



April 11, 2019

Mr. Howard Aamold  
Noble Energy, Inc.  
2115 117<sup>th</sup> Avenue  
Greeley, Colorado 80631

**Re: State Farm 36-07  
Water Vault Removal  
40.357080, -104.610027  
SWNE, Sec 36, 5N65W  
Weld County, Colorado  
Remediation # 12624**

Dear Mr. Aamold:

On March 21, 2019, Apex Companies, LLC (Apex) provided environmental assessment support that included field-screening and collecting soil samples related to the decommissioning of a partially buried produced water sump associated with the State Farm 36-07 well located at 40.357080°-104.610027° (Remediation # 12624).

There was one sump present at this site and it will not be replaced. An assessment related to the decommissioned sump was conducted to evaluate whether constituents of concern (COC's) were present related to the sump removal. A total of five soil samples were collected from the site, which included: four samples from the excavation sidewalls, and one from the excavation base location. No liner or groundwater were present within the excavation. The sample collected from the base of the excavation (B01@6'), and the sidewall sample with the highest PID screening (S01@2'), were submitted to Summit Scientific Laboratory for analysis of organic COC's (DRO, GBTEX, and Naphthalene), with the sidewall sample also being analyzed for inorganic COC's (pH, EC, and SAR). The remainder of the samples were placed on lab-hold pending results.

The laboratory results for the base sample (B01@6') was non-detect (ND) or below Table 910-1 allowable concentrations for all State standards. Sidewall sample S01@2' had a Total Petroleum Hydrocarbon (TPH) concentration of 2,230 mg/kg with no other exceedances of the Table 910-1 allowable concentrations State standards. Approximately five cubic yards of additional soil was removed from the south/southwest end of the excavation and a soil sample (S02@3') was collected from the south/southwestern end of the excavation on March 22, 2019. Sample S02@3' was submitted to Summit Scientific Laboratory for analysis of organic COC's (DRO, GBTEX, and Naphthalene). The laboratory results for sample (S02@3') was non-detect (ND) or below Table 910-1 allowable concentrations for all State standards. No further investigation appears warranted at this time.

Attached are the field reports and analytical results of the assessment. It is Apex's understanding that the produced water sump was disposed of at Buffalo Ridge. Approximately five cubic yards of impacted material from the excavation was removed from site and disposed of at Buffalo Ridge. Overburden material from the excavation was used as backfill.

Please contact me at (303) 483-8656 if you have any questions regarding this report or require additional information.

Sincerely,  
Apex Companies, LLC

*Ken Worthington*

Ken Worthington  
Project Manager

Attachments:



Figure 1 – State Farm 36-07– Regional Map  
Figure 2 – State Farm 36-07- Facility Layout & Sample Locations  
Attachment A – Laboratory Analytical Report

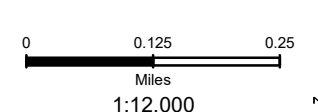
cc: Jacob Evans (email)



