

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

April 17, 2018

Randy Edelen
Grynberg Petroleum Company
3600 S Yosemite Suite 900
Denver, CO 80237
RE: WH Croissant #4

Enclosed are the results of analyses for samples received by Summit Scientific on 04/09/18 16:05. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury For Ben Shrewsbury
President / Laboratory Director



Grynberg Petroleum Company
3600 S Yosemite Suite 900
Denver CO, 80237

Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH 1A-2	1804168-01	Soil	04/09/18 10:12	04/09/18 16:05
WH 1-2	1804168-02	Soil	04/09/18 10:02	04/09/18 16:05
WH 1-3	1804168-03	Soil	04/09/18 10:33	04/09/18 16:05
WH 2-1	1804168-04	Soil	04/09/18 10:10	04/09/18 16:05
WH 2-5	1804168-05	Soil	04/09/18 10:20	04/09/18 16:05
WH 3-2	1804168-06	Soil	04/09/18 09:56	04/09/18 16:05
WH 3-3	1804168-07	Soil	04/09/18 10:07	04/09/18 16:05
WH 4-1	1804168-08	Soil	04/09/18 10:04	04/09/18 16:05
WH 3-4	1804168-09	Soil	04/09/18 10:17	04/09/18 16:05
WH 4-5	1804168-10	Soil	04/09/18 10:25	04/09/18 16:05
WH 5-2	1804168-11	Soil	04/09/18 10:32	04/09/18 16:05
WH 5-5	1804168-12	Soil	04/09/18 10:29	04/09/18 16:05

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741 Corporate Circle, Suite J ♦ Golden, Colorado 80401

303-277-9310 ♦ 303-374-5933

1804168

Page 1 of 1

Client: Grynberg Petroleum

Project Manager: Randy Edelen

Address: 3600 S ROSEMITE ST suite 900

E-Mail: r.edelen@grynberg.com

City/State/Zip: Denver CO 80237

Phone: 303-850-7490 Fax: 303-850-7498

Project Name: WH Croissant #4

Sampler Name: Pinky Zaremba

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested						Special Instructions
					HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	BTEX	TPH - DRO	TPH GRO	PH	EC	
1	WH 1A-2	4/9	10:12	1														Samples 11 and 12 are written in the Notes. Total of 12 samples all for same analyses. (WH)
2	WH 1-2	4/9	10:02	1														
3	WH 1-3	4/9	10:33	1														
4	WH 2-1	4/9	10:10	1														
5	WH 2-5	4/9	10:20	1														
6	WH 3-2	4/9	9:50	1														
7	WH 3-3	4/9	10:07	1														
8	WH 4-1	4/9	10:04	1														
9	WH 3-4	4/9	10:17	1														
10	WH 4-5	4/9	10:25	1			✓		✓			✓	✓	✓	✓	✓		
Relinquished by: <i>[Signature]</i>		Date/Time: 4/9/18 4:05 PM		Received by: <i>[Signature]</i>		Date/Time: 4/9/18 1605		Turn Around Time (Check)		Same Day _____ 72 hours _____		24 hours _____ Standard <i>X</i>		48 hours _____		Sample Integrity: 4.6°C		Notes: on ice 11. WH 5-2 4/9. 10:32 12. WH 5-5 4/9. 10:29 Same analysis
Relinquished by:		Date/Time:		Received by:		Date/Time:		Temperature Upon Receipt: Intact: <i>(yes)</i> No										
Relinquished by:		Date/Time:		Received by:		Date/Time:												

Sample Receipt Checklist

S2 Work Order: 1804168

Client: Grynberg Petroleum

Client Project ID: WH Croissant #4

Shipped Via: Hand

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

Matrix (check all that apply): Air ✓ Soil/Solid Water Other: _____
(Describe)

Cooler ID					
Temp (°C)	<u>4.6</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?				
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			
Were all samples received intact ⁽¹⁾ ?	✓			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
If custody seals are present, are they intact ⁽¹⁾ ?			✓	
Are short holding time analytes or samples with HTs due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	✓			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	✓			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			✓	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			✓	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			✓	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

