

2020 Annual Groundwater Monitoring Report

APPROVED*By Nelson Velez at 10:08 am, Jan 11, 2022*

Review of 2020 ANNUAL GROUNDWATER MONITORING REPORT:

Content satisfactory

Contractor anticipated actions approved by OCD and are as follows;

1. Complete quarterly monitoring well gauging, groundwater purging and BTEX sampling for monitor wells MW-1, MW-2, MW-4, MW-5, MW-11, and MW-12
2. Resume semi-annual monitoring events for monitor wells MW-6, MW-9, MW-14, and MW-15 as approved by the NMOCD in the 2019 annual groundwater monitoring report
3. Since wells MW-7, MW-8, and MW-10 were inadvertently not sampled during the 2020 reporting period, these monitor wells will be sampled during the 1st quarter of 2021 and continue to be sampled annually per NMOCD approval of the 2019 annual groundwater monitoring report
4. Collect PAH samples from monitoring well TMW-1R (if applicable) during the annual monitoring event scheduled for the 4th quarter of 2020
5. Complete monthly manual abatement of hydrocarbon impacted groundwater and PSH on monitoring well TMW-1R
6. Complete quarterly AFR events on monitoring well TMW-1R
7. Submit annual report to OCD no later than March 31, 2022.

Plains All American Pipeline, L.P.
Livingston Ridge to Hugh – P. Sims

Plains SRS No. 2001-11005

Lea County, New Mexico

NMOCD Reference No. 1RP-0398

NMOCD Incident No. nAPP2109740065

Terracon Project No. AR207012

April 8, 2021

Prepared for:



Plains All American Pipeline, L.P.

1106 Griffith Drive

Midland, Texas 79706

Prepared by:

Terracon Consultants, Inc.

Lubbock, Texas

terracon.com

Terracon



April 8, 2021

Plains All American Pipeline, L.P.
1106 Griffith Drive
Midland, Texas 79706

Attn: Mrs. Camille Bryant
Telephone: (432) 221-7924
Email: CJBryant@paalp.com

Re: 2020 Annual Groundwater Monitoring Report
Livingston Ridge to Hugh - P. Sims
NE ¼ of the SE ¼, Section 3, T21S, R37E
Lea County, New Mexico
NMOCD Reference No. 1RP-0398
NMOCD Incident No. nAPP2109740065
Plains All American Pipeline, L.P. SRS No. 2001-11005
Terracon Project Number AR207012

Dear Mrs. Bryant:

Terracon is pleased to submit one electronic copy and one CD attached to the cover page of the 2020 Annual Groundwater Monitoring Report for the above-referenced site.

We appreciate the opportunity to perform these services for Plains All American Pipeline, L.P. (Plains). Please contact either of the undersigned at (806) 300-0140 if you have questions regarding the information provided in the report.

Sincerely,
Terracon

Prepared by:

A blue ink signature of Brett Dennis is written over the name and title.

Brett Dennis
Staff Scientist
Lubbock

Reviewed by:

A blue ink signature of Erin Loyd is written over the name and title.

Erin Loyd, P.G.
Principal
Office Manager – Lubbock

2020 Annual Groundwater Monitoring Report

Plains – Livingston Ridge to Hugh P. Sims ■ Lea County, New Mexico

April 8, 2021 ■ Terracon Project No. AR207012

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Plains – Livingston Ridge to Hugh P. Sims ■ Lea County, New Mexico

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1.0 INTRODUCTION

1.1 Site Description

The legal description of the Livingston Ridge to Hugh – P. Sims site is Unit Letter "I" (NE/SE), Section 3, Township 21 South, Range 37 East, in Lea County, New Mexico. The property affected by the release is owned by Mr. Hugh P. Sims. The geographic coordinates of the release site are 32.503649° North latitude and 103.148924° West longitude. A "Topographic Map" depicting the site's location is provided as Exhibit 1 in Appendix A.

Site Name	Livingston Ridge to Hugh – P. Sims
Site Location	West of Loop 207 approximately 5 miles north-northeast of Eunice, Lea County, New Mexico. Latitude 32.503649° North, Longitude 103.148924° West
General Site Description	The site consists of 16 groundwater monitoring wells located in, and adjacent to, a pipeline right-of-way surrounded by native pasture land, and in close proximity to the former Carbon Black Plant.
Landowner	Mr. Hugh P. Sims

1.2 Background Information

Based on information provided by the client, on June 22, 2001, an estimated release of 6 barrels (bbls) of crude oil was reported to the New Mexico Oil Conservation District (NMOCD). Initial excavation activities were reportedly conducted by Environmental Plus, Inc. (EPI) in an effort to stockpile saturated soils and expose the leak origin to facilitate repair of the pipeline. The pipeline excavation activities continued into July 2001. A total of approximately 148 cubic yards (cy) of hydrocarbon impacted soil were excavated at the site and transported to EPI's land-farm south of Eunice, New Mexico. A temporary groundwater monitoring well (TMW-1) was installed in the bottom of the excavation. Phase-separated hydrocarbons (PSH) were observed within the shallow groundwater bearing unit at the time of installation. Based on the review of provided documentation, the NMOCD and landowner were immediately notified of the release. EPI installed three groundwater monitoring wells at the site to evaluate the magnitude and extent of the release and determine the groundwater gradient.

In August 2002, Environmental Technology Group, Inc. (ETGI), assumed control of remedial activities and installed 12 additional groundwater monitoring wells at the site monitoring well MW-2 through MW-14. These wells were installed to complete the delineation activities initiated by EPI. At the time of ETGI's investigation, the groundwater monitoring wells had adequately

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delineated the hydrocarbon dissolved phase plume and PSH plume at the site. In 2004, Plains appointed EPI to take over the remediation and sampling activities.

On February 1, 2007, Terracon assumed project management responsibilities and oversight of groundwater activities associated with the release. Available files for this site were provided to Terracon at this time.

In July 2007, Terracon oversaw the installation of a polyvinyl chloride (PVC) liner on the floor of the excavation and backfilling the excavation with remediated soils from the previous land treatment area at the site in accordance with the NMOCD-approved work plan. Details of these activities can be found in *Plains' Soil Closure Compliance Report*, dated August 17, 2007.

On October 1, 2018, monitoring well TMW-1 was plugged and abandoned, and replacement monitoring well TMW-1R was installed to evaluate the status of the groundwater at the site. This monitoring well was advanced to a total depth of approximately 45 ft. bgs. Monitoring well TMW-1R is located approximately 65 ft. to the west (cross-gradient) of monitoring well MW-1. A "Site Diagram" depicting monitoring well locations is provided as Exhibit 2 in Appendix A.

On November 2, 2018, West Company a licensed surveyor, surveyed monitoring well TMW-1R.

In May of 2020, frequency of manual recovery events were reduced from once per week to once per month due to COVID-19.

1.3 Scope of Work

Terracon's scope of work includes project management responsibilities, oversight of groundwater monitoring activities, and preparation of an *Annual Groundwater Monitoring Report* in accordance with the NMOCD letter, dated May 1998, requiring submittal of an *Annual Groundwater Monitoring Report* by April 1st of each year. In accordance with the approved scope of work, Terracon conducted quarterly groundwater monitoring and sampling events on January 22 (1Q20), June 8 (2Q20), September 23 (3Q20), and December 22, 2020 (4Q20).

2.0 GROUNDWATER REMEDIATION PROGRAM

2.1 Groundwater Monitoring

Quarterly groundwater monitoring events were conducted on January 22, June 8, September 23, and December 22, 2020. Monitoring event activities included measuring the static water levels in all the site's monitoring wells, checking for the presence of PSH, and purging and collecting groundwater samples from wells not exhibiting a measurable thickness of PSH.

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Groundwater samples were collected utilizing low-flow sampling equipment, including a bladder pump and multi-parameter meter. Prior to sample collection, readings on the multi-parameter meter were recorded for a minimum of four cycles of five minutes each. Each collected sample was placed in laboratory-supplied containers appropriate to the analyses requested and placed on ice in a cooler. The sample coolers and completed chain-of-custody forms were delivered to Xenco Laboratories in Lubbock, Texas for analysis of benzene, toluene, ethylbenzene, total xylene (BTEX) and polycyclic aromatic hydrocarbons (PAHs), as applicable. Purged water was placed into a polystyrene aboveground storage tank (AST) and disposed at an NMOCD-approved disposal facility.

Groundwater elevation gauging data collected during the respective quarterly monitoring events were used to construct groundwater gradient maps, which are included as Exhibits 3 through 6 in Appendix A. The groundwater flow direction was inconsistent between quarters. The 1st and 4th quarter's groundwater gradient flowed in the expected south-easterly direction, the 2nd quarter was indicated as flowing to the north-east, and the 3rd quarter showed to flow to the north/north-west.

A yearly monitoring event for polyaromatic hydrocarbons (PAH) was conducted during the 4th quarter of 2020. Based on the sampling criteria provided by NMOCD, only monitoring wells MW-5 and MW-12 were subject to annual PAH monitoring. Due to the presence of PSH, TMW-1R was not sampled. PAH sample requirements were met, as two years of sampling were performed on monitoring wells MW-1 through MW-4, MW-6 through MW-11, and MW-13 through MW-15. However, monitor wells MW-1, MW-4 through MW-6, MW-9, MW-11 and MW-13 through MW-15 were inadvertently analyzed for PAHs during the 4th quarter monitoring event. To adhere to NMOCD requirements of two consecutive years of PAH concentrations below action levels monitor wells MW-1, MW-4 through MW-6, MW-9 through MW-11 and MW-13 through MW-15 will be analyzed for Analytical results from these wells were below PAH Action Levels established in New Mexico Administrative Code (NMAC) 20.6.2. A summary of PAH data can be found in Table 5 in Appendix B.

3.0 LABORATORY ANALYTICAL METHODS

The groundwater samples collected from the site monitor wells were analyzed for BTEX using EPA SW-846 Method 8021B and PAHs using EPA SW-846 method 8270C. Laboratory results from the analysis of groundwater samples collected from the monitoring wells are summarized in Table 2 in Appendix B and presented as Exhibits 7 through 10 in Appendix A. Copies of certified laboratory reports and chain-of-custody documentation are provided in Appendix C.

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**4.0 GROUNDWATER DATA EVALUATION****4.1 Groundwater Sample Results**

Laboratory analytical results from each quarterly monitoring event were compared to NMOCD regulatory standards based on New Mexico Water Quality Control Commission (NMWQCC) groundwater standards found in Section 20.6.2.3103 of the NMAC.

4.1.1 Monitoring Well MW-1

- Laboratory analytical results indicated concentrations of total xylenes in monitor well MW-1 were detected above laboratory sample detection limits (SDLs). Concentrations of total xylenes ranged from 0.0038 milligrams per liter (mg/L) in the 2nd quarter to 0.0094 mg/L in the 4th quarter. All detected concentrations were below NMOCD Action Levels.

4.1.2 Monitoring Well MW-2

- Monitoring wells MW-2 (dry) was not sampled during the 2020 reporting period.

4.1.3 Monitoring Wells MW-7, MW-8, and MW-10

- Monitoring wells MW-7, MW-8, and MW-10 were inadvertently not sampled during the 2020 reporting period. Therefore, these monitor wells will be sampled during the 1st quarter of 2021 and continue to be sampled annually per NMOCD approval of the 2019 annual groundwater monitoring report.

4.1.4 Monitoring Wells MW-3 and TMW-1

- Monitoring wells MW-3 and TMW-1 were plugged and abandoned in the 4th quarter of 2018. As such, monitoring wells MW-3 and TMW-1 were not sampled in 2020.

4.1.5 Monitoring Well MW-4

- Laboratory analytical results indicated concentrations of benzene greater than the NMOCD criteria during the 1st quarter. Concentrations of benzene ranged from 0.01151 mg/L in 1st quarter to 0.00382 mg/L in the 3rd quarter.
- Concentrations of toluene were not detected above the laboratory SDL, with the exception of the 4th quarter, in which, an estimated concentration of ethylbenzene was detected above the SDL but below the method quantitation limit (MQL).
- Ethylbenzene was detected at concentrations above the laboratory SDL in each of the quarterly monitoring events but were below NMOCD Action Levels. Concentrations of ethylbenzene ranged from 0.0411 mg/L in the 1st quarter to 0.0198 mg/L in both the 3rd and 4th quarters.

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- Total xylenes were detected above laboratory SDLs in each quarter with the exception of the 3rd quarter. All detected concentrations were below NMOCD Action Levels. Concentrations ranged from 0.0029 mg/L in the 2nd quarter to 0.0072 mg/L in the 1st quarter.

4.1.6 Monitoring Well MW-5

- Laboratory analytical results indicated benzene, ethylbenzene, and total xylenes above the laboratory SDLs during the 1st and 2nd quarters but below the NMOCD Action Levels. Total xylenes were additionally detected above the SDL in the 4th quarter but below the laboratory MQL.
- Concentrations of toluene were not detected above laboratory SDLs in the 1st, 2nd, or 3rd quarters. During the 4th quarter, toluene was detected above the laboratory SDL but below the MQL and NMOCD Action Level.

4.1.7 Monitoring Well MW-6, MW-9, and MW-15

- Monitor wells MW-6, MW-9, and MW-15 were inadvertently excluded from sampling in the 1st quarter.
- Laboratory analysis indicated that concentrations of BTEX did not exceed the laboratory SDL in either of these wells during the 2nd, 3rd, or 4th quarters in monitor wells MW-6 and MW-15. Monitor well MW-9 exhibited a concentration of toluene above laboratory SDL during the 4th quarter.
- These monitoring wells will be sampled on a semi-annual basis per NMOCD approval of the 2019 groundwater monitoring report.

4.1.8 Monitoring Well MW-11

- Concentrations of toluene total xylenes were detected in monitor well MW-11 above the laboratory SDL during the 4th quarter but were below both the MQL and NMOCD Action Levels.

4.1.9 Monitoring Well MW-12

- Concentrations of benzene and toluene were not detected above laboratory SDLs during the 2020 reporting period, with the exception of toluene being detected above the MQL during the 4th quarter.
- Ethylbenzene and total xylenes were detected above laboratory SDLs during the 1st, 2nd, and 4th quarters but did not exceed NMOCD Action Levels.

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**4.1.10 Monitoring Well MW-13**

- Laboratory analytical results indicated BTEX concentrations were below the respective laboratory sample detection limits and below the NMOCD regulatory standard for each constituent during the four quarterly monitoring events. Except, during the 4th quarter concentrations of toluene and total xylenes were detected above laboratory SDLs but below both the MQL and the NMOCD Action Levels.

4.1.11 Monitoring Well MW-14

- Monitor well MW-14 was inadvertently not sampled during the 1st quarter monitoring event.
- Concentrations of toluene total xylenes were detected in monitor well MW-14 above the laboratory SDL but below the NMOCD Action Level during the 2nd quarter.
- Monitor well MW-14 will be sampled on a semi-annual basis per NMOCD approval of the 2019 groundwater monitoring report.

4.1.12 Monitoring Well TMW-1R

- Monitoring well TMW-1R was drilled and completed on October 1, 2018. During quarterly groundwater monitoring events, the well was not sampled due to PSH thickness ranging from 0.04 ft. (2Q20) to 0.27 ft. (3Q20).

5.0 CORRECTIVE ACTION**5.1 Product Recovery**

On October 1, 2018, TMW-1 was plugged and abandoned and replacement monitoring well (TMW-1R) was drilled and constructed. Subsequent gauging data indicated PSH was accumulating in TMW-1R, and as a result, an AFR event was performed. For monitoring well TMW-1R, weekly/quarterly gauging and manual PSH recovery activities had approximately 0.90 gallons of recovered PSH and the average PSH thickness was 0.33 ft.

5.2 Groundwater Recovery

For monitoring well TMW-1R, approximately 58.0 gallons of hydrocarbon impacted groundwater was recovered manually in 2020. For the AFR events performed on TMW-1R during the 2020 reporting period, an estimated 3,108 gallons (74 bbls) of hydrocarbon impacted groundwater was recovered from the well. Manual recovery collection information is included as Table 3 (Appendix B). AFR event data is included as Table 4 (Appendix B).

For monitoring well MW-4, an estimated 63.0 gallons of hydrocarbon impacted groundwater were recovered via weekly/quarterly manual recovery.

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For monitoring well MW-5, an estimated 45.0 gallons of hydrocarbon impacted groundwater were recovered via weekly, monthly, and quarterly manual recovery.

For monitoring well MW-12, an estimated 63.0 gallons of hydrocarbon impacted groundwater were recovered via weekly, monthly, and quarterly manual recovery. Recovered fluids were disposed at an NMOCD-approved disposal facility.

6.0 SUMMARY OF FINDINGS

The findings of the 2020 Quarterly Groundwater Monitoring and Remediation activities are as follows:

- Currently, there are 15 groundwater monitoring wells.
- Quarterly groundwater monitoring events were conducted on January 22, June 8, September 23, and December 22, 2020.
- Monitoring well TMW-1R gauging events observed an average PSH thickness of 0.33 ft. during the 2020 reporting period.
- The groundwater flow direction was inconsistent between quarters. The 1st and 4th quarter's groundwater gradient flowed in the expected south-easterly direction, the 2nd quarter was indicated as flowing to the north-east, and the 3rd quarter showed to flow to the north/north-west.
- Benzene was detected at concentrations exceeding NMOCD Action Levels during the 1st quarter of 2020 at 0.01151 mg/L in monitor well MW-4. All other concentrations of BTEX were either below laboratory the respective SDLs or detected at concentrations below NMOCD Action Levels.
- PAH concentrations did not exceed Action Levels established in NMAC 20.6.2.
- Quarterly AFR events performed on monitoring well TMW-1R resulted in recovering approximately 3,108 gallons (74 bbls) of hydrocarbon impacted groundwater.

2020 Annual Groundwater Monitoring Report

Plains – Livingston Ridge to Hugh P. Sims ■ Lea County, New Mexico

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**7.0 ANTICIPATED ACTIONS**

- Conduct quarterly monitoring well gauging, groundwater purging and BTEX sampling for monitor wells MW-1, MW-2, MW-4, MW-5, MW-11, and MW-12.
- Resume semi-annual monitoring events for monitor wells MW-6, MW-9, MW-14, and MW-15 as approved by the NMOCD in the 2019 annual groundwater monitoring report.
- Monitoring wells MW-7, MW-8, and MW-10 were inadvertently not sampled during the 2020 reporting period. Therefore, these monitor wells will be sampled during the 1st quarter of 2021 and continue to be sampled annually per NMOCD approval of the 2019 annual groundwater monitoring report.
- Collect PAH samples from monitoring well TMW-1R (if applicable) during the annual monitoring event scheduled for the 4th quarter of 2020.
- Conduct monthly manual abatement of hydrocarbon impacted groundwater and PSH on monitoring well TMW-1R.
- Conduct quarterly AFR events on monitoring well TMW-1R.
- An *Annual Groundwater Monitoring Report* will be prepared detailing field activities and the results of groundwater monitoring activities conducted during the 2021 reporting period.

2020 Annual Groundwater Monitoring Report

Plains – Livingston Ridge to Hugh P. Sims ■ Lea County, New Mexico

April 8, 2021 ■ Terracon Project No. AR207012



8.0 DISTRIBUTION

Copy 1: Bradford Billings, Hydrologist E Spec. A.
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cjbryant@paalp.com

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Houston, Texas 77002
jpdann@paalp.com

APPENDIX A

Exhibit 1 – Topographic Map

Exhibit 2 – Site Detail

Exhibit 3 – 1Q20 Groundwater Gradient Map (01/22/20)

Exhibit 4 – 2Q20 Groundwater Gradient Map (06/08/20)

Exhibit 5 – 3Q20 Groundwater Gradient Map (09/23/20)

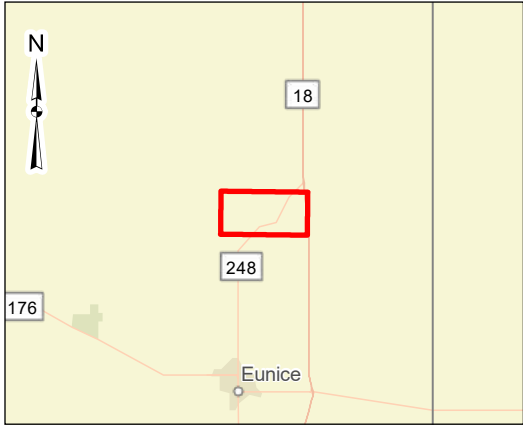
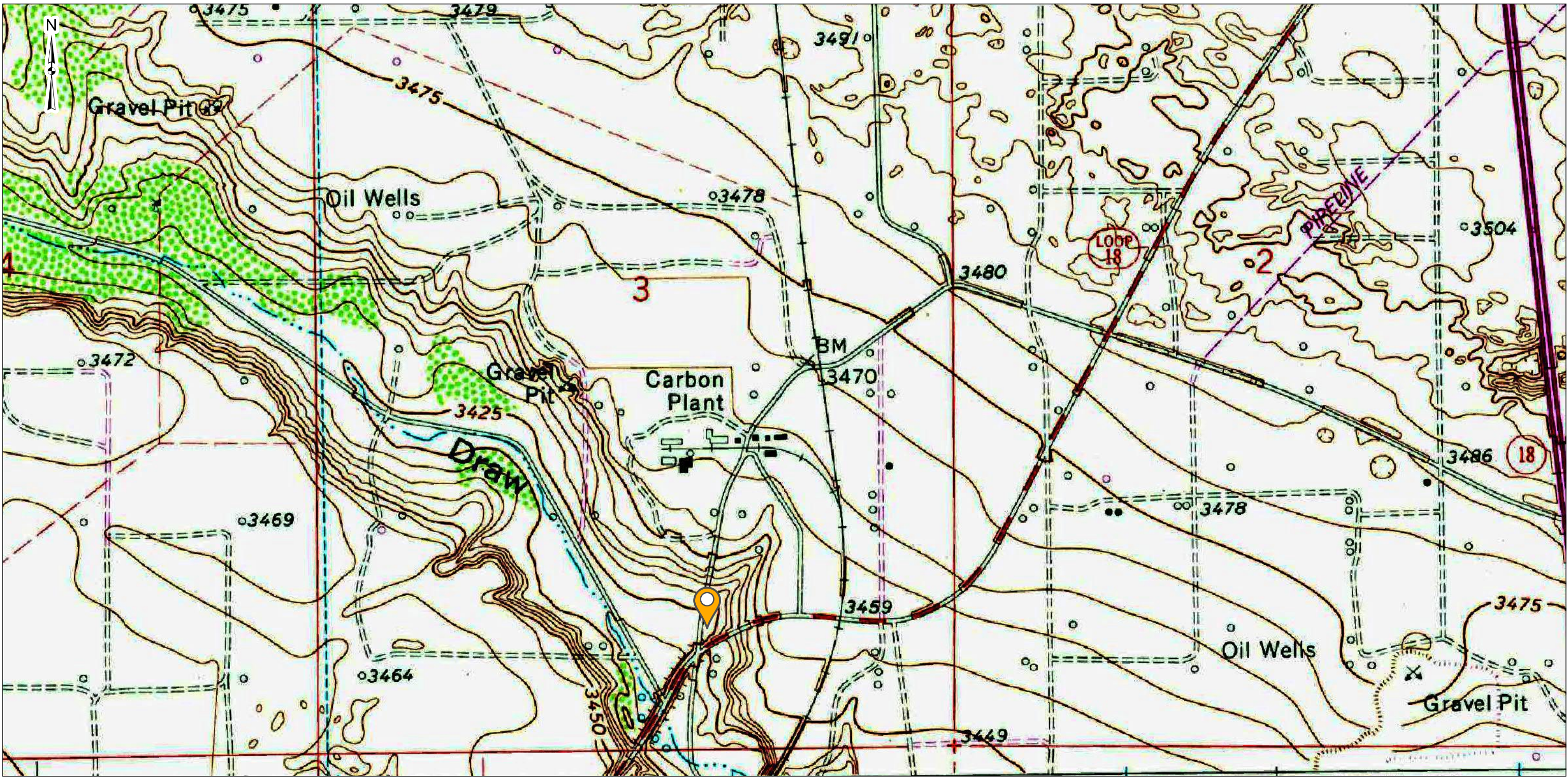
Exhibit 6 – 4Q20 Groundwater Gradient Map (12/22/20)

Exhibit 7 – 1Q20 Groundwater Contaminant Concentration Map (01/22/20)

Exhibit 8 – 2Q20 Groundwater Contaminant Concentration Map (6/08/20)

Exhibit 9 – 3Q20 Groundwater Contaminant Concentration Map (09/23/20)

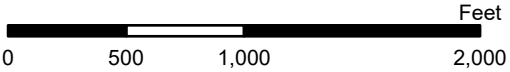
Exhibit 10 – 4Q20 Groundwater Contaminant Concentration Map (12/22/20)



Legend:

 Site Location

DATA SOURCES:
USGS Topoview - Hobbs SW, NM - 1969



Project No.:
AR207012
Date:
Jan 2021
Drawn By:
BAD
Reviewed By:
ELL



5847 50th Street
Lubbock, Texas 79424
PH: (806) 300-0140
terracon.com

Topographic Map

Livingston Ridge to Hugh - P. Sims
Plains SRS # 2001-11005
NMOCD Ref. # 1RP-0398
NE 1/4 of the SE 1/4, Sec. 3, T21S, R37E
Lea County, New Mexico
GPS: 32.503649, -103.148924

Exhibit

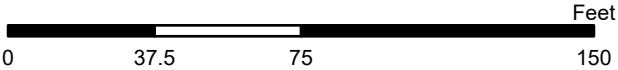
1



Legend:

● Monitor Well (MW)

DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap



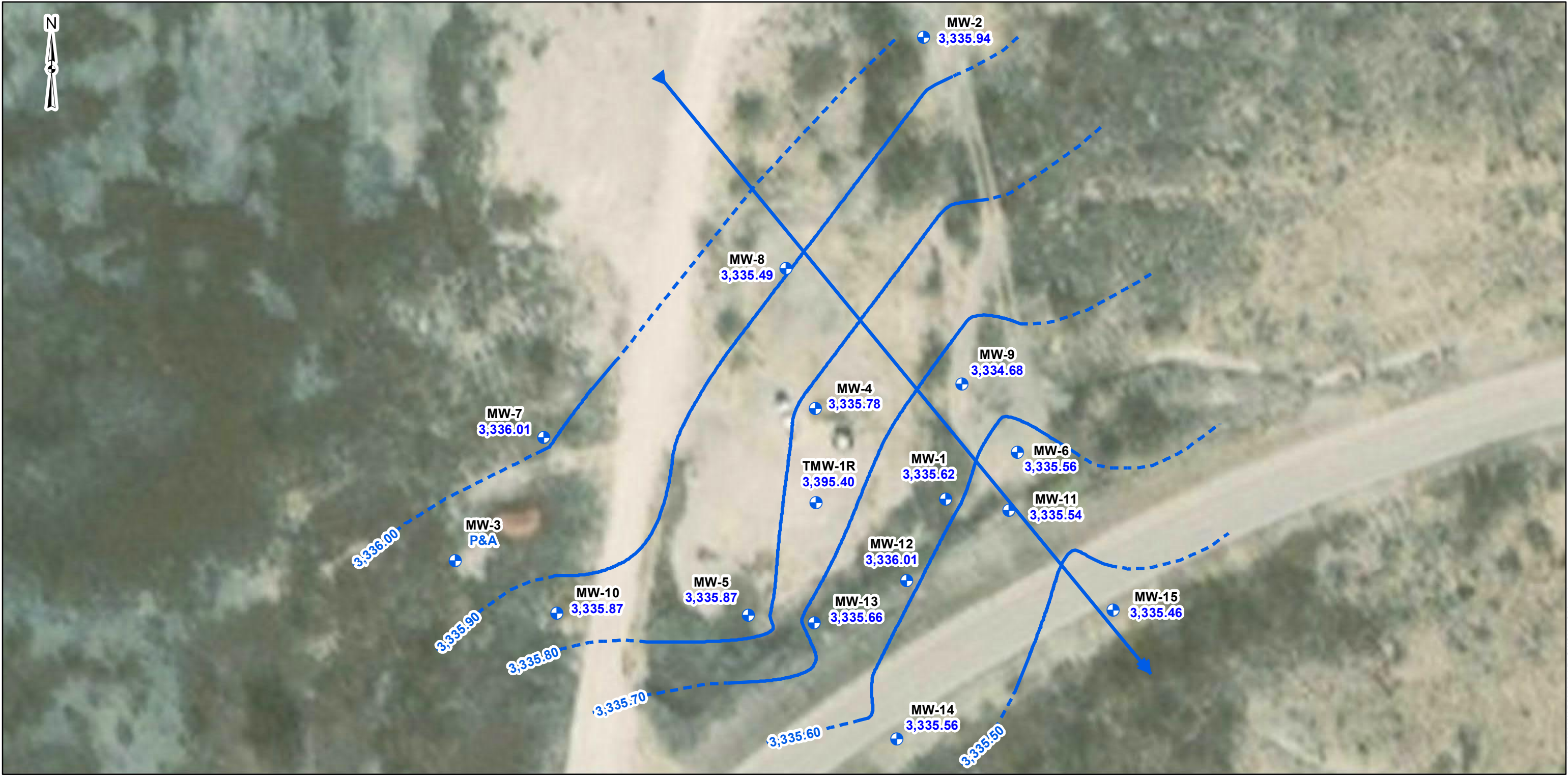
Project No.:	AR207012
Date:	Jan 2021
Drawn By:	BAD
Reviewed By:	ELL



5847 50th Street
Lubbock, Texas 79424
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Site Diagram
Livingston Ridge to Hugh - P. Sims Plains SRS # 2001-11005 NMOCD Ref. # 1RP-0398 NE 1/4 of the SE 1/4, Sec. 3, T21S, R37E Lea County, New Mexico GPS: 32.503649, -103.148924

Exhibit
2



Groundwater Monitoring Site

- Monitoring Well (MW)
- Groundwater Contour
- Inferred Groundwater Contour
- Groundwater_Flow_Direction

Notes:

- All groundwater elevations are measured in feet above mean sea level.
- Groundwater contours were interpolated with ArcGIS's kriging algorithm.
- Groundwater contour interval: 0.10 ft.
- Groundwater gradient: 0.002 ft/ft
- MW-3, MW-8, MW-9, MW-12 and TMW-1R not honored in contouring interpolation.

Project No.:	AR207012
Date:	May 2020
Drawn By:	KK
Reviewed By:	ELL

5847 50th St. Lubbock, TX 79424
PH. (806) 300-0104 terracon.com

0 50 100 Feet

Fractional Scale: 1:598

DATA SOURCES:
Bing Maps - Aerial Imagery, World Street Map

1Q20 Groundwater Gradient Map (01/22/20)
Livingston Ridge to Hugh - P. Sims Plains SRS # 2001-11005 NMOCD Ref. # 1R-0398 Plains Pipeline, LP NE 1/4 of the SE 1/4, Section 3, T21S, R37E Lea County, New Mexico GPS: 32.503649°, -103.148924°

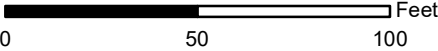
Exhibit
3



Groundwater Monitoring Site

- Monitoring Well (MW)
- Monitoring Well (MW) Not Honored
- Groundwater Contour
- Inferred Groundwater Contour
- Groundwater_Flow_Direction

Notes:
- All groundwater elevations are measured in feet above mean sea level.
- Groundwater contours were interpolated with ArcGIS's kriging algorithm.
- Groundwater contour interval: 0.10 ft.
- Groundwater gradient: 0.006 ft/ft
- MW-2, MW-3, and TMW-1R not honored in contouring interpolation.



