

**2RP-3875**  
**REMEDIATION REPORT**  
**Nash Draw Tank Battery #24**  
**Eddy County, New Mexico**

LAI Project No. 16-0108-05

March 23, 2017

Prepared for:

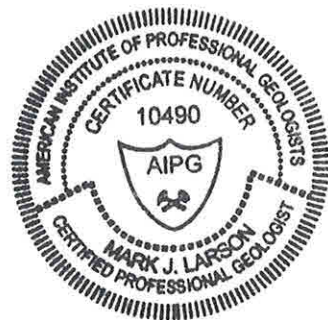
XTO Energy, Inc.  
500 W. Illinois Ave., Suite 100  
Midland, Texas 79707

Prepared by:

Larson & Associates, Inc.  
507 North Marienfeld Street, Suite 205  
Midland, Texas 79701

  
\_\_\_\_\_  
Mark J. Larson, P.G.

Certified Professional Geologist #10490



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## **1.0 INTRODUCTION**

Larson & Associates, Inc. (LAI) has prepared this report on behalf of XTO Energy, Inc. (XTO) for submittal to the New Mexico Oil Conservation Division (OCD) District 2, in Artesia, New Mexico and U.S. Bureau of Land Management (BLM) in Carlsbad, New Mexico, to document soil remediation at the Nash Draw #24 tank battery (Site). The Site is located in Unit H (SE/4, NE/4), Section 14, Township 23 South, Range 29 East in Eddy County, New Mexico. The geodetic position is North 32° 18' 27.64777" and West 103° 56' 58.49626". Figure 1 presents a topographic map. Figure 2 presents an aerial map.

### **1.1 Background**

On June 21, 2016, LAI personnel used a Terraprobe® direct-push rig to collect soil samples at five (5) locations (DP-05-01 through DP-05-05). Soil samples were collected between ground surface and approximately four (4) feet below ground surface (bgs). A background sample (DP-05-BG) was collected about 80 feet southwest of the Site at approximately 1 foot bgs. The laboratory analysis and initial C-141 were submitted to OCD which assigned remediation permit number 2RP-3875, on September 8, 2016.

On September 29, 2016, LAI personnel supervised a backhoe operated by SDR Enterprises, LLC (SDR), Hobbs, New Mexico, to collect soil samples to delineate impacts observed in samples from DP-05-01, DP-05-02, and DP-05-04. On September 29, 2016, a second background sample was collected about south of the Site at approximately 4 feet bgs. On October 19, 2016, LAI personnel supervised Scarborough Drilling, Inc. (SDI), Lamesa, Texas, to collect soil samples with an air rotary rig and jam tube sampler to delineate chloride observed in samples from DP-05-04. The laboratory reported 369 mg/kg chloride in the confirmation sample. Table 1 presents the analytical data summary for the assessment soil samples

On November 9, 2016, LAI, on behalf of XTO, submitted a plan OCD District 2 and BLM for approval to remediate impacts to soil based on laboratory analysis of soil samples collected on June 21, 2016, September 29, 2016 and October 19, 2016. On November 10, 2016, OCD District 2 approved the remediation plan. Appendix A presents the OCD approval.

### **1.2 Physical Setting**

The physical setting is as follows:

- Elevation is approximately 2,987 feet above mean sea level (AMSL);
- Topography slopes to the east towards a playa lake (Salt Lake) located about 300 feet north of the Site;
- Surface geology is comprised of unconsolidated Holocene to mid- Pleistocene-age eolian and piedmont-slope deposits that are approximately 80 feet thick according to a log from a nearby well;
- The Triassic-age Chinle formation of the Dockum group underlies the unconsolidated deposits and is comprised of interbedded sand, clay, and mudstone;

- According to State of New Mexico Office of the State Engineer (NMOSE) records a fresh water well is located about 1.4 miles southeast in Unit J (NW/4, SE/4), Section 24, Township 23 South, Range 29 East with groundwater reported at about 54 feet bgs.

### 1.3 Recommended Remediation Action Levels

Recommended remediation action levels (RRAL) were calculated for benzene, BTEX and TPH based on the following criteria established by the OCD in "Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993":

| Criteria                       | Result                      | Score |
|--------------------------------|-----------------------------|-------|
| Depth-to-Groundwater           | 50 - 99 feet                | 10    |
| Wellhead Protection Area       | No                          | 0     |
| Distance to Surface Water Body | 200 – 1,000 Horizontal Feet | 10    |

The following RRAL apply to the release for ranking score: 20

- Benzene 10 mg/Kg
- BTEX 50 mg/Kg
- TPH 100 mg/Kg

## 2.0 REMEDIATION

Soil remediation was performed on November 11, 2016, according to the plan approved by OCD District 2 on November 10, 2016. On November 8, 2016, SDR, under supervision from LAI, used the backhoe to collect a soil sample at DP-05-02 from approximately 6 feet bgs to confirm the chloride concentration (67.9 mg/Kg) reported in the sample on September 29, 2016. Permian Basin Environmental Lab (PBEL) analyzed the sample for chloride and reported 369 mg/Kg. Very moist soil conditions were encountered at about 8 feet bgs and sample collection was terminated.

On November 11, 2016, SDR excavated soil from the area of DP-05-01 measuring about 25 x 25 feet to about 3 feet bgs. SDR excavated soil from the area of DP-05-02 measuring about 15 x 15 feet and DP-05-03 over an area measuring about 25 x 25 feet to about 2 feet bgs. Soil was excavated from the area of DP-05-05 over an area measuring approximately 25 x 25 feet to about 3 feet bgs. The excavations were filled with caliche.

