TETRA TECH

Review of 2020 Semi-Annual Monitoring and Remedial Activities Report:
Content satisfactory

1. Continued groundwater monitoring and sampling on a semi-annual basis
2. Submit the Annual Monitoring Report to the OCD no later than March 31, 2022

March 19, 2021

Mr. Bradford Billings
State of New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: 2020 Soil Assessment and Groundwater Investigation Report
ConocoPhillips, MCA Well Number 357; 1RP-3025
Lea County, New Mexico

Mr. Billings:

This report details the groundwater monitoring and monitor well installation at the ConocoPhillips Company (COP) MCA Well Number 357, Lea County, New Mexico (Site). The Site is located in Unit M, Section 28, T17S, R32E, approximately 3.7 miles south of Maljamar, New Mexico, in western Lea County (Figure 1). The Site was assigned the identifier 1RP-3025 by the State of New Mexico Oil Conservation Division (NMOCD).

1.0 BACKGROUND AND PREVIOUS INVESTIGATIONS

On December 7, 2013, COP submitted a Release Notification and Corrective Action Form C-141 to the NMOCD. The source of the release was recorded as being due to external corrosion of a flow line, which resulted in an approximate affected ground surface/pasture area of approximately 5,600 square feet. An estimated 24 barrels (bbls) of produced water was released of which no fluids were recovered.

Previous environmental assessment activities conducted by others included a drilling and soil sampling program, analytical laboratory analyses, and preliminary determinations of impacts to environmental media. Based on those preliminary determinations, a Corrective Action Plan (CAP) was submitted to the NMOCD on October 30, 2014.

The CAP was approved in October 2014. Approved CAP activities were initiated in November 2014 and completed on December 5, 2014.

Following the CAP approval, one monitor well, MW-1, was installed at the Site in January 2015 to an approximate depth of 100 feet below ground surface (bgs). Groundwater samples from MW-1 (Rice Well #1) were collected on January 16, 2015 and submitted for laboratory analysis. Laboratory analytical results indicated the concentration of chloride in groundwater (39,500 milligrams per liter [mg/L] above New Mexico Water Quality Control Commission (NMWQCC) guidance levels (250 mg/L).

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A review of the previous assessment activities conducted by others indicates that two down gradient monitor wells (MW-18 and MW-20) at the nearby Maljamar Gas Plant have been determined to be affected by a separate chloride plume unrelated to operations and/or historical releases associated with Maljamar Gas Plant and are no longer part of the groundwater monitoring program for the plant. Additionally, GHD investigated multiple potential sources surrounding the Site on April 7, 2015.

On May 28, 2015, GHD collected groundwater samples from three monitor wells (MW-1, MW-18, and MW-20). These samples were submitted to Pace Analytical in Lenexa, Kansas for evaluation of total dissolved solids (TDS) by Method SM 2540C and chloride by United States Environmental Protection Agency (EPA) Method 300.0. Concentrations of chloride ranged from 6,300 mg/L to 37,400 mg/L, and concentrations of TDS ranged from 18,900 mg/L to 27,800 mg/L. This data indicated a potential source may exist in the up or cross gradient direction between the monitor well network at the Maljamar Gas Plant and the Site.

Between September 20 and 25, 2017, four 2-inch monitoring wells were installed at the Site (MW-2 through MW-5), and MW-6 through MW-9 were installed on April 18 and 19, 2019. MW-6 has historically been dry. Phase separated hydrocarbons (PSH) have not been historically found at the site.

2.0 HYDROLOGY/GROUNDWATER

The Site is located in the Querecho Plains of southeastern New Mexico. This area generally consists of a thin cover of Quaternary sand dunes overlying the undivided Triassic Upper Chinle Group. The soil consists of well-drained sand and sandy clay loam. Typically, the surface layer is reddish-brown loamy fine sand. It is underlain by red light sandy clay. Below this is white moderately to well-indurated caliche. Underlying the caliche is dark reddish shales and thin sandstones of the undivided Triassic Upper Chinle Group. The Upper Chinle Group consists of silty shale, thin bedded to massive, purplish red to reddish brown with greenish reduction spots. The Group is interbedded with thin beds of fine-grained sandstone with chert pebble gravel.

The water bearing zone consists of the Pliocene-age Ogallala aquifer under unconfined conditions at the Site. The Ogallala aquifer is located at the base of the Ogallala Formation. In general, the Ogallala Formation consists of quartz sand and gravel that is poorly to well-cemented with calcium carbonate and contains minor amounts of clay. The wells installed at the Site were drilled to depths of approximately 100 to 115 feet bgs with static groundwater water levels approximately 83 to 98 feet bgs.

3.0 NEW WELL INSTALLATION

On April 27 and 28, 2020, Tetra Tech personnel mobilized to the Site to oversee the installation of three new 2-inch monitoring wells, MW-10, MW-11, and MW-12. Then on September 28, 2020, Tetra Tech personnel mobilized to the Site to oversee the installation of one additional new 2-inch

monitoring well, MW-13. The well locations are depicted on Figure 2, and the boring logs and well surveys are included in Appendix A.

4.0 2020 GROUNDWATER MONITORING

4.1 Groundwater Sampling and Analysis Methodology

The quarterly groundwater monitoring events occurred in January, April, July, and October 2020. MW-10, MW-11, and MW-12 were added to the sampling plan in April 2020 after installation, and MW-13 was added to the sampling plan for the October monitoring event after it was installed in September 2020. MW-10, MW-11, and MW-12 were dry during the April 2020 monitoring event, but only MW-11 and MW-12 were dry during the July and October monitoring events (MW-10 was sampled). MW-13 was dry during the October monitoring event. The water levels measurements are summarized in Table 1, and the groundwater gradient maps are included as Figures 3 through 6.

Prior to purging the wells, each well was gauged to measure the depth to groundwater and PSH, if any. No PSH was found. Each sampled monitoring well was sampled utilizing low flow sampling techniques. All groundwater samples were collected and analyzed for bromide, sulfate, and chlorides by EPA Method 9056A, and TDS by SM Method 2540C and anions by EPA Method 9056A. All groundwater samples were transported to Pace Analytical Services, LLC, in Mount Juliet, Tennessee under chain-of-custody control. The laboratory analytical results are summarized in Table 2, and the analytical reports and chain-of-custody documentation are presented in Appendix B. Chloride concentration graphs are presented in Appendix C.

4.2 Groundwater Gradient

Water table maps were generated for all four sampling events (January, April, July, and October 2020). The hydraulic gradient was generally to the south-southwest, consistent with historical data.

4.3 Groundwater Analytical Results

During the 2020 sampling events, concentrations of chloride and TDS in wells MW-1 through MW-5 and MW-8 through MW-10 exceeded the applicable NMWQCC groundwater quality standards (250 mg/L for chloride and 1,000 mg/L for TDS). Additionally, the concentration of chloride in the sample collected from MW-7 in July 2020 and the concentration of sulfate in the duplicate sample collected from MW-1 in May 2020 exceeded the applicable NMWQCC groundwater quality standards. No additional exceedances were found. The highest concentrations of chloride and TDS were found in MW-1. Concentrations of chloride in MW-1 ranged from 8,700 in the October 2020 sampling event to 37,200 mg/L during the May 2020 sampling event. Concentrations of TDS in MW-1 ranged from 17,500 during the October 2020 sampling event to 98,200 during the May 2020 sampling event.

5.0 WORK PLAN

Groundwater monitoring and sampling of the monitoring wells will be continued on a quarterly basis, with annual reporting to the NMOCD.

If you have any questions, please call me at (832) 251-6026.

Sincerely,
Tetra Tech, Inc.

Julie Evans
Project Manager

Reviewed By:

Greg W. Pope, P.G.
Program Manager

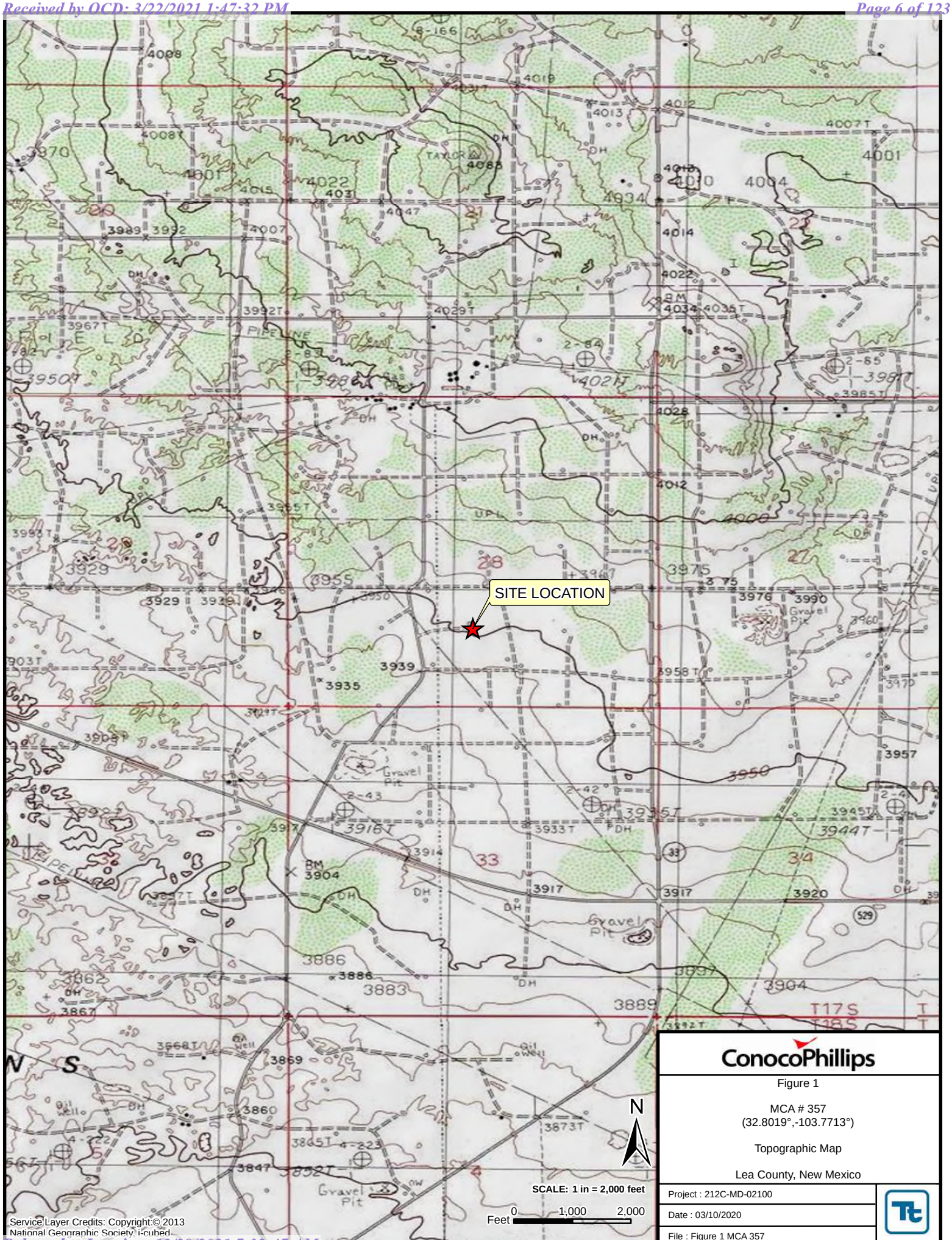
cc: Mr. Marvin Soriwei – ConocoPhillips

Attachments:

