



J. Brady Crouch

ConocoPhillips Company
Risk Management & Remediation
Program Manager
600 N. Dairy Ashford, EC3-06-W056
Houston, TX 77079
Phone: 832-486-3016
J.Brady.Crouch@conocophillips.com

Mr. Jim Griswold
New Mexico Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

January 30, 2017

Re: NMOCD Case No. 3R-428, 2016 Annual Groundwater Assessment and Monitoring Report

Dear Mr. Griswold:

Enclosed is the 2016 Annual Groundwater Monitoring Report for the Sategna No. 2E 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,

A handwritten signature in blue ink that reads "Joseph B. Crouch". The signature is written in a cursive style.

J. Brady Crouch

Enc



2016 Annual Groundwater Monitoring Report

Sategna No. 2E
Unit Letter J, Section 21, Township 29N, Range 11W
San Juan County, New Mexico

ConocoPhillips Company

GHD | 6121 Indian School Rd NE Suite 200 Albuquerque NM 87110 USA
074932 | 2016 | Report No 8 | December 20 2016



Table of Contents

1.	Introduction.....	1
1.1	Introduction	1
1.2	Background.....	1
2.	Groundwater Monitoring Summary, Methodology and Analytical Results.....	2
2.1	Groundwater Monitoring Summary.....	2
2.2	Groundwater Monitoring Methodology.....	2
2.3	Groundwater Monitoring Analytical Results.....	3
3.	Conclusions and Recommendations.....	3
3.1	Conclusions	3
3.2	Recommendations.....	3

Figure Index

Figure 1	Site Vicinity Map
Figure 2	Site Plan
Figure 3	Geologic Cross Section
Figure 4	September 2016 Groundwater Potentiometric Surface Map
Figure 5	September 2016 Groundwater Concentration Map

Table Index

Table 1	Site History Timeline
Table 2	Monitor Well Specifications and Groundwater Elevations
Table 3	Field Parameters Summary
Table 4	Groundwater Analytical Results Summary

Appendix Index

Appendix A	September 2016 Groundwater Laboratory Analytical Results
------------	--



1. Introduction

1.1 Introduction

This 2016 Annual Groundwater Monitoring Report presents the results of groundwater monitoring conducted by GHD Services, Inc. (GHD) at the ConocoPhillips Company (ConocoPhillips) Sategna Number 2E natural gas production well site (Site). The Site is situated on privately owned land within Unit Letter J, Section 21, Township 29N, 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

On November 24, 2008, approximately eight barrels of condensate were released from the on Site, aboveground storage tank. Notification of the release was given to the New Mexico Oil Conservation Division (NMOCD) by ConocoPhillips personnel using NMOCD Form C 141. On November 25, 2008, Envirotech Inc. of Farmington, New Mexico (Envirotech) obtained grab soil samples from just outside the affected area for analysis of petroleum hydrocarbons. Results of this analysis were below NMOCD recommended action levels. Envirotech also used a hand auger to complete two soil borings to approximately 8 feet below ground surface (bgs), where groundwater was encountered. Two groundwater samples were submitted by Envirotech to an analytical laboratory for analysis of benzene, toluene, ethylbenzene and xylenes (BTEX). Analytical results revealed BTEX in concentrations below NMOCD action levels.

On December 4, 2008, Envirotech returned to the Site and obtained grab and composite soil samples from an excavation measuring approximately 30 feet by 18 feet by 5 feet deep (Figure 2). Soil samples were collected from the excavation and analyzed for BTEX, total petroleum hydrocarbons (TPH) and chloride. Analytical results were below NMOCD action levels for BTEX. Two grab soil samples collected from below the above grade and below grade tanks exceeded the NMOCD action level for total TPH.

Groundwater samples were collected from seepage into the excavation on December 5, 2008. The groundwater sample exceeded the New Mexico Water Quality Control Commission (NMWQCC) for benzene, toluene, and xylenes. Groundwater was recovered from the bottom of the excavated area using a vacuum truck during the week of December 8, 2008. Once removed, further excavation took place and groundwater slowly seeped into the excavation. This process was repeated a total of four times.

The first time water was recovered from the surface of the excavation, a hydrocarbon odor and free phase, light non aqueous phase liquid (LNAPL) were present. By the fourth and last event, neither the hydrocarbon odor nor free phase LNAPL was present in the groundwater seepage. Each pumping event recovered approximately thirty to sixty barrels of liquid from the Site.

Groundwater monitoring wells MW 1, MW 2 and MW 3 were installed by Tetra Tech at the Site in March 2009. A geologic cross section is presented in Figure 3. Quarterly groundwater monitoring was initiated in April 2009.



Additional hydrocarbon soil impacts were discovered during relocation and reinstallation of gas well equipment in April 2009. Envirotech uncovered an abandoned sewer line in the same location as hydrocarbon impacted soils while digging an exploratory trench between the wellhead and the proposed separator tank location (Figure 2). Trench work was halted and the excavated soils were stockpiled on site. Tetra Tech returned to the site on April 23 and 24, 2009 to oversee excavation of the hydrocarbon impacted soils from the vicinity of the trench (Figure 2). Photoionization detector readings in the field indicated levels below the NMOCD action level; however, lab results were above the NMOCD action level for TPH in samples collected from all four walls of the excavation. The bottom sample results were below NMOCD action levels. The excavation was backfilled and equipment was reinstalled before analytical results were available. A Tetra Tech report detailing this activity, titled *Soil Excavation and Sampling Report*, was submitted to the NMOCD in July 2009.

Tetra Tech continued quarterly groundwater monitoring from April 2, 2009 to March 2011. The March 2011 Tetra Tech quarterly groundwater monitoring report recommended the discontinuation of sampling and analysis of BTEX for all Site monitoring wells.

On June 15, 2011, Site consulting responsibilities were transferred from Tetra Tech to GHD (Formerly CRA) of Albuquerque, NM. Quarterly groundwater monitoring was conducted by GHD in June and October 2011. Quarterly groundwater monitoring was discontinued and annual monitoring for dissolved manganese, sulfate, and total dissolved solids (TDS) was initiated. Up gradient monitoring well MW-4 was installed at the Site on the existing pad in October 2014, and incorporated into the annual groundwater sampling activities.

Site history is summarized in Table 1.

2. Groundwater Monitoring Summary, Methodology and Analytical Results

2.1 Groundwater Monitoring Summary

Groundwater elevation measurements were recorded from Site monitor wells using an oil/water interface probe on September 12, 2016. Groundwater elevations for the Site are presented in Table 2.