1:598

DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap

Project No.:	AR207012
Date:	Aug 2020
Drawn By:	KAK
Reviewed By:	ELL

5847 50th St. Lubbock, TX 79424
PH. (806) 300-0104 terracon.com

2Q20 Groundwater Gradient Map (06/08/20)
Livingston Ridge to Hugh - P. Sims Plains SRS # 2001-11005 NMOC Ref. # 1R-0398 Plains Pipeline, LP NE 1/4 of the SE 1/4, Section 3, T21S, R37E Lea County, New Mexico GPS: 32.503649°, -103.148924°

Exhibit
4



- Legend:**
- Monitor Well (MW)
 - Groundwater Contour
 - ➔ Groundwater Flow Direction

Notes:

- All groundwater elevations measured in feet above mean sea level.
- Groundwater contours were interpolated using ArGIS's kriging algorithm.
- TMW-1R was not honored in interpolation
- Groundwater contour intervals: 0.20 ft.
- Groundwater gradient: 0.007 ft./ft.



DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap

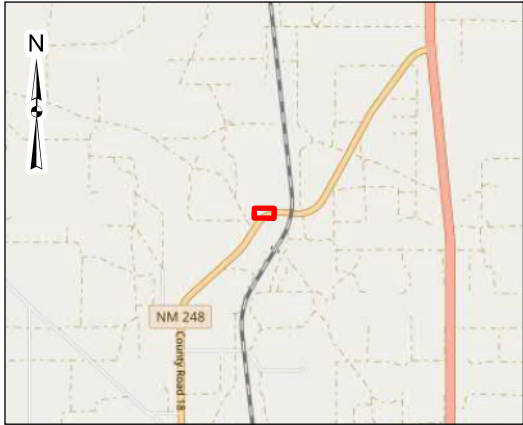
Project No.:	AR207012
Date:	Oct 2020
Drawn By:	BAD
Reviewed By:	ELL



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3Q20Groundwater Concentration Map (9/23/20)
Livingston Ridge to Hugh - P. Sims Plains SRS # 2001-11005 NMOCD Ref. # 1RP-0398 NE 1/4 of the SE 1/4, Sec. 3, T21S, R37E Lea County, New Mexico GPS: 32.503649, -103.148924

Exhibit
5



Legend:

- Monitor Well (MW)
- Groundwater Contour
- ➔ Groundwater Flow Direction

Notes:

- All groundwater elevations measured in feet above mean sea level.
- Groundwater contours were interpolated using ArGIS's kriging algorithm.
- TMW-1R was not honored in interpolation
- Groundwater contour intervals: 0.10 ft.
- Groundwater gradient: 0.002 ft./ft.



DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap

Project No.:
AR207012
Date:
Jan 2021
Drawn By:
BAD
Reviewed By:
ELL

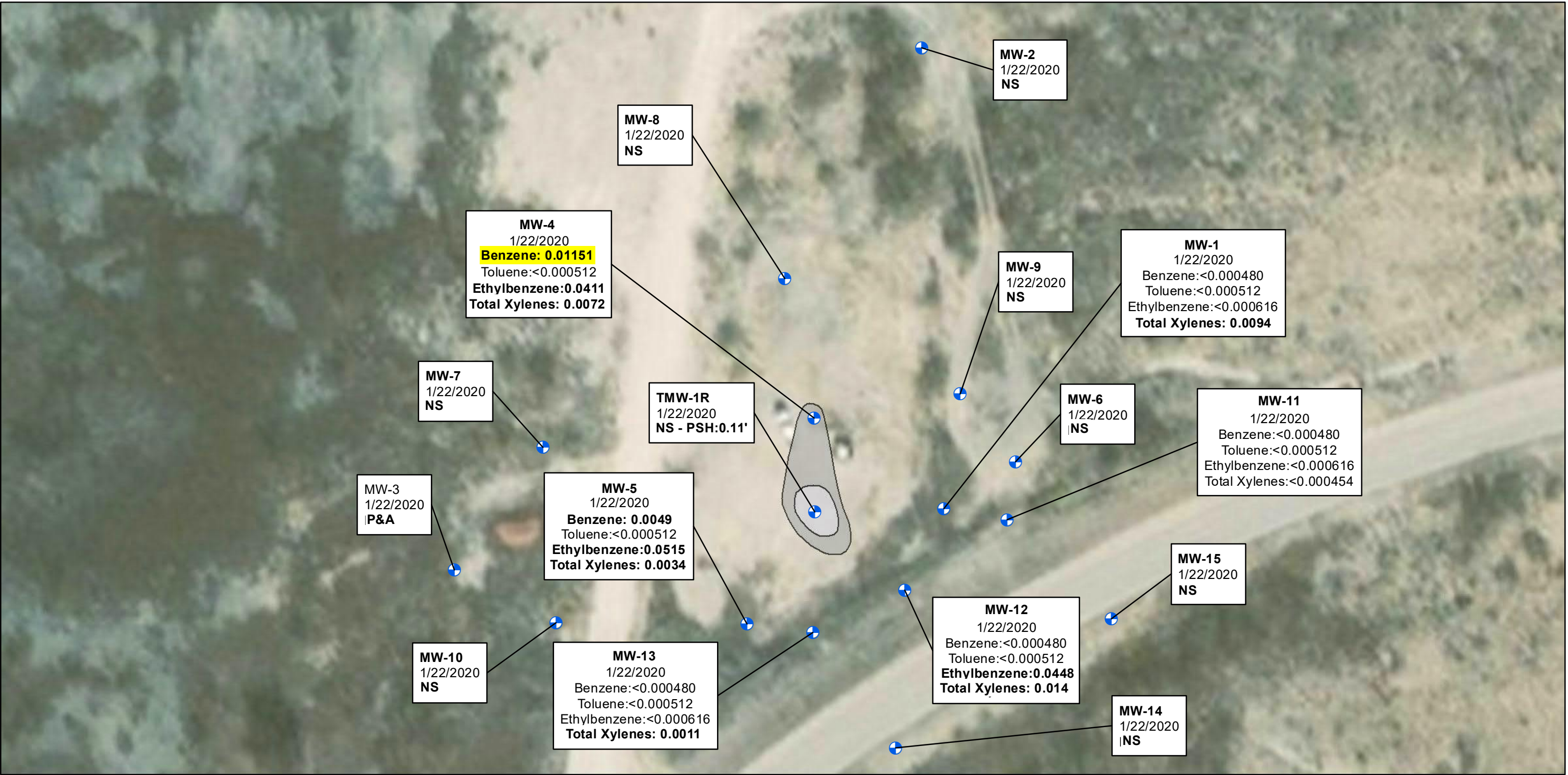
5847 50th Street
Lubbock, Texas 79424
PH. (806) 300-0140
terracon.com

4Q20 Groundwater Gradient Map (12/22/20)

Livingston Ridge to Hugh - P. Sims
Plains SRS # 2001-11005
NMOCD Ref. # 1RP-0398
NE 1/4 of the SE 1/4, Sec. 3, T21S, R37E
Lea County, New Mexico
GPS: 32.503649, -103.148924

Exhibit

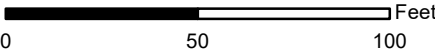
6



Groundwater Monitoring Site

- Monitor Well (MW)
- Free Phase Plume
- Dissolved Phase Plume

New Mexico - Oil Conservation Division (NMOCD) Criteria:
B (Benzene) - 0.01 mg/L
T (Toluene) - 0.75 mg/L
E (Ethylbenzene) - 0.75 mg/L
X (Total Xylenes) - 0.62 mg/L
J: The identification of the analyte is acceptable; the reported value is an estimate.
NS: Monitoring well was not sampled.
Bold concentrations indicates a concentration above the laboratory sample detection limit (SDL).
Highlighted concentrations indicate a concentration exceeding the NMOCD Delineation and Remediation Limits. PSH thicknesses are measured in hundredths of feet.



Fractional Scale: 1:600

DATA SOURCES:
Bing Maps - Aerial Imagery, World Street Map

Project No.:
AR207012
Date:
May 2020
Drawn By:
KK
Reviewed By:
ELL

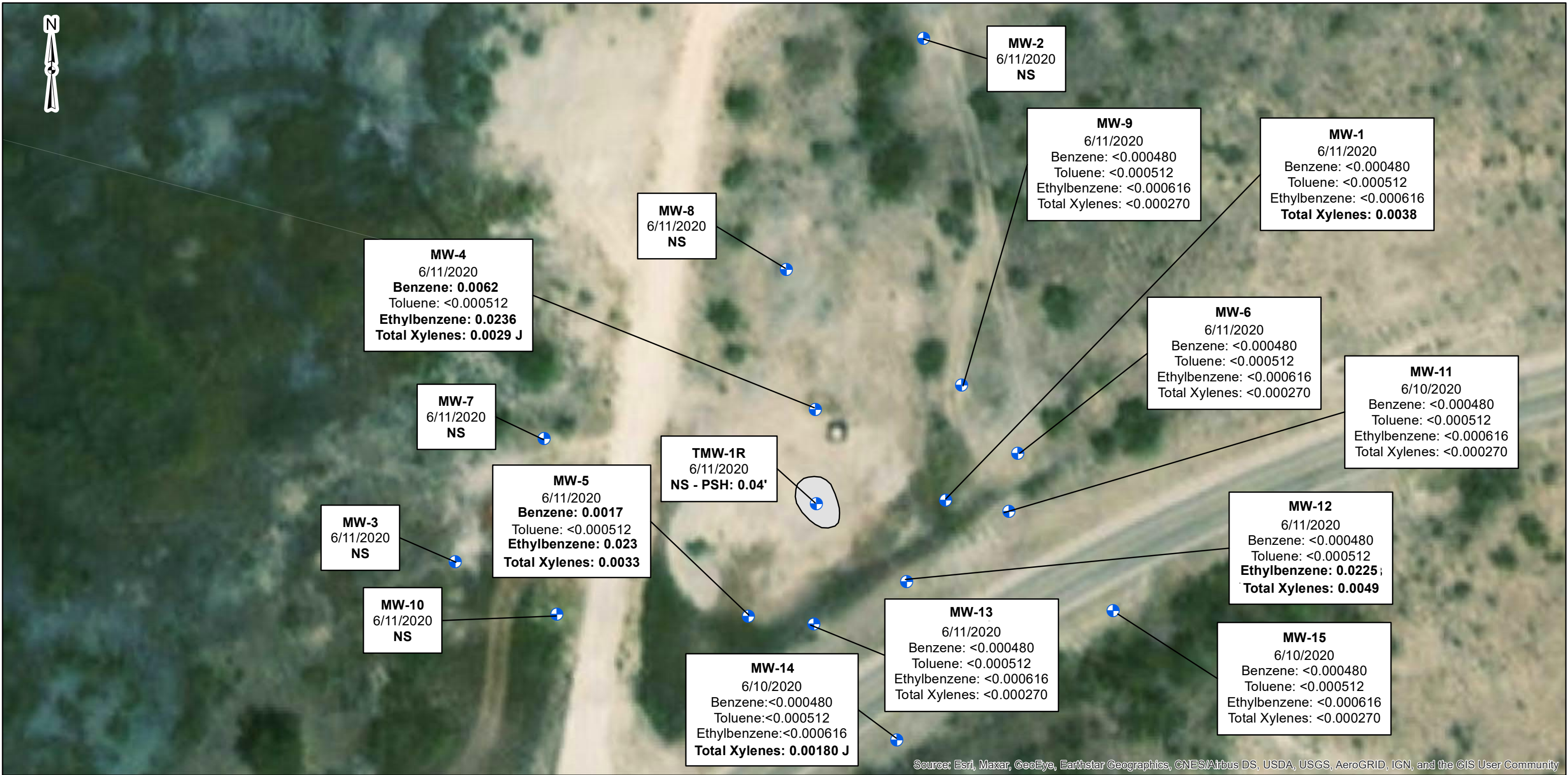
Terracon
5847 50th St. Lubbock, TX 79424
PH. (806) 300-0104 terracon.com

1Q20 Groundwater Contaminant Concentration Map (01/22/20)

Livingston Ridge to Hugh - P. Sims
Plains SRS # 2001-11005
NMOCD Ref. # 1R-0398
Plains Pipeline, LP
Lea County, New Mexico
GPS: 32.503649°, -103.148924°

Exhibit

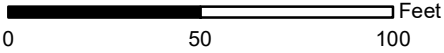
7



Groundwater Monitoring Site

- Monitoring Well (MW)
- Free Phase Plume

New Mexico - Oil Conservation Division (NMOCD) Criteria:
B (Benzene) - 0.01 mg/L
T (Toluene) - 0.75 mg/L
E (Ethylbenzene) - 0.75 mg/L
X (Total Xylenes) - 0.62 mg/L
J: The identification of the analyte is acceptable; the reported value is an estimate.
NS: Monitoring well was not sampled.
Bold concentrations indicates a concentration above the laboratory sample detection limit (SDL).
Highlighted concentrations indicate a concentration exceeding the RRC Delineation and Remediation Limits. PSH thicknesses are measured in tenths of feet.



1:598

DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap

Project No.:	AR207012
Date:	Jul 2020
Drawn By:	KAK
Reviewed By:	ELL

5847 50th St. Lubbock, TX 79424
PH. (806) 300-0104 terracon.com

2Q20 Groundwater Contaminant Concentration Map (06/10-11/20)
Livingston Ridge to Hugh - P. Sims Plains SRS # 2001-11005 NMOCD Ref. # 1R-0398 Plains Pipeline, LP NE 1/4 of the SE 1/4, Section 3, T21S, R37E Lea County, New Mexico GPS: 32.503649°, -103.148924°

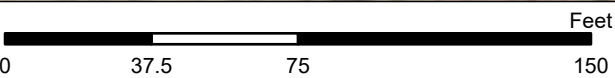
Exhibit
8



Legend:

- Monitor Well (MW)
- Free Phase Plume

New Mexico- Oil Conservation Division(NMOCD) Criteria:
B (Benzene) - 0.01 mg/L
T (Toluene) - 0.75 mg/L
E (Ethylbenzene) - 0.75 mg/L
X (Total Xylenes) - 0.62 mg/L
- NS: Monitoring well was not sampled
- **Bold** concentrations indicates a concentration above laboratory sample detection limit (SDL).
- **Highlight** indicates concentrations exceeding applicable NMOCD criteria
- All concentrations are reported in milligrams per liter (mg/L)
- PSH thickness is measured in tenths of feet.



DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap

Project No.:
AR207012
Date:
Oct 2020
Drawn By:
BAD
Reviewed By:
ELL

Terracon
5847 50th Street Lubbock, Texas 79424
PH. (806) 300-0140 terracon.com

3Q20Groundwater Concentration Map (9/23/20)

Livingston Ridge to Hugh - P. Sims
Plains SRS # 2001-11005
NMOCD Ref. # 1RP-0398
NE 1/4 of the SE 1/4, Sec. 3, T21S, R37E
Lea County, New Mexico
GPS: 32.503649, -103.148924

Exhibit

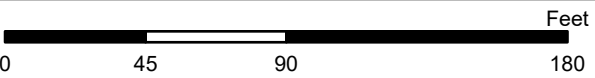
9



Legend:

- Monitor Well (MW)
- Free Phase Plume

New Mexico- Oil Conservation Division(NMOCD) Criteria:
B (Benzene) - 0.01 mg/L
T (Toluene) - 0.75 mg/L
E (Ethylbenzene) - 0.75 mg/L
X (Total Xylenes) - 0.62 mg/L
- NS: Monitoring well was not sampled
- **Bold** concentrations indicates a concentration above laboratory sample detection limit (SDL).
- **Highlight** indicates concentrations exceeding applicable NMOCD criteria
- All concentrations are reported in milligrams per liter (mg/L)
- PSH thickness is measured in tenths of feet.



DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap

Project No.:	AR207012
Date:	Jan 2021
Drawn By:	BAD
Reviewed By:	ELL

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terracon.com

4Q20 Groundwater Concentration Map (12/22/20)
Livingston Ridge to Hugh - P. Sims Plains SRS # 2001-11005 NMOCD Ref. # 1RP-0398 NE 1/4 of the SE 1/4, Sec. 3, T21S, R37E Lea County, New Mexico GPS: 32.503649, -103.148924

Exhibit
10

APPENDIX B

Table 1 – Groundwater Elevation and PSH Thickness Summary

Table 2 – Groundwater BTEX Concentration Analytical Summary

Table 3a – TMW-1R PSH Thickness & Recovery Summary

Table 3b – MW-4 Gauging and BTEX Impacted Groundwater Recovery Summary

Table 3c – MW-5 Gauging and BTEX Impacted Groundwater Recovery Summary

Table 3d – MW-12 Gauging and BTEX Impacted Groundwater Recovery Summary

Table 4 – Quarterly AFR Event Results

Table 5 – Concentrations of PAH in Groundwater Summary

Table 1
Groundwater Elevation & PSH¹ Thickness Summary

Livingston Ridge - HP Sims
Lea County, New Mexico
Plains Pipeline, L.P. SRS #: 2001-11005
Terracon Project #: AR207012
NMOCD² Reference #: 1R-0398

All measurements are in feet above mean sea level

Monitoring Well (Well Diameter ")	Date Gauged	Top of Casing (TOC) ³ Elevation*	Depth to PSH Below TOC (feet)	Depth to Water Below TOC (feet)	PSH Thickness (feet)	Corrected Groundwater Elevation**
MW-1 (2")	01/20/2016	3,374.23	-	37.21	-	3,337.02
	04/26/2016		-	37.20	-	3,337.03
	07/23/2016		-	37.87	-	3,336.36
	10/06/2016		35.72	35.73	0.01	3,338.51
	02/09/2017		-	35.87	-	3,338.36
	04/26/2017		-	35.96	-	3,338.27
	07/15/2017		-	36.62	-	3,337.61
	11/08/2017		-	36.61	-	3,337.62
	01/25/2018		-	40.04	-	3,334.19
	04/23/2018		-	36.70	-	3,337.53
	05/09/2018		-	36.72	-	3,337.51
	06/13/2018		-	36.92	-	3,337.31
	07/30/2018		-	37.49	-	3,336.74
	08/28/2018		-	37.77	-	3,336.46
	09/18/2018		-	37.90	-	3,336.33
	11/26/2018		-	37.38	-	3,336.85
	02/26/2019		-	37.78	-	3,336.45
	05/21/2019		-	37.91	-	3,336.32
	09/03/2019		-	37.78	-	3,336.45
	11/14/2019		-	38.82	-	3,335.41
	01/22/2020		-	38.61	-	3,335.62
	06/08/2020		-	38.97	-	3,335.26
	09/23/2020		-	38.42	-	3,335.81
	12/17/2020		-	39.63	-	3,334.60
MW-2 (2")	01/20/2016	3,378.27	-	40.95	-	3,337.32
	04/26/2016		-	40.92	-	3,337.35
	07/23/2016		-	41.60	-	3,336.67
	10/06/2016		-	39.95	-	3,338.32
	02/09/2017		-	39.53	-	3,338.74
	04/26/2017		-	39.62	-	3,338.65
	07/15/2017		-	40.30	-	3,337.97
	11/08/2017		-	40.40	-	3,337.87
	01/25/2018		-	40.25	-	3,338.02
	04/23/2018		-	40.36	-	3,337.91
	05/09/2018		-	40.40	-	3,337.87
	06/13/2018		-	40.69	-	3,337.58
	07/30/2018		-	41.16	-	3,337.11
	08/28/2018		-	41.40	-	3,336.87
	09/18/2018		-	41.51	-	3,336.76
	11/26/2018		-	41.44	-	3,336.83
	02/26/2019		-	41.44	-	3,336.83
	05/21/2019		-	41.60	-	3,336.67
	09/03/2019		Dry			
	11/14/2019		Dry			
	01/22/2020		-	42.33	-	3,335.94
	06/08/2020		Dry			
	09/23/2020		Dry			
	12/17/2020		Dry			
MW-3 (2")	10/01/2018	3,367.36	Plugged & Abandoned			
MW-4 (2")	01/20/2016	3,372.73	35.56	35.57	0.01	3,337.17
	04/26/2016		-	35.55	-	3,337.18
	07/23/2016		36.24	36.25	0.01	3,336.49
	10/06/2016		-	34.02	-	3,338.71
	02/09/2017		-	34.21	-	3,338.52
	04/26/2017		-	34.30	-	3,338.43
	07/15/2017		-	34.95	-	3,337.78
	11/08/2017		-	34.99	-	3,337.74
	01/24/2018		-	34.95	-	3,337.78
	04/23/2018		-	35.07	-	3,337.66
	05/09/2018		-	35.04	-	3,337.69
	06/13/2018		-	35.38	-	3,337.35
	07/30/2018		-	35.86	-	3,336.87
	08/28/2018		-	36.20	-	3,336.53
	09/18/2018		-	34.26	-	3,338.47
	11/26/2018		-	36.12	-	3,336.61
	02/26/2019		-	36.12	-	3,336.61
	05/21/2019		-	36.26	-	3,336.47
	09/03/2019		-	37.10	-	3,335.63
	11/14/2019		-	37.17	-	3,335.56
	01/22/2020		-	36.95	-	3,335.78
	06/08/2020		-	37.35	-	3,335.38
	09/23/2020		-	37.88	-	3,334.85
	12/17/2020		-	37.97	-	3,334.76

Notes:

1. PSH: Phase Separated Hydrocarbons

2. NMOCD: New Mexico Oil Conservation Division

3. TOC: Top of Casing

* Elevations based on the North American Vertical Datum of 1988.

** Corrected groundwater elevations were extrapolated using a PSH specific gravity of 0.85, if PSH was gauged in the monitoring well.

Table 1
Groundwater Elevation & PSH¹ Thickness Summary

Livingston Ridge - HP Sims
Lea County, New Mexico
Plains Pipeline, L.P. SRS #: 2001-11005
Terracon Project #: AR207012
NMOCD² Reference #: 1R-0398

All measurements are in feet above mean sea level

Monitoring Well (Well Diameter ")	Date Gauged	Top of Casing (TOC) ³ Elevation*	Depth to PSH Below TOC (feet)	Depth to Water Below TOC (feet)	PSH Thickness (feet)	Corrected Groundwater Elevation**
MW-5 (2")	01/20/2016	3,370.92	-	33.70	-	3,337.22
	04/26/2016		-	33.65	-	3,337.27
	07/23/2016		-	34.38	-	3,336.54
	10/06/2016		-	31.08	-	3,339.84
	10/20/2016		-	32.05	-	3,338.87
	02/09/2017		-	31.98	-	3,338.94
	04/26/2017		-	32.44	-	3,338.48
	07/15/2017		-	33.10	-	3,337.82
	11/08/2017		-	33.13	-	3,337.79
	01/24/2018		-	33.03	-	3,337.89
	04/23/2018		-	33.17	-	3,337.75
	05/09/2018		-	33.17	-	3,337.75
	06/13/2018		-	33.48	-	3,337.44
	07/30/2018		-	34.02	-	3,336.90
	08/28/2018		-	34.28	-	3,336.64
	09/18/2018		-	34.40	-	3,336.52
	11/26/2018		-	34.21	-	3,336.71
	02/26/2019		-	34.23	-	3,336.69
	05/21/2019		-	34.39	-	3,336.53
	09/03/2019		-	35.26	-	3,335.66
	11/14/2019		-	35.26	-	3,335.66
	01/22/2020		-	35.05	-	3,335.87
	06/08/2020		-	35.47	-	3,335.45
	09/23/2020		-	36.14	-	3,334.78
	12/17/2020		-	36.10	-	3,334.82
MW-6 (2")	01/20/2016	3,377.02	-	40.04	-	3,336.98
	04/26/2016		-	40.03	-	3,336.99
	07/23/2016		-	40.70	-	3,336.32
	10/06/2016		-	38.64	-	3,338.38
	02/09/2017		-	38.72	-	3,338.30
	04/26/2017		-	38.82	-	3,338.20
	07/15/2017		-	39.43	-	3,337.59
	11/08/2017		-	39.49	-	3,337.53
	01/25/2018		-	39.40	-	3,337.62
	04/23/2018		-	39.56	-	3,337.46
	05/09/2018		-	39.54	-	3,337.48
	06/13/2018		-	39.68	-	3,337.34
	07/30/2018		-	40.35	-	3,336.67
	08/28/2018		-	40.59	-	3,336.43
	09/18/2018		-	40.72	-	3,336.30
	11/26/2018		-	40.55	-	3,336.47
	02/26/2019		-	40.62	-	3,336.40
	05/21/2019		-	40.73	-	3,336.29
	09/03/2019		-	41.57	-	3,335.45
	11/14/2019		-	41.65	-	3,335.37
	01/22/2020		-	41.46	-	3,335.56
	06/08/2020		-	41.79	-	3,335.23
	09/23/2020		-	42.45	-	3,334.57
	12/17/2020		-	42.47	-	3,334.55
MW-7 (2")	01/20/2016	3,369.47	-	32.12	-	3,337.35
	04/26/2016		-	32.04	-	3,337.43
	07/23/2016		-	32.80	-	3,336.67
	10/06/2016		-	30.21	-	3,339.26
	02/09/2017		-	30.64	-	3,338.83
	04/26/2017		-	30.79	-	3,338.68
	07/15/2017		-	31.40	-	3,338.07
	11/09/2017		-	31.52	-	3,337.95
	01/24/2018		-	31.42	-	3,338.05
	04/23/2018		-	31.58	-	3,337.89
	05/09/2018		-	31.56	-	3,337.91
	06/13/2018		-	31.77	-	3,337.70
	07/30/2018		-	32.39	-	3,337.08
	08/28/2018		-	32.69	-	3,336.78
	09/18/2018		-	32.82	-	3,336.65
	11/26/2018		-	32.63	-	3,336.84
	02/26/2019		-	32.62	-	3,336.85
	05/21/2019		-	32.77	-	3,336.70
	09/03/2019		-	33.69	-	3,335.78
	11/14/2019		-	33.64	-	3,335.83
	01/22/2020		-	33.45	-	3,336.01
	06/08/2020		-	33.88	-	3,335.59
	09/23/2020		-	34.54	-	3,334.93
	12/17/2020		-	34.49	-	3,334.98
MW-8 (2")	01/20/2016	3,373.77	-	36.52	-	3,337.25
	04/26/2016		-	36.47	-	3,337.30
	07/23/2016		-	37.17	-	3,336.60
	10/06/2016		-	35.03	-	3,338.74
	02/09/2016		-	35.10	-	3,338.67
	04/26/2017		-	35.24	-	3,338.53
	07/15/2017		-	35.86	-	3,337.91
	11/08/2017		-	35.96	-	3,337.81
	01/24/2018		-	35.82	-	3,337.91
	04/23/2018		-	35.94	-	3,337.39
	05/09/2018		-	35.95	-	3,337.38
	06/13/2018		-	36.28	-	3,337.05
	07/30/2018		-	36.77	-	3,336.56
	08/28/2018		-	37.02	-	3,336.31
	09/18/2018		-	37.11	-	3,336.22
	11/26/2018		-	37.04	-	3,336.29
	02/26/2019		-	37.03	-	3,336.30
	05/21/2019		-	37.19	-	3,336.14
	09/03/2019		-	38.02	-	3,335.31
	11/14/2019		-	38.16	-	3,335.17
	01/22/2020		-	37.84	-	3,335.49
	06/08/2020		-	38.72	-	3,334.61
	09/23/2020		-	38.91	-	3,334.42
	12/17/2020		-	38.88	-	3,334.45

Notes:

1. PSH: Phase Separated Hydrocarbons

2. NMOCD: New Mexico Oil Conservation Division

3. TOC: Top of Casing

* Elevations based on the North American Vertical Datum of 1988.

** Corrected groundwater elevations were extrapolated using a PSH specific gravity of 0.85, if PSH was gauged in the monitoring well.

Table 1
Groundwater Elevation & PSH¹ Thickness Summary

Livingston Ridge - HP Sims
Lea County, New Mexico
Plains Pipeline, L.P. SRS #: 2001-11005
Terracon Project #: AR207012
NMOCD² Reference #: 1R-0398

All measurements are in feet above mean sea level

Monitoring Well (Well Diameter ")	Date Gauged	Top of Casing (TOC) ³ Elevation*	Depth to PSH Below TOC (feet)	Depth to Water Below TOC (feet)	PSH Thickness (feet)	Corrected Groundwater Elevation**
MW-9 (2")	01/20/2016	3,375.92	-	38.87	-	3,337.05
	04/26/2016		-	38.85	-	3,337.07
	07/23/2016		-	39.53	-	3,336.39
	10/06/2016		-	37.47	-	3,338.45
	02/13/2017		-	37.51	-	3,338.41
	04/26/2017		-	37.56	-	3,338.36
	07/15/2017		-	38.20	-	3,337.72
	11/08/2017		-	38.35	-	3,337.57
	01/25/2018		-	38.20	-	3,337.72
	04/23/2018		-	38.34	-	3,337.58
	05/09/2018		-	38.33	-	3,337.59
	06/13/2018		-	38.70	-	3,337.22
	07/30/2018		-	39.17	-	3,336.75
	08/28/2018		-	39.41	-	3,336.51
	09/18/2018		-	39.54	-	3,336.38
	11/26/2018	3,375.92	-	39.41	-	3,336.51
	02/26/2019		-	39.42	-	3,336.50
	05/21/2019		-	39.55	-	3,336.37
	09/03/2019		-	40.39	-	3,335.53
	11/14/2019		-	40.44	-	3,335.48
	01/22/2020		-	41.24	-	3,334.68
	06/08/2020		-	41.58	-	3,334.34
	09/23/2020		-	41.26	-	3,334.66
	12/17/2020		-	41.26	-	3,334.66
MW-10 (2")	01/21/2016	3,370.17	-	32.96	-	3,337.21
	04/26/2016		-	32.89	-	3,337.28
	07/23/2016		-	33.66	-	3,336.51
	10/06/2016		-	30.89	-	3,339.28
	02/09/2017		-	31.52	-	3,338.65
	04/26/2017		-	31.65	-	3,338.52
	07/15/2017		-	32.32	-	3,337.85
	11/09/2017		-	32.35	-	3,337.82
	01/24/2018		-	32.38	-	3,337.79
	04/25/2018		-	32.41	-	3,337.76
	05/09/2018		-	32.45	-	3,337.72
	06/13/2018		-	32.59	-	3,337.58
	07/30/2018		-	33.22	-	3,336.95
	08/28/2018		-	33.56	-	3,336.61
	09/18/2018		-	33.69	-	3,336.48
	11/26/2018		-	33.43	-	3,336.74
	02/26/2019		-	33.46	-	3,336.71
	05/21/2019		-	33.66	-	3,336.51
	09/03/2019		-	34.56	-	3,335.61
	11/14/2019		-	34.54	-	3,335.63
	01/22/2020		-	34.30	-	3,335.87
	06/08/2020		-	34.41	-	3,335.76
	09/23/2020		-	35.40	-	3,334.77
	09/23/2020		-	35.33	-	3,334.84
MW-11 (2")	01/20/2016	3,373.96	-	37.10	-	3,336.86
	04/26/2016		-	36.99	-	3,336.97
	07/23/2016		-	37.65	-	3,336.31
	10/06/2016		-	35.58	-	3,338.38
	02/09/2016		-	35.65	-	3,338.31
	04/26/2017		-	35.78	-	3,338.18
	07/15/2017		-	36.38	-	3,337.58
	11/08/2017		-	36.45	-	3,337.51
	01/25/2018		-	35.95	-	3,338.01
	04/25/2018		-	36.51	-	3,337.45
	05/09/2018		-	36.49	-	3,337.47
	06/13/2018		-	36.80	-	3,337.16
	07/30/2018		-	37.32	-	3,336.64
	08/28/2018		-	37.55	-	3,336.41
	09/18/2018		-	37.90	-	3,336.06
	11/26/2018		-	37.49	-	3,336.47
	02/26/2019		-	37.57	-	3,336.39
	05/21/2019		-	37.71	-	3,336.25
	09/03/2019		-	38.55	-	3,335.41
	11/14/2019		-	36.55	-	3,337.41
	01/22/2020		-	38.42	-	3,335.54
	06/08/2020		-	38.70	-	3,335.26
	09/23/2020		-	39.40	-	3,334.56
	12/17/2020		-	39.44	-	3,334.52
MW-12 (2")	01/20/2016	3,372.41	-	35.50	-	3,336.91
	04/26/2016		-	35.38	-	3,337.03
	07/23/2016		-	36.07	-	3,336.34
	10/06/2016		-	33.81	-	3,338.60
	02/09/2016		-	34.05	-	3,338.36
	04/26/2017		-	34.19	-	3,338.22
	07/15/2017		-	34.80	-	3,337.61
	11/08/2017		-	34.86	-	3,337.55
	01/25/2018		-	34.75	-	3,337.66
	04/25/2018		-	34.91	-	3,337.50
	05/09/2018		-	34.89	-	3,337.52
	06/13/2018		-	35.08	-	3,337.33
	07/30/2018		-	35.72	-	3,336.69
	08/28/2018		-	36.01	-	3,336.40
	09/18/2018		-	36.14	-	3,336.27
	11/26/2018		-	35.96	-	3,336.45
	02/26/2019		-	35.98	-	3,336.43
	05/21/2019		-	36.12	-	3,336.29
	09/03/2019		-	36.97	-	3,335.44
	11/14/2019		-	37.03	-	3,335.38
	01/22/2020		-	36.40	-	3,336.01
	06/08/2020		-	37.19	-	3,335.22
	09/23/2020		-	37.82	-	3,334.59
	12/17/2020		-	37.83	-	3,334.58

Notes:

1. PSH: Phase Separated Hydrocarbons

2. NMOCD: New Mexico Oil Conservation Division

3. TOC: Top of Casing

* Elevations based on the North American Vertical Datum of 1988.

** Corrected groundwater elevations were extrapolated using a PSH specific gravity of 0.85, if PSH was gauged in the monitoring well.

Table 1
Groundwater Elevation & PSH¹ Thickness Summary

Livingston Ridge - HP Sims
Lea County, New Mexico
Plains Pipeline, L.P. SRS #: 2001-11005
Terracon Project #: AR207012
NMOCD² Reference #: 1R-0398

All measurements are in feet above mean sea level

Monitoring Well (Well Diameter ")	Date Gauged	Top of Casing (TOC) ³ Elevation*	Depth to PSH Below TOC (feet)	Depth to Water Below TOC (feet)	PSH Thickness (feet)	Corrected Groundwater Elevation**
MW-13 (2")	01/20/2016	3,368.91	-	31.95	-	3,336.96
	04/26/2016		-	31.85	-	3,337.06
	07/23/2016		-	32.54	-	3,336.37
	10/06/2016		-	30.14	-	3,338.77
	02/09/2016		-	29.45	-	3,339.46
	04/26/2017		-	30.63	-	3,338.28
	07/15/2017		-	31.24	-	3,337.67
	11/08/2017		-	31.34	-	3,337.57
	01/25/2018		-	32.04	-	3,336.87
	04/25/2018		-	31.32	-	3,337.59
	05/09/2018		-	31.32	-	3,337.59
	06/13/2018		-	31.43	-	3,337.48
	07/30/2018		-	32.13	-	3,336.78
	08/28/2018		-	32.43	-	3,336.48
	09/18/2018		-	32.56	-	3,336.35
	11/26/2018		-	32.38	-	3,336.53
	02/26/2019		-	32.43	-	3,336.48
	05/21/2019		-	32.48	-	3,336.43
	09/03/2019		-	33.42	-	3,335.49
	11/14/2019		-	33.46	-	3,335.45
	01/22/2020		-	33.25	-	3,336.66
	06/08/2020		-	33.65	-	3,335.26
	09/23/2020		-	34.32	-	3,334.59
	12/17/2020		-	34.27	-	3,334.64
MW-14 (2")	01/20/2016	3,371.54	-	34.68	-	3,336.86
	04/26/2016		-	34.58	-	3,336.96
	07/23/2016		-	35.29	-	3,336.25
	10/06/2016		-	32.93	-	3,338.61
	02/09/2016		-	33.21	-	3,338.33
	04/26/2017		-	33.42	-	3,338.12
	07/15/2017		-	34.02	-	3,337.52
	11/09/2017		-	32.65	-	3,338.89
	01/25/2018		-	33.94	-	3,337.60
	04/25/2018		-	34.11	-	3,337.43
	05/09/2018		-	34.10	-	3,337.44
	06/13/2018		-	34.46	-	3,337.08
	07/30/2018		-	34.92	-	3,336.62
	08/28/2018		-	35.18	-	3,336.36
	09/18/2018		-	35.31	-	3,336.23
	11/26/2018		-	35.16	-	3,336.38
	02/26/2019		-	35.15	-	3,336.39
	05/21/2019		-	35.31	-	3,336.23
	09/03/2019		-	36.17	-	3,335.37
	11/14/2019		-	36.19	-	3,335.35
	01/22/2020		-	35.98	-	3,335.56
	06/08/2020		-	35.35	-	3,336.19
	09/23/2020		-	37.33	-	3,334.21
	12/17/2020		-	37.02	-	3,334.52
MW-15 (2")	01/20/2016	3,377.64	-	40.87	-	3,336.77
	04/26/2016		-	40.80	-	3,336.84
	07/23/2016		-	41.45	-	3,336.19
	10/06/2016		-	39.42	-	3,338.22
	02/09/2016		-	39.46	-	3,338.18
	04/26/2017		-	39.64	-	3,338.00
	07/15/2017		-	40.20	-	3,337.44
	11/09/2017		-	40.23	-	3,337.41
	01/25/2018		-	40.11	-	3,337.53
	04/25/2018		-	40.30	-	3,337.34
	05/09/2018		-	40.26	-	3,337.38
	06/13/2018		-	40.41	-	3,337.23
	07/30/2018		-	41.11	-	3,336.53
	08/28/2018		-	41.36	-	3,336.28
	09/18/2018		-	41.49	-	3,336.15
	11/26/2018		-	41.35	-	3,336.29
	02/26/2019		-	41.37	-	3,336.27
	05/21/2019		-	41.48	-	3,336.16
	09/03/2019		-	42.31	-	3,335.33
	11/14/2019		-	42.43	-	3,335.21
	01/22/2020		-	42.18	-	3,335.46
	06/08/2020		-	42.23	-	3,335.41
	09/23/2020		-	41.31	-	3,336.33
	12/17/2020		-	43.27	-	3,334.37
TMW-1 (2")	01/20/2016	3,372.24	34.73	38.40	3.67	3,336.96
	04/26/2016		34.65	38.44	3.79	3,337.02
	07/23/2016		35.60	37.34	1.74	3,336.38
	10/06/2016		33.21	35.53	2.32	3,338.68
	02/09/2016		33.40	36.55	3.15	3,338.37
	04/26/2017		33.44	37.00	3.56	3,338.27
	07/15/2017		34.18	37.12	2.94	3,337.62
	11/08/2017		34.05	38.44	2.94	3,336.30
	03/29/2018		34.05	38.60	4.55	3,337.51
	04/23/2018		34.07	38.12	4.05	3,337.56
	05/09/2018		34.09	38.47	4.38	3,337.49
	06/13/2018		34.43	38.92	4.49	3,337.14
	07/30/2018		35.07	38.74	3.67	3,336.62
	08/28/2018		35.27	39.47	4.20	3,336.34
	09/18/2018		35.35	39.66	4.31	3,336.24
	10/01/2018		Plugged & Abandoned			
TMW-1R	10/01/2018	3,431.82	Installation			
	11/26/2018		35.47	36.57	1.10	3,396.19
	02/26/2019		35.32	37.12	1.80	3,396.23
	05/21/2019		35.50	37.20	1.70	3,396.07
	09/03/2019		36.54	37.09	0.55	3,395.20
	11/14/2019		37.61	38.82	1.21	3,394.03
	01/22/2020		36.40	36.51	0.11	3,395.40
	06/08/2020		36.63	36.67	0.04	3,395.18
	09/23/2020		36.72	36.99	0.27	3,395.06
	12/17/2020		37.45	37.55	0.10	3,394.36

Notes:

1. PSH: Phase Separated Hydrocarbons

2. NMOCD: New Mexico Oil Conservation Division

3. TOC: Top of Casing

* Elevations based on the North American Vertical Datum of 1988.

** Corrected groundwater elevations were extrapolated using a PSH specific gravity of 0.85, if PSH was gauged in the monitoring well.

Table 2
Groundwater BTEX¹ Concentration Analytical Summary

Livingston Ridge to Hugh P. Sims
Lea County, New Mexico
Plains Pipeline, L.P. SRS #: 2001-1005
Terracon Project #: AR207012
NMOCD² Reference #: 1R-0398

All concentrations are in milligrams per liter (mg/L)

Monitoring Well	Date Sampled	EPA SW846-8021B						
		Benzene	Toluene	Ethylbenzene	M,P- Xylenes	O- Xylenes	Total Xylenes	Total BTEX
NMOCD RRAL CRITERIA ³		0.01	0.75	0.75	TOTAL XYLENES 0.62			NE ⁴
MW-1	01/20/2016	<0.000800	<0.00120	<0.000800	<0.00120	<0.000700	<0.000700	<0.000700
	04/26/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	07/23/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	10/06/2016	0.00984	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	0.00984
	02/14/2017	0.00429	<0.00100	<0.000657	0.00591	<0.000642	0.00591	0.0102
	04/26/2017	0.00212	<0.000367	<0.000657	0.00121	<0.000642	0.00121	0.00333
	07/16/2017	<0.000408	<0.000367	<0.000657	<0.000630	0.00878	0.00878	0.00878
	11/08/2017	<0.000408	<0.000512	<0.000616	0.0064	0.0039	0.0103	0.0103
	01/25/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	04/23/2018	<0.000480	<0.000512	<0.000616	0.00710	0.00310	0.0102	0.0102
	08/30/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/28/2018	0.000700J	<0.000512	0.00140	0.00700	0.00310	0.0101	0.0122
	02/26/2019	0.002300	<0.000512	<0.000616	<0.000454	0.00120	0.00120	0.00350
	05/21/2019	0.000910J	<0.000367	<0.000657	0.00281J	<0.000642	0.00281	0.00372
	09/03/2019	<0.000480	<0.000512	<0.000616	0.00240	0.000800 J	0.00320	0.00320
	11/15/2019	Inadvertantly Not Sampled						
	01/22/2020	<0.000480	<0.000512	<0.000616	0.0065	0.0029	0.0094	0.0094
	06/11/2020	<0.000480	<0.000512	<0.000616	0.0027	0.0011	0.0038	0.0038
	DUP-1	<0.000480	<0.000512	<0.000616	0.0027	0.0012	0.0039	0.0039
	09/23/2020	<0.00200	<0.00200	<0.00200	0.00428	<0.00200	0.00428	0.00428
	12/22/2020	<0.000408	0.000890 J	<0.000657	0.00265 J	0.00158 J	0.00423	0.00512
MW-2	01/20/2016	<0.000800	<0.00120	<0.000800	<0.00120	<0.000700	<0.000700	<0.000700
	04/26/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	07/23/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	10/06/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	02/13/2017	<0.000408	<0.00100	<0.000657	<0.00140	<0.000642	<0.000642	<0.000408
	04/26/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	07/16/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	11/08/2017	<0.000408	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	01/25/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	04/23/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	08/30/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/27/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	02/26/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	05/21/2019	Inadvertantly Not Sampled						
	09/03/2019							
	11/15/2019							
	01/22/2020							
	06/11/2020	Not Sampled due to Sample Reduction						
	09/23/2020							
	12/22/2020							
	MW-3	10/01/2018	Plugged & Abandoned					
MW-4	01/20/2016	<0.000800	0.00278	0.0058	<0.00120	<0.000700	<0.000700	0.00858
	04/26/2016	<0.000408	<0.000367	0.00706	<0.000630	<0.000642	<0.000630	0.00706
	07/23/2016	<0.000408	<0.000367	0.00503	<0.000630	<0.000642	<0.000630	0.00503
	10/06/2016	0.00208	<0.000367	0.00372	0.00117	<0.000642	0.00117	0.00697
	02/14/2017	<0.000408	<0.00100	0.0103	<0.00140	<0.000642	<0.000642	0.0103
	04/26/2017	<0.000408	<0.000367	0.00846	<0.000630	<0.000642	<0.000630	0.00846
	07/16/2017	0.00719	<0.000367	0.00954	<0.000630	<0.000642	<0.000630	0.0167
	11/08/2017	<0.000480	<0.000512	0.0076	0.00140	<0.000270	0.00140	0.00900
	01/24/2018	<0.000480	<0.000512	0.0065	<0.000454	<0.000270	<0.000270	0.0065
	04/23/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	08/30/2018	<0.000480	<0.000512	0.00350	<0.000454	<0.000270	<0.000270	0.00350
	11/28/2018	<0.000480	<0.000512	0.00230	0.00140J	0.000800J	0.00220J	0.00450
	02/26/2019	<0.000480	<0.000512	0.00710	0.00160J	0.00110	0.00270	0.00980
	05/21/2019	0.00712	0.000750J	0.0279	0.00154J	0.00319	0.00473	0.0405
	09/03/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	DUP-1	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/15/2019	<0.000214	<0.000500	<0.000146	<0.000330	<0.000192	<0.000192	<0.000146
	01/22/2020	0.01151	<0.000512	0.0411	0.0062	0.001 J	0.0072	0.0634
	DUP-2	0.0149	<0.000512	0.0405	0.0061	0.001 J	0.0071	0.0625
	06/11/2020	0.0062	<0.000512	0.0236	0.0021	0.0008 J	0.0029	0.0327
	09/23/2020	0.00382	<0.00200	0.0198	<0.00400	<0.00200	<0.00200	0.0236
12/23/2020	0.00430	0.000690 J	0.0198	0.00239 J	0.00382	0.00621	0.0310	

Notes:

- BTEX: Benzene, Toluene, Ethylbenzene, and Total Xylenes
 - NMOCD: New Mexico Oil Conservation Division
 - RRAL Criteria: Recommended Remediation Action Level Criteria
 - NE: Not Established
- J: The target analyte was positively identified below the quantitation limit and above the detection limit
- Bold** text indicates a concentration above the laboratory detection limit.
- Highlighted text** indicates a concentration exceeding the NMOCD RRAL Criteria

Table 2
Groundwater BTEX¹ Concentration Analytical Summary

Livingston Ridge to Hugh P. Sims
 Lea County, New Mexico
 Plains Pipeline, L.P. SRS #: 2001-1005
 Terracon Project #: AR207012
 NMOCD² Reference #: 1R-0398

All concentrations are in milligrams per liter (mg/L)

Monitoring Well	Date Sampled	EPA SW846-8021B							
		Benzene	Toluene	Ethylbenzene	M,P- Xylenes	O- Xylenes	Total Xylenes	Total BTEX	
NMOCD RRAL CRITERIA ³		0.01	0.75	0.75	TOTAL XYLENES 0.62			NE ⁴	
MW-5	01/20/2016	0.00602	<0.00120	0.0977	<0.00120	<0.000700	<0.000700	0.104	
	04/26/2016	<0.000408	<0.000367	0.0695	<0.000630	<0.000642	<0.000630	0.0695	
	07/23/2016	0.00376	<0.000367	0.0408	<0.000630	<0.000642	<0.000630	0.00446	
	10/06/2016	0.0207	<0.000367	0.0589	0.0162	0.00702	0.0232	0.103	
	10/20/2016	0.00772	<0.000367	0.0327	0.00458				
	02/14/2017	0.00403	<0.00100	0.125	<0.00140	<0.000642	<0.000642	0.129	
	04/26/2017	0.00641	<0.000367	0.123	<0.000630	<0.000642	<0.000630	0.129	
	07/16/2017	0.0146	<0.000367	0.161	<0.000630	<0.000642	<0.000630	0.176	
	11/08/2017	0.0052	<0.000512	0.161	0.00340	0.00320	0.00660	0.173	
	01/24/2018	<0.000480	<0.000512	0.00804	<0.000454	<0.000270	<0.000270	0.0804	
	04/23/2018	0.00600	<0.000512	0.0724	0.00290	0.00280	0.00570	0.0841	
	08/30/2018	<0.000480	<0.000512	0.0188	<0.000454	<0.000270	<0.000270	0.0188	
	11/30/2018	<0.000480	<0.000512	0.0197	0.00270	0.00280	0.00550	0.0252	
	02/26/2019	<0.000480	<0.000512	0.0646	0.00340	0.00360	0.00700	0.0716	
	05/21/2019	0.00424	0.000620J	0.0271	0.00311J	0.00226	0.00537	0.0373	
	09/03/2019	0.00240	<0.000512	0.0371	0.00110 J	0.00110	0.00220	0.0417	
	11/15/2019	0.00335	<0.000500	0.0525	<0.000330	<0.00192	<0.00192	0.0559	
	DUP-2	0.00328	<0.000500	0.0516	<0.000330	<0.00192	<0.00192	0.0549	
	01/22/2020	0.0049	<0.000512	0.0515	0.0019 J	0.0015	0.0034	0.0598	
	06/11/2020	0.0017	<0.000512	0.023	0.0019 J	0.0014	0.0033	0.028	
	DUP-2	0.0015	<0.000512	0.0213	0.00180 J	0.0014	0.0032	0.026	
	09/23/2020	<0.00200	<0.00200	<0.00200	<0.00400	<0.00200	<0.00200	<0.00200	
	12/22/2020	<0.000408	0.000770 J	<0.000657	0.000920 J	<0.000642	0.000920 J	0.00169 J	
MW-6	01/20/2016	<0.000800	<0.00120	<0.000800	<0.00120	<0.000700	<0.000700	<0.000700	
	04/26/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367	
	07/23/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367	
	10/06/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367	
	02/13/2017	<0.000408	<0.00100	<0.000657	<0.00140	<0.000642	<0.000642	<0.000408	
	04/26/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367	
	07/16/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367	
	11/08/2017	<0.000408	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270	
	01/25/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270	
	04/23/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270	
	08/30/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270	
	11/28/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270	
	02/26/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270	
	05/21/2019	Inadvertantly Not Sampled							
	09/03/2019								
	11/15/2019								
	01/22/2020								
	06/11/2020								
	09/23/2020	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270	
	12/22/2020	<0.00200	<0.00200	<0.00200	<0.00400	<0.00200	<0.00200	<0.00200	
	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367		
MW-7	01/21/2016	<0.000800	<0.00120	<0.000800	<0.00120	<0.000700	<0.000700	<0.000700	
	04/26/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367	
	07/23/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367	
	10/06/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367	
	02/09/2017	<0.000408	<0.00100	<0.000657	<0.00140	<0.000642	<0.000642	<0.000408	
	04/26/2017	<0.000408	<0.000367	<0.000657	<0.000630	0.00232	0.00232	0.00232	
	07/15/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367	
	11/08/2017	<0.000408	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270	
	01/24/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270	
	04/25/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270	
	08/30/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270	
	11/27/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270	
	02/26/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270	
	05/21/2019	Inadvertantly Not Sampled							
	09/03/2019								
	11/15/2019								
	01/22/2020								
	06/11/2020								
	09/23/2020	Not Sampled due to Sample Reduction							
	12/22/2020								

Notes:

1. BTEX: Benzene, Toluene, Ethylbenzene, and Total Xylenes
 2. NMOCD: New Mexico Oil Conservation Division
 3. RRAL Criteria: Recommended Remediation Action Level Criteria
 4. NE: Not Established
- J: The target analyte was positively identified below the quantitation limit and above the detection limit
- Bold** text indicates a concentration above the laboratory detection limit.
- Highlighted text** indicates a concentration exceeding the NMOCD RRAL Criteria

Table 2
Groundwater BTEX¹ Concentration Analytical Summary

Livingston Ridge to Hugh P. Sims
Lea County, New Mexico
Plains Pipeline, L.P. SRS #: 2001-1005
Terracon Project #: AR207012
NMOCD² Reference #: 1R-0398

All concentrations are in milligrams per liter (mg/L)

Monitoring Well	Date Sampled	EPA SW846-8021B						
		Benzene	Toluene	Ethylbenzene	M,P- Xylenes	O- Xylenes	Total Xylenes	Total BTEX
NMOCD RRAL CRITERIA ³		0.01	0.75	0.75	TOTAL XYLENES 0.62			NE ⁴
MW-8	01/20/2016	<0.000800	<0.00120	<0.000800	<0.00120	<0.000700	<0.000700	<0.000700
	04/26/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	07/23/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	10/06/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	02/09/2017	<0.000408	<0.00100	<0.000657	<0.00140	<0.000642	<0.000642	<0.000408
	04/26/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	07/15/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	11/08/2017	<0.000408	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	01/24/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	04/23/2018	<0.000480	0.000800	<0.000616	<0.000454	<0.000270	<0.000270	0.000800
	08/30/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/27/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	02/26/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	05/21/2019	Inadvertantly Not Sampled						
	09/03/2019							
	11/15/2019							
	01/22/2020							
	06/11/2020	Not Sampled due to Sample Reduction						
	09/23/2020							
	12/22/2020							
MW-9	01/20/2016	<0.000800	<0.00120	<0.000800	<0.00120	<0.000700	<0.000700	<0.000700
	04/26/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	07/23/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	10/06/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	02/13/2017	<0.000408	<0.00100	<0.000657	<0.00140	<0.000642	<0.000642	<0.000408
	04/26/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	07/16/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	11/08/2017	<0.000408	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	01/25/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	04/23/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	08/29/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/27/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	02/26/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	05/21/2019	Inadvertantly Not Sampled						
	09/03/2019							
	11/15/2019							
	01/22/2020							
	06/11/2020	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	09/23/2020	<0.00200	<0.00200	<0.00200	<0.00400	<0.00200	<0.00200	<0.00200
	12/22/2020	<0.000408	0.000560 J	<0.000657	<0.000630	<0.000642	<0.000630	0.000560 J
MW-10	01/21/2016	<0.000800	<0.00120	<0.000800	<0.00120	<0.000700	<0.000700	<0.000700
	04/26/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	07/23/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	10/06/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	02/14/2017	<0.000408	<0.00100	<0.000657	<0.00140	<0.000642	<0.000642	<0.000408
	04/26/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	07/15/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	11/08/2017	<0.000408	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	01/24/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	04/25/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	08/30/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/27/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	02/26/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	05/21/2019	Inadvertantly Not Sampled						
	09/03/2019							
	11/15/2019							
	01/22/2020							
	06/11/2020	Not Sampled due to Sample Reduction						
	09/23/2020							
	12/22/2020							

Notes:

1. BTEX: Benzene, Toluene, Ethylbenzene, and Total Xylenes

2. NMOCD: New Mexico Oil Conservation Division

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J: The target analyte was positively identified below the quantitation limit and above the detection limit

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Table 2
Groundwater BTEX¹ Concentration Analytical Summary

Livingston Ridge to Hugh P. Sims
Lea County, New Mexico
Plains Pipeline, L.P. SRS #: 2001-1005
Terracon Project #: AR207012
NMOCD² Reference #: 1R-0398

All concentrations are in milligrams per liter (mg/L)

Monitoring Well	Date Sampled	EPA SW846-8021B						
		Benzene	Toluene	Ethylbenzene	M,P-Xylenes	O-Xylenes	Total Xylenes	Total BTEX
NMOCD RRAL CRITERIA ³		0.01	0.75	0.75	TOTAL XYLENES 0.62			NE ⁴
MW-11	01/21/2016	<0.000800	<0.00120	<0.000800	<0.00120	<0.000700	<0.000700	<0.000700
	04/26/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	07/23/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	10/06/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	02/09/2017	<0.000408	<0.00100	<0.000657	<0.00140	<0.000642	<0.000642	<0.000408
	04/26/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	07/15/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	11/08/2017	<0.000408	<0.000512	0.00480	0.00180	0.000700	0.00250	0.00730
	01/25/2018	<0.000408	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	04/25/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	08/30/2018	<0.000480	<0.000512	0.00380	<0.000454	<0.000270	<0.000270	0.00380
	11/30/2018	<0.000480	<0.000512	<0.000616	0.00190J	<0.000270	0.00190J	0.00190
	02/26/2019	<0.000480	<0.000512	<0.000616	0.00120J	0.000400J	0.00160J	0.00160J
	05/21/2019	<0.000408	0.000580J	<0.000657	0.000960J	<0.000642	0.000960J	0.00154J
	09/03/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/15/2019	<0.000214	<0.000500	<0.000146	<0.000330	<0.000192	<0.000192	<0.000146
	01/22/2020	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	06/10/2020	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	09/23/2020	<0.00200	<0.00200	<0.00200	<0.00400	<0.00200	<0.00200	<0.00200
	12/23/2020	<0.000408	0.000780 J	<0.000657	0.00164 J	<0.000642	0.00164 J	0.00242
MW-12	01/21/2016	<0.000800	<0.00120	<0.000800	0.00413	<0.000700	0.00413	0.00413
	04/26/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	07/23/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	10/06/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	02/09/2017	<0.000408	<0.00100	<0.000657	<0.00140	<0.000642	<0.000642	<0.000408
	04/26/2017	<0.000408	<0.000367	0.0142	0.00469	<0.000642	0.00469	0.0189
	07/15/2017	<0.000408	<0.000367	0.00350	<0.000630	<0.000642	<0.000630	0.0035
	11/08/2017	<0.000408	<0.000512	0.0273	0.00630	<0.000270	0.00630	0.0336
	01/25/2018	<0.000480	<0.000512	0.0482	0.0123	<0.000270	0.0123	0.0605
	04/25/2018	<0.000480	<0.000512	0.0680	0.0162	<0.000270	0.0162	0.0842
	08/30/2018	<0.000480	<0.000512	0.0542	0.0143	<0.000270	0.0143	0.0685
	11/30/2018	<0.000480	<0.000512	0.106	0.0272	0.00110	0.0283	0.134
	02/26/2019	<0.000480	<0.000512	0.00420	0.00150J	<0.000270	0.00150J	0.00570
	05/21/2019	<0.000408	0.000870J	0.00117J	0.00176J	0.000790J	0.00255	0.00459
	DUP-1	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	09/03/2019	<0.000480	<0.000512	0.0144	0.00440	0.000800 J	0.00520	0.0196
	DUP-2	<0.000480	<0.000512	0.0219	0.00390	<0.000270	0.00390	0.0258
	11/15/2019	<0.000214	<0.000500	0.00241	0.00116 J	<0.000192	0.00116	0.00357
	DUP-1	<0.000214	<0.000500	0.00206 J	0.000960 J	<0.000192	0.000960 J	0.00302
	01/22/2020	<0.000480	<0.000512	0.0448	0.0127	0.0013	0.0140	0.0588
	DUP-1	<0.000480	<0.000512	0.0418	0.0115	<0.000270	0.015	0.0533
	06/11/2020	<0.000480	<0.000512	0.0225	0.0049	<0.000270	0.0049	0.0274
	09/23/2020	<0.00200	<0.00200	0.00897	<0.00400	<0.00200	<0.00200	0.00897
	DUP-1	<0.00200	<0.00200	<0.00200	<0.00400	<0.00200	<0.00200	<0.00200
	12/23/2020	<0.000408	0.000940 J	0.0141	0.00273 J	0.00114 J	0.00387	0.0189
MW-13	01/21/2016	<0.000800	<0.00120	<0.000800	<0.00120	<0.000700	<0.000700	<0.000700
	04/26/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	07/23/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	10/06/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	02/09/2017	<0.000408	<0.00100	<0.000657	<0.00140	<0.000642	<0.000642	<0.000408
	04/26/2017	0.000630	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	0.000630
	07/15/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	11/08/2017	<0.000408	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	01/25/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	04/25/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	08/30/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/30/2018	<0.000480	<0.000512	0.00110	0.00110J	<0.000270	0.00110 J	0.00220
	02/26/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	05/21/2019	<0.000408	0.000580J	<0.000657	<0.000630	<0.000642	<0.000630	0.000580J
	09/03/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/15/2019	<0.000214	<0.000500	<0.000146	<0.000330	<0.000192	<0.000192	<0.000146
	01/22/2020	<0.000480	<0.000512	<0.000616	0.0011 J	<0.000270	0.0011	0.0011
	06/11/2020	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	09/23/2020	<0.00200	<0.00200	<0.00200	<0.00400	<0.00200	<0.00200	<0.00200
	12/29/2020	<0.000408	0.000760 J	<0.000657	0.00115 J	<0.000642	0.00115 J	0.00191 J

Notes:

1. BTEX: Benzene, Toluene, Ethylbenzene, and Total Xylenes

2. NMOCD: New Mexico Oil Conservation Division

3. RRAL Criteria: Recommended Remediation Action Level Criteria

4. NE: Not Established

J: The target analyte was positively identified below the quantitation limit and above the detection limit

Bold text indicates a concentration above the laboratory detection limit.

