2017 Remediation and Annual Groundwater Monitoring Report

Hampton No. 4M
Unit Letter N, Section 13, Township 30N, Range 11W
San Juan County, New Mexico
API # 30-045-25810
NMOCD # 3R-069

Hilcorp Energy Company

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

11145958| 2017| Report No 1 | February 1, 2018

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1. Introduction

1.1 Introduction

This 2017 Remediation and Annual Groundwater Monitoring Report presents the results of field activities conducted by GHD Services, Inc. (GHD) at the Hilcorp Energy Company (Hilcorp) Hampton Number 4M natural gas production wellsite (Site). The Site is situated on federal land approximately ¼ mile south of Hampton Arroyo, within Unit Letter N, Section 13, Township 30N, Range 11W of San Juan County, New Mexico (Figure 1). The Site consists of a natural gas production well and associated equipment. General features of the Site are depicted on Figure 2.

1.2 Background

The Hampton No. 4M gas well was spudded on November 22, 1983 by Southland Royalty Company (Southland). Burlington Resources, Inc. (Burlington) acquired Southland in January of 1996; Burlington was subsequently acquired by ConocoPhillips in March of 2006. Site ownership was transferred from ConocoPhillips Company to Hilcorp in April 2017.

Public Service Company of New Mexico (PNM) operated a dehydration unit and an unlined earthen pit at the site from 1990 to 1996. Closure of the dehydrator pit in 1996 revealed impacted soil and groundwater. While drilling a monitor well upgradient of the former pit in January 1997, impacted groundwater was encountered adjacent to Burlington equipment. A groundwater seep was also discovered near the well pad in April 1997. PNM, Burlington, and the New Mexico Oil Conservation Division (NMOCD) agreed on the installation of a collection trench. In March 2000, the NMOCD named Burlington responsible party of impacts upgradient of the pit, while PNM was named responsible party of impacts downgradient of the pit. Burlington excavated approximately 120 cubic yards of impacted soil from the vicinity of MW-13 and MW-14 in mid-2000, destroying both monitor wells in the process. Maps outlining the excavation area for these activities, as well as a former excavation conducted by Burlington in December 1997 are provided in Appendix A.

The existing monitor well network consists of eight wells: MW-1, MW-5, MW-9, MW-11, MW-12, MW-15, MW-16, and TMW-1. A mobile dual phase extraction event took place during August 2013. Monitor well MW-7 was damaged by heavy rains in September 2013, and plugged and abandoned in May 2014. A groundwater seep is also sampled as part of the current Site monitoring program, although the seep has been dry since 2011.

A generalized geologic cross section for the Site is provided as Figure 3. Site history is summarized in Table 1.

2. Product Recovery

2.1 Skimmer Installation

GHD installed a QED Environmental Systems two-inch bladder pump with a solar-powered C100M control station for non-aqueous phase liquid (NAPL, or free product) recovery in June 2016 for

ConocoPhillips Company. The system consists of the down-well skimmer pump, a pump controller and nitrogen tank and 55-gallon drum on a containment pallet. All surface equipment is contained within a chain-link enclosure.

The system operated for approximately 4 months and recovered 3 gallons of NAPL before the NAPL diminished to an insufficient thickness to be recovered. Thickness of the NAPL layer in MW-16 was 2.45 feet (ft) before the June 2016 installation date, however, it should be noted that NAPL thickness measured in monitoring wells typically exceeds the true thickness in the subsurface by a factor estimated to range between 2 and 10. The thickness measured in the monitoring well is therefore commonly referred to as the "apparent" thickness and is not necessarily an accurate measurement of the thickness of LNAPL in the aquifer.

2.2 Product Recovery

On October 18, 2017 the QED skimmer system was reinstalled in MW-16 to resume NAPL recovery. A NAPL thickness of 2.78 ft was measured in MW-16 just prior to start up. Monthly Operations and Maintenance (O&M) visits to the Site to check on the system's performance were recorded on O&M Checklist forms. Copies of the forms are presented in Appendix B of this report. At this writing, the skimmer pump in MW-16 has recovered approximately 2.25 gallons of NAPL.

3. Groundwater Monitoring Summary, Methodology, and Analytical Results

3.1 Groundwater Monitoring Summary

On October 26, 2017, groundwater elevation measurements were recorded from monitoring wells MW-1, MW-5, MW-9, MW-11, MW-12, MW-15 and MW-16 using an oil/water interface probe. Groundwater elevations for the Site are presented in Table 2.

October 2017 groundwater data indicates groundwater flow is to the north and is consistent with historical records. Groundwater gradient was estimated to be 0.006 ft/ft. A groundwater potentiometric surface map is presented as Figure 4.

3.2 Groundwater Monitoring Methodology

Monitoring well TMW -1 was dry and therefore not sampled. TMW-1 has consistently been dry since 2012. The location of the seep appears to have been washed out or buried from previous heavy rainfall events. Flow from the seep has been sufficient enough in years past to be sampled.

Monitoring wells MW-1, MW-5, MW-9, MW-11, MW-12 and MW-15 were purged of at least three casing volumes of water using a dedicated polyethylene bailer prior to sampling. Groundwater quality parameters including pH, temperature, oxidation reduction potential, total dissolved solids, and conductivity were collected using a calibrated YSI-556 Multi-Parameter Sonde and were recorded. Field parameters collected during sampling are summarized in Table 3.

Groundwater samples were placed in laboratory prepared bottles, packed on ice and shipped under chain-of-custody documentation to Pace Analytical Laboratories (Pace) located in Lenexa, Kansas. Groundwater samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8260 (MW-5, MW-9 and MW-12) and for dissolved manganese by EPA Method 6010B (all wells).

3.3 Groundwater Monitoring Analytical Results

Of the groundwater samples collected from Site monitor wells during the October 2017 annual sampling event, the following New Mexico Water Quality Control Commission (NMWQCC) groundwater quality standard exceedances are reported:

- Benzene
  - The NMWQCC standard for benzene is 0.01 mg/L. Benzene concentrations exceeded the NMWQCC standard in monitor well MW-12. Benzene concentrations ranged from less than the laboratory reporting limit (LRL) to 0.0379 milligrams per liter (mg/L) in MW-12.
- Dissolved Manganese
  - The NMWQCC standard for dissolved manganese is 0.2 mg/L. Dissolved manganese was found in excess of the NMWQCC standard in groundwater of MW-1 (4.91 mg/L), MW-5 (16.2 mg/L), MW-9 (7.98 mg/L), MW-11 (4.40 mg/L), MW-12 (9.51 mg/L) and MW-15 (8.6 mg/L).
- A summary of groundwater laboratory analytical results is presented in Table 4. A benzene groundwater concentration map is included as Figure 5. The October 2017 laboratory analytical report is included as Appendix C.

4. Conclusions and Recommendations

4.1 Conclusions

Based on the above referenced information, the following conclusions are presented below:

- Groundwater flow is towards the north and is consistent with historical records.
- The groundwater seep has been dry since 2011.
- TMW-1 has consistently been dry since 2012.
- Monitoring well MW-16 contained approximately 2.78 ft of NAPL prior to the installation of the powered skimmer pump in October 2017. Approximately 2.25 gallons of NAPL have been recovered this year by the system.
- Groundwater collected from monitoring wells MW-5 and MW-9 were below the laboratory detection limit for BTEX constituents. Groundwater from MW-12 contained concentrations of benzene above NMWQCC standard.
- Dissolved manganese concentrations were above NMWQCC standards in groundwater collected from all Site wells.

4.2 Recommendations

GHD recommends:

- Plugging and abandonment of TMW-1.
- Continuation of NAPL recovery via skimmer pump in monitoring well MW-16.
- Continuation of annual groundwater sampling of Site monitoring wells for BTEX, dissolved manganese, sulfate, and TDS.

All of Which is Respectfully Submitted,

GHD

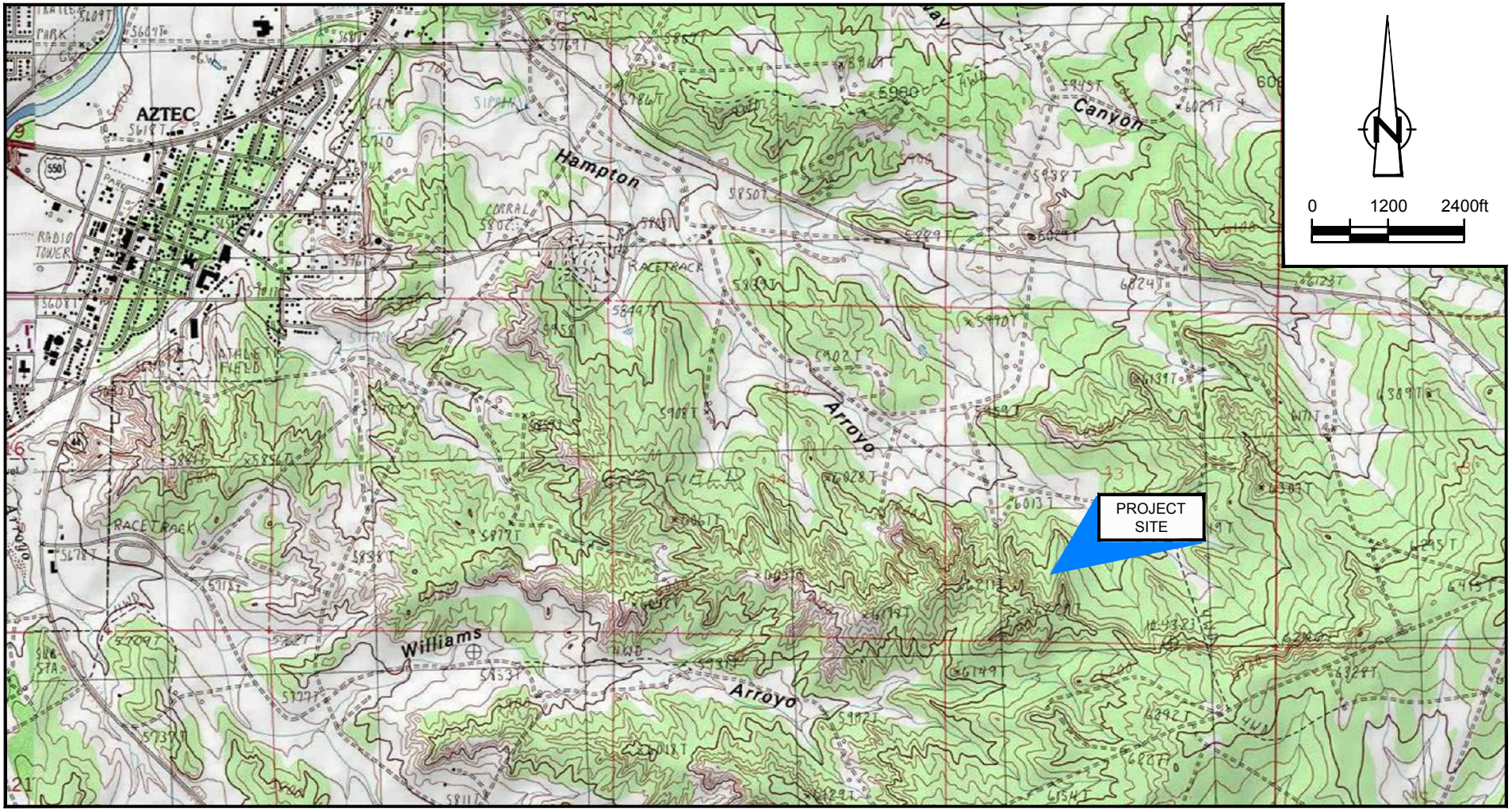
Jeff Walker

Senior Project Manager

Alan Brandon

Senior Project Manager

Figures



SOURCE: USGS 7.5 MINUTE QUAD
"AZTEC, NEW MEXICO"

LAT/LONG: 36.8089° NORTH, 107.9463° WEST
COORDINATE: NAD83 DATUM, U.S. FOOT
STATE PLANE ZONE - NEW MEXICO WEST

Figure 1

SITE LOCATION MAP
HAMPTON No. 4M SITE
SECTION 13, T30N-R11W, SAN JUAN COUNTY, NEW MEXICO
Hilcorp Energy Company

GHD

11145958-00(007)GN-DL001 DEC 7, 2017

LAT/LONG: 36.8089° NORTH, 107.9463° WEST
COORDINATE: NAD83 DATUM, U.S. FOOT
STATE PLANE ZONE - NEW MEXICO WEST

LEGEND

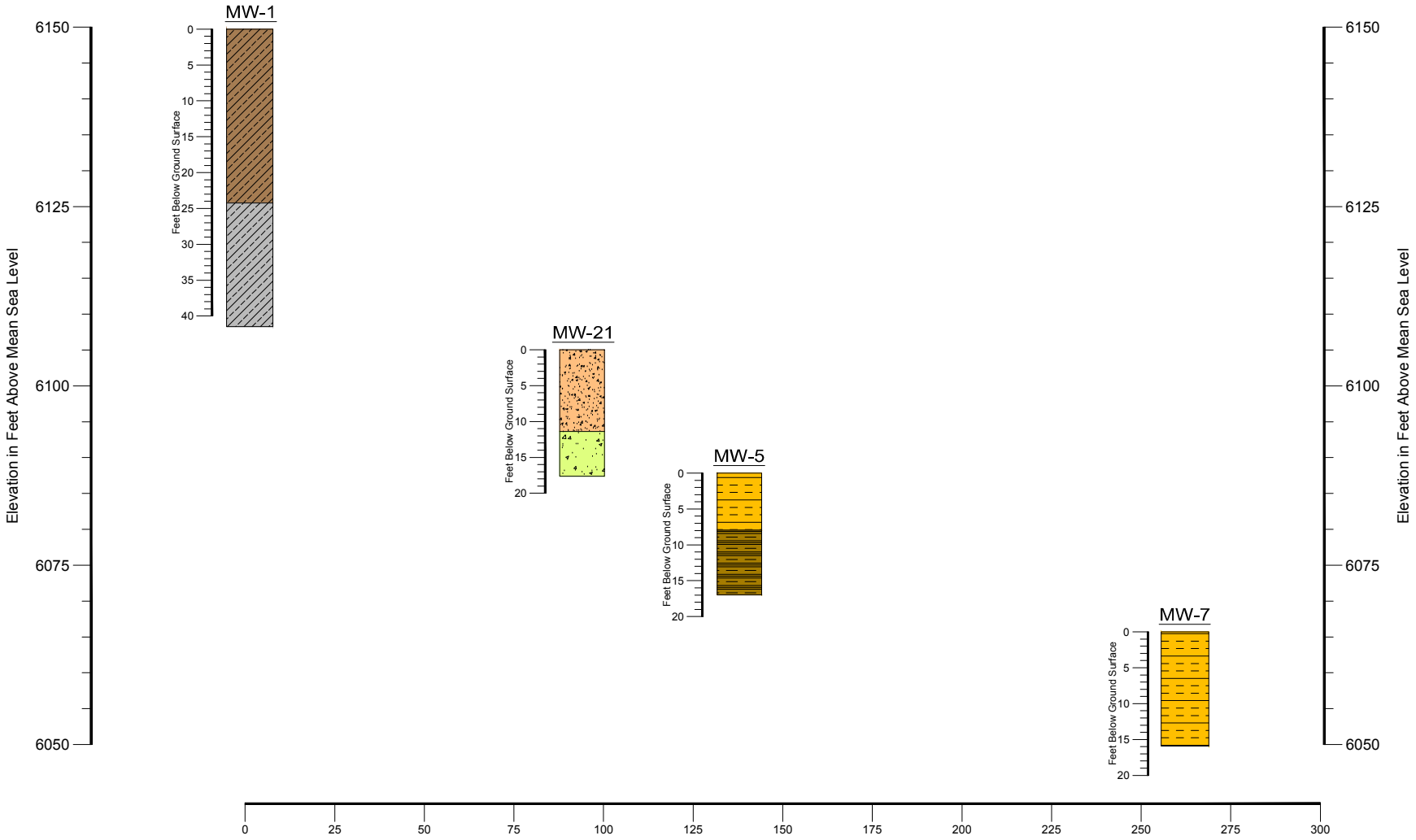
- Monitor Well Location
- Seep
- El Paso Gas Pipeline
- PnA — Plugged and Abandoned

