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Soil Assessment and Remediation Work Plan

Shakespeare 20 Federal #1 * 30-015-36376 * 2RP-3360

Talon Project No. 700794.213.01

Prepared For:

Devon Energy Production
6488 Seven Rivers Hwy
Artesia, New Mexico 88210

Prepared By:

Kimberly M. Wilson
Talon/LPE
408 West Texas
Artesia, New Mexico 88210

February 21, 2017

Mr. Mike Bratcher
NMOCD District 2
811 S. 1st Street
Artesia, NM 88210

Subject: **Soil Assessment and Remediation Work Plan**
 Shakespeare 20 Federal #1
 API # 30-015-36376 * 2RP-3360

Dear Mr. Bratcher,

Devon Energy (Devon) has contracted Talon/LPE (Talon) to perform soil assessment and remediation services at the above referenced location. The results of our soil assessment and proposed remediation activities consist of the following.

Site Information

The Shakespeare 20 Federal #1 is located approximately seventeen (17) miles southeast of Artesia, New Mexico. The legal location for this site is Unit Letter H of Section 27, Township 18 South, and Range 28 East in Eddy County, New Mexico. More specifically the latitude and longitude for the location are 32.720956 North and -104.157078 West. See site plan in [Appendix I](#).

According to the soil survey provided by the United States Department of Agriculture Natural Resources Conservation Service (NRCS), the soil in this area is made up of Simona gravelly fine sandy loam with 0 to 3 percent slopes. The local surface and shallow geology, Quaternary Age sedimentary deposits, is comprised of alluvium and eolian sands underlain by gravelly fine sandy loam and hard caliches. Drainage courses in this area are normally dry.

Ground Water and Site Ranking

According to the New Mexico State Engineer web site there is no published groundwater information within 4,000 meters of the release area. See [Appendix II](#) for the referenced groundwater data.

| | |
|--------------------------------|--------|
| Depth to ground water | >100' |
| Wellhead Protection Area | >1000' |
| Distance to surface water body | >1000' |

Based upon the site ranking of **0**, NMOCD Recommended Remedial Action Levels (RRAL) are 50 mg/kg for BTEX, 10 mg/kg for Benzene, 5,000 mg/kg for TPH and recommended guidelines for total chlorides is 1,000 mg/kg.

Incident Description

The stuffing box blew out on the pump jack causing 1 barrel of oil and 4 barrels of produced water to be released on the location. A vac truck was called to the location and recovered 4 barrels of fluid. A site plan is presented in [Appendix I](#) which illustrates the impacted area.

On February 16, 2017 Talon mobilized personnel to begin the site assessment and soil sampling activities for the construction of a work plan. Grab soil samples were collected utilizing a hand auger where refusal was encountered. Laboratory results are presented below..

Laboratory Results

See [Appendix III](#) for complete report of laboratory results.

February 19, 2017

| Sample ID | Depth (feet) | BTEX (mg/kg) | Chlorides (mg/kg) | TPH (mg/kg) GRO | TPH (mg/kg) DRO |
|-----------|--------------|--------------|-------------------|-----------------|-----------------|
| S-1 | 0' | <0.300 | 96 | <10 | <10 |
| | 1' | <0.300 | 432 | <10 | <10 |
| | 2' | <0.300 | 640 | <10 | <10 |
| | 3' | <0.300 | 48 | <10 | <10 |
| | 4' | -- | 32 | -- | -- |
| | 5' | -- | 64 | -- | -- |
| | 7' | -- | 112 | -- | -- |
| S-2 | 0' | <0.300 | 6880 | <10 | 44.5 |
| | 0.5' | <0.300 | 2320 | <10 | <10 |
| | 1' | <0.300 | 840 | <10 | <10 |
| | 1.5' | <0.300 | 800 | <10 | <10 |


Proposed Remedial Actions


- The impacted soil in the vicinity of sample location S-2 will be excavated to a depth of 1-foot deep.
- All contaminated soil will be transported to Lea Land, LLC, a NMOCD approved disposal facility.
- The excavated area will be backfilled with new caliche. Once the backfill activities are complete the work area will be compacted.
- A final closure report documenting all remedial actions will be provided to the NMOCD Artesia Office along with a Final C-141 Form.