September 2016 groundwater data indicates groundwater flow is towards the southwest, consistent with historical records. The groundwater gradient was estimated to be 0.0015 foot per foot (ft/ft). A groundwater potentiometric surface map is presented as Figure 4.

2.2 Groundwater Monitoring Methodology

Monitoring wells MW 1, MW 2, MW 3 and MW 4 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 on GHD groundwater sampling field forms. A summary of field parameters collected during sampling is included 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 dissolved manganese by EPA Method 6010B, sulfate by EPA method 300.0, and total dissolved solids (TDS) by Standard Method 2540C.

2.3 Groundwater Monitoring Analytical Results

The NMWQCC groundwater quality standard for dissolved manganese is 0.2 milligrams per liter (mg/L). All Site wells were above the NMWQCC standard for dissolved manganese with the exception of down gradient well MW-2 at 0.12 mg/L . Groundwater concentrations in all Site wells remain above the 600 mg/L NMWQCC standard for sulfate . and the the 1000 mg/L NMWQCC standard for TDS.

A summary of groundwater laboratory analytical results is presented in Table 4. A groundwater concentration map is included as Figure 5. The September 2016 laboratory analytical report is included as Appendix A.

3. Conclusions and Recommendations

3.1 Conclusions

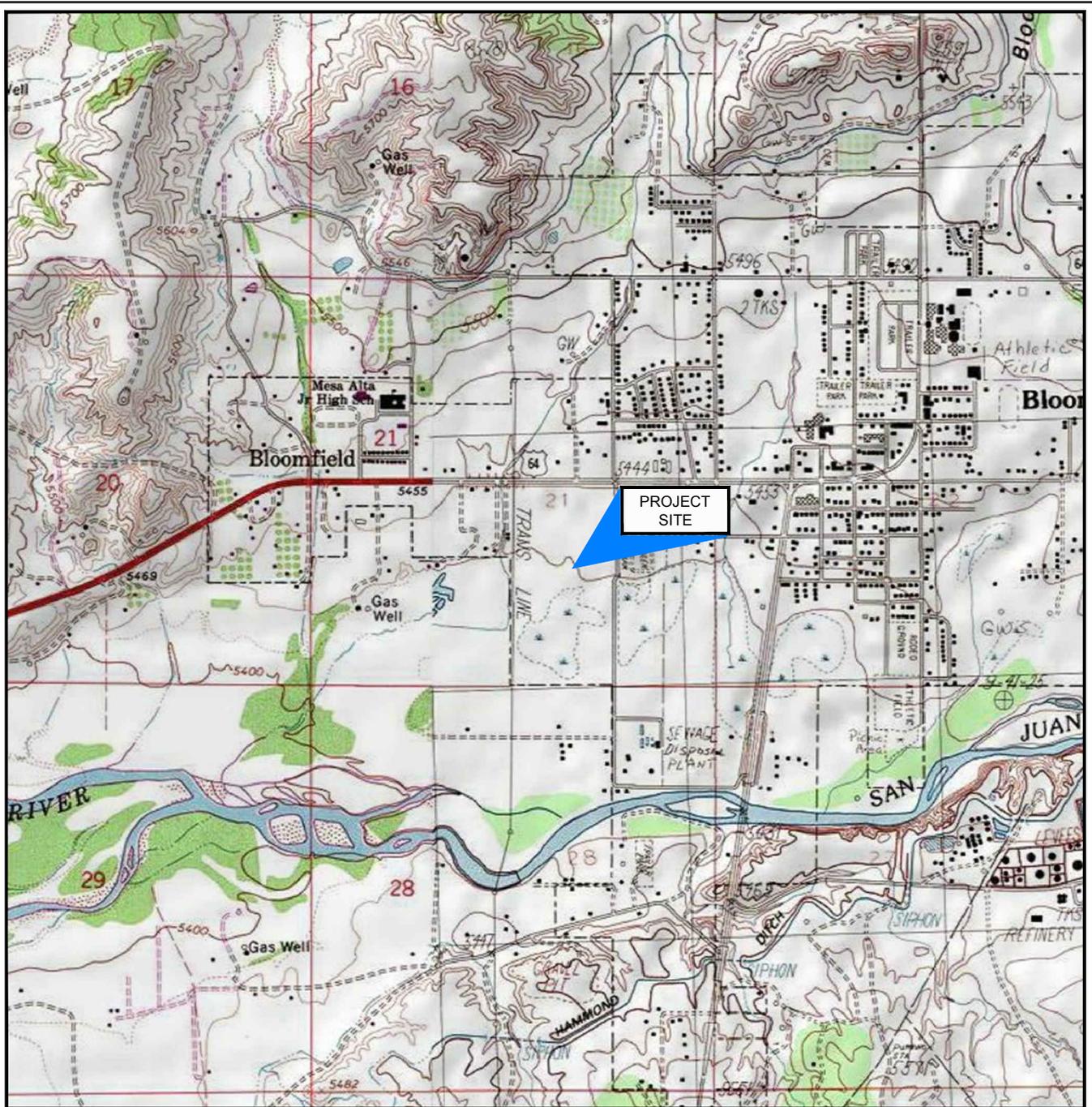
Based on the above referenced information, the following conclusions are presented below:

-) Groundwater flow is towards the southwest and is consistent with historical records.
-) Concentrations of dissolved manganese, sulfate and TDS have remained consistent since sampling began.

3.2 Recommendations

Installation of an upgradient well, located off the Site pad to the northeast, is recommended to determine if concentrations of manganese, sulfate and TDS in Site wells is representative of background conditions.