Figure 2

SITE MAP
HAMPTON No. 4M SITE
SECTION 13, T30N-R11W, SAN JUAN COUNTY, NEW MEXICO
Hilcorp Energy Company

GHD

11145958-00(007)GN-DL001 DEC 7, 2017



Lithology Index

- Brown Weathered Sandstone
- Gray Weathered Sandstone
- Very Coarse Grained Sand
- Coarse Grained Sand
- Silty Sand
- Clayey Sand

Figure 3

GEOLOGICAL CROSS SECTION
HAMPTON No. 4M SITE
SECTION 13, T30N-R11W, SAN JUAN COUNTY, NEW MEXICO
Hilcorp Energy Company

LEGEND

- Monitor Well Location
- Plugged and Abandoned Well
- Seep
- El Paso Gas Pipeline
- (6104.26) Groundwater Elevation, Ft
- 6100 Groundwater Elevation Contour, Ft
- Groundwater Flow Direction
- PnA Plugged and Abandoned

LAT/LONG: 36.8089° NORTH, 107.9463° WEST
COORDINATE: NAD83 DATUM, U.S. FOOT
STATE PLANE ZONE - NEW MEXICO WEST

Figure 4

OCTOBER 2017 GROUNDWATER POTENTIOMETRIC SURFACE MAP
HAMPTON No. 4M SITE
SECTION 13, T30N-R11W, SAN JUAN COUNTY, NEW MEXICO

Hilcorp Energy Company

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11145958-00(007)GN-DL001 DEC 7, 2017

LEGEND

- Monitor Well Location
- Plugged and Abandoned Well
- Seep
- El Paso Gas Pipeline
- (0.0568) Benzene Concentration, mg/L
- NAPL Non-Aqueous Phase Liquids
- NS Not Sampled
- PnA Plugged and Abandoned

LAT/LONG: 36.8089° NORTH, 107.9463° WEST
COORDINATE: NAD83 DATUM, U.S. FOOT
STATE PLANE ZONE - NEW MEXICO WEST

Figure 5

OCTOBER 2017 BENZENE CONCENTRATION MAP
HAMPTON No. 4M SITE
SECTION 13, T30N-R11W, SAN JUAN COUNTY, NEW MEXICO

Hilcorp Energy Company

11145958-00(007)GN-DL001 DEC 18, 2017

Tables

Table 1

Site History Timeline
Hilcorp Energy Company
Hampton No. 4M
San Juan County, NM

Date	*Event/Action*	*Description/Comments*
11/22/1983	Well Spudded	Hampton No. 4M spudded by Southland Royalty Company (Southland).
3/1/1990	Operator Change	Southland entered into an agreement with Gas Company of New Mexico (predecessor to Public Service Company of New Mexico -- PNM) to sell production from the Hampton No. 4M well. PNM installed and operated dehydration equipment in the northern-most portion of the site as part of the contract.
6/30/1995	Transfer of Dehydration Equipment Ownership	Williams Field Services purchased the dehydration equipment from PNM.
1/2/1996	Transfer of Well Ownership	Burlington Resources completed the acquisition of Southland Royalty Company.
4/23/1996	Site Assessment	PNM discovered potential hydrocarbon contamination beneath PNM's dehydrator discharge pit during a site assessment. PNM subsequently began pit closure work.
12/16/1996	Site Assessment	PNM discovered hydrocarbon-impacted groundwater while drilling to determine the vertical extent of hydrocarbon contamination beneath a former unlined, earthen dehydrator discharge pit located on the north end of the well pad. Total BTEX in groundwater 20,620 ug/L; benzene 840 ug/L.
1/13/1997	NMOCD Notified of Contamination	PNM notified NMOCD in writing of the discovery of groundwater contamination at the site.
1/28/1997	LNAPL Discovered	PNM gauged Monitor Well MW-2 and discovered approximately 4 feet of LNAPL.
1/31/1997	Monitor Well Installation	PNM installed two monitor wells upgradient from PNM's former pit. Impacted groundwater was discovered in the well adjacent to Burlington's equipment.
1/31/1997	Monitor Well Installation	PNM installed MW-3 and MW-4.
4/14/1997	Seep Discovered	During a site visit, Burlington discovered a surface seep north of the well pad with LNAPL discharging to a small drainage area. Burlington notified NMOCD and PNM on the same day.
4/16/1997	On-Site Meeting	Burlington hosted an on-site meeting with PNM and NMOCD to discuss the seep. NMOCD asked for immediate action to contain the seep. The group agreed to install a collection trench.
4/17/1997	Collection Trench Constructed	Burlington constructed a collection trench between the seep and the wellhead. A sandstone shelf was encountered 6 to 8 feet bgs. Black to grey saturated soil was found above the sandstone. PID readings during construction of the trenchwere between 1,000 - 2,000 ppm.
4/30/1997	Site Assessment	Burlington attempted to excavate the area of the former tank discharge pit. Sandstone was encountered at one foot below the bottom of the pit. The excavator could not penetrate the sandstone. There was no indication of hydrocarbon contamination in this area. Burlington subsequently excavated 9 to 10 test holes in the vicinity of the well pad. No hydrocarbon impacts were found in any of the test holes.
6/05/1997 through 6/6/1997	Monitor Well Installation	Burlington advanced 7 boreholes around the well pad. Each of the 7 boreholes was subsequently completed as a temporary monitor well.
8/1/1997	NMOCD Letter Issued	NMOCD issued a letter to PNM and Burlington. PNM was directed to assess contamination downgradient of its pit and Burlington was directed to submit an assessment plan for the portion of the site upgradient of the PNM disposal pit.
November 1997	Recovery Well System Installation	PNM installed an LNAPL recovery well system adjacent to PNM's former pit in November 1997 (exact dates unknown).
December 1997 - 2000	Pit Excavations	Hydrocarbon impacted soil was excavated from December 1997 to 2000 at various locations to the depth of groundwater. Potassium permanganate was applied to the excavations.
January 1998	LNAPL Recovery Initiated	PNM initiated LNAPL recovery (exact date unknown).
2/23/1998	Letter From Downgradient Land Owner	Mr. J. Burton Everett, the owner of property downgradient of the Site, wrote a letter to the NMOCD, expressing concern over the migration of hydrocarbons onto his property.

Table 1

Site History Timeline
Hilcorp Energy Company
Hampton No. 4M
San Juan County, NM

Date	*Event/Action*	*Description/Comments*
3/13/1998	NMOCD Letter Issued	NMOCD sent a letter to PNM directing the removal, within 30 days, of the remaining source areas of LNAPL in the vicinity and immediately downgradient of PNM's former pit.
April/May 1998	Monitor Well Installation	LNAPL was discovered upgradient from the dehydration pit and Burlington installed two additional monitor wells.
10/28/1998	Burlington Responds to NMOCD Letter	Burlington responded to NMOCD's letter of September 1, 1998. The letter stated that if PNM did not begin remediation of PNM's former pit by October 30, 1998, Burlington would begin remediating the entire site, starting at PNM's former pit and working south to Burlington's former pit.
November 1998	LNAPL Recovery Efforts Terminated	PNM's LNAPL recovery efforts were terminated (exact date unknown) as a result of Burlington's removal of PNM's system during excavation activities.
4/14/1999	Seep Sampled	NMOCD sampled a groundwater seep to the northwest of the well pad. The analytical results revealed benzene in excess of NMWQCC groundwater quality standards.
3/24/2000	Order No. R-11134-A Issued to Burlington and PNM	NMOCD issued Order No. R-11134-A to Burlington and PNM. The Order: 1) denied the application by PNM for rescinding the prior directive, 2) declared Burlington the responsible party for any contamination south and upgradient to the PNM disposal pit, 3) declared PNM the responsible party for any soil contamination remaining below its former pit, 4) directed PNM and Burlington to share responsibility of remediation for any groundwater or soil contamination, other than soil contamination below the former PNM pit, remaining north and downgradient of the property for which Burlington is responsible, 5) directed PNM and Burlington to submit remediation plans to NMOCD, 6) directed both PNM and Burlington to begin remedial activities within 10 days of NMOCD approval of the plans, 7) directed PNM to have oversight and reporting responsibilities for GW remediation in the area north and downgradient of the property for which Burlington is responsible, and 8) retained jurisdiction for NMOCD for any further orders as may be necessary.
Second Quarter 2000	Pit Excavation	Burlington excavated approximately 120 cubic yards of hydrocarbon-impacted soil to groundwater depth in the vicinity of MW-13 and MW-14 in mid-2000 (exact dates unknown). Both wells were destroyed in the process. A shale confining layer was discovered at the bottom of the excavation. The excavated soil was landfarmed on a nearby wellpad lease.
Third Quarter 2001	Excavation Backfilled	Burlington backfilled the mid-2000 excavation area with clean fill.
3/31/2006	Operator Change	ConocoPhillips Company completed the acquisition of Burlington Resources.
11/8/2007	Groundwater Monitoring	Tetra Tech conducted quarterly groundwater monitoring activities.
1/17/2008	Groundwater Monitoring	Tetra Tech conducted quarterly groundwater monitoring activities.
3/19/2008	Groundwater Monitoring	Tetra Tech conducted quarterly groundwater monitoring activities.
7/22/2008	Groundwater Monitoring	Tetra Tech conducted quarterly groundwater monitoring activities.
10/23/2008	Groundwater Monitoring	Tetra Tech conducted quarterly groundwater monitoring activities.
1/29/2009	Groundwater Monitoring	Tetra Tech conducted quarterly groundwater monitoring activities.
9/24/2009	Groundwater Monitoring	Tetra Tech completed annual groundwater monitoring activities.
9/28/2010	Groundwater Monitoring	Tetra Tech completed annual groundwater monitoring activities. LNAPL was encountered in MW-16. Tetra Tech purged LNAPL from the well and placed two absorbent socks in MW-16.
12/15/2010	Assessment of MW-16	Tetra Tech returned to the Site to check the status of the absorbent socks in MW-16. The socks were saturated. Tetra Tech purged approximately 3.5 gallons of LNAPL and water from the well and placed three additional absorbent socks in MW-16.
6/15/2011	Transfer of Site Consulting Responsibilities	Site consulting responsibilities were transferred from Tetra Tech to Conestoga-Rovers & Associates (CRA), Inc. of Albuquerque, NM.

Table 1

Site History Timeline
Hilcorp Energy Company
Hampton No. 4M
San Juan County, NM

Date	*Event/Action*	*Description/Comments*
10/4/2011 and 10/11/2011	Groundwater Monitoring	CRA completed annual groundwater monitoring activities. Oil absorbent socks in MW-16 were found saturated and were replaced on 10/4/11. The new socks were found to be saturated on 10/11/11, and were not replaced due to the rapidity of saturation. One gallon of LNAPL was recovered during the sampling event.
4/25/2012	Assessment of MW-16	CRA recovered approximately one half gallon of product from MW-16 and placed three oil absorbent socks in the well.
6/6/2012	Assessment of MW-16	CRA recovered approximately one quarter gallon of product from MW-16 and replaced oil absorbent socks.
9/25/2012 and 9/26/2012	Groundwater Monitoring	CRA completed annual groundwater monitoring activities. One half gallon of LNAPL was recovered from MW-16 during the sampling event and the oil absorbent socks were replaced.
8/26/2013	Mobile Dual Phase Extraction Event	Mobile dual phase extraction (MDPE) was attempted using Monitor Wells MW-16 and MW-12. Only a minimal amount of LNAPL was recovered; 0.92 gallons from MW-16 and only 0.07 gallons from MW-12. Vapor recovery rates indicated very little LNAPL present in soil surrounding MW-12 and MW-16.
9/18/2013	Groundwater Monitoring	CRA completed annual groundwater monitoring activities. One half gallon of LNAPL was recovered from MW-16 during the sampling event and the oil absorbent socks were replaced.
3/24/2014	Oxidant injection treatment study	CRA completed sampling of MW-1 and MW-12 for full-list VOC's and SVOC's, inorganics, and general chemistry analytes in order to conduct a oxidant injection treatment study.
5/9/2014	Monitor Well Plugging and Abandoning	CRA plugged and abandoned MW-7.
9/24/2014	Groundwater Monitoring	CRA completed annual groundwater monitoring activities. One half gallon of LNAPL was recovered from MW-16 during the sampling event and the oil absorbent socks were replaced.
9/23/2015	Groundwater Monitoring	GHD (formerly CRA) completed annual groundwater monitoring activities. Approximately 2.44 feet of LNAPL was measured in MW-16. Fresh oil absorbent socks were placed in MW-16.
6/1/2016	Skimmer Installation	GHD Install NAPLSkimmer Pump in MW-16.
9/15/2016	Groundwater Monitoring	GHD completed annual groundwater monitoring activities.
4/13/2017	San Juan Asset Sale	Hampton No. 4M sold by ConocoPhillips Co. as part of sale of San Juan Asset to Hilcorp Energy Company.
6/14/2017	Skimmer System Shut Off	MW-16 Product Skimmer System Shut off to allow NAPL/groundwater interface equilibration.
10/26/2017	Groundwater Monitoring	GHD completed annual groundwater monitoring activities.
10/18/2017	Skimmer System Re-Start	Resume NAPL removal from MW-16 after reappearance of product in well. Initiate remediation O&M (skimmer system) under Hilcorp.

