SITE INFORMATION **Report Type: Closure Report** 1RP-5023 **General Site Information:** Site: Angell B #2 Marathon Oil Company Company: Section, Township and Range Unit B Sec. 11 T 17S R 36E API No. 30-025-39076 Lease Number: County: Lea County GPS: 32.8559071° N 103.3214257º W Surface Owner: Fee Mineral Owner: State From the intersection of HWY 18 and Stiles Road, travel west on Stiles Rd for 2.4 mi, turn south Directions: onto lease road 0.15 mi, turn west onto lease road for 0.35 mile to location. Release Data: Date Released: 4/9/2018 Type Release: Oil Source of Contamination: Oil Tank Fluid Released: 11 bbls Fluids Recovered: <1 bbl **Official Communication:** Name: Callie Karrigan Clair Gonzales Marathon Oil Company: Tetra Tech Address: 5555 San Felipe Street 4000 N. Big Spring Ste Ste 401 City: Houston, TX 77056 Midland, Texas Phone number: (575) 297-0956 (432) 687-8110 Fax: Email: cnkarrigan@marrathonoil.com Clair.Gonzales@tetratech.com

Ranking Criteria Depth to Groundwater: Ranking Score Site Data <50 ft 20 48' 50-99 ft 10 >100 ft. 0 WellHead Protection: Ranking Score Site Data Water Source <1,000 ft., Private <200 ft. 20 Water Source >1,000 ft., Private >200 ft. 0 0 Surface Body of Water: Ranking Score Site Data <200 ft. 20 200 ft - 1,000 ft. 10 >1,000 ft. 0 0 Total Ranking Score: 20 Acceptable Soil RRAL (mg/kg) Total BTEX Benzene TPH 10 50 100



July 3, 2018

NMOCD approves 1RP-5023 for closure.

Ms. Olivia Yu Environmental Engineer Specialist Oil Conservation Division, District 1 1625 North French Drive Hobbs, New Mexico 88240

Re: Closure Report for the Marathon Oil, Angell B #2, Unit B, Section 11, Township 17 South, Range 36 East, Lea County, New Mexico. 1RP-5023.

Ms. Yu:

Tetra Tech, Inc. (Tetra Tech) was contacted by Marathon Oil (Marathon) to remediate a spill from Angell B #2, Unit B, Section 11, Township 17 South, Range 36 East, Lea County, New Mex (site). The spill site coordinates are N 32.8559071°, W 103.3214257°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on April 9, 2018, and released approximately eleven (11) barrels of oil from an oil tank. Less than one barrel of oil was recovered. The release occurred around the base of the tank and impacted an area measuring approximately 20' x 30'. The initial C-141 form is included in Appendix A.

Groundwater

No water wells were listed in Section 11 on the New Mexico Office of the State Engineer's (NMOSE) database, the USGS National Water Information System, or the Geology and Ground-Water Conditions in Southern Lea County, New Mexico (Report 6). The nearest well is listed in Section 12 on the NMOSE database, approximately 0.9 miles southwest of the site, with a reported depth to groundwater of 48 feet below surface. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is less than 50 feet below surface. The groundwater data is included in Appendix B.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene,



ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 100 mg/kg.

Soil Assessment and Analytical Results

On May 15, 2018, Tetra Tech personnel were onsite to evaluate and sample the release area. A total of three (3) auger holes (AH-1, AH-2, and AH-3) were installed in the release area around the oil tank to total depths of 0-1' below surface. Deeper samples were not collected due to a dense formation in the area. The samples were submitted to the laboratory for analysis of TPH by EPA method 8015 extended, BTEX by EPA method 8021B, and chlorides by EPA method 300.0. Copies of the laboratory results and chain-of-custody documentation are included in Appendix C. The laboratory results are summarized in Table 1. The auger hole locations are shown in Figure 3.

Referring to Table 1, all of the samples collected showed elevated TPH concentrations of 18,000 mg/kg (AH-1), 20,100 mg/kg (AH-2), and 23,600 mg/kg (AH-3). None of the samples collected showed benzene concentrations above 10 mg/kg. However, the area of auger hole (AH-2) showed a total BTEX concentration above the RRAL of 90.9 mg/kg. The areas of auger holes (AH-1 and AH-3) did not show total BTEX concentrations above the RRALs. The areas of auger holes (AH-1, AH-2, and AH-3) showed chloride concentrations of 2,860 mg/kg, 8,260 mg/kg, and 565 mg/kg, respectively. The hydrocarbon and chloride impact was not vertically defined in all areas.

Remediation Activities

After the sampling event, the failed oil tank was removed for replacement. Remediation activities were scheduled prior to the new tank installation to ensure access for proper removal of the impacted soils. Tetra Tech was onsite on June 27, 2018, to supervise the excavation of the release area prior to the new tank installment.

The release area was excavated to 2.0' below surface. One bottom hole (Bottom Hole #1) and four sidewall samples (North Sidewall, South Sidewall, West Sidewall, and East Sidewall) were collected to ensure proper removal of the impacted soils. The samples were submitted to the laboratory for analysis of TPH by EPA method 8015 extended, BTEX by EPA method 8021B, and chlorides by EPA method 300.0. Copies of the laboratory results and chain-of-custody documentation are included in Appendix C. The laboratory results are summarized in Table 1. The confirmation sample locations are shown in Figure 4.

Referring to Table 1, all of the confirmation samples collected showed TPH, benzene, and total BTEX concentrations below the laboratory reporting limits. Additionally, the chloride concentrations detected were below the 600 mg/kg threshold. Once the excavation was completed, the area was backfilled with clean material to surface grade, and the excavated material was hauled for proper disposal.



Conclusions and Recommendations

Based on the soil assessment and remediation work performed at the site, Marathon requests closure of this spill. The final C-141 is enclosed in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities for this site, please call at (432) 682-4559.

Respectfully submitted, TETRA TECH

Clair Clongalos

Clair Gonzales, Project Manager

cc: Callie Karrigan - Marathon

Figures



Mapped By: Isabel Marmolejo



Date Saved: 7/2/2018 1:27:31 PM User: misti.morgan Path: H:\GIS\212C-MD-01214 Marathon Angell B #2\212C-MD-01214 Topo Map Fig. 2.mxc





Drawn By: MISTI MORGAN

Tables

Table 1 Marathon Angell B #2 Lea County, New Mexico

| | Sample | Sample | BEB | Soil | Status | | TPH (| mg/kg) | | Benzene | Toluene | Ethlybenzene | Xylene | Total BTEX | Chloride |
|----------------|-----------|------------|----------------------|---------|---------|-------|--------|--------|--------|----------|----------|--------------|----------|------------|----------|
| Sample ID | Date | Depth (ft) | Sample Depth (ft) | In-Situ | Removed | GRO | DRO | ORO | Total | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) |
| AH-1 | 5/15/2018 | 0-1 | - | | Х | 1,430 | 16,100 | 422 | 18,000 | <0.0992 | 5.19 | 19.8 | 20.8 | 45.8 | 2,860 |
| AH-2 | 5/15/2018 | 0-1 | - | | Х | 2,480 | 17,200 | 372 | 20,100 | <0.200 | 8.33 | 39.8 | 42.8 | 90.9 | 8,260 |
| AH-3 | 5/15/2018 | 0-1 | - | | Х | 592 | 22,400 | 566 | 23,600 | 0.0796 | 2.40 | 6.36 | 6.68 | 15.5 | 565 |
| Bottom Hole #1 | 6/27/2018 | 0-0.5 | 2.0 | Х | | <15.0 | <15.0 | <15.0 | <15.0 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | 571 |
| North Sidewall | 6/27/2018 | 0-1 | - | Х | | <15.0 | <15.0 | <15.0 | <15.0 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | <0.00202 | 15.8 |
| South Sidewall | 6/27/2018 | 0-1 | - | Х | | <15.0 | <15.0 | <15.0 | <15.0 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | <0.00201 | 34.5 |
| West Sidewall | 6/27/2018 | 0-1 | - | Х | | <15.0 | <15.0 | <15.0 | <15.0 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | <0.00200 | 35.6 |
| East Sidewall | 6/27/2018 | 0-1 | - | Х | | <15.0 | <15.0 | <15.0 | <15.0 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | <0.00199 | 278 |



Below Excavation Bottom

Excavated & Removed

Photos

Marathon Oil Permian, LLC. Angell B #2 Lea County, New Mexico



View North - Release Area



View North – Release Area

Marathon Oil Permian, LLC. Angell B #2 Lea County, New Mexico



View East – Release Area



View South - Excavated Area

Marathon Oil Permian, LLC. Angell B #2 Lea County, New Mexico



View East – Excavated Area

Appendix A

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

| | OPERATOR | Initial Report | | Final Report |
|--|-----------------------------------|-------------------------|-----|--------------|
| Name of Company Marathon Oil Permian LLC | Contact Callie Karrigan | | | |
| Address 5555 San Felipe Street, Houston, Texas 77056 | Telephone No. 405-202-1028 (c | ell) 575-297-0956 (offi | ce) | |
| Facility Name: Angell B No. 2 | Facility Type Oil and gas produce | ction facilities | | |
| | | | | |

| Surface: Owner: state | Mineral: Owner: state | API No. : 30-025-39076 |
|-----------------------|-----------------------|------------------------|

LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|-------------|---------|----------|-------|---------------|------------------|---------------|----------------|--------|
| В | 11 | 17S | 36 | 330 | Ν | 1650 | E | Lea |

Latitude 32.8559071 Longitude -103.3214257

NATURE OF RELEASE

| Type of Release: oil | | Volume of Release: 11 bbls | Volume Re | ecovered: <1 bbls |
|---------------------------------------|---|--|------------------|----------------------------------|
| Source of Release: oil tank | | Date and Hour of Occurrence | Date and H | lour of Discovery |
| | | unknown | 04/09/2018 | 3 4:00 pm |
| Was Immediate Notice Given? | | If YES, To Whom? | | |
| | Yes 🗌 No 🗌 Not Required | Olivia Yu and Ryan Mann | | |
| By Whom? Callie Karrigan | | Date and Hour 04/10/2018 3:34 pm | 1 | |
| Was a Watercourse Reached? | | If YES, Volume Impacting the Wat | tercourse. | |
| | 🗌 Yes 🖾 No | | | |
| If a Watercourse was Impacted, D | escribe Fully.* | | | |
| Not applicable. | | | | |
| | | | | |
| Describe Cause of Problem and R | emedial Action Taken.* | | | |
| Operator was onsite conducting d | aily rounds and observed oil pooling arou | and the base of the oil tank. Operator | immediately | dispatched a hauling company |
| to pull remaining contents of tank | . Approximately 11 barrels of oil was rele | eased and verified by gauge sheets. T | The tank is cur | rrently isolated. |
| | | | | |
| Describe Area Affected and Clear | up Action Taken.* | | | |
| The pooling and staining is around | d the base of the tank in a $4x8$ area with a | an additional 1.5x3 area. The tank em | ptied and iso | lated. Tetratech will assess the |
| spill and develop a clean-up plan | to be submitted to the NMOCD for appro- | oval. | | |
| | | | | |
| I hereby certify that the information | on given above is true and complete to the | e best of my knowledge and understa | and that nursu | ant to NMOCD rules and |
| regulations all operators are requi | red to report and/or file certain release no | otifications and perform corrective ac | tions for relea | ases which may endanger |
| public health or the environment. | The acceptance of a C-141 report by the | NMOCD marked as "Final Report" | does not relie | ve the operator of liability |
| should their operations have failed | to adequately investigate and remediate | contamination that pose a threat to g | ground water, | surface water, human health |
| or the environment. In addition, I | MOCD acceptance of a C-141 report do | bes not relieve the operator of response | sibility for con | mpliance with any other |
| federal, state, or local laws and/or | regulations. | | | |
| - 77 / / | | OIL CONSERV | VATION I | DIVISION |
| Callie Karrigan | | | | |
| Signature: | | | | |
| Drinted Names Callie Karrison | A | Approved by Environmental Specialis | st: | |
| Printed Name: Came Karrigan | | | | |
| Title: HES Professional | A | Approval Date: | Expiration D | ate: |
| | | | • | |
| E-mail Address: cnkarrigan@mar | athonoil.com C | Conditions of Approval: | | |
| D / 04/17/0010 | | | | Attached |
| Date: $04/17/2018$ | 207.0055 (| | | |
| Phone: 405-02-1028(cell) 5/5- | 297-0950 (Office) | | | |

* Attach Additional Sheets If Necessary



State of New Mexico Energy Minerals and Natural Resources

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

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

| | OPERATOR | Initial Report | Final Report |
|--|-----------------------------------|----------------|--------------|
| Name of Company Marathon Oil Permian LLC. | Contact Callie Karrigan | | |
| Address 5555 San Felipe St., Houston, TX 77056 | Telephone No. (575) 297-0956 | | |
| Facility Name Angell B #2 | Facility Type Production Facility | y | |
| | | | |

| Surface Owner: Fee | Mineral Owner State | API No. 30-025-39076 |
|--------------------|---------------------|----------------------|

LOCATION OF RELEASE

| Unit Letter Section | 1 Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|---------------------|------------|-------|---------------|------------------|---------------|----------------|--------|
| B 11 | 17S | 36E | 330 | Ν | 1650 | E | Lea |

Latitude N 32.8559071° Longitude W 103.3214257°

NATURE OF RELEASE

| Type of Release: Oil | Volume of Release 11 bbls | Volume Recovered <1 bbls | | | | | |
|---|-----------------------------------|----------------------------|--|--|--|--|--|
| Source of Release: Oil Tank | Date and Hour of Occurrence | Date and Hour of Discovery | | | | | |
| | Unknown | 04/09/2018 4:00 pm | | | | | |
| Was Immediate Notice Given? | If YES, To Whom? | | | | | | |
| 🛛 Yes 🗌 No 🗌 Not Required | Olivia Yu, NMOCD and Ryan Ma | ann SLO | | | | | |
| By Whom? Callie Karrigan | Date and Hour 04/10/2018 3:34 pm | n | | | | | |
| Was a Watercourse Reached? | If YES, Volume Impacting the Wate | ercourse. | | | | | |
| 🗌 Yes 🖾 No | N/A | | | | | | |
| If a Watercourse was Impacted, Describe Fully.* N/A | APPROVED | | | | | | |
| | By Olivia Yu at 8:58 | 3 am, Sep 13, 2018 | | | | | |
| Describe Cause of Problem and Remedial Action Taken.* | | | | | | | |
| An oil tank failed, resulting in the release of 11 bbls of oil. The remaining contents in the tank were removed to prevent any further impact to the surrounding soils. | | | | | | | |
| Describe Area Affected and Cleanup Action Taken.* | | | | | | | |

Tetra Tech inspected site and collected samples to define spills extent. Soil that exceeded RRAL was removed and hauled away for proper disposal. Site was then brought up to surface grade with clean backfill material. Tetra Tech prepared closure report and submitted to NMOCD for review.