- Figure 1 – Topographic Map
- Figure 2 – Site Map
- Figure 3 – Groundwater Gradient Map - January 2020
- Figure 4 –Groundwater Gradient Map - April 2020
- Figure 5 – Groundwater Gradient Map - July 2020
- Figure 6 – Groundwater Gradient Map - October 2020
- Table 1 – Summary of Groundwater Elevations and PSH Thickness
- Table 2 – Summary of Analysis of Groundwater Samples
- Appendix A – Boring Logs and Well Survey
- Appendix B – Laboratory Analytical Data and Chain of Custody Documentation
- Appendix C – Chloride Concentration Graphs

TETRA TECH

FIGURES



ConocoPhillips

Figure 1

MCA # 357
(32.8019°,-103.7713°)

Topographic Map

Lea County, New Mexico

Project : 212C-MD-02100	
Date : 03/10/2020	
File : Figure 1 MCA 357	

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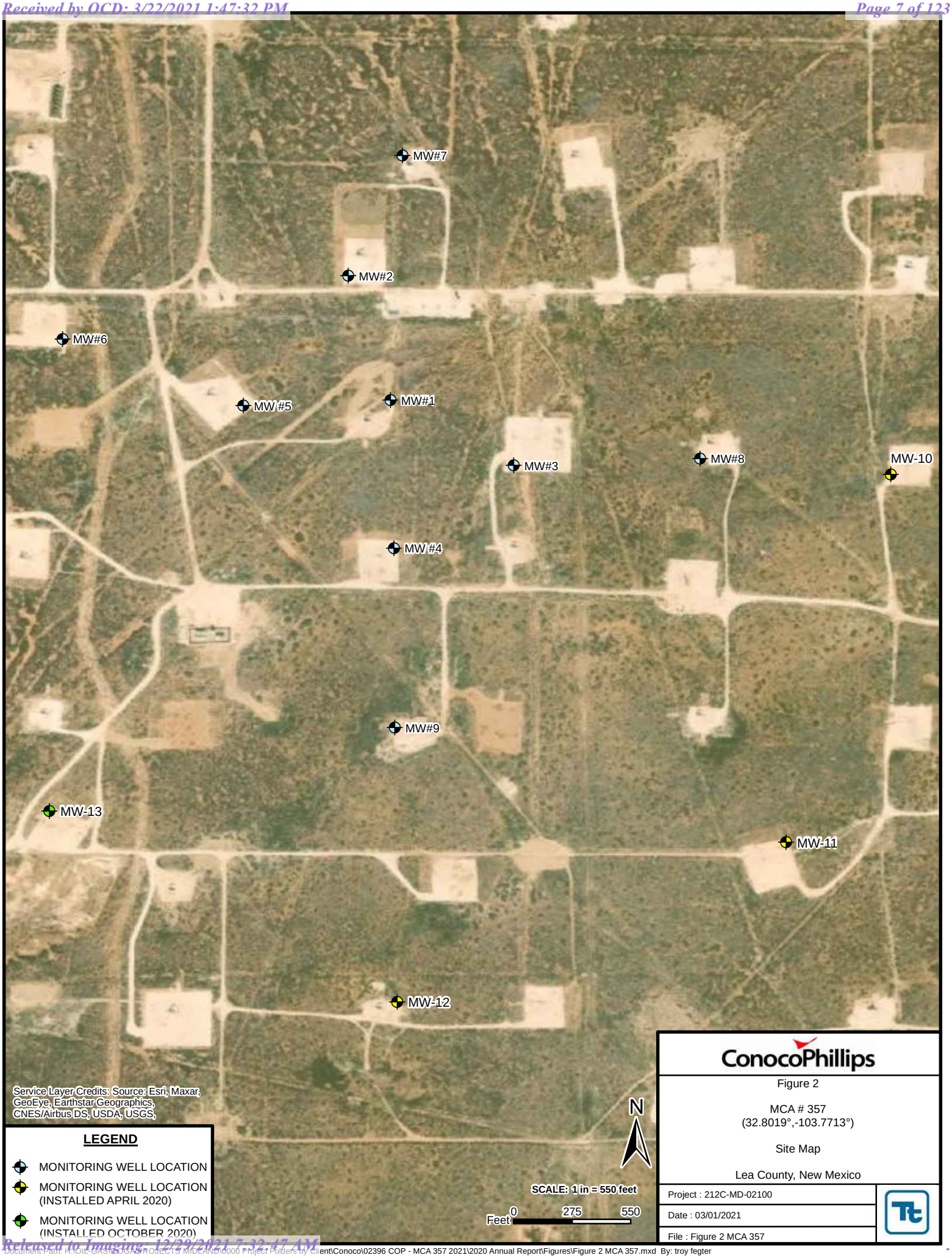


ConocoPhillips

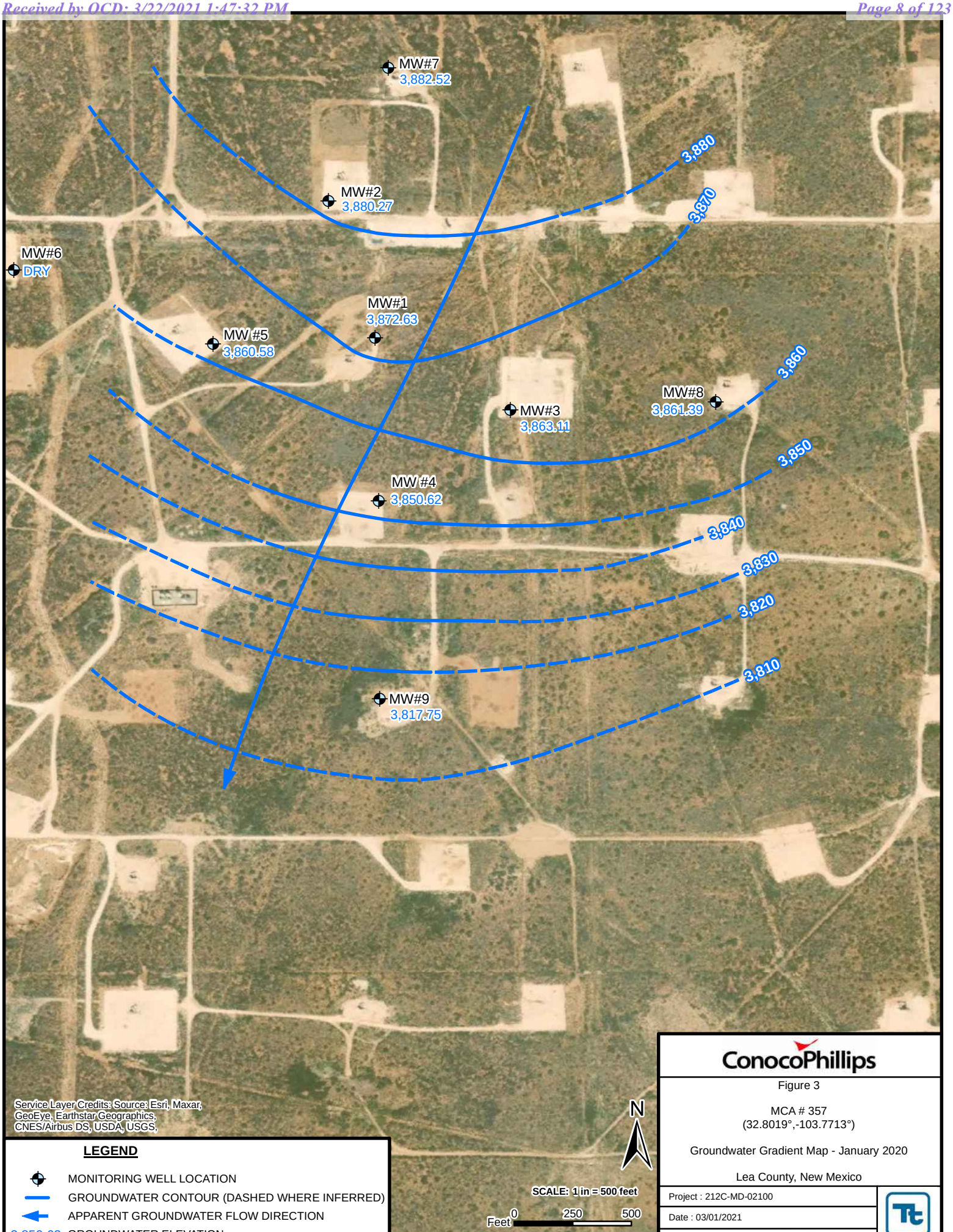
Figure 2

MCA # 357
(32.8019°,-103.7713°)

Site Map

Lea County, New Mexico

Project : 212C-MD-02100	
Date : 03/01/2021	
File : Figure 2 MCA 357	



LEGEND

- MONITORING WELL LOCATION
- GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- APPARENT GROUNDWATER FLOW DIRECTION
- 3,850.63 GROUNDWATER ELEVATION