Should you have any questions or if further information is required, please do not hesitate to contact our office at (575)-746-8768

Respectfully submitted,

TALON/LPE


Kimberly M. Wilson
Project Manager


David J. Adkins
District Manager

Attachments:

Appendix I Site Plan
Appendix II Groundwater Data & Initial C-141
Appendix III Laboratory Results

APPENDIX I
SITE MAP

Shakespeare 20 Fed Com 1H

Write a description for your map.

Legend

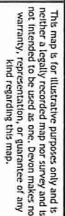
- Buried Power
- Sample points
- Impacted Area (approx due to clean location)
- SHAKESPEARE 20 FEDERAL COM #001H

SHAKESPEARE 20 FEDERAL COM #001H

S-2

S-1





Map is current as of: 27-Oct-2015



Miles

| 0 | 0.01 | 0.02 | 0.04 | 1:1,779 |
|---|------|------|------|---------|
| 0 | 0.01 | 0.02 | 0.04 | 1:1,779 |

TDM Wells (Drilled)
TDM Wells (Proposed)



APPENDIX II
GROUNDWATER DATA
INITIAL C-141



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

UTMNAD83 Radius Search (in meters):

Easting (X): 575704

Northing (Y): 3640631

Radius: 4000

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

1/25/17 7:44 AM

WATER COLUMN/ AVERAGE
DEPTH TO WATER

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

NM OIL CONSERVATION
ARTESIA DISTRICT
State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

OCT 27 2015

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

NAB1530148267 OPERATOR ☒ Initial Report ☐ Final Report

| | |
|--|---|
| Name of Company Devon Energy Production <u>11/37</u> | Contact Mike McMahan Production Assistant Foreman |
| Address 6488 Seven Rivers Hwy Artesia, NM 88220 | Telephone No. 575.706.4165 |
| Facility Name Shakespeare 20 Fed Com 1H | Facility Type Oil |

| | | |
|-----------------------|-----------------------|----------------------|
| Surface Owner Federal | Mineral Owner Federal | API No. 30-015-36376 |
|-----------------------|-----------------------|----------------------|

LOCATION OF RELEASE

| | | | | | | | | |
|------------------|---------------|-----------------|--------------|----------------------|-------------------------|----------------------|-----------------------|----------------|
| Unit Letter P | Section 20 | Township 16S | Range 28E | Feet from the 400 | North/South Line FSL | Feet from the 330 | East/West Line FEL | County EDDY |
|------------------|---------------|-----------------|--------------|----------------------|-------------------------|----------------------|-----------------------|----------------|

Latitude: Longitude:

NATURE OF RELEASE

| | | |
|--|---|--|
| Type of Release Spill Oil & Produced water | Volume of Release 1 BBL oil & 4 BBL produced water | Volume Recovered 1 BBL oil & 3 BBL produced water |
| Source of Release Stuffing box blow out on pump jack | Date and Hour of Occurrence 10.18.15 at 1:00 pm | Date and Hour of Discovery 10.18.15 at 1:00 pm |
| Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required | If YES, To Whom? Mike Bratcher BLM Jim Amos OCD | |
| By Whom? Mike McMahan | Date and Hour 10.19.15 at 9:45 am | |
| Was a Watercourse Reached? <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.*

Stuffing box blew out on pump jack. Lease operator shut down valve.

Describe Area Affected and Cleanup Action Taken.*

1 BBL of oil and 4 BBL of produced water released. A vacuum truck recovered 1 BBL oil and 3 BBL produced water. All this occurred on location on an 8 x10 area near the wellhead and a 3x10 area near the pump jack. An environmental agency will be contacted for remediation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD 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, NMOCD 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: <u>Jeanette Barron</u> | OIL CONSERVATION DIVISION | |
| Printed Name: <u>Jeanette Barron</u> | Signed By <u>Mike Bratcher</u> Approved by Environmental Specialist: | |
| Title: <u>Field Admin Support</u> | Approval Date: <u>10/28/15</u> | Expiration Date: <u>N/A</u> |
| E-mail Address: <u>Jeanette.barron@dmn.com</u> | Conditions of Approval: Remediation per O.C.D. Rules & Guidelines SUBMIT REMEDIATION PROPOSAL NO | |
| Date: <u>10.27.15</u> Phone: <u>575.748.1813</u> | Attached <input type="checkbox"/> | |