Soil was excavated from the area of DP-05-04 over an area measuring about 25 x 30 feet to about 4 feet bgs where a 20 mil thickness polyethylene liner was installed in the bottom of the excavation. The excavation above the liner was filled with caliche to ground surface.

Approximately 344 cubic yards of contaminated soil was disposed at Lea Land Landfill, LLC. Table 1 presents the analytical data summary for sample DP-05-02, 6 feet. Figure 3 presents the remediation areas. Appendix B presents the confirmation sample laboratory report. Appendix C presents photographs. Appendix D presents the waste manifests. Appendix E presents the initial and final C-141.

## 3.0 CONCLUSIONS

Soil was remediated according to the remediation plans approved by OCD District 2. XTO requests no further action for 2RP-3875.

## Tables

Table 1  
2RP-3875  
Investigation Soil Sample Analytical Data Summary  
XTO Energy, Inc., Nash Draw Tank Battery 24  
Unit H (SE/4, NE/4), Section 14, Township 23 South, Range 29 East  
Eddy County, New Mexico

| Location      | Depth<br>(Feet) | Collection<br>Date | Status    | C6 - C12<br>(mg/Kg) | >C12 - C28<br>(mg/Kg) | >C28 - C35<br>(mg/Kg) | TPH<br>(mg/Kg) | Chloride<br>(mg/Kg) |
|---------------|-----------------|--------------------|-----------|---------------------|-----------------------|-----------------------|----------------|---------------------|
| OCD RRAL: 100 |                 |                    |           |                     |                       |                       |                |                     |
| DP-05 -BG     | 0 - 1           | 6/21/2016          | In-Situ   | 30.2                | 63.7                  | <26.0                 | 93.9           | 30.2                |
|               | 4               | 9/29/2016          | In-Situ   | --                  | --                    | --                    | --             | <5.75               |
| DP-05-01      | 0 - 1           | 6/21/2016          | Excavated | 270                 | 2,590                 | 231                   | 3,091          | 172                 |
|               | 1 - 2           | 6/21/2016          | Excavated | 43.4                | 162                   | 38.7                  | 244.1          | --                  |
|               | 2 - 3           | 6/21/2016          | Excavated | 68.7                | 42.8                  | <27.8                 | 111.5          | --                  |
|               | 3 - 4           | 6/21/2016          | In-Situ   | <28.4               | <28.4                 | <28.4                 | <28.4          | --                  |
| DP-05-02      | 0 - 1           | 6/21/2016          | Excavated | 269                 | 3,020                 | 334                   | 3,623          | 727                 |
|               | 1 - 2           | 6/21/2016          | Excavated | <32.9               | 73.8                  | <32.9                 | 73.8           | 712                 |
|               | 2 - 3           | 6/21/2016          | In-Situ   | 41.8                | 36.3                  | <32.1                 | 78.1           | 557                 |
|               | 4               | 9/29/2016          | In-Situ   | --                  | --                    | --                    | --             | 311                 |
|               | 6               | 9/29/2016          | In-Situ   | --                  | --                    | --                    | --             | 67.9                |
|               |                 | 11/8/2016          | In-Situ   | --                  | --                    | --                    | --             | 369                 |
|               | 8               | 9/29/2016          | In-Situ   | --                  | --                    | --                    | --             | 666                 |
| DP-05-03      | 0 - 1           | 6/21/2016          | Excavated | <137                | 757                   | 208                   | 965            | 48.2                |
|               | 1 - 2           | 6/21/2016          | Excavated | 38.7                | 116                   | 38.1                  | 192.8          | --                  |
|               | 2 - 3           | 6/21/2016          | In-Situ   | <30.5               | <30.5                 | <30.5                 | <30.5          | --                  |
|               | 3 - 4           | 6/21/2016          | In-Situ   | --                  | --                    | --                    | --             | --                  |



Table 1  
2RP-3875  
Investigation Soil Sample Analytical Data Summary  
XTO Energy, Inc., Nash Draw Tank Battery 24  
Unit H (SE/4, NE/4), Section 14, Township 23 South, Range 29 East  
Eddy County, New Mexico

| Location      | Depth<br>(Feet) | Collection<br>Date | Status    | C6 - C12<br>(mg/Kg) | >C12 - C28<br>(mg/Kg) | >C28 - C35<br>(mg/Kg) | TPH<br>(mg/Kg) | Chloride<br>(mg/Kg) |
|---------------|-----------------|--------------------|-----------|---------------------|-----------------------|-----------------------|----------------|---------------------|
| OCD RRAL: 100 |                 |                    |           |                     |                       |                       |                |                     |
| DP-05-04      | 0 - 1           | 6/21/2016          | Excavated | 259                 | 4,930                 | 587                   | 5,776          | 554                 |
|               | 1 - 2           | 6/21/2016          | Excavated | 94.0                | 1,820                 | 202                   | 2,120          | 2,460               |
|               | 2 - 3           | 6/21/2016          | Excavated | 50.4                | 34.8                  | <30.5                 | 85.2           | 2,850               |
|               | 3 - 4           | 6/21/2016          | Excavated | --                  | --                    | --                    | --             | 4,790               |
|               | 6               | 9/29/2016          | In-Situ   | --                  | --                    | --                    | --             | 2,590               |
|               | 8               | 9/29/2016          | In-Situ   | --                  | --                    | --                    | --             | 2,660               |
|               | 10              | 9/29/2016          | In-Situ   | --                  | --                    | --                    | --             | 1,630               |
|               | 15              | 10/19/2016         | In-Situ   | --                  | --                    | --                    | --             | 2,390               |
|               | 20              | 10/19/2016         | In-Situ   | --                  | --                    | --                    | --             | 12,100*             |
| DP-05-05      | 0 - 1           | 6/21/2016          | Excavated | 231                 | 4,100                 | 741                   | 5,072          | 112                 |
|               | 1 - 2           | 6/21/2016          | Excavated | 40.9                | 494                   | 90.5                  | 625.4          | --                  |
|               | 2 - 3           | 6/21/2016          | Excavated | 47.3                | 271                   | 59.1                  | 377.4          | --                  |
|               | 3 - 4           | 6/21/2016          | In-Situ   | <29.4               | <29.4                 | <29.4                 | <29.4          | --                  |