Table 2

Monitor Well Specifications and Groundwater Elevations
Hilcorp Energy Company
Hampton No. 4M
San Juan County

Monitor Well	*TOC Elevation (ft AMSL)*	*Sample Date*	*Depth to LNAPL (ft)*	*Depth to Water (ft)*	*GW Elevation (ft AMSL)*
MW-1	6149.42	11/8/2007		42.81	6106.61
		1/17/2008		42.96	6106.46
		3/19/2008		42.93	6106.49
		7/22/2008		42.74	6106.68
		10/23/2008		32.80	6116.62
		1/21/2009		42.90	6106.52
		9/24/2009		43.09	6106.33
		9/28/2010		43.19	6106.23
		10/11/2011		43.55	6105.87
		9/25/2012		43.88	6105.54
		9/18/2013		44.32	6105.10
		3/24/2014		44.10	6105.32
		9/24/2014		44.69	6104.73
		9/23/2015		44.95	6104.47
		9/15/2016		45.11	6104.31
		10/26/2017		45.16	6104.26
MW-5	6090.83	11/8/2007		16.52	6074.31
		1/17/2008		15.65	6075.18
		3/19/2008		13.64	6077.19
		7/22/2008		15.72	6075.11
		10/23/2008		16.53	6074.3
		1/21/2009		16.04	6074.79
		9/24/2009		16.89	6073.94
		9/28/2010		16.55	6074.28
		10/11/2011		17.39	6073.44
		9/25/2012		17.46	6073.37
		9/18/2013		16.78	6074.05
		9/24/2014		17.50	6073.33
		9/23/2015		17.17	6073.66
		9/15/2016		17.24	6073.59
		10/26/2017		17.69	6073.14
MW-7	6066.91	11/8/2007		20.22	6046.69
		1/17/2008		20.50	6046.41
		3/19/2008		20.02	6046.89
		7/22/2008		19.29	6047.62
		10/23/2008		19.95	6046.96
		1/21/2009		20.44	6046.47
		9/24/2009		20.55	6046.36
		9/28/2010		21.24	6045.67
		10/11/2011		DRY	--
		9/25/2012		DRY	--
		9/18/2013		DRY	--
		5/9/2014		Well plugged and abandoned	

Table 2

Monitor Well Specifications and Groundwater Elevations
Hilcorp Energy Company
Hampton No. 4M
San Juan County

MW-9	6122.52	11/8/2007		22.91	6099.61
		1/17/2008		22.76	6099.76
		3/19/2008		22.38	6100.14
		7/22/2008		23.10	6099.42
		10/23/2008		23.02	6099.5
		1/21/2009		22.85	6099.67
		9/24/2009		23.64	6098.88
		9/28/2010		23.70	6098.82
		10/11/2011		24.03	6098.49
		9/25/2012		24.61	6097.91
		9/18/2013		24.61	6097.91
		9/24/2014		25.18	6097.34
		9/23/2015		25.32	6097.20
		9/15/2016		25.82	6096.70
		10/26/2017		25.35	6097.17
MW-11	6015.75	11/8/2007		56.00	5959.75
		1/17/2008		55.86	5959.89
		3/19/2008		55.88	5959.87
		7/22/2008		55.71	5960.04
		10/23/2008		55.91	5959.84
		1/21/2009		55.75	5960
		9/24/2009		56.02	5959.73
		9/28/2010		56.06	5959.69
		10/11/2011		56.21	5959.54
		9/25/2012		56.41	5959.34
		9/18/2013		56.73	5959.02
		9/24/2014		56.91	5958.84
		9/23/2015		57.20	5958.55
		9/15/2016		58.37	5957.38
		10/26/2017		57.42	5958.33
MW-12	6109.02	11/8/2007		20.46	6088.56
		1/17/2008		20.24	6088.78
		3/19/2008		19.85	6089.17
		7/22/2008		20.54	6088.48
		10/23/2008		20.61	6088.41
		1/21/2009		20.37	6088.65
		9/24/2009		21.23	6087.79
		9/28/2010		21.27	6087.75
		10/11/2011		21.58	6087.44
		9/25/2012		22.14	6086.88
		9/18/2013		22.17	6086.85
		3/24/2014		21.64	6087.38
		9/24/2014		22.70	6086.32
		9/23/2015		22.84	6086.18
		9/15/2016		22.21	6086.81
		10/26/2017		22.82	6086.20

Table 2

Monitor Well Specifications and Groundwater Elevations
Hilcorp Energy Company
Hampton No. 4M
San Juan County

MW-15	No survey - DTW only	11/8/2007		18.03	NA
		1/17/2008		18.20	NA
		3/19/2008		17.60	NA
		7/22/2008		17.79	NA
		10/23/2008		18.01	NA
		1/21/2009		18.20	NA
		9/24/2009		18.33	NA
		9/28/2010		18.25	NA
		10/11/2011		18.65	NA
		9/25/2012		18.97	NA
		9/18/2013		19.23	NA
		9/24/2014		19.43	NA
		9/23/2015		19.58	NA
		9/15/2016		19.69	NA
		10/26/2017		19.60	NA
MW-16	No survey - Theoretical DTW only	11/8/2007		25.03	NA
		1/17/2008		24.88	NA
		3/19/2008		24.37	NA
		7/22/2008		25.00	NA
		10/23/2008		25.57	NA
		1/21/2009		24.97	NA
		9/24/2009		25.75	NA
		9/28/2010		25.41	NA
		10/11/2011		28.26	NA
		9/25/2012	26.57	27.38	NA
		9/18/2013	27.34	28.15	NA
		3/24/2014	25.96	28.20	NA
		9/24/2014	28.00	28.84	NA
		9/23/2015	26.83	29.27	NA
		9/15/2016*	33.25	33.34	NA
		10/27/2016*	33.25	33.42	NA
		6/14/2017	--	30.58	NA
		10/26/2017	31.39	--	NA
TMW-1	No survey - DTW only	11/8/2007		19.06	NA
		1/17/2008		19.37	NA
		3/19/2008		18.55	NA
		7/22/2008		18.10	NA
		10/23/2008		19.19	NA
		1/21/2009		19.25	NA
		9/24/2009		19.61	NA
		9/28/2010		19.11	NA
		10/11/2011		19.39	NA
		9/25/2012		DRY	NA
		9/18/2013		DRY	NA
		9/24/2014		DRY	NA
		9/23/2015		DRY	NA
		10/26/2017		DRY	NA

Notes:
ft = feet
AMSL = Above mean sea level
DTW = Depth to water
NA = Not available
LNAPL = light non-aqueous phase liquid
*extension added to top of PVC casing resulting in greater depths to water
When LNAPL present: GW Elevation + (LNAPL Thickness X LNAPL Density [0.75])

Table 3

Field Parameters Summary
Hilcorp Energy Company
Hampton No. 4M
San Juan County, New Mexico

Well ID	*Sample Date*	*Temperature (°C)*	*pH*	*TDS (g/L)*	*Conductivity (µS/cm)*	*DO (mg/L)*	*ORP (mV)*	*Volume (gallons)*
MW-1	9/23/2015	12.65	5.20	2.10	3226	2.75	-26.0	1.25
	10/26/2017	13.26	4.37	--	2522	2.29	204.8	1.25
MW-5	9/23/2015	15.63	5.85	2.85	4377	3.10	-114.9	0.50
	9/15/2016	--	--	--	--	--	--	--
MW-9	9/23/2015	15.69	4.98	2.50	3838	2.85	-15.0	2.50
	9/23/2015	14.61	5.13	2.48	3817	2.25	-32.4	3.00
	9/23/2015	14.50	5.19	2.48	3819	2.15	-35.2	3.50
	9/15/2016	13.67	4.97	2.51	3856	1.64	111.6	3.75
	10/26/2017	14.93	5.73	--	3020	2.85	120.5	3.50
MW-11	9/23/2015	14.31	7.02	1.71	2636	11.84	-46.1	4.75
	9/23/2015	13.92	6.54	1.89	2906	2.16	-54.7	5.25
	9/23/2015	13.82	6.37	1.88	2895	1.71	-88.6	5.75
	9/15/2016	13.20	6.43	1.91	2938	1.47	-73.2	5.00
	10/26/2017	14.07	6.44	--	2271	2.55	19.7	5.50
MW-12	9/23/2015	14.34	5.67	2.35	3620	9.92	-14.0	2.75
	9/23/2015	14.34	5.95	2.36	3631	3.13	-33.20	3.25
	9/23/2015	14.31	6.00	2.36	3630	1.65	-44.0	3.75
	9/15/2016	13.65	5.74	2.41	3710	0.73	-148.7	4.00
	10/26/2017	14.78	6.47	--	2932	1.56	50.0	3.75
MW-15	9/23/2015	15.18	3.92	2.28	3503	4.10	-3.5	1.50
	9/23/2015	15.17	3.88	2.28	3505	3.80	0.2	2.00
	9/23/2015	15.05	3.84	2.28	3502	3.59	5.9	2.50
	9/15/2016	14.10	3.88	2.33	3591	3.17	307.9	2.50
	10/26/2017	15.76	4.15	--	2954	3.62	339.0	2.50
MW-16	9/23/2015	Well not sampled - LNAPL Present						
TMW-1	9/23/2015	Well not sampled - Dry						

Notes:
TDS = total dissolved solids
DO = dissolved oxygen
ORP = oxidation-reduction potential

Table 4

Groundwater Laboratory Analytical Results Summary
Hilcorp Energy Company
Hampton No. 4M
San Juan County

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Dissolved Manganese (mg/L)	Total Dissolved Solid (mg/L)	Sulfate (mg/L)
NMWQCC Groundwater Quality Standards				**0.01**	**0.75**	**0.75**	**0.62**	**0.2**	**1000**	**600**
MW-1	MW-1	10/30/1997	(orig)	**0.0024**	**0.0023**	< 0.0002	**0.0011**	--	--	--
	MW-1	1/12/1998	(orig)	**0.0043**	**0.0033**	0.0002	**0.001**	--	--	--
	MW-1	4/14/1998	(orig)	**0.001**	**0.0013**	< 0.0005	**< 0.0005**	--	--	--
	MW-1	7/1/1998	(orig)	**0.0013**	**0.001**	< 0.0005	**0.0037**	--	--	--
	MW-1	10/5/1998	(orig)	**< 0.001**	**< 0.001**	< 0.001	**< 0.003**	--	--	--
	MW-1	1/27/1999	(orig)	**0.0008**	**0.0009**	< 0.0005	**< 0.0015**	--	--	--
	MW-1	7/12/1999	(orig)	**0.0011**	**0.0005**	< 0.0005	**< 0.0005**	--	--	--
	MW-1	9/24/2003	(orig)	**0.0009 J**	**0.001**	ND	**0.0004 J**	--	--	--
	MW-1	12/15/2003	(orig)	**0.0011**	**0.0009 J**	ND	**ND**	--	--	--
	MW-1	3/15/2004	(orig)	**ND**	**ND**	ND	**ND**	--	--	--
	MW-1	6/21/2004	(orig)	**ND**	**ND**	ND	**ND**	--	--	--
	MW-1	9/29/2004	(orig)	**ND**	**ND**	ND	**ND**	--	--	--
	MW-1	12/31/2004	(orig)	**ND**	**0.0009 J**	ND	**0.0033 J**	--	--	--
	MW-1	3/22/2005	(orig)	**ND**	**0.0003 J**	ND	**ND**	--	--	--
	MW-1	10/24/2005	(orig)	**ND**	**ND**	ND	**ND**	--	--	--
	MW-1	12/12/2005	(orig)	**ND**	**0.0007 J**	ND	**0.0006 J**	--	--	--
	MW-1	3/20/2006	(orig)	0.0011	0.0009 J	ND	0.0006 J	--	--	--
	MW-1	6/21/2006	(orig)	0.0003 J	0.0014	0.0004 J	0.0018 J	--	--	--
	MW-1	10/18/2006	(orig)	ND	0.0002	0.0002	0.0013	--	--	--
	MW-1	12/12/2006	(orig)	ND	0.0002	0.0002	0.0014	--	--	--
	MW-1	3/26/2007	(orig)	< 0.0003	0.0003 J	0.0002 J	0.0004 J	--	--	--
	MW-1	6/26/2007	(orig)	< 0.0003	< 0.0002	< 0.0002	< 0.0006	--	--	--
	MW-1	11/8/2007	(orig)	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--	--	--
	MW-1	1/15/2008	(orig)	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--	--	--
	MW-1	3/19/2008	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	MW-1	7/22/2008	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	MW-1	10/23/2008	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	MW-1	1/21/2009	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	MW-1	9/24/2009	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--
	MW-1	9/28/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--
	GW-074927-100411-CM-002	10/4/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	GW-074927-092612-CM-MW-1	9/26/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	GW-074927-091813-CM-MW-1	9/18/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	GW-074927-032414-CM-MW-1	3/24/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	**5.86**	**3060**	**2450**
	GW-074927-092414-CM-MW-1	9/24/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	**5.3**	**3070**	**2570**
	GW-074927-092315-CB-MW-1	9/23/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	**4.9**	**2590**	**2080**
	GW-11145958-102617-CM-MW-1	10/26/2017	(orig)	--	--	--	--	**4.91**	--	--

Groundwater Laboratory Analytical Results Summary
Hilcorp Energy Company
Hampton No. 4M
San Juan County