Figures



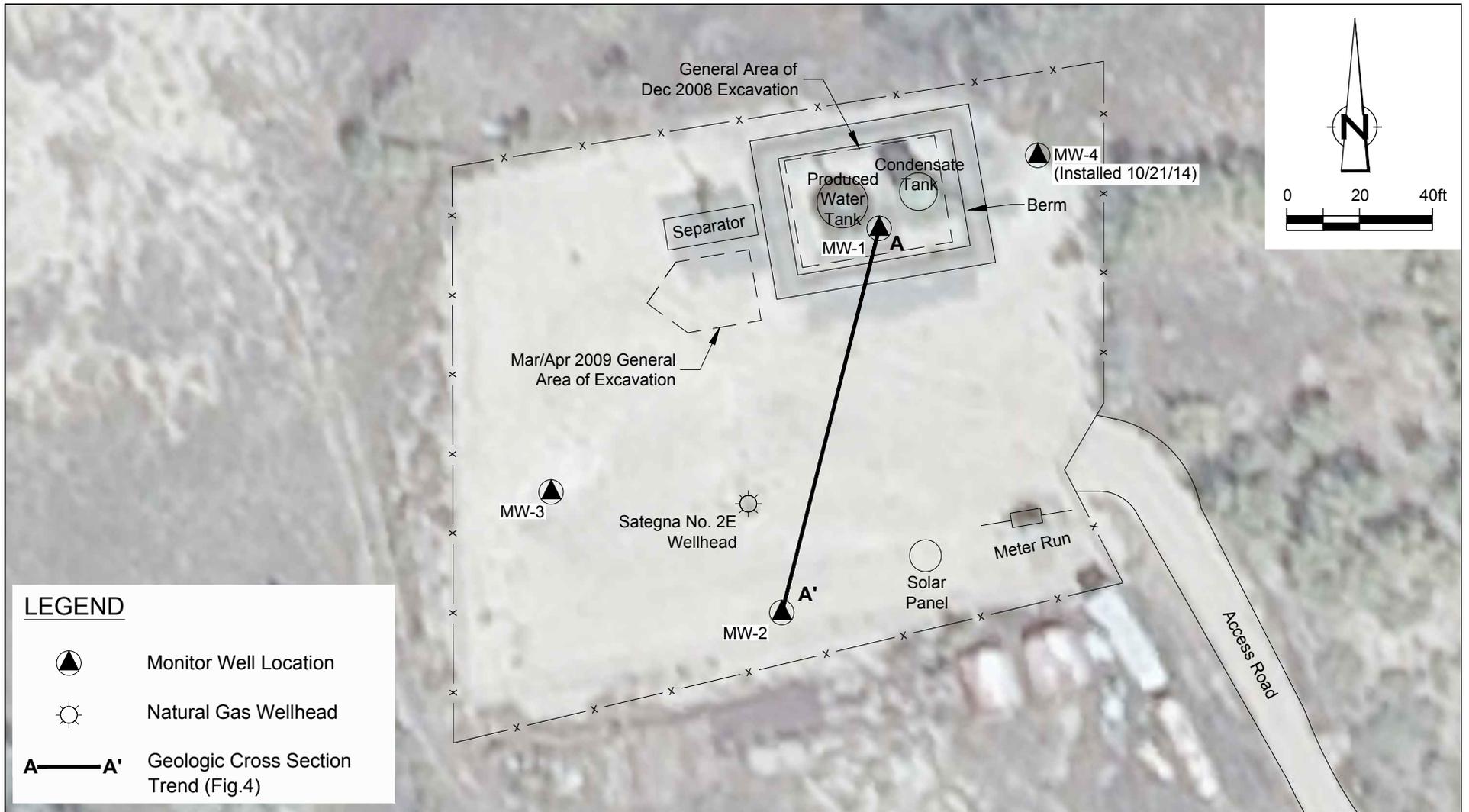
SOURCE: USGS 7.5 MINUTE QUAD
 "HORN CANYON AND BLOOMFIELD, NEW MEXICO"



Figure 1

SITE VICINITY MAP
 SATEGNA No. 2E NATURAL GAS WELL SITE
 SECTION 21, T29N-R11W, BLOOMFIELD, NEW MEXICO
ConocoPhillips Company

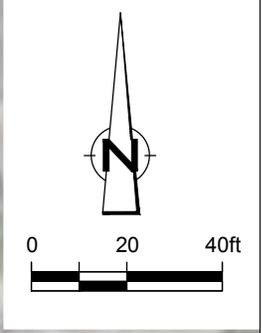
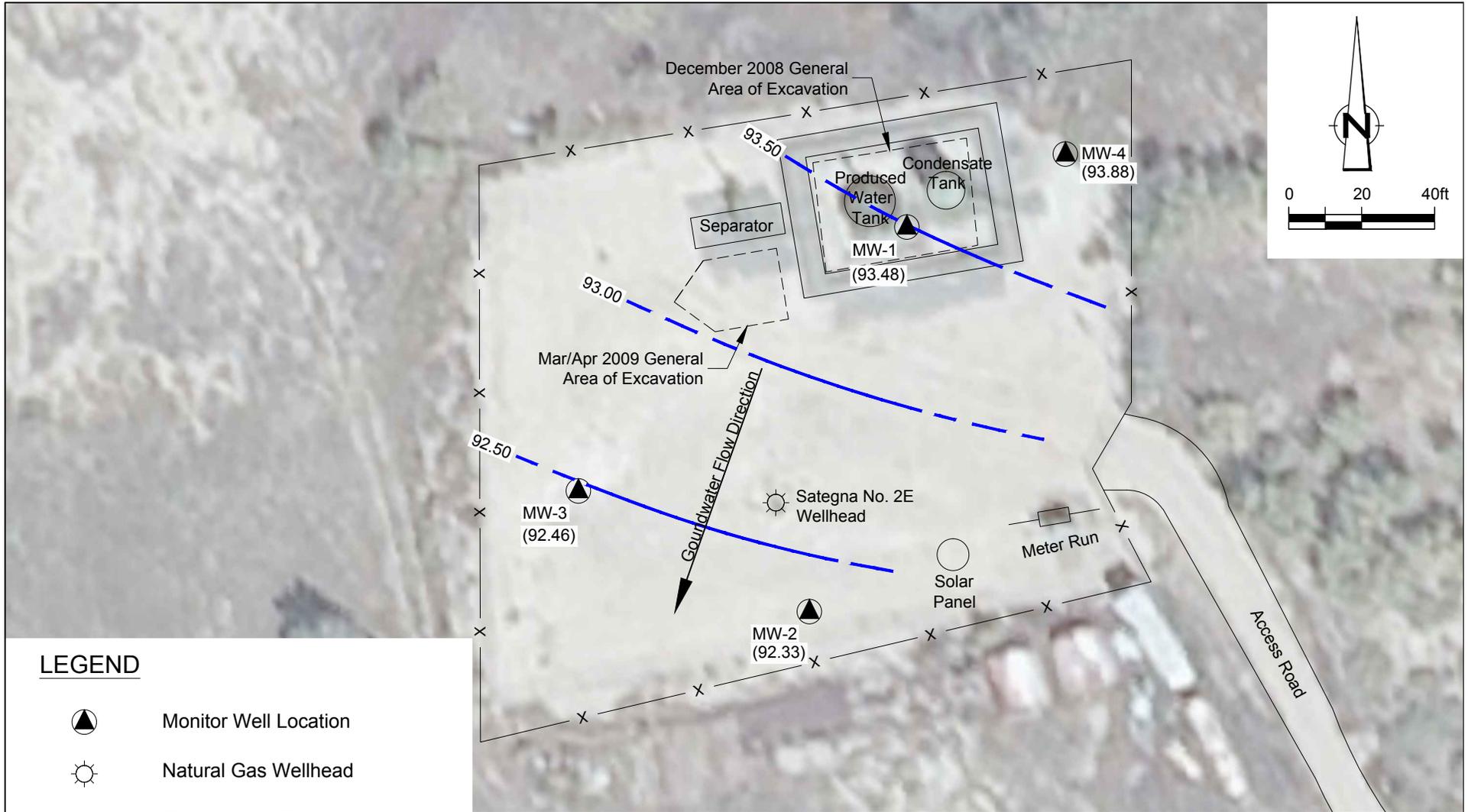




ConocoPhillips high resolution aerial imagery 2008.