Notes: laboratory analysis performed by Permian Basin Environmental Lab, Midland, Texas, by EPA SW-846 method 8015M (TPH) and 300.0 (chloride)  
Depth in feet below ground surface (bgs)  
mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)  
RRAL: Remediation action level calculated from OCD guidance document (August 13, 1993)  
\*: groundwater observed at approximately 24 feet bgs



Table 2

2RP-3872

## Remediation Soil Sample Analytical Data Summary

XTO Energy, Inc., Nash Draw Tank Battery 15 and 33

Unit D (NW/4, NW/4), Section 13, Township 23 South, Range 29 East  
Eddy County, New Mexico

| Location  | Sidewall | Depth<br>(Feet) | Collection<br>Date | Status    | Benzene<br>(mg/Kg) | BTEX<br>(mg/Kg) | C6 - C12<br>(mg/Kg) | >C12 - C28<br>(mg/Kg) | >C28 - C35<br>(mg/Kg) | TPH<br>(mg/Kg) |
|-----------|----------|-----------------|--------------------|-----------|--------------------|-----------------|---------------------|-----------------------|-----------------------|----------------|
| OCD RRAL: |          |                 |                    |           |                    |                 |                     |                       |                       |                |
|           |          |                 |                    |           | 10                 | 50              | 100                 |                       |                       |                |
| DP-04-02  | North    | 2               | 11/15/2016         | In-Situ   | <0.00122           | <0.00854        | <30.5               | <30.5                 | <30.5                 | <30.5          |
|           | East     | 2               | 11/15/2016         | In-Situ   | <0.00116           | <0.00814        | <29.1               | <29.1                 | <29.1                 | <29.1          |
|           | West     | 2               | 11/15/2016         | In-Situ   | <0.00116           | <0.00814        | <29.1               | <29.1                 | <29.1                 | <29.1          |
|           | South    | 2               | 11/15/2016         | Excavated | <0.00116           | <0.00814        | <29.1               | 143                   | 89.2                  | 232.2          |
|           |          | 2               | 11/21/2016         | In-Situ   | --                 | --              | <28.4               | <28.4                 | <28.4                 | <28.4          |
| DP-04-04  | North    | 2               | 11/15/2016         | In-Situ   | <0.00118           | <0.00824        | <29.4               | <29.4                 | <29.4                 | <29.4          |
|           | East     | 2               | 11/15/2016         | In-Situ   | <0.00114           | <0.00341        | <28.4               | <28.4                 | <28.4                 | <28.4          |
|           | West     | 2               | 11/15/2016         | Excavated | <0.00116           | <0.00814        | <29.1               | 105                   | 46.9                  | 151.9          |
|           |          | 2               | 11/21/2016         | In-Situ   | --                 | --              | <28.7               | <28.7                 | <28.7                 | <28.7          |
|           | South    | 2               | 11/15/2016         | In-Situ   | <0.00114           | <0.00341        | <28.4               | <28.4                 | <28.4                 | <28.4          |

Notes: laboratory analysis performed by Permian Basin Environmental Lab, Midland, Texas, by EPA SW-846 Methods 8021B (BTEX) and 8015M (TPH)

Depth in feet below ground surface (bgs)

mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)

RRAL: Remediation action level calculated from OCD guidance document (August 13, 1993)

P: Denotes laboratory results pending

## Figures





4,500 0 4,500

Graphic Scale in Feet

XTO Energy  
Nash Draw Battery #24  
Unit H, S14, T23S, R29E  
Eddy County, New Mexico

N 32° 18' 27.64777"  
W 103° 56' 58.49626"

**Larson & Associates, Inc.**  
Environmental Consultants

Figure 1 - Topographic Map

11" x 8.5"





Figure 2 - Aerial Map

11" x 8.5"

