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ConocoPhillips

Dr. Tomas Oberding
New Mexico Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

February 6, 2017

Re: Vacuum Glorieta East Unit
NMOCD Case No. AP-39
2016 Annual Groundwater Assessment and Monitoring Report

Dear Dr. Oberding:

Enclosed is the 2016 Annual Groundwater Monitoring Report for the Vacuum Glorieta East Unit site. This report, prepared by GHD Services, Inc., contains the results of groundwater monitoring activities in 2016.

Please let me know if you have any questions.

Sincerely,

Neal Goates

Enc

2016 Annual Groundwater Monitoring Report

Vacuum Glorietta East Unit
Lea County, New Mexico

ConocoPhillips Company

GHD | 6121 Indian School Road, NE Suite 200 Albuquerque New Mexico 87110
075005 5AS00 | Report No 6 | January 31 2017

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1. Introduction

This report presents the results of semi-annual groundwater monitoring events conducted by GHD Services, Inc. (GHD) at the Vacuum Glorietta East Unit site (hereafter referred to as the "Site"). The Site is located on land owned by the New Mexico State Land Office within Units N and O, Section 27, Township 17 South, Range 35 East, in Lea County, New Mexico. Geographical coordinates for the Site are 32° 47.932' N, 103° 26.726' W. A Site Location Map and Site Details Map are included as Figure 1 and Figure 2, respectively.

2. Site History

Impacts to soil and groundwater are believed to be associated with a release that was reported to the New Mexico Oil Conservation Division (NMOCD) on October 28, 2002. The affected area was estimated to be approximately 80 feet by 150 feet in size. Approximately 80 barrels of oil and 20 barrels of water were recovered after the release.

An initial Site investigation was performed by B&H Environmental Services in November 2002. A total of seven shallow soil borings were advanced during the investigation. Soil samples collected from the borings indicated the presence of chlorides and petroleum hydrocarbons above NMOCD Recommended Remedial Action Limits (RRALs).

Excavation of affected soil began in August 2004 and was extended to a depth of approximately 20 feet below ground surface (bgs). Approximately 3,240 cubic yards (yd3) of petroleum impacted soil were excavated from the Site and disposed of at a regulated facility. However, historical hydrocarbon concentrations were observed during excavation and additional assessment work was required. The excavation was backfilled and additional soil borings and monitoring wells were installed.

Based on the results of the additional assessment work, a Stage I and II Abatement Plan (AP) was submitted to the NMOCD and approved in October 2007 (AP 39). The AP proposed additional excavation of impacted soils and the placement of a geo membrane liner prior to backfilling and reseeding the area of excavation. The AP also included the installation of groundwater monitoring wells, followed by eight quarters of groundwater monitoring.

The additional excavation work that was approved under the AP 39 was performed in November and December 2008. Monitoring well VG 1 was abandoned because it was located within the footprint of the excavation. Approximately 1,000 yd3 of soil was excavated.

During the excavation, a significant rain event occurred which caused flushing of the soils. Due to the rain event, it was agreed by the NMOCD that a geo membrane liner was not required to be installed prior to backfilling.

Backfilling and reseeding of the excavation was approved and performed in July 2009. Following backfilling and reseeding, one groundwater monitoring well, VG 4, was installed within the footprint

of the excavation and monitoring wells VG 2 and VG 3 were installed down gradient and up gradient of the excavation, respectively.

On October 6, 2011, GHD (formerly Conestoga Rovers & Associates) conducted groundwater gauging of the on Site monitoring wells. Monitoring well VG 4 was not sampled because it contained 0.17 feet of light non aqueous phase liquid (LNAPL). The groundwater at the Site was sampled for chlorides. The groundwater analytical results indicated concentrations of chlorides below the regulatory limit for monitoring wells VG 2 and VG 3 with results of 103 milligrams per liter (mg/L) and 42 mg/L, respectively.

Three additional groundwater monitoring wells, VG 5, VG 6, and VG 7, were installed between December 4 and December 13, 2013. The additional wells were installed to further assess the northern, western, and southern extent of hydrocarbons and chlorides in the groundwater. The first quarterly groundwater sampling event took place in January 2014.

The use of mobile dual phase extraction (MDPE) was suggested to be used at the site due to the presence of LNAPL. Two MDPE events were performed at the site. The first MDPE event at the Site took place on September 8 and September 9, 2014. MDPE was performed for a total of eight hours over 2 days and approximately 1,636 gallons of total fluids were extracted from monitoring well VG 4. Approximately 6.06 gallons of hydrocarbons (liquid and vapor) were extracted from VG 4.

The second MDPE event performed at the Site occurred from May 4 to May 6, 2015. Approximately 6,349 gallons of total fluids were extracted from monitoring well VG 4. Approximately 14.51 gallons of hydrocarbons (liquid and vapor) were extracted from VG 4. Approximately 8.16 gallons of the total amount of hydrocarbons were removed as vapors. Both MDPE events were performed by AcuVac of Houston, Texas.

GHD installed an oxygenating compound sock in VG 4 on July 21, 2016 to assist with the degradation of the hydrocarbons.

3. Semi-Annual Groundwater Monitoring and Sampling

3.1 Groundwater Monitoring Summary

Semi-annual groundwater monitoring events were conducted on April 6 and October 6, 2016. Groundwater elevation measurements were recorded in monitoring wells VG 2, VG 3, VG 4, VG 5, VG 6 and VG 7 using a clean oil/water interface probe. Groundwater elevations are shown in Table 1. Groundwater potentiometric surface maps created from the April and October data are presented as Figure 3 and Figure 4 respectively. The groundwater gradient was 0.0025 feet per foot to the southeast for the monitoring events. This is consistent with historical data for the Site. A trace of LNAPL (0.01 foot) was observed in VG-4 during the April monitoring event.

3.2 Groundwater Monitoring Methodology

During groundwater monitoring events Site monitoring wells were purged of at least three casing volumes of groundwater using a 1.5 inch diameter, polyethylene, dedicated bailer or a submersible pump. While purging each well, groundwater parameters were recorded using a multi parameter groundwater quality meter.

Groundwater samples were placed in laboratory supplied containers, labeled, placed on ice, and transported via overnight delivery under chain of custody documentation. Groundwater samples were sent to Pace Analytical Laboratories in Lenexa, Kansas. Groundwater samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) by Environmental Protection Agency (EPA) method 8260 and for chloride by EPA method 300.0. A summary of analytical results is presented as Table 2 and laboratory analytical results are presented in Appendix A.

3.3 Groundwater Monitoring Analytical Results

The New Mexico Water Quality Control Commission (NMWQCC) mandates that groundwater quality in New Mexico be protected, and has issued groundwater quality standards in Title 20, Chapter 6, Part 2, Section 3103 of the New Mexico Administrative Code (20.6.2.3103 NMAC). The NMWQCC domestic water supply groundwater quality standards for benzene, toluene, ethylbenzene, and xylenes are 0.01 mg/L, 0.75 mg/L, 0.75 mg/L, and 0.62 mg/L, respectively. The NMWQCC domestic water supply groundwater quality standard for chloride is 250 mg/L.

Exceedances of NMWQCC groundwater quality standards in Site monitoring wells are discussed below. A BTEX and chloride concentration map for the April and October monitoring events is included as Figure 5.

April 2016

- BTEX: VG 4 exceeded the NMWQCC standards for benzene, ethylbenzene, and xylenes with concentrations of 3.61 mg/L, 5.47 mg/L, and 2.13 mg/L, respectively.
- Chlorides: VG 4 exceeded the NMWQCC standard for chloride with a concentration of 1,190 mg/L.

October 2016

- BTEX: VG 4 exceeded the NMWQCC standard for benzene with a concentration of 1.51 mg/L.
- Chlorides: VG 4 and VG-5 exceeded the NMWQCC standard for chloride with concentrations of 1,490 and 283 mg/L, respectively.

4. Conclusion and Recommendations

Chloride and BTEX concentrations exceeded the NMWQCC standards in monitoring well VG 4 during both semi-annual monitoring events. However, they were below the NMWQCC standards in the remaining monitoring wells with the exception of chloride in VG 5 during the October 2016 event. This concentration only slightly exceeded the standard at 283 mg/L.

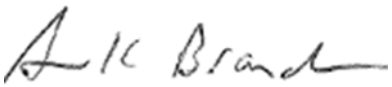
Based on these conclusions, GHD recommends the following:

- Continue monitoring the oxygenating compound socks in VG 4 and replace as needed.
- Perform semi-annual groundwater monitoring of Site monitoring wells.

Please feel free to contact the GHD Albuquerque office if there are any questions or additional information is required.