Figure 2
 SITE PLAN
 SATEGNA No. 2E NATURAL GAS WELL SITE
 SECTION 21, T29N-R11W, BLOOMFIELD, NEW MEXICO
 ConocoPhillips Company





LEGEND

-  Monitor Well Location
-  Natural Gas Wellhead
-  (92.46) Groundwater Elevation, Ft
-  **92.50** Groundwater Elevation Contour, Ft
-  Groundwater Flow Direction

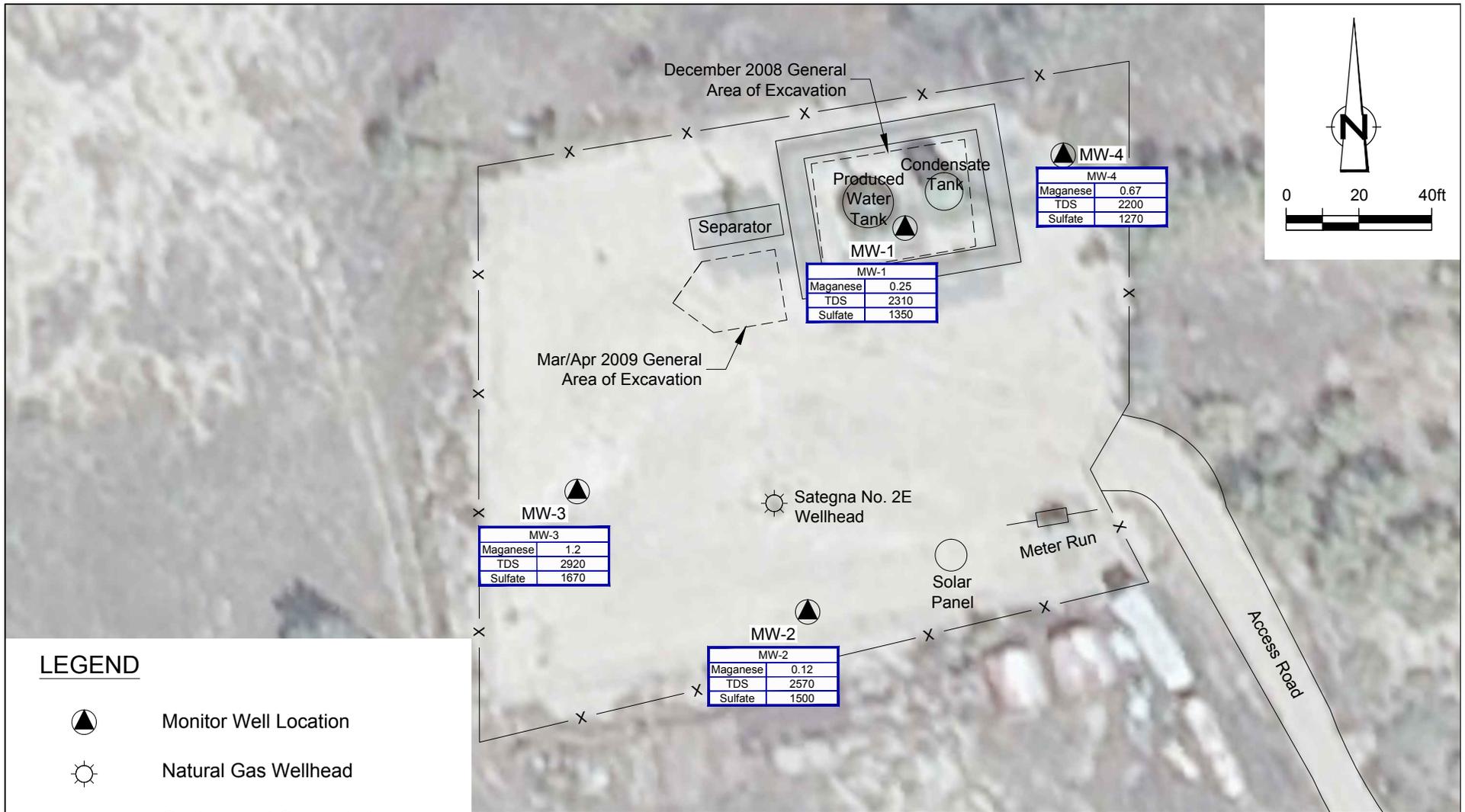


Figure 3
SEPTEMBER 2016 GROUNDWATER POTENTIOMETRIC SURFACE MAP
SATEGNA No. 2E NATURAL GAS WELL SITE
SECTION 21, T29N-R11W, BLOOMFIELD, NEW MEXICO
ConocoPhillips Company



Figure 4
 GEOLOGICAL CROSS SECTION
 SATEGNA No. 2E NATURAL GAS WELL SITE
 SECTION 21, T29N-R11W, BLOOMFIELD, NEW MEXICO
ConocoPhillips Company





LEGEND

-  Monitor Well Location
-  Natural Gas Wellhead
- 1670 Containment Concentration, mg/L

Figure 5
 SEPTEMBER 2016 GROUNDWATER CONCENTRATION MAP
 SATEGNA No. 2E NATURAL GAS WELL SITE
 SECTION 21, T29N-R11W, BLOOMFIELD, NEW MEXICO
ConocoPhillips Company