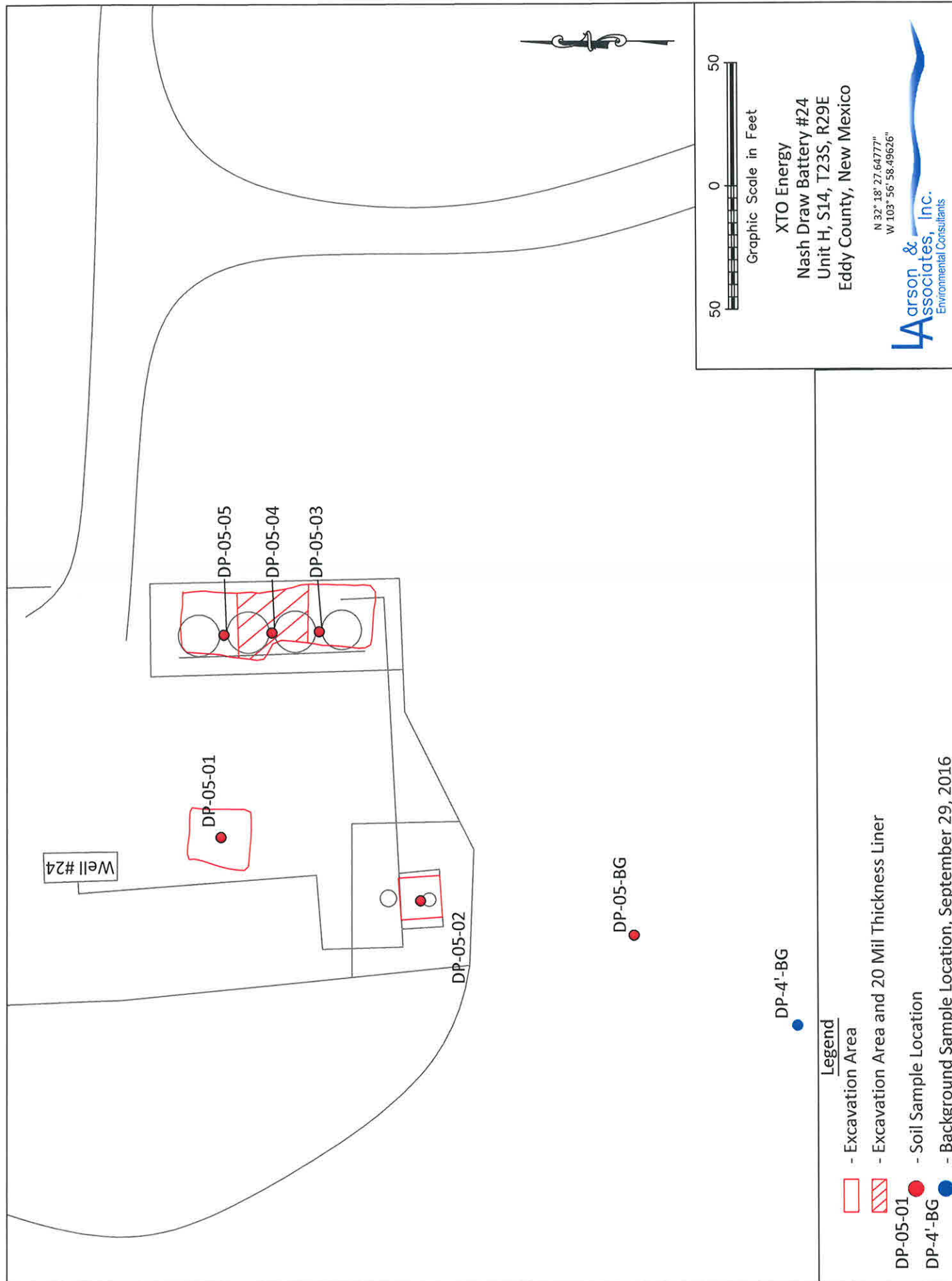


Figure 4 - Site Map Showing Excavation and Sample Location



## **Appendix A**

### **Remediation Plan Approval**

**From:** Patterson, Heather, EMNRD [Heather.Patterson@state.nm.us]  
**Sent:** Thursday, November 10, 2016 2:20 PM  
**To:** Mark Larson; Bratcher, Mike, EMNRD; Weaver, Crystal, EMNRD; hprice@blm.gov  
**Subject:** RE: Re 2RP-3875, Nash Draw Tank Battery #24, Delineation Results from DP-05-02, November 8, 2016

RE: XTO \* Nash Draw Battery #24 \* 30-015-28271 \* 2RP-3875

Mark,

Your proposed remediation as well as your 11/9/2016 revisions to that proposal are approved. Thank you for keeping us updated with the changes you find in the field.

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

If you have any questions or concerns, and for notification, please contact me.

Heather Patterson  
Environmental Specialist  
NMOCD District II  
Office (575)748-1283 ext.101  
Cell (575)703-0228

**From:** Mark Larson [<mailto:Mark@laenvironmental.com>]  
**Sent:** Wednesday, November 09, 2016 3:12 PM  
**To:** Patterson, Heather, EMNRD; Bratcher, Mike, EMNRD; Weaver, Crystal, EMNRD; [hprice@blm.gov](mailto:hprice@blm.gov)  
**Subject:** Re 2RP-3875, Nash Draw Tank Battery #24, Delineation Results from DP-05-02, November 8, 2016

Heather,

Per the remediation plan for the Nash Draw Tank Battery #24 (2RP-3875) soil samples were collected at location DP-05-02 on November 8, 2016. A sample was collected with a track hoe at 6 feet below ground surface (bgs). However after excavating soil to 8 feet bgs the soil was moist to the point of saturation with groundwater therefore no sample was collected from this depth interval. The sample from 6 feet bgs was analyzed for chloride and reported 369 mg/Kg. The chloride concentration in previous sample from DP-05-02 at 6 feet was 67.9 mg/Kg and the samples from 8 feet was 666 mg/Kg. The chloride results for the sample from 8 feet bgs is reflective of elevated chloride in groundwater due to proximity of the playa lake. Given these findings XTO proposes to excavate soil from the area 15 x 15 feet based on field observations, around DP-05-02 to about 4 feet bgs. Samples will be collected from the excavation sidewalls for laboratory analysis (BTEX and TPH) to determine if concentrations are below the RRAL. Additional soil will be removed as necessary to achieve the RRAL. A 20 mil thickness liner will be placed in the bottom of the excavation and filled to surface with clean soil. Attached are the revised drawing showing the sample location (DP-05-02), proposed remediation area and depth, updated analytical data summary and laboratory report. Your approval of the revised remediation plan