ConocoPhillips

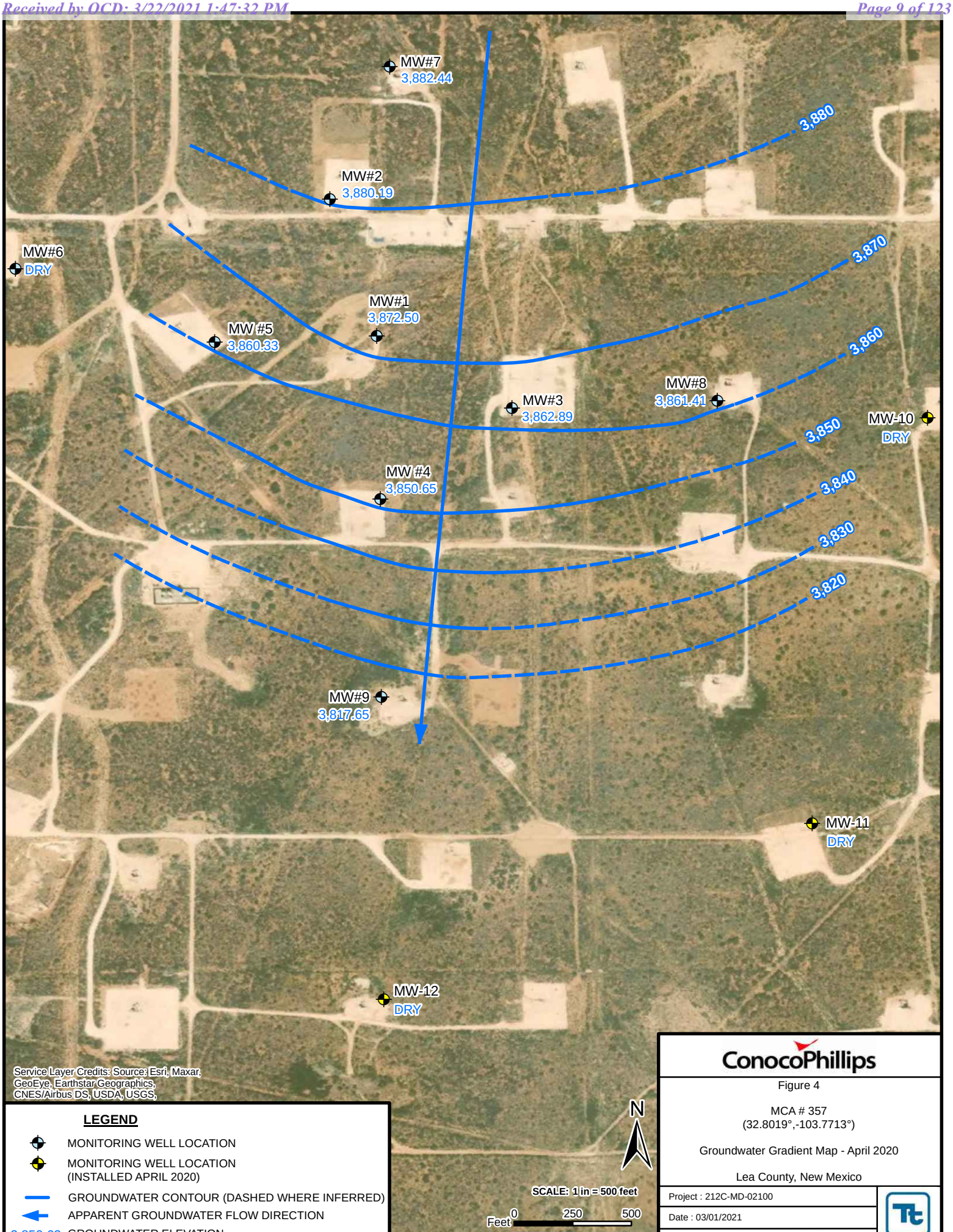
Figure 3

MCA # 357
(32.8019°,-103.7713°)

Groundwater Gradient Map - January 2020

Lea County, New Mexico

Project : 212C-MD-02100	
Date : 03/01/2021	
File : Figure 3 MCA 357	



ConocoPhillips

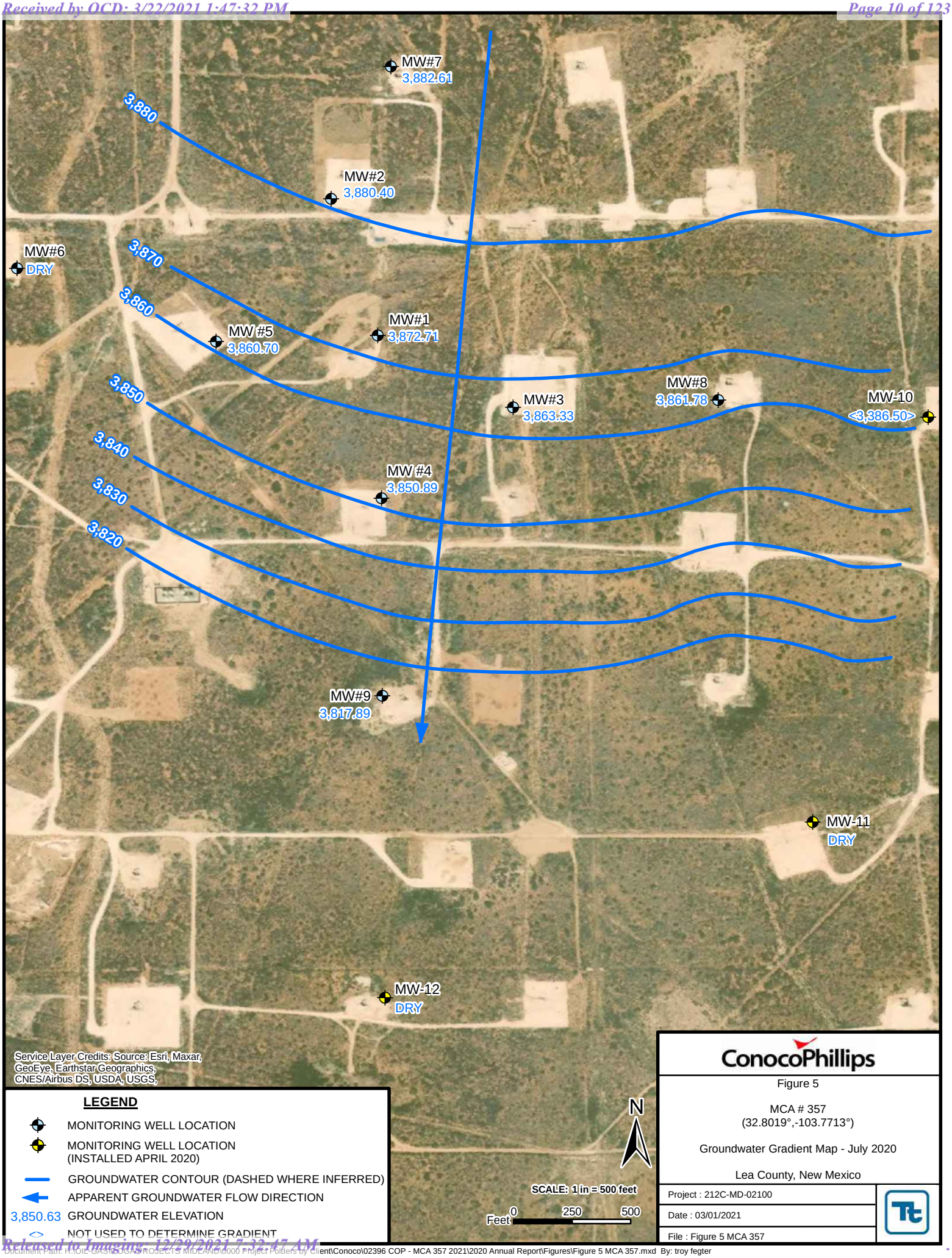
Figure 4

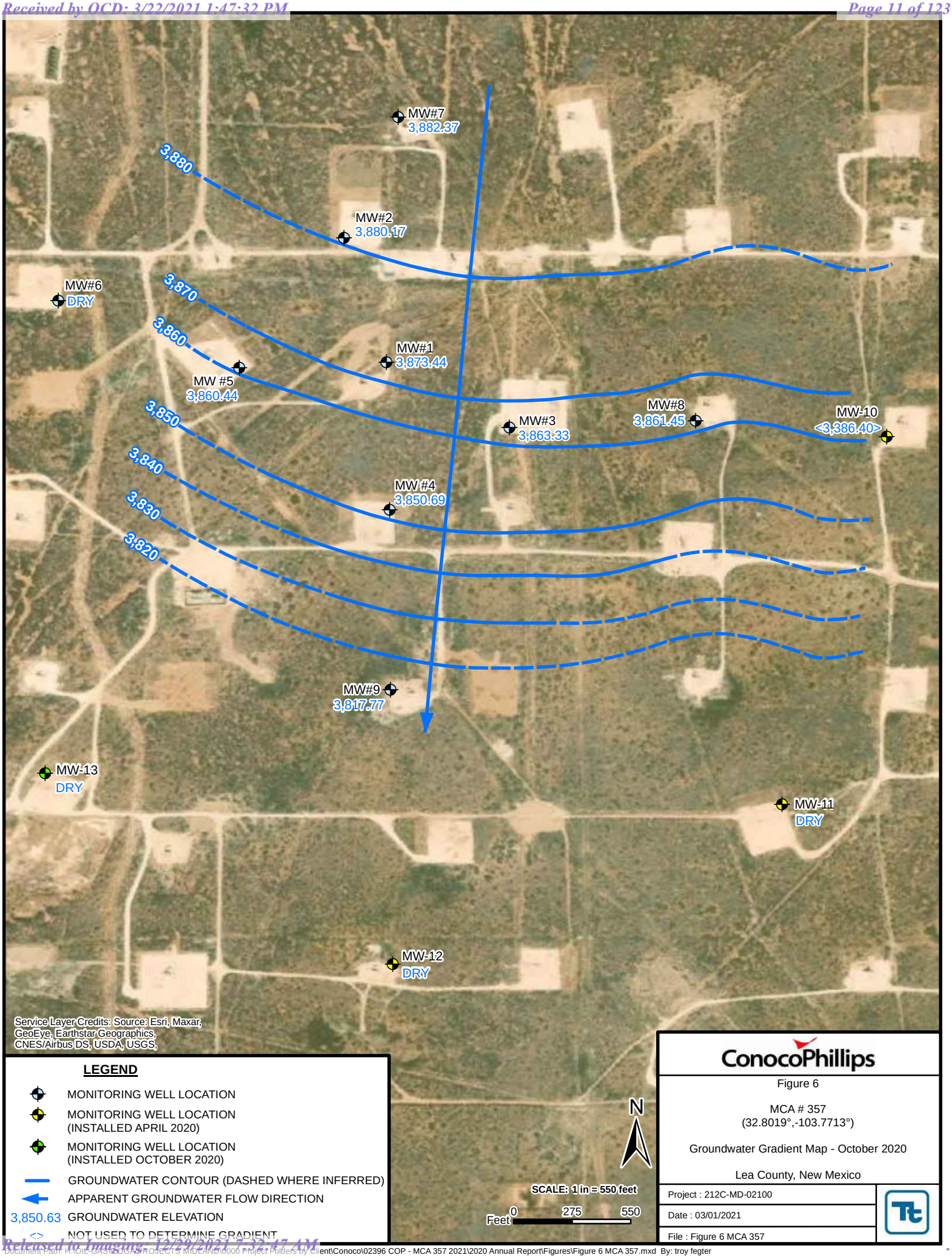
MCA # 357
(32.8019°,-103.7713°)