Nakita
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

4/9/18 1610
Date/Time



Grynberg Petroleum Company
3600 S Yosemite Suite 900
Denver CO, 80237

Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 1A-2
1804168-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/09/18 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1804048	04/10/18	04/11/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/09/18 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		84.9 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		93.1 %	81-119		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.9 %	57-173		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/09/18 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1804071	04/09/18	04/11/18	EPA 8015M	

Date Sampled: **04/09/18 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		114 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **04/09/18 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	966	2.50	mg/kg dry	1	1804061	04/13/18	04/16/18	EPA 6020B	
Magnesium	226	1.00	"	"	"	"	"	"	

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Project: WH Croissant #4
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Reported:
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WH 1A-2
1804168-01 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Sodium	870	5.00	mg/kg dry	1	1804061	04/13/18	04/16/18	EPA 6020B
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Calculated Analysis

Date Sampled: **04/09/18 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.55	0.100	units	1	1804077	04/14/18	04/14/18	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/18 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.38	0.0100	mmhos/cm	1	1804109	04/16/18	04/16/18	EPA 120.1	
% Solids	90.5		%	"	1804129	04/17/18	04/17/18	Calculation	
pH	8.7		pH Units	"	1804108	04/16/18	04/16/18	EPA 9045D	

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Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 1-2
1804168-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/09/18 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1804048	04/10/18	04/11/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/09/18 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		85.5 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		93.8 %	81-119		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.8 %	57-173		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/09/18 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1804071	04/09/18	04/11/18	EPA 8015M	

Date Sampled: **04/09/18 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		112 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **04/09/18 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	576	2.50	mg/kg dry	1	1804061	04/13/18	04/16/18	EPA 6020B	
Magnesium	272	1.00	"	"	"	"	"	"	
Sodium	819	5.00	"	"	"	"	"	"	

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Project: WH Croissant #4
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Reported:
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WH 1-2
1804168-02 (Soil)

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Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Calculated Analysis

Date Sampled: **04/09/18 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	7.05	0.100	units	1	1804077	04/14/18	04/14/18	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/18 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.5		%	1	1804129	04/17/18	04/17/18	Calculation	
Specific Conductance (EC)	0.965	0.0100	mmhos/cm	"	1804109	04/16/18	04/16/18	EPA 120.1	
pH	8.4		pH Units	"	1804108	04/16/18	04/16/18	EPA 9045D	

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Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 1-3
1804168-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/09/18 10:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1804048	04/10/18	04/11/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/09/18 10:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		87.0 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		93.4 %	81-119		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.0 %	57-173		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/09/18 10:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1804071	04/09/18	04/11/18	EPA 8015M	

Date Sampled: **04/09/18 10:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		115 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **04/09/18 10:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2340	2.50	mg/kg dry	1	1804061	04/13/18	04/16/18	EPA 6020B	
Magnesium	301	1.00	"	"	"	"	"	"	
Sodium	504	5.00	"	"	"	"	"	"	

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Project: WH Croissant #4
Project Number: [none]
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Reported:
04/17/18 12:07

WH 1-3
1804168-03 (Soil)

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Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Calculated Analysis

Date Sampled: **04/09/18 10:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.61	0.100	units	1	1804077	04/14/18	04/14/18	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/18 10:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.2		%	1	1804129	04/17/18	04/17/18	Calculation	
Specific Conductance (EC)	0.899	0.0100	mmhos/cm	"	1804109	04/16/18	04/16/18	EPA 120.1	
pH	8.7		pH Units	"	1804108	04/16/18	04/16/18	EPA 9045D	

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Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 2-1
1804168-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/09/18 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1804048	04/10/18	04/11/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/09/18 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		85.6 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		93.1 %	81-119		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.0 %	57-173		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/09/18 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1804071	04/09/18	04/11/18	EPA 8015M	

Date Sampled: **04/09/18 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		118 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **04/09/18 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2280	2.50	mg/kg dry	1	1804061	04/13/18	04/16/18	EPA 6020B	
Magnesium	442	1.00	"	"	"	"	"	"	
Sodium	108	5.00	"	"	"	"	"	"	

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Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 2-1
1804168-04 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Calculated Analysis