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Dissolved Manganese (mg/L)	Total Dissolved Solid (mg/L)	Sulfate (mg/L)
NMWQCC Groundwater Quality Standards				**0.01**	**0.75**	**0.75**	**0.62**	**0.2**	**1000**	**600**
MW-5	MW-5	10/29/1997	(orig)	**5.934**	**10.024**	0.709	**8.188**	--	--	--
	MW-5	1/12/1998	(orig)	**7.521**	**11.213**	**0.779**	**8.436**	--	--	--
	MW-5	4/14/1998	(orig)	**7**	**11**	0.72	**7.8**	--	--	--
	MW-5	7/1/1998	(orig)	**6.5**	**10**	**0.78**	**7.5**	--	--	--
	MW-5	10/5/1998	(orig)	**6.8**	**8.4**	0.74	**6.9**	--	--	--
	MW-5	11/9/1998	(orig)	**6.2**	**8.2**	0.67	**6.5**	--	--	--
	MW-5	1/27/1999	(orig)	**6.4**	**8.9**	0.66	**6.7**	--	--	--
	MW-5	5/5/1999	(orig)	**6.8**	**9.8**	**0.9**	**7.8**	--	--	--
	MW-5	5/26/1999	(orig)	**6.6**	**10**	0.65	**8.1**	--	--	--
	MW-5	7/12/1999	(orig)	**6.3**	**10**	0.75	**8.8**	--	--	--
	MW-5	8/17/1999	(orig)	**5.4**	**9.8**	0.67	**7.5**	--	--	--
	MW-5	8/17/1999	(Duplicate)	**5.9**	**8.9**	0.5	**6.2**	--	--	--
	MW-5	10/21/1999	(orig)	**5.2**	**9.6**	0.65	**6.9**	--	--	--
	MW-5	1/27/2000	(orig)	**4.7**	**10**	0.68	**7.4**	--	--	--
	MW-5	6/13/2000	(orig)	**8.4**	**19**	**1.7**	**22**	--	--	--
	MW-5	3/29/2001	(orig)	**3.89**	**9.6**	0.64	**7.73**	--	--	--
	MW-5	6/26/2001	(orig)	**3.8**	**11**	0.7	**9**	--	--	--
	MW-5	9/18/2001	(orig)	**4.1**	**11**	**0.76**	**10**	--	--	--
	MW-5	12/18/2001	(orig)	**3.2**	**9.7**	0.6	**7.8**	--	--	--
	MW-5	3/22/2002	(orig)	**3.5**	**10**	**0.83**	**8.5**	--	--	--
	MW-5	6/28/2002	(orig)	**3.7**	**12**	**0.76**	**10**	--	--	--
	MW-5	9/23/2002	(orig)	**3**	**9.8**	0.64	**8.3**	--	--	--
	MW-5	12/31/2002	(orig)	**2.9**	**8.9**	0.58	**7.3**	--	--	--
	MW-5	3/27/2003	(orig)	**1.22**	**4.87**	0.487	**6.01**	--	--	--
	MW-5	6/27/2003	(orig)	**2.04**	**8.55**	0.64	**8.05**	--	--	--
	MW-5	9/24/2003	(orig)	**2.11**	**9.09**	0.7	**9.2**	--	--	--
	MW-5	12/15/2003	(orig)	**2.15**	**9.24**	0.72	**8.81**	--	--	--
	MW-5	6/21/2004	(orig)	**1.61**	**8.74**	0.64	**8.22**	--	--	--
	MW-5	9/29/2004	(orig)	**1.71**	**7.25**	0.67	**8.09**	--	--	--
	MW-5	12/31/2004	(orig)	**1.82**	**9.15**	0.73	**9.03**	--	--	--
	MW-5	3/15/2005	(orig)	**1.37**	**8.1**	0.66	**8.71**	--	--	--
	MW-5	3/22/2005	(orig)	**0.42**	**1.42**	0.11	**1.16**	--	--	--
	MW-5	10/24/2005	(orig)	**1.07**	**6.66**	0.61	**7.62**	--	--	--
	MW-5	12/12/2005	(orig)	**0.9**	**5.93**	0.52	**6.28**	--	--	--
	MW-5	3/20/2006	(orig)	**0.82**	**6.27**	0.51	**6.04**	--	--	--
	MW-5	6/21/2006	(orig)	**0.93**	**6.11**	0.58	**6.69**	--	--	--
	MW-5	10/18/2006	(orig)	**0.69**	**5.14**	0.5	**5.87**	--	--	--
	MW-5	12/18/2006	(orig)	**0.64**	**5.09**	0.5	**5.61**	--	--	--
	MW-5	3/26/2007	(orig)	**0.66**	**6.47**	0.53	**5.45**	--	--	--
	MW-5	6/26/2007	(orig)	**0.74**	**8.07**	0.64	**7.32**	--	--	--
	MW-5	11/8/2007	(orig)	**0.41**	**4.8**	0.39	**5**	--	--	--
	MW-5	1/17/2008	(orig)	**0.44**	**6.4**	0.51	**6.1**	--	--	--
	MW-5	3/19/2008	(orig)	**0.37**	**2.9**	0.24	**2.57**	--	--	--
	MW-5	7/22/2008	(orig)	**0.34**	**6.1**	0.55	**6.4**	--	--	--
	MW-5	10/23/2008	(orig)	**0.27**	**6.2**	0.44	**6.3**	--	--	--
	MW-5	1/21/2009	(orig)	**0.25**	**3.8**	0.51	**5.2**	--	--	--
	MW-5	9/24/2009	(orig)	**0.19**	**4.3**	0.47	**5.1**	--	--	--
	MW-5	9/28/2010	(orig)	**0.13**	**2.4**	0.6	**5.2**	--	--	--
	GW-074927-100411-CM-006	10/12/2011	(orig)	**0.0652**	**1.22**	0.443	**3.21**	--	--	--
	GW-074927-100411-CM-007	10/12/2011	(Duplicate)	**0.0796**	**1.22**	0.488	**3.46**	--	--	--
	GW-074927-092612-CM-MW-5	9/26/2012	(orig)	**0.0898**	0.626	0.551	**3.59**	--	--	--
	GW-074927-091813-CM-MW-5	9/18/2013	(orig)	**0.0359**	0.154	0.227	**1.32**	--	--	--
	GW-074927-092414-CM-MW-5	9/24/2014	(orig)	0.0041	0.0052	0.0338	0.106	**3.5**	**4030**	**2690**
	GW-074927-092315-CB-MW-5	9/23/2015	(orig)	**0.015**	0.0072	0.154	0.138	**7.8**	**4340**	**2480**
	GW-074927-091516-CM-MW-5	9/15/2016	(orig)	**0.011**	0.0153	0.166	0.0414	--	--	--
	GW-11145958-102617-CM-MW-5	10/26/2017	(orig)	0.0074	0.0118	0.0563	0.0236	**16.2**	--	--

Table 4

Groundwater Laboratory Analytical Results Summary
Hilcorp Energy Company
Hampton No. 4M
San Juan County

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Dissolved Manganese (mg/L)	Total Dissolved Solid (mg/L)	Sulfate (mg/L)
NMWQCC Groundwater Quality Standards				**0.01**	**0.75**	**0.75**	**0.62**	**0.2**	**1000**	**600**
MW-7	MW-7	1/12/1998	(orig)	**0.78**	0.246	0.258	**3.942**	--	--	--
	MW-7	4/14/1998	(orig)	**0.82**	0.34	0.19	**2.45**	--	--	--
	MW-7	7/1/1998	(orig)	**0.95**	0.44	0.2	**3.02**	--	--	--
	MW-7	10/5/1998	(orig)	**1.6**	**0.93**	0.18	**1.53**	--	--	--
	MW-7	11/9/1998	(orig)	**1.8**	**1**	0.16	**1.24**	--	--	--
	MW-7	1/27/1999	(orig)	**2.1**	**1**	0.16	**1.05**	--	--	--
	MW-7	5/5/1999	(orig)	**0.21**	0.0029	0.03	0.147	--	--	--
	MW-7	5/26/1999	(orig)	**0.19**	0.0074	0.032	0.15	--	--	--
	MW-7	7/12/1999	(orig)	**0.13**	0.0072	0.022	0.1013	--	--	--
	MW-7	10/21/1999	(orig)	**0.26**	0.011	0.015	0.089	--	--	--
	MW-7	1/27/2000	(orig)	**0.67**	0.58	0.054	**0.68**	--	--	--
	MW-7	6/17/2000	(orig)	**0.42**	**1.1**	0.075	**1.4**	--	--	--
	MW-7	3/29/2001	(orig)	**0.83**	0.15	0.32	**1.79**	--	--	--
	MW-7	6/26/2001	(orig)	**0.54**	0.33	0.25	**1.41**	--	--	--
	MW-7	9/18/2001	(orig)	**0.87**	0.56	0.32	**2.02**	--	--	--
	MW-7	12/18/2001	(orig)	**0.4**	0.03	0.16	**0.885**	--	--	--
	MW-7	3/22/2002	(orig)	**0.18**	ND	0.078	0.26	--	--	--
	MW-7	6/28/2002	(orig)	**0.089**	0.001	0.041	0.079	--	--	--
	MW-7	9/23/2002	(orig)	**0.08**	0.003	0.031	0.01889	--	--	--
	MW-7	12/31/2002	(orig)	**0.16**	0.0022	0.074	0.0315	--	--	--
	MW-7	3/27/2003	(orig)	**0.195**	0.0004	0.0442	0.109	--	--	--
	MW-7	6/27/2003	(orig)	**0.3**	0.0014 J	0.117	0.4616	--	--	--
	MW-7	9/24/2003	(orig)	**0.09**	0.012	0.002	**0.694**	--	--	--
	MW-7	3/15/2004	(orig)	**0.056**	0.001 J	0.006	0.003	--	--	--
	MW-7	6/21/2004	(orig)	**0.18**	ND	0.055	0.058 J	--	--	--
	MW-7	9/29/2004	(orig)	**0.163**	0.0009 J	0.0545	0.0698	--	--	--
	MW-7	12/15/2004	(orig)	**0.15**	0.004 J	0.115	0.549	--	--	--
	MW-7	12/31/2004	(orig)	**0.094**	0.003 J	0.01	0.024 J	--	--	--
	MW-7	3/22/2005	(orig)	**0.0208**	ND	0.0024	0.0048	--	--	--
	MW-7	10/24/2005	(orig)	**0.0652**	0.0007 J	0.002	0.0027 J	--	--	--
	MW-7	12/12/2005	(orig)	**0.0662**	0.001 J	0.0087	0.0085 J	--	--	--
	MW-7	3/20/2006	(orig)	**0.072**	ND	0.0126	0.0169	--	--	--
	MW-7	6/21/2006	(orig)	**0.0899**	0.0106	0.0048	0.0145	--	--	--
	MW-7	10/18/2006	(orig)	**0.0319**	0.0004 J	0.0018	0.0041	--	--	--
	MW-7	12/12/2006	(orig)	**0.0294**	0.0015	0.0031	0.0057	--	--	--
	MW-7	3/26/2007	(orig)	**0.0115**	0.001	0.0006 J	0.0008 J	--	--	--
	MW-7	6/26/2007	(orig)	**0.056**	0.0004 J	0.0177	0.0013	--	--	--
	MW-7	11/8/2007	(orig)	**0.044**	< 0.0007	0.002	< 0.0008	--	--	--
	MW-7	1/17/2008	(orig)	**0.017**	< 0.0007	0.003	< 0.0008	--	--	--
	MW-7	3/19/2008	(orig)	0.005	< 0.005	< 0.005	< 0.005	--	--	--
	MW-7	7/22/2008	(orig)	**0.032**	< 0.005	0.012	0.007	--	--	--
	MW-7	10/23/2008	(orig)	**0.017**	< 0.005	< 0.005	< 0.005	--	--	--
	MW-7	1/21/2009	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	MW-7	9/24/2009	(orig)	0.0037	< 0.001	< 0.001	< 0.001	--	--	--
	MW-7	9/28/2010	(orig)	0.0013	< 0.001	0.0023	< 0.001	--	--	--
	MW-7	10/11/2011	No sample collected; well dry.							
	MW-7	9/26/2012	No sample collected; well dry.							
	MW-7	9/18/2013	No sample collected; well dry.							
	MW-7	5/9/2014	Well plugged and abandoned.							