* Attach Additional Sheets If Necessary

LATER THAN: 11/29/15

2RP-3360

APPENDIX III
LABORATORY RESULTS

February 19, 2017

KIMBERLY WILSON

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: SHAKESPEARE 20 #1

Enclosed are the results of analyses for samples received by the laboratory on 02/17/17 9:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

| | |
|------------------|------------------------------|
| Method EPA 552.2 | Haloacetic Acids (HAA-5) |
| Method EPA 524.2 | Total Trihalomethanes (TTHM) |
| Method EPA 524.4 | Regulated VOCs (V1, V2, V3) |

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

TALON LPE
KIMBERLY WILSON
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

| | | | |
|-------------------|-------------------|---------------------|---------------|
| Received: | 02/17/2017 | Sampling Date: | 02/16/2017 |
| Reported: | 02/19/2017 | Sampling Type: | Soil |
| Project Name: | SHAKESPEARE 20 #1 | Sampling Condition: | Cool & Intact |
| Project Number: | 700794.213.01 | Sample Received By: | Jodi Henson |
| Project Location: | EDDY CO | | |

Sample ID: S-1 0' (H700415-01)

| BTX 8021B | | mg/kg | | Analyzed By: MS | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | <0.050 | 0.050 | 02/18/2017 | ND | 2.11 | 105 | 2.00 | 1.07 | |
| Toluene* | <0.050 | 0.050 | 02/18/2017 | ND | 1.98 | 98.8 | 2.00 | 0.580 | |
| Ethylbenzene* | <0.050 | 0.050 | 02/18/2017 | ND | 1.98 | 99.1 | 2.00 | 0.582 | |
| Total Xylenes* | <0.150 | 0.150 | 02/18/2017 | ND | 5.66 | 94.4 | 6.00 | 0.374 | |
| Total BTX | <0.300 | 0.300 | 02/18/2017 | ND | | | | | |

Surrogate: 4-Bromofluorobenzene (PIE) 99.7 % 73.6-140

| Chloride, SM4500Cl-B | | mg/kg | | Analyzed By: AC | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 96.0 | 16.0 | 02/19/2017 | ND | 464 | 116 | 400 | 10.9 | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10 | <10.0 | 10.0 | 02/18/2017 | ND | 187 | 93.6 | 200 | 3.41 | |
| DRO >C10-C28 | <10.0 | 10.0 | 02/18/2017 | ND | 196 | 97.8 | 200 | 6.66 | |

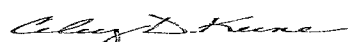
Surrogate: 1-Chlorooctane 78.5 % 35-147

Surrogate: 1-Chlorooctadecane 87.5 % 28-171

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TALON LPE
KIMBERLY WILSON
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

| | | | |
|-------------------|-------------------|---------------------|---------------|
| Received: | 02/17/2017 | Sampling Date: | 02/16/2017 |
| Reported: | 02/19/2017 | Sampling Type: | Soil |
| Project Name: | SHAKESPEARE 20 #1 | Sampling Condition: | Cool & Intact |
| Project Number: | 700794.213.01 | Sample Received By: | Jodi Henson |
| Project Location: | EDDY CO | | |

Sample ID: S-1 1' (H700415-02)

| BTEX 8021B | | mg/kg | | Analyzed By: MS | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | <0.050 | 0.050 | 02/18/2017 | ND | 2.11 | 105 | 2.00 | 1.07 | |
| Toluene* | <0.050 | 0.050 | 02/18/2017 | ND | 1.98 | 98.8 | 2.00 | 0.580 | |
| Ethylbenzene* | <0.050 | 0.050 | 02/18/2017 | ND | 1.98 | 99.1 | 2.00 | 0.582 | |
| Total Xylenes* | <0.150 | 0.150 | 02/18/2017 | ND | 5.66 | 94.4 | 6.00 | 0.374 | |
| Total BTEX | <0.300 | 0.300 | 02/18/2017 | ND | | | | | |