Date Sampled: **04/09/18 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.540	0.100	units	1	1804077	04/14/18	04/14/18	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/18 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.5		%	1	1804129	04/17/18	04/17/18	Calculation	
Specific Conductance (EC)	0.460	0.0100	mmhos/cm	"	1804109	04/16/18	04/16/18	EPA 120.1	
pH	8.5		pH Units	"	1804108	04/16/18	04/16/18	EPA 9045D	

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Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 2-5
1804168-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/09/18 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1804048	04/10/18	04/11/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/09/18 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		87.7 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		94.2 %	81-119		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.9 %	57-173		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/09/18 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1804071	04/09/18	04/11/18	EPA 8015M	

Date Sampled: **04/09/18 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		117 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **04/09/18 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2430	2.50	mg/kg dry	1	1804061	04/13/18	04/16/18	EPA 6020B	
Magnesium	121	1.00	"	"	"	"	"	"	
Sodium	283	5.00	"	"	"	"	"	"	

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Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 2-5
1804168-05 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Calculated Analysis

Date Sampled: **04/09/18 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.52	0.100	units	1	1804077	04/14/18	04/14/18	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/18 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.2		%	1	1804129	04/17/18	04/17/18	Calculation	
Specific Conductance (EC)	1.39	0.0100	mmhos/cm	"	1804109	04/16/18	04/16/18	EPA 120.1	
pH	8.4		pH Units	"	1804108	04/16/18	04/16/18	EPA 9045D	

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Grynberg Petroleum Company
3600 S Yosemite Suite 900
Denver CO, 80237

Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 3-2
1804168-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/09/18 09:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1804048	04/10/18	04/11/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/09/18 09:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		86.0 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		92.4 %	81-119		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %	57-173		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/09/18 09:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1804071	04/09/18	04/11/18	EPA 8015M	

Date Sampled: **04/09/18 09:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		118 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **04/09/18 09:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1400	2.50	mg/kg dry	1	1804061	04/13/18	04/16/18	EPA 6020B	
Magnesium	344	1.00	"	"	"	"	"	"	
Sodium	1900	5.00	"	"	"	"	"	"	

Summit Scientific

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Grynberg Petroleum Company
3600 S Yosemite Suite 900
Denver CO, 80237

Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 3-2
1804168-06 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Calculated Analysis

Date Sampled: **04/09/18 09:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	11.8	0.100	units	1	1804077	04/14/18	04/14/18	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/18 09:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.8		%	1	1804129	04/17/18	04/17/18	Calculation	
Specific Conductance (EC)	4.82	0.0100	mmhos/cm	"	1804109	04/16/18	04/16/18	EPA 120.1	
pH	8.0		pH Units	"	1804108	04/16/18	04/16/18	EPA 9045D	

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Denver CO, 80237

Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 3-3
1804168-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/09/18 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1804048	04/10/18	04/11/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/09/18 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		85.8 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		92.1 %	81-119		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.6 %	57-173		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/09/18 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1804071	04/09/18	04/11/18	EPA 8015M	

Date Sampled: **04/09/18 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		114 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **04/09/18 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	782	2.50	mg/kg dry	1	1804061	04/13/18	04/16/18	EPA 6020B	
Magnesium	314	1.00	"	"	"	"	"	"	
Sodium	1200	5.00	"	"	"	"	"	"	

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Grynberg Petroleum Company
3600 S Yosemite Suite 900
Denver CO, 80237

Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 3-3
1804168-07 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Calculated Analysis

Date Sampled: **04/09/18 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	9.17	0.100	units	1	1804077	04/14/18	04/14/18	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/18 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.41	0.0100	mmhos/cm	1	1804109	04/16/18	04/16/18	EPA 120.1	
% Solids	87.9		%	"	1804129	04/17/18	04/17/18	Calculation	
pH	8.4		pH Units	"	1804108	04/16/18	04/16/18	EPA 9045D	

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Grynberg Petroleum Company
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Denver CO, 80237

Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 4-1
1804168-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/09/18 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1804048	04/10/18	04/11/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/09/18 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		86.9 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		93.3 %	81-119		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.4 %	57-173		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/09/18 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1804071	04/09/18	04/11/18	EPA 8015M	