Table 4

Groundwater Laboratory Analytical Results Summary
Hilcorp Energy Company
Hampton No. 4M
San Juan County

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Dissolved Manganese (mg/L)	Total Dissolved Solid (mg/L)	Sulfate (mg/L)
NMWQCC Groundwater Quality Standards				**0.01**	**0.75**	**0.75**	**0.62**	**0.2**	**1000**	**600**
MW-9	MW-9	7/1/1998	(orig)	**0.012**	< 0.001	< 0.001	< 0.003	--	--	--
	MW-9	10/5/1998	(orig)	0.0008	< 0.0005	< 0.0005	0.0022	--	--	--
	MW-9	11/9/1998	(orig)	**0.073**	< 0.0005	0.0022	0.0016	--	--	--
	MW-9	1/27/1999	(orig)	**0.12**	< 0.0005	0.0025	0.0018	--	--	--
	MW-9	5/5/1999	(orig)	**0.12**	< 0.0005	0.0016	0.0008	--	--	--
	MW-9	5/26/1999	(orig)	**0.14**	< 0.0005	0.0015	< 0.0005	--	--	--
	MW-9	5/26/1999	(Duplicate)	**0.29**	< 0.0005	0.0006	< 0.0015	--	--	--
	MW-9	7/12/1999	(orig)	**0.32**	< 0.0005	0.0006	< 0.0015	--	--	--
	MW-9	8/17/1999	(orig)	**0.13**	ND	ND	ND	--	--	--
	MW-9	10/21/1999	(orig)	< 0.0005	0.0019	< 0.0005	0.0025	--	--	--
	MW-9	1/27/2000	(orig)	< 0.0002	< 0.0002	< 0.0002	< 0.0002	--	--	--
	MW-9	6/13/2000	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.001	--	--	--
	MW-9	3/29/2001	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.001	--	--	--
	MW-9	6/26/2001	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.001	--	--	--
	MW-9	9/18/2001	(orig)	ND	ND	ND	ND	--	--	--
	MW-9	12/18/2001	(orig)	ND	ND	ND	ND	--	--	--
	MW-9	3/22/2002	(orig)	ND	ND	ND	ND	--	--	--
	MW-9	6/28/2002	(orig)	ND	ND	ND	ND	--	--	--
	MW-9	9/23/2002	(orig)	0.0004 J	ND	ND	ND	--	--	--
	MW-9	3/27/2003	(orig)	ND	ND	ND	ND	--	--	--
	MW-9	6/27/2003	(orig)	0.0005 J	ND	ND	ND	--	--	--
	MW-9	9/24/2003	(orig)	ND	ND	ND	ND	--	--	--
	MW-9	12/15/2003	(orig)	ND	ND	ND	ND	--	--	--
	MW-9	3/15/2004	(orig)	ND	ND	ND	ND	--	--	--
	MW-9	6/21/2004	(orig)	ND	0.0004 J	ND	0.0007 J	--	--	--
	MW-9	9/29/2004	(orig)	ND	ND	ND	ND	--	--	--
	MW-9	3/22/2005	(orig)	ND	ND	ND	ND	--	--	--
	MW-9	6/23/2005	(orig)	ND	0.0003 J	ND	ND	--	--	--
	MW-9	3/20/2006	(orig)	ND	ND	ND	ND	--	--	--
	MW-9	6/21/2006	(orig)	ND	ND	ND	ND	--	--	--
	MW-9	10/18/2006	(orig)	ND	ND	ND	0.0003 J	--	--	--
	MW-9	12/12/2006	(orig)	0.0003 J	0.0007 J	0.0003 J	0.0012 J	--	--	--
	MW-9	3/26/2007	(orig)	< 0.0003	< 0.0002	< 0.0002	< 0.0006	--	--	--
	MW-9	6/26/2007	(orig)	< 0.0003	< 0.0002	< 0.0002	< 0.0006	--	--	--
	MW-9	11/8/2007	(orig)	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--	--	--
	MW-9	1/17/2008	(orig)	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--	--	--
	MW-9	3/19/2008	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	MW-9	7/22/2008	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	MW-9	10/23/2008	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	MW-9	1/21/2009	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	MW-9	9/24/2009	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--
	MW-9	9/28/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--
	GW-074927-100411-CM-004	10/4/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	GW-074927-092612-CM-MW-9	9/26/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	GW-074927-091813-CM-MW-9	9/18/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	GW-074927-092414-CM-MW-9	9/24/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	**6.6**	**3800**	**2430**
	GW-074927-092315-CB-MW-9	9/23/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	**4.5**	**3880**	**2510**
	GW-074927-091516-CM-MW-9	9/15/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	**5.9**	**4140**	**2550**
	GW-11145958-102617-CM-MW-9	10/26/2017	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	**7.98**	--	--

Groundwater Laboratory Analytical Results Summary
Hilcorp Energy Company
Hampton No. 4M
San Juan County

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Dissolved Manganese (mg/L)	Total Dissolved Solid (mg/L)	Sulfate (mg/L)
NMWQCC Groundwater Quality Standards				**0.01**	**0.75**	**0.75**	**0.62**	**0.2**	**1000**	**600**
MW-11	MW-11	1/27/1999	(orig)	< 0.0005	0.0025	0.0007	0.0131	--	--	--
	MW-11	5/5/1999	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0015	--	--	--
	MW-11	5/26/1999	(orig)	0.0008	0.0017	< 0.0005	0.0011	--	--	--
	MW-11	10/21/1999	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0015	--	--	--
	MW-11	1/27/2000	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--	--	--
	MW-11	6/13/2000	(orig)	< 0.0005	< 0.0005	< 0.0005	0.0009	--	--	--
	MW-11	3/29/2001	(orig)	< 0.0002	< 0.0002	< 0.0002	< 0.0002	--	--	--
	MW-11	6/26/2001	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.001	--	--	--
	MW-11	9/18/2001	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.001	--	--	--
	MW-11	12/18/2001	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.001	--	--	--
	MW-11	12/19/2001	(orig)	ND	ND	ND	ND	--	--	--
	MW-11	12/20/2001	(orig)	ND	ND	ND	ND	--	--	--
	MW-11	12/21/2001	(orig)	ND	ND	ND	ND	--	--	--
	MW-11	12/22/2001	(orig)	ND	ND	ND	ND	--	--	--
	MW-11	5/24/2003	(orig)	ND	ND	ND	ND	--	--	--
	MW-11	6/27/2003	(orig)	0.0004 J	0.0003 J	ND	0.0004 J	--	--	--
	MW-11	9/24/2003	(orig)	ND	ND	ND	ND	--	--	--
	MW-11	12/15/2003	(orig)	0.0005 J	ND	ND	ND	--	--	--
	MW-11	3/15/2004	(orig)	ND	ND	ND	ND	--	--	--
	MW-11	6/21/2004	(orig)	ND	ND	ND	0.0005 J	--	--	--
	MW-11	9/29/2004	(orig)	ND	ND	ND	ND	--	--	--
	MW-11	12/31/2004	(orig)	ND	ND	ND	ND	--	--	--
	MW-11	3/22/2005	(orig)	ND	ND	ND	ND	--	--	--
	MW-11	10/24/2005	(orig)	ND	ND	ND	ND	--	--	--
	MW-11	12/12/2005	(orig)	ND	0.0003 J	ND	ND	--	--	--
	MW-11	3/20/2006	(orig)	ND	ND	ND	ND	--	--	--
	MW-11	6/21/2006	(orig)	ND	0.0003 J	ND	0.0008 J	--	--	--
	MW-11	10/18/2006	(orig)	ND	0.0003 J	0.0004 J	0.0012 J	--	--	--
	MW-11	12/12/2006	(orig)	ND	ND	ND	0.0003 J	--	--	--
	MW-11	3/26/2007	(orig)	< 0.0003	< 0.0002	< 0.0002	< 0.0006	--	--	--
	MW-11	6/26/2007	(orig)	< 0.0003	< 0.0002	< 0.0002	< 0.0006	--	--	--
	MW-11	11/8/2007	(orig)	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--	--	--
	MW-11	1/17/2008	(orig)	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--	--	--
	MW-11	3/19/2008	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	MW-11	7/22/2008	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	MW-11	10/23/2008	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	MW-11	1/21/2009	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	MW-11	9/24/2009	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--
	MW-11	9/28/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--
	GW-074927-100411-CM-005	10/11/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	GW-074927-092612-CM-MW-11	9/26/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	GW-074927-091813-CM-MW-11	9/18/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	GW-074927-092414-CM-MW-11	9/24/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	**4.2**	**2760**	**1810**
	GW-074927-092315-CB-MW-11	9/23/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	**4.3**	**2550**	**1740**
	GW-074927-091516-CM-MW-11	9/15/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	GW-11145958-102617-CM-MW-11	10/26/2017	(orig)	--	--	--	--	**4.4**	--	--

Groundwater Laboratory Analytical Results Summary
Hilcorp Energy Company
Hampton No. 4M
San Juan County

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Dissolved Manganese (mg/L)	Total Dissolved Solid (mg/L)	Sulfate (mg/L)
NMWQCC Groundwater Quality Standards				**0.01**	**0.75**	**0.75**	**0.62**	**0.2**	**1000**	**600**
MW-12	MW-12	5/5/1999	(orig)	**0.79**	**0.84**	0.26	**2.88**	--	--	--
	MW-12	5/5/1999	(Duplicate)	**1.2**	**13**	**5.1**	**68**	--	--	--
	MW-12	5/26/1999	(orig)	**1.9**	**0.82**	0.2	**1.72**	--	--	--
	MW-12	5/26/1999	(Duplicate)	**1.8**	0.64	0.16	**1.6**	--	--	--
	MW-12	7/12/1999	(orig)	**4.5**	**0.76**	0.4	**3.1**	--	--	--
	MW-12	7/12/1999	(Duplicate)	**4.6**	0.73	0.39	**3.08**	--	--	--
	MW-12	8/17/1999	(orig)	**4.8**	**5**	0.32	**3.39**	--	--	--
	MW-12	8/17/1999	(Duplicate)	**5.9**	**6.1**	0.39	**4.1**	--	--	--
	MW-12	10/21/1999	(orig)	**5.6**	0.65	0.54	**2.89**	--	--	--
	MW-12	1/27/2000	(orig)	**4.1**	0.55	0.43	**2.379**	--	--	--
	MW-12	6/13/2000	(orig)	**5**	**1.3**	0.49	**2.7**	--	--	--
	MW-12	3/29/2001	(orig)	**5.17**	**1.79**	0.366	**2.62**	--	--	--
	MW-12	6/26/2001	(orig)	**4.8**	**1.9**	0.39	**2.56**	--	--	--
	MW-12	9/18/2001	(orig)	**5.1**	**2.4**	0.43	**2.82**	--	--	--
	MW-12	12/18/2001	(orig)	**4**	**1.5**	0.32	**1.88**	--	--	--
	MW-12	3/22/2002	(orig)	**3.3**	**0.93**	0.29	**1.27**	--	--	--
	MW-12	6/28/2002	(orig)	**4.2**	**1.8**	0.41	**1.94**	--	--	--
	MW-12	9/23/2002	(orig)	**3.8**	**1.5**	0.31	**1.51**	--	--	--
	MW-12	12/31/2002	(orig)	**3.6**	**0.84**	0.28	**1.01**	--	--	--
	MW-12	5/24/2003	(orig)	**3.99**	**2.23**	0.299	**1.47**	--	--	--
	MW-12	6/27/2003	(orig)	**5.29**	**2.75**	0.36	**1.6**	--	--	--
	MW-12	9/24/2003	(orig)	**4.6**	**1.69**	0.29	**1.15**	--	--	--
	MW-12	12/15/2003	(orig)	**4.2**	**1.36**	0.24	**1.15**	--	--	--
	MW-12	3/15/2004	(orig)	**2.09**	**1.12**	0.3	**1.25**	--	--	--
	MW-12	6/21/2004	(orig)	**3.87**	**1.82**	0.28	**1.5**	--	--	--
	MW-12	6/29/2004	(orig)	**5.14**	**2.22**	0.24	**1.28**	--	--	--
	MW-12	12/31/2004	(orig)	**4.16**	**1.22**	0.25	**1.15**	--	--	--
	MW-12	3/22/2005	(orig)	**2.38**	**1.1**	0.13	**0.71**	--	--	--
	MW-12	10/24/2005	(orig)	**1.35**	0.15	0.08	0.33	--	--	--
	MW-12	12/16/2005	(orig)	**2.38**	0.422	0.111	0.341	--	--	--
	MW-12	3/20/2006	(orig)	**2.1**	0.21	0.071	0.225	--	--	--
	MW-12	6/21/2006	(orig)	**2.27**	0.385	0.085	0.355	--	--	--
	MW-12	10/18/2006	(orig)	**1.74**	0.477	0.112	0.399	--	--	--
	MW-12	12/12/2006	(orig)	**2.4**	**1.11**	0.142	**0.668**	--	--	--
	MW-12	3/26/2007	(orig)	**4.13**	**1.68**	0.34	**1.18**	--	--	--
	MW-12	6/26/2007	(orig)	**1.52**	0.432	0.118	0.34	--	--	--
	MW-12	11/8/2007	(orig)	**0.78**	0.31	0.043	0.17	--	--	--
	MW-12	1/17/2008	(orig)	**2**	**1.4**	0.18	**0.79**	--	--	--
	MW-12	3/19/2008	(orig)	**1.6**	0.56	0.16	0.53	--	--	--
	MW-12	7/22/2008	(orig)	**0.73**	0.022	0.014	0.021	--	--	--
	MW-12	10/23/2008	(orig)	**0.5**	0.03	0.022	0.04	--	--	--
	MW-12	1/21/2009	(orig)	**1.1**	0.43	0.11	0.41	--	--	--
	MW-12	9/24/2009	(orig)	**0.61**	0.0083	0.01	0.0195	--	--	--
	MW-12	9/28/2010	(orig)	**0.55**	< 0.001	0.015	0.016	--	--	--
	GW-074927-100411-CM-003	10/4/2011	(orig)	**0.494**	< 0.01	0.0235	< 0.03	--	--	--
	GW-074927-092612-CM-MW-12	9/26/2012	(orig)	**0.617**	<0.001	0.015	0.0207	--	--	--
	GW-074927-091813-CM-MW-12	9/18/2013	(orig)	**0.202**	<0.005	<0.005	<0.015	--	--	--
	GW-074927-091813-CM-DUP	9/18/2013	(Duplicate)	**0.21**	<0.005	<0.005	<0.015	--	--	--
	GW-074927-032414-CM-MW-12	3/24/2014	(orig)	**0.0559**	0.0067	<0.005	<0.015	**14.2**	**3390**	**2740**
	GW-074927-032414-CM-DUP	3/24/2014	(Duplicate)	**0.0508**	0.0056	<0.005	<0.015	--	--	--
	GW-074927-092414-CM-MW-12	9/24/2014	(orig)	**0.83**	0.0013	0.011	0.0171	**9.7**	**3460**	**2330**
	GW-074927-092414-CM-DUP	9/24/2014	(Duplicate)	**0.882**	0.0015	0.0121	0.0179	--	--	--
	GW-074927-092315-CB-MW-12	9/23/2015	(orig)	**0.246**	< 0.001	< 0.001	< 0.003	**10.2**	**3330**	**2310**
	GW-074927-092315-CB-MW-12	9/23/2015	(Duplicate)	**0.258**	< 0.001	< 0.001	< 0.003	--	--	--
	GW-074927-091516-CM-MW-12	9/15/2016	(orig)	**0.0568**	< 0.0005	< 0.0005	< 0.015	**10.6**	**3580**	**2240**
	GW-11145958-102617-CM-MW-12	10/26/2017	(orig)	**0.0379**	<0.002	<0.002	<0.006	**9.51**	--	--
	GW-11145958-102617-CM-DUP	10/26/2017	(Duplicate)	**0.0447**	<0.001	<0.001	<0.003	--	--	--

Table 4

Groundwater Laboratory Analytical Results Summary
Hilcorp Energy Company
Hampton No. 4M
San Juan County