**Figure 1**  
**State Farm 36-07 -**  
**Regional Map**

**Legend**

-  Facility Location
-  Section Line



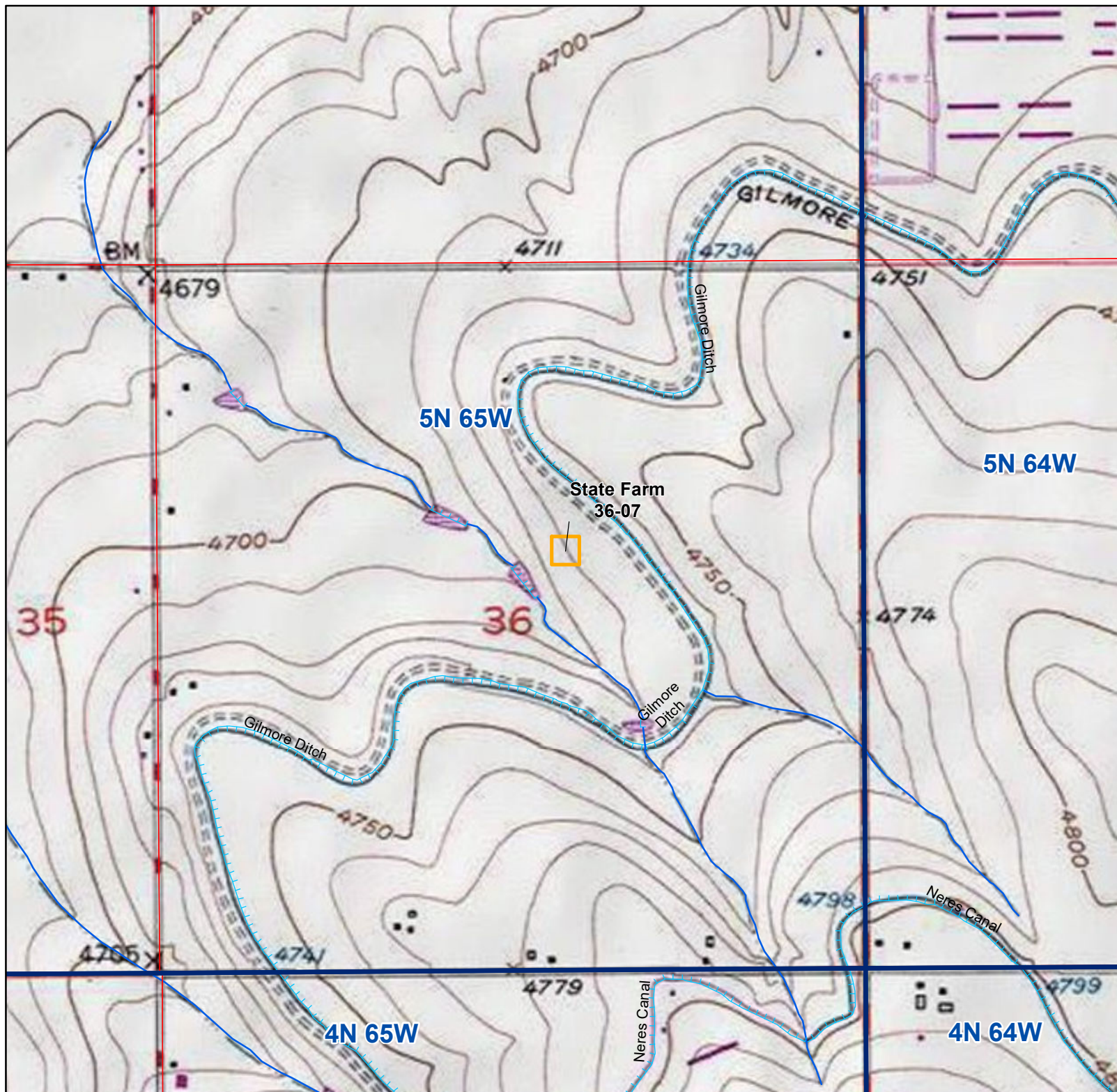
**Site Characteristics**

State Farm 36-07  
Water Vault Removal  
40.357080, -104.610027  
SWNE, Sec 36, 5N65W  
Weld County, Colorado  
Location ID 323685

REVISED	BY	COMMENT
4/5/2019	BJB	Figure 1



**Apex Companies, LLC**  
1746 Cole Blvd., Bldg. 21 Suite 265  
Lakewood, Colorado 80401  
Phone: (303) 487-1020  
[www.apexcos.com](http://www.apexcos.com)







**Figure 2**  
**State Farm 36-07 -**  
**Facility Layout &**  
**Sample Locations**

**Legend**

- Soil Sample - With Lab Analysis (3/21/2019)
- Soil Sample - Field Screening Analysis (3/21/2019)
- ▲ Soil Sample - With Lab Analysis (3/22/2019)
- ▭ Excavation Extent (3/21/2019)
- ▭ Former Secondary Containment

**Sample Location Analytical Results**

B: benzene in mg/kg  
T: toluene in mg/kg  
E: ethylbenzene in mg/kg  
X: xylenes in mg/kg  
N: naphthalene in mg/kg  
TPH: total petroleum hydrocarbons in mg/kg  
EC: specific conductance in mmhos/cm  
SAR: sodium adsorption ratio  
pH: pH in pH units

Bold values exceed COGCC Table  
910-1 allowable concentrations

**Site Characteristics**

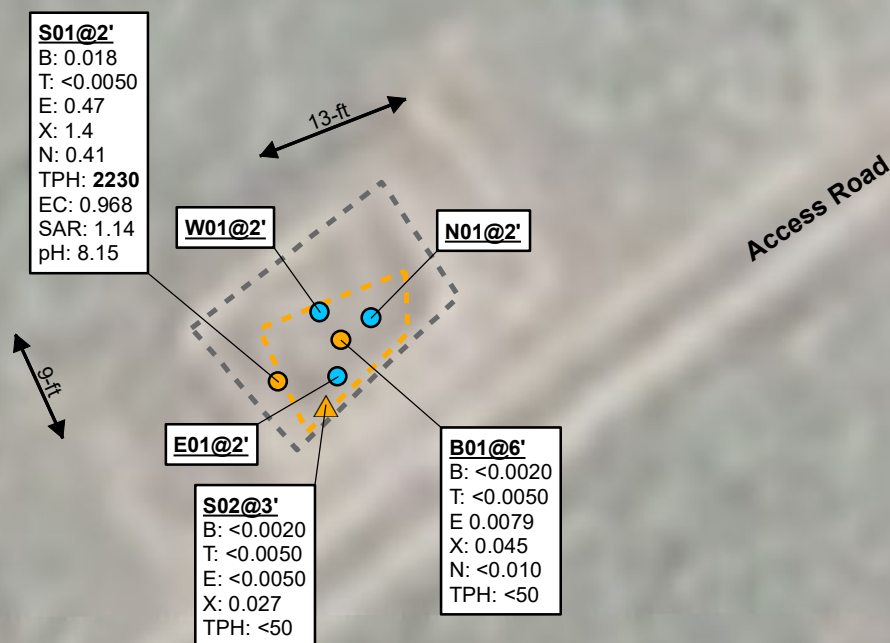
State Farm 36-07  
Water Vault Removal  
40.357080, -104.610027  
SWNE, Sec 36, 5N65W  
Weld County, Colorado  
Location ID 323685

REVISED	BY	COMMENT
4/5/2019	BJB	Figure 2

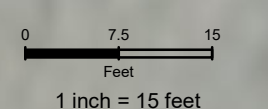


**Apex Companies, LLC**  
1746 Cole Blvd., Bldg. 21 Suite 265  
Lakewood, Colorado 80401  
Phone: (303) 487-1020  
[www.apexcos.com](http://www.apexcos.com)

Non-cropland



Spatial data collected for this project was acquired using a GPS with submeter accuracy. Illustration discrepancies may be present in this diagram due to the inherent limitations of data accuracy for both project data and the underlying aerial imagery. To accurately reflect field conditions, illustrated data may have been manually corrected in order to fit with the aerial imagery reference points and other collected data points.



Attachment A

Laboratory Analytical Report

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 22, 2019

Ken Worthington

Apex Companies

176 Cole Blvd. Suite 250

Lakewood, CO 80101

RE: Noble - State farm 36-07

Enclosed are the results of analyses for samples received by Summit Scientific on 03/21/19 17:35. 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

President



Apex Companies  
176 Cole Blvd. Suite 250  
Lakewood CO, 80101

Project: Noble - State farm 36-07

Project Number: [none]  
Project Manager: Ken Worthington

**Reported:**  
03/22/19 07:05

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@6'	1903206-01	Soil	03/21/19 15:20	03/21/19 17:35
S01@2'	1903206-04	Soil	03/21/19 15:28	03/21/19 17:35

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

1903206


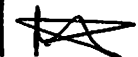
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Sampler Name: KEN WORTHINGTON

Project No.: WO#: 247039 RC# 425777538

**Noble Contact: Harold Aamold**

				Preservative				Matrix				Analyze For:								Special Instructions
Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	GBTEX + Naph by 8260C	DRO by 8015C	pH, EC, SAR	HOLD					
BØ1 @ 6'	3/21/19	1520	1			X			X			X	X							Call Ken Worthington with questions
NØ1 @ 2'		1524	1												X					
EØ1 @ 2'		1526	1												X					
SØ1 @ 2'		1528	1									X	X	X						
WØ1 @ 2'		1530	1												X					
Relinquished by: 				Date/Time: 3/21/19 1735		Received by: 		Date/Time: 3-21-19 17:35		Turn Around Time (Check)				Notes						
Relinquished by:				Date/Time:		Received by:		Date/Time:		Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 Hours <input type="checkbox"/>				Circle applicable regulatory agency: <input checked="" type="checkbox"/> COGCC <input type="checkbox"/> CDPHE						
Relinquished by:				Date/Time:		Received in Lab by:		Date/Time:		Sample Integrity: Temperature Upon Receipt: 6.5 Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				Client Name: Bill to Noble Energy						



# Sample Receipt Checklist

S2 Work Order 1903206

Client: APEX / NOBLE Client Project ID: STATE FARM 36-07

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

Matrix (check all that apply):      Air   X   Soil/Solid      Water      Other: \_\_\_\_\_  
(Describe)

Temp (°C)	<u>6.5</u>
-----------	------------

Thermometer ID: 61857155-K

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

Additional Comments (if any):

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

Musi P.  
Custodian Printed Name or Initials

[Signature] 3-21-19  
Signature of Custodian

16:00  
Date/Time



Apex Companies  
176 Cole Blvd. Suite 250  
Lakewood CO, 80101

Project: Noble - State farm 36-07

Project Number: [none]  
Project Manager: Ken Worthington

**Reported:**  
03/22/19 07:05

**B01@6'**  
**1903206-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/21/19 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1903256	03/21/19	03/21/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.0079</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.045</b>	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **03/21/19 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.8 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/21/19 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1903257	03/21/19	03/22/19	EPA 8015M	

Date Sampled: **03/21/19 15:20**

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

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Apex Companies  
176 Cole Blvd. Suite 250  
Lakewood CO, 80101

Project: Noble - State farm 36-07

Project Number: [none]  
Project Manager: Ken Worthington

Reported:  
03/22/19 07:05

**S01@2'**  
**1903206-04 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/21/19 15:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.018</b>	0.0020	mg/kg	1	1903256	03/21/19	03/22/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.47</b>	0.050	"	10	"	"	"	"	
<b>Xylenes (total)</b>	<b>1.4</b>	0.10	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.41</b>	0.010	"	1	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1600</b>	500	"	10	"	"	"	"	E

Date Sampled: **03/21/19 15:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		137 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		83.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		433 %	21-167		"	"	"	"	S-02

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/21/19 15:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>630</b>	50	mg/kg	1	1903257	03/21/19	03/22/19	EPA 8015M	

Date Sampled: **03/21/19 15:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		127 %	30-150		"	"	"	"	

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

Date Sampled: **03/21/19 15:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>566</b>	11.6	mg/kg dry	1	1903258	03/21/19	03/21/19	EPA 6020B	
<b>Magnesium</b>	<b>288</b>	5.79	"	"	"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Apex Companies  
176 Cole Blvd. Suite 250  
Lakewood CO, 80101

Project: Noble - State farm 36-07

Project Number: [none]  
Project Manager: Ken Worthington

**Reported:**  
03/22/19 07:05

**S01@2'**  
**1903206-04 (Soil)**

**Summit Scientific**

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

<b>Sodium</b>	<b>134</b>	5.79	mg/kg dry	1	1903258	03/21/19	03/21/19	EPA 6020B
---------------	------------	------	-----------	---	---------	----------	----------	-----------

**Calculated Analysis**

Date Sampled: **03/21/19 15:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Sodium Adsorption Ratio</b>	<b>1.14</b>	0.100	units	1	1903261	03/22/19	03/22/19	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/21/19 15:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>% Solids</b>	<b>86.4</b>		%	1	1903231	03/21/19	03/22/19	Calculation	
<b>pH</b>	<b>8.15</b>		pH Units	"	1903259	03/21/19	03/21/19	EPA 9045D	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **03/21/19 15:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.968</b>	0.0100	mmhos/cm	1	1903260	03/21/19	03/21/19	EPA 120.1	

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Apex Companies  
176 Cole Blvd. Suite 250  
Lakewood CO, 80101

Project: Noble - State farm 36-07

Project Number: [none]  
Project Manager: Ken Worthington

**Reported:**  
03/22/19 07:05

## 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 1903256 - EPA 5030 Soil MS

##### Blank (1903256-BLK1)

Prepared: 03/21/19 Analyzed: 03/22/19

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0363		"	0.0400		90.8	23-173			
Surrogate: Toluene-d8	0.0376		"	0.0400		94.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.6	21-167			

##### LCS (1903256-BS1)

Prepared: 03/21/19 Analyzed: 03/22/19

Benzene	0.0906	0.0020	mg/kg	0.100		90.6	70-130			
Toluene	0.0970	0.0050	"	0.100		97.0	70-130			
Ethylbenzene	0.103	0.0050	"	0.100		103	70-130			
m,p-Xylene	0.215	0.010	"	0.200		108	70-130			
o-Xylene	0.0986	0.0050	"	0.100		98.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0378		"	0.0400		94.6	23-173			
Surrogate: Toluene-d8	0.0378		"	0.0400		94.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0374		"	0.0400		93.4	21-167			

##### Matrix Spike (1903256-MS1)

Source: 1903199-01

Prepared: 03/21/19 Analyzed: 03/22/19

Benzene	0.111	0.0020	mg/kg	0.100	0.0174	93.5	70-130			
Toluene	0.0992	0.0050	"	0.100	ND	99.2	70-130			
Ethylbenzene	0.126	0.0050	"	0.100	0.00666	120	70-130			
m,p-Xylene	0.354	0.010	"	0.200	0.0410	157	70-130			QM-07
o-Xylene	0.109	0.0050	"	0.100	ND	109	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0400		"	0.0400		100	23-173			
Surrogate: Toluene-d8	0.0374		"	0.0400		93.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0476		"	0.0400		119	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Apex Companies  
176 Cole Blvd. Suite 250  
Lakewood CO, 80101

Project: Noble - State farm 36-07

Project Number: [none]  
Project Manager: Ken Worthington

**Reported:**  
03/22/19 07:05

**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 1903256 - EPA 5030 Soil MS**

Matrix Spike Dup (1903256-MSD1)		Source: 1903199-01			Prepared: 03/21/19 Analyzed: 03/22/19					
Benzene	0.111	0.0020	mg/kg	0.100	0.0174	93.5	70-130	0.00	30	
Toluene	0.0997	0.0050	"	0.100	ND	99.7	70-130	0.453	30	
Ethylbenzene	0.112	0.0050	"	0.100	0.00666	106	70-130	11.6	30	
m,p-Xylene	0.269	0.010	"	0.200	0.0410	114	70-130	27.5	30	
o-Xylene	0.106	0.0050	"	0.100	ND	106	70-130	2.82	30	
Surrogate: 1,2-Dichloroethane-d4	0.0396		"	0.0400		99.0	23-173			
Surrogate: Toluene-d8	0.0380		"	0.0400		94.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.8	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





Apex Companies  
176 Cole Blvd. Suite 250  
Lakewood CO, 80101

Project: Noble - State farm 36-07

Project Number: [none]  
Project Manager: Ken Worthington

**Reported:**  
03/22/19 07:05

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1903257 - EPA 3550A**

**Blank (1903257-BLK1)**

Prepared: 03/21/19 Analyzed: 03/22/19

C10-C28 (DRO) ND 50 mg/kg

**LCS (1903257-BS1)**

Prepared: 03/21/19 Analyzed: 03/22/19

C10-C28 (DRO) 513 50 mg/kg 500 103 70-130

**Matrix Spike (1903257-MS1)**

**Source: 1903199-01**

Prepared: 03/21/19 Analyzed: 03/22/19

C10-C28 (DRO) 533 50 mg/kg 500 21.9 102 70-130

**Matrix Spike Dup (1903257-MSD1)**

**Source: 1903199-01**

Prepared: 03/21/19 Analyzed: 03/22/19

C10-C28 (DRO) 547 50 mg/kg 500 21.9 105 70-130 2.52 20

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Apex Companies  
176 Cole Blvd. Suite 250  
Lakewood CO, 80101

Project: Noble - State farm 36-07

Project Number: [none]  
Project Manager: Ken Worthington

**Reported:**  
03/22/19 07:05

## 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 1903258 - General Preparation

##### Blank (1903258-BLK1)

Prepared & Analyzed: 03/21/19

Calcium	ND	10.0	mg/kg wet
Magnesium	ND	5.00	"
Sodium	ND	5.00	"

##### LCS (1903258-BS1)

Prepared & Analyzed: 03/21/19

Calcium	488	10.0	mg/kg wet	500	97.6	70-130
Magnesium	515	5.00	"	500	103	70-130
Sodium	490	5.00	"	500	98.0	70-130

##### Duplicate (1903258-DUP1)

Source: 1903206-04

Prepared & Analyzed: 03/21/19

Calcium	529	11.6	mg/kg dry	566	6.88	20
Magnesium	286	5.79	"	288	0.745	20
Sodium	127	5.79	"	134	5.68	20

##### Matrix Spike (1903258-MS1)

Source: 1903206-04

Prepared & Analyzed: 03/21/19

Calcium	1060	11.6	mg/kg dry	579	566	86.0	70-130
Magnesium	833	5.79	"	579	288	94.1	70-130
Sodium	708	5.79	"	579	134	99.1	70-130

##### Matrix Spike Dup (1903258-MSD1)

Source: 1903206-04

Prepared & Analyzed: 03/21/19

Calcium	1080	11.6	mg/kg dry	579	566	88.6	70-130	1.39	25
Magnesium	789	5.79	"	579	288	86.5	70-130	5.44	25
Sodium	706	5.79	"	579	134	98.9	70-130	0.203	25

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Apex Companies  
176 Cole Blvd. Suite 250  
Lakewood CO, 80101

Project: Noble - State farm 36-07

Project Number: [none]  
Project Manager: Ken Worthington

**Reported:**  
03/22/19 07:05

**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 1903231 - General Preparation**

<b>Duplicate (1903231-DUP1)</b>		<b>Source: 1903183-01</b>			Prepared & Analyzed: 03/21/19						
% Solids	88.4		%		88.2			0.215		20	

**Batch 1903259 - General Preparation**

<b>LCS (1903259-BS1)</b>		Prepared & Analyzed: 03/21/19									
pH	9.23		pH Units		9.23		100	95-105			
<b>Duplicate (1903259-DUP1)</b>		<b>Source: 1903206-04</b>			Prepared & Analyzed: 03/21/19						
pH	7.74		pH Units		8.15			5.16		20	

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Apex Companies  
176 Cole Blvd. Suite 250  
Lakewood CO, 80101

Project: Noble - State farm 36-07

Project Number: [none]  
Project Manager: Ken Worthington

**Reported:**  
03/22/19 07:05

**Specific Conductance by EPA Method 120.1 - Quality Control**  
**Summit Scientific**

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

**Batch 1903260 - General Preparation**

**Blank (1903260-BLK1)**

Prepared & Analyzed: 03/21/19

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (1903260-BS1)**

Prepared & Analyzed: 03/21/19

Specific Conductance (EC) 0.758 0.0100 mmhos/cm 0.750 101 90-110

**Duplicate (1903260-DUP1)**

**Source: 1903206-04**

Prepared & Analyzed: 03/21/19

Specific Conductance (EC) 0.841 0.0100 mmhos/cm 0.968 14.2 20

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Apex Companies  
176 Cole Blvd. Suite 250  
Lakewood CO, 80101

Project: Noble - State farm 36-07

Project Number: [none]  
Project Manager: Ken Worthington

**Reported:**  
03/22/19 07:05

### Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 25, 2019

Ken Worthington

Apex Companies

176 Cole Blvd. Suite 250

Lakewood, CO 80101

RE: Noble - State Farm 36-07

Enclosed are the results of analyses for samples received by Summit Scientific on 03/22/19 11:40. 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

President





Apex Companies  
176 Cole Blvd. Suite 250  
Lakewood CO, 80101

Project: Noble - State Farm 36-07

Project Number: [none]  
Project Manager: Ken Worthington

**Reported:**  
03/25/19 06:15

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S02@3'	1903214-01	Soil	03/22/19 08:55	03/22/19 11:40

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

# Summit Scientific

214

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Client: APEX Companies, LLC

Address: 1746 Cole Blvd. Suite 250

City/State/Zip: Lakewood, Colorado 80401

Phone: 303-487-1020

Fax:

Sampler Name: KEN WORTHINGTON

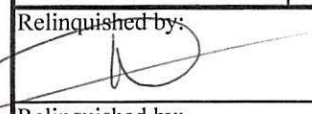

Project Manager: Ken Worthington 303-487-1020

E-Mail: ~~Ken.Worthington@apexcos.com~~ Maggie.Graham@apexcos.com

Project Name: STATE FARM 36-07

Project No.: WO#: 247039 RC# 425777538

Noble Contact: Harold Aamold

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:								Special Instructions					
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	GBTEX + Naphth by 8260C	DRO by 8015C	pH, EC, SAR	HOLD										
S&Z@3'	3-22-19	0855	1			X			X				X	X							Call Ken Worthington with questions				
Relinquished by: 				Date/Time: 3/22/19 1140				Received by: 				Date/Time: 3-22-19 11:40				Turn Around Time (Check)								Notes	
																Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/>								Circle applicable regulatory agency:	
																24 Hours <input type="checkbox"/> Standard <input type="checkbox"/>									
																48 Hours <input type="checkbox"/>									
																Sample Integrity:								COGCC/CDPHE	
																Temperature Upon Receipt: 7.0								Client Name: Bill to	
																Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>								Noble Energy	

## Sample Receipt Checklist

S2 Work Order 1903214

Client: APEX COMPANIES LLC Client Project ID: STATE FARM 36-07

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other HD Airbill #: \_\_\_\_\_

Matrix (check all that apply):      Air   X   Soil/Solid      Water      Other: \_\_\_\_\_  
(Describe)

Temp (°C)	7.0
-----------	-----

Thermometer ID: 61857155-K

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

MP  
Custodian Printed Name or Initials

Muri Premer  
Signature of Custodian

3-22-19/14:00  
Date/Time



Apex Companies  
176 Cole Blvd. Suite 250  
Lakewood CO, 80101

Project: Noble - State Farm 36-07

Project Number: [none]  
Project Manager: Ken Worthington

**Reported:**  
03/25/19 06:15

**S02@3'**  
**1903214-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/22/19 08:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1903281	03/22/19	03/22/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.027</b>	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **03/22/19 08:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		120 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/22/19 08:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1903280	03/22/19	03/22/19	EPA 8015M	

Date Sampled: **03/22/19 08:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Apex Companies  
176 Cole Blvd. Suite 250  
Lakewood CO, 80101

