# 2017 Annual Groundwater Monitoring Report

Flora Vista No. 1
San Juan County, New Mexico
API# 30-045-20073
NMOCD# 3R-173

Hilcorp Energy Company

**GHD** | 6121 Indian School Rd NE Suite 200 Albuquerque NM 87110 USA

11145982| MN00| Report No 1 | January 11, 2018

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# 1. Introduction

This annual report presents the results of the quarterly groundwater monitor events conducted by GHD Services, Inc. (GHD) during 2017 at the Flora Vista No. 1 natural gas well site (hereafter referred to as the "Site"). The Site is operated by Hilcorp Energy Company after their acquisition of ConocoPhillips Company (ConocoPhillips) San Juan Basin assets in spring of 2017. The Site is located on private property in Unit Letter F, Section 22, Township 30N, Range 12W, of San Juan County, New Mexico (Figure 1). The Site consists of a gas well and associated equipment and installations. A detailed Site Plan is provided as Figure 2.

## 1.1 Background

A previous operator removed an earthen dehydrator pit from service in March 1994. Hydrocarbon impacted soil was subsequently excavated in April 1994 and again in November 1995. A pit closure report was submitted to the New Mexico Oil Conservation Division (NMOCD) in August 1996 by El Paso Field Services. The NMOCD issued a letter to El Paso Field Services on January 24, 1997 approving pit closure and remediation.

Burlington encountered hydrocarbon impacted soil at the Site during a production facility resetting activity in early 2003. Burlington subsequently directed the excavation of approximately 9,443 cubic yards of soil in an attempt to remove impacted soils. Groundwater was observed in the bottom of the excavation at approximately 25 feet below ground surface (ft. bgs). Field screening was conducted during excavation to determine extent of impacted soil. To enhance the remediation of the remaining amounts of residual hydrocarbon contamination in the excavated area, approximately 80 barrels (bbls) of a potassium permanganate oxidizer solution was sprayed on the soil.

In September 2003, Envirotech installed a groundwater monitor well (MW-1) slightly down gradient from the center of the excavation (Figure 2). Subsequent groundwater sampling included analyses for benzene, toluene, ethylbenzene, and total xylenes (BTEX), as well as total petroleum hydrocarbons (TPH). Analytical results indicated the presence of benzene and total xylenes above regulatory standards. Monitor wells MW-2, MW-3, and MW-4 were installed at the Site in August 2008 in response to an April 2008 request from NMOCD for Site characterization and additional laboratory analyses. Monitor well MW-5 was installed in September 2015 to assess soil and groundwater impacts upgradient from MW-1 and to ascertain whether or not storage tanks north of this location were a potential source of groundwater impacts. A generalized geologic cross section was prepared using boring logs from the August 2008 monitoring well installation and is presented as Figure 3.

A mobile-dual phase extraction event was conducted in August 2013 removing approximately 1,300 of dissolved phase hydrocarbon-impacted groundwater. Subsurface lithology and vadose zone short circuiting determined this remedial approach not to be cost effective.

GHD conducted an in-situ chemical oxidation (ISCO) event in October 2016. A total of 4834 gallons of 15 percent PersulfOx oxidant was injected into MW-1 and MW-5 to promote oxidation of soluble metals and hydrocarbon impacted groundwater. A comprehensive site history is summarized in Table 1.

# 2. Groundwater Monitoring Summary Methodology and Analytical Results

## 2.1 Groundwater Monitoring Summary

Quarterly groundwater monitoring was conducted at the Site on March 7, June 15, September 27, and December 5, 2017. Groundwater elevation measurements were recorded in all accessible Site monitor wells using an oil/water interface probe. Some monitor wells were inaccessible due to either being covered with construction materials or being under standing water from recent rains. Groundwater elevations are detailed in Table 2. Groundwater potentiometric surface maps created from 2017 data are presented as Figures 4, 5, and 6. A map for the September sampling event was not generated due to insufficient data. Groundwater flow fluctuates from southwest to southeast seasonally and is consistent with historical data.

## 2.2 Groundwater Monitoring Methodology

Prior to sampling, at least three well volumes were purged from Site monitor wells with a polyethylene 1.5 inch bailer. If three well volumes could not be purged, wells were purged until dry and allowed to recharge prior to sampling. Purge water generated during sampling events was placed in the on Site produced water tank. While bailing each well, groundwater parameter data, including temperature, pH and conductivity were collected using a calibrated multi parameter meter. Field parameters are summarized on Table 3.

Not all Site monitor wells were sampled during each quarterly monitoring event in 2017 either due to insufficient well volume, reduced scope of work or inaccessibility.

Groundwater samples were placed in laboratory prepared bottles, packed on ice, and shipped under chain of custody documentation to Pace Analytical in Lenexa, Kansas. Samples were analyzed for the presence of BTEX by EPA Method 8260 and dissolved iron and dissolved manganese by EPA Method 6010.

On September 27, 2017 groundwater samples were collected from two down gradient domestic irrigation wells. Domestic irrigation wells DW-1 and DW-2 are located at 32 Road 3581 and 34 Road 3581, Flora Vista, New Mexico, respectively.

## 2.3 Groundwater Monitoring Analytical Results

Groundwater samples collected during 2017 quarterly sampling events from monitor well MW-2 and domestic irrigation wells DW-1 and DW-2 did not exceed New Mexico Water Quality Control Commission (NMWQCC) groundwater quality standards for any target constituents. Groundwater collected from monitor wells MW-1, MW-3, MW-4, and MW-5 exceeded the NMWQCC standards for the following constituents:

### *March 2017*

- Dissolved Iron – The NMWQCC standard for dissolved iron is 1 milligram per liter (mg/L). The concentrations of dissolved iron in the groundwater sample collected from MW-3 and MW-5 were 0.878 mg/L and 24.6 mg/L, respectively.
- Dissolved Manganese – The NMWQCC standard for dissolved manganese is 0.2 mg/L. The concentrations of dissolved manganese in the groundwater sample collected from MW-3, MW-4 and MW-5 were 0.904 mg/L, 3.06mg/L and 11.8 mg/L, respectively.
- Benzene – The NMWQCC standard for benzene is 0.01 mg/L. The concentrations of benzene in the groundwater samples collected from MW-5 was 0.0865 mg/L.
- Xylenes – The NMWQCC standard for total xylenes is 0.62 mg/L. The concentration of xylenes in the groundwater sample collected from MW-5 was 3.65 mg/L.

### *June 2017*

- Benzene –The concentrations of benzene in the groundwater samples collected from MW-1, MW-4 and MW-5 were 0.0371 mg/L, 0.0224 mg/L and 0.0369 mg/L, respectively.
- Dissolved Iron – The concentrations of dissolved iron in groundwater samples collected from MW-4 and MW-5 were 15.5 mg/L and 7.43 mg/L, respectively.
- Dissolved Manganese – The concentrations of dissolved manganese in groundwater samples collected from MW-4 and MW-5 were 11.1 mg/L and 6.26 mg/L, respectively.

### *September 2017*

- Benzene – The concentrations of benzene in the groundwater samples collected from MW-1 and MW-4 were 0.0231 mg/L and 0.0131 mg/L.
- Dissolved Iron – The concentrations of dissolved iron in groundwater samples collected from MW-1 and MW-4 were 24.2 mg/L, and 22.7 mg/L, respectively.
- Dissolved Manganese – The concentrations of dissolved manganese in groundwater samples collected from MW-1 and MW-4 were 3.13 mg/L, and 7.68 mg/L, respectively.

### *December 2017*

- Benzene – The concentration of benzene in the groundwater sample collected from MW-1, MW-4 and MW-5 was 0.288 mg/L, 0.247 mg/L and 0.0562 mg/L, respectively.
- Xylenes –The concentration of xylenes in the groundwater sample collected from MW-1 and MW-5 was 1.07 mg/L and 5.95 mg/L, respectively.
- Dissolved Iron – The concentration of dissolved iron in groundwater sample collected from MW-1, MW-4 and MW-5 were 19.9 mg/L, 21.2 mg/L and 10.3 mg/L, respectively.
- Dissolved Manganese – The concentration of dissolved manganese in groundwater sample collected from MW-1, MW-4 and MW-5 were 3.27 g/L, 6.2 mg/L and 3.89 mg/L, respectively.

A contaminant concentration map for 2017 quarterly groundwater monitor events is presented on Figure 7. A summary of the historical groundwater laboratory analytical results is presented in Table 4. The 2017 laboratory analytical reports are included in Appendix C.

# 3. Conclusions and Recommendations

A decrease in BTEX concentrations was observed at well MW-1 after the 2016 ISCO injections but they have rebounded in 2017. Little to no change in BTEX concentrations was seen at wells MW-4 and MW-5 after the injection event and 2017 concentrations remain above standards. Well MW-4 is located approximately 40 feet from the nearest injection well, MW-5; therefore, it is likely that the oxidant was consumed before it reached this area. Well MW-5 was an injection well and, therefore, oxidant was certainly delivered to this area. Petroleum hydrocarbons (total petroleum hydrocarbons, not including BTEX), though not measured as part of routine groundwater monitoring, were identified in Site groundwater during the ISCO feasibility study. It is possible that the oxidant in the area of well MW-5 was consumed by petroleum hydrocarbons before BTEX compounds could be oxidized and that is why BTEX remains elevated at this well.

ISCO treatment is expected to create oxidizing conditions that would cause the oxidation and precipitation of iron and manganese since these metals are more soluble in their reduced forms. However, the oxidant provided appears to have been consumed by BTEX and/or petroleum hydrocarbons before it was able to create oxidizing conditions in the area as shown by the fact that oxidation-reduction potential, as measured in the field (Table 3) did not increase in any of the wells. Therefore, the oxidant did not oxidize the metals, and no reduction in metals concentrations has been observed to date.

An increase in iron and manganese concentrations was observed at MW-1, MW-4 and MW-5 during 2017. At MW-1, the initial increase was observed before the October 2016 ISCO injections, and at MW-4, the increase in iron and manganese was observed despite the fact that it does not appear that the oxidant reached this area. Therefore, it appears likely that the increase in iron and manganese concentrations is not related to the ISCO treatment. In wells MW-1 and MW-4, the increases appear to be associated with high groundwater levels, which may indicate that metals were solubilized from previously drained soil as the water level rose. However, at well MW-5, the water level appeared to decrease as the metals concentrations increased.

Additional ISCO is recommended to reverse the rebound at MW-1 which will also likely cause BTEX concentrations to decrease at MW-5. It is evident that the ISCO injection did not make contact with MW-4. In order to reduce BTEX concentrations in this area, oxidant would need to be injected into MW-4. This is not recommended due to the close proximity of MW-4 with the Site boundary and downgradient domestic water wells. With respect to the iron and manganese concentrations, a NaOH catalyzed persulfate is recommended rather than PersulfOx oxidant as the increased pH will better induce precipitation of these metals.

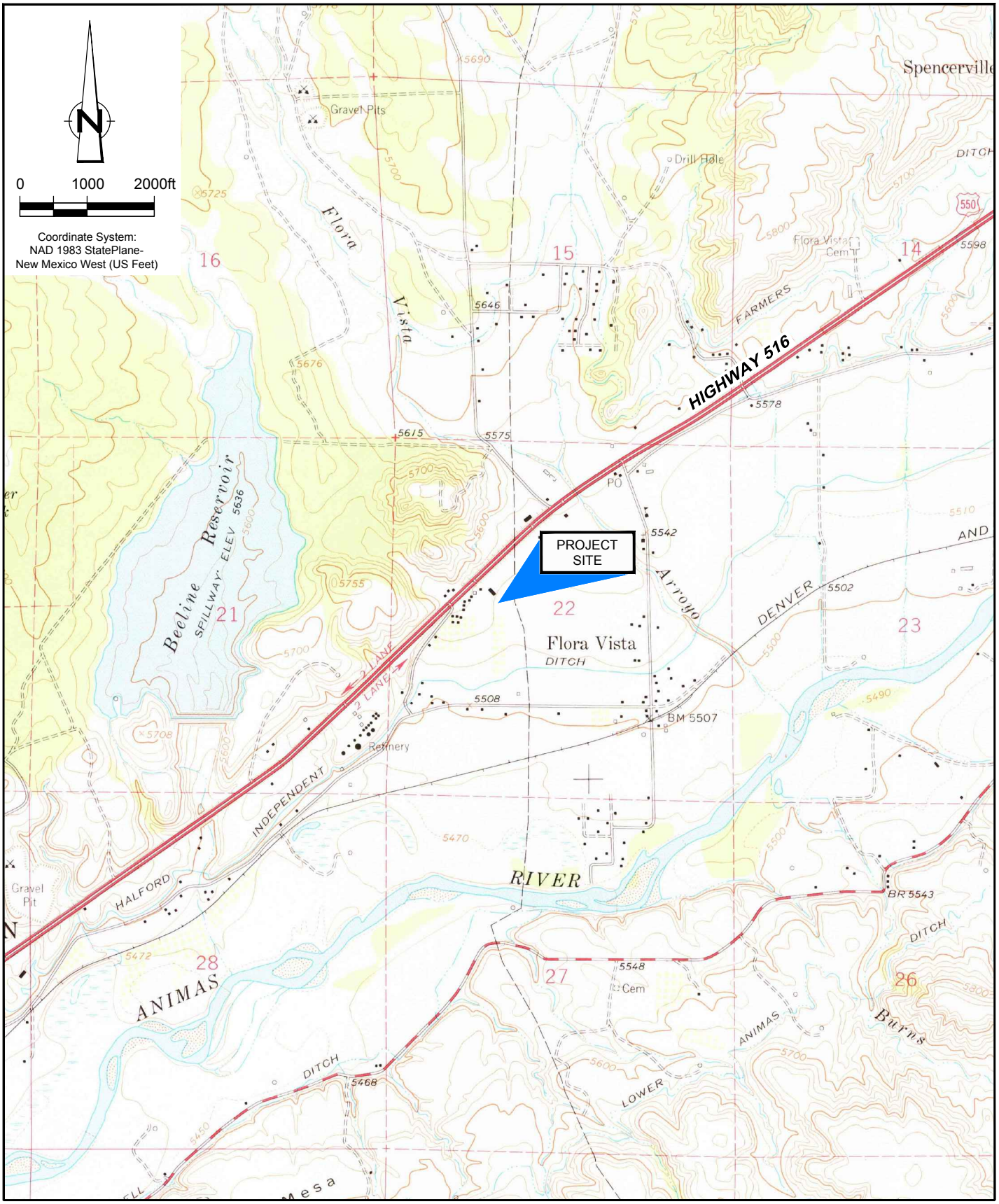
Respectfully Submitted,

GHD

Jeff Walker
Sr. Project Manager

Bernie Bockisch
Albuquerque Operations Manager

# Figures




Source: USGS 7.5 Minute Quad "Flora Vista, New Mexico"

HILCORP ENERGY COMPANY
SECTION 22, T30N-R12W, SAN JUAN COUNTY, NEW MEXICO
FLORA VISTA NO. 1 NATURAL GAS WELL SITE

11145982-00

Dec 22, 2017

# SITE LOCATION MAP

FIGURE 1

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1114----\11145982-Hilcorp-Flora Vista No. 1\11145982-00(000)GN-DL001.dwg


Source: ConocoPhillips high resolution aerial imagery 2008

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FLORA VISTA NO. 1 NATURAL GAS WELL SITE

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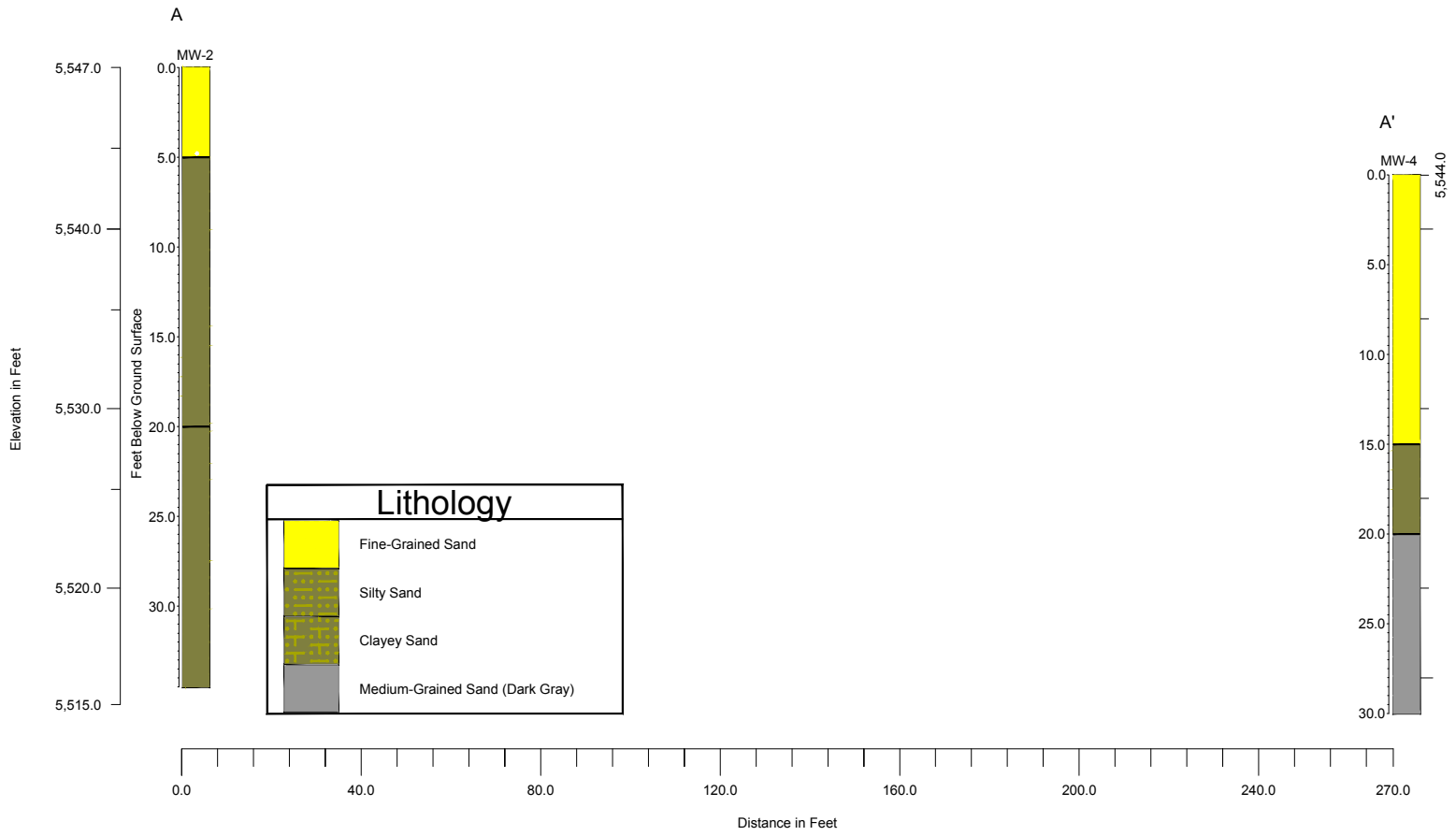
# SITE PLAN

# FIGURE 2

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1114----\11145982-Hilcorp-Flora Vista No. 1\11145982-00(000)GN-DL001.dwg

Flora Vista No. 1 - Cross-Section A-A'

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FLORA VISTA NO. 1 NATURAL GAS WELL SITE