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Dissolved Manganese (mg/L)	Total Dissolved Solid (mg/L)	Sulfate (mg/L)
NMWQCC Groundwater Quality Standards				**0.01**	**0.75**	**0.75**	**0.62**	**0.2**	**1000**	**600**
MW-15	MW-15	10/21/1999	(orig)	< 0.0005	0.0012	< 0.0005	0.0015	--	--	--
	MW-15	1/27/2000	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--	--	--
	MW-15	6/13/2000	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--	--	--
	MW-15	3/29/2001	(orig)	< 0.0002	< 0.0002	< 0.0002	< 0.0002	--	--	--
	MW-15	6/26/2001	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--	--	--
	MW-15	9/18/2001	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--	--	--
	MW-15	12/18/2001	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--	--	--
	MW-15	3/22/2002	(orig)	ND	ND	ND	ND	--	--	--
	MW-15	6/28/2002	(orig)	ND	ND	ND	ND	--	--	--
	MW-15	9/23/2002	(orig)	ND	ND	ND	ND	--	--	--
	MW-15	12/31/2002	(orig)	ND	ND	ND	ND	--	--	--
	MW-15	3/27/2003	(orig)	ND	0.0003 J	ND	0.0009 J	--	--	--
	MW-15	6/27/2003	(orig)	0.0004 J	ND	ND	ND	--	--	--
	MW-15	9/24/2003	(orig)	ND	ND	ND	ND	--	--	--
	MW-15	3/15/2004	(orig)	ND	0.0003 J	ND	ND	--	--	--
	MW-15	6/21/2004	(orig)	ND	ND	ND	ND	--	--	--
	MW-15	9/29/2004	(orig)	ND	ND	ND	ND	--	--	--
	MW-15	12/15/2004	(orig)	0.0007 J	ND	ND	ND	--	--	--
	MW-15	12/31/2004	(orig)	ND	0.0009 J	0.0003 J	0.0014 J	--	--	--
	MW-15	3/22/2005	(orig)	ND	ND	ND	ND	--	--	--
	MW-15	10/24/2005	(orig)	ND	ND	ND	ND	--	--	--
	MW-15	12/12/2005	(orig)	ND	0.0003 J	ND	0.0004 J	--	--	--
	MW-15	3/20/2006	(orig)	ND	ND	ND	ND	--	--	--
	MW-15	6/21/2006	(orig)	0.0007 J	ND	0.0003 J	ND	--	--	--
	MW-15	10/18/2006	(orig)	ND	0.0003 J	ND	0.0002 J	--	--	--
	MW-15	12/12/2006	(orig)	ND	ND	ND	ND	--	--	--
	MW-15	3/26/2007	(orig)	< 0.0003	< 0.0002	< 0.0002	< 0.0006	--	--	--
	MW-15	6/26/2007	(orig)	< 0.0003	0.0005 J	< 0.0002	< 0.0006	--	--	--
	MW-15	11/8/2007	(orig)	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--	--	--
	MW-15	1/17/2008	(orig)	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--	--	--
	MW-15	3/19/2008	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	MW-15	7/22/2008	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	MW-15	10/23/2008	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	MW-15	1/21/2009	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	MW-15	9/24/2009	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--
	MW-15	9/28/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--
	GW-074927-100411-CM-001	10/4/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	GW-074927-092612-CM-MW-15	9/26/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	GW-074927-091813-CM-MW-15	9/18/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	GW-074927-092414-CM-MW-15	9/24/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	**8.8**	**3390**	**2500**
	GW-074927-092315-CB-MW-15	9/23/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	**8.5**	**3020**	**2550**
	GW074927-091516-CM-MW-15	9/15/0216	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	GW-11145958-102617-CM-MW-15	10/26/2017	(orig)	--	--	--	--	**8.6**	--	--

Table 4

Groundwater Laboratory Analytical Results Summary
Hilcorp Energy Company
Hampton No. 4M
San Juan County

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Dissolved Manganese (mg/L)	Total Dissolved Solid (mg/L)	Sulfate (mg/L)
NMWQCC Groundwater Quality Standards				**0.01**	**0.75**	**0.75**	**0.62**	**0.2**	**1000**	**600**
MW-16	MW-16	10/21/1999	(orig)	**0.22**	0.3	0.0054	0.142	--	--	--
	MW-16	10/21/1999	(Duplicate)	**0.214**	0.268	0.004	0.151	--	--	--
	MW-16	1/27/2000	(orig)	**1.6**	0.17	0.056	0.225	--	--	--
	MW-16	6/13/2000	(orig)	**8.7**	0.43	0.68	**2.2**	--	--	--
	MW-16	6/26/2001	(orig)	**9.3**	**1.1**	**0.81**	**3.41**	--	--	--
	MW-16	9/18/2001	(orig)	**11**	**6.4**	0.59	**6.4**	--	--	--
	MW-16	12/18/2001	(orig)	**9.9**	**6.9**	0.57	**7.4**	--	--	--
	MW-16	6/28/2002	(orig)	**11**	**7**	**0.77**	**5.7**	--	--	--
	MW-16	9/23/2002	(orig)	**8.9**	**9.9**	0.61	**8.5**	--	--	--
	MW-16	12/31/2002	(orig)	**8.8**	**7.9**	**0.77**	**7.4**	--	--	--
	MW-16	3/22/2003	(orig)	**10**	**6.6**	**1.1**	**7.4**	--	--	--
	MW-16	3/27/2003	(orig)	**10.4**	**11.2**	**0.84**	**8.67**	--	--	--
	MW-16	9/24/2003	(orig)	**10.3**	**15.4**	**0.87**	**10.59**	--	--	--
	MW-16	3/15/2004	(orig)	**9.2**	**16**	**1.31**	**12**	--	--	--
	MW-16	6/21/2004	(orig)	**8.04**	**18.1**	**2.45**	**18.58**	--	--	--
	MW-16	9/29/2004	(orig)	**8.33**	**14**	**0.76**	**8.23**	--	--	--
	MW-16	12/15/2004	(orig)	**9.64**	**12.6**	0.72	**1.55**	--	--	--
	MW-16	12/31/2004	(orig)	**8.34**	**17.1**	**1.55**	**18.83**	--	--	--
	MW-16	3/28/2005	(orig)	**4.14**	**5.81**	**0.76**	**10.48**	--	--	--
	MW-16	10/24/2005	(orig)	**6.28**	**9.8**	0.67	**6.91**	--	--	--
	MW-16	12/12/2005	(orig)	**6.94**	**11.5**	0.75	**8.06**	--	--	--
	MW-16	3/20/2006	(orig)	**6.82**	**11.5**	**0.83**	**8.55**	--	--	--
	MW-16	6/21/2006	(orig)	**6.64**	**11.2**	0.69	**7.57**	--	--	--
	MW-16	10/18/2006	(orig)	**5.7**	**10.2**	0.62	**6.52**	--	--	--
	MW-16	12/12/2006	(orig)	**4.6**	**10**	0.55	**6.83**	--	--	--
	MW-16	3/26/2007	(orig)	**2.97**	**2.82**	0.26	**5.22**	--	--	--
	MW-16	6/26/2007	(orig)	**5.23**	**9.11**	**0.77**	**7.76**	--	--	--
	MW-16	11/8/2007	(orig)	**5.5**	**12**	0.57	**6.2**	--	--	--
	MW-16	1/17/2008	(orig)	**4.6**	**9.1**	0.55	**5.6**	--	--	--
	MW-16	3/19/2008	(orig)	**5.5**	**9.6**	0.51	**6.9**	--	--	--
	MW-16	7/22/2008	(orig)	**3.6**	**6.1**	0.43	**4.5**	--	--	--
	MW-16	10/23/2008	(orig)	**4.7**	**9.1**	0.48	**6.6**	--	--	--
	MW-16	1/21/2009	(orig)	**4.2**	**7.5**	0.48 J	**6.9**	--	--	--
	MW-16	9/24/2009	(orig)	**3.2**	**4.6**	0.34	**3.5**	--	--	--
	MW-16	9/29/2010	(orig)	**3**	**4.6**	**3.4**	**23.6**	--	--	--
	MW-16	12/15/2010	(orig)	**5.2**	**13**	**1.1**	**14.5**	--	--	--
	MW-16	10/11/2011	No sample collected due to presence of LNAPL.							
	MW-16	9/26/2012	No sample collected due to presence of LNAPL.							
	MW-16	9/18/2013	No sample collected due to presence of LNAPL.							
	MW-16	9/24/2014	No sample collected due to presence of LNAPL.							
	MW-16	9/23/2015	No sample collected due to presence of LNAPL.							

Table 4

Groundwater Laboratory Analytical Results Summary
Hilcorp Energy Company
Hampton No. 4M
San Juan County

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Dissolved Manganese (mg/L)	Total Dissolved Solid (mg/L)	Sulfate (mg/L)
NMWQCC Groundwater Quality Standards				**0.01**	**0.75**	**0.75**	**0.62**	**0.2**	**1000**	**600**
Seep	Seep	7/1/1998	(orig)	0.0016	0.0007	0.0006	0.00036	--	--	--
	Seep	4/14/1999	(orig)	**0.04**	0.0022	0.0021	0.019	--	--	--
	Seep	10/21/1999	(orig)	**0.065**	0.23	0.011	0.434	--	--	--
	Seep	3/29/2001	(orig)	**0.0116**	< 0.0002	0.0007 J	0.0254	--	--	--
	Seep	6/26/2001	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.001	--	--	--
	Seep	9/18/2001	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.001	--	--	--
	Seep	12/18/2001	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.001	--	--	--
	Seep	3/22/2002	(orig)	0.0059	ND	0.0008	0.0034	--	--	--
	Seep	6/28/2002	(orig)	ND	ND	ND	ND	--	--	--
	Seep	9/23/2002	(orig)	ND	ND	ND	ND	--	--	--
	Seep	12/31/2002	(orig)	0.0007	ND	ND	ND	--	--	--
	Seep	3/27/2003	(orig)	0.0063	0.0002 J	0.0018	0.0101	--	--	--
	Seep	9/24/2003	(orig)	ND	0.0003 J	ND	ND	--	--	--
	Seep	12/15/2003	(orig)	0.0004 J	0.0003 J	ND	ND	--	--	--
	Seep	3/15/2004	(orig)	ND	ND	ND	ND	--	--	--
	Seep	6/21/2004	(orig)	ND	ND	ND	ND	--	--	--
	Seep	9/29/2004	(orig)	ND	ND	ND	ND	--	--	--
	Seep	12/31/2004	(orig)	ND	0.0002 J	ND	0.0004 J	--	--	--
	Seep	3/28/2005	(orig)	ND	ND	ND	ND	--	--	--
	Seep	10/24/2005	(orig)	ND	J	ND	ND	--	--	--
	Seep	12/12/2005	(orig)	ND	0.0005 J	0.0003 J	0.0009 J	--	--	--
	Seep	3/20/2006	(orig)	ND	ND	ND	ND	--	--	--
	Seep	6/21/2006	(orig)	0.004	0.0129	0.0008 J	0.015	--	--	--
	Seep	10/18/2006	(orig)	ND	0.0005 J	0.0003 J	0.0014 J	--	--	--
	Seep	12/12/2006	(orig)	ND	ND	ND	ND	--	--	--
	Seep	3/26/2007	(orig)	< 0.0003	0.0003 J	< 0.0002	< 0.0006	--	--	--
	Seep	6/26/2007	(orig)	< 0.0003	< 0.0002	< 0.0002	< 0.0006	--	--	--
	Seep	11/8/2007	(orig)	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--	--	--
	Seep	3/19/2008	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	Seep	10/23/2008	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	Seep	1/21/2009	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	Seep	9/24/2009	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--
	Seep	9/28/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--
	Seep	10/11/2011	No sample collected; seep dry.							
	Seep	9/26/2012	No sample collected; seep dry.							
	Seep	9/18/2013	No sample collected; seep dry.							
	Seep	9/24/2014	No sample collected; seep dry.							
	Seep	9/23/2015	No sample collected; seep dry.							

Table 4

Groundwater Laboratory Analytical Results Summary
Hilcorp Energy Company
Hampton No. 4M
San Juan County