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.

| | OIL CONSERVATION I | DIVISION |
|--|---------------------------------------|------------------|
| Signature: | dry | |
| Printed Name: Clair Gonzales | Approved by District Supervisor: | |
| Title: Project Manager | Approval Date: 9/13/2018 Expiration D | Date: XX/XX/XXXX |
| E-mail Address: Clair.Gonzales@tetratech.com | Conditions of Approval: | Attached |
| Date: Phone: (432) 682-4559 | | |

* Attach Additional Sheets If Necessary



Appendix B

Water Well Data Average Depth to Groundwater (ft) Angell B #2 Lea County, New Mexico

| | 16 So | outh | 35 | East | |
|----|-------|------|----|------|----|
| 6 | 5 | 4 | 3 | 2 | 1 |
| 7 | 8 | 9 | 10 | 11 | 12 |
| 18 | 17 | 16 | 15 | 14 | 13 |
| 19 | 20 | 21 | 22 | 23 | 24 |
| 30 | 29 | 28 | 27 | 26 | 25 |
| 31 | 32 | 33 | 34 | 35 | 36 |

| | 17 \$ | South | | 35 East | t |
|-----|-------|-------|----|---------|----|
| 6 | 5 | 4 | 3 | 2 | 1 |
| | | | | | 50 |
| 7 | 8 | 9 | 10 | 11 | 12 |
| 18 | 17 | 16 | 15 | 14 | 13 |
| 40 | 55 | | | | |
| 19 | 20 | 21 | 22 | 23 | 24 |
| 85 | 60 | | | | |
| 30 | 29 | 28 | 27 | 26 | 25 |
| 83 | | 70 | | | |
| 31 | 32 | 33 | 34 | 35 | 36 |
| 106 | | 63 | 56 | 40 | 50 |

| | | 18 Sc | outh | 35 | East | |
|----|-----|-------------------|-------------|-------------------|--------------|-----|
| 6 | 89 | 5 <mark>69</mark> | 4 SITE | 3 <mark>62</mark> | 2 55 | 1 |
| | Buc | keye | 58 | | 51 | |
| 7 | | 8 | 9 72 | 10 | 11 59 | 12 |
| 85 | | | | 49 | 48 | |
| 18 | | 17 90 | 16 | 15 | 14 | 13 |
| 90 | | 124 | 75 | | 90 | 135 |
| 19 | 74 | 20 85 | 21 | 22 | 23 | 24 |
| 70 | | 50 | | 70 | | |
| 30 | | 29 | 28 | 27 | 26 | 25 |
| | | 95 | | 68 | 60 | |
| 31 | | 32 | 33 | 34 | 35 | 36 |
| | | 58 | 80 | | 58 | |

| | 16 Sc | outh | 36 | | |
|----|-----------------|--------|--------------------|--------------------|----|
| 6 | 5 | 4 | 3 | 2 | 1 |
| 7 | ⁸ Lo | Angtor | 1 ¹⁰ | 11 | 12 |
| 18 | 17 | 16 | 15 | 14 | 13 |
| 54 | | | | | |
| 19 | 20 | 21 | 22 <mark>63</mark> | 23 <mark>70</mark> | 24 |
| | 70 | 70 | 63 | 61 | 55 |
| 30 | 29 | 28 | 27 | 26 | 25 |
| 82 | | | | 63 | 68 |
| 31 | 32 | 33 | 34 | 35 | 36 |
| 74 | 65 | | | 41 | 60 |

| | 17 S | South | 36 | | |
|----|------|--------------|--------------|-------------------|-------------------|
| 6 | 5 | 4 | 3 | 2 <mark>60</mark> | 1 <mark>83</mark> |
| 50 | 120 | 65 | 60 | 69 | 74 |
| 7 | 8 | 9 | 10 43 | <mark>11</mark> | 12 44 |
| | | | 43 | Site | 46 |
| 18 | 17 | 16 | 15 | 14 | 13 |
| | | | | 48 | |
| 19 | 20 | 21 | 22 | 23 | 24 |
| 30 | 29 | 28 4(| 27 | 26 | 25 |
| 31 | 32 | 33 | 34 | 35 | 36 |

| | | 18 | So | 36 | Ea | st | | | | | |
|----|----|----|----|----|----|----|--|----|----|----|----|
| 6 | | 5 | 35 | 4 | 65 | 3 | | 2 | 60 | 1 | 50 |
| 45 | | | | | | | | | | | |
| 7 | 65 | 8 | | 9 | 85 | 10 | | 11 | | 12 | |
| | | | | | | | | 38 | | 40 | |
| 18 | | 17 | | 16 | | 15 | | 14 | | 13 | |
| 25 | | | | | | 53 | | 55 | | | |
| 19 | | 20 | | 21 | | 22 | | 23 | | 24 | |
| | | 59 | | 58 | | 60 | | 39 | | 28 | |
| 30 | | 29 | | 28 | | 27 | | 26 | | 25 | |
| | | 55 | | 45 | | 55 | | 55 | | 62 | |
| 31 | | 32 | | 33 | | 34 | | 35 | | 36 | |
| | | | | | | 70 | | | | | |

| | 16 Se | outh | 37 | | |
|--------------------------|--------------------|--------------------|--------------------|-----------------------|-----------------|
| 6 | 5 | 4 | 3 | 2 | 1 |
| 7 66 | 8 | 9 | 10 | 11 <mark>80</mark> | 12 |
| 18 | 17 | 16 | 15 | 14 | 13 |
| 19 <mark>55</mark> 82 | 20 44 | 21 50 | 22 | 23 | 24 |
| 30 <mark>52</mark> | 29 44 | 28 <mark>34</mark> | 27 <mark>73</mark> | 26 | 25 70 |
| 31 Site 53 | 32 <mark>38</mark> | 33 60 | 34 60 | 35 | 36 |

| | 17 Sc | outh | 37 | | |
|-------------|-------------------|-------------|--------------------|----|----|
| 6 75 | 5 <mark>57</mark> | 4 40 | 3 <mark>60</mark> | 2 | 1 |
| | 62 | | 55 | 67 | 51 |
| 7 | 8 | 9 | 10 <mark>70</mark> | 11 | 12 |
| 65 | 50 | 42 | 64 | | |
| 18 | 17 | 16 | 15 | 14 | 13 |
| 19 | 20 | 21 | 22 | 23 | 24 |
| 30 | 29 | 28 | 27 | 26 | 25 |
| 31 | 32 | 33 | 34 | 35 | 36 |

| | 18 Sc | outh | 37 | East | |
|----|-------|------|----|------|----|
| 6 | 5 | 4 | 3 | 2 | 1 |
| 7 | 8 | 9 | 10 | 11 | 12 |
| 18 | 17 | 16 | 15 | 14 | 13 |
| 19 | 20 | 21 | 22 | 23 | 24 |
| 30 | 29 | 28 | 27 | 26 | 25 |
| 31 | 32 | 33 | 34 | 35 | 36 |

- 88 New Mexico State Engineers Well Reports
- 105 USGS Well Reports
- 90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6) Geology and Groundwater Resources of Eddy County, NM (Report 3)
- 34 NMOCD Groundwater Data
- 123 Tetra Tech installed temporary wells and field water level
- 143 NMOCD Groundwater map well location



(A CLW##### in the

New Mexico Office of the State Engineer Water Column/Average Depth to Water

| (A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.) | (R=POD replaced, O=orphan C=the fil | has beer ned, e is | (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in meters) (In feet) | | | | | | | | | | | | | |
|---|--|--------------------------|--|----------------|---------|---------------|---------------|-------------------|-------------------|--------------------|-----------------|--------------------|------------|--------|--|--|
| | closed) | POD | (գւ | iarte | ers a | are | small | est to I | argest) | (NAD8 | 3 UTM in meters | 5) | (III leet) | | | |
| | | Sub- | | Q | Q | Q | | | | | | | | Water | | |
| POD Number <u>L 00373</u> | Code | basin L | County LE | 64 4 | 16 4 | 4 4 | Sec 18 | Tws 17S | Rng 36E | X 651019 | Y 3633420* 🥌 | DepthWellDe 120 | pthWater | Column | | |
| <u>L 00374</u> | | L | LE | 3 | 1 | 1 | 35 | 17S | 36E | 656116 | 3629884* 🧉 | 120 | | | | |
| <u>L 00375</u> | | L | LE | 1 | 4 | 4 | 17 | 17S | 36E | 652432 | 3633650* 🧉 | 100 | | | | |
| <u>L 00376</u> | | L | LE | 1 | 3 | 3 | 34 | 17S | 36E | 654527 | 3628843* 🌍 | 90 | | | | |
| <u>L 00377</u> | | L | LE | 2 | 1 | 4 | 27 | 17S | 36E | 655498 | 3630879* 🌍 | 100 | | | | |
| <u>L 00378</u> | | L | LE | 1 | 3 | 1 | 27 | 17S | 36E | 654487 | 3631269* 🌍 | 100 | | | | |
| <u>L 00379</u> | | L | LE | 1 | 2 | 1 | 12 | 17S | 36E | 658031 | 3636570* 🌍 | 110 | | | | |
| <u>L 00380</u> | | L | LE | 1 | 4 | 1 | 10 | 17S | 36E | 654811 | 3636117 🌍 | 90 | | | | |
| <u>L 00380</u> | R | L | LE | 1 | 4 | 1 | 10 | 17S | 36E | 654811 | 3636117 🌍 | 90 | | | | |
| <u>L 00381</u> | | L | LE | 1 | 4 | 1 | 08 | 17S | 36E | 651586 | 3636052* 🧉 | 110 | | | | |
| <u>L 01227 POD1</u> | | L | LE | | 1 | 3 | 28 | 17S | 36E | 652985 | 3630739* 🌍 | 94 | 40 | 54 | | |
| <u>L 01584 POD1</u> | | L | LE | | 2 | 1 | 01 | 17S | 36E | 658107 | 3638083* 🌍 | 110 | 48 | 62 | | |
| <u>L 01629</u> | R | L | LE | | | 4 | 33 | 17S | 36E | 654023 | 3628931* 🌍 | 125 | 33 | 92 | | |
| L 01629 POD2 | | L | LE | 1 | 1 | 4 | 33 | 17S | 36E | 652858 | 3628151 🧉 | 100 | | | | |
| <u>L 01629 S</u> | | L | LE | 4 | 3 | 3 | 33 | 17S | 36E | 653116 | 3628615* 🌍 | 100 | | | | |
| <u>L 01629 82</u> | | L | LE | 3 | 2 | 3 | 33 | 17S | 36E | 653312 | 3629027* 🌍 | 120 | 54 | 66 | | |
| <u>L 01630</u> | R | L | LE | 1 | 1 | 3 | 33 | 17S | 36E | 652909 | 3629220* 🧉 | 120 | 80 | 40 | | |
| <u>L 01713</u> | | L | LE | | 1 | 1 | 01 | 17S | 36E | 657703 | 3638076* 🌍 | 150 | 72 | 78 | | |
| <u>L 01716</u> | | L | LE | 1 | 1 | 4 | 02 | 17S | 36E | 656808 | 3637357* 🧉 | 145 | 50 | 95 | | |
| <u>L 01723</u> | | L | LE | 1 | 1 | 3 | 05 | 17S | 36E | 651164 | 3637252* 🧉 | 162 | 120 | 42 | | |
| <u>L 01723 S</u> | | L | LE | 4 | 2 | 3 | 05 | 17S | 36E | 651767 | 3637060* 🌍 | 162 | 86 | 76 | | |
| <u>L 01723 82</u> | | L | LE | 1 | 2 | 3 | 05 | 17S | 36E | 651567 | 3637260* 🧉 | 140 | 120 | 20 | | |
| <u>L 01723 S3</u> | | L | LE | 2 | 1 | 4 | 05 | 17S | 36E | 652170 | 3637268* 🍯 | 140 | 118 | 22 | | |
| <u>L 01724</u> | | L | LE | | | 2 | 03 | 17S | 36E | 655492 | 3637835* 🌍 | 146 | 80 | 66 | | |
| <u>L 01724 S</u> | | L | LE | 3 | 4 | 2 | 03 | 17S | 36E | 655593 | 3637539* 🍯 | 135 | 85 | 50 | | |
| <u>L 01724 S2</u> | | L | LE | | | 1 | 02 | 17S | 36E | 656298 | 3637848* 🤤 | 140 | 128 | 12 | | |
| <u>L 01724 S3</u> | | L | LE | 2 | 1 | 3 | 02 | 17S | 36E | 656201 | 3637343* 🌍 | 140 | 125 | 15 | | |
| <u>L 01919</u> | R | L | LE | 1 | 1 | 2 | 29 | 17S | 36E | 652063 | 3631626* 🤤 | 135 | 31 | 104 | | |
| <u>L 01919 S</u> | | L | LE | 2 | 2 | 2 | 29 | 17S | 36E | 652667 | 3631634* 🍯 | 225 | 110 | 115 | | |
| <u>L 02119</u> | | L | LE | 1 | 4 | 3 | 01 | 17S | 36E | 658024 | 3636973* 🌍 | 130 | | | | |
| <u>L 02199</u> | | L | LE | | 4 | 4 | 14 | 17S | 36E | 657369 | 3633640* 🍯 | 110 | 45 | 65 | | |
| <u>L 02205</u> | | L | LE | | 2 | 2 | 12 | 17S | 36E | 658939 | 3636485* 🍯 | 110 | 45 | 65 | | |
| <u>L 02331</u> | | L | LE | | 4 | 4 | 01 | 17S | 36E | 658933 | 3636888* 🥶 | 105 | 48 | 57 | | |

http://nmwrrs.ose.state.nm.us/nmwrrs/ReportProxy?queryData=%7B%22report%22%3A... 6/29/2018

| <u>L 02413</u> | L | LE | | 4 | 4 | 02 | 17S | 36E | 657318 | 3636861* 🌍 | 90 | 90 | 0 |
|---------------------|---|----|---|-----|---|----|-----|-----|--------|------------|-----|-----|-----|
| <u>L 02426</u> | L | LE | | 4 | 4 | 02 | 17S | 36E | 657318 | 3636861* 🌍 | 115 | 48 | 67 |
| <u>L 02480</u> | L | LE | | 1 | 2 | 02 | 17S | 36E | 656897 | 3638063* 🌍 | 130 | 58 | 72 |
| <u>L 02481</u> | L | LE | 4 | 4 4 | 2 | 02 | 17S | 36E | 657405 | 3637566* 🌍 | 150 | 76 | 74 |
| <u>L 02508</u> | L | LE | 2 | 2 2 | 2 | 01 | 17S | 36E | 659013 | 3638194* 🌍 | 120 | 40 | 80 |
| <u>L 02566</u> | L | LE | 3 | 33 | 3 | 25 | 17S | 36E | 657723 | 3630314* 🌍 | 110 | 40 | 70 |
| <u>L 02984</u> | L | LE | | 1 | 1 | 10 | 17S | 36E | 654502 | 3636414* 🌍 | 125 | 45 | 80 |
| <u>L 03086</u> | L | LE | | 1 | 1 | 25 | 17S | 36E | 657804 | 3631628* 🌍 | 122 | 60 | 62 |
| <u>L 03194</u> | L | LE | | 4 | 3 | 25 | 17S | 36E | 658227 | 3630422* 🌍 | 120 | 40 | 80 |
| <u>L 03577</u> | L | LE | | | | 26 | 17S | 36E | 656813 | 3630992* 🌍 | 160 | 60 | 100 |
| <u>L 03676</u> | L | LE | | 4 | 2 | 02 | 17S | 36E | 657306 | 3637667* 🌍 | 75 | 68 | 7 |
| <u>L 03882</u> | L | LE | | 3 | 1 | 14 | 17S | 36E | 656147 | 3634430* 🌍 | 120 | 57 | 63 |
| <u>L 04171</u> | L | LE | | 4 | 1 | 18 | 17S | 36E | 650102 | 3634311* 🌍 | 128 | 128 | 0 |
| <u>L 04549</u> | L | LE | | 1 | 2 | 20 | 17S | 36E | 652137 | 3633140* 🌍 | 121 | 48 | 73 |
| <u>L 04570</u> | L | LE | 1 | 1 3 | 2 | 29 | 17S | 36E | 652070 | 3631223* 🌍 | 106 | 85 | 21 |
| <u>L 04570 POD2</u> | L | LE | 1 | 1 3 | 2 | 29 | 17S | 36E | 652070 | 3631223* 🌍 | 210 | 58 | 152 |
| <u>L 04599</u> | L | LE | | 2 | 1 | 20 | 17S | 36E | 651733 | 3633133* 🌍 | 128 | 38 | 90 |
| <u>L 04601</u> | L | LE | | 1 | 1 | 30 | 17S | 36E | 649772 | 3631482* 🌍 | 125 | 50 | 75 |
| <u>L 04602</u> | L | LE | 2 | 24 | 3 | 17 | 17S | 36E | 651825 | 3633635* 🌍 | 115 | 45 | 70 |
| <u>L 04623</u> | L | LE | 1 | 1 1 | 1 | 31 | 17S | 36E | 649697 | 3629969* 🌍 | 135 | 75 | 60 |
| <u>L 04640</u> | L | LE | | 4 | 4 | 31 | 17S | 36E | 651004 | 3628681* 🌍 | 90 | 50 | 40 |
| <u>L 04722</u> | L | LE | 3 | 33 | 3 | 32 | 17S | 36E | 651306 | 3628587* 🌍 | 128 | 65 | 63 |
| <u>L 04876</u> | L | LE | | 4 | 3 | 29 | 17S | 36E | 651782 | 3630308* 🌍 | 130 | 75 | 55 |
| <u>L 04936</u> | L | LE | | 3 | 1 | 21 | 17S | 36E | 652950 | 3632752* 🌍 | 125 | 55 | 70 |
| <u>L 04988</u> | L | LE | | 1 | 2 | 01 | 17S | 36E | 658510 | 3638089* 🌍 | 195 | 55 | 140 |
| <u>L 04988 S</u> | L | LE | 3 | 3 2 | 1 | 01 | 17S | 36E | 658006 | 3637982* 🌍 | 182 | 55 | 127 |
| <u>L 05161</u> | L | LE | | 2 | 4 | 14 | 17S | 36E | 657363 | 3634043* 🌍 | 105 | 36 | 69 |
| <u>L 05179</u> | L | LE | | | | 16 | 17S | 36E | 653539 | 3634162* 🌍 | 120 | 65 | 55 |
| <u>L 05181</u> | L | LE | | 4 | 1 | 20 | 17S | 36E | 651740 | 3632729* 🌍 | 125 | 75 | 50 |
| <u>L 05248</u> | L | LE | | 1 | 2 | 32 | 17S | 36E | 652192 | 3629914* 🌍 | 118 | 85 | 33 |
| <u>L 05281</u> | L | LE | | 2 | 4 | 24 | 17S | 36E | 659002 | 3632453* 🌍 | 110 | 52 | 58 |
| <u>L 05301</u> | L | LE | | 1 | 4 | 31 | 17S | 36E | 650594 | 3629077* 🌍 | 101 | 48 | 53 |
| <u>L 05361</u> | L | LE | | 3 | 3 | 20 | 17S | 36E | 651350 | 3631914* 🌍 | 123 | 90 | 33 |
| <u>L 05407</u> | L | LE | | 4 | 1 | 19 | 17S | 36E | 650128 | 3632699* 🌍 | 108 | 49 | 59 |
| <u>L 05413</u> | L | LE | | 3 | 3 | 12 | 17S | 36E | 657747 | 3635257* 🌍 | 100 | 48 | 52 |
| <u>L 05481</u> | L | LE | | | 2 | 04 | 17S | 36E | 653879 | 3637806* 🌍 | 140 | 115 | 25 |
| <u>L 05486</u> | L | LE | 2 | 2 3 | 1 | 01 | 17S | 36E | 657808 | 3637773* 🌍 | 225 | 62 | 163 |
| L 05486 POD2 | L | LE | 2 | 2 1 | 1 | 01 | 17S | 36E | 657802 | 3638175* 🌍 | 232 | 83 | 149 |
| <u>L 05616</u> | L | LE | | 2 | 3 | 04 | 17S | 36E | 653280 | 3637194* 🌍 | 130 | 65 | 65 |
| <u>L 05879</u> | L | LE | | 4 | 4 | 10 | 17S | 36E | 655731 | 3635227* 🌍 | 120 | 40 | 80 |
| <u>L 06077</u> | L | LE | | 3 | 3 | 15 | 17S | 36E | 654548 | 3633592* 🌍 | 101 | 40 | 61 |