All of which is Respectfully Submitted,

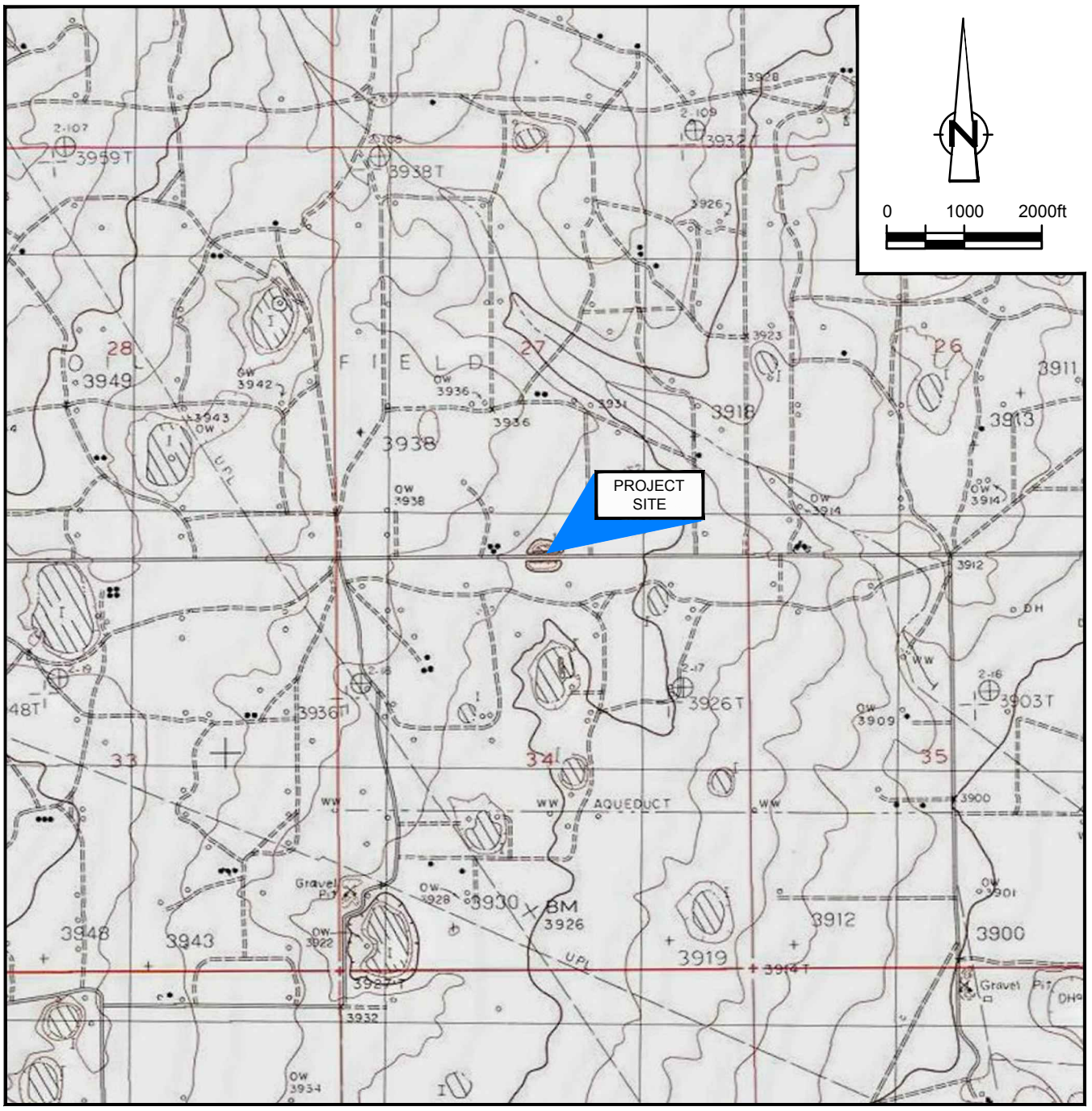
GHD



Alan Brandon
Sr. Project Manager

Bernard Bockisch, PMP
Sr. Project Manager

Figures



SOURCE: USGS 7.5 MINUTE QUAD
"LOVINGTON SW, NEW MEXICO"

LAT/LONG: 32.799° NORTH, -103.445° WEST
COORDINATE: NAD83 DATUM, U.S. FOOT
STATE PLANE ZONE - NEW MEXICO EAST

Figure 1

SITE LOCATION MAP
VACUUM GLORIETTA EAST UNIT, EAST BATTERY PLAYA
SECTION 27, T17S, R35E, LEA COUNTY, NEW MEXICO
ConocoPhillips Company

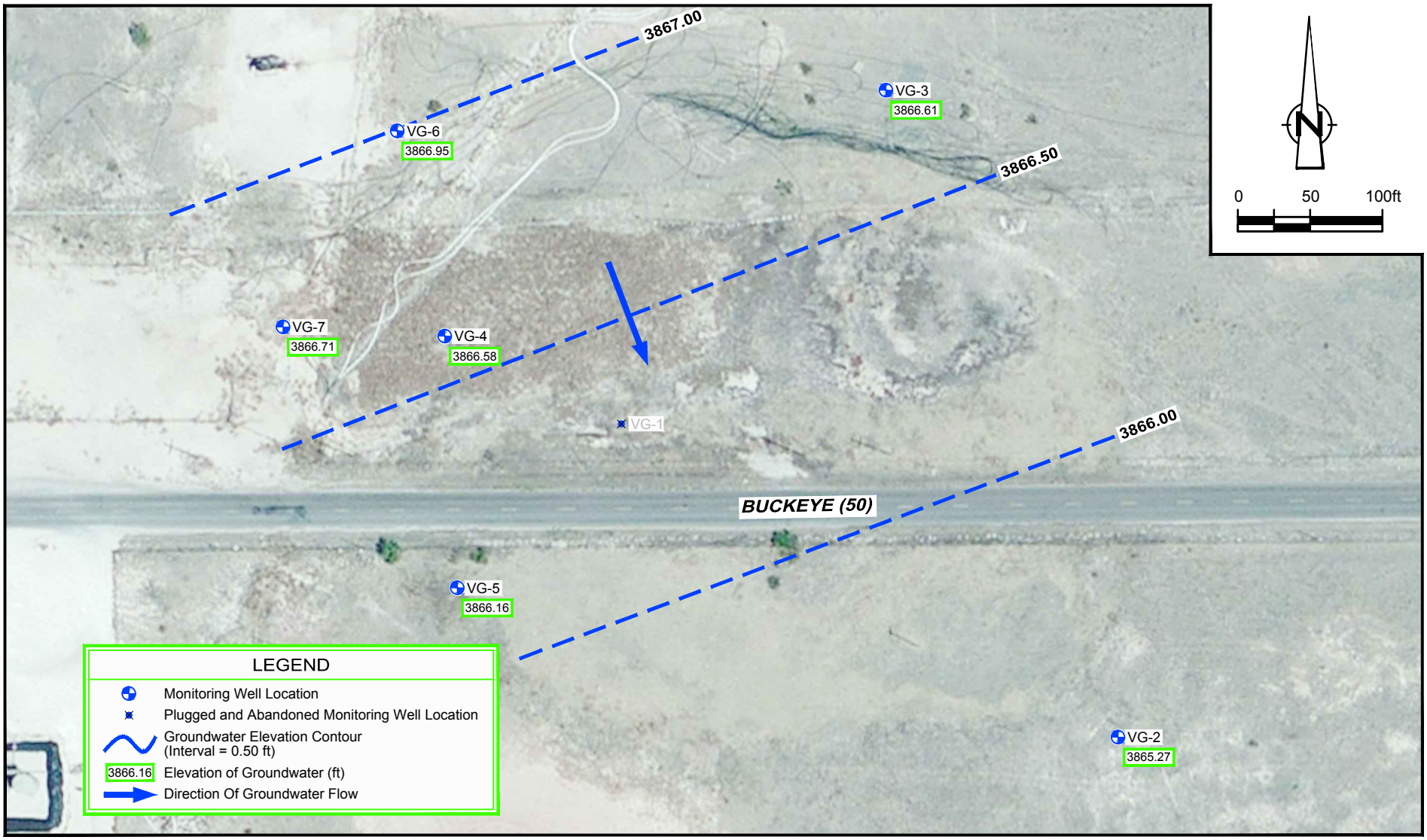
LAT/LONG: 32.799° NORTH, -103.445° WEST
COORDINATE: NAD83 DATUM, U.S. FOOT
STATE PLANE ZONE - NEW MEXICO EAST

Figure 2

SITE DETAILS MAP
VACUUM GLORIETTA EAST UNIT, EAST BATTERY PLAYA
SECTION 27, T17S, R35E, LEA COUNTY, NEW MEXICO
ConocoPhillips Company