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GEOLOGICAL CROSS SECTION

FIGURE 3

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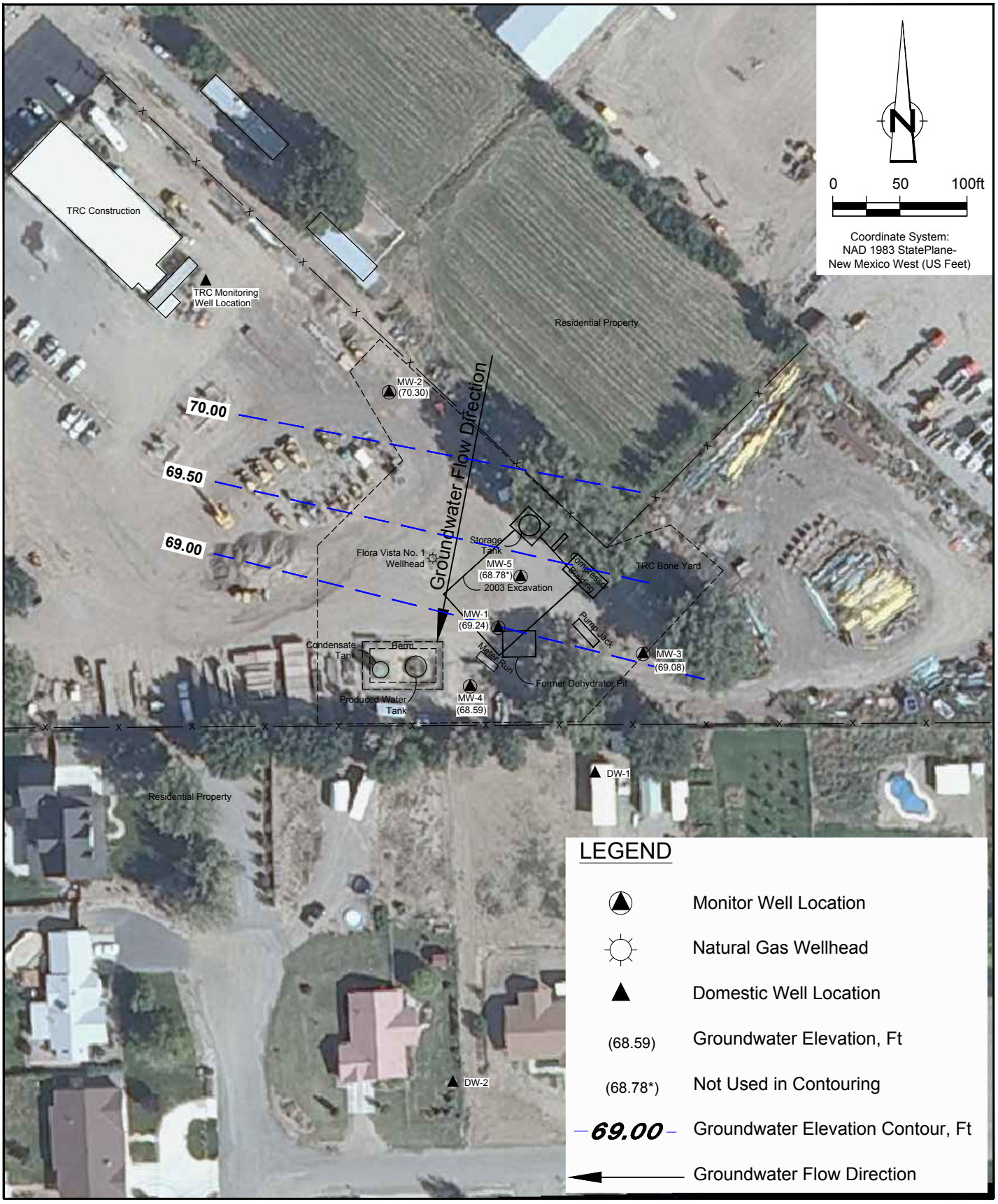


Source: ConocoPhillips high resolution aerial imagery 2008

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SECTION 22, T30N-R12W, SAN JUAN COUNTY, NEW MEXICO
FLORA VISTA NO. 1 NATURAL GAS WELL SITE

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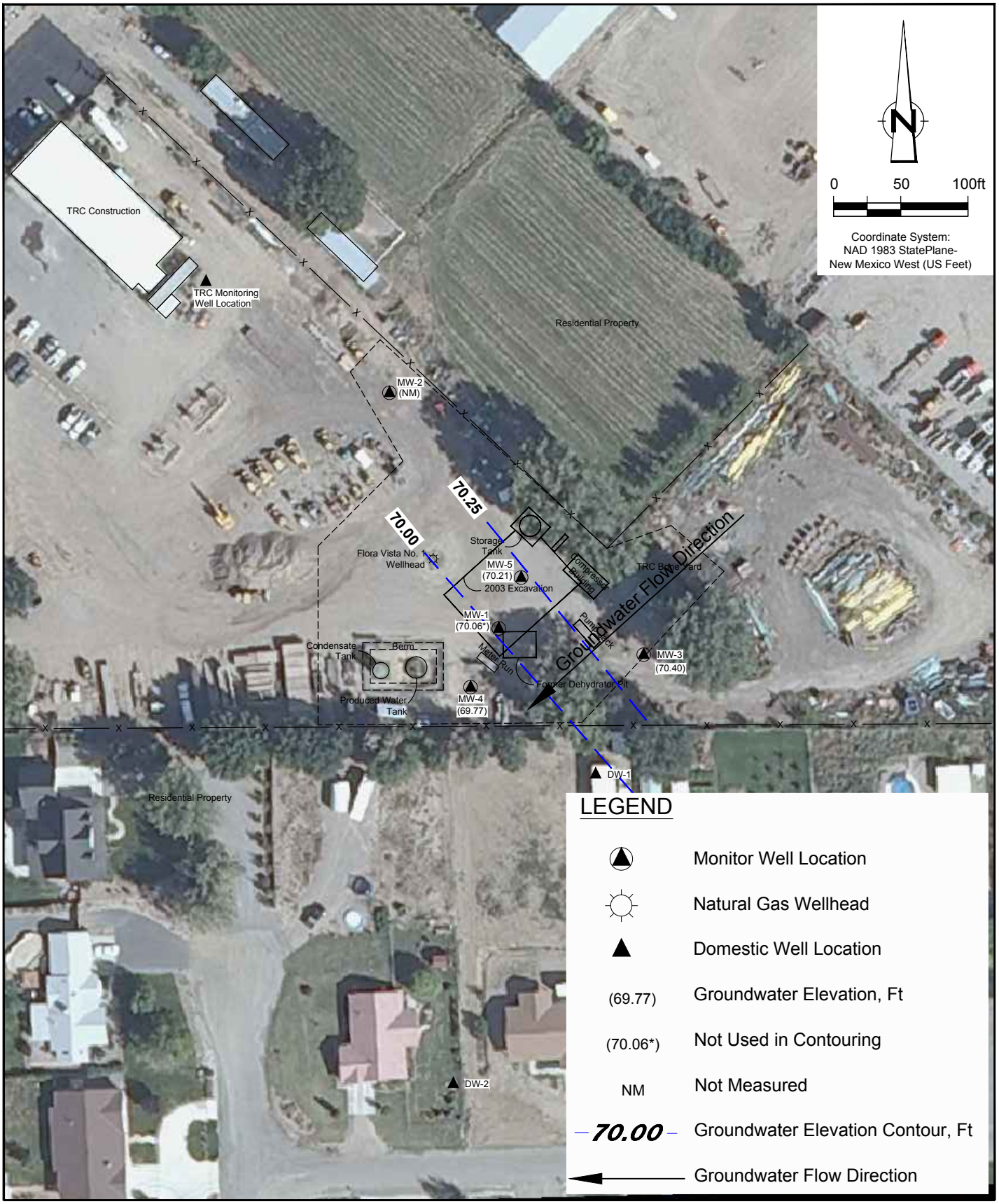
# MARCH 2017
# GROUNDWATER POTENTIOMETRIC SURFACE MAP

FIGURE 4

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1114----\11145982-Hilcorp-Flora Vista No. 1\11145982-00(000)GN-DL001.dwg




Source: ConocoPhillips high resolution aerial imagery 2008

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# JUNE 2017
# GROUNDWATER POTENTIOMETRIC SURFACE MAP

FIGURE 5

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Source: ConocoPhillips high resolution aerial imagery 2008

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FLORA VISTA NO. 1 NATURAL GAS WELL SITE

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Jan 2, 2018

# DECEMBER 2017
# GROUNDWATER POTENTIOMETRIC SURFACE MAP

FIGURE 6

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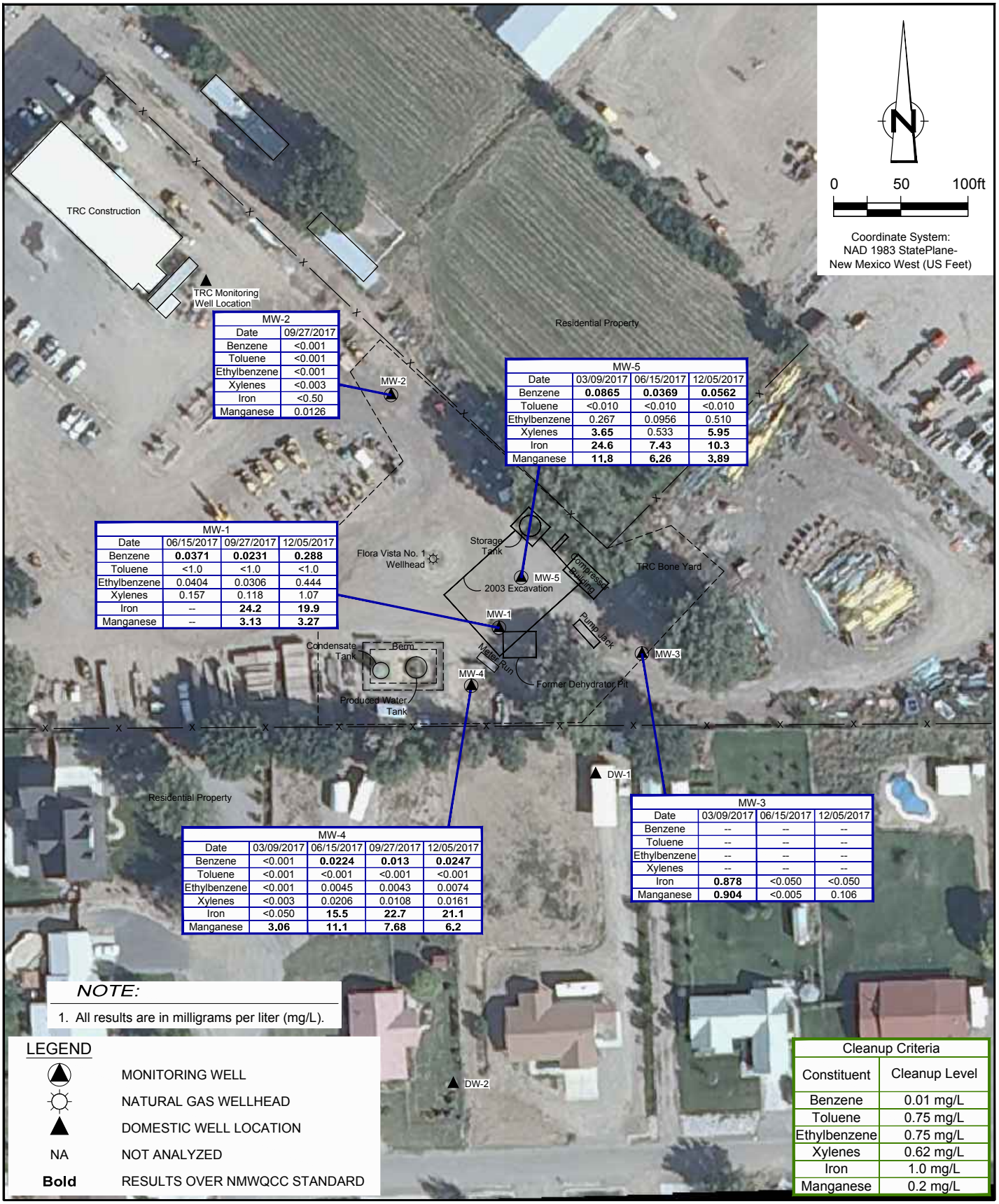


| MW-2 | |
|---|---|
| Date | 09/27/2017 |
| Benzene | <0.001 |
| Toluene | <0.001 |
| Ethylbenzene | <0.001 |
| Xylenes | <0.003 |
| Iron | <0.50 |
| Manganese | 0.0126 |

| MW-5 | | | |
|---|---|---|---|
| Date | 03/09/2017 | 06/15/2017 | 12/05/2017 |
| Benzene | **0.0865** | **0.0369** | **0.0562** |
| Toluene | <0.010 | <0.010 | <0.010 |
| Ethylbenzene | 0.267 | 0.0956 | 0.510 |
| Xylenes | **3.65** | 0.533 | **5.95** |
| Iron | **24.6** | **7.43** | **10.3** |
| Manganese | **11.8** | **6.26** | **3.89** |

| MW-1 | | | |
|---|---|---|---|
| Date | 06/15/2017 | 09/27/2017 | 12/05/2017 |
| Benzene | **0.0371** | **0.0231** | **0.288** |
| Toluene | <1.0 | <1.0 | <1.0 |
| Ethylbenzene | 0.0404 | 0.0306 | 0.444 |
| Xylenes | 0.157 | 0.118 | 1.07 |
| Iron | -- | **24.2** | **19.9** |
| Manganese | -- | **3.13** | **3.27** |

| MW-4 | | | | |
|---|---|---|---|---|
| Date | 03/09/2017 | 06/15/2017 | 09/27/2017 | 12/05/2017 |
| Benzene | <0.001 | **0.0224** | **0.013** | **0.0247** |
| Toluene | <0.001 | <0.001 | <0.001 | <0.001 |
| Ethylbenzene | <0.001 | 0.0045 | 0.0043 | 0.0074 |
| Xylenes | <0.003 | 0.0206 | 0.0108 | 0.0161 |
| Iron | <0.050 | **15.5** | **22.7** | **21.1** |
| Manganese | **3.06** | **11.1** | **7.68** | **6.2** |

| MW-3 | | | |
|---|---|---|---|
| Date | 03/09/2017 | 06/15/2017 | 12/05/2017 |
| Benzene | -- | -- | -- |
| Toluene | -- | -- | -- |
| Ethylbenzene | -- | -- | -- |
| Xylenes | -- | -- | -- |
| Iron | **0.878** | <0.050 | <0.050 |
| Manganese | **0.904** | <0.005 | 0.106 |

*NOTE:*

1. All results are in milligrams per liter (mg/L).

LEGEND

- MONITORING WELL
- NATURAL GAS WELLHEAD
- DOMESTIC WELL LOCATION
- NA — NOT ANALYZED
- **Bold** — RESULTS OVER NMWQCC STANDARD

| Cleanup Criteria | |
|---|---|
| Constituent | Cleanup Level |
| Benzene | 0.01 mg/L |
| Toluene | 0.75 mg/L |
| Ethylbenzene | 0.75 mg/L |
| Xylenes | 0.62 mg/L |
| Iron | 1.0 mg/L |
| Manganese | 0.2 mg/L |

Source: ConocoPhillips high resolution aerial imagery 2008

HILCORP ENERGY COMPANY
SECTION 22, T30N-R12W, SAN JUAN COUNTY, NEW MEXICO
FLORA VISTA NO. 1 NATURAL GAS WELL SITE

11145982-00

Jan 2, 2018

# 2017 CONTAMINANT CONCENTRATION MAP

FIGURE 7

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# Tables

Table 1

Site History Timeline
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

| *Date/Time Period* | *Event/Action* | *Description/Comments* |
|---|---|---|
| November 28, 1995 | Pit Closure Activities | Philip Environmental excavated and removed approximately 850 cubic yards of soil from the area where the Flora Vista No. 1 dehydrator pit was located. Excavation activities were stopped in the north and west directions due to the positions of the compressor and meter run equipment. |
| July and August 1996 | Submittal of Pit Closure | El Paso Field Services submits Pit Closure Reports to the New Mexico Oil Conservation Division outlining the excavation and closure of the dehydrator pit at the site. |
| January 24, 1997 | Pit Closure Approval | El Paso Field Services receives approval of pit closure from the New Mexico Oil Conservation Division. |
| June and July 2003 | Initial Site Assessment | Historical petroleum contaminated soil discovered during a production facility resetting activity. Environmental investigation began with the excavation of approximately 4,986 cubic yards of impacted soil and 4,446 cubic yards of clean soil. Groundwater was encountered at approximately 25 feet below the ground surface. The impacted soil was taken to a commercial landfill facility located on Crouch Mesa in Farmington, New Mexico. Approximately 80 bbls of potassium permanganate was sprayed on the soils to breakdown any minor amounts of residual petroleum contaminants. The excavation area was backfilled with clean soil. |
| September 2, 2003 | Groundwater Monitor Well Installation | One ground water Monitor Well, MW-1, was installed slightly down-gradient from the center of the soil excavation by Envirotech. Total depth of well is 26 feet. |
| September of 2003 through December 13, 2006 | Quarterly Groundwater Monitoring | Quarterly groundwater monitoring of MW-1 for analysis of BTEX constituents. MW-1 remained above standards for benzene, ethylbenzene, and total xylenes. |
| March 31, 2006 | Site Transfer | ConocoPhillips Company completes acquisition of Burlington Resources. |
| March 2007 through January 2008 | Consultant Change and Groundwater Monitoring | After the acquisition of Burlington Resources by ConocoPhillips, consulting responsibilities were transferred from Lode Star LLC of Farmington, NM to Tetra Tech of Albuquerque, NM. Tetra Tech began sampling the Flora Vista site quarterly in March of 2007. Four consecutive quarters of groundwater sampling were conducted at the Flora Vista site. Groundwater was sampled from MW-1 and was analyzed for BTEX constituents during all sampling events. MW-1 remained above standards for benzene, ethylbenzene, and total xylenes. |
| March 28, 2008 | Reporting | Annual report for 2007 is submitted to the Oil Conservation Division of NM Energy, Minerals, and Resources Department (OCD). |
| April 1, 2008 | Additional Monitoring Requested by OCD | Oil Conservation Division of NM Energy, Minerals, and Resources Dept. indicates additional investigation and sampling is necessary for closure consideration during a meeting with Glenn Von Gonten. |
| July 23, 2008 | Groundwater Monitoring | Groundwater monitoring of MW-1. One sample and a duplicate were collected. Benzene and Xylenes are above NMWQCC standards. |
| August 12 and 13, 2008 | Groundwater Monitor Well Installation and Groundwater Monitoring | Three additional groundwater Monitor Wells, MW-2, MW-3 and MW-4 were installed by WDC and overseen by Tetra Tech. MW-2 was installed upgradient of MW-1. Both MW-3 and MW-4 were installed downgradient of MW-1. Soil samples were collected from just above the groundwater interface for each boring location and sent to Southern Petroleum Laboratory for a baseline soil analysis. All wells were developed by purging approximately 80 gallons of fluid using a surge block and hand bailer/purge pump. |
| October 21, 2008 | Groundwater Monitoring | Third quarter 2008 groundwater monitoring was completed and was the first quarter of sampling to include all four monitor wells on site. A baseline suite was completed including major ions, total metals, semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs) including BTEX, diesel range organics, and gasoline range organics. There were 3 constituents that returned results above NMWQCC limits, Benzene (MW-1 and MW-4), Total Xylenes (MW-1), and Sulfate (MW-1). |
| January 28, 2009 | Groundwater Monitoring | Tetra Tech conducted fourth quarter 2008 groundwater monitoring at the site for BTEX constituents in all four monitor wells. Benzene (MW-1 and MW-4), Ethylbenzene (MW-1) and Xylenes (MW-1) were above NMWQCC standards. |
| March 1, 2009 | Initiate Annual Sampling | The Flora Vista No. 1 site is put on an annual monitoring schedule. The next sampling event was scheduled for September 2009. |
| September 30, 2009 | Groundwater Monitoring | Tetra Tech conducted 2009 annual groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1) and manganese (MW-1 and MW-4) were above NMWQCC standards. |
| December 16, 2009 | Private Irrigation Well Sampling | Tetra Tech collected a groundwater sample from a domestic well (DW-1) located to the south of the site to be analyzed for BTEX. All constituents were found to be below laboratory detection limits and NMWQCC standards. |
| May 14, 2010 | Initiate Quarterly Sampling | The Flora Vista No. 1 site is put on a semi-annual monitoring schedule. Private domestic irrigation well sampling is also to be included in semi-annual sampling events. |
| June 10, 2010 | Private Irrigation Well Sampling | Tetra Tech collected a groundwater sample from a second private down-gradient domestic well (DW-2) to be sampled for BTEX. All constituents were found to be below laboratory detection limits and NMWQCC standards. |
| June 10 and 11, 2010 | Groundwater Monitoring | Tetra Tech conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1) and manganese (MW-1 and MW-4) were above NMWQCC standards. |
| September 27, 2010 | Groundwater Monitoring | Tetra Tech conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron and manganese (MW-1 and MW-4) were above NMWQCC standards. |
| December 14, 2010 | Groundwater Monitoring | Tetra Tech conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron and manganese (MW-1 and MW-4) were above NMWQCC standards. |