Highlighted text indicates a concentration exceeding the NMOCD RRAL Criteria

Table 2
Groundwater BTEX¹ Concentration Analytical Summary

Livingston Ridge to Hugh P. Sims
Lea County, New Mexico
Plains Pipeline, L.P. SRS #: 2001-1005
Terracon Project #: AR207012
NMOCD² Reference #: 1R-0398

All concentrations are in milligrams per liter (mg/L)

Monitoring Well	Date Sampled	EPA SW846-8021B						
		Benzene	Toluene	Ethylbenzene	M,P- Xylenes	O- Xylenes	Total Xylenes	Total BTEX
NMOCD RRAL CRITERIA ³		0.01	0.75	0.75	TOTAL XYLENES 0.62			NE ⁴
MW-14	01/21/2016	<0.000800	<0.00120	<0.000800	<0.00120	<0.000700	<0.000700	<0.000700
	04/26/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	07/23/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	10/06/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	02/09/2017	<0.000408	<0.00100	<0.000657	<0.00140	<0.000642	<0.000642	<0.000408
	04/26/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	07/15/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	11/09/2017	<0.000408	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	01/25/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	04/25/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	08/29/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/28/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	02/26/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	05/21/2019	Inadvertantly Not Sampled						
	09/03/2019							
	11/15/2019							
		01/22/2020	<0.000480	<0.000512	<0.000616	0.001 J	0.0008 J	0.0018
	09/23/2020	<0.00200	<0.00200	<0.00200	<0.00400	<0.00200	<0.00200	<0.00200
	12/29/2020	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
MW-15	01/21/2016	<0.000800	<0.00120	<0.000800	<0.00120	<0.000700	<0.000700	<0.000700
	04/26/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	07/23/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	10/06/2016	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	02/09/2017	<0.000408	<0.00100	<0.000657	<0.00140	<0.000642	<0.000642	<0.000408
	04/26/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	07/15/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
	11/09/2017	<0.000408	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	01/25/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	04/25/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	08/29/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	11/28/2018	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	02/26/2019	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270	<0.000270
	05/21/2019	Inadvertantly Not Sampled						
	09/03/2019							
	11/15/2019							
		01/22/2020	<0.000480	<0.000512	<0.000616	<0.000454	<0.000270	<0.000270
	09/23/2020	<0.00200	<0.00200	<0.00200	<0.00400	<0.00200	<0.00200	<0.00200
	12/29/2020	<0.000408	<0.000367	<0.000657	<0.000630	<0.000642	<0.000630	<0.000367
TMW-1	01/20/2016	Not Sampled Due to Phase Separated Hydrocarbons						
	04/26/2016							
	07/23/2016							
	10/06/2016							
	02/09/2017							
	04/26/2017							
	11/08/2017							
	01/24/2018							
	04/23/2018	Plugged & Abandoned						
10/01/2018								
TMW-1R	10/01/2018	Installed						
	11/28/2018	Not Sampled Due to Phase Separated Hydrocarbons						
	02/26/2019							
	05/21/2019							
	09/03/2019							
	11/15/2019							
	01/22/2020							
	06/10/2020							
	09/23/2020							
		12/22/2020						

Notes:

1. BTEX: Benzene, Toluene, Ethylbenzene, and Total Xylenes
 2. NMOCD: New Mexico Oil Conservation Division
 3. RRAL Criteria: Recommended Remediation Action Level Criteria
 4. NE: Not Established
- J: The target analyte was positively identified below the quantitation limit and above the detection limit
Bold text indicates a concentration above the laboratory detection limit.
Highlighted text indicates a concentration exceeding the NMOCD RRAL Criteria

TABLE 3a
TMW-1R BTEX¹ and PSH² Thickness & Recovery Summary

Livingston Ridge to Hugh - P. Sims

Lea County, New Mexico

Plains Pipeline, L.P. SRS #2001-1005

Terracon Project #: AR207012

NMOCD³ REFERENCE #: 1RP-0398

All measurements are in feet above mean sea level

Monitoring Well	Date	Top of Casing (TOC) ⁴ Elevation*	Depth to PSH Below TOC (feet)	Depth to Water Below TOC (feet)	PSH Thickness (feet)	Corrected Groundwater Elevation**	Total Fluid Recovery (Gallons)	PSH Recovered (Gallons)
TMW-1R	05/03/2019	3431.82	35.21	35.22	0.01	3,396.61	-	-
	05/07/2019		35.32	37.23	1.91	3,396.21	3.5	0.31
	05/17/2019		35.47	37.07	1.60	3,396.11	-	0.26
	05/21/2019		-	-	-	-	-	-
	06/13/2019		35.65	37.61	1.96	3,395.88	2.0	0.32
	06/18/2019		35.76	37.02	1.26	3,395.87	3.0	0.21
	06/25/2019		35.86	36.81	0.95	3,395.82	3.0	0.15
	07/01/2019		35.94	36.61	0.67	3,395.78	3.0	0.11
	07/08/2019		35.99	36.91	0.92	3,395.69	4.0	0.15
	07/30/2019		36.18	37.22	1.04	3,395.48	4.0	0.17
	08/07/2019		36.28	37.31	1.03	3,395.39	3.0	0.17
	08/13/2019		36.34	37.34	1.00	3,395.33	3.0	0.16
	08/21/2019		36.41	37.01	0.60	3,395.32	3.0	0.10
	09/04/2019		36.54	37.09	0.55	3,395.20	2.5	0.09
	09/09/2019		36.55	37.03	0.48	3,395.20	3.0	0.08
	09/19/2019		36.60	37.01	0.41	3,395.16	3.0	0.07
	10/02/2019		36.75	36.99	0.24	3,395.03	3.0	0.04
	10/07/2019		-	-	-	-	3.0	-
	10/15/2019		36.63	36.88	0.25	3,395.15	3.0	0.04
	10/23/2019		36.58	36.80	0.22	3,395.21	3.0	0.04
	10/31/2019		36.56	36.74	0.18	3,395.23	3.0	0.03
	11/05/2019		-	-	-	-	3.0	-
	11/12/2019		37.61	38.82	1.21	3,394.03	3.0	0.20
	11/19/2019		-	-	-	-	3.0	-
	12/09/2019		36.49	36.82	0.33	3,395.28	3.0	0.05
	12/17/2019		36.50	36.60	0.10	3,395.31	3.0	0.02
	12/23/2019		36.41	36.53	0.12	3,395.39	3.0	0.02
	12/31/2019		36.42	36.50	0.08	3,395.39	3.0	0.01
	01/09/2020		36.41	36.53	0.12	3,395.39	3.0	0.02
	01/20/2020		36.39	36.45	0.06	3,395.42	5.0	0.01
	01/31/2020		36.38	36.41	0.03	3,395.44	3.0	0.00
	02/14/2020		36.42	36.62	0.20	3,395.37	3.0	0.03
	02/19/2020		36.36	36.38	0.02	3,395.46	5.0	0.00
	02/27/2020		36.60	36.80	0.20	3,395.19	3.0	0.03
	03/05/2020		36.31	36.32	0.01	3,395.51	5.0	0.00
	03/17/2020		36.50	36.52	0.02	3,395.32	5.0	0.00
	05/26/2020		36.50	37.60	1.10	3,395.16	5.0	0.18
	06/15/2020		36.75	37.65	0.90	3,394.94	1,008	0.15
	06/29/2020		36.97	38.47	1.50	3,394.63	5.0	0.24
	07/29/2020		37.15	37.35	0.20	3,394.64	4.0	0.03
	08/18/2020		36.79	36.97	0.18	3,395.00	4.0	0.03
	09/01/2020		37.39	37.61	0.22	3,394.40	1,050	0.04
	10/14/2020		37.51	37.66	0.15	3,394.29	4.0	0.02
	11/13/2020		37.50	37.81	0.31	3,394.27	1,050	0.05
	12/29/2020		37.59	37.91	0.32	3,394.18	4.0	0.05
2020 Average PSH Thickness					0.33	2020 Total Recovered	3,166.0	0.90

Notes:

1. BTEX: Benzene, Toluene, Ethylbenzene, Total Xylenes

2. PSH = Phase Separated Hydrocarbons

3. NMOCD = New Mexico Oil Conservation Division

4. TOC = Top Of Casing

* Elevations based on the North American Vertical Datum of 1988.

** Corrected groundwater elevations were extrapolated using a PSH specific gravity of 0.85, if PSH was gauged in the monitoring well.

Table 3b
MW-4 Gauging and BTEX¹ Impacted Groundwater Recovery Summary

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L.P. SRS #2001-1005
Terracon Project #: AR207012
NMOCD² REFERENCE #: 1RP-0398

All measurements are in feet above mean sea level

Monitoring Well	Date	Top of Casing (TOC) ³ Elevation*	Depth to Water (feet)	Corrected Groundwater Elevation	Groundwater Recovered (gallons)
MW-4	05/03/2019	3372.73	36.10	3,336.63	3.0
	05/07/2019		-	-	4.0
	05/17/2019		-	-	3.0
	05/21/2019		-	-	-
	06/13/2019		36.46	3,336.27	4.0
	06/18/2019		36.46	3,336.27	3.0
	06/25/2019		36.52	3,336.21	5.0
	07/01/2019		36.55	3,336.18	3.0
	07/08/2019		36.67	3,336.06	3.0
	07/30/2019		-	-	3.0
	08/07/2019		-	-	3.0
	08/13/2019		-	-	3.0
	08/21/2019		-	-	3.0
	09/04/2019		-	-	3.0
	09/09/2019		-	-	3.0
	09/19/2019		-	-	3.0
	10/02/2019		-	-	3.0
	10/07/2019		-	-	3.0
	10/15/2019		-	-	3.0
	10/23/2019		-	-	3.0
	10/31/2019		-	-	3.0
	11/05/2019		-	-	3.0
	11/12/2019		-	-	3.0
	11/19/2019		-	-	3.0
	12/09/2019		-	-	3.0
	12/17/2019		-	-	3.0
	12/23/2019		-	-	3.0
	12/31/2019		-	-	3.0
	01/09/2020		-	-	3.0
	01/20/2020		-	-	5.0
	01/31/2020		-	-	3.0
	02/14/2020		36.98	3,335.75	4.0
	02/19/2020		-	-	5.0
	02/27/2020		-	-	5.0
	03/05/2020		-	-	5.0
	03/17/2020		-	-	5.0
	05/26/2020		-	-	5.0
	06/29/2020		-	-	5.0
	07/29/2020		-	-	5.0
	08/18/2020		-	-	5.0
	10/14/2020		-	-	5.0
	12/29/2020		-	-	3.0
2020 Total GW ⁴ Recovered					63.0

Notes:

1. BTEX: Benzene, Toluene, Ethylbenzene, Total Xylenes
2. NMOCD = New Mexico Oil Conservation Division
3. TOC = Top Of Casing
4. GW: Groundwater

Table 3c
MW-5 Gauging and BTEX¹ Impacted Groundwater Recovery Summary

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L.P. SRS #2001-1005
Terracon Project #: AR207012
NMOCD² REFERENCE #: 1RP-0398

All measurements are in feet above mean sea level

Monitoring Well	Date	Top of Casing (TOC) ³ Elevation*	Depth to Water	Corrected Groundwater Elevation	Groundwater Recovered (gallons)
MW-5	05/03/2019	3,370.92	34.26	3,336.66	3.0
	05/07/2019		-	-	4.0
	05/17/2019		-	-	3.0
	05/21/2019		-	-	-
	06/13/2019		34.57	3,336.35	3.0
	06/18/2019		34.61	3,336.31	3.0
	06/25/2019		34.66	3,336.26	3.0
	07/01/2019		34.71	3,336.21	3.0
	07/08/2019		34.79	3,336.13	3.0
	07/30/2019		-	-	3.5
	08/07/2019		-	-	3.0
	08/13/2019		-	-	3.0
	08/21/2019		-	-	3.0
	09/04/2019		-	-	3.0
	09/09/2019		-	-	3.0
	09/19/2019		-	-	3.0
	10/02/2019		-	-	3.0
	10/07/2019		-	-	3.0
	10/15/2019		-	-	3.0
	10/23/2019		-	-	3.0
	10/31/2019		-	-	3.0
	11/05/2019		-	-	4.0
	11/12/2019		-	-	3.0
	11/19/2019		-	-	3.0
	12/09/2019		-	-	3.0
	12/17/2019		-	-	3.0
	12/23/2019		-	-	3.0
	12/31/2019		-	-	3.0
	01/09/2020		-	-	3.0
	01/20/2020		-	-	3.5
	01/31/2020		-	-	3.0
	02/14/2020		35.10	3335.82	4.0
	02/19/2020		-	-	3.5
	02/27/2020		-	-	4.0
	03/05/2020		-	-	3.5
	03/17/2020		-	-	3.0
	05/26/2020		-	-	3.0
	06/29/2020		-	-	3.5
	07/29/2020		-	-	2.5
	08/18/2020		-	-	3.0
	10/14/2020		-	-	2.5
	12/29/2020		-	-	3.0
2020 Total GW ⁴ Recovered					45.0

Notes:

1. BTEX: Benzene, Toluene, Ethylbenzene, Total Xylenes
2. NMOCD = New Mexico Oil Conservation Division
3. TOC = Top Of Casing
4. GW: Groundwater

Table 3d
MW-12 Gauging and BTEX¹ Impacted Groundwater Recovery Summary

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L.P. SRS #2001-1005
Terracon Project #: AR207012
NMOCD² REFERENCE #: 1RP-0398

All measurements are in feet above mean sea level

Monitoring Well	Date	Top of Casing (TOC) ³ Elevation*	Depth to Water	Corrected Groundwater Elevation	Groundwater Recovered (gallons)
MW-12	05/03/2019	3,372.41	35.97	3,336.44	3.0
	05/07/2019		-	-	4.0
	05/17/2019		-	-	3.0
	05/21/2019		-	-	-
	06/13/2019		36.32	3,336.09	4.0
	06/18/2019		36.31	3,336.10	3.0
	06/25/2019		36.47	3,335.94	3.0
	07/01/2019		36.53	3,335.88	3.0
	07/08/2019		36.49	3,335.92	3.0
	07/30/2019		-	-	3.5
	08/07/2019		-	-	3.0
	08/13/2019		-	-	3.0
	08/21/2019		-	-	3.0
	09/04/2019		-	-	3.0
	09/09/2019		-	-	3.0
	09/19/2019		-	-	3.0
	10/02/2019		-	-	3.0
	10/07/2019		-	-	3.0
	10/15/2019		-	-	3.0
	10/23/2019		-	-	3.0
	10/31/2019		-	-	3.0
	11/05/2019		-	-	3.0
	11/12/2019		-	-	3.0
	11/19/2019		-	-	3.0
	12/09/2019		-	-	3.0
	12/17/2019		-	-	3.0
	12/23/2019		-	-	3.0
	12/31/2019		-	-	3.0
	01/09/2020		-	-	3.0
	01/20/2020		-	-	5.0
	01/31/2020		-	-	3.0
	02/14/2020		36.84	3335.57	5.0
	02/19/2020		-	-	5.0
	02/27/2020		-	-	5.0
	03/05/2020		-	-	5.0
	03/17/2020		-	-	5.0
	05/26/2020		-	-	5.0
	06/29/2020		-	-	5.0
	07/29/2020		-	-	5.0
	08/18/2020		-	-	5.0
	10/14/2020		-	-	4.0
	12/29/2020		-	-	3.0
2020 Total GW ⁴ Recovered					63.0

Notes:

1. BTEX: Benzene, Toluene, Ethylbenzene, Total Xylenes
2. NMOCD = New Mexico Oil Conservation Division
3. TOC = Top Of Casing
4. GW: Groundwater

TABLE 4
Quarterly AFR¹ Event Results

Livingston Ridge to Hugh - P. Sims
Lea County, New Mexico
Plains Pipeline, L.P. SRS #2001-1005
Terracon Project #: AR207012
NMOCD² REFERENCE #: 1RP-0398

All measurements are in feet above mean sea level

Monitoring Well	Date	Targeted Constituent	PSH Fluid Volume (gallons)	Fluid Volume (gallons)	Notes
TMWR-1	12/03/2019	PSH/BTEX	N/A	2,100	Vac Truck, 325 gallons removed from buffalo tank
	03/01/2020	PSH/BTEX	N/A	N/A	1Q20 quarterly AFR not performed due to Covid
	06/15/2020	PSH/BTEX	N/A	1,008	Vac Truck, 1,333 gallons removed from buffalo tank
	09/01/2020	PSH/BTEX	N/A	1,050	Vac Truck, 210 gallons removed from buffalo tank
	11/13/2020	PSH/BTEX	N/A	1,050	Vac Truck, unknown gallons removed from buffalo tank
2020 Total Recovered				3,108	

Notes:

1. AFR: Aggressive Fluid Recovery
2. NMOCD: New Mexico Oil Conservation Division

Table 5
Concentrations of PAH¹ in Groundwater Summary

Livingston Line to Hugh P Sims
Lea County, New Mexico
Plains Pipeline, L.P. SRS #: 2001-1005
Terracon Project #: AR197011
NMOCD2 Reference#: 1RP-0398

All concentrations are in milligrams per liter (mg/L)³

Monitoring Well	Date Sampled	EPA SW846-8270C, 3510																
		Naphthalene	Benzo(a)pyrene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)Pyrene	Phenanthrene	Pyrene
NMWQCC Groundwater Criteria ⁴		0.03	0.0007	NE ⁵														
MW-1	2/16/2006	0.0000136	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.00229	<0.00005	0.00399	<0.00005
	5/11/2007	0.017	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	N/A	<0.001	<0.001	NA	<0.001	0.001	<0.001	0.012	<0.001
	2/29/2008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	N/A	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005
	11/7/2012	0.0438	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	NA	<0.002	<0.002	<0.002	0.0180	<0.002
	9/19/2013	0.00592	<0.0000500	0.000128	<0.0000500	0.000162	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	NA	<0.0000500	0.000736	<0.0000500	0.000649	<0.0000500
	10/4/2014	<0.0000149	<0.0000066	<0.00000495	<0.00000236	<0.00000407	<0.00000527	<0.00000998	<0.00000796	<0.00000583	<0.00000427	<0.00000580	0.000332	<0.00000633	<0.00000633	<0.00000750	0.000148	<0.00000691
	12/22/2020	0.000315 J	<0.0000585	<0.000103	<0.0000864	<0.0000888	<0.000138	<0.0000729	<0.000116	<0.000119	<0.000160	<0.0000780	N/A	<0.000161	<0.000103	<0.0000937	<0.0000872	<0.000134
MW-2	6/18/2003	<0.00005	<0.00005	0.000118	0.000061	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	0.000056	0.000078	<0.00005	<0.00005	0.000121
	3/22/2005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	2/16/2006	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	5/11/2007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001
	2/29/2008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005
	11/7/2012	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	NA	<0.002	<0.002	<0.002	<0.002	<0.002
	9/19/2013	0.00056	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	NA	<0.0000513	0.000115	<0.0000513	0.000174	<0.0000513
10/4/2014	Well Not Sampled																	
MW-3	6/18/2003	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	2/16/2006	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	5/11/2007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001
	2/29/2008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005
	9/19/2013	Dry - Not Sampled																
MW-4	Not Sampled due to the presence of phase separated hydrocarbons																	
	6/18/2003	0.000167	<0.00005	0.000156	<0.00005	0.000144	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000498	<0.00005	0.000891	<0.00005
	11/2/2004	0.0025	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.0002	<0.00005	0.000227	<0.00005
	2/16/2006	0.00492	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000068	<0.00005	NA	<0.00005	0.000251	<0.00005	0.000312	<0.00005
	5/11/2007	0.034	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	0.001	<0.001	0.006	<0.001
	2/29/2008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005
	9/19/2013	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	NA	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513
	10/4/2014	<0.0000149	<0.0000066	<0.00000495	<0.00000236	<0.00000407	<0.00000527	<0.00000998	<0.00000796	<0.00000583	<0.00000427	<0.00000580	0.000114	<0.00000633	<0.00000633	<0.00000750	0.0000614	<0.00000691
	12/23/2020	0.00501	<0.0000577	<0.000101	<0.0000851	<0.0000876	<0.000136	<0.0000719	<0.000114	<0.000117	<0.000158	<0.0000768	N/A	<0.000159	0.000247	<0.0000923	<0.0000860	<0.000132

Notes:

1. PAH: Polycyclic Aromatic Hydrocarbons

2. NMOCD: New Mexico Oil Conservation Division

3. mg/L: milligrams per liter

4. NMWQCC Groundwater Criteria: Recommended Remediation Action Level Criteria

5. NE: Not Established

J: The target analyte was positively identified below the quantitation limit and above the detection limit

Bold text indicates a concentration above the laboratory detection limit.

Highlighted text indicates a concentration exceeding the NMOCD RRAL Criteria

Table 5
Concentrations of PAH¹ in Groundwater Summary

Livingston Line to Hugh P Sims
Lea County, New Mexico
Plains Pipeline, L.P. SRS #: 2001-1005
Terracon Project #: AR197011
NMOCD2 Reference#: 1RP-0398

All concentrations are in milligrams per liter (mg/L)³

Monitoring Well	Date Sampled	EPA SW846-8270C, 3510																
		Naphthalene	Benzo(a)pyrene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)Pyrene	Phenanthrene	Pyrene
NMWQCC Groundwater Criteria ⁴		0.03	0.0007	NE ⁵														
MW-5	6/18/2003	0.0403	0.000249	0.000732	0.00507	0.000856	0.000459	0.000129	<0.00005	0.00007	0.000328	<0.00005	NA	0.000087	0.00268	<0.00005	<0.00005	0.000284
	8/24/2004	0.00768	<0.00005	0.000092	<0.00005	0.00007	<0.00005	<0.00005	<0.00005	0.00006	0.000114	<0.00005	NA	<0.00005	0.000419	<0.00005	0.000898	<0.00005
	2/16/2006	0.00136	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000115	<0.00005	NA	<0.00005	0.000306	<0.00005	0.000427	<0.00005
	5/11/2007	0.019	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	0.606	<0.001	<0.001	<0.001
	2/29/2008	0.031	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005
	12/30/2011	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005
	11/7/2012	0.0448	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	NA	<0.002	<0.002	<0.002	0.0161	<0.002
	9/19/2013	0.0405	<0.000256	0.00028	<0.000256	0.000397	0.000377	<0.000256	<0.000256	<0.000256	<0.000256	<0.000256	NA	<0.000256	0.00213	<0.000256	0.00374	<0.000256
	10/4/2014	0.00741	<0.00000667	<0.000005	<0.00000238	<0.00000411	<0.00000533	<0.00001101	<0.0000804	<0.0000588	<0.00000431	<0.00000586	0.00071	<0.00000639	0.000301	<0.00000757	0.00019	<0.00000698
	10/19/2015	<0.000968	<0.000395	<0.000968	<0.000736	<0.000977	<0.000371	<0.000463	<0.000353	<0.000579	<0.000386	<0.00041	NA	<0.000505	<0.000997	<0.000371	<0.000804	<0.000463
	11/15/2019	0.00193	<0.000109	<0.000109	<0.000109	<0.000109	<0.000109	<0.000109	<0.000109	<0.000109	<0.000109	<0.000109	0.00126	<0.000109	0.000421	<0.000109	0.000227	<0.000109
12/22/2020	0.000292 J	<0.0000575	<0.000101	<0.0000849	<0.0000873	<0.000136	<0.0000717	<0.000114	<0.000117	<0.000157	<0.0000766	N/A	<0.000158	0.000286	<0.0000921	<0.0000857	<0.000131	
MW-6	6/18/2003	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	11/2/2004	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	2/16/2006	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000126	<0.00005	0.000063	<0.00005
	5/11/2007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	<0.001	<0.001	0.001	<0.001
	2/29/2008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005
	9/19/2013	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	NA	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508
	12/22/2020	<0.0000997	<0.0000585	<0.000103	<0.0000864	<0.0000888	<0.000138	<0.0000729	<0.000116	<0.000119	<0.000160	<0.0000780	N/A	<0.000161	<0.000103	<0.0000937	<0.0000872	<0.000134
MW-7	6/18/2003	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	2/16/2006	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	5/11/2007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001
	2/29/2008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005
	9/19/2013	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	NA	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500
MW-8	6/18/2003	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	2/16/2006	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	5/11/2007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001
	2/29/2008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005
	9/19/2013	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005

Notes:

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Concentrations of PAH¹ in Groundwater Summary

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Lea County, New Mexico
Plains Pipeline, L.P. SRS #: 2001-1005
Terracon Project #: AR197011
NMOCD2 Reference#: 1RP-0398

All concentrations are in milligrams per liter (mg/L)³

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		Naphthalene	Benzo(a)pyrene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)Pyrene	Phenanthrene	Pyrene
NMWQCC Groundwater Criteria ⁴		0.03	0.0007	NE ⁵														
MW-9	6/18/2003	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	3/22/2005	0.000544	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000084	<0.00005	0.000058	<0.00005
	2/16/2006	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	5/11/2007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001
	2/29/2008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005
	9/19/2013	<0.0000513	<0.0000513	0.000052	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513	NA	<0.0000513	<0.0000513	<0.0000513	<0.0000513	<0.0000513
	12/22/2020	<0.0000974	<0.0000571	<0.000100	<0.0000843	<0.0000867	<0.000135	<0.0000712	<0.000113	<0.000116	<0.000156	<0.0000761	N/A	<0.000157	<0.000101	<0.0000914	<0.0000852	<0.000130
MW-10	6/18/2003	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	2/16/2006	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	5/11/2007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001
	2/29/2008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005
	9/19/2019	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	NA	<0.0000508	<0.0000508	<0.0000508	0.0000852	<0.0000508
MW-11	11/6/2002	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	8/18/2004	0.0014	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000075	<0.00005	0.000154	<0.00005
	3/22/2005	0.00167	<0.00005	0.000068	<0.00005	0.000055	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.00008	<0.00005	0.000296	<0.00005
	2/16/2006	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	5/11/2007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001
	2/29/2008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005
	9/19/2013	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	NA	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500
	12/23/2020	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	NA	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	
MW-12	11/6/2002	0.000198	<0.00005	0.00007	0.000096	0.000151	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000662	<0.00005	0.000722	0.000071
	8/18/2004	0.000262	<0.00005	0.000079	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000078	<0.00005	0.000246	<0.00005
	3/22/2005	0.000107	<0.00005	0.0011	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000166	<0.00005	0.000285	<0.00005
	2/16/2006	<0.00005	<0.00005	0.000055	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000053	<0.00005	0.000174	<0.00005
	5/11/2007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001
	2/29/2008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005
	9/19/2013	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	NA	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500
	11/15/2019	0.00210	<0.0000585	<0.000103	<0.0000864	<0.0000888	<0.000138	<0.0000729	<0.000116	<0.000119	<0.000160	<0.0000780	N/A	<0.000161	<0.000103	<0.0000937	<0.0000872	<0.000134
		12/23/2020	0.00210	<0.0000585	<0.000103	<0.0000864	<0.0000888	<0.000138	<0.0000729	<0.000116	<0.000119	<0.000160	<0.0000780	N/A	<0.000161	<0.000103	<0.0000937	<0.0000872

Notes:

- PAH: Polycyclic Aromatic Hydrocarbons
- NMOCD: New Mexico Oil Conservation Division
- mg/L milligrams per liter
- NMWQCC Groundwater Criteria: Recommended Remediation Action Level Criteria
- NE: Not Established
- J: The target analyte was positively identified below the quantitation limit and above the detection limit

Bold text indicates a concentration above the laboratory detection limit.

Highlighted text indicates a concentration exceeding the NMOCD RRAL Criteria

Table 5
Concentrations of PAH¹ in Groundwater Summary

Livingston Line to Hugh P Sims
Lea County, New Mexico
Plains Pipeline, L.P. SRS #: 2001-1005
Terracon Project #: AR197011
NMOCD2 Reference#: 1RP-0398

All concentrations are in milligrams per liter (mg/L)³

Monitoring Well	Date Sampled	EPA SW846-8270C, 3510																	
		Naphthalene	Benzo(a)pyrene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)Pyrene	Phenanthrene	Pyrene	
NMWQCC Groundwater Criteria ⁴		0.03	0.0007	NE ⁵															
MW-13	11/6/2002	0.000232	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
	8/18/2004	0.00234	<0.00005	0.000139	<0.00005	0.000086	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000141	<0.00005	0.000702	<0.00005	
	3/22/2005	0.000746	<0.00005	0.000105	<0.00005	0.000072	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000366	<0.00005	0.000426	<0.00005	
	2/16/2006	0.000064	<0.00005	0.000079	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	0.000079	<0.00005	0.000132	<0.00005	
	5/11/2007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	
	2/29/2008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	
	9/19/2013	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	NA	<0.0000508	<0.0000508	<0.0000508	<0.0000508	<0.0000508	
	12/22/2020	<0.0000997	<0.0000585	<0.000103	<0.0000863	<0.0000888	<0.000138	<0.0000729	<0.000116	<0.000119	<0.000160	<0.0000779	N/A	<0.000161	<0.000103	<0.0000936	<0.0000872	<0.000134	
MW-14	11/6/2002	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
	8/18/2004	0.00119	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	0.000079	<0.00005	
	3/22/2005	0.000071	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
	2/16/2006	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
	5/11/2007	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	
	2/29/2008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	
	9/19/2013	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	NA	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	
	12/29/2020	<0.000116	<0.0000683	<0.000120	<0.000101	<0.000104	<0.000161	<0.0000851	<0.000136	<0.000139	<0.000187	<0.0000910	N/A	<0.000188	<0.000121	<0.000109	<0.000102	<0.000156	
MW-15	11/6/2002	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
	8/24/2004	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
	2/16/2006	0.0033	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
	5/11/2007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.001	<0.001	NA	<0.001	<0.001	<0.001	<0.001	<0.001	
	2/29/2008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.005	
	9/19/2013	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	NA	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	
	12/29/2020	<0.000100	<0.0000588	<0.000103	<0.0000867	<0.0000892	<0.000138	<0.0000732	<0.000117	<0.000120	<0.000161	<0.0000783	N/A	<0.000162	<0.000104	<0.0000940	<0.0000876	<0.000134	
	TMW-1	2/16/2006	0.0886	<0.00005	0.00146	<0.00005	0.00147	<0.00005	<0.00005	<0.00005	<0.00005	0.00221	<0.00005	NA	<0.00005	0.00818	<0.00005	0.0149	0.000788
5/11/2007		0.062	<0.003	<0.002	<0.004	<0.002	<0.002	<0.002	<0.006	NA	<0.002	<0.001	NA	<0.002	0.008	<0.003	<0.002	<0.002	
2/29/2008		0.069	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	NA	<0.025	<0.025	NA	<0.025	<0.025	<0.025	<0.025	<0.025	
9/19/2013			Not Sampled Due to PSH																
10/4/2014			Plugged & Abandoned																
	10/1/2018		Plugged & Abandoned																

Notes:

- PAH: Polycyclic Aromatic Hydrocarbons
 - NMOCD: New Mexico Oil Conservation Division
 - mg/L milligrams per liter
 - NMWQCC Groundwater Criteria: Recommended Remediation Action Level Criteria
 - NE: Not Established
 - J: The target analyte was positively identified below the quantitation limit and above the detection limit
- Bold text indicates a concentration above the laboratory detection limit.**

Highlighted text indicates a concentration exceeding the NMOCD RRAL Criteria

APPENDIX C

Certified Xenco Laboratories Analytical Reports:

1Q20 Groundwater Reports 649987

2Q20 Groundwater Reports 664341

3Q20 Groundwater Reports 673421

4Q20 Groundwater Reports 682429 & 682942

Analytical Report 649987

for Terracon-Lubbock

Project Manager: Paige Gaona

Livingston Ridge - HP Sims

AR207012

04-FEB-20

Collected By: Client



6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



04-FEB-20

Project Manager: **Paige Gaona**

Terracon-Lubbock

5827 50th st, Suite 1

Lubbock, TX 79424

Reference: XENCO Report No(s): **649987**

Livingston Ridge - HP Sims

Project Address: SRS #2001-11005

Paige Gaona:

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) 649987. 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. 649987 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,

A handwritten signature in black ink that reads 'Jessica Kramer'.

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 649987****Terracon-Lubbock, Lubbock, TX**

Livingston Ridge - HP Sims

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	01-22-20 11:06		649987-001
MW-11	W	01-22-20 11:59		649987-002
MW-12	W	01-22-20 12:54		649987-003
MW-13	W	01-22-20 13:37		649987-004
MW-4	W	01-22-20 14:39		649987-005
MW-5	W	01-22-20 15:41		649987-006
DUP-1	W	01-22-20 12:59		649987-007
DUP-2	W	01-22-20 14:44		649987-008

**CASE NARRATIVE****Client Name: Terracon-Lubbock****Project Name: Livingston Ridge - HP Sims**Project ID: AR207012
Work Order Number(s): 649987Report Date: 04-FEB-20
Date Received: 01/23/2020

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:**Sample receipt non conformances and comments per sample:**

None

Analytical non conformances and comments:

Batch: LBA-3114899 BTEX-MTBE by EPA 8021B

Surrogate 4-Bromofluorobenzene, Surrogate a,a,a-Trifluorotoluene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 650194-002 SD.



Certificate of Analytical Results

649987

Terracon-Lubbock, Lubbock, TX

Livingston Ridge - HP Sims

Sample Id: **MW-1**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 649987-001

Date Collected: 01.22.20 11.06

Date Received: 01.23.20 09.53

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3115322

Date Prep: 01.30.20 16.00

Prep seq: 7695804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	01.31.20 09:22	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	01.31.20 09:22	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	01.31.20 09:22	U	1
m_p-Xylenes	179601-23-1	0.00650	0.00200	0.000454	mg/L	01.31.20 09:22		1
o-Xylene	95-47-6	0.00290	0.00100	0.000270	mg/L	01.31.20 09:22		1
Xylenes, Total	1330-20-7	0.00940		0.000270	mg/L	01.31.20 09:22		
Total BTEX		0.00940		0.000270	mg/L	01.31.20 09:22		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	109	66 - 120	%		
4-Bromofluorobenzene	96	67 - 120	%		

Sample Id: **MW-11**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 649987-002

Date Collected: 01.22.20 11.59

Date Received: 01.23.20 09.53

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3114899

Date Prep: 01.29.20 15.00

Prep seq: 7695479

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	01.30.20 00:05	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	01.30.20 00:05	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	01.30.20 00:05	U	1
m_p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	01.30.20 00:05	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	01.30.20 00:05	U	1
Xylenes, Total	1330-20-7	<0.000270		0.000270	mg/L	01.30.20 00:05	U	
Total BTEX		<0.000270		0.000270	mg/L	01.30.20 00:05	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	94	66 - 120	%		
4-Bromofluorobenzene	92	67 - 120	%		



Certificate of Analytical Results

649987

Terracon-Lubbock, Lubbock, TX

Livingston Ridge - HP Sims

Sample Id: **MW-12**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 649987-003

Date Collected: 01.22.20 12.54

Date Received: 01.23.20 09.53

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3115322

Date Prep: 01.30.20 16.00

Prep seq: 7695804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	01.31.20 12:15	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	01.31.20 12:15	U	1
Ethylbenzene	100-41-4	0.0448	0.00100	0.000616	mg/L	01.31.20 12:15		1
m_p-Xylenes	179601-23-1	0.0127	0.00200	0.000454	mg/L	01.31.20 12:15		1
o-Xylene	95-47-6	0.00130	0.00100	0.000270	mg/L	01.31.20 12:15		1
Xylenes, Total	1330-20-7	0.0140		0.000270	mg/L	01.31.20 12:15		
Total BTEX		0.0588		0.000270	mg/L	01.31.20 12:15		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	92	66 - 120	%		
4-Bromofluorobenzene	88	67 - 120	%		

Sample Id: **MW-13**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 649987-004

Date Collected: 01.22.20 13.37

Date Received: 01.23.20 09.53

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3115322

Date Prep: 01.30.20 16.00

Prep seq: 7695804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	01.31.20 13:52	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	01.31.20 13:52	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	01.31.20 13:52	U	1
m_p-Xylenes	179601-23-1	0.00110	0.00200	0.000454	mg/L	01.31.20 13:52	J	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	01.31.20 13:52	U	1
Xylenes, Total	1330-20-7	0.00110		0.000270	mg/L	01.31.20 13:52		
Total BTEX		0.00110		0.000270	mg/L	01.31.20 13:52		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	101	66 - 120	%		
4-Bromofluorobenzene	89	67 - 120	%		



Certificate of Analytical Results

649987

Terracon-Lubbock, Lubbock, TX

Livingston Ridge - HP Sims

Sample Id: **MW-4**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 649987-005

Date Collected: 01.22.20 14.39

Date Received: 01.23.20 09.53

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3115322

Date Prep: 01.30.20 16.00

Prep seq: 7695804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0151	0.00100	0.000480	mg/L	01.31.20 14:17		1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	01.31.20 14:17	U	1
Ethylbenzene	100-41-4	0.0411	0.00100	0.000616	mg/L	01.31.20 14:17		1
m_p-Xylenes	179601-23-1	0.00620	0.00200	0.000454	mg/L	01.31.20 14:17		1
o-Xylene	95-47-6	0.00100	0.00100	0.000270	mg/L	01.31.20 14:17	J	1
Xylenes, Total	1330-20-7	0.00720		0.000270	mg/L	01.31.20 14:17		
Total BTEX		0.0634		0.000270	mg/L	01.31.20 14:17		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	106	66 - 120	%		
4-Bromofluorobenzene	104	67 - 120	%		

Sample Id: **MW-5**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 649987-006

Date Collected: 01.22.20 15.41

Date Received: 01.23.20 09.53

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3115322

Date Prep: 01.30.20 16.00

Prep seq: 7695804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00490	0.00100	0.000480	mg/L	01.31.20 14:41		1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	01.31.20 14:41	U	1
Ethylbenzene	100-41-4	0.0515	0.00100	0.000616	mg/L	01.31.20 14:41		1
m_p-Xylenes	179601-23-1	0.00190	0.00200	0.000454	mg/L	01.31.20 14:41	J	1
o-Xylene	95-47-6	0.00150	0.00100	0.000270	mg/L	01.31.20 14:41		1
Xylenes, Total	1330-20-7	0.00340		0.000270	mg/L	01.31.20 14:41		
Total BTEX		0.0598		0.000270	mg/L	01.31.20 14:41		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	108	66 - 120	%		
4-Bromofluorobenzene	99	67 - 120	%		



Certificate of Analytical Results

649987

Terracon-Lubbock, Lubbock, TX

Livingston Ridge - HP Sims

Sample Id: **DUP-1**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 649987-007

Date Collected: 01.22.20 12.59

Date Received: 01.23.20 09.53

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3115322

Date Prep: 01.30.20 16.00

Prep seq: 7695804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	01.31.20 15:05	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	01.31.20 15:05	U	1
Ethylbenzene	100-41-4	0.0418	0.00100	0.000616	mg/L	01.31.20 15:05		1
m_p-Xylenes	179601-23-1	0.0115	0.00200	0.000454	mg/L	01.31.20 15:05		1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	01.31.20 15:05	U	1
Xylenes, Total	1330-20-7	0.0115		0.000270	mg/L	01.31.20 15:05		
Total BTEX		0.0533		0.000270	mg/L	01.31.20 15:05		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	105	66 - 120	%		
4-Bromofluorobenzene	104	67 - 120	%		

Sample Id: **DUP-2**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 649987-008

Date Collected: 01.22.20 14.44

Date Received: 01.23.20 09.53

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3115322

Date Prep: 01.30.20 16.00

Prep seq: 7695804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0149	0.00100	0.000480	mg/L	01.31.20 15:30		1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	01.31.20 15:30	U	1
Ethylbenzene	100-41-4	0.0405	0.00100	0.000616	mg/L	01.31.20 15:30		1
m_p-Xylenes	179601-23-1	0.00610	0.00200	0.000454	mg/L	01.31.20 15:30		1
o-Xylene	95-47-6	0.00100	0.00100	0.000270	mg/L	01.31.20 15:30	J	1
Xylenes, Total	1330-20-7	0.00710		0.000270	mg/L	01.31.20 15:30		
Total BTEX		0.0625		0.000270	mg/L	01.31.20 15:30		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	108	66 - 120	%		
4-Bromofluorobenzene	103	67 - 120	%		



Certificate of Analytical Results

649987

Terracon-Lubbock, Lubbock, TX

Livingston Ridge - HP Sims

Sample Id: 7695479-1-BLK

Matrix: Water

Sample Depth:

Lab Sample Id: 7695479-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3114899

Date Prep: 01.29.20 15.00

Prep seq: 7695479

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	01.29.20 18:42	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	01.29.20 18:42	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	01.29.20 18:42	U	1
m_p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	01.29.20 18:42	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	01.29.20 18:42	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	94	66 - 120	%		
4-Bromofluorobenzene	93	67 - 120	%		

Sample Id: 7695804-1-BLK

Matrix: Water

Sample Depth:

Lab Sample Id: 7695804-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3115322

Date Prep: 01.30.20 16.00

Prep seq: 7695804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	01.31.20 04:32	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	01.31.20 04:32	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	01.31.20 04:32	U	1
m_p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	01.31.20 04:32	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	01.31.20 04:32	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	106	66 - 120	%		
4-Bromofluorobenzene	90	67 - 120	%		



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 Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory 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



Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Orders : 649987,

Project ID: AR207012

Lab Batch #: 3114899

Sample: 7695479-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 01/29/20 16:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.0852	0.100	85	66-120	
4-Bromofluorobenzene	0.0826	0.100	83	67-120	

Lab Batch #: 3114899

Sample: 7695479-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 01/29/20 17:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.0854	0.100	85	66-120	
4-Bromofluorobenzene	0.0855	0.100	86	67-120	

Lab Batch #: 3114899

Sample: 7695479-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 01/29/20 18:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.0939	0.100	94	66-120	
4-Bromofluorobenzene	0.0932	0.100	93	67-120	

Lab Batch #: 3114899

Sample: 650194-002 S / MS

Batch: 1 Matrix: Ground Water

Units: mg/L

Date Analyzed: 01/29/20 19:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.0832	0.100	83	66-120	
4-Bromofluorobenzene	0.0859	0.100	86	67-120	

Lab Batch #: 3114899

Sample: 650194-002 SD / MSD

Batch: 1 Matrix: Ground Water

Units: mg/L

Date Analyzed: 01/29/20 20:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.0619	0.100	62	66-120	**
4-Bromofluorobenzene	0.0586	0.100	59	67-120	**

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge - HP Sims

Work Orders : 649987,

Project ID: AR207012

Lab Batch #: 3115322

Sample: 7695804-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 01/31/20 02:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.0899	0.100	90	66-120	
4-Bromofluorobenzene	0.0783	0.100	78	67-120	

Lab Batch #: 3115322

Sample: 7695804-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 01/31/20 03:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.0933	0.100	93	66-120	
4-Bromofluorobenzene	0.0805	0.100	81	67-120	

Lab Batch #: 3115322

Sample: 7695804-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 01/31/20 04:32

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.106	0.100	106	66-120	
4-Bromofluorobenzene	0.0904	0.100	90	67-120	

Lab Batch #: 3115322

Sample: 649980-009 S / MS

Batch: 1 Matrix: Ground Water

Units: mg/L

Date Analyzed: 01/31/20 05:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.525	0.500	105	66-120	
4-Bromofluorobenzene	0.0936	0.100	94	67-120	

Lab Batch #: 3115322

Sample: 649980-009 SD / MSD

Batch: 1 Matrix: Ground Water

Units: mg/L

Date Analyzed: 01/31/20 05:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
a,a,a-Trifluorotoluene	0.477	0.500	95	66-120	
4-Bromofluorobenzene	0.0851	0.100	85	67-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



BS / BSD Recoveries



Project Name: Livingston Ridge - HP Sims

Work Order #: 649987

Project ID: AR207012

Analyst: MIT

Date Prepared: 01/29/2020

Date Analyzed: 01/29/2020

Lab Batch ID: 3114899

Sample: 7695479-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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
Analytes											
Benzene	<0.000480	0.100	0.0952	95	0.100	0.100	100	5	74-120	20	
Toluene	<0.000512	0.100	0.0951	95	0.100	0.0974	97	2	74-120	20	
Ethylbenzene	<0.000616	0.100	0.0907	91	0.100	0.0931	93	3	74-120	20	
m_p-Xylenes	<0.000454	0.200	0.178	89	0.200	0.183	92	3	73-120	25	
o-Xylene	<0.000270	0.100	0.0879	88	0.100	0.0903	90	3	73-120	25	

Analyst: MIT

Date Prepared: 01/30/2020

Date Analyzed: 01/31/2020

Lab Batch ID: 3115322

Sample: 7695804-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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
Analytes											
Benzene	<0.000480	0.100	0.0994	99	0.100	0.0995	100	0	74-120	20	
Toluene	<0.000512	0.100	0.104	104	0.100	0.0981	98	6	74-120	20	
Ethylbenzene	<0.000616	0.100	0.107	107	0.100	0.101	101	6	74-120	20	
m_p-Xylenes	<0.000454	0.200	0.212	106	0.200	0.200	100	6	73-120	25	
o-Xylene	<0.000270	0.100	0.106	106	0.100	0.102	102	4	73-120	25	

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: Livingston Ridge - HP Sims

Work Order #: 649987

Project ID: AR207012

Lab Batch ID: 3114899

QC- Sample ID: 650194-002 S

Batch #: 1 Matrix: Ground Water

Date Analyzed: 01/29/2020

Date Prepared: 01/29/2020

Analyst: MIT

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000480	0.100	0.0959	96	0.100	0.0705	71	31	15-147	25	F
Toluene	<0.000512	0.100	0.0958	96	0.100	0.0678	68	34	11-147	25	F
Ethylbenzene	<0.000616	0.100	0.0900	90	0.100	0.0634	63	35	10-149	25	F
m_p-Xylenes	<0.000454	0.200	0.176	88	0.200	0.116	58	41	62-124	25	XF
o-Xylene	<0.000270	0.100	0.0875	88	0.100	0.0609	61	36	62-124	25	XF

Lab Batch ID: 3115322

QC- Sample ID: 649980-009 S

Batch #: 1 Matrix: Ground Water

Date Analyzed: 01/31/2020

Date Prepared: 01/30/2020

Analyst: MIT

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00240	0.500	0.499	100	0.500	0.509	102	2	15-147	25	
Toluene	0.242	0.500	0.721	96	0.500	0.757	103	5	11-147	25	
Ethylbenzene	0.688	0.500	1.18	98	0.500	1.23	108	4	10-149	25	
m_p-Xylenes	0.994	1.00	1.97	98	1.00	2.05	106	4	62-124	25	
o-Xylene	0.665	0.500	1.17	101	0.500	1.21	109	3	62-124	25	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
 Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 \times (F-A)/E$

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.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Terracon-Lubbock

Date/ Time Received: 01.23.2020 09.53.00 AM

Work Order #: 649987

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-4

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.9
#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?	Yes

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

Analyst:

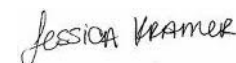
PH Device/Lot#:

Checklist completed by:


Brenda Ward

Date: 01.23.2020

Checklist reviewed by:


Jessica Kramer

Date: 01.27.2020



Analytical Report 664341

for

Terracon-Lubbock

Project Manager: Paige Gaona

Livingston Ridger - HP Sims

AR207012

06.19.2020

Collected By: Client



6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-34), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-23), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



06.19.2020

Project Manager: **Paige Gaona**

Terracon-Lubbock

5827 50th st, Suite 1

Lubbock, TX 79424

Reference: XENCO Report No(s): **664341**

Livingston Ridger - HP Sims

Project Address: SRS# 2001-11005

Paige Gaona:

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) 664341. 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. 664341 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,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

Jessica Kramer

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

**Sample Cross Reference 664341****Terracon-Lubbock, Lubbock, TX**

Livingston Ridger - HP Sims

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-14	W	06.10.2020 13:50		664341-001
MW-15	W	06.10.2020 14:45		664341-002
MW-11	W	06.10.2020 15:34		664341-003
MW-12	W	06.11.2020 10:48		664341-004
MW-13	W	06.11.2020 11:43		664341-005
MW-6	W	06.11.2020 12:45		664341-006
MW-9	W	06.11.2020 13:32		664341-007
MW-1	W	06.11.2020 14:22		664341-008
MW-4	W	06.11.2020 15:32		664341-009
MW-5	W	06.11.2020 16:20		664341-010
DUP-1	W	06.11.2020 14:27		664341-011
DUP-2	W	06.11.2020 16:25		664341-012

**CASE NARRATIVE****Client Name: Terracon-Lubbock****Project Name: Livingston Ridger - HP Sims**Project ID: AR207012
Work Order Number(s): 664341Report Date: 06.19.2020
Date Received: 06.12.2020

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results

664341

Terracon-Lubbock, Lubbock, TX

Livingston Ridger - HP Sims

Sample Id: MW-14

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 664341-001

Date Collected: 06.10.2020 13:50

Date Received: 06.12.2020 14:45

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3129039

Date Prep: 06.15.2020 15:00

Prep seq: 7705488

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	06.16.2020 00:08	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	06.16.2020 00:08	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	06.16.2020 00:08	U	1
m,p-Xylenes	179601-23-1	0.00100	0.00200	0.000454	mg/L	06.16.2020 00:08	J	1
o-Xylene	95-47-6	0.000800	0.00100	0.000270	mg/L	06.16.2020 00:08	J	1
Total Xylenes	1330-20-7	0.00180		0.000270	mg/L	06.16.2020 00:08		
Total BTEX		0.00180		0.000270	mg/L	06.16.2020 00:08		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	87	66 - 120	%		
4-Bromofluorobenzene	89	67 - 120	%		

Sample Id: MW-15

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 664341-002

Date Collected: 06.10.2020 14:45

Date Received: 06.12.2020 14:45

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3129039

Date Prep: 06.15.2020 15:00

Prep seq: 7705488

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	06.16.2020 00:33	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	06.16.2020 00:33	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	06.16.2020 00:33	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	06.16.2020 00:33	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	06.16.2020 00:33	U	1
Total Xylenes	1330-20-7	<0.000270		0.000270	mg/L	06.16.2020 00:33	U	
Total BTEX		<0.000270		0.000270	mg/L	06.16.2020 00:33	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	86	66 - 120	%		
4-Bromofluorobenzene	91	67 - 120	%		



Certificate of Analytical Results

664341

Terracon-Lubbock, Lubbock, TX

Livingston Ridger - HP Sims

Sample Id: MW-11

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 664341-003

Date Collected: 06.10.2020 15:34

Date Received: 06.12.2020 14:45

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3129039

Date Prep: 06.15.2020 15:00

Prep seq: 7705488

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	06.16.2020 00:57	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	06.16.2020 00:57	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	06.16.2020 00:57	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	06.16.2020 00:57	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	06.16.2020 00:57	U	1
Total Xylenes	1330-20-7	<0.000270		0.000270	mg/L	06.16.2020 00:57	U	
Total BTEX		<0.000270		0.000270	mg/L	06.16.2020 00:57	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	86	66 - 120	%		
4-Bromofluorobenzene	89	67 - 120	%		

Sample Id: MW-12

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 664341-004

Date Collected: 06.11.2020 10:48

Date Received: 06.12.2020 14:45

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3129039

Date Prep: 06.15.2020 15:00

Prep seq: 7705488

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	06.16.2020 01:21	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	06.16.2020 01:21	U	1
Ethylbenzene	100-41-4	0.0225	0.00100	0.000616	mg/L	06.16.2020 01:21		1
m,p-Xylenes	179601-23-1	0.00490	0.00200	0.000454	mg/L	06.16.2020 01:21		1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	06.16.2020 01:21	U	1
Total Xylenes	1330-20-7	0.00490		0.000270	mg/L	06.16.2020 01:21		
Total BTEX		0.0274		0.000270	mg/L	06.16.2020 01:21		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	86	66 - 120	%		
4-Bromofluorobenzene	92	67 - 120	%		



Certificate of Analytical Results

664341

Terracon-Lubbock, Lubbock, TX

Livingston Ridger - HP Sims

Sample Id: MW-13

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 664341-005

Date Collected: 06.11.2020 11:43

Date Received: 06.12.2020 14:45

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3129039

Date Prep: 06.15.2020 15:00

Prep seq: 7705488

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	06.16.2020 01:46	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	06.16.2020 01:46	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	06.16.2020 01:46	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	06.16.2020 01:46	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	06.16.2020 01:46	U	1
Total Xylenes	1330-20-7	<0.000270		0.000270	mg/L	06.16.2020 01:46	U	
Total BTEX		<0.000270		0.000270	mg/L	06.16.2020 01:46	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	86	66 - 120	%		
4-Bromofluorobenzene	89	67 - 120	%		

Sample Id: MW-6

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 664341-006

Date Collected: 06.11.2020 12:45

Date Received: 06.12.2020 14:45

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3129039

Date Prep: 06.15.2020 15:00

Prep seq: 7705488

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	06.16.2020 02:10	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	06.16.2020 02:10	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	06.16.2020 02:10	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	06.16.2020 02:10	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	06.16.2020 02:10	U	1
Total Xylenes	1330-20-7	<0.000270		0.000270	mg/L	06.16.2020 02:10	U	
Total BTEX		<0.000270		0.000270	mg/L	06.16.2020 02:10	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	86	66 - 120	%		
4-Bromofluorobenzene	90	67 - 120	%		



Certificate of Analytical Results

664341

Terracon-Lubbock, Lubbock, TX

Livingston Ridger - HP Sims

Sample Id: **MW-9**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 664341-007

Date Collected: 06.11.2020 13:32

Date Received: 06.12.2020 14:45

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3129039

Date Prep: 06.15.2020 15:00

Prep seq: 7705488

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	06.16.2020 02:34	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	06.16.2020 02:34	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	06.16.2020 02:34	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	06.16.2020 02:34	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	06.16.2020 02:34	U	1
Total Xylenes	1330-20-7	<0.000270		0.000270	mg/L	06.16.2020 02:34	U	
Total BTEX		<0.000270		0.000270	mg/L	06.16.2020 02:34	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	88	66 - 120	%		
4-Bromofluorobenzene	93	67 - 120	%		

Sample Id: **MW-1**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 664341-008

Date Collected: 06.11.2020 14:22

Date Received: 06.12.2020 14:45

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3129157

Date Prep: 06.16.2020 12:00

Prep seq: 7705569

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	06.16.2020 20:47	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	06.16.2020 20:47	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	06.16.2020 20:47	U	1
m,p-Xylenes	179601-23-1	0.00270	0.00200	0.000454	mg/L	06.16.2020 20:47		1
o-Xylene	95-47-6	0.00110	0.00100	0.000270	mg/L	06.16.2020 20:47		1
Total Xylenes	1330-20-7	0.00380		0.000270	mg/L	06.16.2020 20:47		
Total BTEX		0.00380		0.000270	mg/L	06.16.2020 20:47		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	90	66 - 120	%		
4-Bromofluorobenzene	99	67 - 120	%		



Certificate of Analytical Results

664341

Terracon-Lubbock, Lubbock, TX

Livingston Ridger - HP Sims

Sample Id: **MW-4**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 664341-009

Date Collected: 06.11.2020 15:32

Date Received: 06.12.2020 14:45

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3129157

Date Prep: 06.16.2020 12:00

Prep seq: 7705569

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00620	0.00100	0.000480	mg/L	06.16.2020 22:24		1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	06.16.2020 22:24	U	1
Ethylbenzene	100-41-4	0.0236	0.00100	0.000616	mg/L	06.16.2020 22:24		1
m,p-Xylenes	179601-23-1	0.00210	0.00200	0.000454	mg/L	06.16.2020 22:24		1
o-Xylene	95-47-6	0.000800	0.00100	0.000270	mg/L	06.16.2020 22:24	J	1
Total Xylenes	1330-20-7	0.00290		0.000270	mg/L	06.16.2020 22:24		
Total BTEX		0.0327		0.000270	mg/L	06.16.2020 22:24		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	89	66 - 120	%		
4-Bromofluorobenzene	98	67 - 120	%		

Sample Id: **MW-5**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 664341-010

Date Collected: 06.11.2020 16:20

Date Received: 06.12.2020 14:45

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3129157

Date Prep: 06.16.2020 12:00

Prep seq: 7705569

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00170	0.00100	0.000480	mg/L	06.16.2020 22:48		1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	06.16.2020 22:48	U	1
Ethylbenzene	100-41-4	0.0230	0.00100	0.000616	mg/L	06.16.2020 22:48		1
m,p-Xylenes	179601-23-1	0.00190	0.00200	0.000454	mg/L	06.16.2020 22:48	J	1
o-Xylene	95-47-6	0.00140	0.00100	0.000270	mg/L	06.16.2020 22:48		1
Total Xylenes	1330-20-7	0.00330		0.000270	mg/L	06.16.2020 22:48		
Total BTEX		0.0280		0.000270	mg/L	06.16.2020 22:48		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	93	66 - 120	%		
4-Bromofluorobenzene	98	67 - 120	%		



Certificate of Analytical Results

664341

Terracon-Lubbock, Lubbock, TX

Livingston Ridger - HP Sims

Sample Id: **DUP-1**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 664341-011

Date Collected: 06.11.2020 14:27

Date Received: 06.12.2020 14:45

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3129157

Date Prep: 06.16.2020 12:00

Prep seq: 7705569

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	06.16.2020 23:12	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	06.16.2020 23:12	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	06.16.2020 23:12	U	1
m,p-Xylenes	179601-23-1	0.00270	0.00200	0.000454	mg/L	06.16.2020 23:12		1
o-Xylene	95-47-6	0.00120	0.00100	0.000270	mg/L	06.16.2020 23:12		1
Total Xylenes	1330-20-7	0.00390		0.000270	mg/L	06.16.2020 23:12		
Total BTEX		0.00390		0.000270	mg/L	06.16.2020 23:12		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	91	66 - 120	%		
4-Bromofluorobenzene	98	67 - 120	%		

Sample Id: **DUP-2**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 664341-012

Date Collected: 06.11.2020 16:25

Date Received: 06.12.2020 14:45

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3129157

Date Prep: 06.16.2020 12:00

Prep seq: 7705569

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00150	0.00100	0.000480	mg/L	06.16.2020 23:36		1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	06.16.2020 23:36	U	1
Ethylbenzene	100-41-4	0.0213	0.00100	0.000616	mg/L	06.16.2020 23:36		1
m,p-Xylenes	179601-23-1	0.00180	0.00200	0.000454	mg/L	06.16.2020 23:36	J	1
o-Xylene	95-47-6	0.00140	0.00100	0.000270	mg/L	06.16.2020 23:36		1
Total Xylenes	1330-20-7	0.00320		0.000270	mg/L	06.16.2020 23:36		
Total BTEX		0.0260		0.000270	mg/L	06.16.2020 23:36		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	95	66 - 120	%		
4-Bromofluorobenzene	97	67 - 120	%		



Certificate of Analytical Results

664341

Terracon-Lubbock, Lubbock, TX

Livingston Ridger - HP Sims

Sample Id: 7705488-1-BLK

Matrix: Water

Sample Depth:

Lab Sample Id: 7705488-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3129039

Date Prep: 06.15.2020 15:00

Prep seq: 7705488

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	06.15.2020 22:09	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	06.15.2020 22:09	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	06.15.2020 22:09	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	06.15.2020 22:09	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	06.15.2020 22:09	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	85	66 - 120	%		
4-Bromofluorobenzene	90	67 - 120	%		

Sample Id: 7705569-1-BLK

Matrix: Water

Sample Depth:

Lab Sample Id: 7705569-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: MIT

% Moist:

Tech: MIT

Seq Number: 3129157

Date Prep: 06.16.2020 12:00

Prep seq: 7705569

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000480	0.00100	0.000480	mg/L	06.16.2020 20:23	U	1
Toluene	108-88-3	<0.000512	0.00100	0.000512	mg/L	06.16.2020 20:23	U	1
Ethylbenzene	100-41-4	<0.000616	0.00100	0.000616	mg/L	06.16.2020 20:23	U	1
m,p-Xylenes	179601-23-1	<0.000454	0.00200	0.000454	mg/L	06.16.2020 20:23	U	1
o-Xylene	95-47-6	<0.000270	0.00100	0.000270	mg/L	06.16.2020 20:23	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
a,a,a-Trifluorotoluene	86	66 - 120	%		
4-Bromofluorobenzene	91	67 - 120	%		



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. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory 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



Form 2 - Surrogate Recoveries

Project Name: Livingston Ridger - HP Sims

Work Orders : 664341

Project ID: AR207012

Lab Batch #: 3129039

Sample: 7705488-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06.15.2020 20:32

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
a,a,a-Trifluorotoluene	0.0926	0.100	93	66-120	
4-Bromofluorobenzene	0.0911	0.100	91	67-120	

Lab Batch #: 3129039

Sample: 7705488-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06.15.2020 20:56

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
a,a,a-Trifluorotoluene	0.0892	0.100	89	66-120	
4-Bromofluorobenzene	0.0929	0.100	93	67-120	

Lab Batch #: 3129039

Sample: 7705488-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06.15.2020 22:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
a,a,a-Trifluorotoluene	0.0850	0.100	85	66-120	
4-Bromofluorobenzene	0.0897	0.100	90	67-120	

Lab Batch #: 3129039

Sample: 664316-004 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06.15.2020 22:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
a,a,a-Trifluorotoluene	0.458	0.500	92	66-120	
4-Bromofluorobenzene	0.101	0.100	101	67-120	

Lab Batch #: 3129039

Sample: 664316-004 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06.15.2020 23:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
a,a,a-Trifluorotoluene	0.461	0.500	92	66-120	
4-Bromofluorobenzene	0.0986	0.100	99	67-120	

* 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

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: Livingston Ridger - HP Sims

Work Orders : 664341

Project ID: AR207012

Lab Batch #: 3129157

Sample: 7705569-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06.16.2020 18:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
a,a,a-Trifluorotoluene	0.0872	0.100	87	66-120	
4-Bromofluorobenzene	0.0920	0.100	92	67-120	

Lab Batch #: 3129157

Sample: 7705569-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06.16.2020 19:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
a,a,a-Trifluorotoluene	0.0868	0.100	87	66-120	
4-Bromofluorobenzene	0.0940	0.100	94	67-120	

Lab Batch #: 3129157

Sample: 7705569-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06.16.2020 20:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
a,a,a-Trifluorotoluene	0.0864	0.100	86	66-120	
4-Bromofluorobenzene	0.0912	0.100	91	67-120	

Lab Batch #: 3129157

Sample: 664341-008 S / MS

Batch: 1 Matrix: Ground Water

Units: mg/L

Date Analyzed: 06.16.2020 21:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
a,a,a-Trifluorotoluene	0.475	0.500	95	66-120	
4-Bromofluorobenzene	0.0947	0.100	95	67-120	

Lab Batch #: 3129157

Sample: 664341-008 SD / MSD

Batch: 1 Matrix: Ground Water

Units: mg/L

Date Analyzed: 06.16.2020 21:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
a,a,a-Trifluorotoluene	0.414	0.500	83	66-120	
4-Bromofluorobenzene	0.0890	0.100	89	67-120	

* 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

All results are based on MDL and validated for QC purposes.



BS / BSD Recoveries

Project Name: Livingston Ridger - HP Sims

Work Order #: 664341

Project ID: AR207012

Analyst: MIT

Date Prepared: 06.15.2020

Date Analyzed: 06.15.2020

Lab Batch ID: 3129039

Sample: 7705488-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	<0.000480	0.100	0.0980	98	0.100	0.0943	94	4	74-120	20	
Toluene	<0.000512	0.100	0.0981	98	0.100	0.0955	96	3	74-120	20	
Ethylbenzene	<0.000616	0.100	0.0914	91	0.100	0.0915	92	0	74-120	20	
m,p-Xylenes	<0.000454	0.200	0.183	92	0.200	0.182	91	1	73-120	25	
o-Xylene	<0.000270	0.100	0.0915	92	0.100	0.0920	92	1	73-120	25	

Analyst: MIT

Date Prepared: 06.16.2020

Date Analyzed: 06.16.2020

Lab Batch ID: 3129157

Sample: 7705569-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	<0.000480	0.100	0.0943	94	0.100	0.0922	92	2	74-120	20	
Toluene	<0.000512	0.100	0.0953	95	0.100	0.0933	93	2	74-120	20	
Ethylbenzene	<0.000616	0.100	0.0901	90	0.100	0.0902	90	0	74-120	20	
m,p-Xylenes	<0.000454	0.200	0.180	90	0.200	0.181	91	1	73-120	25	
o-Xylene	<0.000270	0.100	0.0909	91	0.100	0.0911	91	0	73-120	25	

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: Livingston Ridger - HP Sims

Work Order #: 664341

Project ID: AR207012

Lab Batch ID: 3129039

QC- Sample ID: 664316-004 S

Batch #: 1 Matrix: Water

Date Analyzed: 06.15.2020

Date Prepared: 06.15.2020

Analyst: MIT

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.253	0.500	0.713	92	0.500	0.713	92	0	15-147	25	
Toluene	0.862	0.500	1.35	98	0.500	1.33	94	1	11-147	25	
Ethylbenzene	0.538	0.500	1.00	92	0.500	0.991	91	1	10-149	25	
m,p-Xylenes	0.639	1.00	1.56	92	1.00	1.55	91	1	62-124	25	
o-Xylene	0.588	0.500	1.05	92	0.500	1.06	94	1	62-124	25	

Lab Batch ID: 3129157

QC- Sample ID: 664341-008 S

Batch #: 1 Matrix: Ground Water

Date Analyzed: 06.16.2020

Date Prepared: 06.16.2020

Analyst: MIT

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00240	0.500	0.463	93	0.500	0.466	93	1	15-147	25	
Toluene	<0.00256	0.500	0.459	92	0.500	0.467	93	2	11-147	25	
Ethylbenzene	<0.00308	0.500	0.419	84	0.500	0.448	90	7	10-149	25	
m,p-Xylenes	0.00270	1.00	0.844	84	1.00	0.900	90	6	62-124	25	
o-Xylene	<0.00135	0.500	0.422	84	0.500	0.452	90	7	62-124	25	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A) / B$
 Relative Percent Difference $RPD = 200 \times |(C-F) / (C+F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 \times (F-A) / E$

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.