Groundwater Gradient Map - April 2020

Lea County, New Mexico

Project : 212C-MD-02100	
Date : 03/01/2021	
File : Figure 4 MCA 357	


MW#7
3,882.61
3,880
MW#2
3,880.40
MW#6
DRY
3,870
3,860
MW#1
3,872.71
MW #5
3,860.70
3,850
MW#8
3,861.78
MW#3
3,863.33
MW-10
<3,386.50>
3,840
MW #4
3,850.89
3,830
3,820
MW#9
3,817.89
MW-11
DRY
MW-12
DRY
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,
LEGEND
MONITORING WELL LOCATION
MONITORING WELL LOCATION (INSTALLED APRIL 2020)
GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
APPARENT GROUNDWATER FLOW DIRECTION
3,850.63 GROUNDWATER ELEVATION
<> NOT USED TO DETERMINE GRADIENT
N
SCALE: 1 in = 500 feet
Feet 0 250 500
ConocoPhillips
Figure 5
MCA # 357
(32.8019°,-103.7713°)
Groundwater Gradient Map - July 2020
Lea County, New Mexico
Project : 212C-MD-02100
Date : 03/01/2021
File : Figure 5 MCA 357



ConocoPhillips

Figure 6

MCA # 357
(32.8019°,-103.7713°)

Groundwater Gradient Map - October 2020

Lea County, New Mexico

Project : 212C-MD-02100	
Date : 03/01/2021	
File : Figure 6 MCA 357	

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TETRA TECH

TABLES

Table 1
Summary of Groundwater Elevations and PSH Thickness
ConocoPhillips - MCA 357
Lea County, New Mexico

Well Identification	Date Measured	Well Total Depth (ft)	Product level below TOC (ft)	Water level below TOC (ft)	Top of Casing Elevation (ft AMSL)	Groundwater Elevation (ft AMSL)
MW-1	10/4/2017	102.27	-	83.66	3,956.78	**3,873.12**
	1/30/2018	-	-	83.81	3,956.78	**3,872.97**
	4/10/2018	102.27	-	84.00	3,956.78	**3,872.78**
	8/17/2018	-	-	84.05	3,956.78	**3,872.73**
	10/18/2018	102.86	-	84.12	3,956.78	**3,872.66**
	1/23/2019	103.05	-	83.96	3,956.78	**3,872.82**
	4/25/2019	102.90	-	83.90	3,956.78	**3,872.88**
	7/10/2019	102.90	-	84.17	3,956.78	**3,872.61**
	10/9/2019	102.90	-	84.00	3,956.78	**3,872.78**
	1/15/2020	102.90	-	84.15	3,956.78	**3,872.63**
	4/28/2020	102.88	-	84.28	3,956.78	**3,872.50**
	7/7/2020	102.70	-	84.07	3,956.78	**3,872.71**
	10/1/2020	102.70	-	83.34	3,956.78	**3,873.44**
MW-2	10/4/2017	108.44	-	83.44	3,963.58	**3,880.14**
	1/30/2018	-	-	83.39	3,963.58	**3,880.19**
	4/10/2018	108.44	-	83.48	3,963.58	**3,880.10**
	8/17/2018	-	-	83.50	3,963.58	**3,880.08**
	10/18/2018	108.69	-	83.50	3,963.58	**3,880.08**
	1/23/2019	108.76	-	83.20	3,963.58	**3,880.38**
	4/25/2019	107.75	-	83.22	3,963.58	**3,880.36**
	7/10/2019	107.75	-	83.40	3,963.58	**3,880.18**
	10/9/2019	107.75	-	83.36	3,963.58	**3,880.22**
	1/15/2020	107.75	-	83.31	3,963.58	**3,880.27**
	4/28/2020	107.74	-	83.39	3,963.58	**3,880.19**
	7/7/2020	107.80	-	83.18	3,963.58	**3,880.40**
	10/1/2020	107.80	-	83.41	3,963.58	**3,880.17**
MW-3	10/4/2017	117.75	-	88.20	3,951.34	**3,863.14**
	1/30/2018	-	-	89.16	3,951.34	**3,862.18**
	4/10/2018	117.75	-	88.37	3,951.34	**3,862.97**
	8/17/2018	-	-	88.31	3,951.34	**3,863.03**
	10/18/2018	117.37	-	88.42	3,951.34	**3,862.92**
	1/23/2019	117.29	-	88.08	3,951.34	**3,863.26**
	4/24/2019	117.40	-	87.40	3,951.34	**3,863.94**
	7/9/2019	117.40	-	88.28	3,951.34	**3,863.06**
	10/8/2019	117.4	-	88.25	3,951.34	**3,863.09**
	1/14/2020	117.4	-	88.23	3,951.34	**3,863.11**
	4/28/2020	117.4	-	88.45	3,951.34	**3,862.89**
	7/7/2020	117.3	-	88.01	3,951.34	**3,863.33**
	10/1/2020	117.30	-	88.38	3,951.34	**3,862.96**

Table 1
Summary of Groundwater Elevations and PSH Thickness
ConocoPhillips - MCA 357
Lea County, New Mexico

Well Identification	Date Measured	Well Total Depth (ft)	Product level below TOC (ft)	Water level below TOC (ft)	Top of Casing Elevation (ft AMSL)	Groundwater Elevation (ft AMSL)
MW-4	10/4/2017	104.22	-	95.11	3,945.39	**3,850.28**
	1/30/2018	-	-	94.97	3,945.39	**3,850.42**
	4/10/2018	104.22	-	95.11	3,945.39	**3,850.28**
	8/17/2018	-	-	95.00	3,945.39	**3,850.39**
	10/18/2018	103.3	-	95.00	3,945.39	**3,850.39**
	1/23/2019	102.80	-	94.76	3,945.39	**3,850.63**
	4/25/2019	103.32	-	94.80	3,945.39	**3,850.59**
	7/10/2019	103.32	-	92.18	3,945.39	**3,853.21**
	10/9/2019	103.32	-	94.70	3,945.39	**3,850.69**
	1/14/2020	103.32	-	94.72	3,945.39	**3,850.67**
	4/28/2020	103.3	-	94.74	3,945.39	**3,850.65**
	7/7/2020	103.2	-	94.50	3,945.39	**3,850.89**
	10/1/2020	103.20	-	94.70	3,945.39	**3,850.69**
MW-5	10/4/2017	113.65	-	89.68	3,950.37	**3,860.69**
	1/30/2018	-	-	89.68	3,950.37	**3,860.69**
	4/10/2018	113.65	-	89.94	3,950.37	**3,860.43**
	8/17/2018	-	-	89.90	3,950.37	**3,860.47**
	10/18/2018	113.05	-	90.02	3,950.37	**3,860.35**
	1/23/2019	113.05	-	89.82	3,950.37	**3,860.55**
	4/25/2019	113.00	-	89.70	3,950.37	**3,860.67**
	7/10/2019	113.00	-	89.95	3,950.37	**3,860.42**
	10/9/2019	113.00	-	89.74	3,950.37	**3,860.63**
	1/15/2020	113.00	-	89.79	3,950.37	**3,860.58**
	4/28/2020	112.98	-	90.04	3,950.37	**3,860.33**
	7/7/2020	113.00	-	89.67	3,950.37	**3,860.70**
	10/1/2020	113.00	-	89.93	3,950.37	**3,860.44**
MW-6	4/24/2019	128.12	-	Dry	3,952.96	**Dry**
	7/9/2019	128.12	-	Dry	3,952.96	**Dry**
	10/8/2019	128.12	-	Dry	3,952.96	**Dry**
	1/14/2020	128.12	-	Dry	3,952.96	**Dry**
	4/28/2020	128.12	-	Dry	3,952.96	**Dry**
	7/7/2020	128.10	-	Dry	3,952.96	**Dry**
	9/30/2020	128.10	-	Dry	3,952.96	**Dry**
MW-7	4/24/2019	127.40	-	89.30	3,972.11	**3,882.81**
	7/9/2019	127.40	-	89.69	3,972.11	**3,882.42**
	10/8/2019	127.40	-	89.64	3,972.11	**3,882.47**
	1/14/2020	127.40	-	89.59	3,972.11	**3,882.52**
	4/28/2020	127.38	-	89.67	3,972.11	**3,882.44**
	7/7/2020	127.30	-	89.50	3,972.11	**3,882.61**
	9/30/2020	127.30	-	89.74	3,972.11	**3,882.37**

Table 1
Summary of Groundwater Elevations and PSH Thickness
ConocoPhillips - MCA 357
Lea County, New Mexico

Well Identification	Date Measured	Well Total Depth (ft)	Product level below TOC (ft)	Water level below TOC (ft)	Top of Casing Elevation (ft AMSL)	Groundwater Elevation (ft AMSL)
MW-8	4/24/2019	118.03	-	95.11	3,956.83	**3,861.72**
	7/9/2019	118.03	-	95.20	3,956.83	**3,861.63**
	10/8/2019	118.03	-	95.26	3,956.83	**3,861.57**
	1/14/2020	118.03	-	95.21	3,956.83	**3,861.62**
	4/28/2020	118.00	-	95.42	3,956.83	**3,861.41**
	7/7/2020	118.02	-	95.05	3,956.83	**3,861.78**
	9/30/2020	118.00	-	95.38	3,956.83	**3,861.45**
MW-9	4/24/2019	133.10	-	118.86	3,936.53	**3,817.67**
	7/9/2019	133.10	-	118.81	3,936.53	**3,817.72**
	10/8/2019	133.10	-	118.88	3,936.53	**3,817.65**
	1/14/2020	133.10	-	118.78	3,936.53	**3,817.75**
	4/28/2020	133.06	-	118.88	3,936.53	**3,817.65**
	7/7/2020	133.50	-	118.71	3,936.53	**3,817.82**
	9/30/2020	133.50	-	118.76	3,936.53	**3,817.77**
MW-10	4/28/2020	132.30	-	Dry	3,963.20	**Dry**
	7/7/2020	132.53	-	126.70	3,963.20	**3,836.50**
	9/30/2020	132.51	-	126.80	3,963.20	**3,836.40**
MW-11	4/28/2020	131.50	-	Dry	3,948.30	**Dry**
	7/7/2020	132.88	-	Dry	3,948.30	**Dry**
	9/30/2020	132.88	-	Dry	3,948.30	**Dry**
MW-12	4/28/2020	132.00	-	Dry	3,930.91	**Dry**
	7/7/2020	132.03	-	Dry	3,930.91	**Dry**
	9/30/2020	132.30	-	Dry	3,930.91	**Dry**
MW-13	9/30/2020	133.25	-	Dry	3,931.32	**Dry**

Notes:

-	no measurement
TOC	top of casing
AMSL	above mean sea level
ft	feet

Table 2
Summary of Groundwater Analytical Data
ConocoPhillips - MCA 357
Lea County, New Mexico