Table 1

Site History Timeline
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

| *Date/Time Period* | *Event/Action* | *Description/Comments* |
|---|---|---|
| March 17, 2011 | Groundwater Monitoring | Tetra Tech conducted groundwater monitoring at the site for BTEX constituents, dissolved iron, dissolved manganese, and sulfate. Groundwater collected from MW-1 exceeded the NMWQCC standards for benzene, xylenes, dissolved iron and dissolved manganese. Groundwater collected from MW-4 exceeded the NMWQCC standards from benzene and dissolved manganese. Tetra Tech also collected a groundwater sample from a domestic well (DW-2) located to the south of the site to be analyzed for BTEX. All constituents were found to be below laboratory detection limits and NMWQCC standards in the domestic well sample. |
| June 15, 2011 | Transfer of Site Consulting Responsibilities | On June 15, 2011, Site consulting responsibilities were transferred from Tetra Tech of Albuquerque, NM to Conestoga-Rovers & Associates (CRA) of Albuquerque, NM. |
| June 24, 2011 | Groundwater Monitoring | CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards. CRA also collected a groundwater sample from Domestic Well DW-1 located south of the site to be analyzed for BTEX. All constituents were found to be below laboratory detection limits and NMWQCC standards in the domestic well sample. |
| September 29, 2011 | Groundwater Monitoring | CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards. |
| December 14, 2011 | Groundwater Monitoring | CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards. |
| March 9, 2012 | Groundwater Monitoring | CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards. The well vault of MW-2 is found to be destroyed. |
| April 25, 2012 | Well Pad Repair | CRA on site to oversee repair of MW-2. |
| June 7, 2012 | Groundwater Monitoring | CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards. CRA also collected a groundwater sample from Domestic Well DW-2 located south of the site to be analyzed for BTEX. All constituents were found to be below laboratory detection limits and NMWQCC standards in the domestic well sample. |
| July 27, 2012 | Private Irrigation Well Sampling | CRA collected a groundwater sample from Domestic Well DW-1 located south of the site to be analyzed for BTEX. All constituents were found to be below laboratory detection limits and NMWQCC standards in the domestic well sample. |
| September 19, 2012 | Groundwater Monitoring | CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards. |
| December 13, 2012 | Groundwater Monitoring | CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1 and MW-4), xylenes (MW-1), ethylbenzene (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards. |
| March 20, 2013 | Groundwater Monitoring | CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards. |
| June 12, 2013 | Groundwater Monitoring | CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards. |
| August 21-22, 2013 | Dual-Phase Extraction | CRA and subcontractor AccuVac conducted Mobile Dual-Phase Extraction from MW-1 and MW-4. 1292 gallons pumped from these wells and 0.5 gallons equivalent product removed via SVE during the two-day event. |
| September 11, 2013 | Groundwater Monitoring | CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards. |
| December 13, 2013 | Groundwater Monitoring | CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards. |
| March 19, 2014 | Groundwater Monitoring | CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards. |
| June 17, 2014 | Groundwater Monitoring | CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards. |
| September 18, 2014 | Groundwater Monitoring | CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards. |
| December 18, 2014 | Groundwater Monitoring | CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. MW-1 and MW-3 were inaccessible during this monitoring event. Benzene, dissolved iron, and dissolved manganese were above NMWQCC standards in MW-4. |

Table 1

Site History Timeline
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

| *Date/Time Period* | *Event/Action* | *Description/Comments* |
|---|---|---|
| March 19, 2015 | Groundwater Monitoring | CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. MW-1 did not contain sufficient volume for sampling. Dissolved iron and dissolved manganese were above NMWQCC standards in MW-4. |
| June 18, 2015 | Groundwater Monitoring | CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards. |
| September 1, 2015 | Monitoring Well Installation | GHD installed MW-5 upgradient from MW-1. Soils just above water table impacted with TPH above NMOCD standards. BTEX constituents, dissolved iron and manganesewere in groundwater above NMWQCC standards. |
| September 17, 2015 | Groundwater Monitoring | GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1, MW-4, and MW-5), xylene (MW-5), dissolved iron (MW-1, MW-4, and MW-5) and dissolved manganese (MW-1, MW-4, and MW-5) were above NMWQCC standards. |
| December 3, 2015 | Groundwater Monitoring | GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1, MW-4, and MW-5), toluene (MW-5), xylene (MW-5), dissolved iron (MW-1, MW-4, and MW-5) and dissolved manganese (MW-1, MW-4, and MW-5) were above NMWQCC standards. |
| March 31, 2016 | Groundwater Monitoring | GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Total xylenes (MW-5), dissolved iron (MW-4, and MW-5) and dissolved manganese (MW-3, MW-4, and MW-5) were above NMWQCC standards. |
| June 20, 2016 | Groundwater Monitoring | GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1, MW-4, MW-5), total xylenes (MW-1, MW-5), dissolved iron and dissolved manganese (MW-1, MW-4, and MW-5) were above NMWQCC standards. |
| October 25-26, 2016 | ISCO Event | GHD conducted an in-situ chemical oxidation event. A total of 4834 gallons of 15% solution catalyzed sodium persulfate was injected into MW-1 and MW-5. |
| September 7, 2016 | Groundwater Monitoring | GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1 and MW-5), total xylenes (MW-1, MW-5), dissolved iron and dissolved manganese (MW-1, MW-4, and MW-5) were above NMWQCC standards. |
| November 29, 2016 | Groundwater Monitoring | GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1, MW-4, MW-5), total xylenes (MW-1, MW-5), dissolved iron and dissolved manganese (MW-1, MW-4, and MW-5) were above NMWQCC standards. |
| March 9, 2017 | Groundwater Monitoring | GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. |
| April 13, 2017 | Sale of San Juan Asset to Hilcorp Energy | Site sold as part of ConocoPhillips Company announced sale of San Juan Asset to Hilcorp Energy Company. |
| June 15, 2017 | Groundwater Monitoring | GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. |
| September 27, 2017 | Groundwater Monitoring | GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. |
| December 5, 2017 | Groundwater Monitoring | GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. |

Table 2

Monitoring Well Specifications and Groundwater Elevations
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

| *Well ID* | *Total Depth (ft below TOC)* | *Elevation** | *Screen Interval (ft bgs)* | *Date Measured* | *Depth to Groundwater (ft below TOC)* | *Relative Water Level* |
|---|---|---|---|---|---|---|
| MW-1 | 26.02 | 94.38 | 11.02 - 26.02 | 06/20/03 | NM | NM |
| | | | | 09/23/03 | 17.03 | 77.35 |
| | | | | 12/16/03 | 20.11 | 74.27 |
| | | | | 03/16/04 | 23.69 | 70.69 |
| | | | | 06/21/04 | 19.92 | 74.46 |
| | | | | 09/30/04 | 16.82 | 77.56 |
| | | | | 12/13/04 | 20.40 | 73.98 |
| | | | | 03/22/05 | 24.32 | 70.06 |
| | | | | 06/22/05 | NM | NM |
| | | | | 10/24/05 | NM | NM |
| | | | | 12/13/05 | 21.24 | 73.14 |
| | | | | 03/22/06 | 24.75 | 69.63 |
| | | | | 06/22/06 | 20.48 | 73.90 |
| | | | | 10/20/06 | 19.13 | 75.25 |
| | | | | 12/13/06 | 21.24 | 73.14 |
| | | | | 11/09/07 | 19.71 | 74.67 |
| | | | | 01/15/08 | NM | NM |
| | | | | 03/19/08 | 24.35 | 70.03 |
| | | | | 07/23/08 | 19.89 | 74.49 |
| | | | | 10/21/08 | 19.48 | 74.90 |
| | | | | 01/28/09 | 23.96 | 70.42 |
| | | | | 09/30/09 | 18.16 | 76.22 |
| | | | | 06/10/10 | 21.64 | 72.74 |
| | | | | 09/27/10 | 19.31 | 75.07 |
| | | | | 12/14/10 | 21.41 | 72.97 |
| | | | | 03/17/11 | 24.95 | 69.43 |
| | | | | 06/24/11 | 22.55 | 71.83 |
| | | | | 09/29/11 | 18.37 | 76.01 |
| | | | | 12/14/11 | 20.63 | 73.75 |
| | | | | 03/09/12 | 24.12 | 70.26 |
| | | 93.96 | | 06/07/12 | 23.08 | 70.88 |
| | | | | 09/19/12 | 18.94 | 75.02 |
| | | | | 12/13/12 | 21.22 | 72.74 |
| | | | | 03/20/13 | 24.79 | 69.17 |
| | | | | 06/12/13 | 22.51 | 71.45 |
| | | | | 09/11/13 | 18.34 | 75.62 |
| | | | | 12/13/13 | 21.53 | 72.43 |
| | | | | 03/19/14 | 25.26 | 68.70 |
| | | | | 06/17/14 | 21.55 | 72.41 |
| | | | | 09/18/14 | 19.58 | 74.38 |
| | | | | 12/18/14 | Well inaccessible | |
| | | | | 03/19/15 | 25.18 | 68.78 |
| | | | | 06/18/15 | 23.56 | 70.40 |
| | | | | 09/17/15 | 21.85 | 72.11 |
| | | | | 12/03/15 | 22.65 | 71.31 |
| | | | | 3/31/2016* | 26.02 | 67.94 |
| | | | | 06/20/16 | 23.52 | 70.44 |
| | | | | 09/06/16 | 20.98 | 72.98 |
| | | | | 11/29/16 | 21.90 | 72.06 |
| | | | | 03/09/17 | 24.72 | 69.24 |
| | | | | 06/15/17 | 23.90 | 70.06 |
| | | | | 09/27/17 | 21.57 | 72.39 |
| | | | | 12/05/17 | 22.30 | 71.66 |

Table 2

Monitoring Well Specifications and Groundwater Elevations
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

| Well ID | Total Depth (ft below TOC) | Elevation* | Screen Interval (ft bgs) | Date Measured | Depth to Groundwater (ft below TOC) | Relative Water Level |
|---|---|---|---|---|---|---|
| MW-2 | 31.35 | 97.1 | 12.35 - 27.35 | 10/21/08 | 20.71 | 76.39 |
| | | | | 01/28/09 | 22.75 | 74.35 |
| | | | | 09/30/09 | 18.83 | 78.27 |
| | | | | 06/11/10 | 22.09 | 75.01 |
| | | | | 09/27/10 | 20.12 | 76.98 |
| | | | | 12/14/10 | NM | NM |
| | | | | 03/17/11 | NM | NM |
| | | | | 06/24/11 | 22.50 | 74.60 |
| | | | | 09/29/11 | 18.95 | 75.43 |
| | | | | 12/14/11 | 21.79 | 75.31 |
| | | | | 03/09/12 | 25.60 | 71.50 |
| | | 97.00 | | 06/07/12 | 22.46 | 74.54 |
| | | | | 09/19/12 | 17.70 | 79.30 |
| | | | | 12/13/12 | 22.43 | 74.57 |
| | | | | 03/20/13 | 26.49 | 70.51 |
| | | | | 06/12/13 | 22.13 | 74.87 |
| | | | | 09/11/13 | 17.95 | 79.05 |
| | | | | 12/13/13 | 22.78 | 74.22 |
| | | | | 03/19/14 | 26.99 | 70.01 |
| | | | | 06/17/14 | 20.31 | 76.69 |
| | | | | 09/18/14 | 19.87 | 77.13 |
| | | | | 12/18/14 | 23.00 | 74.00 |
| | | | | 03/19/15 | 26.92 | 70.08 |
| | | | | 06/18/15 | 23.24 | 73.76 |
| | | | | 09/17/15 | 22.78 | 74.22 |
| | | | | 12/03/15 | 24.23 | 72.77 |
| | | | | 03/31/16 | 28.20 | 68.80 |
| | | | | 06/20/16 | 25.67 | 71.33 |
| | | | | 09/06/16 | 23.57 | 73.43 |
| | | | | 11/29/16 | 23.69 | 73.31 |
| | | | | 03/09/17 | 26.70 | 70.30 |
| | | | | 06/15/17 | Well inaccessible | |
| | | | | 09/27/17 | 23.84 | 73.16 |
| | | | | 12/05/17 | Well inaccessible | |
| MW-3 | 30.87 | 92.9 | 11.87 - 26.87 | 10/21/08 | 17.92 | 74.98 |
| | | | | 01/28/09 | 21.53 | 71.37 |
| | | | | 09/30/09 | 16.43 | 76.47 |
| | | | | 06/10/10 | 19.71 | 73.19 |
| | | | | 09/27/10 | 17.81 | 75.09 |
| | | | | 12/14/10 | 19.61 | 73.29 |
| | | | | 03/17/11 | 23.32 | 69.58 |
| | | | | 06/24/11 | 20.55 | 72.35 |
| | | | | 09/29/11 | 16.84 | 77.54 |
| | | | | 12/14/11 | 19.13 | 73.77 |
| | | | | 03/09/12 | 22.51 | 70.39 |
| | | 92.43 | | 06/07/12 | 20.93 | 71.50 |
| | | | | 09/19/12 | 17.48 | 74.95 |
| | | | | 12/13/12 | 19.78 | 72.65 |
| | | | | 03/20/13 | 23.18 | 69.25 |
| | | | | 06/12/13 | 20.68 | 71.75 |
| | | | | 09/11/13 | 16.90 | 75.53 |
| | | | | 12/13/13 | 20.11 | 72.32 |
| | | | | 03/19/14 | 23.64 | 68.79 |
| | | | | 06/17/14 | 19.85 | 72.58 |
| | | | | 09/18/14 | 18.01 | 74.42 |
| | | | | 12/18/14 | Well inaccessible | |
| | | | | 03/19/15 | 23.55 | 68.88 |
| | | | | 06/18/15 | 21.84 | 70.59 |
| | | | | 09/17/15 | 20.18 | 72.25 |
| | | | | 12/03/15 | 21.10 | 71.33 |
| | | | | 03/31/16 | 24.81 | 67.62 |
| | | | | 06/20/16 | 21.66 | 70.77 |
| | | | | 09/06/16 | 19.18 | 73.25 |
| | | | | 11/29/16 | 20.39 | 72.04 |
| | | | | 03/09/17 | 23.35 | 69.08 |
| | | | | 06/15/17 | 22.03 | 70.40 |
| | | | | 09/27/17 | Well inaccessible | |
| | | | | 12/05/17 | 20.89 | 71.54 |

Table 2

Monitoring Well Specifications and Groundwater Elevations
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

| *Well ID* | *Total Depth (ft below TOC)* | *Elevation** | *Screen Interval (ft bgs)* | *Date Measured* | *Depth to Groundwater (ft below TOC)* | *Relative Water Level* |
|---|---|---|---|---|---|---|
| MW-4 | 30.42 | 93.6 | 11.42 - 26.42 | 10/21/08 | 18.06 | 75.54 |
| | | | | 01/28/09 | 24.55 | 69.05 |
| | | | | 09/30/09 | 17.89 | 75.71 |
| | | | | 06/10/10 | 21.02 | 72.58 |
| | | | | 09/27/10 | 18.93 | 74.67 |
| | | | | 12/14/10 | 21.04 | 72.56 |
| | | | | 03/17/11 | 24.58 | 69.02 |
| | | | | 06/24/11 | 21.80 | 71.80 |
| | | | | 09/29/11 | 17.94 | 76.44 |
| | | | | 12/14/11 | 20.28 | 73.32 |
| | | | | 03/09/12 | 23.70 | 69.90 |
| | | 93.17 | | 06/07/12 | 22.19 | 70.98 |
| | | | | 09/19/12 | 18.60 | 74.57 |
| | | | | 12/13/12 | 20.96 | 72.21 |
| | | | | 03/20/13 | 24.38 | 68.79 |
| | | | | 06/12/13 | 21.81 | 71.36 |
| | | | | 09/11/13 | 18.89 | 74.28 |
| | | | | 12/13/13 | 21.28 | 71.89 |
| | | | | 03/19/14 | 24.88 | 68.29 |
| | | | | 06/17/14 | 21.21 | 71.96 |
| | | | | 09/18/14 | 19.16 | 74.01 |
| | | | | 12/18/14 | 21.41 | 71.76 |
| | | | | 03/19/15 | 24.80 | 68.37 |
| | | | | 06/18/15 | 23.09 | 70.08 |
| | | | | 09/17/15 | 21.37 | 71.80 |
| | | | | 12/03/15 | 22.29 | 70.88 |
| | | | | 03/31/16 | 26.05 | 67.12 |
| | | | | 06/20/16 | 22.95 | 70.22 |
| | | | | 09/06/16 | 20.40 | 72.77 |
| | | | | 11/29/16 | 21.59 | 71.58 |
| | | | | 03/09/17 | 24.58 | 68.59 |
| | | | | 06/15/17 | 23.40 | 69.77 |
| | | | | 09/27/17 | 21.25 | 71.92 |
| | | | | 12/05/17 | 22.05 | 71.12 |
| MW-5 | 29.68 | 93.82 | 15-30 | 9/17/2015 | 21.59 | 72.23 |
| | | | | 12/03/15 | 22.41 | 71.41 |
| | | | | 03/31/16 | 26.18 | 67.64 |
| | | | | 06/20/16 | 23.18 | 70.64 |
| | | | | 09/06/16 | 20.67 | 73.15 |
| | | | | 11/29/16 | 21.72 | 72.10 |
| | | | | 03/09/17 | 25.04 | 68.78 |
| | | | | 06/15/17 | 23.61 | 70.21 |
| | | | | 09/27/17 | Well inaccessible | |
| | | | | 12/5/2017 | 21.96 | 71.86 |

Notes:

1. * = Casing elevations are based on an arbitrary 100 ft relative surface elevation set at the gas well head
2. ft = Feet
3. TOC = Top of casing
4. bgs = below ground surface
5. NM = Not measured

Table 3

Field Parameters Summary
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

| Well ID | Sample Date | Temperature (°C) | pH | TDS (mg/L) | Conductivity (µS/cm) | DO (mg/L) | ORP (mV) | Volume (gallons) |
|---|---|---|---|---|---|---|---|---|
| MW-1 | 03/31/16 | No parameters or sample collected due to low well volume. | | | | | | |
| | 06/20/16 | 16.70 | 6.34 | -- | 1070 | 0.41 | -132.7 | 0.25 |
| | 09/07/16 | 15.55 | 6.30 | 0.027 | 37 | 9.16 | -66.6 | 1.50 |
| | 03/09/17 | No parameters or sample collected due to low well volume. | | | | | | |
| | 06/15/17 | No parameters or sample collected due to low well volume. | | | | | | |
| | 12/05/17 | 15.07 | 6.94 | 4.785 | 7364 | 4.69 | -183.5 | 0.50 |
| MW-2 | 03/31/16 | No parameters taken due to low well volume. | | | | | | |
| | 06/20/16 | 17.00 | 6.40 | -- | 870 | 2.32 | -104.0 | 1.50 |
| | 09/07/16 | 15.00 | 6.57 | 0.571 | 879 | 3.67 | -19.9 | 4.00 |
| | 11/29/16 | 14.78 | 7.21 | -- | 909 | 4.51 | -17.1 | -- |
| | 03/09/17 | No parameters or sample collected due to low well volume. | | | | | | |
| MW-3 | 03/31/16 | 14.68 | 7.13 | 0.510 | 800 | 4.66 | -13.0 | 2.50 |
| | 06/20/16 | 14.90 | 7.05 | -- | 750 | 2.02 | 83.2 | 4.00 |
| | 09/07/16 | 14.19 | 6.02 | 0.467 | 719 | 5.55 | 12.5 | 5.00 |
| | 11/29/16 | 13.68 | 7.41 | NM | 725 | 5.03 | -11.4 | -- |
| | 03/09/17 | 14.44 | 7.06 | 0.675 | 1038 | 1.38 | -199.9 | -- |
| | 06/15/17 | 13.90 | 7.67 | 0.470 | 723 | 4.06 | -79.1 | 1.00 |
| | 12/05/17 | 12.80 | 7.10 | 0.513 | 788 | 2.09 | -135.4 | 4.00 |
| MW-4 | 03/31/16 | 15.60 | 6.98 | 0.700 | 1030 | 5.73 | -47.0 | 2.25 |
| | 06/20/16 | 15.20 | 6.79 | -- | 1040 | 1.06 | -60.8 | 3.50 |
| | 09/07/16 | 14.55 | 6.40 | 0.655 | 1008 | 2.48 | -59.8 | 4.50 |
| | 11/29/16 | 13.58 | 7.16 | -- | 903 | 3.04 | -80.9 | -- |
| | 03/09/17 | 14.45 | 6.96 | 0.753 | 1159 | 1.69 | -133.5 | -- |
| | 06/15/17 | 13.63 | 7.00 | 1.769 | 2721 | 5.00 | -114.3 | 3.50 |
| | 12/05/17 | 13.88 | 6.84 | 1.721 | 2647 | 1.13 | -135.7 | 4.00 |
| MW-5 | 03/31/16 | 16.16 | 7.13 | 0.600 | 980 | 4.74 | -97.0 | 1.75 |
| | 06/20/16 | 15.90 | 6.88 | -- | 1030 | 0.68 | -99.7 | 3.25 |
| | 09/07/16 | 14.96 | 6.34 | 0.599 | 918 | 1.51 | -130.2 | 4.50 |
| | 03/09/17 | 15.29 | 7.35 | 0.793 | 1255 | 8.83 | -124.9 | -- |
| | 06/15/17 | 14.56 | 7.06 | 3.143 | 4842 | 2.19 | -132.6 | 2.00 |
| | 12/05/17 | 15.11 | 6.76 | 0.706 | 1086 | 0.52 | -160.50 | 2.25 |

Notes:
TDS = total dissolved solids
DO = dissolved oxygen
ORP = oxidation-reduction potential
-- Not Measured
°C = degrees Centigrade
mg/L = milligrams per liter
µS/cm = micro Siemens per centimeter
mV = millivolts

Table 4

Groundwater Analytical Results Summary
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

| Well ID | Sample ID | Date | Sample Type | Benzene (mg/L) | Ethylbenzene (mg/L) | Toluene (mg/L) | Xylenes (total) (mg/L) | Sulfate (mg/L) | Iron (dissolved) (mg/L) | Manganese (dissolved) (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| ***NMWQCC Groundwater Quality Standards*** | | | | ***0.01*** | ***0.75*** | ***0.75*** | ***0.62*** | ***600*** | ***1*** | ***0.2*** |
| MW-1 | MW-1 | 6/20/2003 | (orig) | **1.7** | 0.49 | 0.3 | **5.09** | -- | -- | -- |
| | MW-1 | 9/23/2003 | (orig) | **7.5** | 0.66 | 0.02 | **9.22** | -- | -- | -- |
| | MW-1 | 12/16/2003 | (orig) | **7.93** | **1.18** | 0.01 | **0.864** | -- | -- | -- |
| | MW-1 | 3/16/2004 | (orig) | **6.86** | **1.16** | ND | **8.47** | -- | -- | -- |
| | MW-1 | 6/21/2004 | (orig) | **4.14** | 0.43 | ND | **3.12** | -- | -- | -- |
| | MW-1 | 9/30/2004 | (orig) | **9.08** | **1.41** | 0.03 | **9.98** | -- | -- | -- |
| | MW-1 | 12/13/2004 | (orig) | **8.52** | **1.34** | ND | **9.39** | -- | -- | -- |
| | MW-1 | 3/22/2005 | (orig) | **4.55** | **0.85** | ND | **5.95** | -- | -- | -- |
| | MW-1 | 6/22/2005 | (orig) | -- | -- | 0.02188 | -- | -- | -- | -- |
| | MW-1 | 10/24/2005 | (orig) | **6.39** | **1.01** | ND | **7.416** | -- | -- | -- |
| | MW-1 | 12/13/2005 | (orig) | **6.17** | **1.01** | ND | **7.57** | -- | -- | -- |
| | MW-1 | 3/22/2006 | (orig) | **3.58** | **0.77** | ND | **5.84** | -- | -- | -- |
| | MW-1 | 6/22/2006 | (orig) | **3.1** | 0.5 | ND | **3.5** | -- | -- | -- |
| | MW-1 | 10/20/2006 | (orig) | **6.6** | **1.22** | 0.01 | **8.91** | -- | -- | -- |
| | MW-1 | 12/13/2006 | (orig) | **4.23** | **1.09** | 0.01 | **8.13** | -- | -- | -- |
| | MW-1 | 3/27/2007 | (orig) | **2.37** | 0.504 | 0.007 | **3.749** | -- | -- | -- |
| | MW-1 | 6/25/2007 | (orig) | **2.87** | 0.51 | 0.14 | **3.89** | -- | -- | -- |
| | MW-1 | 11/9/2007 | (orig) | **5.6** | **0.91** | < 0.0007 | **6.8** | -- | -- | -- |
| | MW-1 | 1/15/2008 | (orig) | **4.2** | **0.89** | < 0.0007 | **5.7** | -- | -- | -- |
| | MW-1 | 3/19/2008 | (orig) | **2.7** | 0.59 | < 0.005 | **4.7** | -- | -- | -- |
| | MW-1 | 7/23/2008 | (orig) | **2** | 0.38 | < 0.005 | **1.4** | -- | -- | -- |
| | MW-1 | 10/21/2008 | (orig) | **4.5** | 0.63 | < 0.005 | **5.3** | -- | -- | -- |
| | MW-1 | 1/28/2009 | (orig) | **4** | **0.88** | < 0.005 | **8.7** | -- | -- | -- |
| | MW-1 | 9/30/2009 | (orig) | **4.2** | 0.53 | 0.0016 | **5.1** | 11.7 | **2.08** | **1.09** |
| | MW-1 | 6/10/2010 | (orig) | **1.7** | 0.33 | 0.0012 | **0.99** | 27 | 0.126 | **1.28** |
| | MW-1 | 9/27/2010 | (orig) | **3.2** | 0.53 | 0.002 | **4.2016** | 1.8 | **7.73** | **1.19** |
| | MW-1 | 12/14/2010 | (orig) | **3.2** | 0.62 | 0.0012 | **5.3016** | 1.03 | **4.13** | **0.888** |
| | MW-1 | 3/17/2011 | (orig) | **1.7** | 0.48 | 0.0037 | **4.3092** | 2.27 | **1.11** | **1.07** |
| | GW-74926-062411-PG-01 | 6/24/2011 | (orig) | **2.1** | 0.494 | 0.0025 | **2.03** | 18.4 | < 0.1 | **0.894** |
| | GW-74926-062411-PG-02 | 6/24/2011 | (Duplicate) | **1.97** | 0.458 | 0.0026 | **1.94** | -- | -- | -- |
| | GW-074926-092911-CM-009 | 9/29/2011 | (orig) | **2.44** | 0.519 | < 0.005 | **3.65** | < 1.0 | **25.2** | **1.02** |
| | GW-074926-121411-CB-MW-1 | 12/14/2011 | (orig) | **2.31** | 0.508 | 0.0055 | **3.93** | 13.2 | **25.4** | **0.945** |
| | GW-074926-3912-CB-MW-1 | 3/9/2012 | (orig) | **1.59** | 0.636 | < 0.001 | **5.04** | -- | **25.3** | **1.03** |
| | GW-074926-060712-CB-MW-1 | 6/7/2012 | (orig) | **1.77** | 0.182 | 0.127 | **0.633** | -- | **21.4** | **0.914** |
| | GW-074926-091912-JP-MW-1 | 9/19/2012 | (orig) | **1.52** | 0.414 | < 0.020 | **2.49** | -- | **19** | **0.86** |
| | GW-074926-121312-CM-MW-1 | 12/13/2012 | (orig) | **2.02** | **0.809** | < 0.025 | **5.02** | -- | **23.8** | **0.75** |
| | GW-074926-032013-CM-MW-1 | 3/20/2013 | (orig) | **0.182** | 0.0406 | < 0.002 | 0.0914 | -- | **9.39** | **1.08** |
| | GW-074926-061213-JR-MW1 | 6/12/2013 | (orig) | **0.698** | 0.160 | < 0.001 | **0.873** | -- | **12.8** | **1.12** |
| | GW-074926-091113-CM-MW1 | 9/11/2013 | (orig) | **1.05** | **0.831** | < 0.020 | **5.1** | -- | **18.0** | **1.05** |
| | GW-074926-121313-CM-MW-1 | 12/13/2013 | (orig) | **0.591** | 0.670 | 0.0015 | **1.79** | -- | **25.4** | **0.88** |
| | GW-074926-031914-CK-MW-1 | 3/19/2014 | (orig) | **0.0822** | 0.039 | < 0.001 | 0.271 | -- | -- | -- |
| | GW-074926-061714-CK-MW-1 | 6/17/2014 | (orig) | **0.522** | 0.189 | < 0.001 | 0.398 | -- | **17.4** | **0.896** |
| | GW-074926-091814-CB-MW-1 | 9/18/2014 | (orig) | **0.849** | 0.299 | < 0.001 | **1.23** | -- | **23.4** | **1.01** |
| | -- | 12/18/2014 | Well was obstructed and inaccessible due to TRC operations. | | | | | | | |
| | -- | 3/19/2015 | No sample due to insuffiencient volume | | | | | | | |
| | GW-074926-061815-CB-MW-1 | 6/18/2015 | (orig) | **0.213** | 0.116 | < 0.001 | **0.691** | -- | **5.72** | **0.542** |
| | GW-074926-061815-CB-DUP | 6/18/2015 | (Duplicate) | **0.17** | 0.0684 | < 0.001 | 0.533 | -- | -- | -- |
| | GW-074926-091715-CK-MW-1 | 9/17/2015 | (orig) | **0.0673** | 0.0859 | < 0.001 | 0.362 | -- | **4.22** | **0.614** |
| | GW-074926-12315-CB-MW-1 | 12/3/2015 | (orig) | **0.0908** | 0.0612 | < 0.001 | 0.138 | -- | **2.69** | **0.63** |
| | -- | 3/31/2016 | No sample due to insuffiencient volume | | | | | | | |
| | GW-074926-062016-SP-MW-1 | 6/20/2016 | (orig) | **0.834** | 0.533 | < 0.025 | **2.06** | 13.8 | **40.8** | **2.17** |
| | GW-074926-090716-SP-MW-1 | 9/7/2016 | (orig) | **0.525** | 0.416 | < 0.020 | **1.62** | 2.4 | **17.6** | **1.51** |
| | | 10/25/2016 | ISCO Injection-15% PersulfOx solution | | | | | | | |
| | | 3/9/17 | No sample due to insuffiencient volume | | | | | | | |
| | GW-074926-061517-CN-MW-1 | 6/15/2017 | (orig) | **0.0371** | 0.0404 | <1.0 | 0.157 | -- | -- | -- |
| | GW-11145982-092717-SP-MW-1 | 9/27/2017 | (orig) | **0.0231** | 0.0306 | <1.0 | 0.118 | -- | **24.2** | **3.13** |
| | GW-11145982-120517-SP-SP-1 | 12/5/2017 | (orig) | **0.288** | 0.444 | <1.0 | **1.07** | -- | **19.9** | **3.27** |

Table 4

Groundwater Analytical Results Summary
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

| Well ID | Sample ID | Date | Sample Type | Benzene (mg/L) | Ethylbenzene (mg/L) | Toluene (mg/L) | Xylenes (total) (mg/L) | Sulfate (mg/L) | Iron (dissolved) (mg/L) | Manganese (dissolved) (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| ***NMWQCC Groundwater Quality Standards*** | | | | ***0.01*** | ***0.75*** | ***0.75*** | ***0.62*** | ***600*** | ***1*** | ***0.2*** |
| MW-2 | MW-2 | 10/21/2008 | (orig) | < 0.0005 | < 0.0005 | < 0.0005 | < 0.0005 | 115 | -- | -- |
| | MW-2 | 1/28/2009 | (orig) | < 0.0005 | < 0.0005 | < 0.0005 | < 0.0005 | ND | ND | ND |
| | MW-2 | 9/30/2009 | (orig) | < 0.0005 | < 0.0005 | < 0.0005 | < 0.0005 | 123 | 0.0223 | < 0.005 |
| | MW-2 | 6/11/2010 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.001 | 156 | < 0.02 | < 0.005 |
| | MW-2 | 9/27/2010 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.001 | 179 | < 0.02 | < 0.005 |
| | GW-74926-062411-PG-05 | 6/24/2011 | (orig) | < 0.0010 | < 0.0010 | < 0.0010 | < 0.0030 | 176 | 0.191 | < 0.015 |
| | GW-074926-092911-CM-006 | 9/29/2011 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | 151 | < 0.05 | < 0.005 |
| | GW-074926-121411-CB-MW-2 | 12/14/2011 | (orig) | 0.00031 J | 0.0002 J | < 0.001 | 0.0022 J | 135 | 0.0133 J | 0.0022 J |
| | GW-074926-3912-CB-MW-2 | 3/9/2012 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.05 | < 0.005 |
| | GW-074926-060712-CB-MW-2 | 6/7/2012 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | 0.0822 | 0.0052 |
| | GW-074926-091912-JP-MW-2 | 9/19/2012 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.05 | < 0.005 |
| | GW-074926-121312-CM-MW-2 | 12/13/2012 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | <0.05 | < 0.005 |
| | GW-074926-032013-CM-MW-2 | 3/20/2013 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.05 | < 0.005 |
| | GW-074926-061213-JR-MW2 | 6/12/2013 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | 0.0665 | < 0.005 |
| | GW-074926-091113-CM-MW2 | 9/11/2013 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.050 | < 0.005 |
| | GW-074926-121313-CM-MW-2 | 12/13/2013 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.050 | < 0.005 |
| | GW-074926-031914-CK-MW-2 | 3/19/2014 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.050 | 0.0242 |
| | GW-074926-061714-CK-MW-2 | 6/17/2014 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.050 | < 0.005 |
| | GW-074926-091814-CB-MW-2 | 9/18/2014 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | 0.0656 | < 0.005 |
| | GW-074926-121814-CM-MW-2 | 12/18/2014 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | 0.709 | 0.0055 |
| | GW-074926-031915-CM-MW-2 | 3/19/2015 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | 0.883 | 0.0434 |
| | GW-074926-061815-CB-MW-2 | 6/18/2015 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.050 | < 0.005 |
| | GW-074926-091715-CK-MW-2 | 9/17/2015 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.050 | < 0.005 |
| | GW-074926-12315-CB-MW-2 | 12/3/2015 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.050 | < 0.005 |
| | GW-074926-033116-CM-MW-2 | 3/31/2016 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | 126 | 0.0585 | <0.005 |
| | GW-074926-062016-SP-MW-2 | 6/20/2016 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | 134 | < 0.050 | < 0.005 |
| | GW-074926-090716-SP-MW-2 | 9/7/2016 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | 131 | 0.0512 | < 0.005 |
| | GW-074926-112916-CN-MW-2 | 11/29/2016 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | 109 | < 0.050 | < 0.005 |
| | GW-11145982-092717-SP-MW-2 | 9/27/2017 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | <0.50 | 0.0126 |
| MW-3 | MW-3 | 10/21/2008 | (orig) | < 0.0005 | < 0.0005 | < 0.0005 | < 0.0005 | 93 | -- | -- |
| | MW-3 | 1/28/2009 | (orig) | < 0.0005 | < 0.0005 | < 0.0005 | < 0.0005 | ND | ND | ND |
| | MW-3 | 9/30/2009 | (orig) | < 0.0005 | < 0.0005 | < 0.0005 | < 0.0005 | 144 | 0.0543 | < 0.005 |
| | MW-3 | 6/10/2010 | (orig) | < 0.0005 | < 0.001 | < 0.001 | < 0.001 | 122 | 0.0425 | < 0.005 |
| | MW-3 | 9/27/2010 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.001 | 170 | < 0.02 | < 0.005 |
| | MW-3 | 12/14/2010 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.001 | 142 | < 0.02 | < 0.005 |
| | MW-3 | 3/17/2011 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.001 | 119 | < 0.02 | < 0.005 |
| | GW-74926-062411-PG-03 | 6/24/2011 | (orig) | < 0.0010 | < 0.0010 | < 0.0010 | < 0.0030 | 127 | 0.189 | < 0.015 |
| | GW-074926-092911-CM-007 | 9/29/2011 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | 160 | < 0.05 | 0.0063 |
| | GW-074926-121411-CB-MW-3 | 12/14/2011 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | 136 | 0.0288 J | 0.0207 |
| | GW-074926-3912-CB-MW-3 | 3/9/2012 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.05 | < 0.005 |
| | GW-074926-060712-CB-MW-3 | 6/7/2012 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.05 | < 0.005 |
| | GW-074926-091912-JP-MW-3 | 9/19/2012 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.05 | < 0.005 |
| | GW-074926-121312-CM-MW-3 | 12/13/2012 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | 0.0605 | 0.026 |
| | GW-074926-032013-CM-MW-3 | 3/20/2013 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.05 | 0.0149 |
| | GW-074926-061213-JR-MW3 | 6/12/2013 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | 0.189 | 0.0094 |
| | GW-074926-091113-CM-MW3 | 9/11/2013 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.050 | < 0.005 |
| | GW-074926-121313-CM-MW-3 | 12/13/2013 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.050 | 0.013 |
| | GW-074926-031914-CK-MW-3 | 3/19/2014 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.050 | < 0.005 |
| | GW-074926-061714-CK-MW-3 | 6/17/2014 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.050 | < 0.005 |
| | GW-074926-091814-CB-MW-3 | 9/18/2014 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.050 | < 0.005 |
| | -- | 12/18/2014 | Wellhead inaccessable due to standing water. | | | | | | | |
| | GW-074926-031915-CM-MW-3 | 3/19/2015 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.050 | < 0.005 |
| | GW-074926-061815-CB-MW-3 | 6/18/2015 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.050 | < 0.005 |
| | GW-074926-091715-CK-MW-3 | 9/17/2015 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.050 | < 0.005 |
| | GW-074926-12315-CB-MW-3 | 12/3/2015 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | < 0.050 | 0.0258 |
| | GW-074926-033116-CM-MW-3 | 3/31/2016 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | 143 | 0.138 | **0.368** |
| | GW-074926-062016-SP-MW-3 | 6/20/2016 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | 133 | < 0.050 | 0.0078 |
| | GW-074926-090716-SP-MW-3 | 9/7/2016 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | 149 | < 0.050 | < 0.005 |
| | GW-074926-112916-SP-MW-3 | 11/29/2016 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | 147 | 0.103 | 0.197 |
| | GW-074926-030917-CN-MW-3 | 3/9/2017 | (orig) | -- | -- | -- | -- | -- | 0.878 | **0.904** |
| | GW-074926-061517-CN-MW-3 | 6/15/2017 | (orig) | -- | -- | -- | -- | -- | < 0.050 | < 0.005 |
| | GW-11145982-120517-SP-MW-3 | 12/5/2017 | (orig) | -- | -- | -- | -- | -- | < 0.050 | 0.106 |

Table 4

Groundwater Analytical Results Summary
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

