75-125	1.29	25
Silver	2.09	0.0233	"	1.16	0.0387	176	75-125	4.33	25
Zinc	74.0	0.465	"	23.3	28.6	195	75-125	9.17	25

Summit Scientific

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Whiting Oil & Gas
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Denver CO, 80215

Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A
Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BFD0526 - 3060A Mod

Blank (BFD0526-BLK1)

Prepared & Analyzed: 04/25/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFD0526-BS1)

Prepared & Analyzed: 04/25/22

Chromium, Hexavalent 27.8 0.30 mg/kg wet 25.0 111 80-120

Duplicate (BFD0526-DUP1)

Source: 2204245-19

Prepared & Analyzed: 04/25/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFD0526-MS1)

Source: 2204245-19

Prepared & Analyzed: 04/25/22

Chromium, Hexavalent 32.7 0.30 mg/kg dry 28.0 ND 117 75-125

Matrix Spike Dup (BFD0526-MSD1)

Source: 2204245-19

Prepared & Analyzed: 04/25/22

Chromium, Hexavalent 29.1 0.30 mg/kg dry 28.0 ND 104 75-125 11.4 20

Summit Scientific

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Whiting Oil & Gas
retail
Denver CO, 80215

Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BFD0562 - General Preparation

Blank (BFD0562-BLK1)

Prepared: 04/26/22 Analyzed: 05/02/22

Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

LCS (BFD0562-BS1)

Prepared: 04/26/22 Analyzed: 05/02/22

Calcium	4.99	0.0500	mg/L wet	5.00	99.7	70-130
Magnesium	5.39	0.0500	"	5.00	108	70-130
Sodium	5.27	0.0500	"	5.00	105	70-130

Summit Scientific

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Whiting Oil & Gas
retail
Denver CO, 80215

Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike	Source		%REC		RPD		Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

Batch BFD0495 - General Preparation

Duplicate (BFD0495-DUP1)

Source: 2204254-01

Prepared: 04/22/22 Analyzed: 04/26/22

% Solids	79.3		%		79.1			0.239		20	
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Summit Scientific

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Whiting Oil & Gas
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Denver CO, 80215

Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BFD0591 - General Preparation

Blank (BFD0591-BLK1)

Prepared & Analyzed: 04/27/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFD0591-BS1)

Prepared & Analyzed: 04/27/22

Specific Conductance (EC) 0.153 0.0100 mmhos/cm 0.150 102 95-105

Duplicate (BFD0591-DUP1)

Source: 2204254-01

Prepared & Analyzed: 04/27/22

Specific Conductance (EC) 2.40 0.0100 mmhos/cm 2.43 1.24 20

Summit Scientific

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Whiting Oil & Gas
retail
Denver CO, 80215

Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:
05/04/22 12:28

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike	Source	%REC		RPD		Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BFD0589 - General Preparation

LCS (BFD0589-BS1)

Prepared & Analyzed: 04/27/22

pH 9.12 pH Units 9.18 99.3 95-105

Duplicate (BFD0589-DUP1)

Source: 2204254-01

Prepared & Analyzed: 04/27/22

pH 7.68 pH Units 7.66 0.261 20

Batch BFD0676 - General Preparation

LCS (BFD0676-BS1)

Prepared: 04/29/22 Analyzed: 05/02/22

pH 9.07 pH Units 9.18 98.8 95-105

Duplicate (BFD0676-DUP1)

Source: 2204255-01

Prepared: 04/29/22 Analyzed: 05/02/22

pH 7.83 pH Units 7.80 0.384 20

Summit Scientific

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Whiting Oil & Gas
retail
Denver CO, 80215

Project: AC McLaughlin 93 Closure

Project Number: 20221740.001A

Project Manager: Vince DeCianne

Reported:

05/04/22 12:28

Notes and Definitions

QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference