

Smith, Cory, EMNRD

From: Smith, Cory, EMNRD
Sent: Monday, December 3, 2018 2:54 PM
To: 'Andrea Felix'
Cc: Fields, Vanessa, EMNRD; Perrin, Charlie, EMNRD; Griswold, Jim, EMNRD; James McDaniel; Chad Snell; Jacob Ellis
Subject: RE: NEU 2207-16B 11/20/18 Inspection

SRF- 28
PCS 1826341898

Good Afternoon Andrea,

The OCD has received the laboratory analysis received on November 26, and 28 2018.

It appears that based on the laboratory data, low volume and leak detection quality of water that there is not a significant leak in the ponds primary liner.

Enduring can continue to operate the pond as describe in the approved permit with the following conditions.

- Enduring will inspect the leak detection system weekly while there is fluids in the pond.
- Enduring will keep the leak detection sump free of any liquids, and will log any volume of water in the inspection report.
- Enduring will submit to the OCD District III Office a monthly report that includes a copy of each weekly pond inspection and a summary of any accumulation/removal of fluids in the leak detection system. Please submit the first monthly report in January and include November and December inspections.

If you have any additional questions please give me a call.

Thank you,

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Andrea Felix <AFelix@enduringresources.com>
Sent: Monday, November 26, 2018 8:21 AM
To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>
Cc: Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>; Perrin, Charlie, EMNRD <charlie.perrin@state.nm.us>; Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>; James McDaniel <JMcDaniel@enduringresources.com>; Chad Snell <CSnell@enduringresources.com>; Jacob Ellis <JEllis@enduringresources.com>
Subject: [EXT] RE: NEU 2207-16B 11/20/18 Inspection

Good morning Cory,

Our HSE Supervisor has advised he expects lab results today, due to the holiday last week. As soon as we have those results we will send them your way.

Thank you,

Andrea R Felix, RWA

Regulatory Manager
Enduring Resources
200 Energy Court
Farmington, NM 87401
Office: 505-636-9741
Cell: 505-386-8205



From: Smith, Cory, EMNRD [<mailto:Cory.Smith@state.nm.us>]

Sent: Monday, November 26, 2018 7:54 AM

To: Andrea Felix <AFelix@enduringresources.com>

Cc: Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>; Perrin, Charlie, EMNRD <charlie.perrin@state.nm.us>; Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>; James McDaniel <JMcDaniel@enduringresources.com>; Chad Snell <CSnell@enduringresources.com>; Jacob Ellis <JEllis@enduringresources.com>

Subject: RE: NEU 2207-16B 11/20/18 Inspection

Good Morning Andrea,

Has Enduring received the laboratory results from the water sample collected on Tuesday? If so please forward them to me.

Thank you,

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Andrea Felix <AFelix@enduringresources.com>

Sent: Tuesday, November 20, 2018 4:41 PM

To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>

Cc: Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>; Perrin, Charlie, EMNRD <charlie.perrin@state.nm.us>; Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>; James McDaniel <JMcDaniel@enduringresources.com>; Chad Snell <CSnell@enduringresources.com>; Jacob Ellis <JEllis@enduringresources.com>

Subject: [EXT] RE: NEU 2207-16B 11/20/18 Inspection

Cory,

Thank you for the email follow up regarding the inspection that was conducted today. The time spent and willingness to work with our team in the field today is very much appreciated.

Our team will work with the findings listed below to ensure that our facility is compliant.

We have taken note that we are to measure the leak detection daily and record the level as part of the required inspections.

We will also see that the water sample is analyzed as soon as possible and communicate those results as soon as they are available.

Thank you,

Andrea R Felix, RWA

Regulatory Manager
Enduring Resources
200 Energy Court
Farmington, NM 87401
Office: 505-636-9741
Cell: 505-386-8205



From: Smith, Cory, EMNRD [<mailto:Cory.Smith@state.nm.us>]

Sent: Tuesday, November 20, 2018 4:04 PM

To: Andrea Felix <AFelix@enduringresources.com>

Cc: Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>; Perrin, Charlie, EMNRD <charlie.perrin@state.nm.us>; Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>; James McDaniel <JMcDaniel@enduringresources.com>; Chad Snell <CSnell@enduringresources.com>; Jacob Ellis <JEllis@enduringresources.com>

Subject: NEU 2207-16B 11/20/18 Inspection

Andrea,

As discussed today during the OCD site visit at the NEU 2207-16B Recycling Facility Enduring collected samples for the early November release and also inspected the Leak detection system for the pond.

Enduring Personnel measured a water level inside the secondary containment at approximately 53' from the top of the leak detection port. Chad indicated that Enduring discovered the water level approximately a week earlier. The inspection records indicate that there was a water level discovered the week of 11/9/18 with a water level of approximately 53'.

Enduring was able to collect a water sample from the leak detection port as discussed onsite the sample needs to be analyzed for General Water Chemistry (TDS, pH, Cation/Anions) The water sample needs to be analyzed as soon as possible to determine if there is an integrity issue.

In the interim Enduring needs to measure the leak detection daily and record the level and start looking into options to remove any liquids in the leak detection system.

It is my understanding from our conversation that the liquids in the pond were sampled during flow back so a comparison sample is not needed, and that the pond contains a mixture of water from the well and produced water from various locations.

If you have any additional questions please give me a call.

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

Analytical Report

Report Summary

Client: Enduring Resources, LLC
Chain Of Custody Number:
Samples Received: 11/20/2018 4:28:00PM
Job Number: 17065-0017
Work Order: P811064
Project Name/Location: NEU 220716B

Report Reviewed By:



Date: 11/26/18

Walter Hinchman, Laboratory Director



Date: 11/26/18

Tim Cain, Project Manager



Envirotech Inc. certifies the test results meet all requirements of TNI unless footnoted otherwise.
Statement of Data Authenticity: Envirotech, Inc. attests the data reported has not been altered in any way.
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Envirotech, Inc. currently holds the appropriate and available Utah TNI certification NM009792018-1 for the data reported.

Enduring Resources, LLC
 511 16th Street, Suite 700
 Denver CO, 80202

Project Name: NEU 220716B
 Project Number: 17065-0017
 Project Manager: Chad Snell

Reported:
 11/26/18 16:51

Analytical Report for Samples

| Client Sample ID | Lab Sample ID | Matrix | Sampled | Received | Container |
|----------------------|---------------|---------|----------|----------|------------|
| Leak Detection Water | P811064-01A | Aqueous | 11/20/18 | 11/20/18 | Poly 250mL |
| | P811064-01B | Aqueous | 11/20/18 | 11/20/18 | Poly 250mL |
| | P811064-01C | Aqueous | 11/20/18 | 11/20/18 | Poly 250mL |

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| | | |
|---|--|-----------------------------|
| Enduring Resources, LLC 511 16th Street, Suite 700 Denver CO, 80202 | Project Name: NEU 220716B Project Number: 17065-0017 Project Manager: Chad Snell | Reported: 11/26/18 16:51 |
|---|--|-----------------------------|

**Leak Detection Water
P811064-01 (Water)**

Reporting

| Analyte | Result | Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-------|-------|----------|-------|----------|----------|--------|-------|
|---------|--------|-------|-------|----------|-------|----------|----------|--------|-------|

Wet Chem/Gravimetric

| | | | | | | | | | |
|------------------------|-------------|------|------|---|---------|----------|----------|---------|--|
| Total Dissolved Solids | 1810 | 10.0 | mg/L | 1 | 1847030 | 11/21/18 | 11/26/18 | SM2540C | |
|------------------------|-------------|------|------|---|---------|----------|----------|---------|--|

Dissolved Metals by 6010

| | | | | | | | | | |
|-----------|-------------|-------|------|----|---------|----------|----------|-----------|--|
| Calcium | 52.8 | 1.00 | mg/L | 1 | 1847018 | 11/21/18 | 11/26/18 | EPA 6010C | |
| Iron | ND | 2.00 | mg/L | 1 | 1847018 | 11/21/18 | 11/26/18 | EPA 6010C | |
| Magnesium | 12.8 | 0.200 | mg/L | 1 | 1847018 | 11/21/18 | 11/26/18 | EPA 6010C | |
| Potassium | 12.2 | 1.00 | mg/L | 1 | 1847018 | 11/21/18 | 11/26/18 | EPA 6010C | |
| Sodium | 661 | 20.0 | mg/L | 10 | 1847018 | 11/21/18 | 11/26/18 | EPA 6010C | |

Anions by 300.0/9056A

| | | | | | | | | | |
|---------------|--------------|-------|------|---|---------|----------------|----------------|--------------------|--|
| Fluoride | 0.746 | 0.500 | mg/L | 2 | 1847029 | 11/21/18 | 11/21/18 | EPA 300.0/9056A | |
| Chloride | 904 | 4.00 | mg/L | 2 | 1847029 | 11/21/18 | 11/21/18 | EPA 300.0/9056A | |
| Nitrite-N | ND | 0.500 | mg/L | 2 | 1847029 | 11/21/18 12:29 | 11/21/18 21:01 | EPA 300.0/9056A | |
| Nitrate-N | ND | 0.500 | mg/L | 2 | 1847029 | 11/21/18 12:29 | 11/21/18 21:01 | EPA 300.0/9056A | |
| o-Phosphate-P | ND | 0.500 | mg/L | 2 | 1847029 | 11/21/18 12:29 | 11/21/18 21:01 | EPA 300.0/9056A | |
| Sulfate | 51.3 | 4.00 | mg/L | 2 | 1847029 | 11/21/18 | 11/21/18 | EPA 300.0/9056A | |

Wet Chemistry

| | | | | | | | | | |
|----------|-------------|--|----------|---|---------|----------------|----------------|-------------------|-----|
| pH @25°C | 6.44 | | pH Units | 1 | 1847026 | 11/21/18 09:52 | 11/21/18 12:10 | 9040C/4500 H+B | 111 |
|----------|-------------|--|----------|---|---------|----------------|----------------|-------------------|-----|

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| | | | |
|----------------------------|------------------|-------------|------------------------------------|
| Enduring Resources, LLC | Project Name: | NEU 220716B | Reported: 11/26/18 16:51 |
| 511 16th Street, Suite 700 | Project Number: | 17065-0017 | |
| Denver CO, 80202 | Project Manager: | Chad Snell | |

Wet Chem/Gravimetric - Quality Control

Envirotech Analytical Laboratory

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

Batch 1847030 - Wet Chemistry Preparation

| | | | | | | | | | | |
|---------------------------------|------|------|------|--|------|------|--------|------|---|--|
| Blank (1847030-BLK1) | | | | Prepared: 11/21/18 1 Analyzed: 11/26/18 1 | | | | | | |
| Total Dissolved Solids | ND | 10.0 | mg/L | | | | | | | |
| LCS (1847030-BS1) | | | | Prepared: 11/21/18 1 Analyzed: 11/26/18 1 | | | | | | |
| Total Dissolved Solids | 73.0 | 10.0 | mg/L | 100 | | 73.0 | 50-150 | | | |
| Duplicate (1847030-DUP1) | | | | Source: P811064-01 Prepared: 11/21/18 1 Analyzed: 11/26/18 1 | | | | | | |
| Total Dissolved Solids | 1860 | 10.0 | mg/L | | 1810 | | | 2.89 | 5 | |

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laboratory@envirotech-inc.com



| | | |
|---|--|-----------------------------|
| Enduring Resources, LLC 511 16th Street, Suite 700 Denver CO, 80202 | Project Name: NEU 220716B Project Number: 17065-0017 Project Manager: Chad Snell | Reported: 11/26/18 16:51 |
|---|--|-----------------------------|

Dissolved Metals by 6010 - Quality Control

Envirotech Analytical Laboratory

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

Batch 1847018 - Metals Water Hotblock Digestion EPA 3010A/200.2

Blank (1847018-BLK1)