664341

CHAIN OF CUSTODY RECORD

[illegible]

Lubbock Office ■ 5827 50th Street ■ Lubbock, Texas 79424 ■ 806-300-0140

Responsive ■ Resourceful ■ Reliable

Lubbock Office ■ 5827 50th Street ■ Lubbock, Texas 79424 ■ 806-300-0140
Responsive ■ Resourceful ■ Reliable

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Terracon-Lubbock

Date/ Time Received: 06.12.2020 02.45.10 PM

Work Order #: 664341

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-4

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.2
#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?	Yes

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

Analyst:

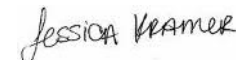
PH Device/Lot#:

Checklist completed by:


Brenda Ward

Date: 06.12.2020

Checklist reviewed by:


Jessica Kramer

Date: 06.15.2020

Certificate of Analysis Summary 673421

Terracon-Lubbock, Lubbock, TX

Project Name: Livingston Ridge - HP Sims (SRS #2001-11005)

Project Id: AR207012
 Contact: Aaron Adams
 Project Location:

Date Received in Lab: Thu 09.24.2020 09:25
 Report Date: 09.28.2020 15:03
 Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	673421-001	673421-002	673421-003	673421-004	673421-005	673421-006
	Field Id:	MW-1	MW-4	MW-5	MW-6	MW-9	MW-11
	Depth:						
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	Sampled:	09.23.2020 17:06	09.23.2020 18:08	09.23.2020 18:42	09.23.2020 16:35	09.23.2020 17:40	09.23.2020 15:01
BTEX by EPA 8021B SUB: T104704400-20-21	Extracted:	09.26.2020 14:00	09.26.2020 14:00	09.27.2020 13:00	09.27.2020 13:00	09.27.2020 13:00	09.27.2020 13:00
	Analyzed:	09.27.2020 09:19	09.27.2020 09:39	09.27.2020 21:27	09.27.2020 21:47	09.27.2020 22:08	09.27.2020 22:29
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Benzene		<0.00200 0.00200	0.00382 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	0.0198 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		0.00428 0.00400	<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		0.00428 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		0.00428 0.00200	0.0236 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Certificate of Analysis Summary 673421

Terracon-Lubbock, Lubbock, TX

Project Name: Livingston Ridge - HP Sims (SRS #2001-11005)

Project Id: AR207012
 Contact: Aaron Adams
 Project Location:

Date Received in Lab: Thu 09.24.2020 09:25
 Report Date: 09.28.2020 15:03
 Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	673421-007	673421-008	673421-009	673421-010	673421-011	
	Field Id:	MW-12	MW-13	MW-14	MW-15	DUP-1	
	Depth:						
	Matrix:	WATER	WATER	WATER	WATER	WATER	
	Sampled:	09.23.2020 15:32	09.23.2020 16:03	09.23.2020 14:21	09.23.2020 13:45	09.23.2020 17:11	
BTEX by EPA 8021B SUB: T104704400-20-21	Extracted:	09.27.2020 13:00	09.27.2020 13:00	09.27.2020 13:00	09.27.2020 13:00	09.27.2020 13:00	
	Analyzed:	09.27.2020 22:50	09.27.2020 23:10	09.27.2020 23:31	09.27.2020 23:52	09.28.2020 00:12	
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	
Ethylbenzene		0.00897 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	
m,p-Xylenes		<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400	<0.00400 0.00400	
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	
Total BTEX		0.00897 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico





Environment Testing
Xenco

Analytical Report 673421

for

Terracon-Lubbock

Project Manager: Aaron Adams

Livingston Ridge - HP Sims (SRS #2001-11005)

AR207012

09.28.2020

Collected By: Client



6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)

Xenco-Tampa: Florida (E87429), North Carolina (483)



09.28.2020

Project Manager: **Aaron Adams**

Terracon-Lubbock

5827 50th st, Suite 1

Lubbock, TX 79424

Reference: Eurofins Xenco, LLC Report No(s): **673421**

Livingston Ridge - HP Sims (SRS #2001-11005)

Project Address:

Aaron Adams:

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 Eurofins Xenco, LLC Report Number(s) 673421. 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 Eurofins Xenco, LLC. 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. 673421 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 Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads "Jessica Kramer".

Jessica Kramer

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

**Sample Cross Reference 673421****Terracon-Lubbock, Lubbock, TX**

Livingston Ridge - HP Sims (SRS #2001-11005)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	09.23.2020 17:06		673421-001
MW-4	W	09.23.2020 18:08		673421-002
MW-5	W	09.23.2020 18:42		673421-003
MW-6	W	09.23.2020 16:35		673421-004
MW-9	W	09.23.2020 17:40		673421-005
MW-11	W	09.23.2020 15:01		673421-006
MW-12	W	09.23.2020 15:32		673421-007
MW-13	W	09.23.2020 16:03		673421-008
MW-14	W	09.23.2020 14:21		673421-009
MW-15	W	09.23.2020 13:45		673421-010
DUP-1	W	09.23.2020 17:11		673421-011



CASE NARRATIVE

Client Name: Terracon-Lubbock

Project Name: Livingston Ridge - HP Sims (SRS #2001-11005)

Project ID: AR207012
Work Order Number(s): 673421

Report Date: 09.28.2020
Date Received: 09.24.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3138201 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 673421-007,673421-011,673421-009.



Certificate of Analytical Results 673421

Terracon-Lubbock, Lubbock, TX Livingston Ridge - HP Sims (SRS #2001-11005)

Sample Id: **MW-1** Matrix: Water Date Received: 09.24.2020 09:25
 Lab Sample Id: 673421-001 Date Collected: 09.23.2020 17:06
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: KTL % Moisture:
 Analyst: KTL Date Prep: 09.26.2020 14:00
 Seq Number: 3138194 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	09.27.2020 09:19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	09.27.2020 09:19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	09.27.2020 09:19	U	1
m,p-Xylenes	179601-23-1	0.00428	0.00400	mg/L	09.27.2020 09:19		1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	09.27.2020 09:19	U	1
Total Xylenes	1330-20-7	0.00428	0.00200	mg/L	09.27.2020 09:19		1
Total BTEX		0.00428	0.00200	mg/L	09.27.2020 09:19		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	82	%	70-130	09.27.2020 09:19		
4-Bromofluorobenzene	460-00-4	127	%	70-130	09.27.2020 09:19		



Certificate of Analytical Results 673421

Terracon-Lubbock, Lubbock, TX Livingston Ridge - HP Sims (SRS #2001-11005)

Sample Id: **MW-4** Matrix: Water Date Received: 09.24.2020 09:25
 Lab Sample Id: 673421-002 Date Collected: 09.23.2020 18:08
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: KTL % Moisture:
 Analyst: KTL Date Prep: 09.26.2020 14:00
 Seq Number: 3138194 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00382	0.00200	mg/L	09.27.2020 09:39		1
Toluene	108-88-3	<0.00200	0.00200	mg/L	09.27.2020 09:39	U	1
Ethylbenzene	100-41-4	0.0198	0.00200	mg/L	09.27.2020 09:39		1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	09.27.2020 09:39	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	09.27.2020 09:39	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	09.27.2020 09:39	U	1
Total BTEX		0.0236	0.00200	mg/L	09.27.2020 09:39		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	89	%	70-130	09.27.2020 09:39		
4-Bromofluorobenzene	460-00-4	129	%	70-130	09.27.2020 09:39		



Certificate of Analytical Results 673421

Terracon-Lubbock, Lubbock, TX Livingston Ridge - HP Sims (SRS #2001-11005)

Sample Id: **MW-5** Matrix: Water Date Received: 09.24.2020 09:25
 Lab Sample Id: 673421-003 Date Collected: 09.23.2020 18:42
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: AMF % Moisture:
 Analyst: KTL Date Prep: 09.27.2020 13:00
 Seq Number: 3138201 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	09.27.2020 21:27	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	09.27.2020 21:27	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	09.27.2020 21:27	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	09.27.2020 21:27	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	09.27.2020 21:27	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	09.27.2020 21:27	U	1
Total BTEX		<0.00200	0.00200	mg/L	09.27.2020 21:27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	83	%	70-130	09.27.2020 21:27		
4-Bromofluorobenzene	460-00-4	129	%	70-130	09.27.2020 21:27		



Certificate of Analytical Results 673421

Terracon-Lubbock, Lubbock, TX Livingston Ridge - HP Sims (SRS #2001-11005)

Sample Id: **MW-6** Matrix: Water Date Received: 09.24.2020 09:25
 Lab Sample Id: 673421-004 Date Collected: 09.23.2020 16:35
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: AMF % Moisture:
 Analyst: KTL Date Prep: 09.27.2020 13:00
 Seq Number: 3138201 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	09.27.2020 21:47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	09.27.2020 21:47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	09.27.2020 21:47	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	09.27.2020 21:47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	09.27.2020 21:47	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	09.27.2020 21:47	U	1
Total BTEX		<0.00200	0.00200	mg/L	09.27.2020 21:47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	84	%	70-130	09.27.2020 21:47		
4-Bromofluorobenzene	460-00-4	121	%	70-130	09.27.2020 21:47		



Certificate of Analytical Results 673421

Terracon-Lubbock, Lubbock, TX Livingston Ridge - HP Sims (SRS #2001-11005)

Sample Id: **MW-9** Matrix: Water Date Received: 09.24.2020 09:25
 Lab Sample Id: 673421-005 Date Collected: 09.23.2020 17:40
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: AMF % Moisture:
 Analyst: KTL Date Prep: 09.27.2020 13:00
 Seq Number: 3138201 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	09.27.2020 22:08	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	09.27.2020 22:08	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	09.27.2020 22:08	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	09.27.2020 22:08	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	09.27.2020 22:08	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	09.27.2020 22:08	U	1
Total BTEX		<0.00200	0.00200	mg/L	09.27.2020 22:08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	87	%	70-130	09.27.2020 22:08		
4-Bromofluorobenzene	460-00-4	128	%	70-130	09.27.2020 22:08		



Certificate of Analytical Results 673421

Terracon-Lubbock, Lubbock, TX Livingston Ridge - HP Sims (SRS #2001-11005)

Sample Id: **MW-11** Matrix: Water Date Received: 09.24.2020 09:25
 Lab Sample Id: 673421-006 Date Collected: 09.23.2020 15:01
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: AMF % Moisture:
 Analyst: KTL Date Prep: 09.27.2020 13:00
 Seq Number: 3138201 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	09.27.2020 22:29	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	09.27.2020 22:29	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	09.27.2020 22:29	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	09.27.2020 22:29	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	09.27.2020 22:29	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	09.27.2020 22:29	U	1
Total BTEX		<0.00200	0.00200	mg/L	09.27.2020 22:29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	85	%	70-130	09.27.2020 22:29		
4-Bromofluorobenzene	460-00-4	127	%	70-130	09.27.2020 22:29		



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Terracon-Lubbock, Lubbock, TX Livingston Ridge - HP Sims (SRS #2001-11005)

Sample Id: **MW-12** Matrix: Water Date Received: 09.24.2020 09:25
 Lab Sample Id: 673421-007 Date Collected: 09.23.2020 15:32
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: AMF % Moisture:
 Analyst: KTL Date Prep: 09.27.2020 13:00
 Seq Number: 3138201 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	09.27.2020 22:50	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	09.27.2020 22:50	U	1
Ethylbenzene	100-41-4	0.00897	0.00200	mg/L	09.27.2020 22:50		1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	09.27.2020 22:50	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	09.27.2020 22:50	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	09.27.2020 22:50	U	1
Total BTEX		0.00897	0.00200	mg/L	09.27.2020 22:50		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	88	%	70-130	09.27.2020 22:50		
4-Bromofluorobenzene	460-00-4	139	%	70-130	09.27.2020 22:50	**	



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Terracon-Lubbock, Lubbock, TX Livingston Ridge - HP Sims (SRS #2001-11005)

Sample Id: **MW-13** Matrix: Water Date Received: 09.24.2020 09:25
 Lab Sample Id: 673421-008 Date Collected: 09.23.2020 16:03
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: AMF % Moisture:
 Analyst: KTL Date Prep: 09.27.2020 13:00
 Seq Number: 3138201 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	09.27.2020 23:10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	09.27.2020 23:10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	09.27.2020 23:10	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	09.27.2020 23:10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	09.27.2020 23:10	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	09.27.2020 23:10	U	1
Total BTEX		<0.00200	0.00200	mg/L	09.27.2020 23:10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	85	%	70-130	09.27.2020 23:10	
4-Bromofluorobenzene	460-00-4	128	%	70-130	09.27.2020 23:10	



Certificate of Analytical Results 673421

Terracon-Lubbock, Lubbock, TX Livingston Ridge - HP Sims (SRS #2001-11005)

Sample Id: **MW-14** Matrix: Water Date Received: 09.24.2020 09:25
 Lab Sample Id: 673421-009 Date Collected: 09.23.2020 14:21
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: AMF % Moisture:
 Analyst: KTL Date Prep: 09.27.2020 13:00
 Seq Number: 3138201 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	09.27.2020 23:31	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	09.27.2020 23:31	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	09.27.2020 23:31	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	09.27.2020 23:31	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	09.27.2020 23:31	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	09.27.2020 23:31	U	1
Total BTEX		<0.00200	0.00200	mg/L	09.27.2020 23:31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	92	%	70-130	09.27.2020 23:31		
4-Bromofluorobenzene	460-00-4	143	%	70-130	09.27.2020 23:31	**	



Certificate of Analytical Results 673421

Terracon-Lubbock, Lubbock, TX Livingston Ridge - HP Sims (SRS #2001-11005)

Sample Id: **MW-15** Matrix: Water Date Received: 09.24.2020 09:25
 Lab Sample Id: 673421-010 Date Collected: 09.23.2020 13:45
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: AMF % Moisture:
 Analyst: KTL Date Prep: 09.27.2020 13:00
 Seq Number: 3138201 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	09.27.2020 23:52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	09.27.2020 23:52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	09.27.2020 23:52	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	09.27.2020 23:52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	09.27.2020 23:52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	09.27.2020 23:52	U	1
Total BTEX		<0.00200	0.00200	mg/L	09.27.2020 23:52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	88	%	70-130	09.27.2020 23:52		
4-Bromofluorobenzene	460-00-4	128	%	70-130	09.27.2020 23:52		



Certificate of Analytical Results 673421

Terracon-Lubbock, Lubbock, TX Livingston Ridge - HP Sims (SRS #2001-11005)

Sample Id: **DUP-1**
Lab Sample Id: 673421-011

Matrix: Water
Date Collected: 09.23.2020 17:11

Date Received: 09.24.2020 09:25

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: AMF

% Moisture:

Analyst: KTL

Date Prep: 09.27.2020 13:00

Seq Number: 3138201

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	09.28.2020 00:12	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	09.28.2020 00:12	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	09.28.2020 00:12	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	09.28.2020 00:12	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	09.28.2020 00:12	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	09.28.2020 00:12	U	1
Total BTEX		<0.00200	0.00200	mg/L	09.28.2020 00:12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	88	%	70-130	09.28.2020 00:12		
4-Bromofluorobenzene	460-00-4	153	%	70-130	09.28.2020 00:12	**	

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. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory 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



Terracon-Lubbock
Livingston Ridge - HP Sims (SRS #2001-11005)

Analytical Method: BTEX by EPA 8021B

Seq Number: 3138194

Matrix: Water

Prep Method: SW5030B

Date Prep: 09.26.2020

MB Sample Id: 7712143-1-BLK

LCS Sample Id: 7712143-1-BKS

LCSD Sample Id: 7712143-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.116	116	0.106	106	70-130	9	25	mg/L	09.27.2020 01:59	
Toluene	<0.00200	0.100	0.116	116	0.105	105	70-130	10	25	mg/L	09.27.2020 01:59	
Ethylbenzene	<0.00200	0.100	0.110	110	0.0998	100	70-130	10	25	mg/L	09.27.2020 01:59	
m,p-Xylenes	<0.00400	0.200	0.212	106	0.190	95	70-130	11	25	mg/L	09.27.2020 01:59	
o-Xylene	<0.00200	0.100	0.109	109	0.0985	99	70-130	10	25	mg/L	09.27.2020 01:59	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	78		96		93		70-130	%	09.27.2020 01:59
4-Bromofluorobenzene	102		113		111		70-130	%	09.27.2020 01:59

Analytical Method: BTEX by EPA 8021B

Seq Number: 3138201

Matrix: Water

Prep Method: SW5030B

Date Prep: 09.27.2020

MB Sample Id: 7712146-1-BLK

LCS Sample Id: 7712146-1-BKS

LCSD Sample Id: 7712146-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.129	129	0.119	119	70-130	8	25	mg/L	09.27.2020 13:37	
Toluene	<0.00200	0.100	0.125	125	0.117	117	70-130	7	25	mg/L	09.27.2020 13:37	
Ethylbenzene	<0.00200	0.100	0.112	112	0.111	111	70-130	1	25	mg/L	09.27.2020 13:37	
m,p-Xylenes	<0.00400	0.200	0.221	111	0.210	105	70-130	5	25	mg/L	09.27.2020 13:37	
o-Xylene	<0.00200	0.100	0.116	116	0.110	110	70-130	5	25	mg/L	09.27.2020 13:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	78		90		90		70-130	%	09.27.2020 13:37
4-Bromofluorobenzene	111		129		121		70-130	%	09.27.2020 13:37

Analytical Method: BTEX by EPA 8021B

Seq Number: 3138194

Matrix: Water

Prep Method: SW5030B

Date Prep: 09.26.2020

Parent Sample Id: 673422-001

MS Sample Id: 673422-001 S

MSD Sample Id: 673422-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.122	122	0.117	117	70-130	4	25	mg/L	09.27.2020 02:41	
Toluene	<0.00200	0.100	0.120	120	0.116	116	70-130	3	25	mg/L	09.27.2020 02:41	
Ethylbenzene	<0.00200	0.100	0.115	115	0.110	110	70-130	4	25	mg/L	09.27.2020 02:41	
m,p-Xylenes	<0.00400	0.200	0.222	111	0.211	106	70-130	5	25	mg/L	09.27.2020 02:41	
o-Xylene	<0.00200	0.100	0.114	114	0.110	110	70-130	4	25	mg/L	09.27.2020 02:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		93		70-130	%	09.27.2020 02:41
4-Bromofluorobenzene	115		111		70-130	%	09.27.2020 02:41

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec



Terracon-Lubbock
Livingston Ridge - HP Sims (SRS #2001-11005)

Analytical Method: BTEX by EPA 8021B

Seq Number: 3138201

Matrix: Water

Prep Method: SW5030B

Date Prep: 09.27.2020

Parent Sample Id: 673546-001

MS Sample Id: 673546-001 S

MSD Sample Id: 673546-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.0627	0.100	0.189	126	0.184	121	70-130	3	25	mg/L	09.27.2020 14:18	
Toluene	0.00198	0.100	0.131	129	0.126	124	70-130	4	25	mg/L	09.27.2020 14:18	
Ethylbenzene	0.00228	0.100	0.119	117	0.120	118	70-130	1	25	mg/L	09.27.2020 14:18	
m,p-Xylenes	<0.00400	0.200	0.235	118	0.229	115	70-130	3	25	mg/L	09.27.2020 14:18	
o-Xylene	<0.00200	0.100	0.122	122	0.118	118	70-130	3	25	mg/L	09.27.2020 14:18	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		96		70-130	%	09.27.2020 14:18
4-Bromofluorobenzene	129		125		70-130	%	09.27.2020 14:18

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec

Final 1,000

Inter-Office Shipment

IOS Number : **70915**

Date/Time: 09.24.2020

Created by: Michael J Turner

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
673421-001	W	MW-1	09.23.2020 17:06	SW8021B	BTEX by EPA 8021B	09.30.2020	10.07.2020	JKR	BR4FBZ BZ BZME EBZ	
673421-002	W	MW-4	09.23.2020 18:08	SW8021B	BTEX by EPA 8021B	09.30.2020	10.07.2020	JKR	BR4FBZ BZ BZME EBZ	
673421-003	W	MW-5	09.23.2020 18:42	SW8021B	BTEX by EPA 8021B	09.30.2020	10.07.2020	JKR	BR4FBZ BZ BZME EBZ	
673421-004	W	MW-6	09.23.2020 16:35	SW8021B	BTEX by EPA 8021B	09.30.2020	10.07.2020	JKR	BR4FBZ BZ BZME EBZ	
673421-005	W	MW-9	09.23.2020 17:40	SW8021B	BTEX by EPA 8021B	09.30.2020	10.07.2020	JKR	BR4FBZ BZ BZME EBZ	
673421-006	W	MW-11	09.23.2020 15:01	SW8021B	BTEX by EPA 8021B	09.30.2020	10.07.2020	JKR	BR4FBZ BZ BZME EBZ	
673421-007	W	MW-12	09.23.2020 15:32	SW8021B	BTEX by EPA 8021B	09.30.2020	10.07.2020	JKR	BR4FBZ BZ BZME EBZ	
673421-008	W	MW-13	09.23.2020 16:03	SW8021B	BTEX by EPA 8021B	09.30.2020	10.07.2020	JKR	BR4FBZ BZ BZME EBZ	
673421-009	W	MW-14	09.23.2020 14:21	SW8021B	BTEX by EPA 8021B	09.30.2020	10.07.2020	JKR	BR4FBZ BZ BZME EBZ	
673421-010	W	MW-15	09.23.2020 13:45	SW8021B	BTEX by EPA 8021B	09.30.2020	10.07.2020	JKR	BR4FBZ BZ BZME EBZ	
673421-011	W	DUP-1	09.23.2020 17:11	SW8021B	BTEX by EPA 8021B	09.30.2020	10.07.2020	JKR	BR4FBZ BZ BZME EBZ	

Inter Office Shipment or Sample Comments:

Relinquished By:



Michael J Turner

Date Relinquished: 09.24.2020

Received By:



Jessica Kramer

Date Received: 09.25.2020

Cooler Temperature: 2.6



Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 70915

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sent By: Michael J Turner

Date Sent: 09.24.2020 09.49 AM

Received By: Jessica Kramer

Date Received: 09.25.2020 10.32 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	2.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Jessica Kramer

Date: 09.25.2020

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Terracon-Lubbock

Date/ Time Received: 09.24.2020 09.25.00 AM

Work Order #: 673421

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-4

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.1
#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)?	Yes Xenco Midland
#18 Water VOC samples have zero headspace?	Yes

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

Analyst:

PH Device/Lot#:

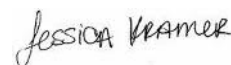
Checklist completed by:



Michael J Turner

Date: 09.24.2020

Checklist reviewed by:



Jessica Kramer

Date: 09.25.2020



Environment Testing
Xenco

Analytical Report 682429

for

Terracon-Lubbock

Project Manager: Brett Dennis

Livingston Ridge-HP Sims

AR207012

01.08.2021

Collected By: Client



6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-24)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-20-21)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)

Xenco-Tampa: Florida (E87429), North Carolina (483)



01.08.2021

Project Manager: **Brett Dennis**

Terracon-Lubbock

5827 50th st, Suite 1

Lubbock, TX 79424

Reference: Eurofins Xenco, LLC Report No(s): **682429**

Livingston Ridge-HP Sims

Project Address:

Brett Dennis:

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 Eurofins Xenco, LLC Report Number(s) 682429. 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 Eurofins Xenco, LLC. 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. 682429 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 Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads "Jessica Kramer".

Jessica Kramer

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

**Sample Cross Reference 682429****Terracon-Lubbock, Lubbock, TX**

Livingston Ridge-HP Sims

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-5	W	12.22.2020 11:35		682429-001
MW-1	W	12.22.2020 14:53		682429-002
MW-9	W	12.22.2020 13:22		682429-003
MW-6	W	12.22.2020 13:59		682429-004
MW-13	W	12.22.2020 15:45		682429-005
MW-4	W	12.23.2020 10:10		682429-006
MW-12	W	12.23.2020 10:55		682429-007
MW-11	W	12.23.2020 11:35		682429-008

**CASE NARRATIVE****Client Name: Terracon-Lubbock****Project Name: Livingston Ridge-HP Sims**Project ID: AR207012
Work Order Number(s): 682429Report Date: 01.08.2021
Date Received: 12.23.2020

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:**Sample receipt non conformances and comments per sample:**

None



Certificate of Analytical Results

682429

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id: MW-5

Matrix: Water

Sample Depth:

Lab Sample Id: 682429-001

Date Collected: 12.22.2020 11:35

Date Received: 12.23.2020 14:25

Analytical Method: PAHs by SW846 8270D SIM

Prep Method: SW3511

Analyst: EKL

% Moist:

Seq Number: 3146794

Date Prep: 12.29.2020 15:02

Tech: EKL

Subcontractor: SUB: T104704215-20-38

Prep seq: 7717994

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
1-Methylnaphthalene	90-12-0	<0.0000802	0.000183	0.0000802	mg/L	01.05.2021 19:48	U	1
2-Methylnaphthalene	91-57-6	<0.0000920	0.000183	0.0000920	mg/L	01.05.2021 19:48	U	1
Acenaphthene	83-32-9	<0.000101	0.000183	0.000101	mg/L	01.05.2021 19:48	U	1
Acenaphthylene	208-96-8	<0.0000849	0.000183	0.0000849	mg/L	01.05.2021 19:48	U	1
Anthracene	120-12-7	<0.0000873	0.000183	0.0000873	mg/L	01.05.2021 19:48	U	1
Benzo(a)anthracene	56-55-3	<0.000136	0.000183	0.000136	mg/L	01.05.2021 19:48	U	1
Benzo(a)pyrene	50-32-8	<0.0000575	0.000183	0.0000575	mg/L	01.05.2021 19:48	U	1
Benzo(b)fluoranthene	205-99-2	<0.0000717	0.000183	0.0000717	mg/L	01.05.2021 19:48	U	1
Benzo(g,h,i)perylene	191-24-2	<0.000114	0.000183	0.000114	mg/L	01.05.2021 19:48	U	1
Benzo(k)fluoranthene	207-08-9	<0.000117	0.000183	0.000117	mg/L	01.05.2021 19:48	U	1
Chrysene	218-01-9	<0.000157	0.000183	0.000157	mg/L	01.05.2021 19:48	U	1
Dibenz(a,h)anthracene	53-70-3	<0.0000766	0.000183	0.0000766	mg/L	01.05.2021 19:48	U	1
Fluoranthene	206-44-0	<0.000158	0.000183	0.000158	mg/L	01.05.2021 19:48	U	1
Fluorene	86-73-7	0.000286	0.000183	0.000102	mg/L	01.05.2021 19:48		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.0000921	0.000183	0.0000921	mg/L	01.05.2021 19:48	U	1
Naphthalene	91-20-3	0.000292	0.000367	0.0000980	mg/L	01.05.2021 19:48	J	1
Phenanthrene	85-01-8	<0.0000857	0.000183	0.0000857	mg/L	01.05.2021 19:48	U	1
Pyrene	129-00-0	<0.000131	0.000183	0.000131	mg/L	01.05.2021 19:48	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
2-Fluorobiphenyl	122	54 - 146	%		
Nitrobenzene-d5	119	46 - 151	%		
Terphenyl-D14	75	51 - 139	%		



Certificate of Analytical Results

682429

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id: MW-5

Matrix: Water

Sample Depth:

Lab Sample Id: 682429-001

Date Collected: 12.22.2020 11:35

Date Received: 12.23.2020 14:25

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: KTL

% Moist:

Seq Number: 3146070

Date Prep: 12.24.2020 10:45

Tech: KTL

Subcontractor: SUB: T104704400-20-21

Prep seq: 7717940

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	12.24.2020 14:43	U	1
Toluene	108-88-3	0.000770	0.00200	0.000367	mg/L	12.24.2020 14:43	J	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	12.24.2020 14:43	U	1
m,p-Xylenes	179601-23-1	0.000920	0.00400	0.000630	mg/L	12.24.2020 14:43	J	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	12.24.2020 14:43	U	1
Total Xylenes	1330-20-7	0.000920		0.000630	mg/L	12.24.2020 14:43	J	
Total BTEX		0.00169		0.000367	mg/L	12.24.2020 14:43	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	86	70 - 130	%		
4-Bromofluorobenzene	111	70 - 130	%		



Certificate of Analytical Results

682429

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id: **MW-1**

Matrix: Water

Sample Depth:

Lab Sample Id: 682429-002

Date Collected: 12.22.2020 14:53

Date Received: 12.23.2020 14:25

Analytical Method: PAHs by SW846 8270D SIM

Prep Method: SW3511

Analyst: EKL

% Moist:

Seq Number: 3146794

Date Prep: 12.29.2020 15:05

Tech: EKL

Subcontractor: SUB: T104704215-20-38

Prep seq: 7717994

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
1-Methylnaphthalene	90-12-0	<0.0000816	0.000186	0.0000816	mg/L	01.05.2021 20:06	U	1
2-Methylnaphthalene	91-57-6	<0.0000936	0.000186	0.0000936	mg/L	01.05.2021 20:06	U	1
Acenaphthene	83-32-9	<0.000103	0.000186	0.000103	mg/L	01.05.2021 20:06	U	1
Acenaphthylene	208-96-8	<0.0000864	0.000186	0.0000864	mg/L	01.05.2021 20:06	U	1
Anthracene	120-12-7	<0.0000888	0.000186	0.0000888	mg/L	01.05.2021 20:06	U	1
Benzo(a)anthracene	56-55-3	<0.000138	0.000186	0.000138	mg/L	01.05.2021 20:06	U	1
Benzo(a)pyrene	50-32-8	<0.0000585	0.000186	0.0000585	mg/L	01.05.2021 20:06	U	1
Benzo(b)fluoranthene	205-99-2	<0.0000729	0.000186	0.0000729	mg/L	01.05.2021 20:06	U	1
Benzo(g,h,i)perylene	191-24-2	<0.000116	0.000186	0.000116	mg/L	01.05.2021 20:06	U	1
Benzo(k)fluoranthene	207-08-9	<0.000119	0.000186	0.000119	mg/L	01.05.2021 20:06	U	1
Chrysene	218-01-9	<0.000160	0.000186	0.000160	mg/L	01.05.2021 20:06	U	1
Dibenz(a,h)anthracene	53-70-3	<0.0000780	0.000186	0.0000780	mg/L	01.05.2021 20:06	U	1
Fluoranthene	206-44-0	<0.000161	0.000186	0.000161	mg/L	01.05.2021 20:06	U	1
Fluorene	86-73-7	<0.000103	0.000186	0.000103	mg/L	01.05.2021 20:06	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.0000937	0.000186	0.0000937	mg/L	01.05.2021 20:06	U	1
Naphthalene	91-20-3	0.000315	0.000373	0.0000997	mg/L	01.05.2021 20:06	J	1
Phenanthrene	85-01-8	<0.0000872	0.000186	0.0000872	mg/L	01.05.2021 20:06	U	1
Pyrene	129-00-0	<0.000134	0.000186	0.000134	mg/L	01.05.2021 20:06	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
2-Fluorobiphenyl	121	54 - 146	%		
Nitrobenzene-d5	122	46 - 151	%		
Terphenyl-D14	83	51 - 139	%		



Certificate of Analytical Results

682429

Terracon-Lubbock, Lubbock, TX
Livingston Ridge-HP Sims

Sample Id: MW-1	Matrix: Water	Sample Depth:
Lab Sample Id: 682429-002	Date Collected: 12.22.2020 14:53	Date Received: 12.23.2020 14:25
Analytical Method: BTEX by EPA 8021B		Prep Method: 5030B
Analyst: KTL	% Moist:	
Seq Number: 3146070	Date Prep: 12.24.2020 10:45	Tech: KTL
Subcontractor: SUB: T104704400-20-21	Prep seq: 7717940	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	12.24.2020 15:08	U	1
Toluene	108-88-3	0.000890	0.00200	0.000367	mg/L	12.24.2020 15:08	J	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	12.24.2020 15:08	U	1
m,p-Xylenes	179601-23-1	0.00265	0.00400	0.000630	mg/L	12.24.2020 15:08	J	1
o-Xylene	95-47-6	0.00158	0.00200	0.000642	mg/L	12.24.2020 15:08	J	1
Total Xylenes	1330-20-7	0.00423		0.000630	mg/L	12.24.2020 15:08		
Total BTEX		0.00512		0.000367	mg/L	12.24.2020 15:08		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	89	70 - 130	%		
4-Bromofluorobenzene	111	70 - 130	%		