GHD

075005-00(006)GN-DL001 JAN 30, 2017

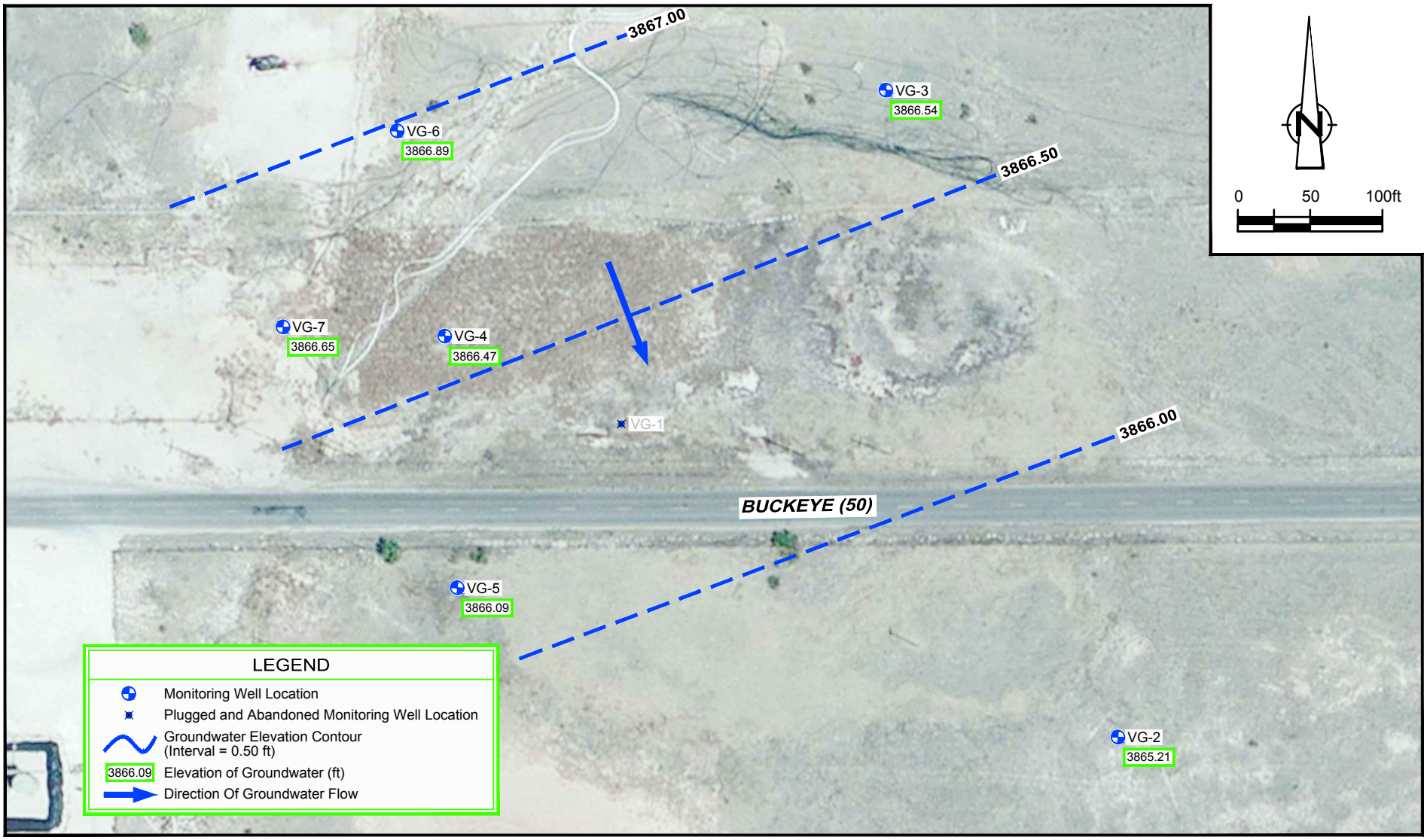


LAT/LONG: 32.799° NORTH, -103.445° WEST
COORDINATE: NAD83 DATUM, U.S. FOOT
STATE PLANE ZONE - NEW MEXICO EAST

Figure 3

APRIL 2016 GROUNDWATER POTENTIOMETRIC SURFACE MAP
VACUUM GLORIETTA EAST UNIT, EAST BATTERY PLAYA
SECTION 27, T17S, R35E, LEA COUNTY, NEW MEXICO
ConocoPhillips Company

GHD



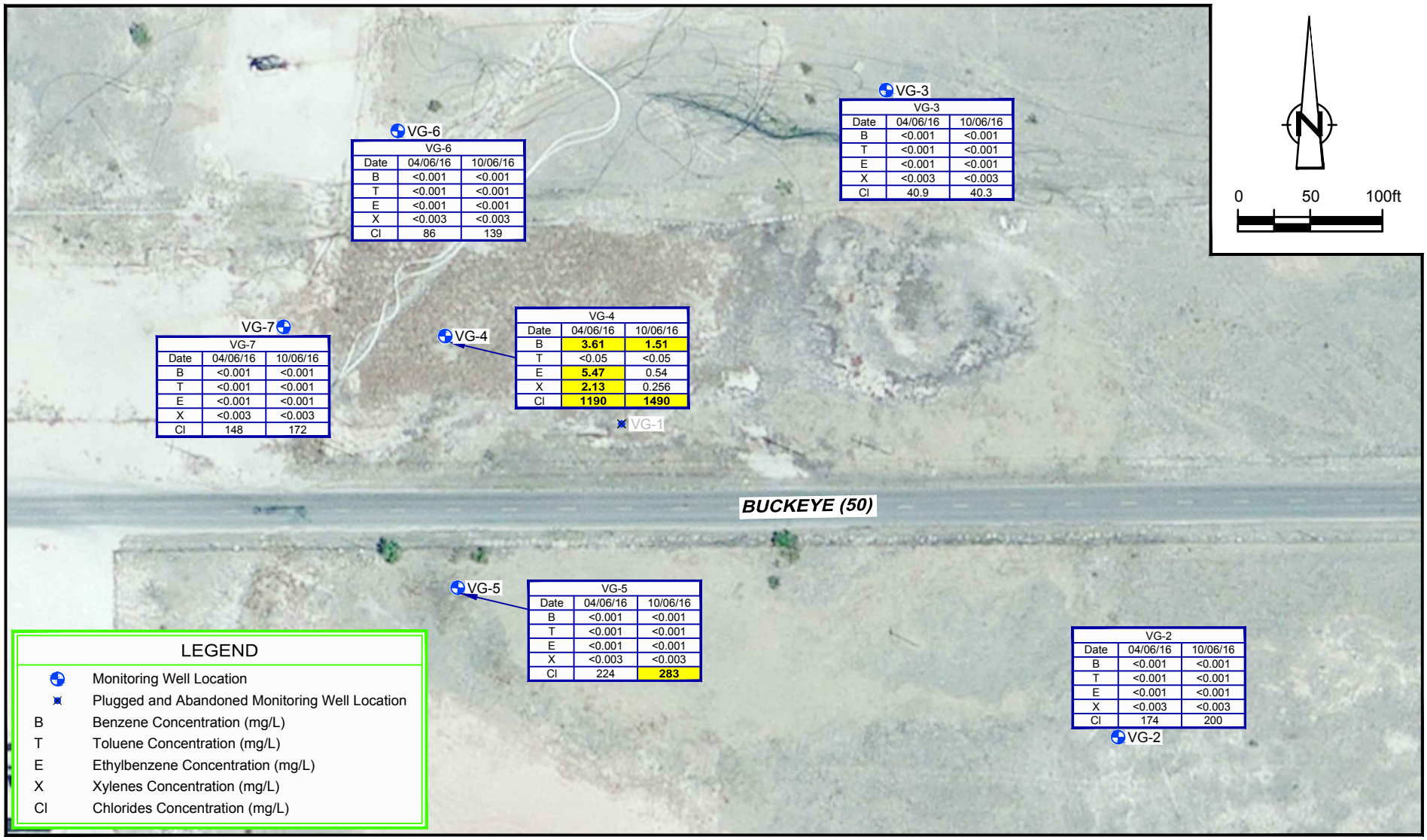
LAT/LONG: 32.799° NORTH, -103.445° WEST
COORDINATE: NAD83 DATUM, U.S. FOOT
STATE PLANE ZONE - NEW MEXICO EAST

Figure 4

OCTOBER 2016 GROUNDWATER POTENTIOMETRIC SURFACE MAP
VACUUM GLORIETTA EAST UNIT, EAST BATTERY PLAYA
SECTION 27, T17S, R35E, LEA COUNTY, NEW MEXICO

ConocoPhillips Company

GHD



LAT/LONG: 32.799° NORTH, -103.445° WEST
COORDINATE: NAD83 DATUM, U.S. FOOT
STATE PLANE ZONE - NEW MEXICO EAST

NOTE:

1. Yellow shaded cells indicate exceedance of New Mexico Water Quality Control Commission standards.

Figure 5

BTEX AND CHLORIDE CONCENTRATION MAP
VACUUM GLORIETTA EAST UNIT, EAST BATTERY PLAYA
SECTION 27, T17S, R35E, LEA COUNTY, NEW MEXICO
ConocoPhillips Company

Tables

Table 1

Monitoring Well Specifications and Groundwater Elevations
Vacuum Glorietta East Unit
Lea County, New Mexico