## **Appendix B**

### **Laboratory Reports**

**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
1400 Rankin Hwy  
Midland, TX 79701**



## Analytical Report

**Prepared for:**

Mark Larson  
Larson & Associates, Inc.  
P.O. Box 50685  
Midland, TX 79710

Project: Nash Draw Site #24

Project Number: 16-0108-05

Location: Eddy Co. NM

Lab Order Number: 6K08010



NELAP/TCEQ # T104704156-16-6

Report Date: 11/09/16

Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Nash Draw Site #24  
Project Number: 16-0108-05  
Project Manager: Mark Larson

Fax: (432) 687-0456

#### ANALYTICAL REPORT FOR SAMPLES

| Sample ID    | Laboratory ID | Matrix | Date Sampled   | Date Received    |
|--------------|---------------|--------|----------------|------------------|
| SP-05-02, 6' | 6K08010-01    | Soil   | 11/08/16 09:00 | 11-08-2016 17:12 |

Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Nash Draw Site #24  
Project Number: 16-0108-05  
Project Manager: Mark Larson

Fax: (432) 687-0456

**SP-05-02, 6'**  
**6K08010-01 (Soil)**

| Analyte | Result | Reporting<br>Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|--------------------|-------|----------|-------|----------|----------|--------|-------|
|---------|--------|--------------------|-------|----------|-------|----------|----------|--------|-------|

**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

|            |      |      |           |   |         |          |          |               |  |
|------------|------|------|-----------|---|---------|----------|----------|---------------|--|
| Chloride   | 369  | 1.20 | mg/kg dry | 1 | P6K0805 | 11/08/16 | 11/08/16 | EPA 300.0     |  |
| % Moisture | 17.0 | 0.1  | %         | 1 | P6K0901 | 11/09/16 | 11/09/16 | % calculation |  |

Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Nash Draw Site #24  
Project Number: 16-0108-05  
Project Manager: Mark Larson

Fax: (432) 687-0456

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

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

**Batch P6K0805 - \*\*\* DEFAULT PREP \*\*\***

|                                   |      |                               |           |                               |      |      |        |       |    |       |
|-----------------------------------|------|-------------------------------|-----------|-------------------------------|------|------|--------|-------|----|-------|
| <b>Blank (P6K0805-BLK1)</b>       |      | Prepared & Analyzed: 11/08/16 |           |                               |      |      |        |       |    |       |
| Chloride                          | ND   | 1.00                          | mg/kg wet |                               |      |      |        |       |    |       |
| <b>LCS (P6K0805-BS1)</b>          |      | Prepared & Analyzed: 11/08/16 |           |                               |      |      |        |       |    |       |
| Chloride                          | 422  | 1.00                          | mg/kg wet | 400                           |      | 105  | 80-120 |       |    |       |
| <b>LCS Dup (P6K0805-BSD1)</b>     |      | Prepared & Analyzed: 11/08/16 |           |                               |      |      |        |       |    |       |
| Chloride                          | 421  | 1.00                          | mg/kg wet | 400                           |      | 105  | 80-120 | 0.256 | 20 |       |
| <b>Duplicate (P6K0805-DUP1)</b>   |      | <b>Source: 6K07004-01</b>     |           | Prepared & Analyzed: 11/08/16 |      |      |        |       |    |       |
| Chloride                          | 2810 | 28.4                          | mg/kg dry |                               | 2930 |      |        | 4.07  | 20 |       |
| <b>Duplicate (P6K0805-DUP2)</b>   |      | <b>Source: 6K07004-11</b>     |           | Prepared & Analyzed: 11/08/16 |      |      |        |       |    |       |
| Chloride                          | 29.1 | 1.23                          | mg/kg dry |                               | 28.2 |      |        | 3.19  | 20 |       |
| <b>Matrix Spike (P6K0805-MS1)</b> |      | <b>Source: 6K07004-01</b>     |           | Prepared & Analyzed: 11/08/16 |      |      |        |       |    |       |
| Chloride                          | 6330 | 28.4                          | mg/kg dry | 4550                          | 2930 | 74.7 | 80-120 |       |    | QM-07 |

**Batch P6K0901 - \*\*\* DEFAULT PREP \*\*\***

|                                 |      |                               |   |                               |     |  |  |     |    |  |
|---------------------------------|------|-------------------------------|---|-------------------------------|-----|--|--|-----|----|--|
| <b>Blank (P6K0901-BLK1)</b>     |      | Prepared & Analyzed: 11/09/16 |   |                               |     |  |  |     |    |  |
| % Moisture                      | ND   | 0.1                           | % |                               |     |  |  |     |    |  |
| <b>Duplicate (P6K0901-DUP1)</b> |      | <b>Source: 6K07004-17</b>     |   | Prepared & Analyzed: 11/09/16 |     |  |  |     |    |  |
| % Moisture                      | 19.0 | 0.1                           | % |                               | 4.0 |  |  | 130 | 20 |  |

Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Nash Draw Site #24  
Project Number: 16-0108-05  
Project Manager: Mark Larson

Fax: (432) 687-0456

### Notes and Definitions

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

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

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By:



Date: 11/9/2016

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

Permian Basin Environmental Lab, LP  
1400 Rankin HWY  
Midland, Texas 797061

Project Manager:

Mark Larson

Company Name

Larson + Associates, Inc.