Certificate of Analytical Results

682429

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id: **MW-9**

Matrix: Water

Sample Depth:

Lab Sample Id: 682429-003

Date Collected: 12.22.2020 13:22

Date Received: 12.23.2020 14:25

Analytical Method: PAHs by SW846 8270D SIM

Prep Method: SW3511

Analyst: EKL

% Moist:

Seq Number: 3146794

Date Prep: 12.29.2020 15:08

Tech: EKL

Subcontractor: SUB: T104704215-20-38

Prep seq: 7717994

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
1-Methylnaphthalene	90-12-0	<0.0000797	0.000182	0.0000797	mg/L	01.05.2021 20:23	U	1
2-Methylnaphthalene	91-57-6	<0.0000914	0.000182	0.0000914	mg/L	01.05.2021 20:23	U	1
Acenaphthene	83-32-9	<0.000100	0.000182	0.000100	mg/L	01.05.2021 20:23	U	1
Acenaphthylene	208-96-8	<0.0000843	0.000182	0.0000843	mg/L	01.05.2021 20:23	U	1
Anthracene	120-12-7	<0.0000867	0.000182	0.0000867	mg/L	01.05.2021 20:23	U	1
Benzo(a)anthracene	56-55-3	<0.000135	0.000182	0.000135	mg/L	01.05.2021 20:23	U	1
Benzo(a)pyrene	50-32-8	<0.0000571	0.000182	0.0000571	mg/L	01.05.2021 20:23	U	1
Benzo(b)fluoranthene	205-99-2	<0.0000712	0.000182	0.0000712	mg/L	01.05.2021 20:23	U	1
Benzo(g,h,i)perylene	191-24-2	<0.000113	0.000182	0.000113	mg/L	01.05.2021 20:23	U	1
Benzo(k)fluoranthene	207-08-9	<0.000116	0.000182	0.000116	mg/L	01.05.2021 20:23	U	1
Chrysene	218-01-9	<0.000156	0.000182	0.000156	mg/L	01.05.2021 20:23	U	1
Dibenz(a,h)anthracene	53-70-3	<0.0000761	0.000182	0.0000761	mg/L	01.05.2021 20:23	U	1
Fluoranthene	206-44-0	<0.000157	0.000182	0.000157	mg/L	01.05.2021 20:23	U	1
Fluorene	86-73-7	<0.000101	0.000182	0.000101	mg/L	01.05.2021 20:23	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.0000914	0.000182	0.0000914	mg/L	01.05.2021 20:23	U	1
Naphthalene	91-20-3	<0.0000974	0.000364	0.0000974	mg/L	01.05.2021 20:23	U	1
Phenanthrene	85-01-8	<0.0000852	0.000182	0.0000852	mg/L	01.05.2021 20:23	U	1
Pyrene	129-00-0	<0.000130	0.000182	0.000130	mg/L	01.05.2021 20:23	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
2-Fluorobiphenyl	122	54 - 146	%		
Nitrobenzene-d5	120	46 - 151	%		
Terphenyl-D14	90	51 - 139	%		



Certificate of Analytical Results

682429

Terracon-Lubbock, Lubbock, TX
Livingston Ridge-HP Sims

Sample Id: MW-9	Matrix: Water	Sample Depth:
Lab Sample Id: 682429-003	Date Collected: 12.22.2020 13:22	Date Received: 12.23.2020 14:25
Analytical Method: BTEX by EPA 8021B		Prep Method: 5030B
Analyst: KTL	% Moist:	
Seq Number: 3146070	Date Prep: 12.24.2020 10:45	Tech: KTL
Subcontractor: SUB: T104704400-20-21	Prep seq: 7717940	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	12.24.2020 15:33	U	1
Toluene	108-88-3	0.000560	0.00200	0.000367	mg/L	12.24.2020 15:33	J	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	12.24.2020 15:33	U	1
m,p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	12.24.2020 15:33	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	12.24.2020 15:33	U	1
Total Xylenes	1330-20-7	<0.000630		0.000630	mg/L	12.24.2020 15:33	U	
Total BTEX		0.000560		0.000367	mg/L	12.24.2020 15:33	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	102	70 - 130	%		
4-Bromofluorobenzene	112	70 - 130	%		



Certificate of Analytical Results

682429

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id: **MW-6**

Matrix: Water

Sample Depth:

Lab Sample Id: 682429-004

Date Collected: 12.22.2020 13:59

Date Received: 12.23.2020 14:25

Analytical Method: PAHs by SW846 8270D SIM

Prep Method: SW3511

Analyst: EKL

% Moist:

Seq Number: 3146794

Date Prep: 12.29.2020 15:11

Tech: EKL

Subcontractor: SUB: T104704215-20-38

Prep seq: 7717994

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
1-Methylnaphthalene	90-12-0	<0.0000816	0.000186	0.0000816	mg/L	01.05.2021 20:41	U	1
2-Methylnaphthalene	91-57-6	<0.0000936	0.000186	0.0000936	mg/L	01.05.2021 20:41	U	1
Acenaphthene	83-32-9	<0.000103	0.000186	0.000103	mg/L	01.05.2021 20:41	U	1
Acenaphthylene	208-96-8	<0.0000864	0.000186	0.0000864	mg/L	01.05.2021 20:41	U	1
Anthracene	120-12-7	<0.0000888	0.000186	0.0000888	mg/L	01.05.2021 20:41	U	1
Benzo(a)anthracene	56-55-3	<0.000138	0.000186	0.000138	mg/L	01.05.2021 20:41	U	1
Benzo(a)pyrene	50-32-8	<0.0000585	0.000186	0.0000585	mg/L	01.05.2021 20:41	U	1
Benzo(b)fluoranthene	205-99-2	<0.0000729	0.000186	0.0000729	mg/L	01.05.2021 20:41	U	1
Benzo(g,h,i)perylene	191-24-2	<0.000116	0.000186	0.000116	mg/L	01.05.2021 20:41	U	1
Benzo(k)fluoranthene	207-08-9	<0.000119	0.000186	0.000119	mg/L	01.05.2021 20:41	U	1
Chrysene	218-01-9	<0.000160	0.000186	0.000160	mg/L	01.05.2021 20:41	U	1
Dibenz(a,h)anthracene	53-70-3	<0.0000780	0.000186	0.0000780	mg/L	01.05.2021 20:41	U	1
Fluoranthene	206-44-0	<0.000161	0.000186	0.000161	mg/L	01.05.2021 20:41	U	1
Fluorene	86-73-7	<0.000103	0.000186	0.000103	mg/L	01.05.2021 20:41	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.0000937	0.000186	0.0000937	mg/L	01.05.2021 20:41	U	1
Naphthalene	91-20-3	<0.0000997	0.000373	0.0000997	mg/L	01.05.2021 20:41	U	1
Phenanthrene	85-01-8	<0.0000872	0.000186	0.0000872	mg/L	01.05.2021 20:41	U	1
Pyrene	129-00-0	<0.000134	0.000186	0.000134	mg/L	01.05.2021 20:41	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
2-Fluorobiphenyl	136	54 - 146	%		
Nitrobenzene-d5	127	46 - 151	%		
Terphenyl-D14	110	51 - 139	%		



Certificate of Analytical Results

682429

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id: **MW-6**

Matrix: Water

Sample Depth:

Lab Sample Id: 682429-004

Date Collected: 12.22.2020 13:59

Date Received: 12.23.2020 14:25

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: KTL

% Moist:

Seq Number: 3146070

Date Prep: 12.24.2020 10:45

Tech: KTL

Subcontractor: SUB: T104704400-20-21

Prep seq: 7717940

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	12.24.2020 15:58	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	12.24.2020 15:58	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	12.24.2020 15:58	U	1
m,p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	12.24.2020 15:58	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	12.24.2020 15:58	U	1
Total Xylenes	1330-20-7	<0.000630		0.000630	mg/L	12.24.2020 15:58	U	
Total BTEX		<0.000367		0.000367	mg/L	12.24.2020 15:58	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	108	70 - 130	%		
4-Bromofluorobenzene	107	70 - 130	%		



Certificate of Analytical Results

682429

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id: **MW-13**

Matrix: Water

Sample Depth:

Lab Sample Id: 682429-005

Date Collected: 12.22.2020 15:45

Date Received: 12.23.2020 14:25

Analytical Method: PAHs by SW846 8270D SIM

Prep Method: SW3511

Analyst: EKL

% Moist:

Seq Number: 3146794

Date Prep: 12.29.2020 15:14

Tech: EKL

Subcontractor: SUB: T104704215-20-38

Prep seq: 7717994

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
1-Methylnaphthalene	90-12-0	<0.0000816	0.000186	0.0000816	mg/L	01.05.2021 20:58	U	1
2-Methylnaphthalene	91-57-6	<0.0000936	0.000186	0.0000936	mg/L	01.05.2021 20:58	U	1
Acenaphthene	83-32-9	<0.000103	0.000186	0.000103	mg/L	01.05.2021 20:58	U	1
Acenaphthylene	208-96-8	<0.0000863	0.000186	0.0000863	mg/L	01.05.2021 20:58	U	1
Anthracene	120-12-7	<0.0000888	0.000186	0.0000888	mg/L	01.05.2021 20:58	U	1
Benzo(a)anthracene	56-55-3	<0.000138	0.000186	0.000138	mg/L	01.05.2021 20:58	U	1
Benzo(a)pyrene	50-32-8	<0.0000585	0.000186	0.0000585	mg/L	01.05.2021 20:58	U	1
Benzo(b)fluoranthene	205-99-2	<0.0000729	0.000186	0.0000729	mg/L	01.05.2021 20:58	U	1
Benzo(g,h,i)perylene	191-24-2	<0.000116	0.000186	0.000116	mg/L	01.05.2021 20:58	U	1
Benzo(k)fluoranthene	207-08-9	<0.000119	0.000186	0.000119	mg/L	01.05.2021 20:58	U	1
Chrysene	218-01-9	<0.000160	0.000186	0.000160	mg/L	01.05.2021 20:58	U	1
Dibenz(a,h)anthracene	53-70-3	<0.0000779	0.000186	0.0000779	mg/L	01.05.2021 20:58	U	1
Fluoranthene	206-44-0	<0.000161	0.000186	0.000161	mg/L	01.05.2021 20:58	U	1
Fluorene	86-73-7	<0.000103	0.000186	0.000103	mg/L	01.05.2021 20:58	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.0000936	0.000186	0.0000936	mg/L	01.05.2021 20:58	U	1
Naphthalene	91-20-3	<0.0000997	0.000373	0.0000997	mg/L	01.05.2021 20:58	U	1
Phenanthrene	85-01-8	<0.0000872	0.000186	0.0000872	mg/L	01.05.2021 20:58	U	1
Pyrene	129-00-0	<0.000134	0.000186	0.000134	mg/L	01.05.2021 20:58	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
2-Fluorobiphenyl	127	54 - 146	%		
Nitrobenzene-d5	118	46 - 151	%		
Terphenyl-D14	101	51 - 139	%		



Certificate of Analytical Results

682429

Terracon-Lubbock, Lubbock, TX
Livingston Ridge-HP Sims

Sample Id: **MW-13**

Matrix: Water

Sample Depth:

Lab Sample Id: 682429-005

Date Collected: 12.22.2020 15:45

Date Received: 12.23.2020 14:25

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: KTL

% Moist:

Seq Number: 3146070

Date Prep: 12.24.2020 10:45

Tech: KTL

Subcontractor: SUB: T104704400-20-21

Prep seq: 7717940

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	12.24.2020 16:23	U	1
Toluene	108-88-3	0.000760	0.00200	0.000367	mg/L	12.24.2020 16:23	J	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	12.24.2020 16:23	U	1
m,p-Xylenes	179601-23-1	0.00115	0.00400	0.000630	mg/L	12.24.2020 16:23	J	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	12.24.2020 16:23	U	1
Total Xylenes	1330-20-7	0.00115		0.000630	mg/L	12.24.2020 16:23	J	
Total BTEX		0.00191		0.000367	mg/L	12.24.2020 16:23	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	102	70 - 130	%		
4-Bromofluorobenzene	108	70 - 130	%		



Certificate of Analytical Results

682429

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id: **MW-4**

Matrix: Water

Sample Depth:

Lab Sample Id: 682429-006

Date Collected: 12.23.2020 10:10

Date Received: 12.23.2020 14:25

Analytical Method: PAHs by SW846 8270D SIM

Prep Method: SW3511

Analyst: EKL

% Moist:

Seq Number: 3146794

Date Prep: 12.29.2020 15:17

Tech: EKL

Subcontractor: SUB: T104704215-20-38

Prep seq: 7717994

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
1-Methylnaphthalene	90-12-0	0.00245	0.000184	0.0000804	mg/L	01.05.2021 21:15		1
2-Methylnaphthalene	91-57-6	0.00100	0.000184	0.0000923	mg/L	01.05.2021 21:15		1
Acenaphthene	83-32-9	<0.000101	0.000184	0.000101	mg/L	01.05.2021 21:15	U	1
Acenaphthylene	208-96-8	<0.0000851	0.000184	0.0000851	mg/L	01.05.2021 21:15	U	1
Anthracene	120-12-7	<0.0000876	0.000184	0.0000876	mg/L	01.05.2021 21:15	U	1
Benzo(a)anthracene	56-55-3	<0.000136	0.000184	0.000136	mg/L	01.05.2021 21:15	U	1
Benzo(a)pyrene	50-32-8	<0.0000577	0.000184	0.0000577	mg/L	01.05.2021 21:15	U	1
Benzo(b)fluoranthene	205-99-2	<0.0000719	0.000184	0.0000719	mg/L	01.05.2021 21:15	U	1
Benzo(g,h,i)perylene	191-24-2	<0.000114	0.000184	0.000114	mg/L	01.05.2021 21:15	U	1
Benzo(k)fluoranthene	207-08-9	<0.000117	0.000184	0.000117	mg/L	01.05.2021 21:15	U	1
Chrysene	218-01-9	<0.000158	0.000184	0.000158	mg/L	01.05.2021 21:15	U	1
Dibenz(a,h)anthracene	53-70-3	<0.0000768	0.000184	0.0000768	mg/L	01.05.2021 21:15	U	1
Fluoranthene	206-44-0	<0.000159	0.000184	0.000159	mg/L	01.05.2021 21:15	U	1
Fluorene	86-73-7	0.000247	0.000184	0.000102	mg/L	01.05.2021 21:15		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.0000923	0.000184	0.0000923	mg/L	01.05.2021 21:15	U	1
Naphthalene	91-20-3	0.00501	0.000368	0.0000983	mg/L	01.05.2021 21:15		1
Phenanthrene	85-01-8	<0.0000860	0.000184	0.0000860	mg/L	01.05.2021 21:15	U	1
Pyrene	129-00-0	<0.000132	0.000184	0.000132	mg/L	01.05.2021 21:15	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
2-Fluorobiphenyl	140	54 - 146	%		
Nitrobenzene-d5	139	46 - 151	%		
Terphenyl-D14	107	51 - 139	%		



Certificate of Analytical Results

682429

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id: MW-4	Matrix: Water	Sample Depth:
Lab Sample Id: 682429-006	Date Collected: 12.23.2020 10:10	Date Received: 12.23.2020 14:25
Analytical Method: BTEX by EPA 8021B		Prep Method: 5030B
Analyst: KTL	% Moist:	
Seq Number: 3146070	Date Prep: 12.24.2020 10:45	Tech: KTL
Subcontractor: SUB: T104704400-20-21	Prep seq: 7717940	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00430	0.00200	0.000408	mg/L	12.24.2020 16:48		1
Toluene	108-88-3	0.000690	0.00200	0.000367	mg/L	12.24.2020 16:48	J	1
Ethylbenzene	100-41-4	0.0198	0.00200	0.000657	mg/L	12.24.2020 16:48		1
m,p-Xylenes	179601-23-1	0.00239	0.00400	0.000630	mg/L	12.24.2020 16:48	J	1
o-Xylene	95-47-6	0.00382	0.00200	0.000642	mg/L	12.24.2020 16:48		1
Total Xylenes	1330-20-7	0.00621		0.000630	mg/L	12.24.2020 16:48		
Total BTEX		0.0310		0.000367	mg/L	12.24.2020 16:48		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	100	70 - 130	%		
4-Bromofluorobenzene	122	70 - 130	%		



Certificate of Analytical Results

682429

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id: **MW-12**

Matrix: Water

Sample Depth:

Lab Sample Id: 682429-007

Date Collected: 12.23.2020 10:55

Date Received: 12.23.2020 14:25

Analytical Method: PAHs by SW846 8270D SIM

Prep Method: SW3511

Analyst: EKL

% Moist:

Seq Number: 3146794

Date Prep: 12.29.2020 15:20

Tech: EKL

Subcontractor: SUB: T104704215-20-38

Prep seq: 7717994

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
1-Methylnaphthalene	90-12-0	0.00114	0.000186	0.0000816	mg/L	01.05.2021 21:33		1
2-Methylnaphthalene	91-57-6	0.000795	0.000186	0.0000936	mg/L	01.05.2021 21:33		1
Acenaphthene	83-32-9	<0.000103	0.000186	0.000103	mg/L	01.05.2021 21:33	U	1
Acenaphthylene	208-96-8	<0.0000864	0.000186	0.0000864	mg/L	01.05.2021 21:33	U	1
Anthracene	120-12-7	<0.0000888	0.000186	0.0000888	mg/L	01.05.2021 21:33	U	1
Benzo(a)anthracene	56-55-3	<0.000138	0.000186	0.000138	mg/L	01.05.2021 21:33	U	1
Benzo(a)pyrene	50-32-8	<0.0000585	0.000186	0.0000585	mg/L	01.05.2021 21:33	U	1
Benzo(b)fluoranthene	205-99-2	<0.0000729	0.000186	0.0000729	mg/L	01.05.2021 21:33	U	1
Benzo(g,h,i)perylene	191-24-2	<0.000116	0.000186	0.000116	mg/L	01.05.2021 21:33	U	1
Benzo(k)fluoranthene	207-08-9	<0.000119	0.000186	0.000119	mg/L	01.05.2021 21:33	U	1
Chrysene	218-01-9	<0.000160	0.000186	0.000160	mg/L	01.05.2021 21:33	U	1
Dibenz(a,h)anthracene	53-70-3	<0.0000780	0.000186	0.0000780	mg/L	01.05.2021 21:33	U	1
Fluoranthene	206-44-0	<0.000161	0.000186	0.000161	mg/L	01.05.2021 21:33	U	1
Fluorene	86-73-7	<0.000103	0.000186	0.000103	mg/L	01.05.2021 21:33	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.0000937	0.000186	0.0000937	mg/L	01.05.2021 21:33	U	1
Naphthalene	91-20-3	0.00210	0.000373	0.0000997	mg/L	01.05.2021 21:33		1
Phenanthrene	85-01-8	<0.0000872	0.000186	0.0000872	mg/L	01.05.2021 21:33	U	1
Pyrene	129-00-0	<0.000134	0.000186	0.000134	mg/L	01.05.2021 21:33	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
2-Fluorobiphenyl	124	54 - 146	%		
Nitrobenzene-d5	122	46 - 151	%		
Terphenyl-D14	93	51 - 139	%		



Certificate of Analytical Results

682429

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id: **MW-12**

Matrix: Water

Sample Depth:

Lab Sample Id: 682429-007

Date Collected: 12.23.2020 10:55

Date Received: 12.23.2020 14:25

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: KTL

% Moist:

Seq Number: 3146070

Date Prep: 12.24.2020 10:45

Tech: KTL

Subcontractor: SUB: T104704400-20-21

Prep seq: 7717940

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	12.24.2020 17:13	U	1
Toluene	108-88-3	0.000940	0.00200	0.000367	mg/L	12.24.2020 17:13	J	1
Ethylbenzene	100-41-4	0.0141	0.00200	0.000657	mg/L	12.24.2020 17:13		1
m,p-Xylenes	179601-23-1	0.00273	0.00400	0.000630	mg/L	12.24.2020 17:13	J	1
o-Xylene	95-47-6	0.00114	0.00200	0.000642	mg/L	12.24.2020 17:13	J	1
Total Xylenes	1330-20-7	0.00387		0.000630	mg/L	12.24.2020 17:13		
Total BTEX		0.0189		0.000367	mg/L	12.24.2020 17:13		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	96	70 - 130	%		
4-Bromofluorobenzene	120	70 - 130	%		



Certificate of Analytical Results

682429

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id: **MW-11**

Matrix: Water

Sample Depth:

Lab Sample Id: 682429-008

Date Collected: 12.23.2020 11:35

Date Received: 12.23.2020 14:25

Analytical Method: PAHs by SW846 8270D SIM

Prep Method: SW3511

Analyst: EKL

% Moist:

Seq Number: 3146794

Date Prep: 12.29.2020 15:23

Tech: EKL

Subcontractor: SUB: T104704215-20-38

Prep seq: 7717994

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
1-Methylnaphthalene	90-12-0	<0.0000940	0.000215	0.0000940	mg/L	01.05.2021 21:50	U	1
2-Methylnaphthalene	91-57-6	<0.000108	0.000215	0.000108	mg/L	01.05.2021 21:50	U	1
Acenaphthene	83-32-9	<0.000118	0.000215	0.000118	mg/L	01.05.2021 21:50	U	1
Acenaphthylene	208-96-8	<0.0000995	0.000215	0.0000995	mg/L	01.05.2021 21:50	U	1
Anthracene	120-12-7	<0.000102	0.000215	0.000102	mg/L	01.05.2021 21:50	U	1
Benzo(a)anthracene	56-55-3	<0.000159	0.000215	0.000159	mg/L	01.05.2021 21:50	U	1
Benzo(a)pyrene	50-32-8	<0.0000674	0.000215	0.0000674	mg/L	01.05.2021 21:50	U	1
Benzo(b)fluoranthene	205-99-2	<0.0000840	0.000215	0.0000840	mg/L	01.05.2021 21:50	U	1
Benzo(g,h,i)perylene	191-24-2	<0.000134	0.000215	0.000134	mg/L	01.05.2021 21:50	U	1
Benzo(k)fluoranthene	207-08-9	<0.000137	0.000215	0.000137	mg/L	01.05.2021 21:50	U	1
Chrysene	218-01-9	<0.000185	0.000215	0.000185	mg/L	01.05.2021 21:50	U	1
Dibenz(a,h)anthracene	53-70-3	<0.0000898	0.000215	0.0000898	mg/L	01.05.2021 21:50	U	1
Fluoranthene	206-44-0	<0.000186	0.000215	0.000186	mg/L	01.05.2021 21:50	U	1
Fluorene	86-73-7	<0.000119	0.000215	0.000119	mg/L	01.05.2021 21:50	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.000108	0.000215	0.000108	mg/L	01.05.2021 21:50	U	1
Naphthalene	91-20-3	<0.000115	0.000430	0.000115	mg/L	01.05.2021 21:50	U	1
Phenanthrene	85-01-8	<0.000101	0.000215	0.000101	mg/L	01.05.2021 21:50	U	1
Pyrene	129-00-0	<0.000154	0.000215	0.000154	mg/L	01.05.2021 21:50	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
2-Fluorobiphenyl	115	54 - 146	%		
Nitrobenzene-d5	114	46 - 151	%		
Terphenyl-D14	119	51 - 139	%		



Certificate of Analytical Results

682429

Terracon-Lubbock, Lubbock, TX
Livingston Ridge-HP Sims

Sample Id: **MW-11**

Matrix: Water

Sample Depth:

Lab Sample Id: 682429-008

Date Collected: 12.23.2020 11:35

Date Received: 12.23.2020 14:25

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: KTL

% Moist:

Seq Number: 3146070

Date Prep: 12.24.2020 10:45

Tech: KTL

Subcontractor: SUB: T104704400-20-21

Prep seq: 7717940

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	12.24.2020 17:38	U	1
Toluene	108-88-3	0.000780	0.00200	0.000367	mg/L	12.24.2020 17:38	J	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	12.24.2020 17:38	U	1
m,p-Xylenes	179601-23-1	0.00164	0.00400	0.000630	mg/L	12.24.2020 17:38	J	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	12.24.2020 17:38	U	1
Total Xylenes	1330-20-7	0.00164		0.000630	mg/L	12.24.2020 17:38	J	
Total BTEX		0.00242		0.000367	mg/L	12.24.2020 17:38		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	70 - 130	%		
4-Bromofluorobenzene	114	70 - 130	%		



Certificate of Analytical Results

682429

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id: 7717940-1-BLK

Matrix: Water

Sample Depth:

Lab Sample Id: 7717940-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021B

Prep Method: 5030B

Analyst: KTL

% Moist:

Seq Number: 3146070

Date Prep: 12.24.2020 10:45

Tech: KTL

Subcontractor: SUB: T104704400-20-21

Prep seq: 7717940

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	12.24.2020 14:17	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	12.24.2020 14:17	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	12.24.2020 14:17	U	1
m,p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	12.24.2020 14:17	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	12.24.2020 14:17	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	71	70 - 130	%		



Certificate of Analytical Results

682429

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id: 7717994-1-BLK

Matrix: Water

Sample Depth:

Lab Sample Id: 7717994-1-BLK

Date Collected:

Date Received:

Analytical Method: PAHs by SW846 8270D SIM

Prep Method: SW3511

Analyst: EKL

% Moist:

Seq Number: 3146794

Date Prep: 12.28.2020 17:30

Tech: EKL

Subcontractor: SUB: T104704215-20-38

Prep seq: 7717994

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
1-Methylnaphthalene	90-12-0	<0.0000795	0.000182	0.0000795	mg/L	12.30.2020 14:42	U	1
2-Methylnaphthalene	91-57-6	<0.0000913	0.000182	0.0000913	mg/L	12.30.2020 14:42	U	1
Acenaphthene	83-32-9	<0.000100	0.000182	0.0001000	mg/L	12.30.2020 14:42	U	1
Acenaphthylene	208-96-8	<0.0000842	0.000182	0.0000842	mg/L	12.30.2020 14:42	U	1
Anthracene	120-12-7	<0.0000866	0.000182	0.0000866	mg/L	12.30.2020 14:42	U	1
Benzo(a)anthracene	56-55-3	<0.000134	0.000182	0.000134	mg/L	12.30.2020 14:42	U	1
Benzo(a)pyrene	50-32-8	<0.0000571	0.000182	0.0000571	mg/L	12.30.2020 14:42	U	1
Benzo(b)fluoranthene	205-99-2	<0.0000711	0.000182	0.0000711	mg/L	12.30.2020 14:42	U	1
Benzo(g,h,i)perylene	191-24-2	<0.000113	0.000182	0.000113	mg/L	12.30.2020 14:42	U	1
Benzo(k)fluoranthene	207-08-9	<0.000116	0.000182	0.000116	mg/L	12.30.2020 14:42	U	1
Chrysene	218-01-9	<0.000156	0.000182	0.000156	mg/L	12.30.2020 14:42	U	1
Dibenz(a,h)anthracene	53-70-3	<0.0000760	0.000182	0.0000760	mg/L	12.30.2020 14:42	U	1
Fluoranthene	206-44-0	<0.000157	0.000182	0.000157	mg/L	12.30.2020 14:42	U	1
Fluorene	86-73-7	<0.000101	0.000182	0.000101	mg/L	12.30.2020 14:42	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.0000913	0.000182	0.0000913	mg/L	12.30.2020 14:42	U	1
Naphthalene	91-20-3	<0.0000972	0.000364	0.0000972	mg/L	12.30.2020 14:42	U	1
Phenanthrene	85-01-8	<0.0000850	0.000182	0.0000850	mg/L	12.30.2020 14:42	U	1
Pyrene	129-00-0	<0.000130	0.000182	0.000130	mg/L	12.30.2020 14:42	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
2-Fluorobiphenyl	126	54 - 146	%		
Nitrobenzene-d5	106	46 - 151	%		
Terphenyl-D14	112	51 - 139	%		

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. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory 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



Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge-HP Sims

Report Date: 01082021

Work Orders : 682429

Project ID: AR207012

Lab Batch #: 3146070

Sample: 7717940-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12.24.2020 11:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0329	0.0300	110	70-130	
4-Bromofluorobenzene	0.0298	0.0300	99	70-130	

Lab Batch #: 3146070

Sample: 7717940-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12.24.2020 11:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0326	0.0300	109	70-130	
4-Bromofluorobenzene	0.0296	0.0300	99	70-130	

Lab Batch #: 3146070

Sample: 682429-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12.24.2020 12:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	70-130	
4-Bromofluorobenzene	0.0332	0.0300	111	70-130	

Lab Batch #: 3146070

Sample: 682429-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12.24.2020 13:01

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	70-130	
4-Bromofluorobenzene	0.0324	0.0300	108	70-130	

Lab Batch #: 3146070

Sample: 7717940-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12.24.2020 14:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	70-130	
4-Bromofluorobenzene	0.0212	0.0300	71	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] = $100 * A / B$

All results are based on MDL and validated for QC purposes.