Prepared & Analyzed: 11/20/18 1

| | | | |
|-----------|----|-------|------|
| Calcium | ND | 1.00 | mg/L |
| Iron | ND | 2.00 | " |
| Magnesium | ND | 0.200 | " |
| Potassium | ND | 1.00 | " |
| Sodium | ND | 2.00 | " |

LCS (1847018-BS1)

Prepared & Analyzed: 11/20/18 1

| | | | | | | | |
|-----------|------|-------|------|------|--|------|--------|
| Calcium | 47.7 | 1.00 | mg/L | 50.0 | | 95.4 | 80-120 |
| Iron | 47.8 | 2.00 | " | 50.0 | | 95.5 | 80-120 |
| Magnesium | 49.6 | 0.200 | " | 50.0 | | 99.3 | 80-120 |
| Potassium | 4.65 | 1.00 | " | 5.00 | | 93.1 | 80-120 |
| Sodium | 47.8 | 2.00 | " | 50.0 | | 95.7 | 80-120 |

Matrix Spike (1847018-MS1)

Source: P811046-01

Prepared & Analyzed: 11/20/18 1

| | | | | | | | |
|-----------|------|-------|------|------|------|-----|--------|
| Calcium | 59.2 | 1.00 | mg/L | 50.0 | 7.29 | 104 | 75-125 |
| Iron | 51.4 | 2.00 | " | 50.0 | ND | 103 | 75-125 |
| Magnesium | 54.3 | 0.200 | " | 50.0 | 1.81 | 105 | 75-125 |
| Potassium | 6.75 | 1.00 | " | 5.00 | 1.37 | 108 | 75-125 |
| Sodium | 117 | 2.00 | " | 50.0 | 59.6 | 114 | 75-125 |

Matrix Spike Dup (1847018-MSD1)

Source: P811046-01

Prepared & Analyzed: 11/20/18 1

| | | | | | | | | | |
|-----------|------|-------|------|------|------|-----|--------|--------|----|
| Calcium | 59.3 | 1.00 | mg/L | 50.0 | 7.29 | 104 | 75-125 | 0.219 | 20 |
| Iron | 51.6 | 2.00 | " | 50.0 | ND | 103 | 75-125 | 0.505 | 20 |
| Magnesium | 52.9 | 0.200 | " | 50.0 | 1.81 | 102 | 75-125 | 2.57 | 20 |
| Potassium | 6.75 | 1.00 | " | 5.00 | 1.37 | 108 | 75-125 | 0.0593 | 20 |
| Sodium | 115 | 2.00 | " | 50.0 | 59.6 | 110 | 75-125 | 1.82 | 20 |

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| | | |
|----------------------------|-----------------------------|--------------------------|
| Enduring Resources, LLC | Project Name: NEU 220716B | Reported: 11/26/18 16:51 |
| 511 16th Street, Suite 700 | Project Number: 17065-0017 | |
| Denver CO, 80202 | Project Manager: Chad Snell | |

Anions by 300.0/9056A - Quality Control

Envirotech Analytical Laboratory

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

Batch 1847029 - Anion Extraction EPA 300.0/9056A

Blank (1847029-BLK1)

Prepared & Analyzed: 11/21/18 1

| | | | | | | | | | | |
|---------------|----|-------|------|--|--|--|--|--|--|--|
| Fluoride | ND | 0.250 | mg/L | | | | | | | |
| Chloride | ND | 2.00 | " | | | | | | | |
| Nitrite-N | ND | 0.250 | " | | | | | | | |
| Nitrate-N | ND | 0.250 | " | | | | | | | |
| o-Phosphate-P | ND | 0.250 | " | | | | | | | |
| Sulfate | ND | 2.00 | " | | | | | | | |

LCS (1847029-BS1)