Project: Noble - State Farm 36-07

Project Number: [none]  
Project Manager: Ken Worthington

**Reported:**  
03/25/19 06:15

## 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 1903281 - EPA 5030 Soil MS

##### Blank (1903281-BLK1)

Prepared: 03/22/19 Analyzed: 03/23/19

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0358		"	0.0400		89.6	23-173			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0374		"	0.0400		93.4	21-167			

##### LCS (1903281-BS1)

Prepared: 03/22/19 Analyzed: 03/23/19

Benzene	0.0985	0.0020	mg/kg	0.100		98.5	70-130			
Toluene	0.102	0.0050	"	0.100		102	70-130			
Ethylbenzene	0.118	0.0050	"	0.100		118	70-130			
m,p-Xylene	0.217	0.010	"	0.200		109	70-130			
o-Xylene	0.105	0.0050	"	0.100		105	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0400		99.5	23-173			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.8	21-167			

##### Matrix Spike (1903281-MS1)

Source: 1903217-01

Prepared: 03/22/19 Analyzed: 03/23/19

Benzene	0.0905	0.0020	mg/kg	0.100	ND	90.5	70-130			
Toluene	0.0927	0.0050	"	0.100	ND	92.7	70-130			
Ethylbenzene	0.113	0.0050	"	0.100	ND	113	70-130			
m,p-Xylene	0.210	0.010	"	0.200	ND	105	70-130			
o-Xylene	0.102	0.0050	"	0.100	ND	102	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0384		"	0.0400		95.9	23-173			
Surrogate: Toluene-d8	0.0401		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.6	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Apex Companies  
176 Cole Blvd. Suite 250  
Lakewood CO, 80101

Project: Noble - State Farm 36-07

Project Number: [none]  
Project Manager: Ken Worthington

**Reported:**  
03/25/19 06:15

**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 1903281 - EPA 5030 Soil MS**

Matrix Spike Dup (1903281-MSD1)		Source: 1903217-01			Prepared: 03/22/19 Analyzed: 03/23/19					
Benzene	0.0982	0.0020	mg/kg	0.100	ND	98.2	70-130	8.14	30	
Toluene	0.103	0.0050	"	0.100	ND	103	70-130	10.3	30	
Ethylbenzene	0.118	0.0050	"	0.100	ND	118	70-130	4.45	30	
m,p-Xylene	0.219	0.010	"	0.200	ND	110	70-130	4.24	30	
o-Xylene	0.105	0.0050	"	0.100	ND	105	70-130	2.47	30	
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		102	23-173			
Surrogate: Toluene-d8	0.0411		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400		96.0	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





Apex Companies  
176 Cole Blvd. Suite 250  
Lakewood CO, 80101

Project: Noble - State Farm 36-07

Project Number: [none]  
Project Manager: Ken Worthington

**Reported:**  
03/25/19 06:15

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1903280 - EPA 3550A**

**Blank (1903280-BLK1)**

Prepared & Analyzed: 03/22/19

C10-C28 (DRO) ND 50 mg/kg

**LCS (1903280-BS1)**

Prepared & Analyzed: 03/22/19

C10-C28 (DRO) 440 50 mg/kg 500 88.0 70-130

**Matrix Spike (1903280-MS1)**

**Source: 1903217-01**

Prepared & Analyzed: 03/22/19

C10-C28 (DRO) 471 50 mg/kg 500 8.80 92.5 70-130

**Matrix Spike Dup (1903280-MSD1)**

**Source: 1903217-01**

Prepared & Analyzed: 03/22/19

C10-C28 (DRO) 464 50 mg/kg 500 8.80 91.0 70-130 1.58 20

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Apex Companies  
176 Cole Blvd. Suite 250  
Lakewood CO, 80101

Project: Noble - State Farm 36-07

Project Number: [none]  
Project Manager: Ken Worthington

**Reported:**  
03/25/19 06:15

### 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