| Well ID | Sample ID | Date | Sample Type | Benzene (mg/L) | Ethylbenzene (mg/L) | Toluene (mg/L) | Xylenes (total) (mg/L) | Sulfate (mg/L) | Iron (dissolved) (mg/L) | Manganese (dissolved) (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| ***NMWQCC Groundwater Quality Standards*** | | | | ***0.01*** | ***0.75*** | ***0.75*** | ***0.62*** | ***600*** | ***1*** | ***0.2*** |
| MW-4 | MW-4 | 10/21/2008 | (orig) | **0.039** | 0.031 | < 0.0005 | 0.18 | 90.1 | -- | -- |
| | MW-4 | 1/28/2009 | (orig) | **0.66** | 0.064 | < 0.0005 | 0.583 | ND | ND | ND |
| | MW-4 | 9/30/2009 | (orig) | **0.34** | 0.054 | < 0.0005 | 0.572 | 48.9 | 0.148 | **4.48** |
| | MW-4 | 6/10/2010 | (orig) | **0.14** | 0.027 | < 0.001 | 0.252 | 53.3 | 0.0566 | **4.65** |
| | MW-4 | 9/27/2010 | (orig) | **0.033** | 0.041 | < 0.001 | 0.274 | 92.5 | **1.22** | **4.34** |
| | MW-4 | 12/14/2010 | (orig) | **0.13** | 0.093 | < 0.001 | **0.899** | 67.5 | **1.75** | **4.69** |
| | MW-4 | 3/17/2011 | (orig) | **0.017** | 0.018 | < 0.001 | 0.1966 | 83 | 0.0852 | **4.46** |
| | GW-74926-062411-PG-04 | 6/24/2011 | (orig) | **0.0296** | 0.0371 | < 0.0010 | 0.472 | 130 | **1.5** | **4.9** |
| | GW-074926-092911-CM-008 | 9/29/2011 | (orig) | **0.0392** | 0.0039 | < 0.001 | 0.0536 | 96.1 | **2.55** | **4.1** |
| | GW-074926-092911-CM-010 | 9/29/2011 | (Duplicate) | **0.043** | 0.0035 | < 0.001 | 0.0483 | -- | -- | -- |
| | GW-074926-121411-CB-MW-4 | 12/14/2011 | (orig) | **0.101** | 0.0443 | < 0.001 | 0.378 | 81.2 | **2.62** | **4.58** |
| | GW-074926-121411-CB-DUP | 12/14/2011 | (Duplicate) | **0.104** | 0.0437 | < 0.005 | 0.372 | -- | -- | -- |
| | GW-074926-3912-CB-MW-4 | 3/9/2012 | (orig) | **0.0264** | 0.0066 | < 0.001 | 0.0651 | -- | **2.46** | **4.73** |
| | GW-074926-3912-CB-DUP | 3/9/2012 | (Duplicate) | **0.0234** | 0.0056 | < 0.001 | 0.058 | -- | -- | -- |
| | GW-074926-060712-CB-MW-4 | 6/7/2012 | (orig) | **0.044** | 0.0245 | < 0.001 | 0.303 | -- | **2.07** | **4.02** |
| | GW-074926-060712-CB-DUP | 6/7/2012 | (Duplicate) | **0.026** | 0.0124 | < 0.001 | 0.155 | -- | -- | -- |
| | GW-074926-091912-JP-MW-4 | 9/19/2012 | (orig) | 0.0029 | 0.0048 | < 0.001 | 0.0576 | -- | **1.93** | **4.5** |
| | GW-074926-091912-JP-DUP | 9/19/2012 | (Duplicate) | 0.0028 | 0.0045 | < 0.001 | 0.0551 | -- | -- | -- |
| | GW-074926-121312-CM-MW-4 | 12/13/2012 | (orig) | **0.0941** | 0.0399 | < 0.002 | 0.385 | -- | **2.92** | **4.9** |
| | GW-074926-121312-CM-DUP | 12/13/2012 | (Duplicate) | **0.197** | 0.0712 | < 0.001 | 0.55 | -- | -- | -- |
| | GW-074926-032012-CM-MW-4 | 3/20/2013 | (orig) | 0.0035 | 0.002 | < 0.001 | 0.0211 | -- | **1.82** | **4.37** |
| | GW-074926-032012-CM-DUP | 3/20/2013 | (Duplicate) | 0.0034 | 0.0022 | < 0.001 | 0.0212 | -- | -- | -- |
| | GW-074926-061213-JR-MW4 | 6/12/2013 | (orig) | **0.0588** | 0.0509 | < 0.005 | 0.545 | -- | **1.53** | **4.29** |
| | GW-074926-061213-JR-DUP | 6/12/2013 | (Duplicate) | **0.0215** | 0.0213 | < 0.001 | 0.218 | -- | -- | -- |
| | GW-074926-091113-CM-MW4 | 9/11/2013 | (orig) | **0.0166** | 0.0231 | < 0.001 | 0.226 | -- | **3.1** | **4.35** |
| | GW-074926-091113-CM-DUP | 9/11/2013 | (Duplicate) | **0.0156** | 0.0162 | < 0.001 | 0.158 | -- | -- | -- |
| | GW-074926-121313-CM-MW-4 | 12/13/2013 | (orig) | **0.0362** | 0.0199 | < 0.001 | 0.169 | -- | **2.7** | **4.8** |
| | GW-074926-121313-CM-DUP | 12/13/2013 | (Duplicate) | **0.0357** | 0.0185 | < 0.001 | 0.16 | -- | -- | -- |
| | GW-074926-031914-CK-MW-4 | 3/19/2014 | (orig) | < 0.001 | < 0.001 | < 0.001 | 0.0046 | -- | **1.33** | **4.19** |
| | GW-074926-031914-CK-DUP | 3/19/2014 | (Duplicate) | < 0.001 | < 0.001 | < 0.001 | 0.0049 | -- | -- | -- |
| | GW-074926-061714-CK-MW-4 | 6/17/2014 | (orig) | 0.0069 | < 0.001 | < 0.001 | < 0.003 | -- | **2.68** | **4.01** |
| | GW-074926-061714-CK-DUP | 6/17/2014 | (Duplicate) | 0.0063 | < 0.001 | < 0.001 | < 0.003 | -- | -- | -- |
| | GW-074926-091814-CB-MW-4 | 9/18/2014 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | **3.43** | **4.63** |
| | GW-074926-091814-CB-DUP | 9/18/2014 | (Duplicate) | 0.0018 | < 0.001 | < 0.001 | < 0.003 | -- | -- | -- |
| | GW-074926-121814-CM-MW-4 | 12/18/2014 | (orig) | **0.0398** | 0.0062 | < 0.001 | 0.0486 | -- | **4.02** | **4.46** |
| | GW-074926-121814-CM-DUP | 12/18/2014 | (Duplicate) | **0.0296** | 0.0048 | < 0.001 | 0.0354 | -- | -- | -- |
| | GW-074926-031915-CM-MW-4 | 3/19/2015 | (orig) | 0.0012 | < 0.001 | < 0.001 | < 0.003 | -- | **1.57** | **4.02** |
| | GW-074926-031915-CM-DUP | 3/19/2015 | (Duplicate) | 0.0011 | < 0.001 | < 0.001 | < 0.003 | -- | -- | -- |
| | GW-074926-061815-CB-MW-4 | 6/18/2015 | (orig) | **0.067** | 0.0102 | < 0.001 | 0.0563 | -- | **3.02** | **4.35** |
| | GW-074926-091715-CK-MW-4 | 9/17/2015 | (orig) | **0.0319** | 0.0297 | < 0.001 | 0.178 | -- | **3.03** | **3.75** |
| | GW-074926-091715-CK-DUP | 11/29/2016 | (Duplicate) | **0.0318** | 0.027 | < 0.001 | 0.162 | -- | -- | -- |
| | GW-074926-12315-CB-MW-4 | 12/3/2015 | (orig) | **0.0676** | 0.0526 | < 0.01 | 0.354 | -- | **4.34** | **4.12** |
| | GW-074926-12315-CB-DUP | 12/3/2015 | (Duplicate) | **0.0489** | 0.0396 | < 0.01 | 0.263 | -- | -- | -- |
| | GW-074926-033116-CM-MW-4 | 3/31/2016 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | 64.6 | **1.44** | **3.9** |
| | GW-074926-062016-SP-MW-4 | 6/20/2016 | (orig) | **0.0428** | 0.0112 | <0.001 | 0.0397 | 154 | **4.88** | **3.87** |
| | GW-074926-090716-SP-MW-4 | 9/7/2016 | (orig) | 0.0081 | < 0.001 | < 0.001 | < 0.003 | 145 | **4.01** | **3.84** |
| | GW-074926-112916-SP-MW-4 | 11/29/2016 | (orig) | **0.0346** | 0.0077 | < 0.001 | 0.0237 | 72.8 | **4.31** | **3.88** |
| | GW-074926-030917-CN-MW-4 | 3/9/2017 | (orig) | <0.001 | <0.001 | <0.001 | <0.003 | -- | <0.050 | **3.06** |
| | GW-074926-061517-CN-MW-4 | 6/15/2017 | (orig) | **0.0224** | 0.0045 | <0.001 | 0.0206 | -- | **15.5** | **11.1** |
| | GW-11145982-092717-SP-MW-4 | 9/27/2017 | (orig) | **0.0131** | 0.0043 | <0.001 | 0.0108 | -- | **22.7** | **7.68** |
| | GW-11145982-120517-SP-MW-4 | 12/5/2017 | (orig) | **0.0247** | 0.0074 | <0.001 | 0.0161 | -- | **21.1** | **6.2** |

Table 4

Groundwater Analytical Results Summary
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

| *Well ID* | *Sample ID* | *Date* | *Sample Type* | *Benzene (mg/L)* | *Ethylbenzene (mg/L)* | *Toluene (mg/L)* | *Xylenes (total) (mg/L)* | *Sulfate (mg/L)* | *Iron (dissolved) (mg/L)* | *Manganese (dissolved) (mg/L)* |
|---|---|---|---|---|---|---|---|---|---|---|
| ***NMWQCC Groundwater Quality Standards*** | | | | ***0.01*** | ***0.75*** | ***0.75*** | ***0.62*** | ***600*** | ***1*** | ***0.2*** |
| MW-5 | GW-074926-091715-CK-MW-5 | 9/17/2015 | (orig) | **0.0182** | 0.571 | < 0.001 | **4.95** | -- | **2.72** | **2.94** |
| | GW-074926-12315-CB-MW-5 | 12/3/2015 | (orig) | **0.128** | **1.15** | < 0.001 | **12.4** | -- | **20.9** | **0.366** |
| | GW-074926-033116-CM-MW-5 | 3/31/2016 | (orig) | < 0.010 | 0.101 | < 0.01 | **0.936** | 118 | **2.06** | **2.18** |
| | GW-074926-033116-CM-DUP | 3/31/2016 | (Duplicate) | < 0.010 | 0.136 | < 0.01 | **1.26** | -- | **--** | **--** |
| | GW-074926-062016-SP-MW-5 | 6/20/2016 | (orig) | **0.0404** | 0.16 | < 0.025 | **2.48** | 129 | **6.48** | **2.68** |
| | GW-074926-090716-SP-MW-5 | 9/7/2016 | (orig) | **0.0229** | 0.332 | < 0.01 | **3.45** | 104 | **4.6** | **2.07** |
| | GW-074926-090716-SP-DUP | 9/7/2016 | (Duplicate) | **0.0216** | 0.393 | < 0.010 | **4.46** | -- | **--** | **--** |
| | | 10/26/2016 | ISCO Injection-15% PersulfOx solution | | | | | | | |
| | GW-074926-030917-CN-MW-5 | 3/9/2017 | (orig) | **0.0865** | 0.267 | <0.010 | **3.65** | -- | **24.6** | **11.8** |
| | GW-074926-061517-CN-MW-5 | 6/15/2017 | (orig) | **0.0369** | 0.0956 | <0.010 | 0.533 | -- | **7.43** | **6.26** |
| | GW-11145982-120517-SP-MW-5 | 12/5/2017 | (orig) | **0.0562** | 0.51 | <0.010 | **5.95** | -- | **10.3** | **3.89** |
| | GW-11145982-120517-SP-DUP | 12/5/17 | (Duplicate) | **0.05** | 0.444 | <0.010 | **5.97** | -- | -- | -- |
| DW-1 | DW-1 | 12/16/2009 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.001 | -- | -- | -- |
| | RS-74926-062411-CB-01 | 6/24/2011 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | -- | -- |
| | GW-074926-072712-JK-DW-17 | 7/27/2012 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | -- | -- |
| | DW-074926-061213-JR-32 | 6/12/2013 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | -- | -- |
| | -- | 12/18/2014 | Attempt to contact landowner regarding well sampling. No response. | | | | | | | |
| | GW-074926-061815-CB-DOM-32 | 6/18/2015 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | -- | -- |
| | GW-074926-062016-SP-DOM1 | 6/20/2016 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | -- | -- |
| | GW-11145982-092717-SP-32 | 9/27/2017 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | -- | -- |
| DW-2 | #34 | 6/10/2010 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.001 | -- | -- | -- |
| | Domestic #34 | 3/17/2011 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.001 | -- | -- | -- |
| | GW-074926-061712-CB-DW34 | 6/7/2012 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | -- | -- |
| | DW-074926-061213-JR-34 | 6/12/2013 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | -- | -- |
| | -- | 12/18/2014 | Attempt to sample well but landowner had shut well in for the winter months. | | | | | | | |
| | GW-074926-061815-CB-DOM-34 | 6/18/2015 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | -- | -- |
| | GW-074926-062016-SP-DOM2 | 6/20/2016 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | -- | -- |
| | GW-11145982-092717-SP-34 | 9/27/2017 | (orig) | < 0.001 | < 0.001 | < 0.001 | < 0.003 | -- | -- | -- |

Notes:

1. MW = monitoring well
2. NMWQCC = New Mexico Water Quality Control Commission
3. Constituents in **BOLD** are in excess of NMWQCC groundwater quality standards
4. mg/L = milligrams per liter (parts per million)
5. < 1.0 = Below laboratory detection limit of 1.0 mg/L
6. ND = not detected
7. -- = not analyzed

# Appendix A
# Groundwater Laboratory Analytical Reports

**Pace Analytical Services, LLC**
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

March 24, 2017

Christine Mathews
GHD Services, Inc.
6212 Indian School Rd. NE St2
Albuquerque, NM 87110

RE: Project: 074926 COP Flora Vista No1
Pace Project No.: 60239506

Dear Christine Mathews:
Enclosed are the analytical results for sample(s) received by the laboratory on March 10, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Spiller

Alice Spiller
alice.spiller@pacelabs.com
(913)563-1409
Project Manager

Enclosures

cc: Angela Bown, GHD Services, Inc,
Jeffrey Walker, GHD Services, Inc

**Pace Analytical Services, LLC**
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

## CERTIFICATIONS

Project: 074926 COP Flora Vista No1
Pace Project No.: 60239506

**Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 15-016-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

**Pace Analytical Services, LLC**
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Lenexa, KS 66219
(913)599-5665

## SAMPLE SUMMARY

Project: 074926 COP Flora Vista No1
Pace Project No.: 60239506

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| **60239506001** | **GW-074926-030917-CN-MW-3** | Water | 03/09/17 12:32 | 03/10/17 09:10 |
| **60239506002** | **GW-074926-030917-CN-MW-4** | Water | 03/09/17 12:37 | 03/10/17 09:10 |
| **60239506003** | **GW-074926-030917-CN-MW-5** | Water | 03/09/17 12:04 | 03/10/17 09:10 |

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## SAMPLE ANALYTE COUNT

Project: 074926 COP Flora Vista No1
Pace Project No.: 60239506

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|---|---|---|---|---|---|
| **60239506001** | **GW-074926-030917-CN-MW-3** | EPA 6010 | ZBM | 2 | PASI-K |
| **60239506002** | **GW-074926-030917-CN-MW-4** | EPA 6010 | SMW, ZBM | 2 | PASI-K |
| | | EPA 8260 | JTK | 8 | PASI-K |
| **60239506003** | **GW-074926-030917-CN-MW-5** | EPA 6010 | ZBM | 2 | PASI-K |
| | | EPA 8260 | JTK | 8 | PASI-K |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

# PROJECT NARRATIVE

Project: 074926 COP Flora Vista No1
Pace Project No.: 60239506

**Method:** **EPA 6010**
**Description:** 6010 MET ICP, Dissolved
**Client:** GHD Services_COP NM
**Date:** March 24, 2017

**General Information:**
3 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**
The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**
All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**
All criteria were within method requirements with any exceptions noted below.

**Method Blank:**
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**
All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

**Pace Analytical Services, LLC**
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Lenexa, KS 66219
(913)599-5665

# PROJECT NARRATIVE

Project: 074926 COP Flora Vista No1
Pace Project No.: 60239506

**Method:** **EPA 8260**
**Description:** 8260 MSV UST, Water
**Client:** GHD Services_COP NM
**Date:** March 24, 2017

**General Information:**
2 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**
The samples were analyzed within the method required hold times with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**
All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**
All criteria were within method requirements with any exceptions noted below.

**Internal Standards:**
All internal standards were within QC limits with any exceptions noted below.

**Surrogates:**
All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**
All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 468961

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

**Additional Comments:**

This data package has been reviewed for quality and completeness and is approved for release.

**Pace Analytical Services, LLC**
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Lenexa, KS 66219
(913)599-5665

## ANALYTICAL RESULTS

Project: 074926 COP Flora Vista No1
Pace Project No.: 60239506

**Sample: GW-074926-030917-CN-MW-3** **Lab ID: 60239506001** Collected: 03/09/17 12:32 Received: 03/10/17 09:10 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010 | | | | | | | |
| Iron, Dissolved | **878** | ug/L | 250 | 5 | 03/14/17 13:00 | 03/16/17 14:07 | 7439-89-6 | |
| Manganese, Dissolved | **904** | ug/L | 25.0 | 5 | 03/14/17 13:00 | 03/16/17 14:07 | 7439-96-5 | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
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Lenexa, KS 66219
(913)599-5665

## ANALYTICAL RESULTS

Project: 074926 COP Flora Vista No1
Pace Project No.: 60239506

**Sample: GW-074926-030917-CN-MW-4** **Lab ID: 60239506002** Collected: 03/09/17 12:37 Received: 03/10/17 09:10 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010 | | | | | | | |
| Iron, Dissolved | ND | ug/L | 50.0 | 1 | 03/14/17 13:00 | 03/20/17 13:41 | 7439-89-6 | |
| Manganese, Dissolved | **3060** | ug/L | 25.0 | 5 | 03/14/17 13:00 | 03/16/17 14:10 | 7439-96-5 | |
| **8260 MSV UST, Water** | Analytical Method: EPA 8260 | | | | | | | |
| Benzene | ND | ug/L | 1.0 | 1 | | 03/15/17 20:48 | 71-43-2 | |
| Ethylbenzene | ND | ug/L | 1.0 | 1 | | 03/15/17 20:48 | 100-41-4 | |
| Toluene | ND | ug/L | 1.0 | 1 | | 03/15/17 20:48 | 108-88-3 | |
| Xylene (Total) | ND | ug/L | 3.0 | 1 | | 03/15/17 20:48 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 102 | % | 80-108 | 1 | | 03/15/17 20:48 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 95 | % | 80-113 | 1 | | 03/15/17 20:48 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 100 | % | 80-114 | 1 | | 03/15/17 20:48 | 17060-07-0 | |
| Preservation pH | **1.0** | | 1.0 | 1 | | 03/15/17 20:48 | | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

## ANALYTICAL RESULTS

Project: 074926 COP Flora Vista No1
Pace Project No.: 60239506

**Sample: GW-074926-030917-CN-MW-5** **Lab ID: 60239506003** Collected: 03/09/17 12:04 Received: 03/10/17 09:10 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010 | | | | | | | |
| Iron, Dissolved | **24600** | ug/L | 250 | 5 | 03/14/17 13:00 | 03/16/17 14:12 | 7439-89-6 | |
| Manganese, Dissolved | **11800** | ug/L | 25.0 | 5 | 03/14/17 13:00 | 03/16/17 14:12 | 7439-96-5 | |
| **8260 MSV UST, Water** | Analytical Method: EPA 8260 | | | | | | | |
| Benzene | **86.5** | ug/L | 10.0 | 10 | | 03/15/17 21:03 | 71-43-2 | |
| Ethylbenzene | **267** | ug/L | 10.0 | 10 | | 03/15/17 21:03 | 100-41-4 | |
| Toluene | ND | ug/L | 10.0 | 10 | | 03/15/17 21:03 | 108-88-3 | |
| Xylene (Total) | **3650** | ug/L | 30.0 | 10 | | 03/15/17 21:03 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 101 | % | 80-108 | 10 | | 03/15/17 21:03 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 92 | % | 80-113 | 10 | | 03/15/17 21:03 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 100 | % | 80-114 | 10 | | 03/15/17 21:03 | 17060-07-0 | |
| Preservation pH | **1.0** | | 1.0 | 10 | | 03/15/17 21:03 | | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

## QUALITY CONTROL DATA

Project: 074926 COP Flora Vista No1
Pace Project No.: 60239506

QC Batch: 468661 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60239506001, 60239506002, 60239506003

METHOD BLANK: 1918472 Matrix: Water
Associated Lab Samples: 60239506001, 60239506002, 60239506003

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Iron, Dissolved | ug/L | ND | 50.0 | 03/15/17 14:22 | |
| Manganese, Dissolved | ug/L | ND | 5.0 | 03/15/17 14:22 | |

LABORATORY CONTROL SAMPLE: 1918473

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Iron, Dissolved | ug/L | 10000 | 10100 | 101 | 80-120 | |
| Manganese, Dissolved | ug/L | 1000 | 993 | 99 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1918474 1918475

| Parameter | Units | 60239528001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Iron, Dissolved | ug/L | 90.8 | 10000 | 10000 | 10500 | 10600 | 104 | 105 | 75-125 | 1 | 20 | |
| Manganese, Dissolved | ug/L | 962 | 1000 | 1000 | 2010 | 2090 | 104 | 113 | 75-125 | 4 | 20 | |

**Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.**

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

## QUALITY CONTROL DATA

Project: 074926 COP Flora Vista No1
Pace Project No.: 60239506

QC Batch: 468961
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60239506002, 60239506003

METHOD BLANK: 1919470
Matrix: Water
Associated Lab Samples: 60239506002, 60239506003

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Benzene | ug/L | ND | 1.0 | 03/15/17 18:35 | |
| Ethylbenzene | ug/L | ND | 1.0 | 03/15/17 18:35 | |
| Toluene | ug/L | ND | 1.0 | 03/15/17 18:35 | |
| Xylene (Total) | ug/L | ND | 3.0 | 03/15/17 18:35 | |
| 1,2-Dichloroethane-d4 (S) | % | 97 | 80-114 | 03/15/17 18:35 | |
| 4-Bromofluorobenzene (S) | % | 93 | 80-113 | 03/15/17 18:35 | |
| Toluene-d8 (S) | % | 101 | 80-108 | 03/15/17 18:35 | |

LABORATORY CONTROL SAMPLE: 1919471

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Benzene | ug/L | 20 | 19.7 | 98 | 82-115 | |
| Ethylbenzene | ug/L | 20 | 21.7 | 109 | 83-112 | |
| Toluene | ug/L | 20 | 21.2 | 106 | 78-113 | |
| Xylene (Total) | ug/L | 60 | 67.8 | 113 | 83-114 | |
| 1,2-Dichloroethane-d4 (S) | % | | | 95 | 80-114 | |
| 4-Bromofluorobenzene (S) | % | | | 95 | 80-113 | |
| Toluene-d8 (S) | % | | | 103 | 80-108 | |

**Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.**

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

# QUALIFIERS

Project: 074926 COP Flora Vista No1
Pace Project No.: 60239506

## DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

## LABORATORIES

| | |
|---|---|
| PASI-K | Pace Analytical Services - Kansas City |

## BATCH QUALIFIERS

Batch: 468961

| | |
|---|---|
| [M5] | A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume. |

**Pace Analytical Services, LLC**
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074926 COP Flora Vista No1
Pace Project No.: 60239506

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|---|---|---|---|---|---|
| **60239506001** | **GW-074926-030917-CN-MW-3** | EPA 3010 | 468661 | EPA 6010 | 468741 |
| **60239506002** | **GW-074926-030917-CN-MW-4** | EPA 3010 | 468661 | EPA 6010 | 468741 |
| **60239506003** | **GW-074926-030917-CN-MW-5** | EPA 3010 | 468661 | EPA 6010 | 468741 |
| **60239506002** | **GW-074926-030917-CN-MW-4** | EPA 8260 | 468961 | | |
| **60239506003** | **GW-074926-030917-CN-MW-5** | EPA 8260 | 468961 | | |