Date Sampled: **04/09/18 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		115 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **04/09/18 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	4080	2.50	mg/kg dry	1	1804061	04/13/18	04/16/18	EPA 6020B	
Magnesium	3870	1.00	"	"	"	"	"	"	
Sodium	16400	5.00	"	"	"	"	"	"	

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3600 S Yosemite Suite 900
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Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 4-1
1804168-08 (Soil)

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Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Calculated Analysis

Date Sampled: **04/09/18 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	44.2	0.100	units	1	1804077	04/14/18	04/14/18	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/18 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.6		%	1	1804129	04/17/18	04/17/18	Calculation	
Specific Conductance (EC)	1.01	0.0100	mmhos/cm	"	1804109	04/16/18	04/16/18	EPA 120.1	
pH	8.5		pH Units	"	1804108	04/16/18	04/16/18	EPA 9045D	

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Grynberg Petroleum Company
3600 S Yosemite Suite 900
Denver CO, 80237

Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 3-4
1804168-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/09/18 10:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1804048	04/10/18	04/11/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/09/18 10:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		83.6 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		91.0 %	81-119		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.4 %	57-173		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/09/18 10:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1804071	04/09/18	04/11/18	EPA 8015M	

Date Sampled: **04/09/18 10:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		114 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **04/09/18 10:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	40600	2.50	mg/kg dry	1	1804061	04/13/18	04/16/18	EPA 6020B	
Magnesium	19000	1.00	"	"	"	"	"	"	
Sodium	52000	5.00	"	"	"	"	"	"	

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Grynberg Petroleum Company
3600 S Yosemite Suite 900
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Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 3-4
1804168-09 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Calculated Analysis

Date Sampled: **04/09/18 10:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	53.4	0.100	units	1	1804077	04/14/18	04/14/18	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/18 10:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	119	0.0100	mmhos/cm	1	1804109	04/16/18	04/16/18	EPA 120.1	
% Solids	91.7		%	"	1804129	04/17/18	04/17/18	Calculation	
pH	8.1		pH Units	"	1804108	04/16/18	04/16/18	EPA 9045D	

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Grynberg Petroleum Company
3600 S Yosemite Suite 900
Denver CO, 80237

Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 4-5
1804168-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/09/18 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1804048	04/10/18	04/11/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/09/18 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		86.9 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		91.4 %	81-119		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.2 %	57-173		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/09/18 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1804071	04/09/18	04/11/18	EPA 8015M	

Date Sampled: **04/09/18 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		133 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **04/09/18 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	29300	2.50	mg/kg dry	1	1804061	04/13/18	04/16/18	EPA 6020B	
Magnesium	33100	1.00	"	"	"	"	"	"	
Sodium	14700	5.00	"	"	"	"	"	"	

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3600 S Yosemite Suite 900
Denver CO, 80237

Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 4-5
1804168-10 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Calculated Analysis

Date Sampled: **04/09/18 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	14.0	0.100	units	1	1804077	04/14/18	04/14/18	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/18 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.9		%	1	1804129	04/17/18	04/17/18	Calculation	
Specific Conductance (EC)	0.521	0.0100	mmhos/cm	"	1804109	04/16/18	04/16/18	EPA 120.1	
pH	8.6		pH Units	"	1804108	04/16/18	04/16/18	EPA 9045D	

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Grynberg Petroleum Company
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Denver CO, 80237

Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 5-2
1804168-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/09/18 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1804048	04/10/18	04/11/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/09/18 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		87.1 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		91.9 %	81-119		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.2 %	57-173		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/09/18 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1804071	04/09/18	04/11/18	EPA 8015M	

Date Sampled: **04/09/18 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		119 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **04/09/18 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	6990	2.50	mg/kg dry	1	1804061	04/13/18	04/16/18	EPA 6020B	
Magnesium	19300	1.00	"	"	"	"	"	"	
Sodium	8210	5.00	"	"	"	"	"	"	

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Grynberg Petroleum Company
3600 S Yosemite Suite 900
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Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 5-2
1804168-11 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Calculated Analysis