| <u>L 06156</u> | | L | LE | | 2 | 2 | 21 | 17S | 36E | 654152 | 3633180* 🌍 | 115 | 60 | 55 | |
|---------------------|---|---|----|---|---|---|----|-----|-----|--------|--------------------|--------|---------|-----|--|
| <u>L 06395</u> | | L | LE | | 4 | 1 | 12 | 17S | 36E | 658138 | 3636069* 🌍 | 112 | 47 | 65 | |
| <u>L 07042</u> | | L | LE | 3 | 4 | 2 | 03 | 17S | 36E | 655593 | 3637539* 🌍 | 100 | 60 | 40 | |
| <u>L 07862</u> | | L | LE | | 4 | 3 | 20 | 17S | 36E | 651754 | 3631922* 🌍 | 100 | 58 | 42 | |
| <u>L 07907</u> | | L | LE | | 3 | 2 | 29 | 17S | 36E | 652171 | 3631124* 🌍 | 150 | 45 | 105 | |
| <u>L 08266</u> | | L | LE | 1 | 3 | 1 | 29 | 17S | 36E | 651264 | 3631206* 🌍 | 130 | 45 | 85 | |
| <u>L 09342</u> | | L | LE | 3 | 4 | 3 | 20 | 17S | 36E | 651653 | 3631821* 🌍 | 138 | 60 | 78 | |
| <u>L 09666</u> | | L | LE | | 2 | 3 | 13 | 17S | 36E | 658170 | 3634055* 🌍 | 150 | | | |
| <u>L 09892</u> | | L | LE | 3 | 1 | 3 | 06 | 17S | 36E | 649581 | 3637025* 🧉 | 135 | 50 | 85 | |
| <u>L 09952</u> | | L | LE | 3 | 3 | 2 | 16 | 17S | 36E | 653628 | 3634281* 🌍 | 150 | 45 | 105 | |
| <u>L 10633</u> | R | L | LE | | | 4 | 13 | 17S | 36E | 659026 | 3637389* 🌍 | 209 | 80 | 129 | |
| L 10633 POD4 | | L | LE | 1 | 4 | 4 | 01 | 17S | 36E | 658832 | 3636987* 🌍 | 209 | 80 | 129 | |
| L 10633 POD5 | | L | LE | 2 | 4 | 4 | 01 | 17S | 36E | 659032 | 3636987* 🌍 | 228 | 120 | 108 | |
| L 10633 POD6 | | L | LE | 3 | 4 | 4 | 01 | 17S | 36E | 658832 | 3636787* 🧉 | 196 | 80 | 116 | |
| <u>L 10633 S</u> | R | L | LE | | | 4 | 13 | 17S | 36E | 659026 | 3637189* 🌍 | 228 | 120 | 108 | |
| <u>L 10633 S2</u> | R | L | LE | | | 4 | 13 | 17S | 36E | 659032 | 3636987* 🌍 | 196 | 80 | 116 | |
| <u>L 10633 S3</u> | | L | LE | 4 | 4 | 4 | 01 | 17S | 36E | 659032 | 3636787* 🌍 | 188 | 80 | 108 | |
| <u>L 10633 S4</u> | | L | LE | 2 | 4 | 4 | 01 | 17S | 36E | 659032 | 3636987* 🌍 | 204 | 110 | 94 | |
| <u>L 11198</u> | | L | LE | 3 | 3 | 3 | 01 | 17S | 36E | 657620 | 3636766* 🌍 | 186 | | | |
| L 12562 POD11 | | L | LE | 2 | 4 | 2 | 01 | 17S | 36E | 658989 | 3637831 🧉 | 112 | 97 | 15 | |
| L 12562 POD9 | | L | LE | 1 | 4 | 4 | 25 | 17S | 36E | 658980 | 3630480 🧉 | 122 | 107 | 15 | |
| <u>L 12881 POD1</u> | | L | LE | 2 | 3 | 2 | 01 | 17S | 36E | 658291 | 3648926 🌍 | 130 | 100 | 30 | |
| <u>L 13272 POD1</u> | | L | LE | 2 | 2 | 3 | 03 | 17S | 36E | 674360 | 3637724 🌍 | 185 | | | |
| <u>L 14187 POD1</u> | | L | LE | 3 | 1 | 3 | 02 | 17S | 36E | 656130 | 3637225 🌍 | 78 | | | |
| <u>L 14187 POD2</u> | | L | LE | 3 | 1 | 3 | 02 | 17S | 36E | 656095 | 3637201 🌍 | 77 | | | |
| <u>L 14187 POD3</u> | | L | LE | 3 | 1 | 3 | 02 | 17S | 36E | 656141 | 3637232 🌍 | 80 | | | |
| L 14187 POD4 | | L | LE | 3 | 1 | 3 | 02 | 17S | 36E | 656103 | 3637219 🌍 | 80 | | | |
| <u>L 14207 POD1</u> | | L | LE | 3 | 3 | 2 | 01 | 17S | 36E | 658500 | 3637679 🌍 | 240 | 100 | 140 | |
| L 14207 POD2 | | L | LE | 2 | 4 | 1 | 01 | 17S | 36E | 658222 | 3637712 🌍 | 230 | 101 | 129 | |
| <u>L 14263 POD1</u> | | L | LE | 4 | 4 | 4 | 01 | 17S | 36E | 658944 | 3636867 🌍 | 226 | | | |
| <u>L 14263 POD2</u> | | L | LE | 4 | 4 | 4 | 01 | 17S | 36E | 658944 | 3636867 🌍 | 223 | | | |
| L 14263 POD3 | | L | LE | 4 | 4 | 4 | 01 | 17S | 36E | 658914 | 3638715 🌍 | 225 | | | |
| L 14263 POD4 | | L | LE | 4 | 4 | 4 | 01 | 17S | 36E | 658944 | 3636867 🧉 | 235 | | | |
| L 14263 POD6 | | L | LE | 4 | 4 | 4 | 01 | 17S | 36E | 658944 | 3636867 🌍 | 124 | | | |
| L 14263 POD7 | | L | LE | 3 | 4 | 4 | 01 | 17S | 36E | 658785 | 3636874 🌍 | 124 | | | |
| L 14453 POD1 | | L | LE | 4 | 1 | 1 | 26 | 17S | 36E | 656205 | 3631599 🧉 | 58 | 50 | 8 | |
| | | | | | | | | | | | Average Depth to V | Vater: | 69 fee | t | |
| | | | | | | | | | | | Minimum | Depth: | 31 feet | | |
| | | | | | | | | | | | Maximum | Depth: | 128 fee | t | |
| Record Count: 110 | | | | | | | | | | | | | | | |
| PLSS Search: | | | | | | | | | | | | | | | |

Township: 17S Range: 36E

*UTM location was derived from PLSS - see Help

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.

6/29/18 10:08 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

Appendix C

Analytical Report 586590

for Tetra Tech- Midland

Project Manager: Ike Tavarez

Marathon-Angell B #2

29-MAY-18

Collected By: Client





1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-18-25), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16) Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757) Xenco-Atlanta (LELAP Lab ID #04176) Xenco-Tampa: Florida (E87429) Xenco-Lakeland: Florida (E84098)



29-MAY-18



Project Manager: **Ike Tavarez Tetra Tech- Midland** 4000 N. Big Spring Suite 401 Midland, TX 79705

Reference: XENCO Report No(s): **586590 Marathon-Angell B #2** Project Address: Lea County, New Mexico

Ike Tavarez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 586590. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 586590 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Huns hoah

Kelsey Brooks Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies. A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



Sample Cross Reference 586590



Tetra Tech- Midland, Midland, TX

Marathon-Angell B #2

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|--------------|--------|----------------|--------------|---------------|
| AH #1 (0-1') | S | 05-15-18 00:00 | | 586590-001 |
| AH #2 (0-1') | S | 05-15-18 00:00 | | 586590-002 |
| AH #3 (0-1') | S | 05-15-18 00:00 | | 586590-003 |



CASE NARRATIVE

Client Name: Tetra Tech- Midland Project Name: Marathon-Angell B #2

Project ID: Work Order Number(s): 586590
 Report Date:
 29-MAY-18

 Date Received:
 05/18/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3051176 Inorganic Anions by EPA 300/300.1

Lab Sample ID 586649-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 586590-001, -002, -003. The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3051528 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Contact:

Project Location:

Ike Tavarez

Lea County, New Mexico

Certificate of Analysis Summary 586590

Tetra Tech- Midland, Midland, TX Project Name: Marathon-Angell B #2



Date Received in Lab:Fri May-18-18 01:30 pmReport Date:29-MAY-18Project Manager:Kelsey Brooks

| Lab Id: | 586590-0 | 001 | 586590-0 | 02 | 586590-0 | 003 | | | |
|------------|---|---|--|---|--|--|--|---|--|
| Field Id: | AH #1 (0 | -1') | AH #2 (0- | -1') | AH #3 (0-1') | | | | |
| Depth: | | | | | | | | | |
| Matrix: | SOIL | | SOIL | | SOIL | | | | |
| Sampled: | May-15-18 | 00:00 | May-15-18 (| 00:00 | May-15-18 | 00:00 | | | |
| Extracted: | May-25-18 | 17:00 | May-25-18 | 17:00 | May-25-18 | 17:00 | | | |
| Analyzed: | May-26-18 | 12:15 | May-26-18 | 11:58 | May-26-18 | 11:40 | | | |
| Units/RL: | mg/kg | RL | mg/kg | RL | mg/kg | RL | | | |
| | < 0.0992 | 0.0992 | < 0.200 | 0.200 | 0.0796 | 0.0399 | | | |
| | 5.19 | 0.0992 | 8.33 | 0.200 | 2.40 | 0.0399 | | | |
| | 19.8 | 0.0992 | 39.8 | 0.200 | 6.36 | 0.0399 | | | |
| | 12.7 | 0.198 | 29.0 | 0.401 | 4.30 | 0.0798 | | | |
| | 8.08 | 0.0992 | 13.8 | 0.200 | 2.38 | 0.0399 | | | |
| | 20.8 | 0.0992 | 42.8 | 0.200 | 6.68 | 0.0399 | | | |
| | 45.8 | 0.0992 | 90.9 | 0.200 | 15.5 | 0.0399 | | | |
| Extracted: | May-23-18 | 08:30 | May-23-18 (| 08:30 | May-23-18 | 08:30 | | | |
| Analyzed: | May-23-18 | 10:13 | May-23-18 | 10:19 | May-23-18 | 09:55 | | | |
| Units/RL: | mg/kg | RL | mg/kg | RL | mg/kg | RL | | | |
| | 2860 | 25.0 | 8260 | 99.4 | 565 | 4.99 | | | |
| Extracted: | May-18-18 | 14:00 | May-18-18 | 14:00 | May-18-18 | 14:00 | | | |
| Analyzed: | May-20-18 | 12:32 | May-20-18 | 13:03 | May-20-18 | 13:33 | | | |
| Units/RL: | mg/kg | RL | mg/kg | RL | mg/kg | RL | | | |
| | 1430 | 150 | 2480 | 150 | 592 | 150 | | | |
| | 16100 | 150 | 17200 | 150 | 22400 | 150 | | | |
| | 422 | 150 | 372 | 150 | 566 | 150 | | | |
| | 18000 | 150 | 20100 | 150 | 23600 | 150 | | | |
| | Lab Id: Field Id: Depth: Matrix: Sampled: Extracted: Analyzed: Units/RL: Extracted: Analyzed: Units/RL: Extracted: Analyzed: Units/RL: | Lab Id: 586590-0 Field Id: AH #1 (0) Depth: | Lab Id: 586590-001 Field Id: AH #1 (0-1') Depth: | Lab Id: 586590-001 586590-00 Field Id: AH #1 (0-1') AH #2 (0-1') Depth: | Lab Id: 586590-001 586590-002 Field Id: AH #1 (0-1') AH #2 (0-1') Depth: AH #1 (0-1') AH #2 (0-1') Matrix: SOIL SOIL Sampled: May-15-18 00:00 May-15-18 00:00 Extracted: May-25-18 17:00 May-25-18 17:00 Analyzed: May-26-18 12:15 May-26-18 11:58 Units/RL: mg/kg RL mg/kg RL <<0.0992 0.0992 <0.200 0.200 5.19 0.0992 8.33 0.200 12.7 0.198 29.0 0.401 8.08 0.0992 13.8 0.200 45.8 0.0992 13.8 0.200 45.8 0.0992 90.9 0.200 45.8 0.0992 90.9 0.200 Extracted: May-23-18 08:30 May-23-18 08:30 Analyzed: May-23-18 10:13 May-23-18 10:19 Units/RL: mg/kg RL 2860 25.0 8260 99 | Lab Id: 586590-001 586590-002 586590-002 Field Id: AH #1 (0-1') AH #2 (0-1') AH #3 (0 Depth: AH #2 (0-1') AH #3 (0 Matrix: SOIL SOIL SOIL SOIL Sampled: May-15-18 00:00 May-15-18 00:00 May-25-18 17:00 May-25-18 Extracted: May-25-18 17:00 May-25-18 11:58 May-26-18 Units/RL: mg/kg RL mg/kg RL mg/kg 0.0992 0.0992 <0.200 | Lab Id: 586590-001 586590-002 586590-003 Field Id: AH #1 (0-1') AH #2 (0-1') AH #3 (0-1') Depth: AH #1 (0-1') AH #2 (0-1') AH #3 (0-1') Matrix: SOIL SOIL SOIL Sampled: May-15-18 00:00 May-15-18 00:00 May-15-18 00:00 Extracted: May-25-18 17:00 May-25-18 17:00 May-25-18 17:00 Analyzed: May-26-18 12:15 May-26-18 11:58 May-26-18 11:40 Units/RL: mg/kg RL mg/kg RL <d><0.092 0.0992 <0.200 0.200 0.0796 0.0399 12.7 0.198 29.0 0.401 4.30 0.0798 8.08 0.0992 13.8 0.200 6.68 0.0399 20.8 0.0992 90.9 0.200 15.5 0.0399 45.8 0.0992 90.9 0.200 15.5 0.0399 45.8 0.0992 90.9 0.200 15.5 0.0399 Extra</d> | Lab Id: 586590-001 586590-002 586590-003 Field Id: AH #1 (0-1') AH #2 (0-1') AH #3 (0-1') Depth: AH #1 (0-1') AH #2 (0-1') AH #3 (0-1') Matrix: SOIL SOIL SOIL SOIL Sampled: May-15-18 00:00 May-25-18 17:00 May-25-18 17:00 May-25-18 17:00 Analyzed: May-26-18 12:15 May-26-18 11:58 May-26-18 11:40 May-26-18 11:40 Units/RL: mg/kg RL mg/kg RL mg/kg RL -0.0992 0.0992 <0.200 0.200 0.0796 0.0399 5.19 0.0992 39.8 0.200 6.36 0.0399 12.7 0.198 29.0 0.401 4.30 0.0798 8.08 0.0992 13.8 0.200 6.68 0.0399 20.8 0.0992 42.8 0.200 15.5 0.0399 20.8 0.0992 90.9 </th <th>Lab Id: 586590-001 586590-002 586590-003 Field Id: AH #1 (0-1) AH #2 (0-1) AH #3 (0-1) Depth: Natrix: SOIL SOIL Sampled: May-15-18 00:00 May-15-18 00:00 May-15-18 00:00 Extracted: May-25-18 17:00 May-25-18 17:00 May-25-18 17:00 Analyzed: May-26-18 12:15 May-26-18 11:58 May-26-18 11:40 Units/RL: mg/kg RL mg/kg RL <d:0.0992< td=""> 0.0992 <0.200 0.200 0.0399 <d:0.0992< td=""> 0.0992 <0.200 0.0399 19.8 0.0992 39.8 0.200 6.36 0.0399 112.7 0.198 29.0 0.401 4.30 0.0798 20.8 0.0992 13.8 0.200 15.5 0.0399 45.8 0.0992 42.8 0.200 16.5 0.0399 45.8 0.0992 9.200 15.5 0.0399 45.8 0.0992<!--</th--></d:0.0992<></d:0.0992<></th> | Lab Id: 586590-001 586590-002 586590-003 Field Id: AH #1 (0-1) AH #2 (0-1) AH #3 (0-1) Depth: Natrix: SOIL SOIL Sampled: May-15-18 00:00 May-15-18 00:00 May-15-18 00:00 Extracted: May-25-18 17:00 May-25-18 17:00 May-25-18 17:00 Analyzed: May-26-18 12:15 May-26-18 11:58 May-26-18 11:40 Units/RL: mg/kg RL mg/kg RL <d:0.0992< td=""> 0.0992 <0.200 0.200 0.0399 <d:0.0992< td=""> 0.0992 <0.200 0.0399 19.8 0.0992 39.8 0.200 6.36 0.0399 112.7 0.198 29.0 0.401 4.30 0.0798 20.8 0.0992 13.8 0.200 15.5 0.0399 45.8 0.0992 42.8 0.200 16.5 0.0399 45.8 0.0992 9.200 15.5 0.0399 45.8 0.0992<!--</th--></d:0.0992<></d:0.0992<> |