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**Sample Condition Upon Receipt**
**ESI Tech Spec Client**

**WO# : 60239506**

60239506

Client Name: GHD COP

**Courier:** FedEx ☒ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

**Tracking #:** 7044 6660 1892 Pace Shipping Label Used? Yes ☐ No ☐

**Custody Seal on Cooler/Box Present:** Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

**Packing Material:** Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☐

**Thermometer Used:** CF +1.5 T-266 / CF +0.9 T-239 **Type of Ice:** (Wet) Blue None

**Cooler Temperature (°C):** **As-read** 2.0 **Corr. Factor** CF +1.5 CF +0.9 **Corrected** 3.5

**Date and initials of person examining contents:** JG 3/10/17

Temperature should be above freezing to 6°C

| | | |
|---|---|---|
| Chain of Custody present: | ☒Yes ☐No ☐N/A | |
| Chain of Custody relinquished: | ☒Yes ☐No ☐N/A | |
| Samples arrived within holding time: | ☒Yes ☐No ☐N/A | |
| **Short Hold Time analyses (<72hr):** | ☐Yes ☒No ☐N/A | |
| **Rush Turn Around Time requested:** | ☐Yes ☒No ☐N/A | |
| Sufficient volume: | ☒Yes ☐No ☐N/A | |
| Correct containers used: | ☒Yes ☐No ☐N/A | |
| Pace containers used: | ☒Yes ☐No ☐N/A | |
| Containers intact: | ☒Yes ☐No ☐N/A | |
| Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs? | ☐Yes ☐No ☒N/A | |
| Filtered volume received for dissolved tests? | ☒Yes ☐No ☐N/A | 1336 |
| Sample labels match COC: Date / time / ID / analyses | ☒Yes ☐No ☐N/A | |
| Samples contain multiple phases? Matrix: WT | ☐Yes ☒No ☐N/A | |
| Containers requiring pH preservation in compliance? ($HNO_3$, $H_2SO_4$, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) | ☒Yes ☐No ☐N/A | |
| Cyanide water sample checks: ☒N/A<br>Lead acetate strip turns dark? (Record only)<br>Potassium iodide test strip turns blue/purple? (Preserve) | ☐Yes ☐No<br>☐Yes ☐No | |
| Trip Blank present: | ☐Yes ☒No ☐N/A | |
| Headspace in VOA vials ( >6mm): | ☐Yes ☒No ☐N/A | |
| Samples from USDA Regulated Area: State: | ☐Yes ☐No ☒N/A | |
| Additional labels attached to 5035A / TX1005 vials in the field? | ☐Yes ☐No ☒N/A | |

**Client Notification/ Resolution:** Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Alice Date: 03/13/17

**Temp Log**: Record start and finish times when unpacking cooler, if >20 min, recheck sample temps.

| | |
|---|---|
| Start: 1335 | Start: |
| End: 1341 | End: |
| Temp: | Temp: |

# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

| Section A Required Client Information: | | Section B Required Project Information: | Section C Invoice Information: | |
|---|---|---|---|---|
| Company: | GHD Services_COP NM | Report To: Christine Mathews | Attention: | |
| Address: | 6212 Indian School Rd. NE St2 | Copy To: | Company Name: | |
| Albuquerque, NM 87110 | | | Address: | Regulatory Agency |
| Email: | christine.mathews@ghd.com | Purchase Order #: | Pace Quote: | |
| Phone: 505-884-0672 | Fax | Project Name: 074926 COP Flora Vista Nc1 | Pace Project Manager: alice.spiller@pacelabs.com, | State / Location |
| Requested Due Date: | | Project #: | Pace Profile #: 8644, line 22 | NM |

| ITEM # | SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique) | MATRIX CODE (see valid codes to left) | SAMPLE TYPE (G=GRAB C=COMP) | COLLECTED START DATE | COLLECTED START TIME | COLLECTED END DATE | COLLECTED END TIME | SAMPLE TEMP AT COLLECTION | # OF CONTAINERS | Preservatives: Unpreserved | H2SO4 | HNO3 | HCl | NaOH | Na2S2O3 | Methanol | Other | Analyses Test: 8260 BTEX | Dissolved Fe, Mn-field filtered | Residual Chlorine (Y/N) | 07239506 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW-074926-030917-CN-MW-3 | WT | G | 3-9-17 | 1232 | | | | 1 | | | | | | | | | | ✓ | | 001 |
| 2 | GW-074926-030917-CN-MW-4 | WT | G | 3-9-17 | 1237 | | | | 4 | | | | | | | | | ✓ | ✓ | | 002 |
| 3 | GW-074926-030917-CN-MW-5 | WT | G | 3-9-17 | 1204 | | | | 4 | | | | | | | | | ✓ | ✓ | | 003 |
| 4 | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | |

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

| ADDITIONAL COMMENTS | RELINQUISHED BY / AFFILIATION | DATE | TIME | ACCEPTED BY / AFFILIATION | DATE | TIME | SAMPLE CONDITIONS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | [signature] | 3-9-17 | 1500 | [signature] | 3/10/17 | 0910 | 3.5 | Y | Y | Y |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

| SAMPLER NAME AND SIGNATURE | | | | | |
|---|---|---|---|---|---|
| PRINT Name of SAMPLER: | Charles Nethaugh | | | | |
| SIGNATURE of SAMPLER: | [signature] | DATE Signed: | 3-9-17 | TEMP in C | Received on Ice (Y/N) / Custody Sealed Cooler (Y/N) / Samples Intact (Y/N) |

**Pace Analytical Services, LLC**
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

June 30, 2017

Christine Mathews
GHD Services, Inc.
6212 Indian School Rd. NE St2
Albuquerque, NM 87110

RE: Project: 074926 COP FLORA VISTA NO1
Pace Project No.: 60246796

Dear Christine Mathews:
Enclosed are the analytical results for sample(s) received by the laboratory on June 17, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Spiller

Alice Spiller
alice.spiller@pacelabs.com
(913)563-1409
Project Manager

Enclosures

cc: Angela Bown, GHD Services, Inc,
Jeffrey Walker, GHD Services, Inc

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## CERTIFICATIONS

Project: 074926 COP FLORA VISTA NO1
Pace Project No.: 60246796

**Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 15-016-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

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## SAMPLE SUMMARY

Project: 074926 COP FLORA VISTA NO1
Pace Project No.: 60246796

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| **60246796001** | **GW-074926-061517-CN-MW-1** | Water | 06/15/17 16:05 | 06/17/17 08:35 |
| **60246796002** | **GW-074926-061517-CN-MW-3** | Water | 06/15/17 16:25 | 06/17/17 08:35 |
| **60246796003** | **GW-074926-061517-CN-MW-4** | Water | 06/15/17 16:35 | 06/17/17 08:35 |
| **60246796004** | **GW-074926-061517-CN-MW-5** | Water | 06/15/17 16:48 | 06/17/17 08:35 |
| **60246796005** | **TRIP BLANK** | Water | 06/15/17 16:05 | 06/17/17 08:35 |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
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## SAMPLE ANALYTE COUNT

Project: 074926 COP FLORA VISTA NO1
Pace Project No.: 60246796

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|---|---|---|---|---|---|
| **60246796001** | **GW-074926-061517-CN-MW-1** | EPA 8260 | EAG | 8 | PASI-K |
| **60246796002** | **GW-074926-061517-CN-MW-3** | EPA 6010 | TDS | 2 | PASI-K |
| **60246796003** | **GW-074926-061517-CN-MW-4** | EPA 6010 | TDS | 2 | PASI-K |
| | | EPA 8260 | EAG | 8 | PASI-K |
| **60246796004** | **GW-074926-061517-CN-MW-5** | EPA 6010 | TDS | 2 | PASI-K |
| | | EPA 8260 | EAG | 8 | PASI-K |

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# PROJECT NARRATIVE

Project: 074926 COP FLORA VISTA NO1
Pace Project No.: 60246796

**Method:** **EPA 6010**
**Description:** 6010 MET ICP, Dissolved
**Client:** GHD Services_COP NM
**Date:** June 30, 2017

**General Information:**
3 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**
The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**
All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**
All criteria were within method requirements with any exceptions noted below.

**Method Blank:**
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**
All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

**Pace Analytical Services, LLC**
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# PROJECT NARRATIVE

Project: 074926 COP FLORA VISTA NO1
Pace Project No.: 60246796

**Method:** **EPA 8260**
**Description:** 8260 MSV UST, Water
**Client:** GHD Services_COP NM
**Date:** June 30, 2017

**General Information:**
3 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**
The samples were analyzed within the method required hold times with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**
All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**
All criteria were within method requirements with any exceptions noted below.

**Internal Standards:**
All internal standards were within QC limits with any exceptions noted below.

**Surrogates:**
All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**
All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 482825

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

**Additional Comments:**

This data package has been reviewed for quality and completeness and is approved for release.

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## ANALYTICAL RESULTS

Project: 074926 COP FLORA VISTA NO1
Pace Project No.: 60246796

**Sample: GW-074926-061517-CN-MW-1** **Lab ID: 60246796001** Collected: 06/15/17 16:05 Received: 06/17/17 08:35 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV UST, Water** | Analytical Method: EPA 8260 | | | | | | | |
| Benzene | **37.1** | ug/L | 1.0 | 1 | | 06/28/17 04:43 | 71-43-2 | |
| Ethylbenzene | **40.4** | ug/L | 1.0 | 1 | | 06/28/17 04:43 | 100-41-4 | |
| Toluene | ND | ug/L | 1.0 | 1 | | 06/28/17 04:43 | 108-88-3 | |
| Xylene (Total) | **157** | ug/L | 3.0 | 1 | | 06/28/17 04:43 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 103 | % | 80-108 | 1 | | 06/28/17 04:43 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 98 | % | 80-113 | 1 | | 06/28/17 04:43 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 101 | % | 80-114 | 1 | | 06/28/17 04:43 | 17060-07-0 | |
| Preservation pH | **1.0** | | 1.0 | 1 | | 06/28/17 04:43 | | |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 074926 COP FLORA VISTA NO1
Pace Project No.: 60246796

**Sample: GW-074926-061517-CN-MW-3** **Lab ID: 60246796002** Collected: 06/15/17 16:25 Received: 06/17/17 08:35 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010 | | | | | | | |
| Iron, Dissolved | ND | ug/L | 50.0 | 1 | 06/27/17 10:05 | 06/29/17 11:15 | 7439-89-6 | |
| Manganese, Dissolved | ND | ug/L | 5.0 | 1 | 06/27/17 10:05 | 06/29/17 11:15 | 7439-96-5 | |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 074926 COP FLORA VISTA NO1
Pace Project No.: 60246796

**Sample: GW-074926-061517-CN-MW-4** **Lab ID: 60246796003** Collected: 06/15/17 16:35 Received: 06/17/17 08:35 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010 | | | | | | | |
| Iron, Dissolved | **15500** | ug/L | 50.0 | 1 | 06/27/17 10:05 | 06/29/17 11:19 | 7439-89-6 | |
| Manganese, Dissolved | **11100** | ug/L | 5.0 | 1 | 06/27/17 10:05 | 06/29/17 11:19 | 7439-96-5 | |
| **8260 MSV UST, Water** | Analytical Method: EPA 8260 | | | | | | | |
| Benzene | **22.4** | ug/L | 1.0 | 1 | | 06/28/17 04:57 | 71-43-2 | |
| Ethylbenzene | **4.5** | ug/L | 1.0 | 1 | | 06/28/17 04:57 | 100-41-4 | |
| Toluene | ND | ug/L | 1.0 | 1 | | 06/28/17 04:57 | 108-88-3 | |
| Xylene (Total) | **20.6** | ug/L | 3.0 | 1 | | 06/28/17 04:57 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 101 | % | 80-108 | 1 | | 06/28/17 04:57 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 104 | % | 80-113 | 1 | | 06/28/17 04:57 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 98 | % | 80-114 | 1 | | 06/28/17 04:57 | 17060-07-0 | |
| Preservation pH | **1.0** | | 1.0 | 1 | | 06/28/17 04:57 | | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
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## ANALYTICAL RESULTS

Project: 074926 COP FLORA VISTA NO1
Pace Project No.: 60246796

**Sample: GW-074926-061517-CN-MW-5** **Lab ID: 60246796004** Collected: 06/15/17 16:48 Received: 06/17/17 08:35 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010 | | | | | | | |
| Iron, Dissolved | **7430** | ug/L | 50.0 | 1 | 06/27/17 10:05 | 06/29/17 11:23 | 7439-89-6 | |
| Manganese, Dissolved | **6260** | ug/L | 5.0 | 1 | 06/27/17 10:05 | 06/29/17 11:23 | 7439-96-5 | |
| **8260 MSV UST, Water** | Analytical Method: EPA 8260 | | | | | | | |
| Benzene | **36.9** | ug/L | 10.0 | 10 | | 06/28/17 05:11 | 71-43-2 | |
| Ethylbenzene | **95.6** | ug/L | 10.0 | 10 | | 06/28/17 05:11 | 100-41-4 | |
| Toluene | ND | ug/L | 10.0 | 10 | | 06/28/17 05:11 | 108-88-3 | |
| Xylene (Total) | **533** | ug/L | 30.0 | 10 | | 06/28/17 05:11 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 105 | % | 80-108 | 10 | | 06/28/17 05:11 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 101 | % | 80-113 | 10 | | 06/28/17 05:11 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 102 | % | 80-114 | 10 | | 06/28/17 05:11 | 17060-07-0 | |
| Preservation pH | **1.0** | | 1.0 | 10 | | 06/28/17 05:11 | | |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
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(913)599-5665

## QUALITY CONTROL DATA

Project: 074926 COP FLORA VISTA NO1
Pace Project No.: 60246796

QC Batch: 482717 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60246796002, 60246796003, 60246796004

METHOD BLANK: 1977606 Matrix: Water
Associated Lab Samples: 60246796002, 60246796003, 60246796004

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Iron, Dissolved | ug/L | ND | 50.0 | 06/29/17 10:30 | |
| Manganese, Dissolved | ug/L | ND | 5.0 | 06/29/17 10:30 | |

LABORATORY CONTROL SAMPLE: 1977607

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Iron, Dissolved | ug/L | 10000 | 9970 | 100 | 80-120 | |
| Manganese, Dissolved | ug/L | 1000 | 1030 | 103 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1977608 1977609

| Parameter | Units | 60246795004 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Iron, Dissolved | ug/L | ND | 10000 | 10000 | 9890 | 9860 | 98 | 98 | 75-125 | 0 | 20 | |
| Manganese, Dissolved | ug/L | 0.39 mg/L | 1000 | 1000 | 1400 | 1390 | 100 | 100 | 75-125 | 0 | 20 | |

**Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.**

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
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Lenexa, KS 66219
(913)599-5665

## QUALITY CONTROL DATA

Project: 074926 COP FLORA VISTA NO1
Pace Project No.: 60246796

QC Batch: 482825 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60246796001, 60246796003, 60246796004

METHOD BLANK: 1977959 Matrix: Water
Associated Lab Samples: 60246796001, 60246796003, 60246796004

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Benzene | ug/L | ND | 1.0 | 06/28/17 00:28 | |
| Ethylbenzene | ug/L | ND | 1.0 | 06/28/17 00:28 | |
| Toluene | ug/L | ND | 1.0 | 06/28/17 00:28 | |
| Xylene (Total) | ug/L | ND | 3.0 | 06/28/17 00:28 | |
| 1,2-Dichloroethane-d4 (S) | % | 100 | 80-114 | 06/28/17 00:28 | |
| 4-Bromofluorobenzene (S) | % | 105 | 80-113 | 06/28/17 00:28 | |
| Toluene-d8 (S) | % | 104 | 80-108 | 06/28/17 00:28 | |

LABORATORY CONTROL SAMPLE: 1977960

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Benzene | ug/L | 20 | 18.6 | 93 | 82-115 | |
| Ethylbenzene | ug/L | 20 | 19.5 | 98 | 83-112 | |
| Toluene | ug/L | 20 | 18.9 | 95 | 78-113 | |
| Xylene (Total) | ug/L | 60 | 57.7 | 96 | 83-114 | |
| 1,2-Dichloroethane-d4 (S) | % | | | 100 | 80-114 | |
| 4-Bromofluorobenzene (S) | % | | | 100 | 80-113 | |
| Toluene-d8 (S) | % | | | 104 | 80-108 | |

**Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.**

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
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Lenexa, KS 66219
(913)599-5665

# QUALIFIERS

Project: 074926 COP FLORA VISTA NO1
Pace Project No.: 60246796

## DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

## LABORATORIES

PASI-K Pace Analytical Services - Kansas City

## BATCH QUALIFIERS

Batch: 482825

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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(913)599-5665

## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074926 COP FLORA VISTA NO1
Pace Project No.: 60246796

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|---|---|---|---|---|---|
| **60246796002** | **GW-074926-061517-CN-MW-3** | EPA 3010 | 482717 | EPA 6010 | 482862 |
| **60246796003** | **GW-074926-061517-CN-MW-4** | EPA 3010 | 482717 | EPA 6010 | 482862 |
| **60246796004** | **GW-074926-061517-CN-MW-5** | EPA 3010 | 482717 | EPA 6010 | 482862 |
| **60246796001** | **GW-074926-061517-CN-MW-1** | EPA 8260 | 482825 | | |
| **60246796003** | **GW-074926-061517-CN-MW-4** | EPA 8260 | 482825 | | |
| **60246796004** | **GW-074926-061517-CN-MW-5** | EPA 8260 | 482825 | | |

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**Sample Condition Upon Receipt**
**ESI Tech Spec Client**

**WO# : 60246796**

60246796

Client Name: GHD PLG

**Courier:** FedEx ☒ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

**Tracking #:** 7869 0626 1730 Pace Shipping Label Used? Yes ☐ No ☐

**Custody Seal on Cooler/Box Present:** Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

**Packing Material:** Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☐

**Thermometer Used:** CF +2.9 T-266 / (CF +0.2 T-239) **Type of Ice:** (Wet) Blue None

**Cooler Temperature (°C):** **As-read** 2.6 **Corr. Factor** CF +2.9 (CF +0.2) **Corrected** 2.8

**Date and initials of person examining contents:** JBG 12/7/17

Temperature should be above freezing to 6°C

| | | |
|---|---|---|
| Chain of Custody present: | ☒Yes ☐No ☐N/A | |
| Chain of Custody relinquished: | ☒Yes ☐No ☐N/A | |
| Samples arrived within holding time: | ☒Yes ☐No ☐N/A | |
| **Short Hold Time analyses (<72hr):** | ☐Yes ☒No ☐N/A | |
| **Rush Turn Around Time requested:** | ☐Yes ☒No ☐N/A | |
| Sufficient volume: | ☒Yes ☐No ☐N/A | Missing BPSF for MW-1 |
| Correct containers used: | ☒Yes ☐No ☐N/A | |
| Pace containers used: | ☒Yes ☐No ☐N/A | |
| Containers intact: | ☒Yes ☐No ☐N/A | |
| Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs? | ☐Yes ☐No ☒N/A | |
| Filtered volume received for dissolved tests? | ☒Yes ☐No ☐N/A | |
| Sample labels match COC: Date / time / ID / analyses | ☒Yes ☐No ☐N/A | |
| Samples contain multiple phases? Matrix: WT | ☐Yes ☒No ☐N/A | |
| Containers requiring pH preservation in compliance? (HNO3, H2SO4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) | ☒Yes ☐No ☐N/A | |
| Cyanide water sample checks: ☒ N/A<br>Lead acetate strip turns dark? (Record only)<br>Potassium iodide test strip turns blue/purple? (Preserve) | ☐Yes ☐No<br>☐Yes ☐No | |
| Trip Blank present: | ☒Yes ☐No ☐N/A | |
| Headspace in VOA vials ( >6mm): | ☐Yes ☒No ☐N/A | |
| Samples from USDA Regulated Area: State: | ☐Yes ☐No ☒N/A | |
| Additional labels attached to 5035A / TX1005 vials in the field? | ☐Yes ☐No ☒N/A | |