Well ID	Total Depth (ft below TOC)	Top of Casing Elevation* (ft above amsl)	Screen Interval (ft bgs)	Date Measured	Depth to Product (ft below TOC)	Depth to Groundwater (ft below TOC)	Relative Water Level (ft above amsl)
VG-2	70	3930.56	--	1/27/2014	--	65.41	3865.15
				4/16/2014	--	65.38	3865.18
				7/22/2014	--	65.32	3865.24
				10/9/2014	--	64.03	3866.53
				1/14/2015	--	64.30	3866.26
				4/16/2015	--	64.37	3866.19
				7/8/2015	--	64.85	3865.71
				10/9/2015	--	65.15	3865.41
				1/7/2016	--	65.25	3865.31
				4/6/2016	--	65.29	3865.27
				10/6/2016	--	65.35	3865.21
VG-3	70	3931.15	--	1/27/2014	--	64.71	3866.44
				4/16/2014	--	64.66	3866.49
				7/22/2014	--	64.59	3866.56
				10/9/2014	--	63.30	3867.85
				1/14/2015	--	63.58	3867.57
				4/16/2015	--	63.63	3867.52
				7/8/2015	--	64.11	3867.04
				10/9/2015	--	64.38	3866.77
				1/7/2016	--	64.48	3866.67
				4/6/2016	--	64.54	3866.61
				10/6/2016	--	64.61	3866.54
VG-4	78	3931.93	--	1/27/2014	65.52	65.56	3866.40
				4/16/2014	65.48	65.49	3866.45
				7/22/2014	65.44	65.45	3866.49
				10/9/2014	--	63.93	3868.00
				1/14/2015	--	64.48	3867.45
				4/16/2015	--	64.53	3867.40
				7/8/2015	--	65.02	3866.91
				10/9/2015	--	65.25	3866.68
				1/7/2016	--	65.33	3866.60
				4/6/2016	65.35	65.36	3866.58
				10/6/2016	--	65.46	3866.47
VG-5	74	3930.52	59 - 74	1/27/2014	--	64.51	3866.01
				4/16/2014	--	64.80	3865.72
				7/22/2014	--	64.38	3866.14
				10/9/2014	--	63.16	3867.36
				1/14/2015	--	63.42	3867.10
				4/16/2015	--	63.46	3867.06
				7/8/2015	--	63.99	3866.53
				10/9/2015	--	64.25	3866.27
				1/7/2016	--	64.32	3866.20
				4/6/2016	--	64.36	3866.16
				10/6/2016	--	64.43	3866.09
VG-6	80	3935.16	65 - 80	1/27/2014	--	68.38	3866.78
				4/16/2014	--	68.32	3866.84
				7/22/2014	--	68.26	3866.90
				10/9/2014	--	67.06	3868.10
				1/14/2015	--	67.27	3867.89
				4/16/2015	--	67.30	3867.86
				7/8/2015	--	67.86	3867.30
				10/9/2015	--	68.12	3867.04
				1/7/2016	--	68.16	3867.00
				4/6/2016	--	68.21	3866.95
				10/6/2016	--	68.27	3866.89
VG-7	80	3934.78	65 - 80	1/27/2014	--	68.23	3866.55
				4/16/2014	--	68.19	3866.59
				7/22/2014	--	68.10	3866.68
				10/9/2014	--	66.93	3867.85
				1/14/2015	--	67.12	3867.66
				4/16/2015	--	67.16	3867.62
				7/8/2015	--	67.70	3867.08
				10/9/2015	--	67.98	3866.80
				1/7/2016	--	68.01	3866.77
				4/6/2016	--	68.07	3866.71
				10/6/2016	--	68.13	3866.65

Notes:

ft = feet
TOC = top of casing
* = Survey conducted 2/27/2014
amsl = above mean sea level
bgs = below ground surface

Table 2

Groundwater Analytical Results Summary
Vacuum Glorietta East Unit
Lea County, New Mexico

Well ID	Sample ID	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)
NMWQCC Groundwater Quality Standards			**0.01**	**0.75**	**0.75**	**0.62**	**250**
VG-2	GW-075005-012814-CK-VG-2	1/28/2014	< 0.001	< 0.001	< 0.001	< 0.003	125
	GW-075005-041614-BB-VG-2	4/16/2014	< 0.001	< 0.001	< 0.001	< 0.003	134
	GW-075005-072214-CK-VG-2	7/22/2014	< 0.001	< 0.001	< 0.001	< 0.003	146
	GW-075005-100914-SP-VG-2	10/9/2014	< 0.001	< 0.001	< 0.001	< 0.003	111
	GW-075005-100914-SP-DUP	10/9/2014	< 0.001	< 0.001	< 0.001	< 0.003	139
	GW-075005-011415-SP-VG-2	1/14/2015	< 0.001	< 0.001	< 0.001	< 0.003	106
	GW-075005-041615-CK-VG-2	4/16/2015	< 0.001	< 0.001	< 0.001	< 0.003	88.4
	GW-075005-070815-CK-VG-2	7/8/2015	< 0.001	< 0.001	< 0.001	< 0.003	73.8
	GW-075005-100915-SP-VG-2	10/9/2015	< 0.001	< 0.001	< 0.001	< 0.003	106
	GW-075005-010716-SP-VG-2	1/7/2016	< 0.001	< 0.001	< 0.001	< 0.003	183
	GW-075005-040616-SP-VG-2	4/6/2016	< 0.001	< 0.001	< 0.001	< 0.003	174
	GW-075005-100616-SP-VG-2	10/6/2016	< 0.001	< 0.001	< 0.001	< 0.003	200
VG-3	GW-075005-012814-CK-VG-3	1/28/2014	< 0.001	< 0.001	< 0.001	< 0.003	45.2
	GW-075005-041614-BB-VG-3	4/16/2014	< 0.001	< 0.001	< 0.001	< 0.003	46.7
	GW-075005-072214-CK-VG-3	7/22/2014	< 0.001	< 0.001	< 0.001	< 0.003	44.4
	GW-075005-100914-SP-VG-3	10/9/2014	< 0.001	< 0.001	< 0.001	< 0.003	38.2
	GW-075005-011415-SP-VG-3	1/14/2015	< 0.001	< 0.001	< 0.001	< 0.003	50
	GW-075005-041615-CK-VG-3	4/16/2015	< 0.001	< 0.001	< 0.001	< 0.003	45.7
	GW-075005-070815-CK-VG-3	7/8/2015	< 0.001	< 0.001	< 0.001	< 0.003	44.2
	GW-075005-100915-SP-VG-3	10/9/2015	< 0.001	< 0.001	< 0.001	< 0.003	41.6
	GW-075005-010716-SP-VG-3	1/7/2016	< 0.001	< 0.001	< 0.001	< 0.003	40.4
	GW-075005-040616-SP-VG-3	4/6/2016	< 0.001	< 0.001	< 0.001	< 0.003	40.9
	GW-075005-100616-SP-VG-3	10/6/2016	< 0.001	< 0.001	< 0.001	< 0.003	40.3
VG-4	--	1/28/2014	Not sampled due to presence of LNAPL.				
	--	4/16/2014	Not sampled due to presence of LNAPL.				
	--	7/22/2014	Not sampled due to presence of LNAPL.				
	--	10/9/2014	Not sampled due to presence of LNAPL.				
	GW-075005-102814-SP-VG-4	10/28/2014	**1.8**	< 0.05	**0.82**	0.2	**4140**
	GW-075005-011415-SP-VG-4	1/14/2015	**2.7**	0.03	**1.1**	**0.78**	**5640**
	GW-075005-041615-CK-VG-4	4/16/2015	**5.6**	0.037	**1.7**	**0.8**	**3080**
	GW-075005-041615-CK-DUP	4/16/2015	**5.0**	0.03	**1.3**	0.61	--
	GW-075005-070815-CK-VG-4	7/8/2015	**4.94**	< 0.05	**1.57**	< 0.15	**2240**
	GW-075005-070815-CK-DUP	7/8/2015	**4.21**	0.0024	**1.27**	0.134	--
	GW-075005-100915-SP-VG-4	10/9/2015	**4.18**	< 0.05	**1.5**	0.305	**1480**
	GW-075005-010716-SP-VG-4	1/7/2016	**4.12**	< 0.05	**2.1**	0.272	**1360**
	GW-075005-010716-SP-DUP	1/7/2016	**4.08**	0.0222	**2.01**	0.175	--
	GW-075005-040616-SP-VG-4	4/6/2016	**3.61**	< 0.05	**5.47**	**2.13**	**1190**
	GW-075005-040616-SP-DUP	4/6/2016	**3.17**	< 0.05	**2.95**	**0.99**	--
	GW-075005-100616-SP-VG-4	10/6/2016	**1.51**	< 0.05	0.54	0.256	**1490**
	GW-075005-100616-SP-DUP	10/6/2016	**1.58**	<0.05	0.569	0.27	--

Table 2

Groundwater Analytical Results Summary
Vacuum Glorietta East Unit
Lea County, New Mexico

Well ID	Sample ID	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)
NMWQCC Groundwater Quality Standards			**0.01**	**0.75**	**0.75**	**0.62**	**250**
VG-5	GW-075005-012814-CK-VG-5	1/28/2014	< 0.001	< 0.001	< 0.001	< 0.003	**304**
	GW-075005-041614-BB-VG-5	4/16/2014	< 0.001	< 0.001	< 0.001	< 0.003	**342**
	GW-075005-041614-BB-DUP	4/16/2014	< 0.001	< 0.001	< 0.001	< 0.003	**328**
	GW-075005-072214-CK-VG-5	7/22/2014	< 0.001	< 0.001	< 0.001	< 0.003	140
	GW-075005-100914-SP-VG-5	10/9/2014	< 0.001	< 0.001	< 0.001	< 0.003	**278**
	GW-075005-011415-SP-VG-5	1/14/2015	< 0.001	< 0.001	< 0.001	< 0.003	228
	GW-075005-011415-SP-DUP	1/14/2015	< 0.001	< 0.001	< 0.001	< 0.003	200
	GW-075005-041615-CK-VG-5	4/16/2015	< 0.001	< 0.001	< 0.001	< 0.003	200
	GW-075005-070815-CK-VG-5	7/8/2015	< 0.001	< 0.001	< 0.001	< 0.003	232
	GW-075005-100915-CK-VG-5	10/9/2015	< 0.001	< 0.001	< 0.001	< 0.003	204
	GW-075005-100915-SP-DUP	10/9/2015	< 0.001	< 0.001	< 0.001	< 0.003	187
	GW-075005-010716-SP-VG-5	1/7/2016	< 0.001	< 0.001	< 0.001	< 0.003	158
	GW-075005-040616-SP-VG-5	4/6/2016	< 0.001	< 0.001	< 0.001	< 0.003	224
	GW-075005-100616-SP-VG-5	10/6/2016	< 0.001	< 0.001	< 0.001	< 0.003	**283**
VG-6	GW-075005-012814-CK-VG-6	1/28/2014	< 0.001	< 0.001	< 0.001	< 0.003	88.3
	GW-075005-041614-BB-VG-6	4/16/2014	< 0.001	< 0.001	< 0.001	< 0.003	78.1
	GW-075005-072214-CK-VG-6	7/22/2014	< 0.001	< 0.001	< 0.001	< 0.003	95.3
	GW-0750015-100914-SP-VG-6	10/9/2014	< 0.001	< 0.001	< 0.001	< 0.003	113
	GW-0750015-011415-SP-VG-6	1/14/2015	< 0.001	< 0.001	< 0.001	< 0.003	88.4
	GW-075005-041615-CK-VG-6	4/16/2015	< 0.001	< 0.001	< 0.001	< 0.003	82.3
	GW-075005-070815-CK-VG-6	7/8/2015	< 0.001	< 0.001	< 0.001	< 0.003	99.9
	GW-075005-100915-SP-VG-6	10/9/2015	< 0.001	< 0.001	< 0.001	< 0.003	134
	GW-075005-010716-SP-VG-6	1/7/2016	< 0.001	< 0.001	< 0.001	< 0.003	111
	GW-075005-040616-SP-VG-6	4/6/2016	< 0.001	< 0.001	< 0.001	< 0.003	86
	GW-075005-100616-SP-VG-6	10/6/2016	< 0.001	< 0.001	< 0.001	< 0.003	139
VG-7	GW-075005-012814-CK-VG-7	1/28/2014	< 0.001	< 0.001	< 0.001	< 0.003	191
	GW-075005-012814-CK-DUP	1/28/2014	< 0.001	< 0.001	< 0.001	< 0.003	201
	GW-075005-041614-BB-VG-7	4/16/2014	< 0.001	< 0.001	< 0.001	< 0.003	211
	GW-075005-072214-CK-VG-7	7/22/2014	< 0.001	< 0.001	< 0.001	< 0.003	201
	GW-075005-072214-CK-DUP	7/22/2014	--	--	--	--	203
	GW-075005-100914-SP-VG-7	10/9/2014	< 0.001	< 0.001	< 0.001	< 0.003	189
	GW-075005-011415-SP-VG-7	1/14/2015	< 0.001	< 0.001	< 0.001	< 0.003	246
	GW-075005-041615-CK-VG-7	4/16/2015	< 0.001	< 0.001	< 0.001	< 0.003	**270**
	GW-075005-070815-CK-VG-7	7/8/2015	< 0.001	< 0.001	< 0.001	< 0.003	203
	GW-075005-100915-SP-VG-7	10/9/2015	< 0.001	< 0.001	< 0.001	< 0.003	154
	GW-075005-010716-SP-VG-7	1/7/2016	< 0.001	< 0.001	< 0.001	< 0.003	121
	GW-075005-040616-SP-VG-7	4/6/2016	< 0.001	< 0.001	< 0.001	< 0.003	148
	GW-075005-100616-SP-VG-7	10/6/2016	<0.001	<0.001	<0.001	<0.003	172

Notes:

NMWQCC = New Mexico Water Quality Control Commission
mg/L = milligrams per liter (parts per million)
< 0.001 = Below Laboratory Detection Limit of 0.001 mg/L
< = Below Laboratory Detection Limit
-- = not applicable
BOLD = Concentrations that exceed the NMWQCC groundwater quality standard

Appendices

Appendix A
Groundwater Laboratory Analytical Reports

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

April 20, 2016

Bernie Bockisch
GHD Services, Inc.
6121 Indian School Rd NE
Ste 200
Albuquerque, NM 87110

RE: Project: 075005 Vacuum Glorieta East
Pace Project No.: 60216616

Dear Bernie Bockisch:
Enclosed are the analytical results for sample(s) received by the laboratory on April 08, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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 Flanagan
alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Angela Bown, GHD Services, Inc,
Cassie Brown, GHD Services, Inc,
Cale Kanack, GHD
Jeffrey Walker, GHD Services, Inc

Pace Analytical Services, Inc.
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Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60216616

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

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SAMPLE SUMMARY

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60216616

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60216616001	**GW-075005-040616-SP-VG-2**	Water	04/06/16 19:30	04/08/16 09:10
60216616002	**GW-075005-040616-SP-VG-3**	Water	04/06/16 18:15	04/08/16 09:10
60216616003	**GW-075005-040616-SP-VG-4**	Water	04/06/16 16:23	04/08/16 09:10
60216616004	**GW-075005-040616-SP-VG-5**	Water	04/06/16 18:55	04/08/16 09:10
60216616005	**GW-075005-040616-SP-VG-6**	Water	04/06/16 17:50	04/08/16 09:10
60216616006	**GW-075005-040616-SP-VG-7**	Water	04/06/16 17:18	04/08/16 09:10
60216616007	**GW-075005-040616-SP-DUP**	Water	04/06/16 00:00	04/08/16 09:10
60216616008	**TRIP BLANK**	Water	04/06/16 08:00	04/08/16 09:10

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60216616

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60216616001	**GW-075005-040616-SP-VG-2**	EPA 8260/OA1	JDH	8
		EPA 300.0	OL	1
60216616002	**GW-075005-040616-SP-VG-3**	EPA 8260/OA1	JDH	8
		EPA 300.0	OL	1
60216616003	**GW-075005-040616-SP-VG-4**	EPA 8260/OA1	JDH	8
		EPA 300.0	OL	1
60216616004	**GW-075005-040616-SP-VG-5**	EPA 8260/OA1	JDH	8
		EPA 300.0	OL	1
60216616005	**GW-075005-040616-SP-VG-6**	EPA 8260/OA1	JDH	8
		EPA 300.0	OL	1
60216616006	**GW-075005-040616-SP-VG-7**	EPA 8260/OA1	JDH	8
		EPA 300.0	OL	1
60216616007	**GW-075005-040616-SP-DUP**	EPA 8260/OA1	JDH	8
60216616008	**TRIP BLANK**	EPA 8260/OA1	JDH	8

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60216616

Sample: GW-075005-040616-SP-VG-2 **Lab ID: 60216616001** Collected: 04/06/16 19:30 Received: 04/08/16 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	ND	ug/L	1.0	1		04/20/16 06:47	71-43-2	
Toluene	ND	ug/L	1.0	1		04/20/16 06:47	108-88-3	
Ethylbenzene	ND	ug/L	1.0	1		04/20/16 06:47	100-41-4	
Xylene (Total)	ND	ug/L	3.0	1		04/20/16 06:47	1330-20-7	
Surrogates								
Toluene-d8 (S)	101	%	80-120	1		04/20/16 06:47	2037-26-5	
4-Bromofluorobenzene (S)	101	%	77-130	1		04/20/16 06:47	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	81-127	1		04/20/16 06:47	17060-07-0	
Preservation pH	**1.0**		0.10	1		04/20/16 06:47		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**174**	mg/L	10.0	10		04/15/16 17:45	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60216616

Sample: GW-075005-040616-SP-VG-3 **Lab ID: 60216616002** Collected: 04/06/16 18:15 Received: 04/08/16 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	ND	ug/L	1.0	1		04/20/16 07:01	71-43-2	
Toluene	ND	ug/L	1.0	1		04/20/16 07:01	108-88-3	
Ethylbenzene	ND	ug/L	1.0	1		04/20/16 07:01	100-41-4	
Xylene (Total)	ND	ug/L	3.0	1		04/20/16 07:01	1330-20-7	
Surrogates								
Toluene-d8 (S)	102	%	80-120	1		04/20/16 07:01	2037-26-5	
4-Bromofluorobenzene (S)	99	%	77-130	1		04/20/16 07:01	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	81-127	1		04/20/16 07:01	17060-07-0	
Preservation pH	**1.0**		0.10	1		04/20/16 07:01		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**40.9**	mg/L	10.0	10		04/15/16 18:30	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60216616

Sample: GW-075005-040616-SP-VG-4 **Lab ID: 60216616003** Collected: 04/06/16 16:23 Received: 04/08/16 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	**3610**	ug/L	50.0	50		04/20/16 07:15	71-43-2	
Toluene	ND	ug/L	50.0	50		04/20/16 07:15	108-88-3	
Ethylbenzene	**5470**	ug/L	50.0	50		04/20/16 07:15	100-41-4	
Xylene (Total)	**2130**	ug/L	150	50		04/20/16 07:15	1330-20-7	
Surrogates								
Toluene-d8 (S)	102	%	80-120	50		04/20/16 07:15	2037-26-5	
4-Bromofluorobenzene (S)	100	%	77-130	50		04/20/16 07:15	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	81-127	50		04/20/16 07:15	17060-07-0	
Preservation pH	**1.0**		0.10	50		04/20/16 07:15		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**1190**	mg/L	100	100		04/16/16 16:52	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60216616

Sample: GW-075005-040616-SP-VG-5 **Lab ID: 60216616004** Collected: 04/06/16 18:55 Received: 04/08/16 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	ND	ug/L	1.0	1		04/20/16 07:29	71-43-2	
Toluene	ND	ug/L	1.0	1		04/20/16 07:29	108-88-3	
Ethylbenzene	ND	ug/L	1.0	1		04/20/16 07:29	100-41-4	
Xylene (Total)	ND	ug/L	3.0	1		04/20/16 07:29	1330-20-7	
Surrogates								
Toluene-d8 (S)	101	%	80-120	1		04/20/16 07:29	2037-26-5	
4-Bromofluorobenzene (S)	101	%	77-130	1		04/20/16 07:29	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	81-127	1		04/20/16 07:29	17060-07-0	
Preservation pH	**1.0**		0.10	1		04/20/16 07:29		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**224**	mg/L	20.0	20		04/16/16 17:08	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60216616