Company Address:

507 N. Harrison St. 1205

City/State/Zip:

Midland, TX 79701

Telephone No:

(432) 687-0901

Fax No:

(432) 687-0456

Report Format:

☒ Standard

☐ TRRP

☐ NPDES

Sampler Signature:

*[Signature]*

e-mail:

mark@larsonassoc.com

ORDER #: 6408010

LAB # (lab use only)

FIELD CODE

DF-05-02, 6'

Beginning Depth

Ending Depth

Date Sampled

Time Sampled

Field Filtered

Total #. of Containers

Ice

HNO<sub>3</sub>

HCl

H<sub>2</sub>SO<sub>4</sub>

NaOH

Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>

None

Other (Specify)

DW=Drinking Water SL=Sludge

GW = Groundwater S=Soil/Solid

NP=Non-Potable Specify Other

TPH: 418.1 8015M 8015B

TPH: TX 1005 TX 1006

Cations (Ca, Mg, Na, K)

Anions (Cl, SO<sub>4</sub>, Alkalinity)

SAR / ESP / CEC

Metals: As Ag Ba Cd Cr Pb Hg Se

Volatiles

Semivolatiles

BTEX 8021B/5030 or BTEX 8260

RCI

N.O.R.M.

Chloride (300)

RUSH TAT (Pre-Schedule) 24, 48, 72 hrs

Standard TAT

Preservation & # of Containers

Matrix

Analyze For:

TCLP

TOTAL

Special Instructions:

Rush

Relinquished by:

*[Signature]*

Date

11/8/16

Time

17:05

Received by:

*[Signature]*

Date

11/8/16

Time

17:05

Received by:

*[Signature]*

Date

11/8/16

Time

17:05

Relinquished by:

*[Signature]*

Date

11/8/16

Time

17:05

Received by:

*[Signature]*

Date

11/8/16

Time

17:05

Received by:

*[Signature]*

Date

11/8/16

Time

17:05

Relinquished by:

*[Signature]*

Date

11/8/16

Time

17:05

Received by:

*[Signature]*

Date

11/8/16

Time

17:05

Received by:

*[Signature]*

Date

11/8/16

Time

17:05

Laboratory Comments:

Sample Containers: intact?

VOCs: Free of Headspace?

Labels on containers?

Custody seals on containers?

Custody seals on cooler(s)?

Sample Hand Delivered

by Sampler/Clean Rep.?

by Courier? UPS DHL FedEx Home Star

Temperature Upon Receipt:

Adjusted: 75 °C Factor NCF 4.1



**Appendix C**  
**Photographs**



Location Sign



Location Viewing Northeast Prior to Remediation, February 3, 2016





Location Viewing South Prior to Remediation, February 3, 2016



Excavation at DP-05-01 Viewing East, November 8, 2016





Excavation DP-05-03, DP-05-04, and DP-05-05 Viewing Northeast, November 9, 2016



Excavation at DP-05-02 Viewing Northwest, November 14, 2016





Liner Installed in Excavation (4 feet) DP-05-04 Viewing South, November 9, 2016



Liner Installed in Excavation (4 feet) DP-05-04 Viewing West, November 9, 2016



Completed Remediation at Excavation DP-05-03, DP-05-04, DP-05-05 Viewing South, November 11, 2016



Completed Remediation at Excavation DP-05-01 Viewing West, November 11, 2016





Completed Remediation at Excavation DP-05-02 Viewing Southeast, November 11, 2016



**Appendix D**  
**Waste Manifests**

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

## NO

116128

1. PAGE \_\_\_\_ OF \_\_\_\_

2. TRAILER NO.

DISPOSAL FACILITY

DISPOSAL SITE: COPIES 2 &amp; 3

TRANSPORTERS: COPIES 4 &amp; 5



# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

### NON-HAZARDOUS WASTE MANIFEST

NO

116129

1. PAGE \_\_\_ OF \_\_\_

2. TRAILER NO. 12

G

3. COMPANY NAME

4. ADDRESS

5. PICK-UP DATE

PHONE NO.

CITY

STATE

ZIP

6. TNRCC I.D. NO.

E

7. NAME OR DESCRIPTION OF WASTE SHIPPED:

8. CONTAINERS  
No. Type

9. TOTAL  
QUANTITY

10. UNIT  
Wt/Vol

11. TEXAS  
WASTE ID #

N

a.

E

b.

R

c.

A

d.

12. COMMENTS OR SPECIAL INSTRUCTIONS:

13. WASTE PROFILE NO.

T

14.

### IN CASE OF EMERGENCY OR SPILL, CONTACT

NAME

PHONE NO

24-HOUR EMERGENCY NO.

O

15. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC

R

PRINTED/TYPED NAME

SIGNATURE

DATE

T

16.

### TRANSPORTER (1)

NAME:

TEXAS I.D. NO.

IN CASE OF EMERGENCY CONTACT:

EMERGENCY PHONE:

18. **TRANSPORTER (1):** Acknowledgment of receipt of material

PRINTED/TYPED NAME

SIGNATURE

DATE

17.

### TRANSPORTER (2)

NAME:

TEXAS I.D. NO.

IN CASE OF EMERGENCY CONTACT:

EMERGENCY PHONE:

19. **TRANSPORTER (2):** Acknowledgment of receipt of material

PRINTED/TYPED NAME

SIGNATURE

DATE

D

Lea Land, LLC

ADDRESS:

Mile Marker 64, U.S. Hwy 62/180,  
30 Miles East of Carlsbad, NM

PHONE:

575-887-4048

F

PERMIT NO.

WM-01-035 - New Mexico

20. COMMENTS

S

21. **DISPOSAL FACILITY'S CERTIFICATION:** I hereby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.

I

AUTHORIZED SIGNATURE

CELL NO.

DATE

TIME



# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

### NON-HAZARDOUS WASTE MANIFEST

NO

116264

1. PAGE \_\_\_ OF \_\_\_

2. TRAILER NO.:

G

3. COMPANY NAME

4. ADDRESS

5. PICK-UP DATE

PHONE NO.

CITY

STATE

ZIP

6. TNRCC I.D. NO.

E

7. NAME OR DESCRIPTION OF WASTE SHIPPED:

8. CONTAINERS  
No. Type

9. TOTAL  
QUANTITY

10. UNIT  
Wt/Vol.

11. TEXAS  
WASTE ID #

N

a.

b.