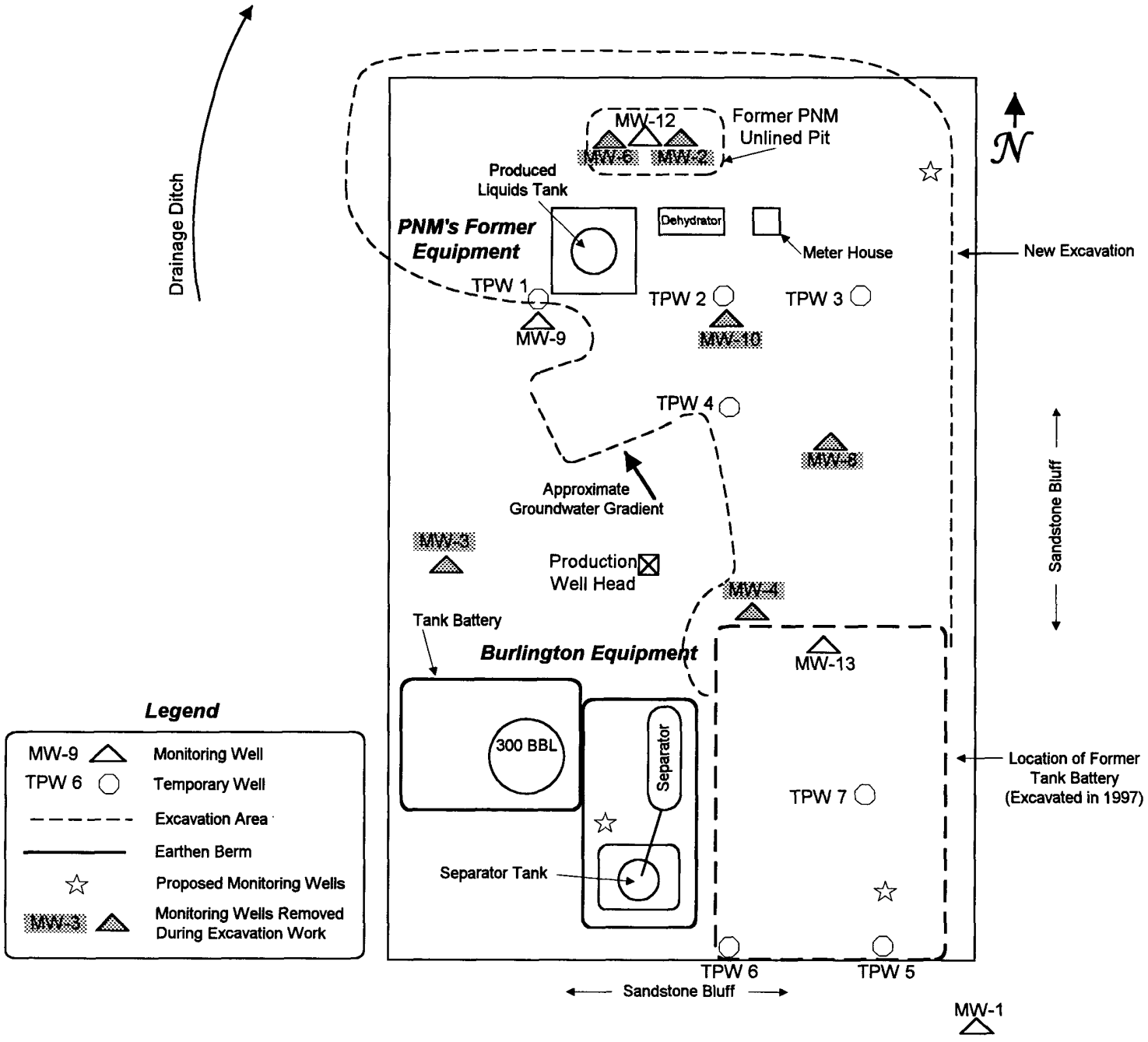
Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Dissolved Manganese (mg/L)	Total Dissolved Solid (mg/L)	Sulfate (mg/L)
NMWQCC Groundwater Quality Standards				**0.01**	**0.75**	**0.75**	**0.62**	**0.2**	**1000**	**600**
TMW-1	TMW-1	1/27/2000	(orig)	**0.93**	**1.4**	0.35	**6.7**	--	--	--
	TMW-1	6/13/2000	(orig)	**2.4**	**3.4**	0.55	**9.1**	--	--	--
	TMW-1	6/26/2001	(orig)	**1.1**	**3.5**	0.33	**5.5**	--	--	--
	TMW-1	5/23/2003	(orig)	**0.83**	0.123	0.107	**1.0047**	--	--	--
	TMW-1	6/27/2003	(orig)	**0.474**	0.0366	0.0596	0.4907	--	--	--
	TMW-1	9/24/2003	(orig)	**0.292**	0.139	0.017	0.221	--	--	--
	TMW-1	12/15/2003	(orig)	**0.0559**	0.0013	0.0039	0.0425	--	--	--
	TMW-1	6/21/2004	(orig)	**0.0406**	ND	0.0141	0.0147	--	--	--
	TMW-1	9/29/2004	(orig)	**0.41**	0.0087	0.0596	0.4585	--	--	--
	TMW-1	12/31/2004	(orig)	0.003 J	0.005 J	0.001 J	0.011 J	--	--	--
	TMW-1	3/22/2005	(orig)	**0.0678**	0.0133	0.0081	0.1017	--	--	--
	TMW-1	10/24/2005	(orig)	**0.483**	0.705	0.045	0.328	--	--	--
	TMW-1	12/12/2005	(orig)	**0.122**	0.317	0.019	0.16	--	--	--
	TMW-1	3/20/2006	(orig)	**0.071**	0.082	0.016	0.151	--	--	--
	TMW-1	6/21/2006	(orig)	**0.159**	0.0657	0.0569	0.36	--	--	--
	TMW-1	10/18/2006	(orig)	0.0064	0.0016	0.0021	0.0138	--	--	--
	TMW-1	6/26/2007	(orig)	**0.269**	0.0026	0.0049	0.0157	--	--	--
	TMW-1	11/8/2007	(orig)	**0.3**	0.012	0.006	0.038	--	--	--
	TMW-1	1/17/2008	(orig)	0.0008	< 0.0007	< 0.0008	0.001	--	--	--
	TMW-1	3/19/2008	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--
	TMW-1	7/22/2008	(orig)	**0.13**	0.029	0.011	0.022	--	--	--
	TMW-1	1/21/2009	(orig)	**0.013**	< 0.005	< 0.005	< 0.005	--	--	--
	TMW-1	9/28/2010	(orig)	**0.013**	< 0.001	< 0.001	0.0032	--	--	--
	TMW-1	10/11/2011	No sample collected; insufficient water present in well.							
	TMW-1	9/26/2012	No sample collected; well dry.							
	TMW-1	9/18/2013	No sample collected; well dry.							
	TMW-1	9/24/2014	No sample collected; well dry.							
	TMW-1	9/23/2015	No sample collected; well dry.							

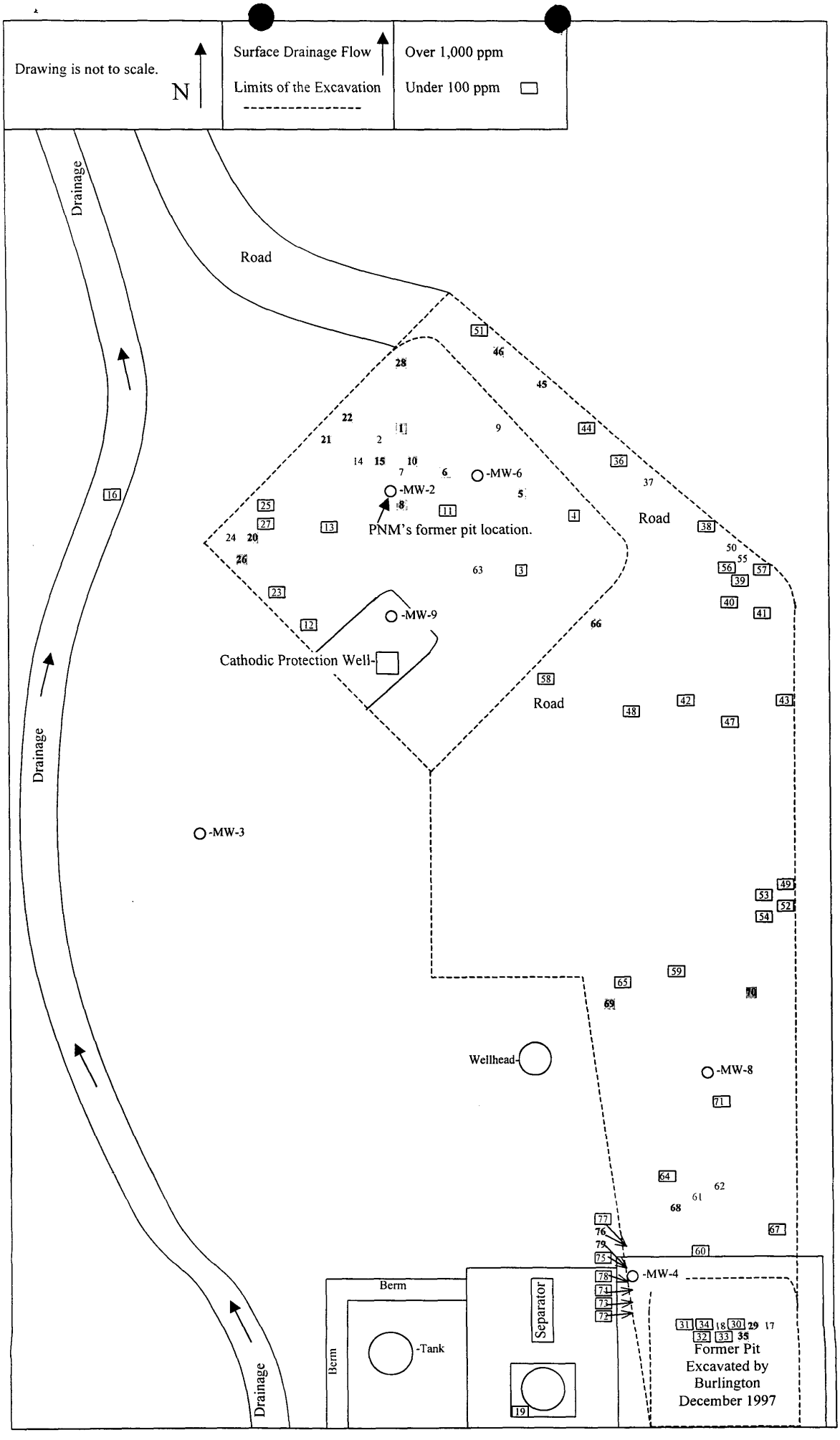
Notes:
J = Analyte concetration detected at a value between MDL and PQL
MDL = Method Detection Limit
PQL = Practical Quantitation Limit
NS = Not Sampled
NMWQCC = New Mexico Water Quality Control Commission
mg/L = milligrams per liter (parts per million)
< 0.001 = Below Laboratory Detection Limit of 0.001 mg/L
ND = Not Dectected Above Laboratory Detection Limit
-- Analyte not analyzed for this monitoring event
BOLD = Concentrations that exceed the NMWQCC groundwater quality standard

Appendices

Appendix A
Diagram of Former Excavation Area

Hampton #4M Site Diagram




Drawing is not to scale.
N
Surface Drainage Flow
Limits of the Excavation
Over 1,000 ppm
Under 100 ppm
Drainage
Road
-MW-6
-MW-2
PNM's former pit location.
Road
Road
-MW-9
Cathodic Protection Well-
-MW-3
Drainage
Drainage
Wellhead-
-MW-8
-MW-4
Berm
Berm
-Tank
Separator
Former Pit
Excavated by
Burlington
December 1997

Appendix B
NAPL Recovery System Monthly O&M Checklists

Hampton No. 4M O&M Checklist

Project Number: 11145958

Date: 10/18/2017

Personnel: J. Walker

Well Number: MW-16

Controller:

Regulator PSI	Sys Total ON Time	Sys Total OFF Time
60	000:00:00	000:00:00

Controller Run Times (min) :

On	Off	Refill	Discharge
20	072:00:00	000:04:00	000:01:00

Nitrogen Tank:

Nitrogen Tank PSI	Regulator PSI
2500	120

Well (ft):

DTP	DTW	LNAPL Thickness	Pump Depth
31.07	33.85	2.78	On Bottom

LNAPL Recovery Drum (ft):

DTP	DTW	TD	LNAPL Thickness
2.71	--	2.79	0.08

High-level shut off functioning: Y / N

Comments:
Replace inoperable tank regulator; Reset system run times and system data

First initiation of system op under Hilcorp

Hampton No. 4M O&M Checklist

Project Number: 11145958

Date: 11/07/2017

Personnel: J. Walker

Well Number: MW-16

Controller:

Regulator PSI	Sys Total ON Time	Sys Total OFF Time
60	002:40:12	481:46:30

Controller Run Times (min) :

On	Off	Refill	Discharge
000:20:00	072:00:00	000:04:00	000:01:00

Nitrogen Tank:

Nitrogen Tank PSI	Regulator PSI
2120	110

Well (ft):

DTP	DTW	LNAPL Thickness	Pump Depth
31.58	33.85	2.27	On Bottom

LNAPL Recovery Drum (ft):

DTP	DTW	TD	LNAPL Thickness
2.69	--	2.79	0.1

High-level shut off functioning: Y / N

Comments:

Hampton No. 4M O&M Checklist

Project Number: 11145958

Date: 12/06/2017

Personnel: S. Perez

Well Number: MW-16

Controller:

Regulator PSI	Sys Total ON Time	Sys Total OFF Time
60	005:40:12	182:39:12

Controller Run Times (min) :

On	Off	Refill	Discharge
000:20:00	072:00:00 48:00:00	000:04:00	000:01:00

Nitrogen Tank:

Nitrogen Tank PSI	Regulator PSI
2100	100

Well (ft):

DTP	DTW	LNAPL Thickness	Pump Depth
31.62	33.33	2.29	On Bottom

LNAPL Recovery Drum (ft):

DTP	DTW	TD	LNAPL Thickness
2.67	--	2.79	0.12

High-level shut off functioning: Y / N

Comments:
Changed controller Run Time-Off to **048:00:00** from 072:00:00

Appendix C
Groundwater Laboratory Analytical Report

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

November 07, 2017

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

RE: Project: 11145958 HAMPTON NO 4
Pace Project No.: 60256788

Dear Jeff Walker:
Enclosed are the analytical results for sample(s) received by the laboratory on October 28, 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
Christine Mathews, GHD Services

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

CERTIFICATIONS

Project: 11145958 HAMPTON NO 4
Pace Project No.: 60256788

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

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

SAMPLE SUMMARY

Project: 11145958 HAMPTON NO 4
Pace Project No.: 60256788

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60256788001	**GW-11145958-102617-CM-MW-1**	Water	10/26/17 11:50	10/28/17 08:55
60256788002	**GW-11145958-102617-CM-MW-5**	Water	10/26/17 13:30	10/28/17 08:55
60256788003	**GW-11145958-102617-CM-MW-9**	Water	10/26/17 12:20	10/28/17 08:55
60256788004	**GW-11145958-102617-CM-MW-12**	Water	10/26/17 12:40	10/28/17 08:55
60256788005	**GW-11145958-102617-CM-MW-15**	Water	10/26/17 12:05	10/28/17 08:55
60256788006	**GW-11145958-102617-CM-DUP**	Water	10/26/17 08:00	10/28/17 08:55
60256788007	**GW-11145958-102617-CM-001**	Water	10/26/17 13:45	10/28/17 08:55
60256788008	**GW-11145958-102617-CM-MW-11**	Water	10/26/17 13:20	10/28/17 08:55

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

SAMPLE ANALYTE COUNT

Project: 11145958 HAMPTON NO 4
Pace Project No.: 60256788

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60256788001	**GW-11145958-102617-CM-MW-1**	EPA 6010	TDS	1	PASI-K
60256788002	**GW-11145958-102617-CM-MW-5**	EPA 6010	TDS	1	PASI-K
		EPA 8260	JDH	8	PASI-K
60256788003	**GW-11145958-102617-CM-MW-9**	EPA 6010	TDS	1	PASI-K
		EPA 8260	JDH	8	PASI-K
60256788004	**GW-11145958-102617-CM-MW-12**	EPA 6010	TDS	1	PASI-K
		EPA 8260	JDH	8	PASI-K
60256788005	**GW-11145958-102617-CM-MW-15**	EPA 6010	TDS	1	PASI-K
60256788006	**GW-11145958-102617-CM-DUP**	EPA 8260	JDH	8	PASI-K
60256788007	**GW-11145958-102617-CM-001**	EPA 8260	JDH	8	PASI-K
60256788008	**GW-11145958-102617-CM-MW-11**	EPA 6010	TDS	1	PASI-K