Prepared & Analyzed: 11/21/18 1

| | | | | | | | | | | |
|---------------|------|-------|------|------|--|-----|--------|--|--|--|
| Fluoride | 2.61 | 0.250 | mg/L | 2.50 | | 105 | 90-110 | | | |
| Chloride | 25.6 | 2.00 | " | 25.0 | | 102 | 90-110 | | | |
| Nitrite-N | 2.62 | 0.250 | " | 2.50 | | 105 | 90-110 | | | |
| Nitrate-N | 2.52 | 0.250 | " | 2.50 | | 101 | 90-110 | | | |
| o-Phosphate-P | 12.8 | 0.250 | " | 12.5 | | 103 | 90-110 | | | |
| Sulfate | 25.4 | 2.00 | " | 25.0 | | 101 | 90-110 | | | |

Matrix Spike (1847029-MS1)

Source: P811064-01

Prepared: 11/21/18 1 Analyzed: 11/26/18 1

| | | | | | | | | | | |
|---------------|------|-------|------|------|-------|------|--------|--|--|------|
| Fluoride | 5.90 | 0.500 | mg/L | 5.00 | 0.746 | 103 | 80-120 | | | |
| Chloride | 956 | 4.00 | " | 50.0 | 904 | 104 | 80-120 | | | |
| Nitrite-N | 4.81 | 0.500 | " | 5.00 | ND | 96.1 | 80-120 | | | |
| Nitrate-N | 4.96 | 0.500 | " | 5.00 | ND | 99.3 | 80-120 | | | |
| o-Phosphate-P | 17.7 | 0.500 | " | 25.0 | ND | 70.7 | 80-120 | | | SPK1 |
| Sulfate | 103 | 4.00 | " | 50.0 | 51.3 | 104 | 80-120 | | | |

Matrix Spike Dup (1847029-MSD1)

Source: P811064-01

Prepared: 11/21/18 1 Analyzed: 11/26/18 1

| | | | | | | | | | | |
|---------------|------|-------|------|------|-------|------|--------|-------|----|------|
| Fluoride | 5.92 | 0.500 | mg/L | 5.00 | 0.746 | 104 | 80-120 | 0.338 | 20 | |
| Chloride | 959 | 4.00 | " | 50.0 | 904 | 110 | 80-120 | 0.315 | 20 | |
| Nitrite-N | 4.90 | 0.500 | " | 5.00 | ND | 98.0 | 80-120 | 1.98 | 20 | |
| Nitrate-N | 5.00 | 0.500 | " | 5.00 | ND | 100 | 80-120 | 0.803 | 20 | |
| o-Phosphate-P | 17.4 | 0.500 | " | 25.0 | ND | 69.7 | 80-120 | 1.50 | 20 | SPK1 |
| Sulfate | 104 | 4.00 | " | 50.0 | 51.3 | 105 | 80-120 | 0.460 | 20 | |

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laboratory@envirotech-inc.com



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|----------------------------|------------------|-------------|------------------------------------|
| Enduring Resources, LLC | Project Name: | NEU 220716B | Reported: 11/26/18 16:51 |
| 511 16th Street, Suite 700 | Project Number: | 17065-0017 | |
| Denver CO, 80202 | Project Manager: | Chad Snell | |

Wet Chemistry - Quality Control

Envirotech Analytical Laboratory

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

Batch 1847026 - Wet Chemistry Preparation

| | | | | | | | | | | |
|---------------------------------|------|--|----------|--|--|-----|--------------|-------|----|--|
| LCS (1847026-BS1) | | | | Prepared: 11/21/18 0 Analyzed: 11/21/18 1 | | | | | | |
| pH | 8.00 | | pH Units | 8.00 | | 100 | 98.75-101.25 | | | |
| Duplicate (1847026-DUP1) | | | | Source: P811064-01 Prepared: 11/21/18 0 Analyzed: 11/21/18 1 | | | | | | |
| pH | 6.48 | | pH Units | 6.44 | | | | 0.619 | 20 | |

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Enduring Resources, LLC
511 16th Street, Suite 700
Denver CO, 80202

Project Name: NEU 220716B
Project Number: 17065-0017
Project Manager: Chad Snell

Reported:
11/26/18 16:51

Notes and Definitions

SPK1 The spike recovery is outside of quality control limits.