Tables

Table 1

**Site History Timeline
ConocoPhillips Company
Sategna No. 2E
San Juan County, New Mexico**

Date/Time Period	Event/Action	Description/Comments
November 24, 2008	Release Discovered	Approximately eight barrels of condensate were found to have spilled from an on-Site, aboveground storage tank (AST); corrosion was thought to be the cause of the release. A C-141 form was filled out by ConocoPhillips staff and notice was given to Brandon Powell of the New Mexico Oil Conservation Division (NMOCD) via electronic mail. The C-141 form stated that the well was shut down and the production tank was emptied.
November 25, 2008	Initial Site Assessment	Envirotech Inc. of Farmington, NM (Envirotech) collected soil samples and analyzed them using the heated headspace soil method; results were 0.2 and 1.1 parts per million (ppm) from outside the excavated area. Depth of soil samples was not noted. Envirotech hand augered two soil borings to groundwater at a depth of approximately 8 feet below ground surface (bgs) and submitted groundwater samples for analysis. Results were below OCD action levels for benzene, toluene, ethylbenzene, and total xylenes (BTEX) in groundwater. Envirotech noted that groundwater levels in the soil borings increased to approximately 5 feet bgs, and groundwater beneath the Site was thought to be under confined aquifer conditions.
December 4, 2008	Site Assessment	<p>Envirotech returned to the Site and obtained grab and composite soil samples from an excavation measuring approximately 30 feet by 18 feet by 5 feet deep (Figure 2). Heated headspace results show values ranging from 6.5 ppm in a grab soil sample obtained from the bottom of the excavation to 1,400 ppm from a composite soil sample taken from the former location of the AST. Total petroleum hydrocarbons (TPH), BTEX, and chloride samples were obtained for soils analysis. Results were below OCD action levels for BTEX. One soil sample obtained for chlorides showed results of 370 milligrams per kilogram (mg/kg). Results for TPH analysis obtained through Environmental Protection Agency (EPA) method 8015B for the composite soil sample taken at the site of the AST revealed results of 205 mg/kg; the OCD action level is 100 mg/kg. Results for TPH analysis obtained through EPA method 418.1 for the composite soil sample obtained at the location of the below ground tank revealed results of 521 mg/kg. The below ground tank was located within the berm and adjacent to the AST (Figure 2).</p> <p>Results of all other soil analyses at all other sampling locations were below OCD action levels.</p>
December 5, 2008	Site Assessment	Envirotech noted seepage of groundwater into the excavation on December 4, 2008, and returned to the Site on December 5, 2008 to collect groundwater samples from the excavation for BTEX analysis. The OCD groundwater action levels for benzene, toluene, and total xylenes are 10 ug/l, 750 ug/l, and 620 ug/l, respectively. Benzene was found at a concentration of 327 ug/l, toluene was detected at 4,300 ug/l, and total xylenes were found at a concentration of 8,480 ug/L.
Week of December 8, 2008	Removal of Groundwater Seepage	A vacuum truck was utilized to pump groundwater seepage from the surface of the excavated area. Once removed, further excavation took place and groundwater slowly seeped into the excavation; this process was repeated a total of four (4) times. The first time water was pumped from the surface of the excavation, a hydrocarbon odor and free-phase, light non-aqueous phase liquid (LNAPL) were present. By the fourth and last event, neither the hydrocarbon odor nor free-phase LNAPL were present in the groundwater seepage. Each pumping event removed approximately 30-60 barrels of liquid from the Site.
January 20, 2009 & January 30, 2009	Site Assessment	Tetra Tech conducted a Site visit to determine proposed groundwater monitoring well locations.
March 4-5, 2009	Monitoring Well Installation	Tetra Tech installed three groundwater monitoring wells at the Site: MW-1, MW-2, and MW-3.
March 2009	Additional Contamination Discovered	Construction and trenching for relocation of well operational equipment and tanks uncovered additional hydrocarbon impacted soils between the well head and separator tank. Work was stopped.
April 2, 2009	Quarterly Groundwater Monitoring Initiated	Tetra Tech conducted the first quarterly groundwater monitoring event at the Site.
April 2, 2009	Site Assessment	Envirotech created an exploratory trench between the proposed location of the separator tank and the well head and found an abandoned sewer line associated with hydrocarbon-impacted soils. The trenching was stopped and the excavated soils were stockpiled on site.
April 23 - 24, 2009	Removal of Contaminated Soil	Tetra Tech provided oversight for removal of approximately 96 cubic yards of hydrocarbon-impacted soils located west of the tank berm and in the vicinity of the abandoned sewer line. Excavation was backfilled.
June 17, 2009	Quarterly Groundwater Monitoring	Tetra Tech conducted the second quarterly groundwater monitoring event at the Site.
September 28, 2009	Quarterly Groundwater Monitoring	Tetra Tech conducted the third quarterly groundwater monitoring event at the Site.

Table 1
Site History Timeline
ConocoPhillips Company
Sategna No. 2E
San Juan County, New Mexico

<i>Date/Time Period</i>	<i>Event/Action</i>	<i>Description/Comments</i>
December 14, 2009	Quarterly Groundwater Monitoring	Tetra Tech conducted the fourth quarterly groundwater monitoring event at the Site.
March 31, 2010	Quarterly Groundwater Monitoring	Tetra Tech conducted the fifth quarterly groundwater monitoring event at the Site.
June 7, 2010	Quarterly Groundwater Monitoring	Tetra Tech conducted the sixth quarterly groundwater monitoring event at the Site.
September 23, 2010	Quarterly Groundwater Monitoring	Tetra Tech conducted the seventh quarterly groundwater monitoring event at the Site.
December 14, 2010	Quarterly Groundwater Monitoring	Tetra Tech conducted the eighth quarterly groundwater monitoring event at the Site.
March 14, 2011	Quarterly Groundwater Monitoring	Tetra Tech conducted the ninth quarterly groundwater monitoring event at the Site.
June 15, 2011	Transfer of Site Consulting Responsibilities	On June 15, 2011, Site consulting responsibilities were transferred from Tetra Tech of Albuquerque, NM to Conestoga-Rovers & Associates (CRA) of Albuquerque, NM.
June 24, 2011	Quarterly Groundwater Monitoring	CRA conducted the tenth quarterly groundwater monitoring event at the Site.
October 3, 2011	Quarterly Groundwater Monitoring	CRA conducted the 11th quarterly groundwater monitoring event at the Site.
September 17, 2012	Groundwater Monitoring	CRA conducted an annual groundwater monitoring event at the Site. Samples analyzed for dissolved Mn, sulfate, and total dissolved solids.
September 16, 2013	Groundwater Monitoring	CRA conducted an annual groundwater monitoring event at the Site. Samples analyzed for dissolved Mn, sulfate, and total dissolved solids.
September 22, 2014	Groundwater Monitoring	CRA conducted an annual groundwater monitoring event at the Site. Samples analyzed for dissolved Mn, sulfate, and total dissolved solids.
October 21, 2014	Monitoring Well Installation	CRA installed an up-gradient monitoring well MW-4.
December 17, 2014	Groundwater Monitoring	CRA conducted initial groundwater monitoring of the up-gradient monitoring well MW-4. The sample was analyzed for dissolved Mn, sulfate, and total dissolved solids.
September 21, 2015	Groundwater Monitoring	GHD (formerly CRA) conducted an annual groundwater monitoring event at the Site. Samples analyzed for dissolved Mn, sulfate, and total dissolved solids.
September 12, 2016	Groundwater Monitoring	GHD conducted an annual groundwater monitoring event at the Site. Samples analyzed for dissolved Mn, sulfate, and total dissolved solids.