E

c.

R

d.

A

12. COMMENTS OR SPECIAL INSTRUCTIONS:

13. WASTE PROFILE NO.

T

14.

#### IN CASE OF EMERGENCY OR SPILL, CONTACT

NAME

PHONE NO.

24-HOUR EMERGENCY NO.

O

15. **GENERATOR'S CERTIFICATION:** I Hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC

R

PRINTED/TYPED NAME

SIGNATURE

DATE

T

16.

#### TRANSPORTER (1)

NAME:

TEXAS I.D. NO.

IN CASE OF EMERGENCY CONTACT:

EMERGENCY PHONE:

R

18. **TRANSPORTER (1):** Acknowledgment of receipt of material

PRINTED/TYPED NAME

SIGNATURE

DATE

D

F

PERMIT NO.

WM-01-035 - New Mexico

I

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T

A

T

L

Y

ADDRESS:

Mile Marker 64, U.S. Hwy 62/180,  
30 Miles East of Carlsbad, NM

PHONE:

575-887-4048

20. COMMENTS

21. **DISPOSAL FACILITY'S CERTIFICATION:** I Hereby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.

AUTHORIZED SIGNATURE

CELL NO.

DATE

TIME



# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

### NON-HAZARDOUS WASTE MANIFEST

NO **116265**

1. PAGE    OF   

2. TRAILER NO.   

G

3. COMPANY NAME

PHONE NO.

4. ADDRESS

CITY

STATE

ZIP

5. PICK-UP DATE

6. TNRCC I.D. NO.

E

7. NAME OR DESCRIPTION OF WASTE SHIPPED:

8. CONTAINERS  
No. | Type

9. TOTAL  
QUANTITY

10. UNIT  
Wt/Vol.

11. TEXAS  
WASTE ID #

N

a.

b.

E

c.

R

d.

A

12. COMMENTS OR SPECIAL INSTRUCTIONS:

13. WASTE PROFILE NO.

T

14.

#### IN CASE OF EMERGENCY OR SPILL, CONTACT

NAME

PHONE NO

24-HOUR EMERGENCY NO.

O

**15. GENERATOR'S CERTIFICATION:** I Hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC

R

PRINTED/TYPED NAME

SIGNATURE

DATE

T

16. **TRANSPORTER (1)**

NAME:

TEXAS I.D. NO.

IN CASE OF EMERGENCY CONTACT:

EMERGENCY PHONE:

R

18. **TRANSPORTER (1):** Acknowledgment of receipt of material

PRINTED/TYPED NAME

SIGNATURE

DATE

D

Lea Land, LLC

ADDRESS:

Mile Marker 64, U.S. Hwy 62/180,  
30 Miles East of Carlsbad, NM

PHONE:

575-887-4048

F

PERMIT NO.

WM-01-035 - New Mexico

20. COMMENTS

S

**21. DISPOSAL FACILITY'S CERTIFICATION:** I Hereby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.

A

AUTHORIZED SIGNATURE

CELL NO.

DATE

TIME

T

GENERATOR: COPIES 1 & 6

DISPOSAL SITE: COPIES 2 & 3

TRANSPORTERS: COPIES 4 & 5

**COPY 4**



# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

## LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

### NON-HAZARDOUS WASTE MANIFEST

NO **116266**

1. PAGE    OF   

2. TRAILER NO.

G

3. COMPANY NAME

4. ADDRESS

5. PICK-UP DATE

PHONE NO.

CITY

STATE

ZIP

6. TNRCC I.D. NO.

E

7. NAME OR DESCRIPTION OF WASTE SHIPPED:

8. CONTAINERS  
No. | Type

9. TOTAL  
QUANTITY

10. UNIT  
Wt/Vol.

11. TEXAS  
WASTE ID #

N

a.

b.

E

c.

R

d.

12. COMMENTS OR SPECIAL INSTRUCTIONS:

13. WASTE PROFILE NO.

A

14.

#### IN CASE OF EMERGENCY OR SPILL, CONTACT

NAME

PHONE NO

24-HOUR EMERGENCY NO.

T

O

15. **GENERATOR'S CERTIFICATION:** I Hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC

R

PRINTED/TYPED NAME

SIGNATURE

DATE

T

16.

#### TRANSPORTER (1)

NAME:

TEXAS I.D. NO.

IN CASE OF EMERGENCY CONTACT:

EMERGENCY PHONE:

R

18. **TRANSPORTER (1):** Acknowledgment of receipt of material

PRINTED/TYPED NAME

SIGNATURE

DATE

D

F

PERMIT NO.

WM-01-035 - New Mexico

I

S

21. **DISPOSAL FACILITY'S CERTIFICATION:** I Hereby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.

A

AUTHORIZED SIGNATURE

CELL NO.