Surrogate: 4-Bromofluorobenzene (PID) 99.1 % 73.6-140

| Chloride, SM4500Cl-B | | mg/kg | | Analyzed By: AC | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 432 | 16.0 | 02/19/2017 | ND | 464 | 116 | 400 | 10.9 | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10 | <10.0 | 10.0 | 02/18/2017 | ND | 187 | 93.6 | 200 | 3.41 | |
| DRO >C10-C28 | <10.0 | 10.0 | 02/18/2017 | ND | 196 | 97.8 | 200 | 6.66 | |

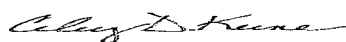
Surrogate: 1-Chlorooctane 79.4 % 35-147

Surrogate: 1-Chlorooctadecane 96.0 % 28-171

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TALON LPE
KIMBERLY WILSON
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received: 02/17/2017
Reported: 02/19/2017
Project Name: SHAKESPEARE 20 #1
Project Number: 700794.213.01
Project Location: EDDY CO

Sampling Date: 02/16/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-1 2' (H700415-03)

| BTEX 8021B | | mg/kg | | Analyzed By: MS | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | <0.050 | 0.050 | 02/19/2017 | ND | 2.16 | 108 | 2.00 | 0.378 | |
| Toluene* | <0.050 | 0.050 | 02/19/2017 | ND | 2.03 | 102 | 2.00 | 0.392 | |
| Ethylbenzene* | <0.050 | 0.050 | 02/19/2017 | ND | 2.05 | 103 | 2.00 | 0.236 | |
| Total Xylenes* | <0.150 | 0.150 | 02/19/2017 | ND | 5.85 | 97.5 | 6.00 | 0.262 | |
| Total BTEX | <0.300 | 0.300 | 02/19/2017 | ND | | | | | |

Surrogate: 4-Bromofluorobenzene (PID) 98.6 % 73.6-140

| Chloride, SM4500Cl-B | | mg/kg | | Analyzed By: AC | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 640 | 16.0 | 02/19/2017 | ND | 464 | 116 | 400 | 10.9 | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10 | <10.0 | 10.0 | 02/18/2017 | ND | 187 | 93.6 | 200 | 3.41 | |
| DRO >C10-C28 | <10.0 | 10.0 | 02/18/2017 | ND | 196 | 97.8 | 200 | 6.66 | |

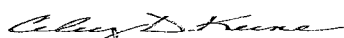
Surrogate: 1-Chlorooctane 75.4 % 35-147

Surrogate: 1-Chlorooctadecane 87.5 % 28-171

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TALON LPE
KIMBERLY WILSON
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received: 02/17/2017
Reported: 02/19/2017
Project Name: SHAKESPEARE 20 #1
Project Number: 700794.213.01
Project Location: EDDY CO

Sampling Date: 02/16/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-1 3' (H700415-04)

| BTX 8021B | | mg/kg | | Analyzed By: MS | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | <0.050 | 0.050 | 02/19/2017 | ND | 2.16 | 108 | 2.00 | 0.378 | |
| Toluene* | <0.050 | 0.050 | 02/19/2017 | ND | 2.03 | 102 | 2.00 | 0.392 | |
| Ethylbenzene* | <0.050 | 0.050 | 02/19/2017 | ND | 2.05 | 103 | 2.00 | 0.236 | |
| Total Xylenes* | <0.150 | 0.150 | 02/19/2017 | ND | 5.85 | 97.5 | 6.00 | 0.262 | |
| Total BTX | <0.300 | 0.300 | 02/19/2017 | ND | | | | | |