Date Sampled: **04/09/18 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	11.5	0.100	units	1	1804077	04/14/18	04/14/18	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/18 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.6		%	1	1804129	04/17/18	04/17/18	Calculation	
Specific Conductance (EC)	0.510	0.0100	mmhos/cm	"	1804109	04/16/18	04/16/18	EPA 120.1	
pH	8.7		pH Units	"	1804108	04/16/18	04/16/18	EPA 9045D	

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Grynberg Petroleum Company
3600 S Yosemite Suite 900
Denver CO, 80237

Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 5-5
1804168-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 04/09/18 10:29									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	1804048	04/10/18	04/11/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 04/09/18 10:29									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		87.3 %	75-125		"	"	"	"	
Surrogate: Toluene-d8		88.9 %	81-119		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %	57-173		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 04/09/18 10:29									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1804071	04/09/18	04/11/18	EPA 8015M	

Date Sampled: 04/09/18 10:29									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		121 %	30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: 04/09/18 10:29									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	14200	2.50	mg/kg dry	1	1804061	04/13/18	04/16/18	EPA 6020B	
Magnesium	22500	1.00	"	"	"	"	"	"	
Sodium	4570	5.00	"	"	"	"	"	"	

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Grynberg Petroleum Company
3600 S Yosemite Suite 900
Denver CO, 80237

Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/17/18 12:07

WH 5-5
1804168-12 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Calculated Analysis

Date Sampled: **04/09/18 10:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.56	0.100	units	1	1804077	04/14/18	04/14/18	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/09/18 10:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.872	0.0100	mmhos/cm	1	1804109	04/16/18	04/16/18	EPA 120.1	
% Solids	91.1		%	"	1804129	04/17/18	04/17/18	Calculation	
pH	8.5		pH Units	"	1804108	04/16/18	04/16/18	EPA 9045D	

Summit Scientific

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Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1804048 - EPA 5030 Soil MS

Blank (1804048-BLK1)

Prepared: 04/10/18 Analyzed: 04/11/18

Benzene	ND	0.0020	mg/kg
Toluene	ND	0.0050	"
Ethylbenzene	ND	0.0050	"
Xylenes (total)	ND	0.010	"
Gasoline Range Hydrocarbons	ND	0.50	"

Surrogate: 1,2-Dichloroethane-d4	0.0331		"	0.0396	83.5	75-125
Surrogate: Toluene-d8	0.0375		"	0.0400	93.7	81-119
Surrogate: 4-Bromofluorobenzene	0.0381		"	0.0400	95.2	57-173

LCS (1804048-BS1)

Prepared: 04/10/18 Analyzed: 04/11/18

Benzene	0.0881	0.0020	mg/kg	0.100	88.1	70-130
Toluene	0.103	0.0050	"	0.100	103	70-130
Ethylbenzene	0.119	0.0050	"	0.100	119	70-130
Xylenes (total)	ND	0.010	"			70-130
Gasoline Range Hydrocarbons	2.51	0.50	"			0-200

Surrogate: 1,2-Dichloroethane-d4	0.0327		"	0.0396	82.5	75-125
Surrogate: Toluene-d8	0.0362		"	0.0400	90.6	81-119
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400	92.5	57-173

Matrix Spike (1804048-MS1)

Source: 1804168-01

Prepared: 04/10/18 Analyzed: 04/11/18

Benzene	0.0909	0.0020	mg/kg	0.100	ND	90.9	70-130
Toluene	0.107	0.0050	"	0.100	ND	107	70-130
Ethylbenzene	0.121	0.0050	"	0.100	ND	121	70-130
Xylenes (total)	ND	0.010	"		ND		70-130
Gasoline Range Hydrocarbons	2.61	0.50	"		0.0142		70-130

Surrogate: 1,2-Dichloroethane-d4	0.0351		"	0.0396	88.6	75-125
Surrogate: Toluene-d8	0.0372		"	0.0400	93.1	81-119
Surrogate: 4-Bromofluorobenzene	0.0377		"	0.0400	94.3	57-173

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Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 1804048 - EPA 5030 Soil MS