 Environment Testing
Xenco

Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge-HP Sims
Report Date: 01082021
Work Orders : 682429

Project ID: AR207012

Lab Batch #: 3146794

Sample: 7717994-1-BLK / BLK

Batch: 1 **Matrix:** Water

Units: mg/L

Date Analyzed: 12.30.2020 14:42

SURROGATE RECOVERY STUDY

PAHs by SW846 8270D SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.632	0.500	126	54-146	
Nitrobenzene-d5	0.528	0.500	106	46-151	
Terphenyl-D14	0.558	0.500	112	51-139	

Lab Batch #: 3146794

Sample: 7717994-1-BKS / BKS

Batch: 1 **Matrix:** Water

Units: mg/L

Date Analyzed: 01.06.2021 16:16

SURROGATE RECOVERY STUDY

PAHs by SW846 8270D SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.620	0.500	124	54-146	
Nitrobenzene-d5	0.741	0.500	148	46-151	
Terphenyl-D14	0.595	0.500	119	51-139	

Lab Batch #: 3146794

Sample: 7717994-1-BSD / BSD

Batch: 1 **Matrix:** Water

Units: mg/L

Date Analyzed: 01.06.2021 16:34

SURROGATE RECOVERY STUDY

PAHs by SW846 8270D SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.649	0.500	130	54-146	
Nitrobenzene-d5	0.745	0.500	149	46-151	
Terphenyl-D14	0.619	0.500	124	51-139	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

 Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



BS / BSD Recoveries

Project Name: Livingston Ridge-HP Sims

Work Order #: 682429

Project ID: AR207012

Analyst: KTL

Date Prepared: 12.24.2020

Date Analyzed: 12.24.2020

Lab Batch ID: 3146070

Sample: 7717940-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	<0.000408	0.100	0.0855	86	0.100	0.0920	92	7	70-130	25	
Toluene	<0.000367	0.100	0.0938	94	0.100	0.0950	95	1	70-130	25	
Ethylbenzene	<0.000657	0.100	0.0945	95	0.100	0.0975	98	3	70-130	25	
m,p-Xylenes	<0.000630	0.200	0.194	97	0.200	0.200	100	3	70-130	25	
o-Xylene	<0.000642	0.100	0.0971	97	0.100	0.100	100	3	70-130	25	

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: Livingston Ridge-HP Sims

Work Order #: 682429

Project ID: AR207012

Analyst: ENC

Date Prepared: 12.28.2020

Date Analyzed: 01.06.2021

Lab Batch ID: 3146794

Sample: 7717994-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

PAHs by SW846 8270D SIM	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
Analytes											
1-Methylnaphthalene	<0.0000795	0.0182	0.0218	120	0.0182	0.0224	123	3	70-126	30	
2-Methylnaphthalene	<0.0000913	0.0182	0.0215	118	0.0182	0.0221	121	3	74-121	30	
Acenaphthene	<0.000100	0.0182	0.0217	119	0.0182	0.0225	124	4	75-127	30	
Acenaphthylene	<0.0000842	0.0182	0.0231	127	0.0182	0.0239	131	3	78-133	30	
Anthracene	<0.0000866	0.0182	0.0220	121	0.0182	0.0229	126	4	73-145	30	
Benzo(a)anthracene	<0.000134	0.0182	0.0205	113	0.0182	0.0209	115	2	77-131	30	
Benzo(a)pyrene	<0.0000571	0.0182	0.0198	109	0.0182	0.0191	105	4	56-163	30	
Benzo(b)fluoranthene	<0.0000711	0.0182	0.0168	92	0.0182	0.0176	97	5	74-138	30	
Benzo(g,h,i)perylene	<0.000113	0.0182	0.0180	99	0.0182	0.0180	99	0	77-127	30	
Benzo(k)fluoranthene	<0.000116	0.0182	0.0191	105	0.0182	0.0194	107	2	67-142	30	
Chrysene	<0.000156	0.0182	0.0194	107	0.0182	0.0200	110	3	66-126	30	
Dibenz(a,h)anthracene	<0.0000760	0.0182	0.0182	100	0.0182	0.0182	100	0	71-142	30	
Fluoranthene	<0.000157	0.0182	0.0208	114	0.0182	0.0222	122	7	78-138	30	
Fluorene	<0.000101	0.0182	0.0222	122	0.0182	0.0232	127	4	79-128	30	
Indeno(1,2,3-c,d)Pyrene	<0.0000913	0.0182	0.0179	98	0.0182	0.0180	99	1	76-140	30	
Naphthalene	<0.0000972	0.0182	0.0202	111	0.0182	0.0206	113	2	72-122	30	
Phenanthrene	<0.0000850	0.0182	0.0207	114	0.0182	0.0216	119	4	76-129	30	
Pyrene	<0.000130	0.0182	0.0224	123	0.0182	0.0235	129	5	74-138	30	

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: Livingston Ridge-HP Sims

Work Order #: 682429

Lab Batch ID: 3146070

Date Analyzed: 12.24.2020

Reporting Units: mg/L

QC- Sample ID: 682429-001 S

Date Prepared: 12.24.2020

Batch #: 1

Analyst: KTL

Report Date: 01082021

Project ID: AR207012

Matrix: Water

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000408	0.100	0.105	105	0.100	0.105	105	0	70-130	25	
Toluene	0.000770	0.100	0.114	113	0.100	0.110	109	4	70-130	25	
Ethylbenzene	<0.000657	0.100	0.115	115	0.100	0.117	117	2	70-130	25	
m,p-Xylenes	0.000920	0.200	0.235	117	0.200	0.241	120	3	70-130	25	
o-Xylene	<0.000642	0.100	0.116	116	0.100	0.119	119	3	70-130	25	

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.

Final 1.000

Inter-Office Shipment

IOS Number : **75505**

Date/Time: 12.23.2020

Created by: Michael J Turner

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@eurofinset.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
682429-001	W	MW-5	12.22.2020 11:35	SW8021B	BTEX by EPA 8021B	12.30.2020	01.05.2021	JKR	BR4FBZ BZ BZME EBZ	
682429-002	W	MW-1	12.22.2020 14:53	SW8021B	BTEX by EPA 8021B	12.30.2020	01.05.2021	JKR	BR4FBZ BZ BZME EBZ	
682429-003	W	MW-9	12.22.2020 13:22	SW8021B	BTEX by EPA 8021B	12.30.2020	01.05.2021	JKR	BR4FBZ BZ BZME EBZ	
682429-004	W	MW-6	12.22.2020 13:59	SW8021B	BTEX by EPA 8021B	12.30.2020	01.05.2021	JKR	BR4FBZ BZ BZME EBZ	
682429-005	W	MW-13	12.22.2020 15:45	SW8021B	BTEX by EPA 8021B	12.30.2020	01.05.2021	JKR	BR4FBZ BZ BZME EBZ	
682429-006	W	MW-4	12.23.2020 10:10	SW8021B	BTEX by EPA 8021B	12.30.2020	01.06.2021	JKR	BR4FBZ BZ BZME EBZ	
682429-007	W	MW-12	12.23.2020 10:55	SW8021B	BTEX by EPA 8021B	12.30.2020	01.06.2021	JKR	BR4FBZ BZ BZME EBZ	
682429-008	W	MW-11	12.23.2020 11:35	SW8021B	BTEX by EPA 8021B	12.30.2020	01.06.2021	JKR	BR4FBZ BZ BZME EBZ	

Inter Office Shipment or Sample Comments:

Relinquished By:



Michael J Turner

Date Relinquished: 12.23.2020

Received By:



Jessica Kramer

Date Received: 12.24.2020

Cooler Temperature: 1.2

Inter-Office Shipment

IOS Number : **75506**

Date/Time: 12.23.2020

Created by: Michael J Turner

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Houston**

Air Bill No.: 772470026727

E-Mail: jessica.kramer@eurofinset.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
682429-001	W	MW-5	12.22.2020 11:35	SW8270D_SIM_PAH	PAHs by SW846 8270D SIM	12.30.2020	12.29.2020 11:35	JKR	ACNP ACNPY ANTH Bz	
682429-002	W	MW-1	12.22.2020 14:53	SW8270D_SIM_PAH	PAHs by SW846 8270D SIM	12.30.2020	12.29.2020 14:53	JKR	ACNP ACNPY ANTH Bz	
682429-003	W	MW-9	12.22.2020 13:22	SW8270D_SIM_PAH	PAHs by SW846 8270D SIM	12.30.2020	12.29.2020 13:22	JKR	ACNP ACNPY ANTH Bz	
682429-004	W	MW-6	12.22.2020 13:59	SW8270D_SIM_PAH	PAHs by SW846 8270D SIM	12.30.2020	12.29.2020 13:59	JKR	ACNP ACNPY ANTH Bz	
682429-005	W	MW-13	12.22.2020 15:45	SW8270D_SIM_PAH	PAHs by SW846 8270D SIM	12.30.2020	12.29.2020 15:45	JKR	ACNP ACNPY ANTH Bz	
682429-006	W	MW-4	12.23.2020 10:10	SW8270D_SIM_PAH	PAHs by SW846 8270D SIM	12.30.2020	12.30.2020 10:10	JKR	ACNP ACNPY ANTH Bz	
682429-007	W	MW-12	12.23.2020 10:55	SW8270D_SIM_PAH	PAHs by SW846 8270D SIM	12.30.2020	12.30.2020 10:55	JKR	ACNP ACNPY ANTH Bz	
682429-008	W	MW-11	12.23.2020 11:35	SW8270D_SIM_PAH	PAHs by SW846 8270D SIM	12.30.2020	12.30.2020 11:35	JKR	ACNP ACNPY ANTH Bz	

Inter Office Shipment or Sample Comments:

Relinquished By:



Michael J Turner

Date Relinquished: 12.23.2020

Received By:



Jose Londono

Date Received: 12.24.2020

Cooler Temperature: 2.2



Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 75505

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sent By: Michael J Turner

Date Sent: 12.23.2020 02.44 PM

Received By: Jessica Kramer

Date Received: 12.24.2020 12.06 PM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	1.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Jessica Kramer

Date: 12.24.2020



Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 75506

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-188

Sent By: Michael J Turner

Date Sent: 12.23.2020 02.44 PM

Received By: Jose Londono

Date Received: 12.24.2020 10.55 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	2.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Jose Londono

Date: 12.24.2020

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Terracon-Lubbock

Date/ Time Received: 12.23.2020 02.25.00 PM

Work Order #: 682429

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-4

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.6
#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)?	Yes PAH to Xenco Stafford. BTEX to Xenco Midland.
#18 Water VOC samples have zero headspace?	Yes

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

Analyst:

PH Device/Lot#:

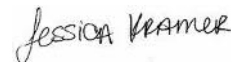
Checklist completed by:



Michael J Turner

Date: 12.23.2020

Checklist reviewed by:



Jessica Kramer

Date: 12.28.2020



Environment Testing
Xenco

Analytical Report 682942

for

Terracon-Lubbock

Project Manager: Brett Dennis

Livingston Ridge-HP Sims

AR207012

01.07.2021

Collected By: Client



6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-24)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-20-21)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)

Xenco-Tampa: Florida (E87429), North Carolina (483)



01.07.2021

Project Manager: **Brett Dennis**

Terracon-Lubbock

5827 50th st, Suite 1

Lubbock, TX 79424

Reference: Eurofins Xenco, LLC Report No(s): **682942**

Livingston Ridge-HP Sims

Project Address:

Brett Dennis:

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 Eurofins Xenco, LLC Report Number(s) 682942. 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 Eurofins Xenco, LLC. 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. 682942 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 Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads "Jessica Kramer".

Jessica Kramer

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 682942

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-14	W	12.29.2020 11:45		682942-001
MW-15	W	12.29.2020 12:17		682942-002

**CASE NARRATIVE****Client Name: Terracon-Lubbock****Project Name: Livingston Ridge-HP Sims**Project ID: AR207012
Work Order Number(s): 682942Report Date: 01.07.2021
Date Received: 12.30.2020

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:**Sample receipt non conformances and comments per sample:**

None

Analytical non conformances and comments:

Batch: LBA-3146878 PAHs by SW846 8270D SIM

Benzo(g,h,i)perylene recovered below QC limits in the Blank Spike Duplicate indicating bias low results. The number of failed analytes were within the marginal exceedances per TNI rule. No additional action is required.

Samples in the analytical batch are: 682942-001, -002.



Certificate of Analytical Results

682942

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id: **MW-14**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 682942-001

Date Collected: 12.29.2020 11:45

Date Received: 12.30.2020 09:50

Analytical Method: PAHs by SW846 8270D SIM

Prep Method: SW3511

Analyst: DNE

% Moist:

Seq Number: 3146878

Date Prep: 01.04.2021 07:39

Tech: DNE

Prep seq: 7718272

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
1-Methylnaphthalene	90-12-0	<0.0000952	0.000218	0.0000952	mg/L	01.05.2021 22:07	U	1
2-Methylnaphthalene	91-57-6	<0.000109	0.000218	0.000109	mg/L	01.05.2021 22:07	U	1
Acenaphthene	83-32-9	<0.000120	0.000218	0.000120	mg/L	01.05.2021 22:07	U	1
Acenaphthylene	208-96-8	<0.000101	0.000218	0.000101	mg/L	01.05.2021 22:07	U	1
Anthracene	120-12-7	<0.000104	0.000218	0.000104	mg/L	01.05.2021 22:07	U	1
Benzo(a)anthracene	56-55-3	<0.000161	0.000218	0.000161	mg/L	01.05.2021 22:07	U	1
Benzo(a)pyrene	50-32-8	<0.0000683	0.000218	0.0000683	mg/L	01.05.2021 22:07	U	1
Benzo(b)fluoranthene	205-99-2	<0.0000851	0.000218	0.0000851	mg/L	01.05.2021 22:07	U	1
Benzo(g,h,i)perylene	191-24-2	<0.000136	0.000218	0.000136	mg/L	01.05.2021 22:07	UL	1
Benzo(k)fluoranthene	207-08-9	<0.000139	0.000218	0.000139	mg/L	01.05.2021 22:07	U	1
Chrysene	218-01-9	<0.000187	0.000218	0.000187	mg/L	01.05.2021 22:07	U	1
Dibenz(a,h)anthracene	53-70-3	<0.0000910	0.000218	0.0000910	mg/L	01.05.2021 22:07	U	1
Fluoranthene	206-44-0	<0.000188	0.000218	0.000188	mg/L	01.05.2021 22:07	U	1
Fluorene	86-73-7	<0.000121	0.000218	0.000121	mg/L	01.05.2021 22:07	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.000109	0.000218	0.000109	mg/L	01.05.2021 22:07	U	1
Naphthalene	91-20-3	<0.000116	0.000435	0.000116	mg/L	01.05.2021 22:07	U	1
Phenanthrene	85-01-8	<0.000102	0.000218	0.000102	mg/L	01.05.2021 22:07	U	1
Pyrene	129-00-0	<0.000156	0.000218	0.000156	mg/L	01.05.2021 22:07	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
2-Fluorobiphenyl	98	54 - 146	%		
Nitrobenzene-d5	90	46 - 151	%		
Terphenyl-D14	99	51 - 139	%		



Certificate of Analytical Results

682942

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id: **MW-14**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 682942-001

Date Collected: 12.29.2020 11:45

Date Received: 12.30.2020 09:50

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: KTL

% Moist:

Seq Number: 3146814

Date Prep: 01.05.2021 09:15

Tech: KTL

Subcontractor: SUB: T104704400-20-21

Prep seq: 7718497

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	01.05.2021 20:20	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	01.05.2021 20:20	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	01.05.2021 20:20	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	01.05.2021 20:20	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	01.05.2021 20:20	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	01.05.2021 20:20	U	
Total BTEX		<0.000367		0.000367	mg/L	01.05.2021 20:20	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	112	70 - 130	%		



Certificate of Analytical Results

682942

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id: **MW-15**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 682942-002

Date Collected: 12.29.2020 12:17

Date Received: 12.30.2020 09:50

Analytical Method: PAHs by SW846 8270D SIM

Prep Method: SW3511

Analyst: DNE

% Moist:

Seq Number: 3146878

Date Prep: 01.04.2021 07:42

Tech: DNE

Prep seq: 7718272

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
1-Methylnaphthalene	90-12-0	<0.0000819	0.000187	0.0000819	mg/L	01.05.2021 22:25	U	1
2-Methylnaphthalene	91-57-6	<0.0000940	0.000187	0.0000940	mg/L	01.05.2021 22:25	U	1
Acenaphthene	83-32-9	<0.000103	0.000187	0.000103	mg/L	01.05.2021 22:25	U	1
Acenaphthylene	208-96-8	<0.0000867	0.000187	0.0000867	mg/L	01.05.2021 22:25	U	1
Anthracene	120-12-7	<0.0000892	0.000187	0.0000892	mg/L	01.05.2021 22:25	U	1
Benzo(a)anthracene	56-55-3	<0.000138	0.000187	0.000138	mg/L	01.05.2021 22:25	U	1
Benzo(a)pyrene	50-32-8	<0.0000588	0.000187	0.0000588	mg/L	01.05.2021 22:25	U	1
Benzo(b)fluoranthene	205-99-2	<0.0000732	0.000187	0.0000732	mg/L	01.05.2021 22:25	U	1
Benzo(g,h,i)perylene	191-24-2	<0.000117	0.000187	0.000117	mg/L	01.05.2021 22:25	UL	1
Benzo(k)fluoranthene	207-08-9	<0.000120	0.000187	0.000120	mg/L	01.05.2021 22:25	U	1
Chrysene	218-01-9	<0.000161	0.000187	0.000161	mg/L	01.05.2021 22:25	U	1
Dibenz(a,h)anthracene	53-70-3	<0.0000783	0.000187	0.0000783	mg/L	01.05.2021 22:25	U	1
Fluoranthene	206-44-0	<0.000162	0.000187	0.000162	mg/L	01.05.2021 22:25	U	1
Fluorene	86-73-7	<0.000104	0.000187	0.000104	mg/L	01.05.2021 22:25	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.0000940	0.000187	0.0000940	mg/L	01.05.2021 22:25	U	1
Naphthalene	91-20-3	<0.000100	0.000374	0.000100	mg/L	01.05.2021 22:25	U	1
Phenanthrene	85-01-8	<0.0000876	0.000187	0.0000876	mg/L	01.05.2021 22:25	U	1
Pyrene	129-00-0	<0.000134	0.000187	0.000134	mg/L	01.05.2021 22:25	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
2-Fluorobiphenyl	108	54 - 146	%		
Nitrobenzene-d5	102	46 - 151	%		
Terphenyl-D14	74	51 - 139	%		



Certificate of Analytical Results

682942

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id: **MW-15**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 682942-002

Date Collected: 12.29.2020 12:17

Date Received: 12.30.2020 09:50

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: KTL

% Moist:

Seq Number: 3146814

Date Prep: 01.05.2021 09:15

Tech: KTL

Subcontractor: SUB: T104704400-20-21

Prep seq: 7718497

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	01.05.2021 20:41	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	01.05.2021 20:41	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	01.05.2021 20:41	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	01.05.2021 20:41	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	01.05.2021 20:41	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	01.05.2021 20:41	U	
Total BTEX		<0.000367		0.000367	mg/L	01.05.2021 20:41	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	108	70 - 130	%		



Certificate of Analytical Results

682942

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id: **7718272-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: 7718272-1-BLK Date Collected: Date Received:

Analytical Method: PAHs by SW846 8270D SIM Prep Method: SW3511

Analyst: DNE % Moist:

Seq Number: 3146878 Date Prep: 01.04.2021 07:30 Tech: DNE

Prep seq: 7718272

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
1-Methylnaphthalene	90-12-0	<0.0000795	0.000182	0.0000795	mg/L	01.05.2021 19:31	U	1
2-Methylnaphthalene	91-57-6	<0.0000913	0.000182	0.0000913	mg/L	01.05.2021 19:31	U	1
Acenaphthene	83-32-9	<0.000100	0.000182	0.0001000	mg/L	01.05.2021 19:31	U	1
Acenaphthylene	208-96-8	<0.0000842	0.000182	0.0000842	mg/L	01.05.2021 19:31	U	1
Anthracene	120-12-7	<0.0000866	0.000182	0.0000866	mg/L	01.05.2021 19:31	U	1
Benzo(a)anthracene	56-55-3	<0.000134	0.000182	0.000134	mg/L	01.05.2021 19:31	U	1
Benzo(a)pyrene	50-32-8	<0.0000571	0.000182	0.0000571	mg/L	01.05.2021 19:31	U	1
Benzo(b)fluoranthene	205-99-2	<0.0000711	0.000182	0.0000711	mg/L	01.05.2021 19:31	U	1
Benzo(g,h,i)perylene	191-24-2	<0.000113	0.000182	0.000113	mg/L	01.05.2021 19:31	U	1
Benzo(k)fluoranthene	207-08-9	<0.000116	0.000182	0.000116	mg/L	01.05.2021 19:31	U	1
Chrysene	218-01-9	<0.000156	0.000182	0.000156	mg/L	01.05.2021 19:31	U	1
Dibenz(a,h)anthracene	53-70-3	<0.0000760	0.000182	0.0000760	mg/L	01.05.2021 19:31	U	1
Fluoranthene	206-44-0	<0.000157	0.000182	0.000157	mg/L	01.05.2021 19:31	U	1
Fluorene	86-73-7	<0.000101	0.000182	0.000101	mg/L	01.05.2021 19:31	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.0000913	0.000182	0.0000913	mg/L	01.05.2021 19:31	U	1
Naphthalene	91-20-3	<0.0000972	0.000364	0.0000972	mg/L	01.05.2021 19:31	U	1
Phenanthrene	85-01-8	<0.0000850	0.000182	0.0000850	mg/L	01.05.2021 19:31	U	1
Pyrene	129-00-0	<0.000130	0.000182	0.000130	mg/L	01.05.2021 19:31	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
2-Fluorobiphenyl	132	54 - 146	%		
Nitrobenzene-d5	118	46 - 151	%		
Terphenyl-D14	123	51 - 139	%		



Certificate of Analytical Results

682942

Terracon-Lubbock, Lubbock, TX

Livingston Ridge-HP Sims

Sample Id: 7718497-1-BLK

Matrix: Water

Sample Depth:

Lab Sample Id: 7718497-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: KTL

% Moist:

Seq Number: 3146814

Date Prep: 01.05.2021 09:15

Tech: KTL

Subcontractor: SUB: T104704400-20-21

Prep seq: 7718497

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	01.05.2021 14:51	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	01.05.2021 14:51	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	01.05.2021 14:51	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	01.05.2021 14:51	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	01.05.2021 14:51	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	90	70 - 130	%		
4-Bromofluorobenzene	109	70 - 130	%		

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. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory 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



Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge-HP Sims

Report Date: 01072021

Work Orders : 682942

Project ID: AR207012

Lab Batch #: 3146814

Sample: 7718497-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 01.05.2021 12:50

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0295	0.0300	98	70-130	
4-Bromofluorobenzene	0.0293	0.0300	98	70-130	

Lab Batch #: 3146814

Sample: 7718497-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 01.05.2021 13:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0297	0.0300	99	70-130	
4-Bromofluorobenzene	0.0301	0.0300	100	70-130	

Lab Batch #: 3146814

Sample: 682924-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 01.05.2021 13:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0295	0.0300	98	70-130	
4-Bromofluorobenzene	0.0305	0.0300	102	70-130	

Lab Batch #: 3146814

Sample: 682924-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 01.05.2021 13:51

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0297	0.0300	99	70-130	
4-Bromofluorobenzene	0.0308	0.0300	103	70-130	

Lab Batch #: 3146814

Sample: 7718497-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 01.05.2021 14:51

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0270	0.0300	90	70-130	
4-Bromofluorobenzene	0.0327	0.0300	109	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] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: Livingston Ridge-HP Sims

Report Date: 01072021

Work Orders : 682942

Project ID: AR207012

Lab Batch #: 3146878

Sample: 7718272-1-BKS / BKS

Batch: 1 **Matrix:** Water

Units: mg/L

Date Analyzed: 01.05.2021 18:56

SURROGATE RECOVERY STUDY

PAHs by SW846 8270D SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.537	0.500	107	54-146	
Nitrobenzene-d5	0.517	0.500	103	46-151	
Terphenyl-D14	0.548	0.500	110	51-139	

Lab Batch #: 3146878

Sample: 7718272-1-BSD / BSD

Batch: 1 **Matrix:** Water

Units: mg/L

Date Analyzed: 01.05.2021 19:13

SURROGATE RECOVERY STUDY

PAHs by SW846 8270D SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.490	0.500	98	54-146	
Nitrobenzene-d5	0.484	0.500	97	46-151	
Terphenyl-D14	0.480	0.500	96	51-139	

Lab Batch #: 3146878

Sample: 7718272-1-BLK / BLK

Batch: 1 **Matrix:** Water

Units: mg/L

Date Analyzed: 01.05.2021 19:31

SURROGATE RECOVERY STUDY

PAHs by SW846 8270D SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorobiphenyl	0.658	0.500	132	54-146	
Nitrobenzene-d5	0.592	0.500	118	46-151	
Terphenyl-D14	0.616	0.500	123	51-139	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



BS / BSD Recoveries

Project Name: Livingston Ridge-HP Sims

Work Order #: 682942

Project ID: AR207012

Analyst: KTL

Date Prepared: 01.05.2021

Date Analyzed: 01.05.2021

Lab Batch ID: 3146814

Sample: 7718497-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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
Analytes											
Benzene	<0.000408	0.100	0.0992	99	0.100	0.105	105	6	70-130	25	
Toluene	<0.000367	0.100	0.0953	95	0.100	0.102	102	7	70-130	25	
Ethylbenzene	<0.000657	0.100	0.0969	97	0.100	0.104	104	7	70-130	25	
m_p-Xylenes	<0.000630	0.200	0.193	97	0.200	0.208	104	7	70-130	25	
o-Xylene	<0.000642	0.100	0.0953	95	0.100	0.103	103	8	70-130	25	

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: Livingston Ridge-HP Sims

Work Order #: 682942

Project ID: AR207012

Analyst: DNE

Date Prepared: 01.04.2021

Date Analyzed: 01.05.2021

Lab Batch ID: 3146878

Sample: 7718272-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

PAHs by SW846 8270D SIM	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
Analytes											
1-Methylnaphthalene	<0.0000795	0.0182	0.0174	96	0.0182	0.0158	87	10	70-126	30	
2-Methylnaphthalene	<0.0000913	0.0182	0.0171	94	0.0182	0.0156	86	9	74-121	30	
Acenaphthene	<0.000100	0.0182	0.0170	93	0.0182	0.0157	86	8	75-127	30	
Acenaphthylene	<0.0000842	0.0182	0.0172	95	0.0182	0.0158	87	8	78-133	30	
Anthracene	<0.0000866	0.0182	0.0175	96	0.0182	0.0157	86	11	73-145	30	
Benzo(a)anthracene	<0.000134	0.0182	0.0166	91	0.0182	0.0147	81	12	77-131	30	
Benzo(a)pyrene	<0.0000571	0.0182	0.0162	89	0.0182	0.0140	77	15	56-163	30	
Benzo(b)fluoranthene	<0.0000711	0.0182	0.0162	89	0.0182	0.0141	77	14	74-138	30	
Benzo(g,h,i)perylene	<0.000113	0.0182	0.0168	92	0.0182	0.0138	76	20	77-127	30	L
Benzo(k)fluoranthene	<0.000116	0.0182	0.0175	96	0.0182	0.0155	85	12	67-142	30	
Chrysene	<0.000156	0.0182	0.0168	92	0.0182	0.0150	82	11	66-126	30	
Dibenz(a,h)anthracene	<0.0000760	0.0182	0.0167	92	0.0182	0.0143	79	15	71-142	30	
Fluoranthene	<0.000157	0.0182	0.0175	96	0.0182	0.0156	86	11	78-138	30	
Fluorene	<0.000101	0.0182	0.0168	92	0.0182	0.0156	86	7	79-128	30	
Indeno(1,2,3-c,d)Pyrene	<0.0000913	0.0182	0.0165	91	0.0182	0.0141	77	16	76-140	30	
Naphthalene	<0.0000972	0.0182	0.0164	90	0.0182	0.0151	83	8	72-122	30	
Phenanthrene	<0.0000850	0.0182	0.0174	96	0.0182	0.0158	87	10	76-129	30	
Pyrene	<0.000130	0.0182	0.0177	97	0.0182	0.0162	89	9	74-138	30	

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: Livingston Ridge-HP Sims

Work Order #: 682942

Lab Batch ID: 3146814

Date Analyzed: 01.05.2021

Reporting Units: mg/L

QC- Sample ID: 682924-001 S

Date Prepared: 01.05.2021

Batch #: 1

Analyst: KTL

Report Date: 01072021

Project ID: AR207012

Matrix: Water

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000408	0.100	0.102	102	0.100	0.106	106	4	70-130	25	
Toluene	<0.000367	0.100	0.0971	97	0.100	0.102	102	5	70-130	25	
Ethylbenzene	<0.000657	0.100	0.0987	99	0.100	0.104	104	5	70-130	25	
m_p-Xylenes	<0.000630	0.200	0.198	99	0.200	0.209	105	5	70-130	25	
o-Xylene	<0.000642	0.100	0.0977	98	0.100	0.104	104	6	70-130	25	

Matrix Spike Percent Recovery [D] = $100 \times (C-A) / B$
 Relative Percent Difference RPD = $200 \times |(C-F) / (C+F)|$

Matrix Spike Duplicate Percent Recovery [G] = $100 \times (F-A) / E$

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.

Inter-Office Shipment

IOS Number : **75680**

Date/Time: 12.30.2020

Created by: Randall Lee

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Houston**

Air Bill No.: 772510055569

E-Mail: jessica.kramer@eurofinset.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
682942-001	W	MW-14	12.29.2020 11:45	SW8270D_SIM_PAH	PAHs by SW846 8270D SIM	01.06.2021	01.05.2021 11:45	JKR	ACNP ACNPY ANTH Bz	
682942-002	W	MW-15	12.29.2020 12:17	SW8270D_SIM_PAH	PAHs by SW846 8270D SIM	01.06.2021	01.05.2021 12:17	JKR	ACNP ACNPY ANTH Bz	

Inter Office Shipment or Sample Comments:

Relinquished By:



Randall Lee

Date Relinquished: 12.30.2020

Received By:



Hypatia Keys

Date Received: 12.31.2020

Cooler Temperature: 2.2

Inter-Office Shipment

IOS Number : **75774**

Date/Time: 01.04.2021

Created by: Michael J Turner

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@eurofinset.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
682942-001	W	MW-14	12.29.2020 11:45	SW8021B	BTEX by EPA 8021	01.06.2021	01.12.2021	JKR	BR4FBZ BZ BZME EBZ	
682942-002	W	MW-15	12.29.2020 12:17	SW8021B	BTEX by EPA 8021	01.06.2021	01.12.2021	JKR	BR4FBZ BZ BZME EBZ	

Inter Office Shipment or Sample Comments:

Relinquished By:



Michael J Turner

Date Relinquished: 01.04.2021

Received By:



Jessica Kramer

Date Received: 01.05.2021

Cooler Temperature: -0.3



Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 75680

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : hou-188

Sent By: Randall Lee

Date Sent: 12.30.2020 11.45 AM

Received By: Hypatia Keys

Date Received: 12.31.2020 10.30 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	2.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Hypatia Keys

Date: 12.31.2020



Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 75774

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sent By: Michael J Turner

Date Sent: 01.04.2021 09.32 AM

Received By: Jessica Kramer

Date Received: 01.05.2021 11.15 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	- .3
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Jessica Kramer

Date: 01.05.2021

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Terracon-Lubbock

Date/ Time Received: 12.30.2020 09.50.00 AM

Work Order #: 682942

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-4

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.1
#2 *Shipping container in good condition?	N/A
#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)?	Yes PAH sent to Xenco Stafford, BTEX sent to Xenco Midland
#18 Water VOC samples have zero headspace?	Yes

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

Analyst:

PH Device/Lot#:

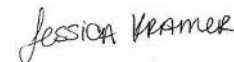
Checklist completed by:



Randall Lee

Date: 12.30.2020

Checklist reviewed by:



Jessica Kramer

Date: 01.06.2021

APPENDIX D

Terracon Standard of Care, Limitation, and Reliance

Standard of Care

Terracon's services will be performed in a manner consistent with generally-accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. Terracon makes no warranties, either express or implied, regarding the findings, conclusions or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies or other third parties supplying information used in the preparation of the report. These services were performed in accordance with the scope of work agreed with you, our client, as set forth in our proposal and were not intended to be in strict conformance with ASTM E1903-11.

Additional Scope Limitations

Findings, conclusions and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, non-detectable or not present during these services, and we cannot represent that the Site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this confirmation sampling. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations or exploratory services; the data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

Reliance

This report has been prepared for the exclusive use of Plains All American Pipeline LP; and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization of Plains All American Pipeline LP and Terracon. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the Master Services Agreement (026450-04810-PMLP.2.17), dated August 3, 2011, between Terracon and Plains All American Pipeline LP. The limitation of liability defined in the Terms and Conditions is the aggregate limit of Terracon's liability to the client and all relying parties unless otherwise agreed in writing.

District I

1625 N. French Dr., Hobbs, NM 88240
 Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
 Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 23689

CONDITIONS

Operator: PLAINS MARKETING L.P. 333 Clay St, Ste 1600 Houston, TX 77002	OGRID:
	34053
	Action Number: 23689
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Contractor anticipated actions approved by OCD and are as follows; 1. Complete quarterly monitoring well gauging, groundwater purging and BTEX sampling for monitor wells MW-1, MW-2, MW-4, MW-5, MW-11, and MW-12 2. Resume semi-annual monitoring events for monitor wells MW-6, MW-9, MW-14, and MW-15 as approved by the NMOCD in the 2019 annual groundwater monitoring report 3. Since wells MW-7, MW-8, and MW-10 were inadvertently not sampled during the 2020 reporting period, these monitor wells will be sampled during the 1st quarter of 2021 and continue to be sampled annually per NMOCD approval of the 2019 annual groundwater monitoring report 4. Collect PAH samples from monitoring well TMW-1R (if applicable) during the annual monitoring event scheduled for the 4th quarter of 2020 5. Complete monthly manual abatement of hydrocarbon impacted groundwater and PSH on monitoring well TMW-1R 6. Complete quarterly AFR events on monitoring well TMW-1R 7. Submit annual report no later than 03/31/2022	1/11/2022