DATE

TIME

T

L

Y

GENERATOR: COPIES 1 & 6

DISPOSAL SITE: COPIES 2 & 3

TRANSPORTERS: COPIES 4 & 5

COPY 4

## **Appendix E**

### **Initial and Final C-141**



District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

# NM OIL CONSERVATION

ARTESIA DISTRICT

SEP 07 2016

Form C-141  
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

RECEIVED

## Release Notification and Corrective Action

### OPERATOR

☒ Initial Report ☐ Final Report

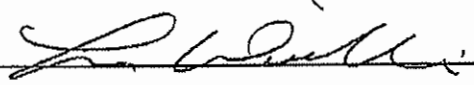
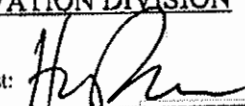
|   |   |
|---|---|
| Name of Company: XTO Energy, Inc. <b>5380</b>               | Contact: Dudley McMinn                          |
| Address: 500 W. Illinois Ave., Suite 100, Midland, TX 70701 | Telephone No.: (432) 682-8873                   |
| Facility Name: Nash Draw Unit Battery #24                   | Facility Type: Tank Battery (Equipment Removed) |
| Surface Owner: Federal                                      | Mineral Owner: Federal                          |
| API No. 30-015-28271  |   |

### LOCATION OF RELEASE

|                  |               |                 |              |                       |                           |                      |                        |              |
|------------------|---------------|-----------------|--------------|-----------------------|---------------------------|----------------------|------------------------|--------------|
| Unit Letter<br>H | Section<br>14 | Township<br>23S | Range<br>29E | Feet from the<br>1750 | North/South Line<br>North | Feet from the<br>890 | East/West Line<br>East | County: Eddy |
|------------------|---------------|-----------------|--------------|-----------------------|---------------------------|----------------------|------------------------|--------------|

Latitude 32.307778 Longitude -103.949444

### NATURE OF RELEASE

|   |   |  |
|---|---|--|
| Type of Release: Crude Oil  | Volume of Release: Unknown  | Volume Recovered: None                   |
| Source of Release: Spills   | Date and Hour of Occurrence<br>Unknown  | Date and Hour of Discovery<br>07-20-2016 |
| Was Immediate Notice Given?<br><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required  | If YES, To Whom?  |  |
| By Whom?  | Date and Hour   |  |
| Was a Watercourse Reached?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No   | If YES, Volume Impacting the Watercourse.   |  |
| If a Watercourse was Impacted, Describe Fully.*   |   |  |
| Describe Cause of Problem and Remedial Action Taken.* Hydrocarbons in soil due to historic use of tank battery reported in soil samples by laboratory following removal of tanks and equipment. Will remediate to OCD and BLM requirements.   |   |  |
| Describe Area Affected and Cleanup Action Taken.*<br>Affected soil to be excavated, treated onsite treatment or disposed offsite at OCD approved facility. Refer to attached analytical data summary.   |   |  |
| I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOC rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOC marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOC acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. |   |  |
| Signature:   | OIL CONSERVATION DIVISION   |  |
| Printed Name: Luke Williams   | Approved by Environmental Specialist:  |  |
| Title: EH&S Coordinator   | Approval Date: <u>9/8/16</u>  | Expiration Date: <u>N/A</u>              |
| E-mail Address: Luke.Williams@xtoenergy.com   | Conditions of Approval:<br>Remediation per O.C.D. Rules & Guidelines <input type="checkbox"/>                               |  |
| Date: 09-07-2016 Phone: (432) 683-8873  | SUBMIT REMEDIATION PROPOSAL NO<br>LATER THAN: <u>10/10/16</u>   |  |

\* Attach Additional Sheets If Necessary

2RP-3875

NOTE: Although no Final C-141 Form was submitted in this package, the RP-3875 is closed.

Bradford Billings 11/19/2019

## **Patterson, Heather, EMNRD**

---

**From:** Mark Larson <Mark@laenvironmental.com>  
**Sent:** Wednesday, September 07, 2016 4:54 PM  
**To:** Patterson, Heather, EMNRD  
**Cc:** McMinn, Dudley; Williams, Luke  
**Subject:** Re: Initial C-141s for XTO Energy, Inc., Nash Draw Unit Tank Batteries (8), Eddy County, New Mexico  
**Attachments:** Initial C-141, XTO Energy, Inc., Nash Draw unit Battery 1 & 6, September 7, 2016.pdf; Initial C-141, XTO Energy, Inc., Nash Draw Unit Battery 10, September 7, 2016.pdf; Initial C-141, XTO Energy, Inc., Nash Draw Unit Battery 9, September 7, 2016.pdf; Initial C-141, XTO Energy, Inc., Nash Draw Unit Battery 15 & 33, September 7, 2016.pdf; Initial C-141, XTO Energy, Inc., Nash Draw Unit Battery 24, September 7, 2016.pdf; Initial C-141, XTO Energy, Inc., Nash Draw Unit Battery 36, September 7, 2016.pdf; Initial C-141, XTO Energy, Inc., Nash Draw Unit Battery 19 & 34, September 7, 2016.pdf; Initial C-141, XTO Energy, Inc., Nash Draw Unit Battery 38, September 7, 2016.pdf

Dear Heather,

The attached C-141s and supporting documentation are submitted on behalf of XTO Energy, Inc., for eight (8) tank batteries located in the Nash Draw Unit, Eddy County, New Mexico. Please contact Dudley McMinn with XTO Energy, Inc. at (432) 682-8873 or me if you have questions.

Respectfully,

Mark J. Larson

---

**From:** Mark Larson  
**Sent:** Wednesday, September 07, 2016 10:59 AM  
**To:** 'heather.patterson@state.nm.us'  
**Cc:** 'McMinn, Dudley'; 'Luke\_Williams@xtoenergy.com'  
**Subject:** Re: Meeting Confirmation

Dear Heather,

This message is to confirm our meeting at your office on September 15, 2016 at 10:00 AM (Mountain Time). Please contact me if you have questions. See you then!

Respectfully,

Mark J. Larson, P.G.  
President/Sr. Project Manager  
507 N. Marienfeld St., Suite 205  
Midland, Texas 79701  
(432) 687-0901 ( O )  
(432) 556-8656 ( C )



[www.LAEnvironmental.com](http://www.LAEnvironmental.com)

"Serving the Permian Basin Since 2000"