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Huns Boah

Kelsey Brooks Project Manager

Final 1.000



Flagging Criteria



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- **E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- **F** RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- **H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- **K** Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- ** Surrogate recovered outside laboratory control limit.
- **BRL** Below Reporting Limit.
- RL Reporting Limit
- MDL Method Detection LimitSDLSample Detection LimitLOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable

| SMP Clier | nt Sample | BLK | Method Blank | |
|-----------|---------------------------------------|-----------|-----------------------------|--------------------------------|
| BKS/LCS | Blank Spike/Laboratory Control Sample | BKSD/LCSD | Blank Spike Duplicate/Labor | atory Control Sample Duplicate |
| MD/SD | Method Duplicate/Sample Duplicate | MS | Matrix Spike | MSD: Matrix Spike Duplicate |

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



Project Name: Marathon-Angell B #2

| Work Or | ders : 58659 | 0, | | Project ID: | | | | | | |
|--------------|-------------------|-------------------------------|------------------------|-----------------------|-----------------------|-------------------------|-------|--|--|--|
| Lab Batch | #: 3050664 | Sample: 586590-001 / SMP | Batch | h: 1 Matrix: Soil | | | | | | |
| Units: | mg/kg | Date Analyzed: 05/20/18 12:32 | SU | RROGATE R | ECOVERY | STUDY | | | | |
| | TPH] | By SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags | | | |
| 1-Chlorooct | tane | | 118 | 100 | 118 | 70-135 | | | | |
| o-Terpheny | 1 | | 44.5 | 50.0 | 89 | 70-135 | | | | |
| Lab Batch | #: 3050664 | Sample: 586590-002 / SMP | Batcl | h: 1 Matrix: | Soil | | | | | |
| Units: | mg/kg | Date Analyzed: 05/20/18 13:03 | SU | RROGATE R | ECOVERY | STUDY | | | | |
| | TPH] | By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R | Control Limits %R | Flags | | | |
| 1 Chlaraget | 10.000 | Anarytes | 129 | 00.0 | 120 | 70.125 | | | | |
| 1-Chlorooct | 1 | | 128 | 99.8 | 128 | 70-135 | | | | |
| Lab Batch | #• 3050664 | Sample: 586590-003 / SMP | 40.4 Ratel | 49.9 h• 1 Matriv | Soil | /0-135 | | | | |
| LaD Dattin | ma/ka | Data Analyzed: 05/20/18 13:33 | | | | | | | | |
| Units. | mg/kg | Date Analyzet. 05/20/16 15.55 | SU | RROGATE R | ECOVERY | STUDY | | | | |
| | TPH] | By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R | Control Limits %R | Flags | | | |
| | | Analytes | | | | | | | | |
| 1-Chlorooct | tane | | 112 | 99.7 | 112 | 70-135 | | | | |
| o-Terpheny | l // | G L 506500.002 (0) (D | 43.5 | 49.9 | 87 | 70-135 | | | | |
| Lab Batch | #: 3051528 | Sample: 586590-003 / SMP | Batch | h: 1 Matrix: | Soll | | | | | |
| Units: | mg/kg | Date Analyzed: 05/26/18 11:40 | SU | RROGATE R | ECOVERY | STUDY | | | | |
| | BTEX | X by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags | | | |
| 1,4-Difluoro | obenzene | | 0.0272 | 0.0300 | 91 | 70-130 | | | | |
| 4-Bromoflu | orobenzene | | 0.0263 | 0.0300 | 88 | 70-130 | | | | |
| Lab Batch | #: 3051528 | Sample: 586590-002 / SMP | Batcl | h: 1 Matrix: | Soil | | | | | |
| Units: | mg/kg | Date Analyzed: 05/26/18 11:58 | SU | RROGATE R | ECOVERY | STUDY | | | | |
| | BTEX | X by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags | | | |
| 1,4-Difluoro | obenzene | | 0.0256 | 0.0300 | 85 | 70-130 | | | | |
| 4-Bromoflu | orobenzene | | 0.0292 | 0.0300 | 97 | 70-130 | | | | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Marathon-Angell B #2

| Work Or | rders: 58659 | 0, Samula: 586500 001 / SME |) Dotal | Project ID: | Soil | | |
|-------------|---------------------|--------------------------------|------------------------|-----------------------|-----------------------|-------------------------|-------|
| Units: | #. 5051528 mσ/kσ | Date Analyzed: 05/26/18 12:15 | | DDOCATE DI | | OTUDY | |
| | ing/kg | Duce 11111/2001 05/20/10 12:15 | 50 | KRUGATE KI | | | 1 |
| | BTEX | K by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1,4-Difluor | obenzene | • | 0.0241 | 0.0300 | 80 | 70-130 | |
| 4-Bromoflu | orobenzene | | 0.0242 | 0.0300 | 81 | 70-130 | |
| Lab Batch | #: 3050664 | Sample: 7645050-1-BLK / | BLK Batch | h: 1 Matrix: | Solid | | |
| Units: | mg/kg | Date Analyzed: 05/20/18 02:38 | SU | RROGATE R | ECOVERY | STUDY | |
| | TPH I | By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1 Chloroost | tana | Anarytes | 07.2 | 100 | 07 | 70.125 | |
| o-Terpheny | 1 | | 97.2 | 50.0 | 97 | 70-135 | |
| Lab Batch | <u>#• 3051528</u> | Sample: 7655506-1-BLK / | BIK Batch | 30.0 h• 1 Matrix• | Solid | /0-155 | |
| Lab Daten | π. 5051520 mg/kg | Date Analyzed: 05/26/18 02:08 | | | | | |
| Omts. | iiig/ Kg | Date Analyzed: 05/20/10 02.00 | 50 | RROGATE RI | ECOVERY | STUDY | |
| | BTEX | K by EPA 8021B | Amount Found [A] | True Amount [B] | Recovery %R | Control Limits %R | Flags |
| | | Analytes | | | [D] | | |
| 1,4-Difluor | obenzene | | 0.0268 | 0.0300 | 89 | 70-130 | |
| 4-Bromoflu | orobenzene | | 0.0260 | 0.0300 | 87 | 70-130 | |
| Lab Batch | #: 3050664 | Sample: 7645050-1-BKS / | BKS Batch | h: 1 Matrix: | Solid | | |
| Units: | mg/kg | Date Analyzed: 05/20/18 03:05 | SU | RROGATE R | ECOVERY | STUDY | |
| | TPH I | 3y SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1-Chlorooct | tane | | 118 | 100 | 118 | 70-135 | |
| o-Terpheny | 1 | | 53.0 | 50.0 | 106 | 70-135 | |
| Lab Batch | #: 3051528 | Sample: 7655506-1-BKS / | BKS Batch | h: 1 Matrix: | Solid | | |
| Units: | mg/kg | Date Analyzed: 05/26/18 00:39 | SU | RROGATE R | ECOVERY | STUDY | |
| | ВТЕХ | K by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1,4-Difluor | obenzene | | 0.0272 | 0.0300 | 91 | 70-130 | |
| 4-Bromoflu | orobenzene | | 0.0256 | 0.0300 | 85 | 70-130 | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Marathon-Angell B #2

| Work Or Lab Batch | ders : 58659 #• 3050664 | 0, Sample: 7645050-1-BSD / 1 | RSD Batch | Project ID: | Solid | | | | | | | | |
|----------------------|-----------------------------------|--------------------------------------|------------------------|-----------------------|-----------------------|-------------------------|-------|--|--|--|--|--|--|
| Lab Daten | mg/kg | Date Analyzed: 05/20/18 03:32 | | | | | | | | | | | |
| omts. | iiig/kg | Date Analyzed: 05/20/10 05:52 | SU | RROGATE R | ECOVERY | STUDY | | | | | | | |
| | TPH I | 3y SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags | | | | | | |
| 1-Chlorooct | tane | | 123 | 100 | 123 | 70-135 | | | | | | | |
| o-Terpheny | 1 | | 57.9 | 50.0 | 116 | 70-135 | | | | | | | |
| Lab Batch | #: 3051528 | Sample: 7655506-1-BSD / 1 | BSD Batch | a: 1 Matrix: | Solid | 1 | | | | | | | |
| Units: | mg/kg | Date Analyzed: 05/26/18 00:57 | SU | RROGATE R | ECOVERY | STUDY | | | | | | | |
| | BTEX | K by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags | | | | | | |
| 1.4-Difluor | obenzene | | 0.0309 | 0.0300 | 103 | 70-130 | | | | | | | |
| 4-Bromoflu | orobenzene | | 0.0260 | 0.0300 | 87 | 70-130 | | | | | | | |
| Lab Batch | #: 3050664 | Sample: 586189-001 S / MS | Batch | a: 1 Matrix: | Soil | | | | | | | | |
| Units: | mg/kg | Date Analyzed: 05/20/18 04:26 | SUI | RROGATE R | ECOVERY | STUDY | | | | | | | |
| | TPH I | By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R | Control Limits %R | Flags | | | | | | |
| | | Analytes | | | [D] | | | | | | | | |
| 1-Chlorooct | tane | | 128 | 99.9 | 128 | 70-135 | | | | | | | |
| o-Terpheny | 1 | | 52.2 | 50.0 | 104 | 70-135 | | | | | | | |
| Lab Batch | #: 3051528 | Sample: 586647-001 S / MS | B Batch | a: 1 Matrix: | Soil | | | | | | | | |
| Units: | mg/kg | Date Analyzed: 05/26/18 01:13 | SUI | RROGATE R | ECOVERY | STUDY | | | | | | | |
| | ВТЕХ | K by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags | | | | | | |
| 1,4-Difluor | obenzene | | 0.0297 | 0.0300 | 99 | 70-130 | | | | | | | |
| 4-Bromoflu | orobenzene | | 0.0323 | 0.0300 | 108 | 70-130 | | | | | | | |
| Lab Batch | #: 3050664 | Sample: 586189-001 SD / N | ASD Batch | a: 1 Matrix: | Soil | | | | | | | | |
| Units: | mg/kg | Date Analyzed: 05/20/18 04:53 | SU | RROGATE R | ECOVERYS | STUDY | | | | | | | |
| | TPH I | By SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags | | | | | | |
| 1-Chlorooct | tane | | 118 | 99.8 | 118 | 70-135 | | | | | | | |
| o-Terpheny | 1 | | 48.9 | 49.9 | 98 | 70-135 | | | | | | | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Marathon-Angell B #2

| Work Orders : 58659 | 0, | | Project ID: | | | | | | | | | | |
|---|----------------------------|------------------------|-----------------------|-----------------------|-------------------------|-------|--|--|--|--|--|--|--|
| Lab Batch #: 3051528 | Sample: 586647-001 SD / 1 | MSD Batcl | h: 1 Matrix: | Soil | | | | | | | | | |
| Units: mg/kg Date Analyzed: 05/26/18 01:31 SURROGATE RECOVERY STUDY | | | | | | | | | | | | | |
| BTEX | K by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags | | | | | | | |
| 1,4-Difluorobenzene | | 0.0275 | 0.0300 | 92 | 70-130 | | | | | | | | |
| 4-Bromofluorobenzene | | 0.0298 | 0.0300 | 99 | 70-130 | | | | | | | | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



BS / BSD Recoveries



Project Name: Marathon-Angell B #2

| Work Order #: 586590 Project ID: | | | | | | | | | | | | | |
|---|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|------------|-------------------------|---------------------------|------|--|--|
| Analyst: ALJ | D | ate Prepar | red: 05/25/20 | 18 | | | Date A | nalyzed: (| 05/26/2018 | | | | |
| Lab Batch ID: 3051528 Sample: 7655506-1 | -BKS | Bate | h #: 1 | | | Matrix: Solid | | | | | | | |
| Units: mg/kg | | BLAN | K /BLANK | SPIKE / 1 | BLANK S | SPIKE DUP | LICATE | RECOV | ERY STUI | DY | | | |
| BTEX by EPA 8021B | Blank Sample Result [A] | Spike Added | Blank Spike Result | Blank Spike %R | Spike Added | Blank Spike Duplicate | Blk. Spk Dup. %R | RPD % | Control Limits %R | Control Limits %RPD | Flag | | |
| Analytes | | [B] | [U] | נטן | [E] | Kesuit [F] | [G] | | | | | | |
| Benzene | < 0.00200 | 0.0998 | 0.0904 | 91 | 0.100 | 0.0934 | 93 | 3 | 70-130 | 35 | | | |
| Toluene | < 0.00200 | 0.0998 | 0.0871 | 87 | 0.100 | 0.0896 | 90 | 3 | 70-130 | 35 | | | |
| Ethylbenzene | < 0.00200 | 0.0998 | 0.0901 | 90 | 0.100 | 0.0905 | 91 | 0 | 70-130 | 35 | | | |
| m,p-Xylenes | < 0.00399 | 0.200 | 0.188 | 94 | 0.201 | 0.192 | 96 | 2 | 70-130 | 35 | | | |
| o-Xylene | < 0.00200 | 0.0998 | 0.0982 | 98 | 0.100 | 0.103 | 103 | 5 | 70-130 | 35 | | | |
| Analyst: SCM | D | ate Prepar | red: 05/23/20 | 18 | • | | Date A | nalyzed: (|)5/23/2018 | | | | |
| Lab Batch ID: 3051176 Sample: 7645290-1 | -BKS | Bate | h #: 1 | | | | | Matrix: S | Solid | | | | |
| Units: mg/kg | | BLAN | K /BLANK | SPIKE / I | BLANK S | SPIKE DUP | LICATE | RECOV | ERY STUI | DY | | | |
| Inorganic Anions by EPA 300/300.1 Analytes | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag | | |
| Chloride | <5.00 | 250 | 234 | 94 | 250 | 234 | 94 | 0 | 90-110 | 20 | | | |

Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] = $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: Marathon-Angell B #2

| Work Order #: 586590 Project ID: | | | | | | | | | | | | | | |
|----------------------------------|---|--------------------------------|----------------|---------------------------------|----------------------|----------------------------------|---|------------------------|----------|-------------------------|---------------------------|------|--|--|
| Analyst: | ARM | D | ate Prepar | red: 05/18/201 | 8 | Date Analyzed: 05/20/2018 | | | | | | | | |
| Lab Batch ID: | : 3050664 Sample: 7645050-1 | 1-BKS Batch #: 1 Matrix: Solid | | | | | | | | | | | | |
| Units: | mg/kg | | BLAN | K /BLANK S | SPIKE / I | BLANK S | SPIKE DUPI | LICATE | RECOVI | ERY STUE | ΟY | | | |
| | TPH By SW8015 Mod | Blank Sample Result [A] | Spike Added | Blank Spike Result [C] | Blank Spike %R | Spike Added | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R | RPD % | Control Limits %R | Control Limits %RPD | Flag | | |
| Analy | rtes | | լոյ | | נשן | լեյ | Kesut [F] | [0] | | | | | | |
| Gasoline R | Range Hydrocarbons (GRO) | <15.0 | 1000 | 1000 | 100 | 1000 | 1030 | 103 | 3 | 70-135 | 20 | | | |
| Diesel Ran | nge Organics (DRO) | <15.0 | 1000 | 1100 | 110 | 1000 | 1150 | 115 | 4 | 70-135 | 20 | | | |

Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] = $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries

Project Name: Marathon-Angell B #2



| Work Order # : 586590 | | | | | | Project II |): | | | | |
|--|---|--|--|--|--|--|--|---|--|--|-------------------|
| Lab Batch ID: 3051528 | QC- Sample ID: | 586647- | 001 S | Ba | tch #: | 1 Matrix | x: Soil | | | | |
| Date Analyzed: 05/26/2018 | Date Prepared: | 05/25/20 |)18 | An | alyst: A | ALJ | | | | | |
| Reporting Units: mg/kg | | Μ | ATRIX SPIK | E / MAT | RIX SPI | KE DUPLICA | TE REC | OVERY S | STUDY | | |
| BTEX by EPA 8021B | Parent Sample Result | Spike Added | Spiked Sample Result [C] | Spiked Sample %R | Spike Added | Duplicate Spiked Sample Result [F] | Spiked Dup. %R | RPD % | Control Limits %R | Control Limits %RPD | Flag |
| Analytes | [A] | [B] | [-] | [D] | [E] | [-] | [G] | | | | |
| Benzene | <0.00201 | 0.100 | 0.0572 | 57 | 0.101 | 0.0681 | 67 | 17 | 70-130 | 35 | X |
| Toluene | <0.00201 | 0.100 | 0.0556 | 56 | 0.101 | 0.0647 | 64 | 15 | 70-130 | 35 | X |
| Ethylbenzene | <0.00201 | 0.100 | 0.0510 | 51 | 0.101 | 0.0665 | 66 | 26 | 70-130 | 35 | X |
| m,p-Xylenes | < 0.00402 | 0.201 | 0.107 | 53 | 0.202 | 0.139 | 69 | 26 | 70-130 | 35 | X |
| o-Xylene | <0.00201 | 0.100 | 0.0573 | 57 | 0.101 | 0.0764 | 76 | 29 | 70-130 | 35 | X |
| Lab Batch ID: 3051176 | QC- Sample ID: | 586590- | 003 S | Ba | tch #: | 1 Matrix | k: Soil | | | | |
| | | | | | | | | | | | |
| Date Analyzed: 05/23/2018 | Date Prepared: | 05/23/20 |)18 | An | alyst: S | SCM | | | | | |
| Date Analyzed:05/23/2018Reporting Units:mg/kg | Date Prepared: | 05/23/20 M |)18 ATRIX SPIK | An E / MAT | alyst: S RIX SPI | SCM KE DUPLICA | TE REC | OVERY S | STUDY | | |
| Date Analyzed: 05/23/2018 Reporting Units: mg/kg Inorganic Anions by EPA 300/30 | Date Prepared: 00.1 Parent Sample Porent | 05/23/20 M Spike |)18 ATRIX SPIK Spiked Sample Result | An E / MAT Spiked Sample | alyst: S RIX SPI | SCM KE DUPLICA Duplicate Spiked Sample | TE REC Spiked Dup. | OVERY S | STUDY Control Limits | Control Limits | Flag |
| Date Analyzed: 05/23/2018 Reporting Units: mg/kg Inorganic Anions by EPA 300/30 Analytes | Date Prepared: 00.1 Parent Sample Result [A] | 05/23/20 M Spike Added [B] |)18 ATRIX SPIK Spiked Sample Result [C] | An E / MAT Spiked Sample %R [D] | alyst: S RIX SPI Spike Added [E] | CM KE DUPLICA Duplicate Spiked Sample Result [F] | TE REC Spiked Dup. %R [G] | OVERY S | STUDY Control Limits %R | Control Limits %RPD | Flag |
| Date Analyzed: 05/23/2018 Reporting Units: mg/kg Inorganic Anions by EPA 300/30 Analytes Chloride | Date Prepared: D0.1 Parent Sample Result [A] 565 | 05/23/20 M Spike Added [B] 250 | 018 ATRIX SPIK Spiked Sample Result [C] 783 | An E / MAT Spiked Sample %R [D] 87 | RIX SPI Spike Added [E] 250 | CM KE DUPLICA Duplicate Spiked Sample Result [F] 782 | TE REC Spiked Dup. %R [G] 87 | OVERY S RPD % | STUDY Control Limits %R 90-110 | Control Limits %RPD 20 | Flag |
| Date Analyzed: 05/23/2018 Reporting Units: mg/kg Inorganic Anions by EPA 300/30 Analytes Chloride Lab Batch ID: 3051176 | Date Prepared: 00.1 Parent Sample Result [A] 565 QC- Sample ID: | 05/23/20 M Spike Added [B] 250 586649- | 018 ATRIX SPIK Spiked Sample Result [C] 783 001 S | An E / MAT Spiked Sample %R [D] 87 Ba | RIX SPI Spike Added [E] 250 tch #: | CM KE DUPLICA Duplicate Spiked Sample Result [F] 782 1 Matrix | TE REC Spiked Dup. %R [G] 87 k: Soil | OVERY S RPD % | Control Limits %R 90-110 | Control Limits %RPD 20 | Flag X |
| Date Analyzed: 05/23/2018 Reporting Units: mg/kg Inorganic Anions by EPA 300/30 Analytes Chloride Lab Batch ID: 3051176 Date Analyzed: 05/23/2018 | Date Prepared: D0.1 Parent Sample Result [A] 565 QC- Sample ID: Date Prepared: | 05/23/20 M Spike Added [B] 250 586649- 05/23/20 | 018 ATRIX SPIK Spiked Sample Result [C] 783 001 S 018 | An E / MAT Spiked Sample %R [D] 87 Ba An | alyst: S RIX SPI Spike Added [E] 250 tch #: alyst: S | CM KE DUPLICA Duplicate Spiked Sample Result [F] 782 1 Matrix SCM | TE REC Spiked Dup. %R [G] 87 k: Soil | OVERY S RPD % | Control Limits %R 90-110 | Control Limits %RPD 20 | Flag X |
| Date Analyzed:05/23/2018Reporting Units:mg/kgInorganic Anions by EPA 300/30AnalytesChlorideLab Batch ID:3051176Date Analyzed:05/23/2018Reporting Units:mg/kg | Date Prepared: 00.1 Parent Sample Result [A] 565 QC- Sample ID: Date Prepared: | 05/23/20 M Spike Added [B] 250 586649- 05/23/20 M | 018 ATRIX SPIK Spiked Sample Result [C] 783 001 S 018 ATRIX SPIK | An E / MAT Spiked Sample %R [D] 87 Ba An E / MAT | Aalyst: S RIX SPI Spike Added [E] 250 tch #: aalyst: S RIX SPI | CM KE DUPLICA Duplicate Spiked Sample Result [F] 782 1 Matrix SCM KE DUPLICA | TE REC Spiked Dup. %R [G] 87 k: Soil TE REC | OVERY S RPD % 0 OVERY S | STUDY Control Limits %R 90-110 STUDY | Control Limits %RPD 20 | Flag X |
| Date Analyzed: 05/23/2018 Reporting Units: mg/kg Inorganic Anions by EPA 300/30 Analytes Chloride Lab Batch ID: 3051176 Date Analyzed: 05/23/2018 Reporting Units: mg/kg Inorganic Anions by EPA 300/30 Analytes | Date Prepared: D0.1 Parent Sample Result [A] 565 QC- Sample ID: Date Prepared: 00.1 Parent Sample Result [A] | 05/23/20 M Spike Added [B] 250 586649- 05/23/20 M Spike Added | 018 ATRIX SPIK Spiked Sample Result [C] 783 001 S 018 ATRIX SPIK Spiked Sample Result [C] | An E / MAT Spiked Sample %R [D] 87 Ba An E / MAT Spiked Sample %R | alyst: S RIX SPI Spike Added [E] 250 tch #: alyst: S RIX SPI Spike Added | CM KE DUPLICA Duplicate Spiked Sample Result [F] 782 1 Matrix SCM KE DUPLICA Duplicate Spiked Sample Result [F] | TE REC Spiked Dup. %R [G] 87 k: Soil TE REC Spiked Dup. %R (G) | OVERY S RPD % 0 OVERY S RPD % | STUDY Control Limits %R 90-110 STUDY Control Limits %R | Control Limits %RPD 20 20 Control Limits %RPD | Flag X Flag |
| Date Analyzed: 05/23/2018 Reporting Units: mg/kg Inorganic Anions by EPA 300/30 Analytes Chloride Lab Batch ID: 3051176 Date Analyzed: 05/23/2018 Reporting Units: mg/kg Inorganic Anions by EPA 300/30 Analytes | Date Prepared: 00.1 Parent Sample Result [A] 565 QC- Sample ID: Date Prepared: 00.1 Parent Sample Result [A] | 05/23/20 M Spike Added [B] 250 586649- 05/23/20 M Spike Added [B] |)18 ATRIX SPIK Spiked Sample Result [C] 783 001 S)18 ATRIX SPIK Spiked Sample Result [C] | An E / MAT Spiked Sample %R [D] 87 Ba An E / MAT Spiked Sample %R [D] | Allyst: S RIX SPI Spike Added [E] 250 tch #: alyst: S RIX SPI Spike Added [E] | CM KE DUPLICA Duplicate Spiked Sample Result [F] 782 1 Matrix CM KE DUPLICA Duplicate Spiked Sample Result [F] | TE REC Spiked Dup. %R [G] 87 k: Soil K: Soil TE REC Spiked Dup. %R [G] | OVERY S RPD % 0 OVERY S RPD % | STUDY Control Limits %R 90-110 STUDY Control Limits %R | Control Limits %RPD 20 20 Control Limits %RPD | Flag X Flag |

Matrix Spike Percent Recovery $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Form 3 - MS / MSD Recoveries

Project Name: Marathon-Angell B #2



| Work Order # : | 586590 | Project ID: | | | | | | | | | | | |
|---|--------------------|------------------|--------------|-------------------------|------------------|--------------|----------------------------|----------------|-----|-------------------|-------------------|------|--|
| Lab Batch ID: | 3050664 | QC- Sample ID: | 586189- | -001 S | Ba | tch #: | 1 Matri | x: Soil | | | | | |
| Date Analyzed: | 05/20/2018 | Date Prepared: | 05/18/20 | 018 | Ar | nalyst: A | ARM | | | | | | |
| Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY | | | | | | | | | | | | | |
|] | TPH By SW8015 Mod | Parent Sample | Spike | Spiked Sample Result | Spiked Sample | Spike | Duplicate Spiked Sample | Spiked Dup. | RPD | Control Limits | Control Limits | Flag | |
| | Analytes | [A] | Added [B] | [C] | %R [D] | Added [E] | Result [F] | %R [G] | % | %R | %RPD | | |
| Gasoline Range | Hydrocarbons (GRO) | <15.0 | 999 | 1020 | 102 | 998 | 939 | 94 | 8 | 70-135 | 20 | | |
| Diesel Range Or | ganics (DRO) | 61.8 | 999 | 1220 | 116 | 998 | 1110 | 105 | 9 | 70-135 | 20 | | |

Matrix Spike Percent Recovery $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}|(C-F)/(C+F)|$ Matrix Spike Duplicate Percent Recovery $[G] = 100^{*}(F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

| | Relinquished b | Telinquished t | | | | | | | LAB USE | LAB # | | comments: | Teceiving Labo | invoice to: | Project Locatio state) | Project Name: | Client Name: | F |
|--------------|-----------------------|------------------|-----------------------------|---|----|--------------|--------------|--------------|--|-----------------------|----------------|--------------------|--------------------|------------------|------------------------------------|---------------|---------------------------|---|
| | y: Date: Time: | y: Date: / Time: | y: Date: Time: 5/18/18 (:30 | | | AH #3 (0-1') | AH #2 (0-1") | AH #1 (0-1') | | SAMPLE IDENTIFICATION | | | ratory: Xenco | Tetra Tech, Inc. | n: (county, Lea County, New Mexico | Augell B # 2 | Marathon | Tetra Tech, Inc. |
| | Received by: | Received by: | Regeliyed by: | | | 5/15/2018 | 5/15/2018 | 5/15/2018 | DATE | YEAR: 2018 | SAMPLING | | Sampler Signature: | | Project #: | | Site Manager: Ike Tav: | |
| | Da | Da | Thes | | | × | × | × | WATEF | 3 | MATRIX | | Mike Ca | | 212C-N | | irez | 4000 N. Big 401 Midia Tel (4: Fax (4 |
| | ate: Time: | ate: Time: | Ale: Time: | | | × | × | × | HCL HNO ₃ ICE None | - | PRESERVATIVE | | armona | | ND-01214 | | |) Spring Street, Ste and, Texas 79705 32) 682-4559 132) 682-3946 |
| 0 | | S | 1250 | | | 1 Z | 1 N X | 1 N X | # CONT. | AINEF | RS N) | Y 9260 | B | | | | | |
| Sircle) H | 29 | ample Te | AB U | | | × | × | × | TPH TX | 1005 (I | Ext to | C35) | 080-1 | MBO) | _ | = | | |
| AND DELIVERE | ras C | mperature | SE ONLY | | | | | | PAH 827 Total Met | OC als Ag | As B g As E | a Cd Cr Ba Cd C | Pb Se r Pb Se | Hg Hg | | | | (|
| DFEDEX | Rush | RUS | TEMARKS: | | | | | | TCLP Se RCI | mi Vol | atiles | 624 | | | | | ANALYSI | |
| UPS T | i Charge ial Repo | H: Sam | TAND | | | - | - | | GC/MS S PCB's 80 | emi. V | ol. 82 | 270C/62 | 5 | | | | S REC | |
| racking # | s Author rt Limits | e Day | ARD | , | | - | | | NORM PLM (Ast | estos) |) | | | | | | UEST | |
| | rized or TRRP | 24 hr 41 | | | | × | × | × | Chloride Chloride General | Sul | fate | TDS | see atta | ached | list) | | | 1 |
| | Report | 8 hr 72 t | | | | | | | Anion/Ca | tion B | alanc | :e | | | | Ξ | | |
| | | hr | | | ++ | + | - | - | | | _ | | | | | _ | | |