**Client Notification/ Resolution:** Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

**Temp Log:** Record start and finish times when unpacking cooler, if >20 min, recheck sample temps.

| | |
|---|---|
| Start: 1105 | Start: |
| End: 1115 | End: |
| Temp: | Temp: |

Project Manager Review: Alice Date: 12/12/17

# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

| Section A – Required Client Information: | | Section B – Required Project Information: | | Section C – Invoice Information: | |
|---|---|---|---|---|---|
| Company: | GHD Services_COP NM | Report To: | Christine Mathews | Attention: | |
| Address: | 6212 Indian School Rd. NE St2 | Copy To: | | Company Name: | |
| | Albuquerque, NM 87110 | | | Address: | |
| Email: | christine.mathews@ghd.com | Purchase Order #: | | Pace Quote: | |
| Phone: | 505-884-0672 Fax: | Project Name: | 074926 COP Flora Vista No1 | Pace Project Manager: | alice.spiller@pacelabs.com, |
| Requested Due Date: | | Project #: | | Pace Profile #: | 8644, line 22 |

| Regulatory Agency | |
|---|---|
| State / Location | NM |

Requested Analysis Filtered (Y/N)

| ITEM # | SAMPLE ID<br>One Character per box. (A-Z, 0-9 / , -)<br>Sample Ids must be unique | MATRIX CODE (see valid codes to left) | SAMPLE TYPE (G=GRAB C=COMP) | COLLECTED START DATE | COLLECTED START TIME | COLLECTED END DATE | COLLECTED END TIME | SAMPLE TEMP AT COLLECTION | # OF CONTAINERS | Preservatives: Unpreserved | H2SO4 | HNO3 | HCl | NaOH | Na2S2O3 | Methanol | Other | Analyses Test Y/N | 8260 BTEX | Dissolved Fe, Mn-field filtered | Residual Chlorine (Y/N) | 60246796 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW-074926-0615H-GW-MW-1 | WT | G | 6/15/17 | 1605 | | | | 4 | | | 1 | 3 | | | | | X | X | | | (3)DGAH 001 |
| 2 | GW-074926-0615H-GW-MW-3 | | | | 1624 | | | | 1 | | | 1 | | | | | | X | X | | | BP3F 20 002 |
| 3 | GW-074926-0615H-GW-MW-4 | | | | 1635 | | | | 4 | | | 1 | 3 | | | | | X | X | | | 003 |
| 4 | GW-074926-0615H-GW-MW-5 | | | | 1645 | | | | 4 | | | 1 | 3 | | | | | X | X | | | 004 |
| 5 | | | | | | | | | | | | | | | | | | | | | | (3)DGAH NP 005 |
| 6 | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | |

| ADDITIONAL COMMENTS | RELINQUISHED BY / AFFILIATION | DATE | TIME | ACCEPTED BY / AFFILIATION | DATE | TIME | SAMPLE CONDITIONS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 6/16/17 | 16:10 | | 6/17/17 | 0835 | 2.8 | Y | Y | Y |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

| SAMPLER NAME AND SIGNATURE | | | | | |
|---|---|---|---|---|---|
| PRINT Name of SAMPLER: | Charles N Leigh | | TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N) |
| SIGNATURE of SAMPLER: | | DATE Signed: 6-16-17 | | | | |

**Pace Analytical Services, LLC**
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December 20, 2017

Jeff Walker
GHD Services
6121 indian School Rd
Ste 200
Albuquerque, NM 87110

RE: Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60254347

Dear Jeff Walker:
Enclosed are the analytical results for sample(s) received by the laboratory on September 29, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Revised Report Rev_1. Reported Dissolved Iron.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Colleen Clyne for
Alice Spiller
alice.spiller@pacelabs.com
(913)563-1409
Project Manager

Enclosures

cc: Angela Bown, GHD Services
Christine Mathews, GHD Services

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## CERTIFICATIONS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60254347

**Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 17-016-0
Illinois Certification #: 200030
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

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## SAMPLE SUMMARY

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60254347

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| **60254347001** | **GW-11145982-092717-SP-MW-1** | Water | 09/27/17 15:10 | 09/29/17 08:35 |
| **60254347002** | **GW-11145982-092717-SP-MW-2** | Water | 09/27/17 15:30 | 09/29/17 08:35 |
| **60254347003** | **GW-11145982-092717-SP-MW-4** | Water | 09/27/17 15:45 | 09/29/17 08:35 |
| **60254347004** | **GW-11145982-092717-SP-32** | Water | 09/27/17 16:06 | 09/29/17 08:35 |
| **60254347005** | **GW-11145982-092717-SP-34** | Water | 09/27/17 16:11 | 09/29/17 08:35 |
| **60254347006** | **TRIP BLANK** | Water | 09/27/17 15:10 | 09/29/17 08:35 |

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60254347

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|---|---|---|---|---|---|
| **60254347001** | **GW-11145982-092717-SP-MW-1** | EPA 6010 | TDS | 2 | PASI-K |
| | | EPA 8260 | EAG | 8 | PASI-K |
| **60254347002** | **GW-11145982-092717-SP-MW-2** | EPA 6010 | TDS | 2 | PASI-K |
| | | EPA 8260 | PGH | 8 | PASI-K |
| **60254347003** | **GW-11145982-092717-SP-MW-4** | EPA 6010 | TDS | 2 | PASI-K |
| | | EPA 8260 | PGH | 8 | PASI-K |
| **60254347004** | **GW-11145982-092717-SP-32** | EPA 8260 | PGH | 8 | PASI-K |
| **60254347005** | **GW-11145982-092717-SP-34** | EPA 8260 | PGH | 8 | PASI-K |

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## ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60254347

**Sample: GW-11145982-092717-SP-MW-1** **Lab ID: 60254347001** Collected: 09/27/17 15:10 Received: 09/29/17 08:35 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010 | | | | | | | |
| Iron, Dissolved | **24200** | ug/L | 50.0 | 1 | 10/09/17 12:18 | 10/09/17 18:29 | 7439-89-6 | |
| Manganese, Dissolved | **3130** | ug/L | 5.0 | 1 | 10/09/17 12:18 | 10/09/17 18:29 | 7439-96-5 | |
| **8260 MSV UST, Water** | Analytical Method: EPA 8260 | | | | | | | |
| Benzene | **23.1** | ug/L | 1.0 | 1 | | 10/06/17 15:08 | 71-43-2 | |
| Ethylbenzene | **30.6** | ug/L | 1.0 | 1 | | 10/06/17 15:08 | 100-41-4 | |
| Toluene | ND | ug/L | 1.0 | 1 | | 10/06/17 15:08 | 108-88-3 | |
| Xylene (Total) | **118** | ug/L | 3.0 | 1 | | 10/06/17 15:08 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 101 | % | 80-108 | 1 | | 10/06/17 15:08 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 100 | % | 80-113 | 1 | | 10/06/17 15:08 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 100 | % | 80-114 | 1 | | 10/06/17 15:08 | 17060-07-0 | |
| Preservation pH | **1.0** | | 1.0 | 1 | | 10/06/17 15:08 | | |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60254347

**Sample: GW-11145982-092717-SP-MW-2** **Lab ID: 60254347002** Collected: 09/27/17 15:30 Received: 09/29/17 08:35 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010 | | | | | | | |
| Iron, Dissolved | ND | ug/L | 50.0 | 1 | 10/09/17 12:18 | 10/09/17 18:31 | 7439-89-6 | |
| Manganese, Dissolved | **12.6** | ug/L | 5.0 | 1 | 10/09/17 12:18 | 10/09/17 18:31 | 7439-96-5 | |
| **8260 MSV UST, Water** | Analytical Method: EPA 8260 | | | | | | | |
| Benzene | ND | ug/L | 1.0 | 1 | | 10/05/17 04:50 | 71-43-2 | |
| Ethylbenzene | ND | ug/L | 1.0 | 1 | | 10/05/17 04:50 | 100-41-4 | |
| Toluene | ND | ug/L | 1.0 | 1 | | 10/05/17 04:50 | 108-88-3 | |
| Xylene (Total) | ND | ug/L | 3.0 | 1 | | 10/05/17 04:50 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 98 | % | 80-108 | 1 | | 10/05/17 04:50 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 99 | % | 80-113 | 1 | | 10/05/17 04:50 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 102 | % | 80-114 | 1 | | 10/05/17 04:50 | 17060-07-0 | |
| Preservation pH | **1.0** | | 1.0 | 1 | | 10/05/17 04:50 | | |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60254347

**Sample: GW-11145982-092717-SP-MW-4** **Lab ID: 60254347003** Collected: 09/27/17 15:45 Received: 09/29/17 08:35 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010 | | | | | | | |
| Iron, Dissolved | **22700** | ug/L | 50.0 | 1 | 10/09/17 12:18 | 10/09/17 18:34 | 7439-89-6 | |
| Manganese, Dissolved | **7680** | ug/L | 5.0 | 1 | 10/09/17 12:18 | 10/09/17 18:34 | 7439-96-5 | |
| **8260 MSV UST, Water** | Analytical Method: EPA 8260 | | | | | | | |
| Benzene | **13.0** | ug/L | 1.0 | 1 | | 10/05/17 04:36 | 71-43-2 | |
| Ethylbenzene | **4.3** | ug/L | 1.0 | 1 | | 10/05/17 04:36 | 100-41-4 | |
| Toluene | ND | ug/L | 1.0 | 1 | | 10/05/17 04:36 | 108-88-3 | |
| Xylene (Total) | **10.8** | ug/L | 3.0 | 1 | | 10/05/17 04:36 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 104 | % | 80-108 | 1 | | 10/05/17 04:36 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 101 | % | 80-113 | 1 | | 10/05/17 04:36 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 102 | % | 80-114 | 1 | | 10/05/17 04:36 | 17060-07-0 | |
| Preservation pH | **1.0** | | 1.0 | 1 | | 10/05/17 04:36 | | |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60254347

**Sample: GW-11145982-092717-SP-32** **Lab ID: 60254347004** Collected: 09/27/17 16:06 Received: 09/29/17 08:35 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV UST, Water** | Analytical Method: EPA 8260 | | | | | | | |
| Benzene | ND | ug/L | 1.0 | 1 | | 10/05/17 04:08 | 71-43-2 | |
| Ethylbenzene | ND | ug/L | 1.0 | 1 | | 10/05/17 04:08 | 100-41-4 | |
| Toluene | ND | ug/L | 1.0 | 1 | | 10/05/17 04:08 | 108-88-3 | |
| Xylene (Total) | ND | ug/L | 3.0 | 1 | | 10/05/17 04:08 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 102 | % | 80-108 | 1 | | 10/05/17 04:08 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 99 | % | 80-113 | 1 | | 10/05/17 04:08 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 102 | % | 80-114 | 1 | | 10/05/17 04:08 | 17060-07-0 | |
| Preservation pH | **1.0** | | 1.0 | 1 | | 10/05/17 04:08 | | |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60254347

**Sample: GW-11145982-092717-SP-34** **Lab ID: 60254347005** Collected: 09/27/17 16:11 Received: 09/29/17 08:35 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV UST, Water** | Analytical Method: EPA 8260 | | | | | | | |
| Benzene | ND | ug/L | 1.0 | 1 | | 10/05/17 04:22 | 71-43-2 | |
| Ethylbenzene | ND | ug/L | 1.0 | 1 | | 10/05/17 04:22 | 100-41-4 | |
| Toluene | ND | ug/L | 1.0 | 1 | | 10/05/17 04:22 | 108-88-3 | |
| Xylene (Total) | ND | ug/L | 3.0 | 1 | | 10/05/17 04:22 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 97 | % | 80-108 | 1 | | 10/05/17 04:22 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 100 | % | 80-113 | 1 | | 10/05/17 04:22 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 99 | % | 80-114 | 1 | | 10/05/17 04:22 | 17060-07-0 | |
| Preservation pH | **1.0** | | 1.0 | 1 | | 10/05/17 04:22 | | |

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60254347

QC Batch: 497830 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60254347001, 60254347002, 60254347003

METHOD BLANK: 2036648 Matrix: Water
Associated Lab Samples: 60254347001, 60254347002, 60254347003

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Manganese, Dissolved | ug/L | ND | 5.0 | 10/09/17 18:07 | |

LABORATORY CONTROL SAMPLE: 2036649

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Manganese, Dissolved | ug/L | 1000 | 976 | 98 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2036650 2036651

| Parameter | Units | 60254337001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese, Dissolved | ug/L | 739 | 1000 | 1000 | 1720 | 1750 | 98 | 101 | 75-125 | 2 | 20 | |

**Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.**

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
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(913)599-5665

## QUALITY CONTROL DATA

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60254347

QC Batch: 497169 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60254347002, 60254347003, 60254347004, 60254347005

METHOD BLANK: 2033893 Matrix: Water
Associated Lab Samples: 60254347002, 60254347003, 60254347004, 60254347005

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Benzene | ug/L | ND | 1.0 | 10/05/17 00:21 | |
| Ethylbenzene | ug/L | ND | 1.0 | 10/05/17 00:21 | |
| Toluene | ug/L | ND | 1.0 | 10/05/17 00:21 | |
| Xylene (Total) | ug/L | ND | 3.0 | 10/05/17 00:21 | |
| 1,2-Dichloroethane-d4 (S) | % | 97 | 80-114 | 10/05/17 00:21 | |
| 4-Bromofluorobenzene (S) | % | 98 | 80-113 | 10/05/17 00:21 | |
| Toluene-d8 (S) | % | 97 | 80-108 | 10/05/17 00:21 | |

LABORATORY CONTROL SAMPLE: 2033894

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Benzene | ug/L | 20 | 20.2 | 101 | 82-115 | |
| Ethylbenzene | ug/L | 20 | 19.8 | 99 | 83-112 | |
| Toluene | ug/L | 20 | 19.7 | 99 | 78-113 | |
| Xylene (Total) | ug/L | 60 | 60.1 | 100 | 83-114 | |
| 1,2-Dichloroethane-d4 (S) | % | | | 101 | 80-114 | |
| 4-Bromofluorobenzene (S) | % | | | 99 | 80-113 | |
| Toluene-d8 (S) | % | | | 100 | 80-108 | |

**Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.**

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

## QUALITY CONTROL DATA

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60254347

QC Batch: 497599
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60254347001

METHOD BLANK: 2035542
Matrix: Water
Associated Lab Samples: 60254347001

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Benzene | ug/L | ND | 1.0 | 10/06/17 11:01 | |
| Ethylbenzene | ug/L | ND | 1.0 | 10/06/17 11:01 | |
| Toluene | ug/L | ND | 1.0 | 10/06/17 11:01 | |
| Xylene (Total) | ug/L | ND | 3.0 | 10/06/17 11:01 | |
| 1,2-Dichloroethane-d4 (S) | % | 102 | 80-114 | 10/06/17 11:01 | |
| 4-Bromofluorobenzene (S) | % | 98 | 80-113 | 10/06/17 11:01 | |
| Toluene-d8 (S) | % | 98 | 80-108 | 10/06/17 11:01 | |

LABORATORY CONTROL SAMPLE: 2035543

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Benzene | ug/L | 20 | 19.2 | 96 | 82-115 | |
| Ethylbenzene | ug/L | 20 | 18.1 | 90 | 83-112 | |
| Toluene | ug/L | 20 | 17.9 | 90 | 78-113 | |
| Xylene (Total) | ug/L | 60 | 56.3 | 94 | 83-114 | |
| 1,2-Dichloroethane-d4 (S) | % | | | 103 | 80-114 | |
| 4-Bromofluorobenzene (S) | % | | | 98 | 80-113 | |
| Toluene-d8 (S) | % | | | 100 | 80-108 | |

**Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.**

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
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(913)599-5665

# QUALIFIERS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60254347

## DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

## LABORATORIES

PASI-K Pace Analytical Services - Kansas City

## BATCH QUALIFIERS

Batch: 497169

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 497599

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60254347

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|---|---|---|---|---|---|
| **60254347001** | **GW-11145982-092717-SP-MW-1** | EPA 3010 | 497830 | EPA 6010 | 497899 |
| **60254347002** | **GW-11145982-092717-SP-MW-2** | EPA 3010 | 497830 | EPA 6010 | 497899 |
| **60254347003** | **GW-11145982-092717-SP-MW-4** | EPA 3010 | 497830 | EPA 6010 | 497899 |
| **60254347001** | **GW-11145982-092717-SP-MW-1** | EPA 8260 | 497599 | | |
| **60254347002** | **GW-11145982-092717-SP-MW-2** | EPA 8260 | 497169 | | |
| **60254347003** | **GW-11145982-092717-SP-MW-4** | EPA 8260 | 497169 | | |
| **60254347004** | **GW-11145982-092717-SP-32** | EPA 8260 | 497169 | | |
| **60254347005** | **GW-11145982-092717-SP-34** | EPA 8260 | 497169 | | |

Pace Analytical
www.pacelabs.com

# Sample Condition Upon Receipt

WO#: 60254347

60254347

AES

Client Name: GHD Services

**Courier:** FedEx ☒ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

**Tracking #:** 7878 9032 2287 Pace Shipping Label Used? Yes ☒ No ☐

**Custody Seal on Cooler/Box Present:** Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

**Packing Material:** Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☐

**Thermometer Used:** CF 0.0 T-266 / CF +0.3 T-239 **Type of Ice:** Wet Blue None

RH 9-29-17

**Cooler Temperature (°C):** **As-read** 4.4 **Corr. Factor** CF 0.0 CF +0.3 **Corrected** 4.4

**Date and initials of person examining contents:**

Temperature should be above freezing to 6°C

| | | |
|---|---|---|
| Chain of Custody present: | ☒Yes ☐No ☐N/A | |
| Chain of Custody relinquished: | ☒Yes ☐No ☐N/A | |
| Samples arrived within holding time: | ☒Yes ☐No ☐N/A | |
| **Short Hold Time analyses (<72hr):** | ☐Yes ☒No ☐N/A | |
| **Rush Turn Around Time requested:** | ☐Yes ☒No ☐N/A | |
| Sufficient volume: | ☒Yes ☐No ☐N/A | |
| Correct containers used: | ☒Yes ☐No ☐N/A | |
| Pace containers used: | ☒Yes ☐No ☐N/A | |
| Containers intact: | ☒Yes ☐No ☐N/A | |
| Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs? | ☐Yes ☐No ☒N/A | |
| Filtered volume received for dissolved tests? | ☐Yes ☐No ☒N/A | |
| Sample labels match COC: Date / time / ID / analyses | ☒Yes ☐No ☐N/A | |
| Samples contain multiple phases? Matrix: WT | ☐Yes ☒No ☐N/A | |
| Containers requiring pH preservation in compliance? ($HNO_3$, $H_2SO_4$, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) | ☒Yes ☐No ☐N/A | |
| Cyanide water sample checks: ☒N/A<br>Lead acetate strip turns dark? (Record only) | ☐Yes ☐No | |
| Potassium iodide test strip turns blue/purple? (Preserve) | ☐Yes ☐No | |
| Trip Blank present: | ☒Yes ☐No ☐N/A | 2 (DG9H) = TB |
| Headspace in VOA vials ( >6mm): | ☐Yes ☐No ☒N/A | |
| Samples from USDA Regulated Area: State: | ☐Yes ☐No ☒N/A | |
| Additional labels attached to 5035A / TX1005 vials in the field? | ☐Yes ☐No ☒N/A | |

**Client Notification/ Resolution:** Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Alice Date: 10/03/17

# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

| Section A Required Client Information: | | Section B Required Project Information: | | Section C Invoice Information: | |
|---|---|---|---|---|---|
| Company: | GHD Services, New Mexico | Report To: | Jeff Walker | Attention: | |
| Address: | 6121 indian School Rd | Copy To: | | Company Name: | |
| | Albuquerque, NM 87110 | | | Address: | |
| Email: | jeff.walker@ghd.com | Purchase Order #: | | Pace Quote: | |
| Phone: | 505-884-0672 Fax | Project Name: | 11145982 Flora Vista No 1 | Pace Project Manager: | alice.spiller@pacelabs.com, |
| Requested Due Date: | | Project #: | | Pace Profile #: | 10540, line 1 |

| Regulatory Agency | |
|---|---|
| State / Location | NM |

| ITEM # | SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique) | MATRIX CODE (see valid codes to left) | SAMPLE TYPE (G=GRAB C=COMP) | COLLECTED START DATE | COLLECTED START TIME | COLLECTED END DATE | COLLECTED END TIME | SAMPLE TEMP AT COLLECTION | # OF CONTAINERS | Preservatives: Unpreserved | H2SO4 | HNO3 | HCl | NaOH | Na2S2O3 | Methanol | Other | Requested Analysis Filtered (Y/N) Y/N | Analyses Test: 8260 BTEX | Dissolved Fe,Mn-field filtered | Residual Chlorine (Y/N) | 60254347 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW-11145982-092717-SP-MW-1 | | | 9-27-17 | 1510 | | | | 4 | | | | | | | | | | X | X | | 3(DG9H), BP3N 001 |
| 2 | GW-11145982-092717-SP-MW-2 | | | | 1530 | | | | 4 | | | | | | | | | | X | X | | 002 |
| 3 | GW-11145982-092717-SP-MW-4 | | | | 1545 | | | | 4 | | | | | | | | | | X | X | | 003 |
| 4 | GW-11145982-092717-SP-32 | | | | 1606 | | | | 3 | | | | | | | | | | X | | | 3(DG9H) 004 |
| 5 | GW-11145982-092717-SP-34 | | | | 1611 | | | | 3 | | | | | | | | | | X | | | 3(DG9H) 005 |
| 6 | | | | | | | | | | | | | | | | | | | | | | 2(DG9H)-TB 006 |
| 7 | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | |

| ADDITIONAL COMMENTS | RELINQUISHED BY / AFFILIATION | DATE | TIME | ACCEPTED BY / AFFILIATION | DATE | TIME | SAMPLE CONDITIONS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Steven Perez | 9-28-17 | 1105 | Pace | 9-29-17 | 0835 | 4C | Y | 4 | 4 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Steven Perez