Sample: GW-075005-040616-SP-VG-6 **Lab ID: 60216616005** Collected: 04/06/16 17:50 Received: 04/08/16 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	ND	ug/L	1.0	1		04/20/16 07:43	71-43-2	
Toluene	ND	ug/L	1.0	1		04/20/16 07:43	108-88-3	
Ethylbenzene	ND	ug/L	1.0	1		04/20/16 07:43	100-41-4	
Xylene (Total)	ND	ug/L	3.0	1		04/20/16 07:43	1330-20-7	
Surrogates								
Toluene-d8 (S)	101	%	80-120	1		04/20/16 07:43	2037-26-5	
4-Bromofluorobenzene (S)	102	%	77-130	1		04/20/16 07:43	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	81-127	1		04/20/16 07:43	17060-07-0	
Preservation pH	**1.0**		0.10	1		04/20/16 07:43		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**86.0**	mg/L	10.0	10		04/15/16 19:31	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60216616

Sample: GW-075005-040616-SP-VG-7 **Lab ID: 60216616006** Collected: 04/06/16 17:18 Received: 04/08/16 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	ND	ug/L	1.0	1		04/20/16 07:58	71-43-2	
Toluene	ND	ug/L	1.0	1		04/20/16 07:58	108-88-3	
Ethylbenzene	ND	ug/L	1.0	1		04/20/16 07:58	100-41-4	
Xylene (Total)	ND	ug/L	3.0	1		04/20/16 07:58	1330-20-7	
Surrogates								
Toluene-d8 (S)	101	%	80-120	1		04/20/16 07:58	2037-26-5	
4-Bromofluorobenzene (S)	99	%	77-130	1		04/20/16 07:58	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	81-127	1		04/20/16 07:58	17060-07-0	
Preservation pH	**1.0**		0.10	1		04/20/16 07:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**148**	mg/L	10.0	10		04/15/16 19:46	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60216616

Sample: GW-075005-040616-SP-DUP **Lab ID: 60216616007** Collected: 04/06/16 00:00 Received: 04/08/16 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	**3170**	ug/L	50.0	50		04/20/16 08:12	71-43-2	
Toluene	ND	ug/L	50.0	50		04/20/16 08:12	108-88-3	
Ethylbenzene	**2950**	ug/L	50.0	50		04/20/16 08:12	100-41-4	
Xylene (Total)	**990**	ug/L	150	50		04/20/16 08:12	1330-20-7	
Surrogates								
Toluene-d8 (S)	99	%	80-120	50		04/20/16 08:12	2037-26-5	
4-Bromofluorobenzene (S)	99	%	77-130	50		04/20/16 08:12	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	81-127	50		04/20/16 08:12	17060-07-0	
Preservation pH	**1.0**		0.10	50		04/20/16 08:12		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60216616

Sample: TRIP BLANK **Lab ID: 60216616008** Collected: 04/06/16 08:00 Received: 04/08/16 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	ND	ug/L	1.0	1		04/20/16 08:26	71-43-2	
Toluene	ND	ug/L	1.0	1		04/20/16 08:26	108-88-3	
Ethylbenzene	ND	ug/L	1.0	1		04/20/16 08:26	100-41-4	
Xylene (Total)	ND	ug/L	3.0	1		04/20/16 08:26	1330-20-7	
Surrogates								
Toluene-d8 (S)	102	%	80-120	1		04/20/16 08:26	2037-26-5	
4-Bromofluorobenzene (S)	99	%	77-130	1		04/20/16 08:26	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	81-127	1		04/20/16 08:26	17060-07-0	
Preservation pH	**1.0**		0.10	1		04/20/16 08:26		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60216616

QC Batch: MSV/75304 Analysis Method: EPA 8260/OA1
QC Batch Method: EPA 8260/OA1 Analysis Description: 8260/OA1 UST-WATER
Associated Lab Samples: 60216616001, 60216616002, 60216616003, 60216616004, 60216616005, 60216616006, 60216616007, 60216616008

METHOD BLANK: 1743920 Matrix: Water
Associated Lab Samples: 60216616001, 60216616002, 60216616003, 60216616004, 60216616005, 60216616006, 60216616007, 60216616008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	04/20/16 03:29	
Ethylbenzene	ug/L	ND	1.0	04/20/16 03:29	
Toluene	ug/L	ND	1.0	04/20/16 03:29	
Xylene (Total)	ug/L	ND	3.0	04/20/16 03:29	
1,2-Dichloroethane-d4 (S)	%	102	81-127	04/20/16 03:29	
4-Bromofluorobenzene (S)	%	101	77-130	04/20/16 03:29	
Toluene-d8 (S)	%	100	80-120	04/20/16 03:29	

LABORATORY CONTROL SAMPLE: 1743921

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	20.1	100	79-116	
Ethylbenzene	ug/L	20	20.3	101	81-110	
Toluene	ug/L	20	20.8	104	82-111	
Xylene (Total)	ug/L	60	60.9	101	80-111	
1,2-Dichloroethane-d4 (S)	%			101	81-127	
4-Bromofluorobenzene (S)	%			98	77-130	
Toluene-d8 (S)	%			102	80-120	

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: 075005 Vacuum Glorieta East
Pace Project No.: 60216616

QC Batch: WETA/39036 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60216616001, 60216616002, 60216616005, 60216616006

METHOD BLANK: 1742443 Matrix: Water
Associated Lab Samples: 60216616001, 60216616002, 60216616005, 60216616006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	04/15/16 16:44	

LABORATORY CONTROL SAMPLE: 1742444

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1742445 1742446

Parameter	Units	60216616001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	174	50	50	226	226	105	104	80-120	0	15	

MATRIX SPIKE SAMPLE: 1742447

Parameter	Units	60216616002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	40.9	50	88.4	95	80-120	

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: 075005 Vacuum Glorieta East
Pace Project No.: 60216616

QC Batch: WETA/39043 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60216616003, 60216616004

METHOD BLANK: 1742830 Matrix: Water
Associated Lab Samples: 60216616003, 60216616004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	04/16/16 12:54	

LABORATORY CONTROL SAMPLE: 1742831

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1742832 1742833

Parameter	Units	60216897003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	311	250	250	557	557	98	98	80-120	0	15	

MATRIX SPIKE SAMPLE: 1742834

Parameter	Units	60216897008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	31.9	25	56.5	98	80-120	

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, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60216616

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.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60216616

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60216616001	**GW-075005-040616-SP-VG-2**	EPA 8260/OA1	MSV/75304		
60216616002	**GW-075005-040616-SP-VG-3**	EPA 8260/OA1	MSV/75304		
60216616003	**GW-075005-040616-SP-VG-4**	EPA 8260/OA1	MSV/75304		
60216616004	**GW-075005-040616-SP-VG-5**	EPA 8260/OA1	MSV/75304		
60216616005	**GW-075005-040616-SP-VG-6**	EPA 8260/OA1	MSV/75304		
60216616006	**GW-075005-040616-SP-VG-7**	EPA 8260/OA1	MSV/75304		
60216616007	**GW-075005-040616-SP-DUP**	EPA 8260/OA1	MSV/75304		
60216616008	**TRIP BLANK**	EPA 8260/OA1	MSV/75304		
60216616001	**GW-075005-040616-SP-VG-2**	EPA 300.0	WETA/39036		
60216616002	**GW-075005-040616-SP-VG-3**	EPA 300.0	WETA/39036		
60216616003	**GW-075005-040616-SP-VG-4**	EPA 300.0	WETA/39043		
60216616004	**GW-075005-040616-SP-VG-5**	EPA 300.0	WETA/39043		
60216616005	**GW-075005-040616-SP-VG-6**	EPA 300.0	WETA/39036		
60216616006	**GW-075005-040616-SP-VG-7**	EPA 300.0	WETA/39036		

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Sample Condition Upon Receipt

WO# : 60216616

60216616

Client Name: GHD Services

Optional
Proj Due Date:
Proj Name:

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

Tracking #: 6707 1640 9020 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 +1.0 T-239 / (CF 0.0 T-262) **Type of Ice:** (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.4

Temperature should be above freezing to 6°C

Date and initials of person examining contents: JB 4/8

Chain of Custody present:	☒Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☒Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☒Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☒Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	7.
Sufficient volume:	☒Yes ☐No ☐N/A	8.
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	9.
Containers intact:	☒Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☒N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	12.
Sample labels match COC:	☒Yes ☐No ☐N/A	
Includes date/time/ID/analyses Matrix: WT		13.
All containers needing preservation have been checked.	☐Yes ☐No ☒N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☒N/A	14.
Exceptions: (VOA), Coliform, O&G, WI-DRO (water)	☒Yes ☐No	Initial when completed / Lot # of added preservative
Trip Blank present:	☒Yes ☐No ☐N/A	
Pace Trip Blank lot # (if purchased): 3/29/16		15.
Headspace in VOA vials (>6mm):	☐Yes ☒No ☐N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☒N/A	17. List State:
Additional labels attached to 5035A vials in the field?	☐Yes ☐No ☒N/A	18.