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ANALYTICAL RESULTS

Project: 11145958 HAMPTON NO 4
Pace Project No.: 60256788

Sample: GW-11145958-102617-CM-MW-1 **Lab ID: 60256788001** Collected: 10/26/17 11:50 Received: 10/28/17 08:55 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							
Manganese, Dissolved	**4910**	ug/L	5.0	1	11/06/17 16:22	11/07/17 12:55	7439-96-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 11145958 HAMPTON NO 4
Pace Project No.: 60256788

Sample: GW-11145958-102617-CM-MW-5 **Lab ID: 60256788002** Collected: 10/26/17 13:30 Received: 10/28/17 08:55 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							
Manganese, Dissolved	**16200**	ug/L	5.0	1	11/06/17 16:22	11/07/17 13:02	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	**7.4**	ug/L	1.0	1		11/03/17 03:38	71-43-2	
Ethylbenzene	**56.3**	ug/L	1.0	1		11/03/17 03:38	100-41-4	
Toluene	**11.8**	ug/L	1.0	1		11/03/17 03:38	108-88-3	
Xylene (Total)	**23.6**	ug/L	3.0	1		11/03/17 03:38	1330-20-7	
Surrogates								
Toluene-d8 (S)	98	%	80-108	1		11/03/17 03:38	2037-26-5	
4-Bromofluorobenzene (S)	109	%	80-113	1		11/03/17 03:38	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	80-114	1		11/03/17 03:38	17060-07-0	
Preservation pH	**1.0**		1.0	1		11/03/17 03:38		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 11145958 HAMPTON NO 4
Pace Project No.: 60256788

Sample: GW-11145958-102617-CM-MW-9 **Lab ID: 60256788003** Collected: 10/26/17 12:20 Received: 10/28/17 08:55 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							
Manganese, Dissolved	**7980**	ug/L	5.0	1	11/06/17 16:22	11/07/17 13:04	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		11/03/17 03:52	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		11/03/17 03:52	100-41-4	
Toluene	ND	ug/L	1.0	1		11/03/17 03:52	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		11/03/17 03:52	1330-20-7	
Surrogates								
Toluene-d8 (S)	99	%	80-108	1		11/03/17 03:52	2037-26-5	
4-Bromofluorobenzene (S)	107	%	80-113	1		11/03/17 03:52	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	80-114	1		11/03/17 03:52	17060-07-0	
Preservation pH	**1.0**		1.0	1		11/03/17 03:52		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 11145958 HAMPTON NO 4
Pace Project No.: 60256788

Sample: GW-11145958-102617-CM-MW-12 **Lab ID: 60256788004** Collected: 10/26/17 12:40 Received: 10/28/17 08:55 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							
Manganese, Dissolved	**9510**	ug/L	5.0	1	11/06/17 16:22	11/07/17 13:07	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	**37.9**	ug/L	2.0	2		11/03/17 04:07	71-43-2	
Ethylbenzene	ND	ug/L	2.0	2		11/03/17 04:07	100-41-4	
Toluene	ND	ug/L	2.0	2		11/03/17 04:07	108-88-3	
Xylene (Total)	ND	ug/L	6.0	2		11/03/17 04:07	1330-20-7	
Surrogates								
Toluene-d8 (S)	88	%	80-108	2		11/03/17 04:07	2037-26-5	D3
4-Bromofluorobenzene (S)	107	%	80-113	2		11/03/17 04:07	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	80-114	2		11/03/17 04:07	17060-07-0	
Preservation pH	**1.0**		1.0	2		11/03/17 04:07		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 11145958 HAMPTON NO 4
Pace Project No.: 60256788

Sample: GW-11145958-102617-CM-MW-15 **Lab ID: 60256788005** Collected: 10/26/17 12:05 Received: 10/28/17 08:55 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							
Manganese, Dissolved	**8600**	ug/L	5.0	1	11/06/17 16:22	11/07/17 13:10	7439-96-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 11145958 HAMPTON NO 4
Pace Project No.: 60256788

Sample: GW-11145958-102617-CM-DUP **Lab ID: 60256788006** Collected: 10/26/17 08:00 Received: 10/28/17 08:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	**44.7**	ug/L	1.0	1		11/03/17 04:22	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		11/03/17 04:22	100-41-4	
Toluene	ND	ug/L	1.0	1		11/03/17 04:22	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		11/03/17 04:22	1330-20-7	
Surrogates								
Toluene-d8 (S)	98	%	80-108	1		11/03/17 04:22	2037-26-5	
4-Bromofluorobenzene (S)	118	%	80-113	1		11/03/17 04:22	460-00-4	S0
1,2-Dichloroethane-d4 (S)	107	%	80-114	1		11/03/17 04:22	17060-07-0	
Preservation pH	**1.0**		1.0	1		11/03/17 04:22		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 11145958 HAMPTON NO 4
Pace Project No.: 60256788

Sample: GW-11145958-102617-CM-001 **Lab ID: 60256788007** Collected: 10/26/17 13:45 Received: 10/28/17 08:55 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		11/03/17 04:37	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		11/03/17 04:37	100-41-4	
Toluene	ND	ug/L	1.0	1		11/03/17 04:37	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		11/03/17 04:37	1330-20-7	
Surrogates								
Toluene-d8 (S)	98	%	80-108	1		11/03/17 04:37	2037-26-5	
4-Bromofluorobenzene (S)	106	%	80-113	1		11/03/17 04:37	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	80-114	1		11/03/17 04:37	17060-07-0	
Preservation pH	**1.0**		1.0	1		11/03/17 04:37		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 11145958 HAMPTON NO 4
Pace Project No.: 60256788

Sample: GW-11145958-102617-CM-MW-11 **Lab ID: 60256788008** Collected: 10/26/17 13:20 Received: 10/28/17 08:55 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							
Manganese, Dissolved	**4400**	ug/L	5.0	1	11/06/17 16:22	11/07/17 13:25	7439-96-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 11145958 HAMPTON NO 4
Pace Project No.: 60256788

QC Batch: 501914 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60256788001, 60256788002, 60256788003, 60256788004, 60256788005, 60256788008

METHOD BLANK: 2054732 Matrix: Water
Associated Lab Samples: 60256788001, 60256788002, 60256788003, 60256788004, 60256788005, 60256788008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Manganese, Dissolved	ug/L	ND	5.0	11/07/17 12:52	

LABORATORY CONTROL SAMPLE: 2054733

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Manganese, Dissolved	ug/L	1000	1010	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2054734 2054735

Parameter	Units	60256788001 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	4910	1000	1000	6040	6030	113	112	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

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QUALITY CONTROL DATA

Project: 11145958 HAMPTON NO 4
Pace Project No.: 60256788

QC Batch: 501523 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60256788002, 60256788003, 60256788004, 60256788006, 60256788007

METHOD BLANK: 2052913 Matrix: Water
Associated Lab Samples: 60256788002, 60256788003, 60256788004, 60256788006, 60256788007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	11/02/17 23:54	
Ethylbenzene	ug/L	ND	1.0	11/02/17 23:54	
Toluene	ug/L	ND	1.0	11/02/17 23:54	
Xylene (Total)	ug/L	ND	3.0	11/02/17 23:54	
1,2-Dichloroethane-d4 (S)	%	105	80-114	11/02/17 23:54	
4-Bromofluorobenzene (S)	%	105	80-113	11/02/17 23:54	
Toluene-d8 (S)	%	99	80-108	11/02/17 23:54	

LABORATORY CONTROL SAMPLE: 2052914

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	20.0	100	82-115	
Ethylbenzene	ug/L	20	19.2	96	83-112	
Toluene	ug/L	20	19.3	97	78-113	
Xylene (Total)	ug/L	60	57.4	96	83-114	
1,2-Dichloroethane-d4 (S)	%			97	80-114	
4-Bromofluorobenzene (S)	%			106	80-113	
Toluene-d8 (S)	%			99	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: 11145958 HAMPTON NO 4
Pace Project No.: 60256788

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: 501523

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

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
S0	Surrogate recovery outside laboratory control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 11145958 HAMPTON NO 4
Pace Project No.: 60256788

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60256788001	**GW-11145958-102617-CM-MW-1**	EPA 3010	501914	EPA 6010	502045
60256788002	**GW-11145958-102617-CM-MW-5**	EPA 3010	501914	EPA 6010	502045
60256788003	**GW-11145958-102617-CM-MW-9**	EPA 3010	501914	EPA 6010	502045
60256788004	**GW-11145958-102617-CM-MW-12**	EPA 3010	501914	EPA 6010	502045
60256788005	**GW-11145958-102617-CM-MW-15**	EPA 3010	501914	EPA 6010	502045
60256788008	**GW-11145958-102617-CM-MW-11**	EPA 3010	501914	EPA 6010	502045
60256788002	**GW-11145958-102617-CM-MW-5**	EPA 8260	501523		
60256788003	**GW-11145958-102617-CM-MW-9**	EPA 8260	501523		
60256788004	**GW-11145958-102617-CM-MW-12**	EPA 8260	501523		
60256788006	**GW-11145958-102617-CM-DUP**	EPA 8260	501523		
60256788007	**GW-11145958-102617-CM-001**	EPA 8260	501523		

Pace Analytical
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Sample Condition Upon Receipt

WO# : 60256788

60256788

AES

Client Name: GHD Services New Mexico

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

Tracking #: 7852 4048 1674 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 10-25-17

Date and initials of person examining contents:

Cooler Temperature (°C): **As-read** 1.2 **Corr. Factor** CF 0.0 CF +0.3 **Corrected** 1.2

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	2L0 (24hr)
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: 10/31/17

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:	Christine Mathews	Attention:	
Address:	6121 Indian School Road	Copy To:		Company Name:	
	Albuquerque, NM 87110			Address:	
Email:	christine.mathews@ghd.com	Purchase Order #:		Pace Quote:	
Phone:	505-884-0672 Fax:	Project Name:	11145958 Hampton No 4	Pace Project Manager:	alice.spiller@pacelabs.com,
Requested Due Date:		Project #:		Pace Profile #:	10540, 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	Dissolved Mn-field filtered	Residual Chlorine (Y/N)	60256788
1	GW-11145958-102617-CM-MW-1	WT	G			10/26/17	1150		1			1								1		BP3N 001
2	GW-11145958-102617-CM-MW-5	WT	G			10/26/17	1330		4			1	3						3	1		BP3N, 3 (DUPLICATE) 002
3	GW-11145958-102617-CM-MW-9	WT	G			10/26/17	1220		4			1	3						3	1		003
4	GW-11145958-102617-CM-MW-12	WT	G			10/26/17	1240		4			1	3						3	1		004
5	GW-11145958-102617-CM-MW-15	WT	G			10/26/17	1205		1			1								1		BP3N 005
6	GW-11145958-102617-CM-DUP	WT	G			10/26/17	—		3				3						3			3 (DUPLICATE) 006
7	TB-11145958-102617-CM-001	WT				10/26/17	1345		2				2						2			2 (DUPLICATE) 007
8	GW-11145958-102617-CM-MW-11	WT	G			10/26/17	1320		1			1								1		BP3N 008
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	GHD	10/27/17	1400		10/28	0855	1.2	4	4	4

SAMPLER NAME AND SIGNATURE				
PRINT Name of SAMPLER:	C. Mathews			
SIGNATURE of SAMPLER:		DATE Signed:	10/27/17	

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

Pace Container Order #279183

Addresses

Order By :		Ship To :		Return To:	
Company	GHD Services, New Mexico	Company	GHD Services, New Mexico	Company	Pace Analytical Kansas
Contact	Mathews, Christine	Contact	Mathews, Christine	Contact	Spiller, Alice
Email	christine.mathews@ghd.com	Email	christine.mathews@ghd.com	Email	alice.spiller@pacelabs.com
Address	6121 Indian School Road	Address	6121 Indian School Road	Address	9608 Loiret Blvd
Address 2	St 200	Address 2	St 200	Address 2	
City	Albuquerque	City	Albuquerque	City	Lenexa
State	NM Zip 87110	State	NM Zip 87110	State	KS Zip 66219
Phone	505-884-0672	Phone	505-884-0672	Phone	(913)563-1409

Info

Project Name	11145958 Hampton No 4	**Due Date**	09/22/2017	**Profile**	10540, line 1	**Quote**	
Project Manager	Spiller, Alice	**Return**		**Carrier**	FedEx Standard Overnight	**Location**	NM

Trip Blanks

- [X] Include Trip Blanks

Bottle Labels

- [ ] Blank
- [X] Pre-Printed No Sample IDs
- [ ] Pre-Printed With Sample IDs

Bottles

- [ ] Boxed Cases
- [ ] Individually Wrapped
- [ ] Grouped By Sample

Return Shipping Labels

- [X] No Shipper Number
- [ ] With Shipper Number

COC Options

- [ ] Number of Blanks
- [X] Pre-Printed

Misc

- [ ] Sampling Instructions
- [X] Custody Seal
- [X] Temp. Blanks
- [X] Coolers
- [ ] Syringes
- [ ] Extra Bubble Wrap
- [ ] Short Hold/Rush Stickers
- [ ] DI Water Liter(s)
- [ ] USDA Regulated Soils

# of Samples	Matrix	Test	Container	Total	# of QC	Lot #	Notes
6	WT	8260 BTEX	3-40ml glass vials w/HCL	18	0	B724001VB	
1	WT	Trip BLANK	2-40mL HCL w/custody seal	2	0	B724001VB 091917	
7	WT	Dissolved Mn-field filtered	250mL plastic, HNO3	7	0	081417-2AFW	

Hazard Shipping Placard In Place : NO

*Sample receiving hours are Mon-Fri 7:00am-6:00pm and Sat 8:00am-2:00pm unless special arrangements are made with your project manager.

*Pace Analytical reserves the right to return hazardous, toxic, or radioactive samples to you.
*Pace Analytical reserves the right to charge for unused bottles, as well as cost associated with sample storage and disposal.
*Payment term are net 30 days.
*Please include the proposal number on the chain of custody to insure proper billing.

Sample Notes

Ship Date :	09/21/2017
Prepared By:	Jeimy
Verified By:	