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: Tetra Tech- Midland Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 05/18/2018 01:30:00 PM Temperature Measuring device used : R8 Work Order #: 586590 Comments Sample Receipt Checklist 2.6 #1 *Temperature of cooler(s)? #2 *Shipping container in good condition? Yes #3 *Samples received on ice? Yes #4 *Custody Seals intact on shipping container/ cooler? N/A #5 Custody Seals intact on sample bottles? N/A #6*Custody Seals Signed and dated? N/A #7 *Chain of Custody present? Yes #8 Any missing/extra samples? No #9 Chain of Custody signed when relinquished/ received? Yes #10 Chain of Custody agrees with sample labels/matrix? Yes #11 Container label(s) legible and intact? Yes #12 Samples in proper container/ bottle? Yes #13 Samples properly preserved? Yes #14 Sample container(s) intact? Yes #15 Sufficient sample amount for indicated test(s)? Yes #16 All samples received within hold time? Yes #17 Subcontract of sample(s)? N/A #18 Water VOC samples have zero headspace? N/A

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Date: 05/18/2018

Checklist completed by: Ballo Tal Brianna Teel Checklist reviewed by: Mark Moak Kelsey Brooks

Date: 05/23/2018

Analytical Report 590649

for Tetra Tech- Midland

Project Manager: Ike Tavarez

Marathon- Angell B#2

212C-MD-01214

28-JUN-18

Collected By: Client





1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-18-26), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16) Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-15) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757) Xenco-Atlanta (LELAP Lab ID #04176) Xenco-Tampa: Florida (E87429) Xenco-Lakeland: Florida (E84098)



28-JUN-18



Project Manager: **Ike Tavarez Tetra Tech- Midland** 4000 N. Big Spring Suite 401 Midland, TX 79705

Reference: XENCO Report No(s): **590649 Marathon- Angell B#2** Project Address: Lea County, NM

Ike Tavarez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 590649. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 590649 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

fession WRAMER

Jessica Kramer Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies. A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



Sample Id

Bottom Hole (0"-6") 2'BEB North Side Wall South Side Wall East Side Wall West Side Wall

Sample Cross Reference 590649



Tetra Tech- Midland, Midland, TX

Marathon- Angell B#2

| Matrix | Date Collected | Sample Depth | Lab Sample Id |
|--------|----------------|--------------|---------------|
| S | 06-27-18 00:00 | | 590649-001 |
| S | 06-27-18 00:00 | | 590649-002 |
| S | 06-27-18 00:00 | | 590649-003 |
| S | 06-27-18 00:00 | | 590649-004 |
| S | 06-27-18 00:00 | | 590649-005 |



CASE NARRATIVE

Client Name: Tetra Tech- Midland Project Name: Marathon- Angell B#2

Project ID: 212C-MD-01214 Work Order Number(s): 590649 Report Date:28-JUN-18Date Received:06/27/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-3054831 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Project Id:212C-MD-01214Contact:Ike TavarezProject Location:Lea County, NM

Certificate of Analysis Summary 590649

Tetra Tech- Midland, Midland, TX Project Name: Marathon- Angell B#2



Date Received in Lab:Wed Jun-27-18 04:19 pmReport Date:28-JUN-18Project Manager:Jessica Kramer

| | Lab Id: | 590649-001 | | 590649-002 | | 590649-003 | | 590649-004 | | 590649-005 | | |
|-----------------------------------|------------|-----------------|------------|-----------------|---------|-----------------|---------|----------------|---------|----------------|---------|---------------------------------------|
| Analysis Requested | Field Id: | Bottom Hole (0" | -6") 2'BEB | North Side Wall | | South Side Wall | | East Side Wall | | West Side Wall | | |
| Analysis Requested | Depth: | | | | | | | | | | | |
| | Matrix: | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | | |
| | Sampled: | Jun-27-18 | 00:00 | Jun-27-18 | 00:00 | Jun-27-18 | 00:00 | Jun-27-18 | 00:00 | Jun-27-18 | 00:00 | l |
| BTEX by EPA 8021B | Extracted: | Jun-27-18 | 17:00 | Jun-27-18 | 17:00 | Jun-27-18 | 17:00 | Jun-27-18 | 17:00 | Jun-27-18 | 17:00 | |
| | Analyzed: | Jun-28-18 | 07:15 | Jun-28-18 | 07:33 | Jun-28-18 | 07:50 | Jun-28-18 | 08:08 | Jun-28-18 (| 08:26 | |
| | Units/RL: | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | |
| Benzene | | < 0.00200 | 0.00200 | < 0.00202 | 0.00202 | < 0.00201 | 0.00201 | < 0.00199 | 0.00199 | < 0.00200 | 0.00200 | |
| Toluene | | < 0.00200 | 0.00200 | < 0.00202 | 0.00202 | < 0.00201 | 0.00201 | < 0.00199 | 0.00199 | < 0.00200 | 0.00200 | |
| Ethylbenzene | | < 0.00200 | 0.00200 | < 0.00202 | 0.00202 | < 0.00201 | 0.00201 | < 0.00199 | 0.00199 | < 0.00200 | 0.00200 | |
| m,p-Xylenes | | < 0.00400 | 0.00400 | < 0.00403 | 0.00403 | < 0.00402 | 0.00402 | < 0.00398 | 0.00398 | <0.00399 | 0.00399 | |
| o-Xylene | | < 0.00200 | 0.00200 | < 0.00202 | 0.00202 | < 0.00201 | 0.00201 | < 0.00199 | 0.00199 | < 0.00200 | 0.00200 | |
| Total Xylenes | | < 0.00200 | 0.00200 | < 0.00202 | 0.00202 | < 0.00201 | 0.00201 | < 0.00199 | 0.00199 | < 0.00200 | 0.00200 | |
| Total BTEX | | < 0.00200 | 0.00200 | < 0.00202 | 0.00202 | < 0.00201 | 0.00201 | < 0.00199 | 0.00199 | < 0.00200 | 0.00200 | |
| TPH By SW8015 Mod | Extracted: | Jun-28-18 | 07:00 | Jun-28-18 | 07:00 | Jun-28-18 | 07:00 | Jun-28-18 | 07:00 | Jun-28-18 (| 07:00 | |
| | Analyzed: | Jun-28-18 | 13:25 | Jun-28-18 | 13:46 | Jun-28-18 | 14:07 | Jun-28-18 | 14:28 | Jun-28-18 | 14:49 | |
| | Units/RL: | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | |
| Gasoline Range Hydrocarbons (GRO) | | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <14.9 | 14.9 | |
| Diesel Range Organics (DRO) | | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <14.9 | 14.9 | |
| Oil Range Hydrocarbons (ORO) | | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <14.9 | 14.9 | |
| Total TPH | | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <15.0 | 15.0 | <14.9 | 14.9 | · · · · · · · · · · · · · · · · · · · |

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

lession bramer

Jessica Kramer Project Assistant



Flagging Criteria



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- **H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- **K** Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- ** Surrogate recovered outside laboratory control limit.
- **BRL** Below Reporting Limit.
- RL Reporting Limit
- MDL Method Detection LimitSDLSample Detection LimitLOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable

| SMP Clie | nt Sample | BLK | Method Blank | |
|----------|---------------------------------------|-----------|----------------------------------|--------------------------------|
| BKS/LCS | Blank Spike/Laboratory Control Sample | BKSD/LCSD | Blank Spike Duplicate/Laboration | atory Control Sample Duplicate |
| MD/SD | Method Duplicate/Sample Duplicate | MS | Matrix Spike | MSD: Matrix Spike Duplicate |

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



Project Name: Marathon- Angell B#2

| Work Or Lab Batch | rders : 59064 #: 3054831 | 9, Sample: 590649-001 / SMP | Batch | Project ID: a: 1 Matrix: | 212C-MD-0 Soil | 01214 | |
|----------------------|-----------------------------|--------------------------------|------------------------|-----------------------------|-----------------------|-------------------------|-------|
| Units: | mg/kg | Date Analyzed: 06/28/18 07:15 | SU | RROGATE R | ECOVERY S | STUDY | |
| | BTEX | K by EPA 8021B | Amount Found [A] | True Amount [B] | Recovery %R | Control Limits %R | Flags |
| | | Analytes | | | [D] | | |
| 1,4-Difluor | obenzene | | 0.0304 | 0.0300 | 101 | 70-130 | |
| 4-Bromoflu | orobenzene | | 0.0287 | 0.0300 | 96 | 70-130 | |
| Lab Batch | #: 3054831 | Sample: 590649-002 / SMP | Batch | a: 1 Matrix: | Soil | | |
| Units: | mg/kg | Date Analyzed: 06/28/18 07:33 | SU | RROGATE R | ECOVERY S | STUDY | |
| | BTEX | K by EPA 8021B | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1,4-Difluor | obenzene | | 0.0323 | 0.0300 | 108 | 70-130 | |
| 4-Bromoflu | orobenzene | | 0.0290 | 0.0300 | 97 | 70-130 | |
| Lab Batch | #: 3054831 | Sample: 590649-003 / SMP | Batch | : 1 Matrix: | Soil | | |
| Units: | mg/kg | Date Analyzed: 06/28/18 07:50 | SUI | RROGATE R | ECOVERY | STUDY | |
| | ВТЕХ | X by EPA 8021B | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1.4-Difluor | obenzene | | 0.0250 | 0.0200 | 86 | 70.120 | |
| 4-Bromoflu | lorobenzene | | 0.0259 | 0.0300 | 80 | 70-130 | |
| Lab Batch | #• 3054831 | Sample: 590649-004 / SMP | Batch | • 1 Matrix | Soil | 70-130 | |
| Units. | mø/kø | Date Analyzed: 06/28/18 08:08 | SU | | | STUDY | |
| | ing ng | Duce multiplet. 00,20,10 00.00 | 501 | KRUGAIE R | | | |
| | ВТЕХ | K by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1,4-Difluor | obenzene | | 0.0304 | 0.0300 | 101 | 70-130 | |
| 4-Bromoflu | orobenzene | | 0.0258 | 0.0300 | 86 | 70-130 | |
| Lab Batch | #: 3054831 | Sample: 590649-005 / SMP | Batch | : 1 Matrix: | Soil | | |
| Units: | mg/kg | Date Analyzed: 06/28/18 08:26 | SUI | RROGATE R | ECOVERY S | STUDY | |
| | ВТЕХ | K by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1,4-Difluor | obenzene | | 0.0289 | 0.0300 | 96 | 70-130 | |
| 4 Bromoflu | lorobenzene | | 0.0260 | 0.0200 | 00 | 70.120 | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Marathon- Angell B#2

| Work Or Lab Batch | r ders : 590649 #: 3054940 | 9, Sample: 590649-001 / SMP | Batcl | Project ID: h: 1 Matrix: | 212C-MD-0 Soil | 01214 | |
|----------------------|--------------------------------------|--------------------------------|------------------------|-----------------------------|-----------------------|-------------------------|-------|
| Units: | mg/kg | Date Analyzed: 06/28/18 13:25 | SU | RROGATE R | ECOVERY | STUDY | |
| | TPH I | By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R | Control Limits %R | Flags |
| | | Analytes | | | [D] | | |
| 1-Chlorooc | tane | | 97.1 | 99.9 | 97 | 70-135 | |
| o-Terpheny | 1 | | 51.6 | 50.0 | 103 | 70-135 | |
| Lab Batch | #: 3054940 | Sample: 590649-002 / SMP | Batcl | h: 1 Matrix: | : Soil | | |
| Units: | mg/kg | Date Analyzed: 06/28/18 13:46 | SU | RROGATE R | ECOVERY | STUDY | |
| | TPH I | By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1-Chlorooc | tane | | 98.4 | 99.7 | 99 | 70-135 | |
| o-Terpheny | 1 | | 51.3 | 49.9 | 103 | 70-135 | |
| Lab Batch | #: 3054940 | Sample: 590649-003 / SMP | Batcl | h: 1 Matrix: | Soil | | |
| Units: | mg/kg | Date Analyzed: 06/28/18 14:07 | SU | RROGATE R | ECOVERYS | STUDY | |
| | TPH I | 3y SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R | Control Limits %R | Flags |
| | | Analytes | | | | | |
| 1-Chlorooc | tane | | 101 | 99.7 | 101 | 70-135 | |
| o-Terpheny | 1 | | 52.7 | 49.9 | 106 | 70-135 | |
| Lab Batch | #: 3054940 | Sample: 590649-004 / SMP | Batcl | h: 1 Matrix: | : Soil | | |
| Units: | mg/kg | Date Analyzed: 06/28/18 14:28 | SU | RROGATE R | ECOVERY | STUDY | |
| | TPH I | By SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1-Chlorooc | tane | | 95.9 | 99.9 | 96 | 70-135 | |
| o-Terpheny | 1 | | 50.2 | 50.0 | 100 | 70-135 | |
| Lab Batch | #: 3054940 | Sample: 590649-005 / SMP | Batel | h: 1 Matrix | Soil | | |
| Units: | mg/kg | Date Analyzed: 06/28/18 14:49 | SU | RROGATE R | ECOVERYS | STUDY | |
| | TPH I | By SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1-Chlorooc | tane | | 99.2 | 99.6 | 100 | 70-135 | |
| o-Terpheny | l | | 53.0 | 49.8 | 106 | 70-135 | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Marathon- Angell B#2

| Work Or Lab Batch | rders : 59064 | 9, Sample: 7657458-1-BLK / | BLK Batch | Project ID: | 212C-MD-0 Solid |)1214 | |
|----------------------|---------------|--------------------------------|------------------------|-----------------------|-----------------------|-------------------------|-------|
| Units: | mg/kg | Date Analyzed: 06/27/18 23:27 | SU. | RROGATE RI | ECOVERY | STUDY | |
| | BTE | X by EPA 8021B | Amount Found [A] | True Amount [B] | Recovery %R | Control Limits %R | Flags |
| | | Analytes | | | נען | | |
| 1,4-Difluor | obenzene | | 0.0288 | 0.0300 | 96 | 70-130 | |
| 4-Bromoflu | iorobenzene | | 0.0283 | 0.0300 | 94 | 70-130 | |
| Lab Batch | #: 3054940 | Sample: 7657513-1-BLK / | BLK Batch | h: 1 Matrix: | Solid | | |
| Units: | mg/kg | Date Analyzed: 06/28/18 10:09 | SU | RROGATE RI | ECOVERY | STUDY | |
| | TPH | By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1-Chlorooc | tane | Anarytes | 01.0 | 100 | 82 | 70 125 | |
| o-Terpheny | | | 42.8 | 50.0 | 86 | 70-135 | |
| Lob Botch | #• 305/831 | Sample: 7657458 1 BKS / | HZ.0 BKS Batek | | Solid | 70-133 | |
| Lab Dattin | mg/kg | Data Applyzed: 06/27/18 21:55 | DK5 Datci | | | | |
| Units: | mg/kg | Date Analyzed: 00/27/18 21.55 | SU | RROGATE RI | ECOVERY | STUDY | |
| | BTE | A polytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1.4.5 | 1 | Analytes | | | [2] | | |
| 1,4-Difluor | obenzene | | 0.0315 | 0.0300 | 105 | 70-130 | |
| 4-Bromoliu | #- 2054040 | Complex 7657512 1 DVC / | 0.0302 | | 101 S-1:4 | /0-130 | |
| | #: 3054940 | Sample: 7037313-1-BKS7 | BKS Balci | n: 1 Matrix: | Solid | | |
| Units: | mg/kg | Date Analyzed: 06/28/18 10:29 | SU | RROGATE RI | ECOVERY | STUDY | |
| | TPH | By SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1-Chlorooc | tane | | 115 | 100 | 115 | 70-135 | |
| o-Terpheny | 1 | | 62.0 | 50.0 | 124 | 70-135 | |
| Lab Batch | #: 3054831 | Sample: 7657458-1-BSD / | BSD Batch | h: 1 Matrix: | Solid | | · |
| Units: | mg/kg | Date Analyzed: 06/27/18 22:13 | SU | RROGATE RI | ECOVERYS | STUDY | |
| | BTE | X by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1,4-Difluor | obenzene | | 0.0306 | 0.0300 | 102 | 70-130 | |
| 4-Bromoflu | iorobenzene | | 0.0286 | 0.0300 | 95 | 70-130 | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Marathon- Angell B#2