Surrogate: 4-Bromofluorobenzene (PIE) 98.8 % 73.6-140

| Chloride, SM4500Cl-B | | mg/kg | | Analyzed By: AC | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 48.0 | 16.0 | 02/19/2017 | ND | 464 | 116 | 400 | 10.9 | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10 | <10.0 | 10.0 | 02/18/2017 | ND | 187 | 93.6 | 200 | 3.41 | |
| DRO >C10-C28 | <10.0 | 10.0 | 02/18/2017 | ND | 196 | 97.8 | 200 | 6.66 | |

Surrogate: 1-Chlorooctane 73.9 % 35-147

Surrogate: 1-Chlorooctadecane 88.8 % 28-171

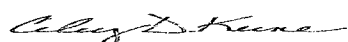
Sample ID: S-1 4' (H700415-05)

| Chloride, SM4500Cl-B | | mg/kg | | Analyzed By: AC | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 32.0 | 16.0 | 02/19/2017 | ND | 464 | 116 | 400 | 10.9 | |

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TALON LPE
KIMBERLY WILSON
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received: 02/17/2017
Reported: 02/19/2017
Project Name: SHAKESPEARE 20 #1
Project Number: 700794.213.01
Project Location: EDDY CO

Sampling Date: 02/16/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-1 5' (H700415-06)

| Chloride, SM4500Cl-B | | mg/kg | | Analyzed By: AC | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 64.0 | 16.0 | 02/19/2017 | ND | 464 | 116 | 400 | 10.9 | |

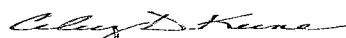
Sample ID: S-1 7' (H700415-07)

| Chloride, SM4500Cl-B | | mg/kg | | Analyzed By: AC | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 112 | 16.0 | 02/19/2017 | ND | 464 | 116 | 400 | 10.9 | |

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TALON LPE
KIMBERLY WILSON
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received: 02/17/2017
Reported: 02/19/2017
Project Name: SHAKESPEARE 20 #1
Project Number: 700794.213.01
Project Location: EDDY CO

Sampling Date: 02/16/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-2 0' (H700415-08)

| BTX 8021B | | | mg/kg | | Analyzed By: MS | | | | |
|----------------|--------|-----------------|------------|--------------|-----------------|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | <0.050 | 0.050 | 02/19/2017 | ND | 2.16 | 108 | 2.00 | 0.378 | |
| Toluene* | <0.050 | 0.050 | 02/19/2017 | ND | 2.03 | 102 | 2.00 | 0.392 | |
| Ethylbenzene* | <0.050 | 0.050 | 02/19/2017 | ND | 2.05 | 103 | 2.00 | 0.236 | |
| Total Xylenes* | <0.150 | 0.150 | 02/19/2017 | ND | 5.85 | 97.5 | 6.00 | 0.262 | |
| Total BTX | <0.300 | 0.300 | 02/19/2017 | ND | | | | | |

Surrogate: 4-Bromofluorobenzene (PID) 99.0 % 73.6-140

| Chloride, SM4500Cl-B | | | mg/kg | | Analyzed By: AC | | | | |
|----------------------|--------|-----------------|------------|--------------|-----------------|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 6880 | 16.0 | 02/19/2017 | ND | 464 | 116 | 400 | 10.9 | |

| TPH 8015M | | | mg/kg | | Analyzed By: MS | | | | |
|--------------|--------|-----------------|------------|--------------|-----------------|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10 | <10.0 | 10.0 | 02/18/2017 | ND | 187 | 93.6 | 200 | 3.41 | |
| DRO >C10-C28 | 44.5 | 10.0 | 02/18/2017 | ND | 196 | 97.8 | 200 | 6.66 | |

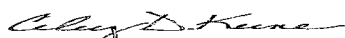
Surrogate: 1-Chlorooctane 68.9 % 35-147

Surrogate: 1-Chlorooctadecane 87.7 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TALON LPE
KIMBERLY WILSON
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received: 02/17/2017
Reported: 02/19/2017
Project Name: SHAKESPEARE 20 #1
Project Number: 700794.213.01
Project Location: EDDY CO