Sample ID	Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC Groundwater Quality Standards (mg/L)		**-**	**250**	**600**	**1,000**
MW-1	10/4/2017	40.6	18,600	282	14,400
Dup	10/4/2017	40.4	18,500	260	8,950
	1/30/2018	85.9	12,900	256	32,800
Dup	1/30/2018	94.7	13,800	333	34,600
	4/10/2018	30.5	15,000	240	32,200
Dup	4/10/2018	30.2	13,600	234	29,800
	8/17/2018	27.1	22,100	211	27,400
Dup	8/17/2018	26.9	20,400	215	26,900
	10/18/2018	38.4	16,000	241	31,000
	1/23/2019	65.8	26,900	404	47,500
	4/25/2019	-	11,000	-	34,400
Dup	4/25/2019	-	11,300	-	33,500
	7/9/2019	79.0	30,200	459	78,900
Dup	7/9/2019	77.3	27,800	458	80,500
	10/9/2019	21.9	11,400	179	27,000
Dup	10/9/2019	20.4	11,400	167	25,300
	1/15/2020	37.3	16,400	283	29,200
Dup	1/15/2020	26.1	11,700	210	20,800
	5/1/2020	79.6	37,200	490	98,200
Dup	5/1/2020	109	50,600	661	93,800
	7/9/2020	26.0	13,200	232	30,600
Dup	7/9/2020	22.7	11,800	195	26,000
	10/1/2020	16.1	8,700	161	17,500
Dup	10/1/2020	17.0	9,740	181	19,100
MW-2	10/4/2017	4.6	4,620	198	7,080
	1/30/2018	15.3	4,340	173	8,600
	4/10/2018	16.3	4,940	227	12,100
	8/17/2018	5.12	5,330	212	11,300
	10/18/2018	5.13	5,160	213	10,500
Dup	10/18/2018	5.21	5,220	214	11,000
	1/23/2019	6.95	4,840	225	11,100
	4/25/2019	-	4,870	-	14,800
	7/9/2019	4.85 J	5,500	253	13,500 Q
	10/9/2019	7.30 J	5,280	212	12,200
	1/15/2020	9.76 J	5,120	243	9,300
	4/30/2020	5.4	5,640	253	12,700
	7/9/2020	8.24 J	5,610	252	13,600
	10/1/2020	7.23 J	5,690	268	11,100

Table 2
Summary of Groundwater Analytical Data
ConocoPhillips - MCA 357
Lea County, New Mexico

Sample ID	Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC Groundwater Quality Standards (mg/L)		-	250	600	1,000
MW-3	10/4/2017	11.2	5,200	171	8,320
	1/30/2018	19.6	4,210	171	8,800
	4/10/2018	9.20	5,110	186	12,200
	8/17/2018	9.40	4,360	170	10,400
	10/18/2018	8.68	4,520	165	10,200
	1/23/2019	10.3	4,560	175	11,000
Dup	1/23/2019	10.3	4,680	175	11,000
	4/24/2019	-	4,440	-	13,800
	7/9/2019	8.4	4,740	183	12,800
	10/8/2019	9.71 J	4,620	160	11,400
	1/14/2020	11.90	4,340	172	9,200
	4/30/2020	7.18	4,380	177	10,600
	7/9/2020	10.30	4,540	178	11,000
	10/1/2020	8.98 J	4,440	183	8,860
MW-4	10/4/2017	7.8	5,630	165	7,080
	1/30/2018	<0.50	4,970	16.1	7,880
	4/10/2018	2.52	5,490	187	12,100
	8/17/2018	5.30	6,140	173	11,700
	10/18/2018	4.55	5,850	171	11,600
	1/23/2019	6.96	5,620	180	12,200
	4/25/2019	-	5,600	-	15,700
	7/9/2019	5.03	6,330	190	13,700 Q
	10/9/2019	7.57 J	6,020	169	13,100
	1/14/2020	9.70 J	5,530	176	9,040
	4/30/2020	5.23	5,770	187	13,300
	7/9/2020	8.55 J	6,170	184	13,700
	10/1/2020	7.47 J	6,140	193	11,500
MW-5	10/4/2017	2.3	198	125	1,820
	1/30/2018	2.3	767	136	1,640
	4/10/2018	0.985 J	803	149	2,160
	8/17/2018	2.29	766	142	2,240
	10/18/2018	2.23	909	117	2,310
	1/23/2019	2.28	909	114	2,470
	4/25/2019	-	849	-	3,290
	7/9/2019	1.82	1,040	138	3,000
	10/9/2019	1.71	807	130	2,300 J3
	1/15/2020	2.2	1,050	118	1,580 J3
	5/1/2020	3.04 J	1,240	130	2,740

Table 2
Summary of Groundwater Analytical Data
ConocoPhillips - MCA 357
Lea County, New Mexico

Sample ID	Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC Groundwater Quality Standards (mg/L)		**-**	**250**	**600**	**1,000**
MW-5 continued	7/9/2020	3.63 J	953	142	3,260
	10/1/2020	2.94 J	773	164	2,200
MW-6	4/24/2019	Not Sampled - Dry			
	7/9/2019	Not Sampled - Dry			
	10/8/2019	Not Sampled - Dry			
	1/14/2020	Not Sampled - Dry			
	4/28/2020	Not Sampled - Dry			
	7/7/2020	Not Sampled - Dry			
	9/30/2020	Not Sampled - Dry			
MW-7	4/24/2019	-	2,060	-	6,020
	7/9/2019	2.60 J	1,740	211	4,630
	10/8/2019	1.08	200	97.1	763
	1/14/2020	1.62	246	96.7	853
	4/30/2020	1.18	239	98.1	846
	7/8/2020	1.47	289	94.7	880
	9/30/2020	1.08	240	111	866
MW-8	4/24/2019	-	2,050	-	6,530
	7/9/2019	2.74	2,270	104	6,620
	10/8/2019	2.50	2,320	88.90	5,740
	1/14/2020	2.95	2,180	99.80	4,870
	4/30/2020	3.95 J	2,390	95.10	5,580
	7/8/2020	6.43 J	2,330	98.60	5,750
	9/30/2020	7.03 J	5,730	156	5,880
MW-9	4/24/2019	-	5,100	-	15,800
	7/9/2019	7.09	5,130	376	17,100
	10/8/2019	9.26 J	5,660	353	13,200
	1/14/2020	11.4	5,540	388	12,700
	4/30/2020	8.51 J	6,030	423	14,500
	7/8/2020	10.3	6,460	438	16,000
	9/30/2020	9.03 J	6,400	461	16,900
MW-10	4/28/2020	Not Sampled - Dry			
	7/8/2020	2.16	1,770	66.00	4,630
	9/30/2020	2.01	1,520	56.5	3,970

Table 2
Summary of Groundwater Analytical Data
ConocoPhillips - MCA 357
Lea County, New Mexico

Sample ID	Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC Groundwater Quality Standards (mg/L)		**-**	**250**	**600**	**1,000**
MW-11	4/28/2020	Not Sampled - Dry			
	7/7/2020	Not Sampled - Dry			
	9/30/2020	Not Sampled - Dry			
MW-12	4/28/2020	Not Sampled - Dry			
	7/7/2020	Not Sampled - Dry			
	9/30/2020	Not Sampled - Dry			
MW-13	9/30/2020	Not Sampled - Dry			

Notes:

(-)	Not Analyzed
NMWQCC	New Mexico Water Quality Control Comission
mg/L	milligrams per liter
TDS	total dissolved solides
	result is above NMWQCC groundwater quality standards
J	The identification of the analyte is acceptable; the reported value is an estimate
J3	The associated QC was outside the established quality control range for precision
Q	Sample was prepared and/or analyzed past holding time as defined in the method. Concentrations should be considered minimum values.

TETRA TECH

APPENDIX A

TETRA TECH

Drilling Log for MW Install with Soil Classifications

DATE : 4/28/2020
SAMPLER : Devin Dominguez

PROJECT NAME : COP MCA 357
PROJECT NO. : 212C-MD-02100
LOCATION : Maljamar, New Mexico
WELL NO. : MW-10
COORDINATES :
ELEVATION :

DRILLER : Bo Atkins
DRILLING COMPANY : White Drilling
DRILLING METHOD : Air Rotary
DRILL BEGIN :
DRILL FINISH :

Depth (BG)	WL	Graphic Soil Log	Soil Description	PID (ppm)	Chloride Field Test (ppm)	Well Construction	Well Description
0			Brown silty sand				
5			Tan silty sand	< 1.1	141		2" PVC Casing
10			Light brown silty sand	< 1.1	158		
15			Light brown silty sand	< 1.1	232		
20			Light brown silty sand	< 1.1	219		
25			Brown/red silty sand with med gravel	< 1.1	217		
30			Brown/red silty sand with med gravel	< 1.1	218	Casing	
35							
40			Brown silty sand with pea gravel	< 1.1	165		
45							
50			Red/brown sandy silt with clay fragments	< 1.1	165		
55							
60			Gray/brown silt	< 1.1	60.6		
65							

TETRA TECH

Drilling Log for MW Install with Soil Classifications

DATE : 4/28/2020
SAMPLER : Devin Dominguez

PROJECT NAME : COP MCA 357
PROJECT NO. : 212C-MD-02100
LOCATION : Maljamar, New Mexico
WELL NO. : MW-10
COORDINATES : 0
ELEVATION : 0

DRILLER : Bo Atkins
DRILLING COMPANY : White Drilling
DRILLING METHOD : Air Rotary
DRILL BEGIN :
DRILL FINISH :

Depth (BG)	WL	Graphic Soil Log	Soil Description	PID (ppm)	Chloride Field Test (ppm)
70			Gray/brown silt	< 1.1	62.9
80			Gray/brown silt	< 1.1	90.1
90			Gray/brown silt with pea gravel	< 1.1	59.3
100			Gray/brown silt with pea gravel	< 1.1	78.8
110			Gray/brown silt with pea gravel	1.2	77.9
120			Gray/brown silt with pea gravel	1.2	79.4
130			Gray/brown silt with pea gravel	1.2	110

TD @ 130'
No signs of groundwater

Well Construction	Well Description
	Bentonite chips from 87' and up
Sand	Sand from 130'-87'
	Screen placed at 130' to 90'
Sand	

TETRA TECH

Drilling Log for MW Install with Soil Classifications

DATE : 4/28/2020
SAMPLER : Devin Dominguez

PROJECT NAME : COP MCA 357
PROJECT NO. : 212C-MD-02100
LOCATION : Maljamar, New Mexico
WELL NO. : MW-11
COORDINATES :
ELEVATION :

DRILLER : Bo Atkins
DRILLING COMPANY : White Drilling
DRILLING METHOD : Air Rotary
DRILL BEGIN :
DRILL FINISH :