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: 4/8/16

F-KS-C-003-Rev.9, 30June2015

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:	Bernie Bockisch	Attention:	
Address:	9033 Meridian Way	Copy To:	Steve Perez	Company Name:	
West Chester, OH 45069		Angela Bown		Address:	
Email:	bernard.bockisch@ghd.com	Purchase Order #:		Pace Quote:	
Phone:	505-884-0672 Fax:	Project Name:	075005 Vacuum Glorieta East	Pace Project Manager:	alice.flanagan@pacelabs.com
Requested Due Date:		Project #:		Pace Profile #:	

Regulatory Agency	
State / Location	NM

Requested Analysis Filtered (Y/N)

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	Chloride	Residual Chlorine (Y/N)	60216416
1	GW-075005-040616-SP-VG-2	WT	G	4/6/16	1930				4										X	X		(3) DGAH BP3U 001
2	GW-075005-040616-SP-VG-3	"	"	"	1815				4										"	"		002
3	GW-075005-040616-SP-VG-4	"	"	"	1623				4													003
4	GW-075005-040616-SP-VG-5	"	"	"	1855				4													004
5	GW-075005-040616-SP-VG-6	"	"	"	1750				4													005
6	GW-075005-040616-SP-VG-7	"	"	"	1718				4													006
7	GW-075005-040616-SP-DUP	"	"	"					3													(3) DGAH TB 007
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Steven Perez/GHD	4/7/16	1050		4/8	0910	2.4	Y	Y	Y

SAMPLER NAME AND SIGNATURE			
PRINT Name of SAMPLER:	Steven Perez		
SIGNATURE of SAMPLER:	Steven Perez	DATE Signed:	4/7/16

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

October 24, 2016

Bernie Bockisch
GHD Services, Inc.
6121 Indian School Rd NE
Ste 200
Albuquerque, NM 87110

RE: Project: 075005 COP VACUUM GLORIETA EAS
Pace Project No.: 60229597

Dear Bernie Bockisch:
Enclosed are the analytical results for sample(s) received by the laboratory on October 08, 2016. 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
Project Manager

Enclosures

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

Pace Analytical Services, LLC
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CERTIFICATIONS

Project: 075005 COP VACUUM GLORIETA EAS
Pace Project No.: 60229597

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: 075005 COP VACUUM GLORIETA EAS
Pace Project No.: 60229597

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60229597001	**GW-075005-100616-SP-VG-4**	Water	10/06/16 11:35	10/08/16 08:20
60229597002	**GW-075005-100616-SP-VG-7**	Water	10/06/16 12:40	10/08/16 08:20
60229597003	**GW-075005-100616-SP-VG-6**	Water	10/06/16 13:10	10/08/16 08:20
60229597004	**GW-075005-100616-SP-VG-3**	Water	10/06/16 13:35	10/08/16 08:20
60229597005	**GW-075005-100616-SP-VG-2**	Water	10/06/16 14:05	10/08/16 08:20
60229597006	**GW-075005-100616-SP-VG-5**	Water	10/06/16 14:35	10/08/16 08:20
60229597007	**GW-075005-100616-SP-DUP**	Water	10/06/16 08:00	10/08/16 08:20
60229597008	**TRIP BLANK**	Water	10/06/16 08:00	10/08/16 08:20

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SAMPLE ANALYTE COUNT

Project: 075005 COP VACUUM GLORIETA EAS
Pace Project No.: 60229597

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60229597001	**GW-075005-100616-SP-VG-4**	EPA 8260/OA1	JTK	8
		EPA 300.0	OL	1
60229597002	**GW-075005-100616-SP-VG-7**	EPA 8260/OA1	JTK	8
		EPA 300.0	OL	1
60229597003	**GW-075005-100616-SP-VG-6**	EPA 8260/OA1	JTK	8
		EPA 300.0	OL	1
60229597004	**GW-075005-100616-SP-VG-3**	EPA 8260/OA1	JTK	8
		EPA 300.0	OL	1
60229597005	**GW-075005-100616-SP-VG-2**	EPA 8260/OA1	JTK	8
		EPA 300.0	OL	1
60229597006	**GW-075005-100616-SP-VG-5**	EPA 8260/OA1	JTK	8
		EPA 300.0	OL	1
60229597007	**GW-075005-100616-SP-DUP**	EPA 8260/OA1	JTK	8

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ANALYTICAL RESULTS

Project: 075005 COP VACUUM GLORIETA EAS
Pace Project No.: 60229597

Sample: GW-075005-100616-SP-VG-4 **Lab ID: 60229597001** Collected: 10/06/16 11:35 Received: 10/08/16 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	**1510**	ug/L	50.0	50		10/20/16 03:18	71-43-2	
Toluene	ND	ug/L	50.0	50		10/20/16 03:18	108-88-3	
Ethylbenzene	**540**	ug/L	50.0	50		10/20/16 03:18	100-41-4	
Xylene (Total)	**256**	ug/L	150	50		10/20/16 03:18	1330-20-7	
Surrogates								
Toluene-d8 (S)	100	%	80-120	50		10/20/16 03:18	2037-26-5	
4-Bromofluorobenzene (S)	100	%	77-130	50		10/20/16 03:18	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	81-127	50		10/20/16 03:18	17060-07-0	
Preservation pH	**1.0**		0.10	50		10/20/16 03:18		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**1490**	mg/L	100	100		10/23/16 10:03	16887-00-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 075005 COP VACUUM GLORIETA EAS
Pace Project No.: 60229597

Sample: GW-075005-100616-SP-VG-7 **Lab ID: 60229597002** Collected: 10/06/16 12:40 Received: 10/08/16 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	ND	ug/L	1.0	1		10/19/16 04:10	71-43-2	
Toluene	ND	ug/L	1.0	1		10/19/16 04:10	108-88-3	
Ethylbenzene	ND	ug/L	1.0	1		10/19/16 04:10	100-41-4	
Xylene (Total)	ND	ug/L	3.0	1		10/19/16 04:10	1330-20-7	
Surrogates								
Toluene-d8 (S)	99	%	80-120	1		10/19/16 04:10	2037-26-5	
4-Bromofluorobenzene (S)	99	%	77-130	1		10/19/16 04:10	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	81-127	1		10/19/16 04:10	17060-07-0	
Preservation pH	**1.0**		0.10	1		10/19/16 04:10		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**172**	mg/L	10.0	10		10/22/16 16:09	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 COP VACUUM GLORIETA EAS
Pace Project No.: 60229597

Sample: GW-075005-100616-SP-VG-6 **Lab ID: 60229597003** Collected: 10/06/16 13:10 Received: 10/08/16 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	ND	ug/L	1.0	1		10/19/16 04:25	71-43-2	
Toluene	ND	ug/L	1.0	1		10/19/16 04:25	108-88-3	
Ethylbenzene	ND	ug/L	1.0	1		10/19/16 04:25	100-41-4	
Xylene (Total)	ND	ug/L	3.0	1		10/19/16 04:25	1330-20-7	
Surrogates								
Toluene-d8 (S)	100	%	80-120	1		10/19/16 04:25	2037-26-5	
4-Bromofluorobenzene (S)	101	%	77-130	1		10/19/16 04:25	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	81-127	1		10/19/16 04:25	17060-07-0	
Preservation pH	**1.0**		0.10	1		10/19/16 04:25		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**139**	mg/L	10.0	10		10/22/16 16:23	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 COP VACUUM GLORIETA EAS
Pace Project No.: 60229597

Sample: GW-075005-100616-SP-VG-3 **Lab ID: 60229597004** Collected: 10/06/16 13:35 Received: 10/08/16 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	ND	ug/L	1.0	1		10/20/16 04:02	71-43-2	
Toluene	ND	ug/L	1.0	1		10/20/16 04:02	108-88-3	
Ethylbenzene	ND	ug/L	1.0	1		10/20/16 04:02	100-41-4	
Xylene (Total)	ND	ug/L	3.0	1		10/20/16 04:02	1330-20-7	
Surrogates								
Toluene-d8 (S)	101	%	80-120	1		10/20/16 04:02	2037-26-5	
4-Bromofluorobenzene (S)	101	%	77-130	1		10/20/16 04:02	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	81-127	1		10/20/16 04:02	17060-07-0	
Preservation pH	**1.0**		0.10	1		10/20/16 04:02		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**40.3**	mg/L	10.0	10		10/22/16 16:37	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 COP VACUUM GLORIETA EAS
Pace Project No.: 60229597

Sample: GW-075005-100616-SP-VG-2 **Lab ID: 60229597005** Collected: 10/06/16 14:05 Received: 10/08/16 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	ND	ug/L	1.0	1		10/20/16 04:17	71-43-2	
Toluene	ND	ug/L	1.0	1		10/20/16 04:17	108-88-3	
Ethylbenzene	ND	ug/L	1.0	1		10/20/16 04:17	100-41-4	
Xylene (Total)	ND	ug/L	3.0	1		10/20/16 04:17	1330-20-7	
Surrogates								
Toluene-d8 (S)	101	%	80-120	1		10/20/16 04:17	2037-26-5	
4-Bromofluorobenzene (S)	100	%	77-130	1		10/20/16 04:17	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	81-127	1		10/20/16 04:17	17060-07-0	
Preservation pH	**1.0**		0.10	1		10/20/16 04:17		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**200**	mg/L	20.0	20		10/23/16 10:46	16887-00-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