Sampling Date: 02/16/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-2 0.5' (H700415-09)

| BTEX 8021B | | mg/kg | | Analyzed By: MS | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | <0.050 | 0.050 | 02/19/2017 | ND | 2.16 | 108 | 2.00 | 0.378 | |
| Toluene* | <0.050 | 0.050 | 02/19/2017 | ND | 2.03 | 102 | 2.00 | 0.392 | |
| Ethylbenzene* | <0.050 | 0.050 | 02/19/2017 | ND | 2.05 | 103 | 2.00 | 0.236 | |
| Total Xylenes* | <0.150 | 0.150 | 02/19/2017 | ND | 5.85 | 97.5 | 6.00 | 0.262 | |
| Total BTEX | <0.300 | 0.300 | 02/19/2017 | ND | | | | | |

Surrogate: 4-Bromofluorobenzene (PIB) 98.9 % 73.6-140

| Chloride, SM4500Cl-B | | mg/kg | | Analyzed By: AC | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 2320 | 16.0 | 02/19/2017 | ND | 464 | 116 | 400 | 10.9 | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10 | <10.0 | 10.0 | 02/18/2017 | ND | 187 | 93.6 | 200 | 3.41 | |
| DRO >C10-C28 | <10.0 | 10.0 | 02/18/2017 | ND | 196 | 97.8 | 200 | 6.66 | |

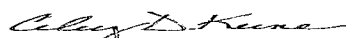
Surrogate: 1-Chlorooctane 66.6 % 35-147

Surrogate: 1-Chlorooctadecane 81.3 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TALON LPE
KIMBERLY WILSON
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received: 02/17/2017
Reported: 02/19/2017
Project Name: SHAKESPEARE 20 #1
Project Number: 700794.213.01
Project Location: EDDY CO

Sampling Date: 02/16/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-2 1' (H700415-10)

| BTEX 8021B | | mg/kg | | Analyzed By: MS | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | <0.050 | 0.050 | 02/19/2017 | ND | 2.16 | 108 | 2.00 | 0.378 | |
| Toluene* | <0.050 | 0.050 | 02/19/2017 | ND | 2.03 | 102 | 2.00 | 0.392 | |
| Ethylbenzene* | <0.050 | 0.050 | 02/19/2017 | ND | 2.05 | 103 | 2.00 | 0.236 | |
| Total Xylenes* | <0.150 | 0.150 | 02/19/2017 | ND | 5.85 | 97.5 | 6.00 | 0.262 | |
| Total BTEX | <0.300 | 0.300 | 02/19/2017 | ND | | | | | |

Surrogate: 4-Bromofluorobenzene (PIC) 99.2 % 73.6-140

| Chloride, SM4500Cl-B | | mg/kg | | Analyzed By: AC | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 840 | 16.0 | 02/19/2017 | ND | 464 | 116 | 400 | 10.9 | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10 | <10.0 | 10.0 | 02/18/2017 | ND | 187 | 93.6 | 200 | 3.41 | |
| DRO >C10-C28 | <10.0 | 10.0 | 02/18/2017 | ND | 196 | 97.8 | 200 | 6.66 | |

Surrogate: 1-Chlorooctane 78.0 % 35-147

Surrogate: 1-Chlorooctadecane 92.8 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

TALON LPE
KIMBERLY WILSON
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received: 02/17/2017
Reported: 02/19/2017
Project Name: SHAKESPEARE 20 #1
Project Number: 700794.213.01
Project Location: EDDY CO

Sampling Date: 02/16/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: S-2 1.5' (H700415-11)

| BTX 8021B | | mg/kg | | Analyzed By: MS | | | | | |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|-------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Benzene* | <0.050 | 0.050 | 02/19/2017 | ND | 2.16 | 108 | 2.00 | 0.378 | |
| Toluene* | <0.050 | 0.050 | 02/19/2017 | ND | 2.03 | 102 | 2.00 | 0.392 | |
| Ethylbenzene* | <0.050 | 0.050 | 02/19/2017 | ND | 2.05 | 103 | 2.00 | 0.236 | |
| Total Xylenes* | <0.150 | 0.150 | 02/19/2017 | ND | 5.85 | 97.5 | 6.00 | 0.262 | |
| Total BTX | <0.300 | 0.300 | 02/19/2017 | ND | | | | | |