Depth (BG)	WL	Graphic Soil Log	Soil Description	PID (ppm)	Chloride Field Test (ppm)	Well Construction	Well Description
0			Brown silty sand				
5			Tan silty sand	< 1.1	108		2" PVC Casing
10			Tan silty sand	< 1.1	457		
15			Brown/red silty sand	< 1.1	865		
20			Brown/red silty sand	< 1.1	222		
25			Brown silty sand	< 1.1	186		
30			Brown silty sand	< 1.1	191	Casing	
35							
40			Brown/red silty sand with pea gravel	< 1.1	163		
45							
50			Brown/red silty sand with pea gravel	< 1.1	125		
55							
60			Red sandy silt with pea gravel	< 1.1	115		
65							

TETRA TECH

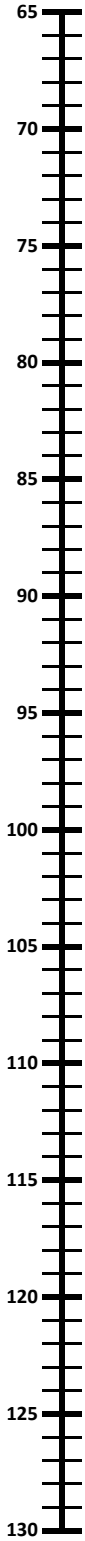
Drilling Log for MW Install with Soil Classifications

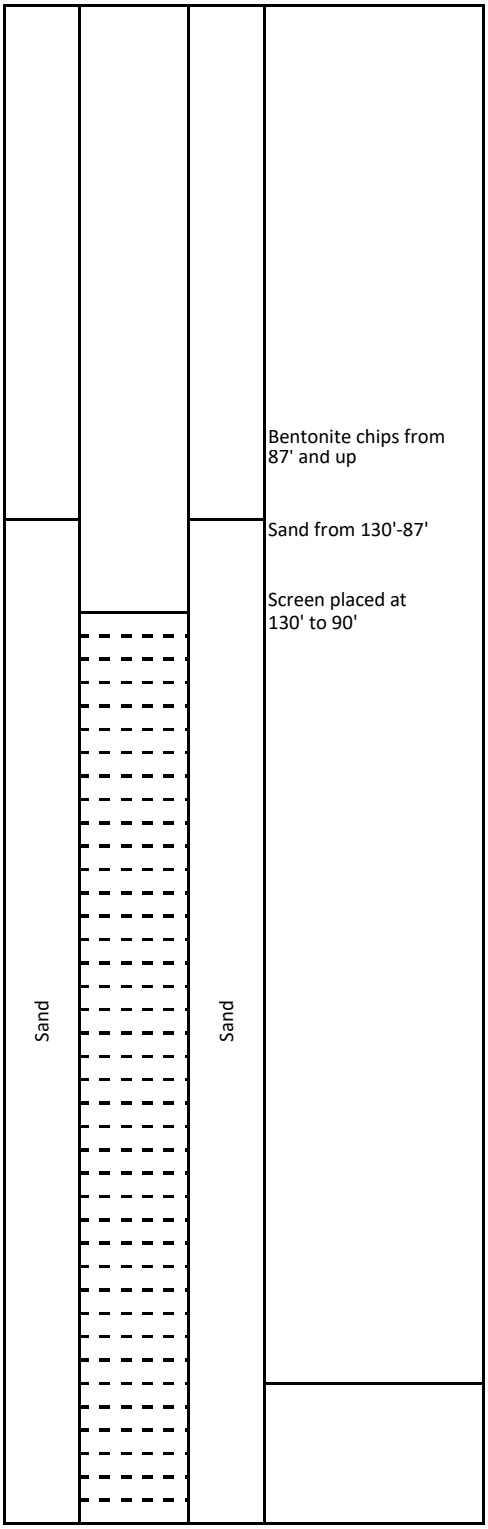
DATE : 4/28/2020
SAMPLER : Devin Dominguez

PROJECT NAME : COP MCA 357
PROJECT NO. : 212C-MD-02100
LOCATION : Maljamar, New Mexico
WELL NO. : MW-11
COORDINATES : 0
ELEVATION : 0

DRILLER : Bo Atkins
DRILLING COMPANY : White Drilling
DRILLING METHOD : Air Rotary
DRILL BEGIN :
DRILL FINISH :

Depth (BG)	WL	Graphic Soil Log	Soil Description	PID (ppm)	Chloride Field Test (ppm)
70			Gray/brown silt	< 1.1	57.4
80			Gray/brown silt	< 1.1	54.8
90			Gray/brown silt	< 1.1	65.6
100			Gray/brown silt	< 1.1	52.7
110			Gray/brown silt	< 1.1	62.2
120			Gray/brown silt	< 1.1	74.3
130			Gray/brown silt	< 1.1	76.4





TD @ 130'
No signs of groundwater

TETRA TECH

Drilling Log for MW Install with Soil Classifications

DATE : 4/28/2020
SAMPLER : Devin Dominguez

PROJECT NAME : COP MCA 357
PROJECT NO. : 212C-MD-02100
LOCATION : Maljamar, New Mexico
WELL NO. : MW-12
COORDINATES :
ELEVATION :

DRILLER : Bo Atkins
DRILLING COMPANY : White Drilling
DRILLING METHOD : Air Rotary
DRILL BEGIN :
DRILL FINISH :

Depth (BG)	WL	Graphic Soil Log	Soil Description	PID (ppm)	Chloride Field Test (ppm)	Well Construction	Well Description
0			Brown silty sand				
5			Brown silty sand with pea gravel	< 1.1	383		2" PVC Casing
10			Brown silty sand with pea gravel	< 1.1	103		
15			Brown silty sand with pea gravel	< 1.1	238		
20			Brown silty sand with pea gravel	< 1.1	242		
25			Brown silty sand with pea gravel	< 1.1	269		
30			Brown silty sand with pea gravel	< 1.1	202	Casing	
35							
40			Brown silty sand with pea gravel	< 1.1	176		
45							
50			Brown/red silty sand with pea gravel	< 1.1	171		
55							
60			Red sandy silt with pea gravel	< 1.1	128		
65							

TETRA TECH

Drilling Log for MW Install with Soil Classifications

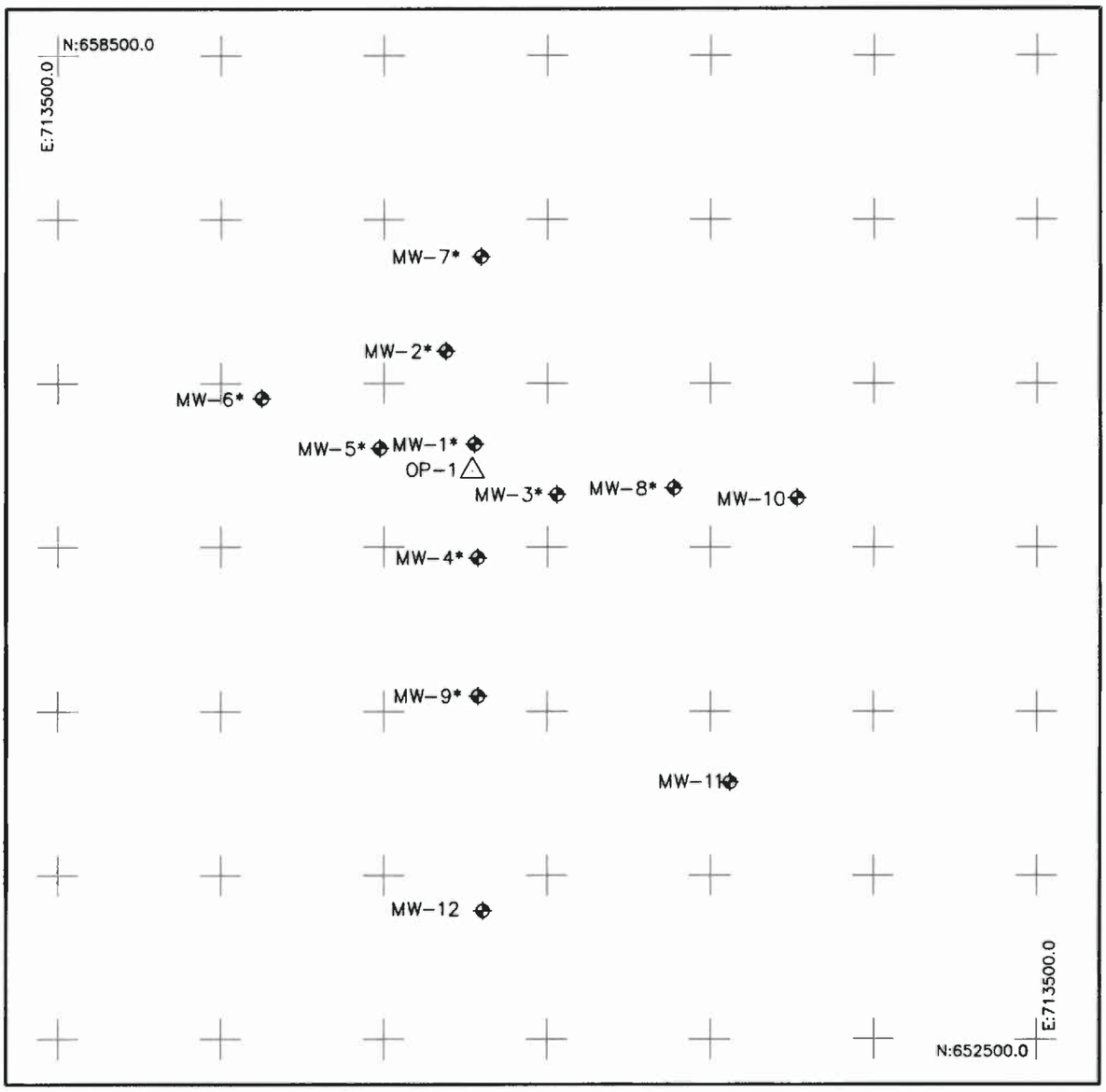
PROJECT NAME : COP MCA 357
PROJECT NO. : 212C-MD-02100
LOCATION : Maljamar, New Mexico
WELL NO. : MW-12
COORDINATES : 0
ELEVATION : 0

DATE : 4/28/2020
SAMPLER : Devin Dominguez
DRILLER : Bo Atkins
DRILLING COMPANY : White Drilling
DRILLING METHOD : Air Rotary
DRILL BEGIN :
DRILL FINISH :