Matrix Spike Dup (1804048-MSD1)	Source: 1804168-01			Prepared: 04/10/18		Analyzed: 04/11/18				
Benzene	0.0893	0.0020	mg/kg	0.100	ND	89.3	70-130	1.76	20	
Toluene	0.105	0.0050	"	0.100	ND	105	70-130	2.18	20	
Ethylbenzene	0.117	0.0050	"	0.100	ND	117	70-130	2.72	20	
Xylenes (total)	ND	0.010	"		ND		70-130		20	
Gasoline Range Hydrocarbons	2.53	0.50	"		0.0142		70-130	3.33	20	
Surrogate: 1,2-Dichloroethane-d4	0.0346		"	0.0396		87.4	75-125			
Surrogate: Toluene-d8	0.0367		"	0.0400		91.7	81-119			
Surrogate: 4-Bromofluorobenzene	0.0369		"	0.0400		92.3	57-173			

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Reported:
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Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1804071 - EPA 3550A

Blank (1804071-BLK1)

Prepared: 04/09/18 Analyzed: 04/10/18

C10-C28 (DRO) ND 50 mg/kg

LCS (1804071-BS1)

Prepared: 04/09/18 Analyzed: 04/10/18

C10-C28 (DRO) 550 50 mg/kg 500 110 81.4-129

Matrix Spike (1804071-MS1)

Source: 1804168-01

Prepared: 04/09/18 Analyzed: 04/10/18

C10-C28 (DRO) 547 50 mg/kg 500 10.5 107 77.8-133

Matrix Spike Dup (1804071-MSD1)

Source: 1804168-01

Prepared: 04/09/18 Analyzed: 04/10/18

C10-C28 (DRO) 578 50 mg/kg 500 10.5 113 77.8-133 5.50 8.48

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Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis - Quality Control
Summit Scientific

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

Batch 1804061 - General Preparation

Blank (1804061-BLK1)

Prepared: 04/13/18 Analyzed: 04/14/18

Calcium	ND	2.50	mg/kg wet
Magnesium	ND	1.00	"
Sodium	ND	5.00	"

LCS (1804061-BS1)

Prepared: 04/13/18 Analyzed: 04/14/18

Calcium	1070	2.50	mg/kg wet	1000	107	70-130
Magnesium	1130	1.00	"	1000	113	70-130
Sodium	1120	5.00	"	1000	112	70-130

Duplicate (1804061-DUP1)

Source: 1804067-01

Prepared: 04/13/18 Analyzed: 04/14/18

Calcium	1030	2.50	mg/kg dry	1050		2.27	20
Magnesium	885	1.00	"	905		2.21	20
Sodium	499	5.00	"	482		3.33	20

Matrix Spike (1804061-MS1)

Source: 1804067-01

Prepared: 04/13/18 Analyzed: 04/14/18

Calcium	1950	2.50	mg/kg dry	1080	1050	83.3	70-130
Magnesium	1870	1.00	"	1080	905	89.8	70-130
Sodium	1330	5.00	"	1080	482	78.9	70-130

Matrix Spike Dup (1804061-MSD1)

Source: 1804067-01

Prepared: 04/13/18 Analyzed: 04/14/18

Calcium	1920	2.50	mg/kg dry	1080	1050	80.4	70-130	1.59	25
Magnesium	1860	1.00	"	1080	905	89.1	70-130	0.377	25
Sodium	1290	5.00	"	1080	482	75.2	70-130	3.09	25

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

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

Batch 1804108 - General Preparation

Duplicate (1804108-DUP1)	Source: 1804168-01			Prepared & Analyzed: 04/16/18							
pH	8.7		pH Units		8.7			0.00		20	

Batch 1804109 - General Preparation

Duplicate (1804109-DUP1)	Source: 1804168-01			Prepared & Analyzed: 04/16/18							
Specific Conductance (EC)	1.39	0.0100	mmhos/cm		1.38			1.01		20	

Batch 1804129 - General Preparation

Duplicate (1804129-DUP1)	Source: 1804168-01			Prepared & Analyzed: 04/17/18							
% Solids	89.2		%		90.5			1.50		20	

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Project Number: [none]
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Reported:
04/17/18 12:07

Notes and Definitions

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