| Work Or Lab Batch | ders : 59064 #: 3054940 | 9, Sample: 7657513-1-BSD / / | BSD Batcl | Project ID: h: 1 Matrix | 212C-MD-0 |)1214 | |
|----------------------|-----------------------------------|---------------------------------|------------------------|----------------------------|-----------------------|-------------------------|-------|
| Units: | mg/kg | Date Analyzed: 06/28/18 10:50 | SU | RROGATE R | ECOVERY | STUDY | |
| | TPH I | 3y SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R | Control Limits %R | Flags |
| | | Analytes | | | [D] | | |
| 1-Chlorooct | ane | | 127 | 100 | 127 | 70-135 | |
| o-Terphenyl | 1 | | 63.3 | 50.0 | 127 | 70-135 | |
| Lab Batch | #: 3054831 | Sample: 590094-001 S / M | S Batch | h: 1 Matrix | : Soil | | |
| Units: | mg/kg | Date Analyzed: 06/27/18 22:32 | SU | RROGATE R | ECOVERY | STUDY | |
| | BTEX | X by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1,4-Difluoro | obenzene | | 0.0322 | 0.0300 | 107 | 70-130 | |
| 4-Bromoflu | orobenzene | | 0.0268 | 0.0300 | 89 | 70-130 | |
| Lab Batch | #: 3054940 | Sample: 590434-020 S / MS | S Batch | h: 1 Matrix | : Soil | | |
| Units: | mg/kg | Date Analyzed: 06/28/18 11:31 | SU | RROGATE R | ECOVERY | STUDY | |
| | TPH I | By SW8015 Mod | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1.011 | | Analytes | 110 | | 110 | 70.107 | |
| T-Chiorooct | ane | | 118 | 99.8 | 118 | 70-135 | |
| I oh Botoh | H. 2054921 | Semula: 500004 001 SD / N | 54.2 | 49.9 | 109 | /0-135 | |
| | #: 3054851 | Sample: 590094-001 SD/ F | MSD Balci | | : 5011 | | |
| Units: | mg/kg | Date Analyzed: 06/27/18 22:50 | SU | RROGATE R | ECOVERYS | STUDY | |
| | BTEX | X by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1,4-Difluoro | obenzene | | 0.0295 | 0.0300 | 98 | 70-130 | |
| 4-Bromoflue | orobenzene | | 0.0334 | 0.0300 | 111 | 70-130 | |
| Lab Batch | #: 3054940 | Sample: 590434-020 SD / N | MSD Batch | h: 1 Matrix | : Soil | | |
| Units: | mg/kg | Date Analyzed: 06/28/18 11:52 | SU | RROGATE R | ECOVERY | STUDY | |
| | TPHI | 3y SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1-Chlorooct | ane | | 118 | 99.9 | 118 | 70-135 | |
| o-Terphenyl | 1 | | 54.5 | 50.0 | 109 | 70-135 | |

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



BS / BSD Recoveries



Project Name: Marathon- Angell B#2

| Work Order #: 590649 | | | | | | | Proj | ject ID: | 212C-MD- | 01214 | |
|-------------------------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analyst: ALJ | D | ate Prepar | ed: 06/27/20 | 18 | | | Date A | nalyzed: | 06/27/2018 | | |
| Lab Batch ID: 3054831 Sample: 76574 | 58-1-BKS | Batcl | h #: 1 | | | | | Matrix: | Solid | | |
| Units: mg/kg | | BLAN | K /BLANK | SPIKE /] | BLANK S | SPIKE DUP | LICATE | RECOV | ERY STU | DY | |
| BTEX by EPA 8021B Analytes | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
| Benzene | <0.00199 | 0.0994 | 0.0976 | 98 | 0.0998 | 0.0897 | 90 | 8 | 70-130 | 35 | |
| Toluene | < 0.00199 | 0.0994 | 0.101 | 102 | 0.0998 | 0.0922 | 92 | 9 | 70-130 | 35 | |
| Ethylbenzene | < 0.00199 | 0.0994 | 0.102 | 103 | 0.0998 | 0.0929 | 93 | 9 | 70-130 | 35 | |
| m,p-Xylenes | <0.00398 | 0.199 | 0.210 | 106 | 0.200 | 0.192 | 96 | 9 | 70-130 | 35 | |
| o-Xylene | < 0.00199 | 0.0994 | 0.0976 | 98 | 0.0998 | 0.0907 | 91 | 7 | 70-130 | 35 | |
| Analyst: ARM | D | ate Prepar | red: 06/28/20 | 18 | • | | Date A | nalyzed: | 06/28/2018 | | • |
| Lab Batch ID: 3054940 Sample: 76575 | 13-1-BKS | Batcl | h #: 1 | | | | | Matrix: | Solid | | |
| Units: mg/kg | | BLAN | K/BLANK | SPIKE /] | BLANK S | SPIKE DUP | LICATE | RECOV | ERY STU | DY | |
| TPH By SW8015 Mod Analytes | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
| Gasoline Range Hydrocarbons (GRO) | <15.0 | 1000 | 978 | 98 | 1000 | 1020 | 102 | 4 | 70-135 | 20 | |
| Diesel Range Organics (DRO) | <15.0 | 1000 | 1070 | 107 | 1000 | 1130 | 113 | 5 | 70-135 | 20 | |

Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] = $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries

Project Name: Marathon- Angell B#2



| Work Order # : 590649 | | | | | | Project II |): 212C-N | AD-01214 | ļ | | |
|-----------------------------------|--------------------------------|----------------|--------------------------------|------------------------|----------------|--|----------------------|----------|-------------------------|---------------------------|------|
| Lab Batch ID: 3054831 | QC- Sample ID: | 590094 | -001 S | Ba | tch #: | 1 Matrix | k: Soil | | | | |
| Date Analyzed: 06/27/2018 | Date Prepared: | 06/27/2 | 018 | An | alyst: A | ALJ | | | | | |
| Reporting Units: mg/kg | | Μ | IATRIX SPIK | E / MAT | RIX SPI | KE DUPLICA | TE RECO | OVERYS | STUDY | | |
| BTEX by EPA 80 | 21B Parent Sample Result | Spike Added | Spiked Sample Result [C] | Spiked Sample %R | Spike Added | Duplicate Spiked Sample Result [F] | Spiked Dup. %R | RPD % | Control Limits %R | Control Limits %RPD | Flag |
| Analytes | [A] | [B] | | [D] | [E] | | [G] | | | | |
| Benzene | <0.00200 | 0.100 | 0.0606 | 61 | 0.0996 | 0.0578 | 58 | 5 | 70-130 | 35 | X |
| Toluene | <0.00200 | 0.100 | 0.0433 | 43 | 0.0996 | 0.0463 | 46 | 7 | 70-130 | 35 | X |
| Ethylbenzene | 0.0158 | 0.100 | 0.0445 | 29 | 0.0996 | 0.0469 | 31 | 5 | 70-130 | 35 | X |
| m,p-Xylenes | 0.0441 | 0.200 | 0.0937 | 25 | 0.199 | 0.0913 | 24 | 3 | 70-130 | 35 | X |
| o-Xylene | 0.0553 | 0.100 | 0.0786 | 23 | 0.0996 | 0.0703 | 15 | 11 | 70-130 | 35 | X |
| Lab Batch ID: 3054940 | QC- Sample ID: | 590434 | -020 S | Ba | tch #: | 1 Matrix | k: Soil | | | | |
| Date Analyzed: 06/28/2018 | Date Prepared: | 06/28/2 | 018 | An | alyst: A | ARM | | | | | |
| Reporting Units: mg/kg | | Μ | IATRIX SPIK | E / MAT | RIX SPI | KE DUPLICA | TE RECO | OVERY | STUDY | | |
| TPH By SW8015 | Mod Parent Sample Result | Spike Added | Spiked Sample Result [C] | Spiked Sample %R | Spike Added | Duplicate Spiked Sample Result [F] | Spiked Dup. %R | RPD % | Control Limits %R | Control Limits %RPD | Flag |
| Analytes | [A] | [B] | | נטן | [E] | | [6] | | | | |
| Gasoline Range Hydrocarbons (GRO) | <15.0 | 998 | 888 | 89 | 999 | 922 | 92 | 4 | 70-135 | 20 | |
| Diesel Range Organics (DRO) | <15.0 | 998 | 962 | 96 | 999 | 1010 | 101 | 5 | 70-135 | 20 | |

Matrix Spike Percent Recovery [D] = 100*(C-A)/BRelative Percent Difference RPD = 200*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

| | Relinquished by: | nomiquoiroa by. | Relinquished by | Relinquished by: | | | | | < | | | | | | LAB # | | Comments: | Heceiving Laborator | | state) | | | | Analysis Reqi |
|--------------|------------------|------------------------|-----------------------|------------------|------------------|---------------|---|---|----------------|---------------|-----------------|-----------------|-------------------------|--|-----------------------|------------------------|-------------------|---------------------|---------|----------------|------------|------------------------|---|---------------------------------|
| | Date: Time: | Date: Time: • | a Ciner 4/21/18 4/8pm | Date: Time: | | | | | vest side wall | AST SIDE WALL | SOUTH SIDE WALL | JORTH SIDE WALL | Dottom Hole (0-6) 2 BEB | | SAMPLE IDENTIFICATION | | | * XAL XENCO | | LEA COUNTY, NM | NCIELL B#2 | ARATHON | Tetra Tech, Inc. | uest of Chain of Custody Record |
| ORIGINAL COP | Received by: | Heceived by: | Jawre | Received hv: | | | | | 6/27/18 | 6/27/18 | Calarlis | 6/27/18 | 6/27/18 | DATE | YEAR: 2017 | SAMPLING | | Sampler Signature: | | Project #: 217 | | Site Manager: i K 1 | | |
| ~ | Da | Dat | ed les | | | | | | × | × | × | × | × | WATE | I.R | MATRIX | Con | VIKE CAN | | 24- MD-0 | | E TAVARE | 4000 N. Big 401 Midla Tel (4: Fax (4 | |
| | te: Time: | te: [•] Time: | 12 /Q | Timor | | | | | * | × | × | X | × | HCL HNO ₃ ICE None | | PRESERVATIVE METHOD | INER MORH | 2 MOWA/ | | - Ht2)(| | 2 | Spring Street, Ste and,Texas 79705 32) 682-4559 32) 682-3946 | |
| | | | 919 | | | | | | - | 1 I | | - 7 | 1 | # CONT | | RS | RINKY | | | | | | | |
| (Circ | | Sam | L S | | | | | | ۲ ۲ | ر. بر | ۲ ۲ | × | × | BTEX 8 | 8021B | BTE | X 8260B | | | | | | | |
| ie) (HAN | 200 | ple Temp | BUSE | | | | | | × | × | × | x | X | ТРН ТХ ТРН 80 | (1005 15M (| (Ext to GRO - | C35) DRO - O | RO - N | (RO) | | | | | N |
| D DELIV | | erature | ON L | E | | | | | | | | | | PAH 82 Total Me | 270C etals A | g As B | a Cd Cr P | bSe⊦ | łg | | |) | | 3 |
| ERED | | | | - | | | | | | | - | | | TCLP M | etals / olatiles | Ag As E s | la Cd Cr I | Pb Se | Hg | | — Cie 0 | ≥ | | Ē |
| FEDE | | ĪĀ | | | | | | _ | | _ | | | | TCLP Se RCI | emi Vo | olatiles | | | | | Y | , ALY | | 2 |
| × UP | ecial F | USH: | STA | | | | | | | | | | | GC/MS | Vol. 8 | 260B / | 624 | | | | | SIS. | | é |
| s Tr | Зерог | Same | NDA | | | | | | | | | | | PCB's 8 | 3emi. 1082 / | 608 | :/UU/625 | | | | | REQ | | |
| acking | Limit | Day | GR | Ŀ | ┝┤ | - | _ | + | | | - | | | NORM PLM (As | besto | s) | | | | | - în | UES | | σ |
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| | RRP F | U 48 | 7 | \vdash | $\left \right $ | \rightarrow | | + | | | | \neg | - | Chloride General | Wate | ulfate er Chen | TDS nistry (se | e atta | ched li | st) | | . | | |
| | leport | hr 7 | | | | | | 4 | | | | | | Anion/Ca | ation | Balanc | e | | | | | | | |
| | | 2 hr | | | | | | | | | | | | | | | | | | | | | | ç |
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| a Tech, Inc. an way and a star and | | neminquisrieu uy. | Salino uobod ba | Pelinquished by: | mike line (| Pelinguished by: | | | | | WEST SIDE WA | EAST SIDE WA | SOUTH SIDE WF | NORTH SIDE WY | Bottom Hole (0"- | | LAB # SAMPLE | | Comments: | Heceiving Laboratory: | | state) (country, | Project Incedion: ANCAELL B#2 | Project Name: | Tetr | Analysis Request of Chain of Custo |
|--|----------|-------------------|-----------------|------------------|----------------|------------------|---|---|---|---------------|--------------|--------------|---------------|---------------|------------------|-----------------------|------------------|-------------------|-----------------------|-----------------------|----------|-----------------------|-------------------------------|----------------------|---|------------------------------------|
| IN E TAVARES IN E TAVARES NAMA USE COULS IN A COULD A COU | | Date: Time: | 7 | Date: Time: | 427/18 418pm | Date: Time: | | | | | XLL | | 4LC (| | ·6") 2' BEB | | | | | 6 | | NTY, NM | | | a Tech, Inc. | vdy Record |
| envices and base of the service of the | | Peceived by: | | feceived by: | Maure | Jon Mond hv: | | | | | 6/27/18 | 6/27/18 | 6/27/18 | 81/12/ | 6/27/18 | DATE | YEAR: 2017 | SAMPLING | | Sampler Signature: M | | Project #: 2 \ 2 C | | Site Manager:)ドモ | | |
| AMALYSIS RECUEST AMALYSIS RECUEST Circle or Specify Method No.) Circle or Specify Method No.) The server of | | Date: | | Date: | Control Dalley | | | | | | × | × | × | × | X | WATE SOIL HCL | R | | CONNE | IKE CARM | | - MD -0(24 | | TAVAREZ | 4000 N. Big Spring 401 Midland,Te Tel (432) 682 Fax (432) 68 | |
| ANALYSIS REQUEST | | Time: | | Time: | 5) 0/ C | | | | | | × | × | × - | X | × | ICE None # CON1 | TAINE | METHOD | K MQEHDIN | CONA/ | | <u>.</u> | | | J Street, Ste xas 79705 ⊱4559 2-3946 | |
| ANALYSIS REQUEST Circle or Specify Method No.) Circle or Specify Method No.) Circle or Specify Method No.) PAH 8270C Total Metals Ag As Ba Cd Cr Pb Se Hg TotLP Metals Ag As Ba Cd | | | | | X | | | | | ŀ | Z | 2 | 5 | 2 | ۲ | FILTER | ED (\ | (/N) | 2 | | | | | | | |
| AND DELIVERED FEDEX UPS Tracking #: | (Circle) | (| Sample |) | LAB | | | | | | × | × | * | х | × | BTEX 8 TPH TX | 021B (1005 | BTE (Ext to | X 8260E C35) | 3 | | | | | | r |
| ANALYSIS RECUEST ANALYSIS RECUEST ANALYSIS RECUEST Circle or Specify Method No. TCLP Metals Ag As Ba Cd Cr Pb Se Hg TCLP Metals Ag As Ba Cd Cr Pb Se Hg TCLP Volatiles TCLP Volatiles TCLP Volatiles TCLP Volatiles Remarks: DULV | HANDI | S. | | (| USE | | | | | \rightarrow | < | × | × | × | × | TPH 80 PAH 82 | 15M (70C | GRO - | DRO - C | RO - N | /IRO) | | | | | |
| RED TCLP Volatiles Characterity Reciption Image: Strand Report Limits or THRP Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Limits or THRP Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report Image: Strand Report <td>DELIVEI</td> <td></td> <td>ature</td> <td></td> <td>AJNC</td> <td>F</td> <td>H</td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td>Total Me TCLP M</td> <td>etais A</td> <td>g As B Ag As F</td> <td>a Cd Cr F Ba Cd Cr</td> <td>Pb Se H Pb Se</td> <td>Hg Ha</td> <td></td> <td></td> <td></td> <td></td> <td></td> | DELIVEI | | ature | | AJNC | F | H | | | | - | | | | | Total Me TCLP M | etais A | g As B Ag As F | a Cd Cr F Ba Cd Cr | Pb Se H Pb Se | Hg Ha | | | | | |
| ARCI RCI ARKS: GC/MS Vol. 8260B / 624 STANDARD GC/MS Semi. Vol. 8270C/625 ARKS: GC/MS Semi. Vol. 8270C/625 Special Report Limits or THRP Report NORM VPS Tracking #: VPS Tacking #: | RED | | 2 | ন | | | | | 1 | | | | | | | | olatile: | S | | | | | q | AN | | 7 |
| Cial Report Limits or THRP Report Tracking #: UPS Tracking #: Line Cial Report Limits or THRP Report Line Cial Report Limits or THRP Report Limits or THRP Report Limits or THRP Report Limits or THRP Rep | EDEX | L Spe | | 7 RUS | | | | | | | | | | | | RCI | | | | | | | v | n ALYS | | |
| Tracking #: | UPS | cial Re | h Char | H: S | STAN | | | _ | | | | | - | | | GC/MS \ GC/MS S | Vol. 8 Serni. | 260B / Vol. 82 | 624 270C/625 | i | | | | IS RI | | ~ |
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| Or THRP Chloride HRP A8 T Chloride Str Chloride Str General Water Chemistry (see attached list) Anion/Cation Balance | king #: | jmits (| uthori | Jay (| Ğ | | | | | | | | | | | PLM (As | besto | s) | | | | | | EST | | Pa |
| Homework Homew | | or TR | ized | °4 h | | | - | _ | - | + | + | - | - | | - | Chloride Chloride | SI | Ilfate | TDS | | | | | | | ge |
| Öp n Anion/Cation Balance N N N N | | RP Re | | 48 h | | \square | | | | | | | | | | General | Wate | er Cher | nistry (se | ee atta | ched I | ist) | | | | - |
| | | sport | : | г 72 | | | | - | | | + | + | -+ | | -ľ | Anion/Ca | ation | Balanc | e | | | | | | | |
| | | | - | ŗ | | | | | 1 | | 1 | | | 4 | | | | | | | | | | | | 으 |
| | | | | | | \square | _ | - | | _ | + | - | - | - | | | | | | | | | | | | - |