Depth (BG)	WL	Graphic Soil Log	Soil Description	PID (ppm)	Chloride Field Test (ppm)	Well Construction	Well Description
70			Red sandy silt with pea gravel	< 1.1	106		
80			Gray/brown silt with pea gravel	< 1.1	74.5		Bentonite chips from 87' and up
90			Gray/brown silt with pea gravel	< 1.1	89.4	Sand	Sand from 130'-87'
100			Gray/brown silt with pea gravel	< 1.1	70.3		Screen placed at 130' to 90'
110			Gray/brown silt with pea gravel	< 1.1	59.2		
120			Gray/brown silt with pea gravel	< 1.1	84.4		
130			Gray/brown silt with pea gravel	< 1.1	104	Sand	

TD @ 130'
No signs of groundwater

W.O.: 2019-0446-1



DESCRIPTION	GEODETIC POSITIONS				STATE PLANE COORDINATES		ELEVATION		
	NORTH AMERICAN DATUM OF 1983				NAD '83 - New Mexico East Zone (US Ft.)				
	Latitude (D.M.S.)	Longitude (D.M.S.)	Latitude (D.D.)	Longitude (D.D.)	Northing (Y)	Easting (X)	Top of Casing	Natural Ground	Top of Concrete
MW-1*	-	-	-	-	656,127.6	714,053.7	3,956.78	3,953.77	3,954.11
MW-2*	-	-	-	-	656,696.7	713,879.6	3,963.58	3,961.17	3,961.39
MW-3*	-	-	-	-	655,820.4	714,558.8	3,951.34	3,948.80	3,949.13
MW-4*	-	-	-	-	655,435.8	714,074.4	3,945.39	3,942.91	3,943.21
MW-5*	-	-	-	-	656,100.7	713,474.0	3,950.37	3,947.93	3,948.23
MW-6*	32°48'11.71"	-103°46'31.63"	32.80325	-103.77545	656,408.5	712,750.7	3,952.96	3,950.23	3,950.62
MW-7*	32°48'20.21"	-103°46'15.84"	32.80561	-103.77107	657,273.6	714,093.8	3,972.11	3,969.44	3,969.84
MW-8*	32°48'06.14"	-103°46'02.07"	32.80171	-103.76724	655,858.8	715,276.0	3,956.83	3,954.29	3,954.66
MW-9*	32°47'53.71"	-103°46'16.20"	32.79825	-103.77117	654,595.3	714,076.6	3,936.53	3,934.02	3,934.35
OP-1*	32°48'07.25"	-103°46'16.55"	32.80201	-103.77126	655,963.9	714,039.9	--	3,951.22	--
MW-10	32°48'05.50"	-103°45'53.24"	32.80153	-103.76479	655,797.8	716,030.6	3963.20	3,960.56	3,960.94
MW-11	32°47'48.43"	-103°45'58.14"	32.79679	-103.76615	654,070.9	715,621.1	3948.30	3,945.64	3,945.95
MW-12	32°47'40.73"	-103°46'15.93"	32.79465	-103.77109	653,284.1	714,106.6	3930.91	3,928.92	3,928.94

Note:(*) Denotes Historical Data

Date Surveyed: May 22, 2020
Weather: Sunny & Hot

LEGEND

- ◆ – Denotes Monitor Well Location
- △ – Denotes Static GPS Control Station
- * – Denotes Historic Data

1000 0 1000 2000
Graphic Scale in Feet

NOTE:
1) Plane Coordinates shown hereon are Transverse Mercator and Conform to the New Mexico Coordinate System, "New Mexico East Zone, North American Datum of 1983.
2) Geodetic Coordinate shown hereon references the North American Datum of 1983 (NAD83).
3) Elevations shown hereon reference the North American Vertical Datum of 1988 (NAVD 88).
4) Historic data referenced on this plat is based on information provided by client.

CERTIFICATION:
I hereby certify that this plat was made from notes taken in the field in a bona fide survey made under my supervision.

05-28-2020

Lindsay Gygax Texas R.P.L.S. No. 6434

STATE OF TEXAS REGISTERED LINDSAY GYGAX 6434 PROFESSIONAL LAND SURVEYOR

WEST COMPANY
Land Surveyors ■ Civil Engineers
110 W. Louisiana Ave., Suite 110, Midland, Texas 79701
(432) 687-0865 - FAX (432)687-0868
FIRM Registration Number: 100682-00

Tetra Tech, Inc.

Topographic Survey of
Monitoring Wells at MCA Well 357
Located in Sections 28 & 33,
T-17-S, R-32-E,
N.M.P.M., Lea County, New Mexico

Scale: 1" = 1000'	W.O.: 2019-0446-1
Surveyed: 05/22/2020	Drawn By: GEP
File: J:\2020\2019-0446-1\2019-0446-1 Tetra Tech.dwg	

TETRA TECH

Drilling Log for MW Install with Soil Classifications

DATE : 9/28/2020
SAMPLER : Devin Dominguez

PROJECT NAME : COP MCA 357
PROJECT NO. : 212C-MD-02100
LOCATION : Maljamar, New Mexico
WELL NO. : MW-13
COORDINATES :
ELEVATION :

DRILLER :
DRILLING COMPANY : White Drilling
DRILLING METHOD : Air Rotary
DRILL BEGIN :
DRILL FINISH :

Depth (BG)	WL	Graphic Soil Log	Soil Description	PID (ppm)	Chloride Field Test (ppm)	Well Construction	Well Description
0			Brown silty sand				
5			Brown silty sand		126		2" PVC Casing
10			Tan/brown silty sand	2.8	153		
15			Tan/brown silty sand		129		
20			Tan/brown silty sand	3.1	112		
25			Tan/brown silty sand		125		
30			Brown silty sand with pea gravel (<10%)	4.6	216	Casing	
35							
40			Brown silty sand with pea gravel (<10%)	< 1.1	223		
45							
50			Red brown silty sand with pea gravel (<10%)	1.1	137		
55							
60			Gray/brown silty sand with pea gravel (<10%)		126		
65							

TETRA TECH

Drilling Log for MW Install with Soil Classifications

DATE : 9/28/2020
SAMPLER : Devin Dominguez

PROJECT NAME : COP MCA 357
PROJECT NO. : 212C-MD-02100
LOCATION : Maljamar, New Mexico
WELL NO. : MW-13
COORDINATES :
ELEVATION :

DRILLER :
DRILLING COMPANY : White Drilling
DRILLING METHOD : Air Rotary
DRILL BEGIN :
DRILL FINISH :

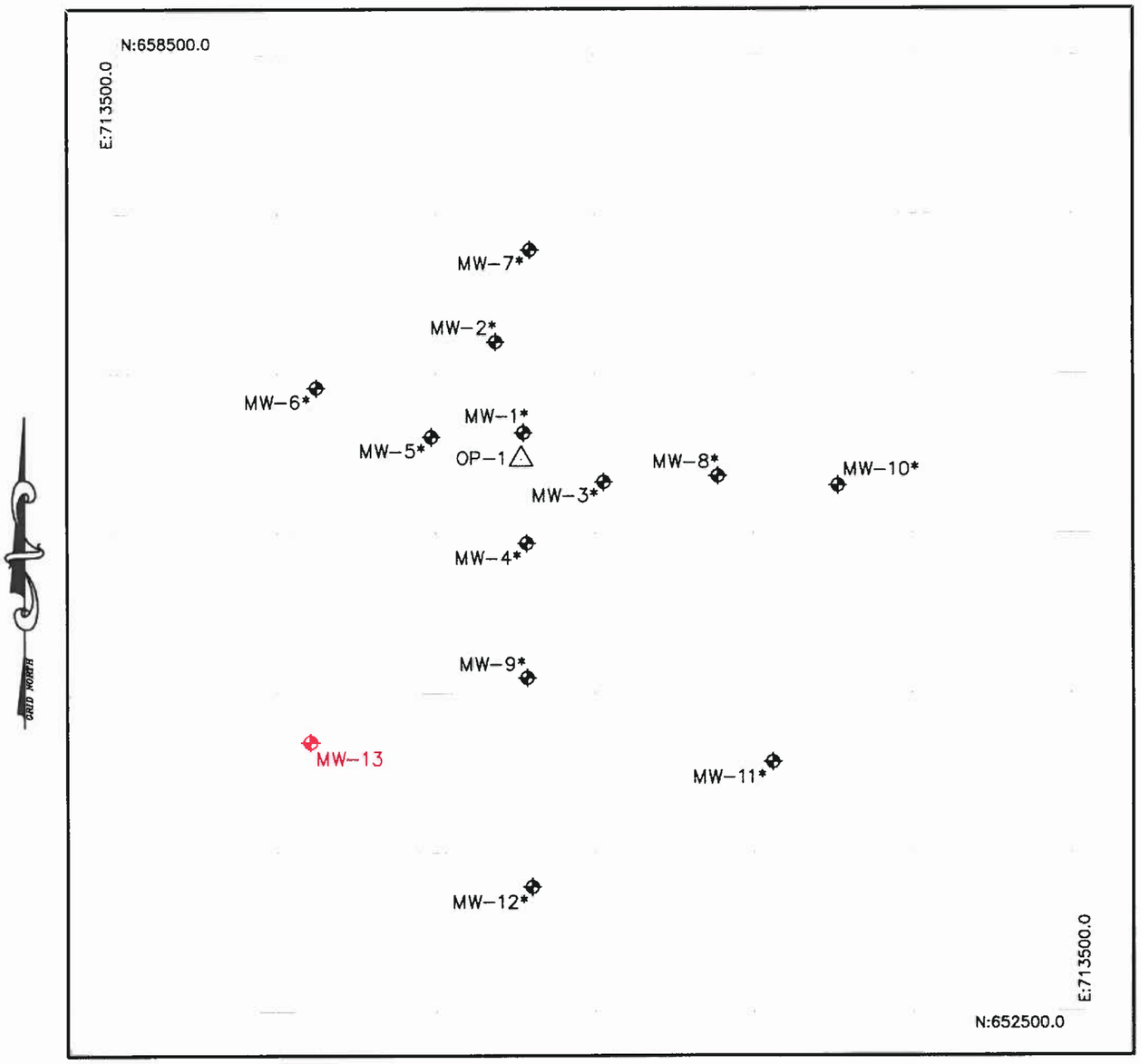
Depth (BG)	WL	Graphic Soil Log	Soil Description	PID (ppm)	Chloride Field Test (ppm)	Well Construction	Well Description
65							
70			Gray/brown silty sand with pea gravel (<10%)	2.3	118		
75							
80			Gray/brown silty sand with pea gravel (<10%)		112		
85							Bentonite chips from 86' and up
90			Gray/brown silt with <25% pea gravel	2.8	58.8		Sand from 130'-86'
95							Screen placed at 130' to 90'
100			Gray/brown silt with <25% pea gravel		84.6		
105							
110			Gray/brown silt with <10% pea gravel, damp	1.6	116		
115							
120			Gray/brown silt with <10% pea gravel, damp		123		
125							
130			Red/brown silt with clay fragments	1.1	140		