H1 Sample was received after regulatory hold-time exceeded for target analyte.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

** Methods marked with ** are non-accredited methods.

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laboratory@envirotech-inc.com

Client: Enduring Resources, LLC
 Project: NEU 2207 16B
 Project Manager: Chad Small
 Address: 200 Energy Court
 City, State, Zip Farmington, NM 87401
 Phone: (505) 444-0586
 Email: C.Small@EnduringResources.com

Report Attention

Report due by: _____
 Attention: _____
 Address: _____
 City, State, Zip _____
 Phone: _____
 Email: _____

Lab Use Only

Lab WO# P811064 Job Number 17065-0017

TAT

1D X 3D _____

EPA Program

RCRA CWA SDWA

Analysis and Method

State

NM CO UT AZ

X

| Time Sampled | Date Sampled | Matrix | No Containers | Sample ID | Lab Number | DRO/ORO by 8015 | GRO/DRO by 8015 | BTEX by 8021 | VOC by 8260 | Metals 6010 | Chloride 300.0 | TPH 418.1 | TDS | pH | Cation/Anion | Remarks |
|--------------|--------------|--------|---------------|----------------------|------------|-----------------|-----------------|--------------|-------------|-------------|----------------|-----------|-----|----|--------------|---------|
| 12:00pm | 11-20-18 | A | 3 | Leak Detection water | 1 | | | | | | | | X | X | X | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | |

Additional Instructions: Vis ICE

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: Chad Small 11-20-18

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6°C on subsequent days.

Relinquished by: (Signature) [Signature]

Date

11-20-18

Time

4:29 pm

Received by: (Signature) [Signature]

Date

11-20-18

Time

4:28 pm

Lab Use Only

Received on ice: Y / N

Relinquished by: (Signature) _____

Date

Time

Received by: (Signature) _____

Date

Time

T1 _____ T2 _____ T3 _____
 AVG Temp °C 4

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



Water Analysis

Operator Magna Energy
Customer EPTL
Wellname 16B Water well pond
Samplepoint water well

Customer Reference
Labnumber 6976-2018112609.2
Sampledate 11/26/2018
Lab Report Date 11/28/2018

Analysis

Specific Gravity (74°F) 1.01
pH, Lab Measured 7.28
Calcium Carbonate S.I. @ 80°F (Stiff-Davis) -0.26
Calcium Carbonate S.I. @ 140°F (Stiff-Davis) 0.55

Dissolved Gases

Hydrogen Sulfide (H2S) mg/l 0.95
Carbon Dioxide (CO2) 14.08
Dissolved Oxygen (O2) 0.0

Cations mg/l meq/l
Sodium (Na) 5796.1 252.1
Calcium (Ca) 221.8 11.0
Magnesium (Mg) 39.5 3.3
Potassium (K) 134.4 3.4
Iron (Fe) 10.1 0.4
Barium (Ba) 0.5 0.0
Manganese (Mn) 0.4 0.0
Strontium (Sr) 25.4 0.6

Anions mg/l meq/l
Chloride (Cl) 8023.0 225.7
Bicarbonate (HCO3) 283.0 4.6
Carbonate (CO3) 0.0 0.0
Hydroxyl (OH) 0.000 0.000
Sulfate (SO4) 1941.3 40.4