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XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

| Client: Tetra Tech- Midland | Acceptable Temperature Range: 0 - 6 degC |
|---|---|
| Date/ Time Received: 06/27/2018 04:19:00 PM | Air and Metal samples Acceptable Range: Ambient |
| Work Order #: 590649 | Temperature Measuring device used: R8 |
| Sample Rece | ipt Checklist Comments |
| #1 *Temperature of cooler(s)? | 6.5 |
| #2 *Shipping container in good condition? | Yes |
| #3 *Samples received on ice? | Yes |
| #4 *Custody Seals intact on shipping container/ cooler? | N/A |
| #5 Custody Seals intact on sample bottles? | N/A |
| #6*Custody Seals Signed and dated? | N/A |
| #7 *Chain of Custody present? | Yes |
| #8 Any missing/extra samples? | Νο |
| #9 Chain of Custody signed when relinquished/ received? | Yes |
| #10 Chain of Custody agrees with sample labels/matrix? | Yes |
| #11 Container label(s) legible and intact? | Yes |
| #12 Samples in proper container/ bottle? | Yes |
| #13 Samples properly preserved? | Yes |
| #14 Sample container(s) intact? | Yes |
| #15 Sufficient sample amount for indicated test(s)? | Yes |
| #16 All samples received within hold time? | Yes |
| #17 Subcontract of sample(s)? | Ν/Α |
| #18 Water VOC samples have zero headspace? | N/A |

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by: Brianna Teel

Date: 06/27/2018

Checklist reviewed by: Jessica Warmer

Jessica Kramer

Date: 06/28/2018

Analytical Report 590650

for Tetra Tech- Midland

Project Manager: Ike Tavarez

Angell B#2

212C-MD-01214

28-JUN-18

Collected By: Client





1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-18-26), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16) Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-15) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757) Xenco-Atlanta (LELAP Lab ID #04176) Xenco-Tampa: Florida (E87429) Xenco-Lakeland: Florida (E84098)



28-JUN-18



Project Manager: **Ike Tavarez Tetra Tech- Midland** 4000 N. Big Spring Suite 401 Midland, TX 79705

Reference: XENCO Report No(s): **590650** Angell B#2 Project Address: Lea County,NM

Ike Tavarez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 590650. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 590650 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

fession WRAMER

Jessica Kramer Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies. A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



Sample Cross Reference 590650



Tetra Tech- Midland, Midland, TX

Angell B#2

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---------------------------|--------|----------------|--------------|---------------|
| Bottom Hole (0-6") 2' BEB | S | 06-27-18 00:00 | | 590650-001 |
| North Side Wall | S | 06-27-18 00:00 | | 590650-002 |
| South Side Wall | S | 06-27-18 00:00 | | 590650-003 |
| East Side Wall | S | 06-27-18 00:00 | | 590650-004 |
| West Side Wall | S | 06-27-18 00:00 | | 590650-005 |
| | | | | |



CASE NARRATIVE

Client Name: Tetra Tech- Midland Project Name: Angell B#2

Project ID: 212C-MD-01214 Work Order Number(s): 590650 Report Date: 28-JUN-18 Date Received: 06/27/2018

Sample receipt non conformances and comments: TPH TX1005 RECEIVED IN BULK JAR

Sample receipt non conformances and comments per sample:

None



Ike Tavarez

Lea County,NM

Contact:

Project Location:

Certificate of Analysis Summary 590650

Tetra Tech- Midland, Midland, TX Project Name: Angell B#2



Date Received in Lab:Wed Jun-27-18 04:30 pmReport Date:28-JUN-18Project Manager:Jessica Kramer

| | Lab Id: | 590650-00 | 1 | 590650-0 | 02 | 590650-0 | 03 | 590650-0 | 04 | 590650-0 | 05 | |
|-----------------------------------|------------|--------------------|----------|-------------|------|-------------|-------|-------------|-------|-------------|------|--|
| Analysis Paguastad | Field Id: | Bottom Hole (0-6") |) 2' BEB | North Side | Wall | South Side | Wall | East Side V | Wall | West Side V | Wall | |
| Analysis Kequesiea | Depth: | | | | | | | | | | | |
| | Matrix: | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | | |
| | Sampled: | Jun-27-18 00 | :00 | Jun-27-18 0 | 0:00 | Jun-27-18 0 | 00:00 | Jun-27-18 0 | 00:00 | Jun-27-18 0 | 0:00 | |
| Inorganic Anions by EPA 300/300.1 | Extracted: | Jun-27-18 17 | :00 | Jun-27-18 1 | 7:00 | Jun-27-18 1 | 7:00 | Jun-27-18 1 | 7:00 | Jun-27-18 1 | 7:00 | |
| | Analyzed: | Jun-27-18 20 | :18 | Jun-27-18 2 | 0:23 | Jun-27-18 2 | 0:28 | Jun-27-18 2 | 0:34 | Jun-27-18 2 | 0:39 | |
| | Units/RL: | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | mg/kg | RL | |
| Chloride | | 571 | 4.99 | 15.8 | 4.92 | 34.5 | 4.97 | 35.6 | 4.95 | 278 | 4.98 | |

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

lession bramer

Jessica Kramer Project Assistant



Flagging Criteria



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- **H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- **K** Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- ** Surrogate recovered outside laboratory control limit.
- **BRL** Below Reporting Limit.
- RL Reporting Limit
- MDL Method Detection LimitSDLSample Detection LimitLOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable

| SMP Clier | nt Sample | BLK | Method Blank | |
|-----------|---------------------------------------|-----------|-----------------------------|--------------------------------|
| BKS/LCS | Blank Spike/Laboratory Control Sample | BKSD/LCSD | Blank Spike Duplicate/Labor | atory Control Sample Duplicate |
| MD/SD | Method Duplicate/Sample Duplicate | MS | Matrix Spike | MSD: Matrix Spike Duplicate |

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



BS / BSD Recoveries



Project Name: Angell B#2

| Work Order | #: 590650 | | | | | | | | Proj | ect ID: | 212C-MD-0 | 01214 | |
|---------------|--------------------|--------------------|-------------------------------|----------------|---------------------------------|-----------------------------|----------------|---|-------------------------------|------------|-------------------------|---------------------------|------|
| Analyst: | SCM | | Da | ate Prepar | ed: 06/27/201 | 18 | | | Date A | nalyzed: (| 06/27/2018 | | |
| Lab Batch ID: | 3054858 S | Sample: 7657472-1- | BKS | Batch | n#: 1 | | | | | Matrix: S | Solid | | |
| Units: | mg/kg | | | BLAN | K/BLANK | SPIKE / 1 | BLANK S | SPIKE DUPI | LICATE | RECOV | ERY STUI | DY | |
| Inorga | nnic Anions by EPA | 300/300.1 | Blank Sample Result [A] | Spike Added | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
| Analy | tes | | | լոյ | | [D] | [E] | Kesut [F] | [0] | | | | |
| Chloride | | | <5.00 | 250 | 238 | 95 | 250 | 238 | 95 | 0 | 90-110 | 20 | |

Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] = $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries

Project Name: Angell B#2



| Work Order # : | 590650 | | | | | | Project II | D: 212C-N | MD-0121 | 4 | | |
|-------------------------|-----------------------------|----------------------------|---------|-------------------------|------------------|-----------|--|----------------------|---------|-------------------|-------------------|------|
| Lab Batch ID: | 3054858 | QC- Sample ID: | 590390 | -021 S | Ba | tch #: | 1 Matri | x: Soil | | | | |
| Date Analyzed: | 06/27/2018 | Date Prepared: | 06/27/2 | 2018 | Ar | nalyst: S | SCM | | | | | |
| Reporting Units: | mg/kg | | N | IATRIX SPIK | E / MAT | 'RIX SPI | IKE DUPLICA | TE REC | OVERY | STUDY | | |
| Inorgai | nic Anions by EPA 300/300.1 | Parent Sample Result | Spike | Spiked Sample Result | Spiked Sample | Spike | Duplicate Spiked Sample Bosult [F] | Spiked Dup. %P | RPD | Control Limits | Control Limits | Flag |
| | Analytes | [A] | [B] | [C] | /0K [D] | [E] | Kesuit [F] | [G] | 70 | 70K | 70KI D | |
| Chloride | | 613 | 248 | 803 | 77 | 248 | 804 | 77 | 0 | 90-110 | 20 | X |
| Lab Batch ID: | 3054858 | QC- Sample ID: | 590390 | -026 S | Ba | tch #: | 1 Matri | x: Soil | | | | |
| Date Analyzed: | 06/27/2018 | Date Prepared: | 06/27/2 | 2018 | Ar | nalyst: S | SCM | | | | | |
| Reporting Units: | mg/kg | | Ν | IATRIX SPIK | E / MAT | 'RIX SPI | IKE DUPLICA | TE REC | OVERY | STUDY | | |
| Inorgai | nic Anions by EPA 300/300.1 | Parent Sample Posult | Spike | Spiked Sample Result | Spiked Sample | Spike | Duplicate Spiked Sample | Spiked Dup. | RPD | Control Limits | Control Limits | Flag |
| | Analytes | [A] | [B] | [C] | -76R [D] | E] | Kesult [F] | -76K [G] | -70 | -⁄0K | 70KPD | |
| Chloride | | 9.93 | 246 | 251 | 98 | 246 | 251 | 98 | 0 | 90-110 | 20 | |

Matrix Spike Percent Recovery [D] = 100*(C-A)/BRelative Percent Difference RPD = 200*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

| | | | | | | | | | | | | 1 | | | | 9 | Ŧ | | |
|--|-----------------------|----------------------------------|--|----------|---------------|-------------------|----------------------|--------------------|----------------|--------------------|---------|------------------------|------------|------------------|------------------------|----|---|----------|-------------|
| Tetra Tech, Inc. | | 4000 N. E 401 M Tel Fax | 3ig Spring Street, Ste idland,Texas 79705 (432) 682-4559 (432) 682-3946 | | | | | | \checkmark | | \leq | \mathcal{O} | \bigcirc | _ | | ľ | | | |
| Client Name: IN AR ATHON | Site Manager: | TAVARI | N. | | | | | ANA | LYSIS | REC | ŬE. | 띡 | | | | | | | |
| Project Name: AN CNELL 民母と | | | | | | _ | – (Circ | - e - e | – pec | _ÿ | _ | - õ | <u> </u> | ن۔ – | | _ | | <u> </u> | |
| Project Location: (county, LEA COUNTY, NM | Project #: 2 \ 2 C | (10- QM | 14 | | | | | | | | | | | st) | | | | | ar 1.00 |
| Invoice to: | | | | | | RO) | g Ig | _ | | | | | | hed lis | | | | | T 111 |
| Receiving Laboratory: メモハこの | Sampler Signature: | remona (c | OWNER MO | EHRING | | RO - M | b Se H Pb Se F | | | | | | | e attac | | | | | |
| Comments: | | | | | X 8260B | C35) DRO - O | a Cd Cr F a Cd Cr | | 624 | 70C/625 | | | TDS | nistry (se | U | | | | |
| | SAMPLING | MATRIX | PRESERVATIN METHOD | rī RS | /N) BTE | (Ext to GRO · | g As B Ag As B | latiles | 260B / | Vol. 8: | | 5) | Ifate | r Chei | Jaidii | | | | |
| LAB # | YEAR: 2017 | 7 | | AINE | ED (Y 021B | 1005 (5M (| tals Agetals A | latiles mi Vo | 'ol. 82 | iemi. \ 082 / 6 | | pestos | Su | Wate | | | | | |
| (LAB USE) | DATE | WATEF SOIL | HCL HNO ₃ ICE None | # CONT | FILTERE | TPH TX TPH 801 | Fotal Met TCLP Me | TCLP Vo TCLP Se | RCI GC/MS V | GC/MS S | NORM | PLM (Ast | Chloride | General | anon/08 | | | lold | |
| Bottom HOLE (O"-6") 2' BEB | 81/27/0 | × | × | - | 5 | | | | | | | ~ | | | - | | | | 10 9 |
| NORTH SIDE WALL | 8/27/18 | × | × | - | Σ. | | | | | | | × | | _ | | | | | га |
| SOUTH SIDE WALL | 6 27 14 | ×. | × | 1 | Ζ | | | | | | | × | | - | - | | | | |
| EAST SIDE WALL | 6127/18 | × | × | | Z | | | | | | | x | | _ | -+ | | | | |
| WEST SIDE WALL | 81 123 9 | × | × × | 1 | Ź | | | | | | | × | | - | \dashv | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | $\left \cdot \right $ | | $\left \right $ | $\left \cdot \right $ | | | | |
| |] | | | | | | F | | | | | | | | - | | | | _ |
| Helinquished by: Date: Time: Withe m 4/27/18 418 pm | Received by: | en le | Date: Time: | 436 | Ľ | AB USE | ONLY | | RKS: | FAND | ARE | Ň | ′ | | | | | | |
| Relinquished by: | Received by: | | Date: Time: | | Sap | nple Temp | erature 7. O | ר אר | RUSH | : San | ne Da | | - (Ī | 48 hr | . 72 | hr | | | |
| Relinquished by: Date: Time: | Received by: | | Date: Time: | | | N.E. | | | Specia | al Repo | ort Lin | nits or | TRR | P Rej | port | | | | |
| | ORIGINAL COPY | | | | (Cir | cie) (ANI |) DELIVE | RED FE | DEX L | JPS | Trackir | ig #: | | | | | - | | |



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: Tetra Tech- Midland Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 06/27/2018 04:30:14 PM Temperature Measuring device used : R8 Work Order #: 590650 Comments Sample Receipt Checklist 6.5 #1 *Temperature of cooler(s)? #2 *Shipping container in good condition? Yes #3 *Samples received on ice? Yes #4 *Custody Seals intact on shipping container/ cooler? N/A #5 Custody Seals intact on sample bottles? N/A #6*Custody Seals Signed and dated? N/A #7 *Chain of Custody present? Yes #8 Any missing/extra samples? No #9 Chain of Custody signed when relinquished/ received? Yes #10 Chain of Custody agrees with sample labels/matrix? Yes #11 Container label(s) legible and intact? Yes #12 Samples in proper container/ bottle? Yes #13 Samples properly preserved? Yes #14 Sample container(s) intact? Yes #15 Sufficient sample amount for indicated test(s)? Yes #16 All samples received within hold time? Yes #17 Subcontract of sample(s)? No #18 Water VOC samples have zero headspace? N/A

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by: June Smith Shawnee Gomez Checklist reviewed by: Jessica Vrämer

Date: 06/27/2018

Jessica Kramer

Date: 06/28/2018