Surrogate: 4-Bromofluorobenzene (PIC) 98.8 % 73.6-140

| Chloride, SM4500Cl-B | | mg/kg | | Analyzed By: AC | | | | | |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| Chloride | 800 | 16.0 | 02/19/2017 | ND | 464 | 116 | 400 | 10.9 | |

| TPH 8015M | | mg/kg | | Analyzed By: MS | | | | | |
|--------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte | Result | Reporting Limit | Analyzed | Method Blank | BS | % Recovery | True Value QC | RPD | Qualifier |
| GRO C6-C10 | <10.0 | 10.0 | 02/18/2017 | ND | 187 | 93.6 | 200 | 3.41 | |
| DRO >C10-C28 | <10.0 | 10.0 | 02/18/2017 | ND | 196 | 97.8 | 200 | 6.66 | |

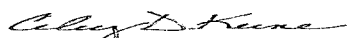
Surrogate: 1-Chlorooctane 71.4 % 35-147

Surrogate: 1-Chlorooctadecane 85.0 % 28-171

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Notes and Definitions

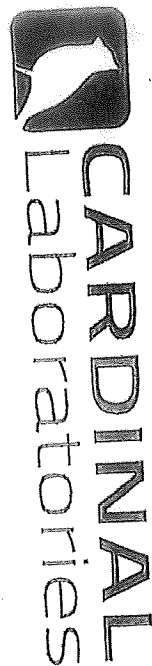
| | |
|-------|--|
| QM-07 | The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery. |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| RPD | Relative Percent Difference |
| ** | Samples not received at proper temperature of 6°C or below. |
| *** | Insufficient time to reach temperature. |
| - | Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report |

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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

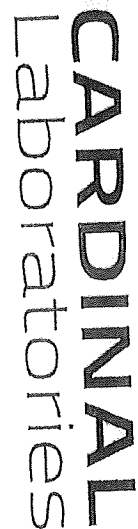
ANALYSIS REQUEST

| | | |
|----------------------------------|-------------|----------------------|
| Company Name: Talon/LPE | | P.O. #: |
| Project Manager: Kimberly Wilson | | Company: Talon/LPE |
| Address: 408 W. Texas Ave. | | State: NM zip: 88210 |
| City: Artesia | | Address: |
| Phone #: 575-746-8768 | | City: |
| Fax #: 575-746-8905 | | State: |
| Project #: 700794.213.01 | | Zip: |
| Project Name: Sheleopard 20 #1 | | Phone #: |
| Project Location: Eddy City | | Fax #: |
| Sample Name: Kim Wilson | | |
| FOR LAB USE ONLY | | |
| Lab I.D. | Sample I.D. | (G)RAB OR (C)OMP. |
| 4700415 | S-1 O1 | # CONTAINERS |
| 1 | 1' | GROUNDWATER |
| 2 | 2' | WASTEWATER |
| 3 | 3' | SOIL |
| 4 | 4' | OIL |
| 5 | 5' | SLUDGE |
| 6 | 6' | OTHER: |
| 7 | 7' | ACID/BASE: |
| 8 | 8-2 O1 | ICE / COOL |
| 9 | 9.5' | OTHER: |
| 10 | 10' | |
| | | MATRIX |
| | | PRESERV |
| | | SAMPLING |
| | | DATE |
| | | TIME |
| | | 10/17 |
| | | 10:15 |
| | | 10:20 |
| | | 10:25 |
| | | 10:30 |
| | | 10:37 |
| | | 10:45 |
| | | 10:47 |
| | | 10:50 |
| | | 10:55 |
| | | Chlorides |
| | | TPH |
| | | BTEX |

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Relinquished By: Kim Wilson
Date: 9/17/17
Time: 8:00
Received By: Kewei Lopez
Date: 9-17-17
Time: 9:30
Sample Condition: Cool Intact Yes ☒ No ☐
Delivered By: (Circle One) UPS ☒ Bus ☐ Other: ☐
Sampler - UPS - Bus - Other: ☒ ☐ ☐
CHECKED BY: (Initials) TS
REMARKS: RUSH

* Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 2 of 2

[illegible]