Zero Denotes Concentration is Below Detection Limit

TDS, Calculated (mg/l) 15865.1 Total Hardness (mg/l) CaCO3 716.4 Conductivity (mS/cm) 24.79

| Temp (F) | Press. (psi) | Calcite CaCO3 | | Anhydrite CaSO4 | | Gypsum CaSO4+H2O | | Barite BaSO4 | | Celestite SrSO4 | | Siderite FeCO3 | | Mackawenite FeS | | Corr MPY | pCo2 |
|-------------|-----------------|------------------|---------|--------------------|------------|---------------------|------------|-----------------|--------|--------------------|---------|-------------------|--------|--------------------|--------|-------------|------|
| | | xSAT | pptb | xSAT | pptb | xSAT | pptb | xSAT | pptb | xSAT | pptb | xSAT | pptb | xSAT | pptb | | |
| 70 | 14.7 | 0.6906 | -0.3968 | 0.1246 | -1975.9400 | 0.2098 | -1410.7500 | 43.2165 | 0.7933 | 1.4394 | 16.0836 | 53.2043 | 1.0075 | 47.1855 | 2.8046 | 0.02 | 0.01 |
| 80 | 147 | 0.3673 | -0.7727 | 0.1234 | -1974.4300 | 0.1988 | -1473.5700 | 33.4811 | 0.7878 | 1.4091 | 15.2833 | 31.0120 | 0.5035 | 176.8210 | 3.8303 | 0.05 | 0.12 |
| 90 | 278 | 0.2953 | -0.8200 | 0.1253 | -1934.6400 | 0.1903 | -1522.5100 | 26.6266 | 0.7816 | 1.4027 | 15.1091 | 27.1669 | 0.3838 | 182.9390 | 3.8032 | 0.06 | 0.22 |
| 100 | 409 | 0.2621 | -0.8207 | 0.1297 | -1864.7300 | 0.1837 | -1560.9700 | 21.6529 | 0.7746 | 1.4097 | 15.2940 | 26.2048 | 0.3252 | 176.0800 | 3.7719 | 0.06 | 0.32 |
| 110 | 539 | 0.2440 | -0.8065 | 0.1370 | -1769.5400 | 0.1891 | -1507.93 | 17.9129 | 0.7667 | 1.4231 | 15.6451 | 26.4188 | 0.2904 | 166.4670 | 3.7384 | 0.06 | 0.42 |
| 120 | 670 | 0.2329 | -0.7874 | 0.1471 | -1654.1000 | 0.2001 | -1419.5600 | 14.8967 | 0.7575 | 1.4336 | 15.9143 | 27.2498 | 0.2670 | 155.7640 | 3.7032 | 0.06 | 0.52 |
| 130 | 801 | 0.2253 | -0.7678 | 0.1605 | -1523.3300 | 0.2109 | -1340.4500 | 12.4399 | 0.7468 | 1.4405 | 16.0889 | 28.4285 | 0.2499 | 144.8310 | 3.6662 | 0.05 | 0.62 |
| 140 | 932 | 0.2195 | -0.7494 | 0.1777 | -1381.8800 | 0.2214 | -1269.7900 | 10.4273 | 0.7342 | 1.4437 | 16.1687 | 29.8040 | 0.2363 | 134.0500 | 3.6273 | 0.05 | 0.72 |
| 150 | 1063 | 0.2146 | -0.7333 | 0.1994 | -1234.0300 | 0.2315 | -1206.8900 | 8.7698 | 0.7194 | 1.4431 | 16.1522 | 31.2934 | 0.2250 | 123.6700 | 3.5865 | 0.05 | 0.82 |
| 160 | 1194 | 0.2098 | -0.7199 | 0.2265 | -1083.5200 | 0.2411 | -1151.1800 | 7.3980 | 0.7022 | 1.4387 | 16.0370 | 32.8081 | 0.2149 | 47.1855 | 3.5435 | 0.06 | 0.92 |
| 170 | 1324 | 0.2050 | -0.7095 | 0.2602 | -933.6150 | 0.2502 | -1102.1400 | 6.2571 | 0.6822 | 1.4303 | 15.8193 | 34.3181 | 0.2059 | 104.2740 | 3.4983 | 0.06 | 1.02 |
| 180 | 1455 | 0.1998 | -0.7020 | 0.3018 | -787.0020 | 0.2585 | -1059.4000 | 5.3042 | 0.6589 | 0.1998 | 15.4939 | 35.7855 | 0.1976 | 95.4297 | 3.4508 | 0.06 | 1.12 |