Table 2
Monitoring Well Specifications and Groundwater Elevations
ConocoPhillips Company
Sategna No. 2E
San Juan County, New Mexico

<i>Well ID</i>	<i>Total Depth (ft below TOC)</i>	<i>Elevation*</i>	<i>Screen Interval (bgs)</i>	<i>Date Measured</i>	<i>Depth to Groundwater (ft below TOC)</i>	<i>Relative Water Level</i>
MW-1	20.3	99.36	2.2 - 17.2	4/2/2009	5.15	94.21
				6/17/2009	5.43	93.93
				9/28/2009	5.45	93.91
				12/14/2009	5.06	94.30
				3/31/2010	5.03	94.33
				6/7/2010	5.41	93.95
				9/23/2010	5.25	94.11
				12/14/2010	5.07	94.29
				3/14/2011	5.09	94.27
				6/24/2011	5.56	93.80
				10/3/2011	5.90	93.46
				9/17/2012	6.83**	92.53**
				11/26/2012	5.51	93.85
				9/16/2013	5.73	93.63
9/22/2014	6.03	93.33				
9/21/2015	5.88	93.48				
9/12/2016	5.88	93.48				
MW-2	20.9	98.78	3.33 - 18.33	4/2/2009	5.96	92.82
				6/17/2009	6.21	92.57
				9/28/2009	6.23	92.55
				12/14/2009	5.92	92.86
				3/31/2010	5.90	92.88
				6/7/2010	6.21	92.57
				9/23/2010	6.06	92.72
				12/14/2010	5.91	92.87
				3/14/2011	5.94	92.84
				6/24/2011	6.32	92.46
				10/3/2011	6.60	92.18
				9/17/2012	7.42**	91.36**
				11/26/2012	6.14	92.64
				9/16/2013	6.31	92.47
9/22/2014	6.62	92.16				
9/21/2015	6.46	92.32				
9/12/2016	6.45	92.33				
MW-3	20.28	98.66	3 - 18	4/2/2009	5.70	92.96
				6/17/2009	5.97	92.69
				9/28/2009	5.96	92.70
				12/14/2009	5.63	93.03
				3/31/2010	5.61	93.05
				6/7/2010	5.95	92.71
				9/23/2010	5.77	92.89
				12/14/2010	5.61	93.05
				3/14/2011	5.63	93.03
				6/24/2011	6.06	92.60
				10/3/2011	6.27	92.39
				9/17/2012	6.11**	92.55**
				11/26/2012	6.00	92.66
				9/16/2013	6.05	92.61
9/22/2014	6.38	92.28				
9/21/2015	6.21	92.45				
9/12/2016	6.20	92.46				
MW-4	20.57	98.37	2.5-17.5	12/17/2014	4.37	94.00
				9/21/2015	4.76	93.61
				9/12/2016	4.49	93.88

Notes:

1. ft = feet
2. TOC = top of casing
3. bgs = below ground surface
4. * Elevation relative to wellhead, set at 100 feet.
5. ** Anomalous data

Table 3

**Field Parameters Summary
ConocoPhillips Company
Sategne No. 2E
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	9/22/2014	15.40	7.09	1.90	3040	8.68	94.0	6.75
	9/21/2015	14.50	7.16	1.77	2715	4.26	60.8	7.25
	9/12/2016	13.52	7.32	1.76	2710	0.94	-72.0	6.00
MW-2	9/22/2014	16.70	6.97	2.00	3160	7.85	77.0	7.50
	9/21/2015	15.21	6.90	1.89	2907	1.53	73.1	7.00
	9/12/2016	15.09	7.46	1.89	2901	1.53	-390.8	7.50
MW-3	9/22/2014	15.90	7.03	2.20	3470	9.68	-23.0	5.25
	9/22/2014	15.70	7.01	2.30	3540	9.31	-27.0	5.50
	9/21/2015	15.59	6.90	2.10	3229	1.44	3.4	5.75
	9/12/2016	13.93	7.36	2.17	3331	1.42	-410.3	6.50
MW-4	12/17/2014	13.10	5.64	1.40	2210	8.02	242.0	8.00
	9/21/2015	13.40	6.99	1.62	2499	1.26	33.8	7.50
	9/12/2016	13.04	7.65	1.65	2540	0.98	-388.9	7.50

Notes:

TDS = total dissolved solids

DO = dissolved oxygen

ORP = oxidation-reduction potential

Groundwater Analytical Results Summary
ConocoPhillips Company
Sategna No. 2E
San Juan County, New Mexico