SIGNATURE of SAMPLER: Steven Perez DATE Signed: 9-28-17

| TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N) |
|---|---|---|---|

**Pace Analytical Services, LLC**
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

December 18, 2017

Jeff Walker
GHD Services
6121 indian School Rd
Ste 200
Albuquerque, NM 87110

RE: Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60259882

Dear Jeff Walker:
Enclosed are the analytical results for sample(s) received by the laboratory on December 08, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Colleen Clyne

Colleen Clyne
colleen.clyne@pacelabs.com
1(913)563-1406
Project Manager

Enclosures

cc: Angela Bown, GHD Services
Christine Mathews, GHD Services

**Pace Analytical Services, LLC**
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## CERTIFICATIONS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60259882

**Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 17-016-0
Illinois Certification #: 200030
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

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## SAMPLE SUMMARY

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60259882

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| **60259882001** | **GW-11145982-120517-SP-MW-1** | Water | 12/05/17 14:15 | 12/08/17 09:10 |
| **60259882002** | **GW-11145982-120517-SP-MW-3** | Water | 12/05/17 13:42 | 12/08/17 09:10 |
| **60259882003** | **GW-11145982-120517-SP-MW-4** | Water | 12/05/17 13:55 | 12/08/17 09:10 |
| **60259882004** | **GW-11145982-120517-SP-MW-5** | Water | 12/05/17 14:30 | 12/08/17 09:10 |
| **60259882005** | **GW-11145982-120517-SP-DUP** | Water | 12/05/17 14:30 | 12/08/17 09:10 |
| **60259882006** | **TRIP BLANK** | Water | 12/05/17 13:55 | 12/08/17 09:10 |

## REPORT OF LABORATORY ANALYSIS

**Pace Analytical Services, LLC**
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## SAMPLE ANALYTE COUNT

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60259882

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|---|---|---|---|---|---|
| **60259882001** | **GW-11145982-120517-SP-MW-1** | EPA 6010 | TDS | 2 | PASI-K |
| | | EPA 8260 | JTK | 8 | PASI-K |
| **60259882002** | **GW-11145982-120517-SP-MW-3** | EPA 6010 | TDS | 2 | PASI-K |
| **60259882003** | **GW-11145982-120517-SP-MW-4** | EPA 6010 | TDS | 2 | PASI-K |
| | | EPA 8260 | JTK | 8 | PASI-K |
| **60259882004** | **GW-11145982-120517-SP-MW-5** | EPA 6010 | TDS | 2 | PASI-K |
| | | EPA 8260 | JTK | 8 | PASI-K |
| **60259882005** | **GW-11145982-120517-SP-DUP** | EPA 8260 | JTK | 8 | PASI-K |
| **60259882006** | **TRIP BLANK** | EPA 8260 | JTK | 8 | PASI-K |

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## ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60259882

**Sample: GW-11145982-120517-SP-MW-1** **Lab ID: 60259882001** Collected: 12/05/17 14:15 Received: 12/08/17 09:10 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010 | | | | | | | |
| Iron, Dissolved | **19900** | ug/L | 50.0 | 1 | 12/13/17 10:38 | 12/15/17 15:08 | 7439-89-6 | |
| Manganese, Dissolved | **3270** | ug/L | 5.0 | 1 | 12/13/17 10:38 | 12/15/17 15:08 | 7439-96-5 | |
| **8260 MSV UST, Water** | Analytical Method: EPA 8260 | | | | | | | |
| Benzene | **288** | ug/L | 10.0 | 10 | | 12/13/17 21:56 | 71-43-2 | |
| Ethylbenzene | **444** | ug/L | 10.0 | 10 | | 12/13/17 21:56 | 100-41-4 | |
| Toluene | ND | ug/L | 1.0 | 1 | | 12/13/17 05:50 | 108-88-3 | |
| Xylene (Total) | **1070** | ug/L | 30.0 | 10 | | 12/13/17 21:56 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 102 | % | 80-108 | 1 | | 12/13/17 05:50 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 103 | % | 80-113 | 1 | | 12/13/17 05:50 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 94 | % | 80-114 | 1 | | 12/13/17 05:50 | 17060-07-0 | |
| Preservation pH | **6.0** | | 1.0 | 1 | | 12/13/17 05:50 | | pH |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60259882

**Sample: GW-11145982-120517-SP-MW-3** **Lab ID: 60259882002** Collected: 12/05/17 13:42 Received: 12/08/17 09:10 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010 | | | | | | | |
| Iron, Dissolved | ND | ug/L | 50.0 | 1 | 12/13/17 10:38 | 12/15/17 15:10 | 7439-89-6 | |
| Manganese, Dissolved | **106** | ug/L | 5.0 | 1 | 12/13/17 10:38 | 12/15/17 15:10 | 7439-96-5 | |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60259882

**Sample: GW-11145982-120517-SP-MW-4** **Lab ID: 60259882003** Collected: 12/05/17 13:55 Received: 12/08/17 09:10 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010 | | | | | | | |
| Iron, Dissolved | **21100** | ug/L | 50.0 | 1 | 12/13/17 10:38 | 12/15/17 15:13 | 7439-89-6 | |
| Manganese, Dissolved | **6200** | ug/L | 5.0 | 1 | 12/13/17 10:38 | 12/15/17 15:13 | 7439-96-5 | |
| **8260 MSV UST, Water** | Analytical Method: EPA 8260 | | | | | | | |
| Benzene | **24.7** | ug/L | 1.0 | 1 | | 12/13/17 22:11 | 71-43-2 | |
| Ethylbenzene | **7.4** | ug/L | 1.0 | 1 | | 12/13/17 22:11 | 100-41-4 | |
| Toluene | ND | ug/L | 1.0 | 1 | | 12/13/17 22:11 | 108-88-3 | |
| Xylene (Total) | **16.1** | ug/L | 3.0 | 1 | | 12/13/17 22:11 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 106 | % | 80-108 | 1 | | 12/13/17 22:11 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 107 | % | 80-113 | 1 | | 12/13/17 22:11 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 96 | % | 80-114 | 1 | | 12/13/17 22:11 | 17060-07-0 | |
| Preservation pH | **1.0** | | 1.0 | 1 | | 12/13/17 22:11 | | |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60259882

**Sample: GW-11145982-120517-SP-MW-5** **Lab ID: 60259882004** Collected: 12/05/17 14:30 Received: 12/08/17 09:10 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP, Dissolved** | Analytical Method: EPA 6010 Preparation Method: EPA 3010 | | | | | | | |
| Iron, Dissolved | **10300** | ug/L | 50.0 | 1 | 12/13/17 10:38 | 12/15/17 15:15 | 7439-89-6 | |
| Manganese, Dissolved | **3890** | ug/L | 5.0 | 1 | 12/13/17 10:38 | 12/15/17 15:15 | 7439-96-5 | |
| **8260 MSV UST, Water** | Analytical Method: EPA 8260 | | | | | | | |
| Benzene | **56.2** | ug/L | 10.0 | 10 | | 12/13/17 06:20 | 71-43-2 | |
| Ethylbenzene | **510** | ug/L | 10.0 | 10 | | 12/13/17 06:20 | 100-41-4 | |
| Toluene | ND | ug/L | 10.0 | 10 | | 12/13/17 06:20 | 108-88-3 | |
| Xylene (Total) | **5950** | ug/L | 150 | 50 | | 12/13/17 22:26 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 103 | % | 80-108 | 10 | | 12/13/17 06:20 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 106 | % | 80-113 | 10 | | 12/13/17 06:20 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 94 | % | 80-114 | 10 | | 12/13/17 06:20 | 17060-07-0 | |
| Preservation pH | **1.0** | | 1.0 | 10 | | 12/13/17 06:20 | | |

## REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

## ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60259882

**Sample: GW-11145982-120517-SP-DUP** **Lab ID: 60259882005** Collected: 12/05/17 14:30 Received: 12/08/17 09:10 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV UST, Water** | Analytical Method: EPA 8260 | | | | | | | |
| Benzene | **50.0** | ug/L | 10.0 | 10 | | 12/13/17 06:35 | 71-43-2 | |
| Ethylbenzene | **444** | ug/L | 10.0 | 10 | | 12/13/17 06:35 | 100-41-4 | |
| Toluene | ND | ug/L | 10.0 | 10 | | 12/13/17 06:35 | 108-88-3 | |
| Xylene (Total) | **5970** | ug/L | 150 | 50 | | 12/13/17 22:41 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 101 | % | 80-108 | 10 | | 12/13/17 06:35 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 106 | % | 80-113 | 10 | | 12/13/17 06:35 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 94 | % | 80-114 | 10 | | 12/13/17 06:35 | 17060-07-0 | |
| Preservation pH | **1.0** | | 1.0 | 10 | | 12/13/17 06:35 | | |

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## ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60259882

**Sample: TRIP BLANK** **Lab ID: 60259882006** Collected: 12/05/17 13:55 Received: 12/08/17 09:10 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV UST, Water** | Analytical Method: EPA 8260 | | | | | | | |
| Benzene | ND | ug/L | 1.0 | 1 | | 12/13/17 06:50 | 71-43-2 | |
| Ethylbenzene | ND | ug/L | 1.0 | 1 | | 12/13/17 06:50 | 100-41-4 | |
| Toluene | ND | ug/L | 1.0 | 1 | | 12/13/17 06:50 | 108-88-3 | |
| Xylene (Total) | ND | ug/L | 3.0 | 1 | | 12/13/17 06:50 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 102 | % | 80-108 | 1 | | 12/13/17 06:50 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 108 | % | 80-113 | 1 | | 12/13/17 06:50 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 95 | % | 80-114 | 1 | | 12/13/17 06:50 | 17060-07-0 | |
| Preservation pH | **1.0** | | 1.0 | 1 | | 12/13/17 06:50 | | |

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60259882

QC Batch: 507060 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60259882001, 60259882002, 60259882003, 60259882004

METHOD BLANK: 2077289 Matrix: Water
Associated Lab Samples: 60259882001, 60259882002, 60259882003, 60259882004

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Iron, Dissolved | ug/L | ND | 50.0 | 12/15/17 14:38 | |
| Manganese, Dissolved | ug/L | ND | 5.0 | 12/15/17 14:38 | |

LABORATORY CONTROL SAMPLE: 2077290

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Iron, Dissolved | ug/L | 10000 | 10200 | 102 | 80-120 | |
| Manganese, Dissolved | ug/L | 1000 | 1000 | 100 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2077291 2077292

| Parameter | Units | 60259839001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Iron, Dissolved | ug/L | 248 | 10000 | 10000 | 10400 | 10500 | 101 | 102 | 75-125 | 1 | 20 | |
| Manganese, Dissolved | ug/L | 674 | 1000 | 1000 | 1690 | 1700 | 102 | 103 | 75-125 | 1 | 20 | |

**Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.**

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60259882

QC Batch: 506955 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60259882001, 60259882004, 60259882005, 60259882006

METHOD BLANK: 2076882 Matrix: Water
Associated Lab Samples: 60259882001, 60259882004, 60259882005, 60259882006

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Benzene | ug/L | ND | 1.0 | 12/13/17 03:35 | |
| Ethylbenzene | ug/L | ND | 1.0 | 12/13/17 03:35 | |
| Toluene | ug/L | ND | 1.0 | 12/13/17 03:35 | |
| Xylene (Total) | ug/L | ND | 3.0 | 12/13/17 03:35 | |
| 1,2-Dichloroethane-d4 (S) | % | 95 | 80-114 | 12/13/17 03:35 | |
| 4-Bromofluorobenzene (S) | % | 108 | 80-113 | 12/13/17 03:35 | |
| Toluene-d8 (S) | % | 102 | 80-108 | 12/13/17 03:35 | |

LABORATORY CONTROL SAMPLE: 2076883

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Benzene | ug/L | 20 | 20.1 | 100 | 82-115 | |
| Ethylbenzene | ug/L | 20 | 19.6 | 98 | 83-112 | |
| Toluene | ug/L | 20 | 20.2 | 101 | 78-113 | |
| Xylene (Total) | ug/L | 60 | 60.0 | 100 | 83-114 | |
| 1,2-Dichloroethane-d4 (S) | % | | | 93 | 80-114 | |
| 4-Bromofluorobenzene (S) | % | | | 106 | 80-113 | |
| Toluene-d8 (S) | % | | | 102 | 80-108 | |

**Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.**

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60259882

QC Batch: 507189 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60259882001, 60259882003, 60259882004, 60259882005

METHOD BLANK: 2077864 Matrix: Water
Associated Lab Samples: 60259882001, 60259882003, 60259882004, 60259882005

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Benzene | ug/L | ND | 1.0 | 12/13/17 18:11 | |
| Ethylbenzene | ug/L | ND | 1.0 | 12/13/17 18:11 | |
| Toluene | ug/L | ND | 1.0 | 12/13/17 18:11 | |
| Xylene (Total) | ug/L | ND | 3.0 | 12/13/17 18:11 | |
| 1,2-Dichloroethane-d4 (S) | % | 97 | 80-114 | 12/13/17 18:11 | |
| 4-Bromofluorobenzene (S) | % | 107 | 80-113 | 12/13/17 18:11 | |
| Toluene-d8 (S) | % | 103 | 80-108 | 12/13/17 18:11 | |

LABORATORY CONTROL SAMPLE: 2077865

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Benzene | ug/L | 20 | 20.8 | 104 | 82-115 | |
| Ethylbenzene | ug/L | 20 | 20.6 | 103 | 83-112 | |
| Toluene | ug/L | 20 | 20.9 | 105 | 78-113 | |
| Xylene (Total) | ug/L | 60 | 62.6 | 104 | 83-114 | |
| 1,2-Dichloroethane-d4 (S) | % | | | 96 | 80-114 | |
| 4-Bromofluorobenzene (S) | % | | | 104 | 80-113 | |
| Toluene-d8 (S) | % | | | 103 | 80-108 | |

**Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.**

## REPORT OF LABORATORY ANALYSIS

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# QUALIFIERS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60259882

## DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

## LABORATORIES

PASI-K Pace Analytical Services - Kansas City

## BATCH QUALIFIERS

Batch: 506955

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 507189

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

## ANALYTE QUALIFIERS

pH Post-analysis pH measurement indicates insufficient VOA sample preservation.

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60259882

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|---|---|---|---|---|---|
| **60259882001** | **GW-11145982-120517-SP-MW-1** | EPA 3010 | 507060 | EPA 6010 | 507123 |
| **60259882002** | **GW-11145982-120517-SP-MW-3** | EPA 3010 | 507060 | EPA 6010 | 507123 |
| **60259882003** | **GW-11145982-120517-SP-MW-4** | EPA 3010 | 507060 | EPA 6010 | 507123 |
| **60259882004** | **GW-11145982-120517-SP-MW-5** | EPA 3010 | 507060 | EPA 6010 | 507123 |
| **60259882001** | **GW-11145982-120517-SP-MW-1** | EPA 8260 | 506955 | | |
| **60259882001** | **GW-11145982-120517-SP-MW-1** | EPA 8260 | 507189 | | |
| **60259882003** | **GW-11145982-120517-SP-MW-4** | EPA 8260 | 507189 | | |
| **60259882004** | **GW-11145982-120517-SP-MW-5** | EPA 8260 | 506955 | | |
| **60259882004** | **GW-11145982-120517-SP-MW-5** | EPA 8260 | 507189 | | |
| **60259882005** | **GW-11145982-120517-SP-DUP** | EPA 8260 | 506955 | | |
| **60259882005** | **GW-11145982-120517-SP-DUP** | EPA 8260 | 507189 | | |
| **60259882006** | **TRIP BLANK** | EPA 8260 | 506955 | | |

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## Sample Condition Upon Receipt

WO# : 60259882

60259882

Client Name: GAD NW

**Courier:** FedEx ☒ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

**Tracking #:** 7888 1801 3516 Pace Shipping Label Used? Yes ☐ No ☐

**Custody Seal on Cooler/Box Present:** Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

**Packing Material:** Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☐ CK

**Thermometer Used:** CF 0.0 T-266 / CF +0.2 T-239 **Type of Ice:** Wet Blue None

**Cooler Temperature (°C):** **As-read** 3.8 **Corr. Factor** CF 0.0 CF +0.2 **Corrected** 3.8

**Date and initials of person examining contents:** 12/12/8

Temperature should be above freezing to 6°C

| | | |
|---|---|---|
| Chain of Custody present: | ☒Yes ☐No ☐N/A | |
| Chain of Custody relinquished: | ☒Yes ☐No ☐N/A | |
| Samples arrived within holding time: | ☒Yes ☐No ☐N/A | |
| **Short Hold Time analyses (<72hr):** | ☐Yes ☒No ☐N/A | |
| **Rush Turn Around Time requested:** | ☐Yes ☒No ☐N/A | |
| Sufficient volume: | ☒Yes ☐No ☐N/A | |
| Correct containers used: | ☒Yes ☐No ☐N/A | |
| Pace containers used: | ☒Yes ☐No ☐N/A | |
| Containers intact: | ☒Yes ☐No ☐N/A | |
| Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs? | ☐Yes ☐No ☒N/A | |
| Filtered volume received for dissolved tests? | ☐Yes ☐No ☒N/A | |
| Sample labels match COC: Date / time / ID / analyses | ☒Yes ☐No ☐N/A | |
| Samples contain multiple phases? Matrix: WT | ☐Yes ☒No ☐N/A | |
| Containers requiring pH preservation in compliance? ($HNO_3$, $H_2SO_4$, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) | ☒Yes ☐No ☐N/A | |
| Cyanide water sample checks: ☒N/A<br>Lead acetate strip turns dark? (Record only)<br>Potassium iodide test strip turns blue/purple? (Preserve) | ☐Yes ☐No<br>☐Yes ☐No | |
| Trip Blank present: | ☒Yes ☐No ☐N/A | |
| Headspace in VOA vials ( >6mm): | ☐Yes ☒No ☐N/A | |
| Samples from USDA Regulated Area: State: | ☐Yes ☐No ☒N/A | |
| Additional labels attached to 5035A / TX1005 vials in the field? | ☐Yes ☐No ☒N/A | |

**Client Notification/ Resolution:** Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: Jenilee Comeso for CBK Date: 12/11/17

# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

| Section A Required Client Information: | | Section B Required Project Information: | | Section C Invoice Information: | |
|---|---|---|---|---|---|
| Company: | GHD Services, New Mexico | Report To: | Jeff Walker | Attention: | |
| Address: | 6121 Indian School Rd | Copy To: | | Company Name: | |
| | Albuquerque, NM 87110 | | | Address: | |
| Email: | jeff.walker@ghd.com | Purchase Order #: | | Pace Quote: | |
| Phone: | 505-884-0672 Fax: | Project Name: | 11145982 Flora Vista No 1 | Pace Project Manager: | alice.spiller@pacelabs.com, |
| Requested Due Date: | | Project #: | | Pace Profile #: | 10540, line 1 |

Regulatory Agency: NM

| ITEM # | SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique) | MATRIX CODE (see valid codes to left) | SAMPLE TYPE (G=GRAB C=COMP) | COLLECTED START DATE | COLLECTED START TIME | COLLECTED END DATE | COLLECTED END TIME | SAMPLE TEMP AT COLLECTION | # OF CONTAINERS | Preservatives: Unpreserved | H2SO4 | HNO3 | HCl | NaOH | Na2S2O3 | Methanol | Other | Analyses Test Y/N | 8260 BTEX | Dissolved Fe, Mn-field filtered | Residual Chlorine (Y/N) | 60259682 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GW-11145982-120517-SP-MW-1 | WT | G | 12/5/17 | 1415 | | | | 4 | | | X | X | | | | | | X | X | | (3)D69H BP3F |
| 2 | GW-11145982-120517-SP-MW-3 | | | | 1342 | | | | 1 | | | X | | | | | | | | X | | |
| 3 | GW-11145982-120517-SP-MW-4 | | | | 1355 | | | | 4 | | | X | X | | | | | | X | X | | |
| 4 | GW-11145982-120517-SP-MW-5 | | | | 1430 | | | | 4 | | | X | X | | | | | | X | X | | |
| 5 | GW-11145982-120517-SP-DUP | | | | | | | | 3 | | | | X | | | | | | X | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | (2)D69H TB |
| 7 | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | |

001 002 003 004 005 006

| ADDITIONAL COMMENTS | RELINQUISHED BY / AFFILIATION | DATE | TIME | ACCEPTED BY / AFFILIATION | DATE | TIME | SAMPLE CONDITIONS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Steven Perez | 12/7/17 | 1442 | | 12/8/17 | 0910 | 3.8 | Y | Y | Y |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Steven Perez

SIGNATURE of SAMPLER: Steven Perez

DATE Signed: 12/7/17

| TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N) |
|---|---|---|---|
| | | | |