ANALYTICAL RESULTS

Project: 075005 COP VACUUM GLORIETA EAS
Pace Project No.: 60229597

Sample: GW-075005-100616-SP-VG-5 **Lab ID: 60229597006** Collected: 10/06/16 14:35 Received: 10/08/16 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	ND	ug/L	1.0	1		10/20/16 04:31	71-43-2	
Toluene	ND	ug/L	1.0	1		10/20/16 04:31	108-88-3	
Ethylbenzene	ND	ug/L	1.0	1		10/20/16 04:31	100-41-4	
Xylene (Total)	ND	ug/L	3.0	1		10/20/16 04:31	1330-20-7	
Surrogates								
Toluene-d8 (S)	101	%	80-120	1		10/20/16 04:31	2037-26-5	
4-Bromofluorobenzene (S)	101	%	77-130	1		10/20/16 04:31	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	81-127	1		10/20/16 04:31	17060-07-0	
Preservation pH	**1.0**		0.10	1		10/20/16 04:31		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**283**	mg/L	20.0	20		10/23/16 11:28	16887-00-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
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(913)599-5665

ANALYTICAL RESULTS

Project: 075005 COP VACUUM GLORIETA EAS
Pace Project No.: 60229597

Sample: GW-075005-100616-SP-DUP **Lab ID: 60229597007** Collected: 10/06/16 08:00 Received: 10/08/16 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	**1580**	ug/L	50.0	50		10/20/16 04:46	71-43-2	
Toluene	ND	ug/L	50.0	50		10/20/16 04:46	108-88-3	
Ethylbenzene	**569**	ug/L	50.0	50		10/20/16 04:46	100-41-4	
Xylene (Total)	**270**	ug/L	150	50		10/20/16 04:46	1330-20-7	
Surrogates								
Toluene-d8 (S)	101	%	80-120	50		10/20/16 04:46	2037-26-5	
4-Bromofluorobenzene (S)	101	%	77-130	50		10/20/16 04:46	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	81-127	50		10/20/16 04:46	17060-07-0	
Preservation pH	**1.0**		0.10	50		10/20/16 04:46		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: 075005 COP VACUUM GLORIETA EAS
Pace Project No.: 60229597

QC Batch: 451095 Analysis Method: EPA 8260/OA1
QC Batch Method: EPA 8260/OA1 Analysis Description: 8260/OA1 UST-WATER
Associated Lab Samples: 60229597002, 60229597003

METHOD BLANK: 1845922 Matrix: Water
Associated Lab Samples: 60229597002, 60229597003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	10/18/16 23:29	
Ethylbenzene	ug/L	ND	1.0	10/18/16 23:29	
Toluene	ug/L	ND	1.0	10/18/16 23:29	
Xylene (Total)	ug/L	ND	3.0	10/18/16 23:29	
1,2-Dichloroethane-d4 (S)	%	100	81-127	10/18/16 23:29	
4-Bromofluorobenzene (S)	%	99	77-130	10/18/16 23:29	
Toluene-d8 (S)	%	101	80-120	10/18/16 23:29	

LABORATORY CONTROL SAMPLE: 1845923

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	20.3	101	79-116	
Ethylbenzene	ug/L	20	19.7	99	81-110	
Toluene	ug/L	20	19.6	98	82-111	
Xylene (Total)	ug/L	60	59.4	99	80-111	
1,2-Dichloroethane-d4 (S)	%			102	81-127	
4-Bromofluorobenzene (S)	%			101	77-130	
Toluene-d8 (S)	%			100	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 075005 COP VACUUM GLORIETA EAS
Pace Project No.: 60229597

QC Batch: 451302 Analysis Method: EPA 8260/OA1
QC Batch Method: EPA 8260/OA1 Analysis Description: 8260/OA1 UST-WATER
Associated Lab Samples: 60229597001, 60229597004, 60229597005, 60229597006, 60229597007

METHOD BLANK: 1846747 Matrix: Water
Associated Lab Samples: 60229597001, 60229597004, 60229597005, 60229597006, 60229597007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	10/20/16 02:33	
Ethylbenzene	ug/L	ND	1.0	10/20/16 02:33	
Toluene	ug/L	ND	1.0	10/20/16 02:33	
Xylene (Total)	ug/L	ND	3.0	10/20/16 02:33	
1,2-Dichloroethane-d4 (S)	%	100	81-127	10/20/16 02:33	
4-Bromofluorobenzene (S)	%	103	77-130	10/20/16 02:33	
Toluene-d8 (S)	%	101	80-120	10/20/16 02:33	

LABORATORY CONTROL SAMPLE: 1846748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	20.8	104	79-116	
Ethylbenzene	ug/L	20	20.2	101	81-110	
Toluene	ug/L	20	20.0	100	82-111	
Xylene (Total)	ug/L	60	60.1	100	80-111	
1,2-Dichloroethane-d4 (S)	%			100	81-127	
4-Bromofluorobenzene (S)	%			101	77-130	
Toluene-d8 (S)	%			101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1846749 1846750

Parameter	Units	60229597001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	1510	1000	1000	2590	2480	107	97	37-151	4	40	
Ethylbenzene	ug/L	540	1000	1000	1580	1520	104	98	29-151	4	45	
Toluene	ug/L	ND	1000	1000	1040	1000	102	98	37-147	4	43	
Xylene (Total)	ug/L	256	3000	3000	3280	3170	101	97	27-156	4	46	
1,2-Dichloroethane-d4 (S)	%						100	100	81-127			
4-Bromofluorobenzene (S)	%						100	100	77-130			
Toluene-d8 (S)	%						100	102	80-120			
Preservation pH		1.0			1.0	1.0				0		

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: 075005 COP VACUUM GLORIETA EAS
Pace Project No.: 60229597

QC Batch: 451621 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60229597002, 60229597003, 60229597004

METHOD BLANK: 1848437 Matrix: Water
Associated Lab Samples: 60229597002, 60229597003, 60229597004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	10/22/16 13:47	

LABORATORY CONTROL SAMPLE: 1848438

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	101	90-110	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: 075005 COP VACUUM GLORIETA EAS
Pace Project No.: 60229597

QC Batch: 451637 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60229597001, 60229597005, 60229597006

METHOD BLANK: 1848743 Matrix: Water
Associated Lab Samples: 60229597001, 60229597005, 60229597006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	10/23/16 09:18	

LABORATORY CONTROL SAMPLE: 1848744

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1848745 1848746

Parameter	Units	60229597001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1490	500	500	2060	2060	114	113	80-120	0	15	

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REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: 075005 COP VACUUM GLORIETA EAS
Pace Project No.: 60229597

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.

BATCH QUALIFIERS

Batch: 451095

[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: 075005 COP VACUUM GLORIETA EAS
Pace Project No.: 60229597

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60229597001	**GW-075005-100616-SP-VG-4**	EPA 8260/OA1	451302		
60229597002	**GW-075005-100616-SP-VG-7**	EPA 8260/OA1	451095		
60229597003	**GW-075005-100616-SP-VG-6**	EPA 8260/OA1	451095		
60229597004	**GW-075005-100616-SP-VG-3**	EPA 8260/OA1	451302		
60229597005	**GW-075005-100616-SP-VG-2**	EPA 8260/OA1	451302		
60229597006	**GW-075005-100616-SP-VG-5**	EPA 8260/OA1	451302		
60229597007	**GW-075005-100616-SP-DUP**	EPA 8260/OA1	451302		
60229597001	**GW-075005-100616-SP-VG-4**	EPA 300.0	451637		
60229597002	**GW-075005-100616-SP-VG-7**	EPA 300.0	451621		
60229597003	**GW-075005-100616-SP-VG-6**	EPA 300.0	451621		
60229597004	**GW-075005-100616-SP-VG-3**	EPA 300.0	451621		
60229597005	**GW-075005-100616-SP-VG-2**	EPA 300.0	451637		
60229597006	**GW-075005-100616-SP-VG-5**	EPA 300.0	451637		

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt
ESI Tech Spec Client

WO# : 60229597

60229597

Client Name: GHD COP

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

Tracking #: 8094 8547 6005 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 +1.1) T-266 / (CF +0.7) T-239 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 2.1 **Corr. Factor** (CF +1.1) CF +0.7 **Corrected** 3.2

Date and initials of person examining contents: JB 10/8

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 Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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: 10/10/16

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

Start: 1005	Start:
End: 1015	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:	Angela Bown, Bernie Bockisch	Company Name:	
Albuquerque, NM 87110				Address:	
Email:	christine.mathews@ghd.com	Purchase Order #:		Pace Quote:	
Phone:	505-884-0672 Fax:	Project Name:	075005 COP Vacuum Glorieta East	Pace Project Manager:	alice.spiller@pacelabs.com
Requested Due Date:		Project #:		Pace Profile #:	8669, line 1

Regulatory Agency: | State / Location: NM

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

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

ITEM #	SAMPLE ID	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	Chloride by 300.0								Residual Chlorine (Y/N)	60229597
1	GW-075005-100616-SP-VG-4	WT	G	10-6-16	1135				7										X	X		(6) DGAH							QA/QC sample included - 3 vocs
2	GW-075005-100616-SP-VG-7				1240				4													(3) DGAH							
3	GW-075005-100616-SP-VG-6				1310				4																				
4	GW-075005-100616-SP-VG-3				1335				4																				
5	GW-075005-100616-SP-VG-2				1405				4																				
6	GW-075005-100616-SP-VG-5				1435				4																				
7	GW-075005-100616-SP-DUP								3													(3) DGAH TB-10-4-16							
8																						(3) DGAH							
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Steven Perez	10-7-16	13:50		10/8	0820	3.2	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Steven Perez

SIGNATURE of SAMPLER: Steven Perez DATE Signed: 10-7-16

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