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)	Sulfate (mg/L)	Total dissolved solids (TDS) (mg/L)	
NMWQCC Groundwater Quality Standards				0.01	0.75	0.75	0.62	1.0	0.2	600	1000	
MW-1	MW-1	4/2/2009	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	1790	--	
	MW-1	6/17/2009	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	1420	--	
	MW-1	9/28/2009	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.02	0.243	1770	2590	
	MW-1	12/14/2009	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	0.152	--	2470	
	MW-1	3/31/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	0.176	1320	2470	
	MW-1	6/7/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	0.206	1330	2580	
	MW-1	9/23/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	0.238	1560	3210	
	MW-1	12/14/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	0.232	1600	2520	
	MW-1	3/14/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	0.323	1820	2770	
		GW-74932-062411-CB-02	6/24/2011	(orig)	--	--	--	--	--	0.574	1790	2450
		GW-074932-100311-CM-005	10/3/2011	(orig)	--	--	--	--	--	0.335	2030	2560
		GW-074932-091712-CM-MW-1	9/17/2012	(orig)	--	--	--	--	--	0.32	1790	2660
		GW-074932-091712-CM-DUP	9/17/2012	(duplicate)	--	--	--	--	--	--	--	2620
		GW-074932-091613-CM-MW-1	9/16/2013	(orig)	--	--	--	--	--	0.36	1580	2560
		GW-074932-091613-CM-DUP	9/16/2013	(duplicate)	--	--	--	--	--	0.33	--	--
		GW-074932-092214-CB-MW-1	9/22/2014	(orig)	--	--	--	--	--	0.42	1440	2650
	GW-074932-092115-CB-MW-1	9/21/2015	(orig)	--	--	--	--	--	0.30	1370	2180	
	GW-074932-092115-CB-DUP	9/21/2015	(duplicate)	--	--	--	--	--	0.31	--	--	
	GW-074932-091216-CM-MW-1	9/12/2016	(orig)	--	--	--	--	--	0.25	1350	2310	
MW-2	MW-2	4/2/2009	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	1850	--	
	MW-2	6/17/2009	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	1610	--	
	MW-2	9/28/2009	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	0.0217	0.168	1840	2260	
	MW-2	12/14/2009	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	0.158	--	2470	
	MW-2	3/31/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	0.136	1530	2620	
	MW-2	6/7/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	0.157	1290	2590	
	MW-2	9/23/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	0.0981	1510	2800	
	MW-2	12/14/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	0.128	1610	3000	
	MW-2	3/14/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	0.158	1850	2680	
		GW-74932-062411-1B-01	6/24/2011	(orig)	--	--	--	--	--	0.174	1860	2550
		GW-074932-100311-CM-006	10/3/2011	(orig)	--	--	--	--	--	0.187	1830	2590
		GW-074932-091712-CM-MW-2	9/17/2012	(orig)	--	--	--	--	--	0.22	1830	2710
		GW-074932-091613-CM-MW-2	9/16/2013	(orig)	--	--	--	--	--	0.21	1690	2570
		GW-074932-092214-CB-MW-2	9/22/2014	(orig)	--	--	--	--	--	0.18	1550	2630
		GW-074932-092115-CB-MW-2	9/21/2015	(orig)	--	--	--	--	--	0.099	1490	2320
		GW-074932-091216-CM-MW-2	9/12/2016	(orig)	--	--	--	--	--	0.12	1500	2570
MW-3	MW-3	4/2/2009	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	2110	--	
	MW-3	6/17/2009	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	--	--	1650	--	
	MW-3	9/28/2009	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.02	2.68	2230	3340	
	MW-3	12/14/2009	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	2.4	--	3060	
	MW-3	3/31/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	1.71	1660	3090	
	MW-3	6/7/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	0.968	1760	2650	
	MW-3	9/23/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	1.68	1910	3570	
	MW-3	12/14/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	1.13	1900	3000	
	MW-3	3/14/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	2.08	2090	3200	
		GW-74932-062411-CB-03	6/24/2011	(orig)	--	--	--	--	--	1.7	2080	2860
		GW-074932-100311-CM-007	10/3/2011	(orig)	--	--	--	--	--	1.45	1770	2810
		GW-074932-091712-CM-MW-3	9/17/2012	(orig)	--	--	--	--	--	1.1	1910	2830
		GW-074932-091613-CM-MW-3	9/16/2013	(orig)	--	--	--	--	--	0.83	1750	2600
		GW-074932-092214-CB-MW-3	9/22/2014	(orig)	--	--	--	--	--	0.87	1670	2830
		GW-074932-092115-CB-MW-3	9/21/2015	(orig)	--	--	--	--	--	0.83	1680	2670
		GW-074932-091216-CM-MW-3	9/12/2016	(orig)	--	--	--	--	--	1.2	1670	2920
MW-4	GW-074932-121714-JW-MW-4	12/17/2014	(orig)	--	--	--	--	--	--	1.5	1140	1520
	GW-074932-092115-CB-MW-4	9/21/2015	(orig)	--	--	--	--	--	0.55	1210	2040	
	GW-074932-091216-CM-MW-4	9/12/2016	(orig)	--	--	--	--	--	0.67	1270	2200	

Notes:

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

Appendices

September 28, 2016

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

RE: Project: 074932 Sategna No 2E
Pace Project No.: 60227651

Dear Christine Mathews:

Enclosed are the analytical results for sample(s) received by the laboratory on September 14, 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@pacelabs.com
Project Manager

Enclosures

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



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

CERTIFICATIONS

Project: 074932 Sategna No 2E

Pace Project No.: 60227651

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

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SAMPLE SUMMARY

Project: 074932 Sategna No 2E

Pace Project No.: 60227651

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60227651001	GW-074932-091216-CM-MW-1	Water	09/12/16 16:10	09/14/16 08:50
60227651002	GW-074932-091216-CM-MW-2	Water	09/12/16 16:18	09/14/16 08:50
60227651003	GW-074932-091216-CM-MW-3	Water	09/12/16 16:55	09/14/16 08:50
60227651004	GW-074932-091216-CM-MW-4	Water	09/12/16 16:50	09/14/16 08:50
60227651005	GW-074932-091216-CM-DUP	Water	09/12/16 00:00	09/14/16 08:50

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SAMPLE ANALYTE COUNT

Project: 074932 Sategna No 2E

Pace Project No.: 60227651

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60227651001	GW-074932-091216-CM-MW-1	EPA 6010	JGP	1
		SM 2540C	JMC1	1
		EPA 300.0	OL	1
60227651002	GW-074932-091216-CM-MW-2	EPA 6010	JGP	1
		SM 2540C	JMC1	1
		EPA 300.0	OL	1
60227651003	GW-074932-091216-CM-MW-3	EPA 6010	JGP	1
		SM 2540C	JMC1	1
		EPA 300.0	OL	1
60227651004	GW-074932-091216-CM-MW-4	EPA 6010	JGP	1
		SM 2540C	JMC1	1
		EPA 300.0	OL	1
60227651005	GW-074932-091216-CM-DUP	EPA 6010	JGP	1
		SM 2540C	JMC1	1
		EPA 300.0	OL	1

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: 074932 Sategna No 2E

Pace Project No.: 60227651

Method: EPA 6010

Description: 6010 MET ICP, Dissolved

Client: GHD Services_COP NM

Date: September 28, 2016

General Information:

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

Hold Time:

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

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: 074932 Sategna No 2E

Pace Project No.: 60227651

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: GHD Services_COP NM

Date: September 28, 2016

General Information:

5 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: 074932 Sategna No 2E

Pace Project No.: 60227651

Method: EPA 300.0

Description: 300.0 IC Anions 28 Days

Client: GHD Services_COP NM

Date: September 28, 2016

General Information:

5 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

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

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 074932 Sategna No 2E

Pace Project No.: 60227651

Sample: GW-074932-091216-CM-MW-1 **Lab ID:** 60227651001 Collected: 09/12/16 16:10 Received: 09/14/16 08:50 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	0.25	mg/L	0.0050	1	09/15/16 15:45	09/20/16 15:44	7439-96-5	
2540C Total Dissolved Solids								
Analytical Method: SM 2540C								
Total Dissolved Solids	2310	mg/L	5.0	1		09/19/16 09:02		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0								
Sulfate	1350	mg/L	100	100		09/27/16 18:04	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 074932 Sategna No 2E

Pace Project No.: 60227651

Sample: GW-074932-091216-CM-MW-2 **Lab ID:** 60227651002 Collected: 09/12/16 16:18 Received: 09/14/16 08:50 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	0.12	mg/L	0.0050	1	09/15/16 15:45	09/20/16 15:48	7439-96-5	
2540C Total Dissolved Solids								
Analytical Method: SM 2540C								
Total Dissolved Solids	2570	mg/L	5.0	1		09/19/16 09:02		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0								
Sulfate	1500	mg/L	100	100		09/27/16 18:18	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 074932 Sategna No 2E

Pace Project No.: 60227651

Sample: GW-074932-091216-CM-MW-3 **Lab ID:** 60227651003 Collected: 09/12/16 16:55 Received: 09/14/16 08:50 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	1.2	mg/L	0.0050	1	09/15/16 15:45	09/20/16 15:52	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	2920	mg/L	5.0	1		09/19/16 09:03		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	1670	mg/L	200	200		09/27/16 18:33	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 074932 Sategna No 2E

Pace Project No.: 60227651

Sample: GW-074932-091216-CM-MW-4 **Lab ID:** 60227651004 Collected: 09/12/16 16:50 Received: 09/14/16 08:50 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	0.67	mg/L	0.0050	1	09/15/16 15:45	09/20/16 16:03	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	2200	mg/L	5.0	1		09/19/16 09:04		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	1270	mg/L	100	100		09/27/16 18:47	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 074932 Sategna No 2E

Pace Project No.: 60227651

Sample: GW-074932-091216-CM-DUP **Lab ID:** 60227651005 Collected: 09/12/16 00:00 Received: 09/14/16 08:50 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	0.72	mg/L	0.0050	1	09/15/16 15:45	09/20/16 16:07	7439-96-5	
2540C Total Dissolved Solids								
Analytical Method: SM 2540C								
Total Dissolved Solids	2180	mg/L	5.0	1		09/19/16 09:04		
300.0 IC Anions 28 Days								
Analytical Method: EPA 300.0								
Sulfate	1240	mg/L	100	100		09/27/16 19:01	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 074932 Sategna No 2E

Pace Project No.: 60227651

QC Batch: 446683 Analysis Method: EPA 6010
 QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
 Associated Lab Samples: 60227651001, 60227651002, 60227651003, 60227651004, 60227651005

METHOD BLANK: 1826572 Matrix: Water
 Associated Lab Samples: 60227651001, 60227651002, 60227651003, 60227651004, 60227651005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Manganese, Dissolved	mg/L	ND	0.0050	09/20/16 15:19	

LABORATORY CONTROL SAMPLE: 1826573

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Manganese, Dissolved	mg/L	1	1.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1826574 1826575

Parameter	Units	60227639001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Manganese, Dissolved	mg/L	0.23	1	1	1.2	1.2	100	99	75-125	1	20	

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

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 074932 Sategna No 2E

Pace Project No.: 60227651

QC Batch: 446979

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 60227651001, 60227651002, 60227651003, 60227651004, 60227651005

METHOD BLANK: 1828613

Matrix: Water

Associated Lab Samples: 60227651001, 60227651002, 60227651003, 60227651004, 60227651005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	09/19/16 08:57	

LABORATORY CONTROL SAMPLE: 1828614

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	984	98	80-120	

SAMPLE DUPLICATE: 1828615

Parameter	Units	60227547007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	202	201	0	10	

SAMPLE DUPLICATE: 1828616

Parameter	Units	60227580002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	743	730	2	10	

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

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 074932 Sategna No 2E

Pace Project No.: 60227651

QC Batch: 448121 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 60227651001, 60227651002, 60227651003, 60227651004, 60227651005

METHOD BLANK: 1833255 Matrix: Water
 Associated Lab Samples: 60227651001, 60227651002, 60227651003, 60227651004, 60227651005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	09/27/16 14:46	

LABORATORY CONTROL SAMPLE: 1833256

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.9	98	90-110	

MATRIX SPIKE SAMPLE: 1833259

Parameter	Units	60227617002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	43.0	25	68.7	103	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

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALIFIERS

Project: 074932 Sategna No 2E

Pace Project No.: 60227651

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.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074932 Sategna No 2E

Pace Project No.: 60227651

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60227651001	GW-074932-091216-CM-MW-1	EPA 3010	446683	EPA 6010	446740
60227651002	GW-074932-091216-CM-MW-2	EPA 3010	446683	EPA 6010	446740
60227651003	GW-074932-091216-CM-MW-3	EPA 3010	446683	EPA 6010	446740
60227651004	GW-074932-091216-CM-MW-4	EPA 3010	446683	EPA 6010	446740
60227651005	GW-074932-091216-CM-DUP	EPA 3010	446683	EPA 6010	446740
60227651001	GW-074932-091216-CM-MW-1	SM 2540C	446979		
60227651002	GW-074932-091216-CM-MW-2	SM 2540C	446979		
60227651003	GW-074932-091216-CM-MW-3	SM 2540C	446979		
60227651004	GW-074932-091216-CM-MW-4	SM 2540C	446979		
60227651005	GW-074932-091216-CM-DUP	SM 2540C	446979		
60227651001	GW-074932-091216-CM-MW-1	EPA 300.0	448121		
60227651002	GW-074932-091216-CM-MW-2	EPA 300.0	448121		
60227651003	GW-074932-091216-CM-MW-3	EPA 300.0	448121		
60227651004	GW-074932-091216-CM-MW-4	EPA 300.0	448121		
60227651005	GW-074932-091216-CM-DUP	EPA 300.0	448121		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



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

WO# : 60227651

60227651

Client Name: GAD GP NW

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

Tracking #: 7044 6652 7069 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: T-266 ^{CF +1.1} T-239 ^{CF -0.1} Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 1.1 Corr. Factor ^{CF +1.1} ^{CF -0.1} Corrected 2.2

Date and initials of person examining contents: DB 9/15/16
1430

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Filtered volume received for dissolved tests?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Samples contain multiple phases? Matrix: <u>water</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Cyanide water sample checks: <input checked="" type="checkbox"/> N/A	
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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: 09/15/16

Temp Log: Record start and finish times when unpacking cooler, if >20 min, recheck sample temps.	
Start: <u>1425</u>	Start:
End: <u>1430</u>	End:
Temp:	Temp:

Appendix A
2016 Annual Groundwater Laboratory
Analytical Report