Sand

Sand

TD @ 130'
No signs of groundwater

W.O.: 2019-0446-2



DESCRIPTION	GEODETIC POSITIONS				STATE PLANE COORDINATES		ELEVATION		
	NORTH AMERICAN DATUM OF 1983				NAD '83 - New Mexico East Zone (US Ft.)				
	Latitude (D.M.S.)	Longitude (D.M.S.)	Latitude (D.D.)	Longitude (D.D.)	Northing (Y)	Easting (X)	Top of Casing	Natural Ground	Top of Concrete
MW-1*	-	-	-	-	656,127.6	714,053.7	3956.78	3,953.77	3,954.11
MW-2*	-	-	-	-	656,696.7	713,879.6	3963.58	3,961.17	3,961.39
MW-3*	-	-	-	-	655,820.4	714,558.8	3951.34	3,948.80	3,949.13
MW-4*	-	-	-	-	655,435.8	714,074.4	3945.39	3,942.91	3,943.21
MW-5*	-	-	-	-	656,100.7	713,474.0	3950.37	3,947.93	3,948.23
MW-6*	32°48'11.71"	-103°46'31.63"	32.80325	-103.77545	656,408.5	712,750.7	3952.96	3,950.23	3,950.62
MW-7*	32°48'20.21"	-103°46'15.84"	32.80561	-103.77107	657,273.6	714,093.8	3972.11	3,969.44	3,969.84
MW-8*	32°48'06.14"	-103°46'02.07"	32.80171	-103.76724	655,858.8	715,276.0	3956.83	3,954.29	3,954.66
MW-9*	32°47'53.71"	-103°46'16.20"	32.79825	-103.77117	654,595.3	714,076.6	3936.53	3,934.02	3,934.35
OP-1*	32°48'07.25"	-103°46'16.55"	32.80201	-103.77126	655,963.9	714,039.9	--	3,951.22	--
MW-10*	32°48'05.50"	-103°45'53.24"	32.80153	-103.76479	655,797.8	716,030.6	3963.20	3,960.56	3,960.94
MW-11*	32°47'48.43"	-103°45'58.14"	32.79679	-103.76615	654,070.9	715,621.1	3948.30	3,945.64	3,945.95
MW-12*	32°47'40.73"	-103°46'15.93"	32.79465	-103.77109	653,284.1	714,106.6	3930.91	3,928.92	3,928.94
MW-13	32°47'49.83"	-103°46'32.22"	32.79718	-103.77562	654,196.7	712,712.0	3931.32	3,928.90	3,929.17

Note:(*) Denotes Historical Data

Date Surveyed: Oct. 9, 2020
Weather: Sunny & Warm

LEGEND

- ⊕ – Denotes Monitor Well Location
- △ – Denotes Static GPS Control Station
- * – Denotes Historic Data

1000 0 1000 2000
Graphic Scale in Feet

NOTE:
1) Plane Coordinates shown hereon are Transverse Mercator and Conform to the "New Mexico Coordinate System", New Mexico East Zone, North American Datum of 1983.
2) Geodetic Coordinate shown hereon references the North American Datum of 1983 (NAD83).
3) Elevations shown hereon reference the North American Vertical Datum of 1988 (NAVD 88).
4) Historic data referenced on this plat is based on information provided by client.

CERTIFICATION:
I hereby certify that this plat was made from notes taken in the field in a bona fide survey made under my supervision.

10-13-2020

Lindsay Gygax New Mexico P.L.S. No. 23263

LINDSAY GYGAX NEW MEXICO 23263 PROFESSIONAL SURVEYOR

WEST COMPANY
Land Surveyors ■ Civil Engineers
110 W. Louisiana Ave., Suite 110, Midland, Texas 79701
(432) 687-0865 - FAX (432)687-0868
Surveyors Registration Number: FIRM 100682-00
Engineers Registration Number: FIRM 2184

Tetra Tech, Inc.

Topographic Survey of
Monitoring Wells at COP MCA 357 Site
Located in Sections 28 & 33,
T-17-S, R-32-E,
N.M.P.M., Lea County, New Mexico

Scale: 1" = 1000'	W.O.: 2019-0446-2
Surveyed: 10/09/2020	Drawn By: ABW
File: J:\2020\2019-0446-2\2019-0446-2 Tetra Tech.dwg	

TETRA TECH

APPENDIX B

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

January 27, 2020

ConocoPhillips - Tetra Tech

Sample Delivery Group:	L1181021
Samples Received:	01/18/2020
Project Number:	212C-MD-01645
Description:	MCA #357

Report To: Julie Evans
901 West Wall
Suite 100
Midland, TX 79701

Entire Report Reviewed By:

Chris McCord
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

TABLE OF CONTENTS

MW-9 L1181021-01 GW

Collected by: Preston Poitevint | Collected date/time: 01/14/20 11:00 | Received date/time: 01/18/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1413652	1	01/20/20 16:12	01/20/20 16:47	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	10	01/23/20 07:00	01/23/20 07:00	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	100	01/23/20 01:46	01/23/20 01:46	ELN	Mt. Juliet, TN

MW-8 L1181021-02 GW

Collected by: Preston Poitevint | Collected date/time: 01/14/20 11:55 | Received date/time: 01/18/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1413652	1	01/20/20 16:12	01/20/20 16:47	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	1	01/23/20 07:13	01/23/20 07:13	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	100	01/23/20 01:59	01/23/20 01:59	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	5	01/23/20 13:05	01/23/20 13:05	ELN	Mt. Juliet, TN

MW-7 L1181021-03 GW

Collected by: Preston Poitevint | Collected date/time: 01/14/20 12:45 | Received date/time: 01/18/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1413652	1	01/20/20 16:12	01/20/20 16:47	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	1	01/23/20 02:12	01/23/20 02:12	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	5	01/23/20 02:25	01/23/20 02:25	ELN	Mt. Juliet, TN

MW-3 L1181021-04 GW

Collected by: Preston Poitevint | Collected date/time: 01/14/20 13:35 | Received date/time: 01/18/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1413652	1	01/20/20 16:12	01/20/20 16:47	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	10	01/23/20 07:26	01/23/20 07:26	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	100	01/23/20 02:39	01/23/20 02:39	ELN	Mt. Juliet, TN

MW-4 L1181021-05 GW

Collected by: Preston Poitevint | Collected date/time: 01/14/20 14:20 | Received date/time: 01/18/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1413652	1	01/20/20 16:12	01/20/20 16:47	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	10	01/23/20 07:39	01/23/20 07:39	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	100	01/23/20 02:52	01/23/20 02:52	ELN	Mt. Juliet, TN

MW-2 L1181021-06 GW

Collected by: Preston Poitevint | Collected date/time: 01/15/20 10:50 | Received date/time: 01/18/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1413654	1	01/20/20 19:02	01/20/20 19:22	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	10	01/23/20 07:52	01/23/20 07:52	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	100	01/23/20 03:31	01/23/20 03:31	ELN	Mt. Juliet, TN

MW-5 L1181021-07 GW

Collected by: Preston Poitevint
Collected date/time: 01/15/20 11:40
Received date/time: 01/18/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1413654	1	01/20/20 19:02	01/20/20 19:22	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	1	01/23/20 03:44	01/23/20 03:44	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	20	01/23/20 03:57	01/23/20 03:57	ELN	Mt. Juliet, TN

MW-1 L1181021-08 GW

Collected by: Preston Poitevint
Collected date/time: 01/15/20 12:55
Received date/time: 01/18/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1413654	1	01/20/20 19:02	01/20/20 19:22	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	10	01/23/20 08:05	01/23/20 08:05	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	500	01/23/20 04:10	01/23/20 04:10	ELN	Mt. Juliet, TN

DUP L1181021-09 GW

Collected by: Preston Poitevint
Collected date/time: 01/15/20 00:00
Received date/time: 01/18/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1413654	1	01/20/20 19:02	01/20/20 19:22	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	10	01/23/20 08:18	01/23/20 08:18	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1415117	500	01/23/20 04:23	01/23/20 04:23	ELN	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris McCord
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	12700		56.4	200	1	01/20/2020 16:47	WG1413652

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	11.4		0.790	10.0	10	01/23/2020 07:00	WG1415117
Chloride	5540		5.19	100	100	01/23/2020 01:46	WG1415117
Sulfate	388		0.774	50.0	10	01/23/2020 07:00	WG1415117

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	4870		28.2	100	1	01/20/2020 16:47	WG1413652

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	2.95		0.0790	1.00	1	01/23/2020 07:13	WG1415117
Chloride	2180		5.19	100	100	01/23/2020 01:59	WG1415117
Sulfate	99.8		0.387	25.0	5	01/23/2020 13:05	WG1415117

MW-7
Collected date/time: 01/14/20 12:45
L1181021

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	853		3.75	13.3	1	01/20/2020 16:47	WG1413652

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	1.62		0.0790	1.00	1	01/23/2020 02:12	WG1415117
Chloride	246		0.260	5.00	5	01/23/2020 02:25	WG1415117
Sulfate	96.7		0.0774	5.00	1	01/23/2020 02:12	WG1415117

MW-3
Collected date/time: 01/14/20 13:35
L1181021

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	9200		56.4	200	1	01/20/2020 16:47	WG1413652

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	11.9		0.790	10.0	10	01/23/2020 07:26	WG1415117
Chloride	4340		5.19	100	100	01/23/2020 02:39	WG1415117
Sulfate	172		0.774	50.0	10	01/23/2020 07:26	WG1415117

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	9040		56.4	200	1	01/20/2020 16:47	WG1413652

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	9.70	J	0.790	10.0	10	01/23/2020 07:39	WG1415117
Chloride	5530		5.19	100	100	01/23/2020 02:52	WG1415117
Sulfate	176		0.774	50.0	10	01/23/2020 07:39	WG1415117

MW-2
Collected date/time: 01/15/20 10:50
L1181021

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	9300		56.4	200	1	01/20/2020 19:22	WG1413654

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	9.76	J	0.790	10.0	10	01/23/2020 07:52	WG1415117
Chloride	5120		5.19	100	100	01/23/2020 03:31	WG1415117
Sulfate	243		0.774	50.0	10	01/23/2020 07:52	WG1415117

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1580	J3	14.1	50.0	1	01/20/2020 19:22	WG1413654

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	2.22		0.0790	1.00	1	01/23/2020 03:44	WG1415117
Chloride	1050		1.04	20.0	20	01/23/2020 03:57	WG1415117
Sulfate	118		1.55	100	20	01/23/2020 03:57	WG1415117

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	29200		113	400	1	01/20/2020 19:22	WG1413654

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	37.3		0.790	10.0	10	01/23/2020 08:05	WG1415117
Chloride	16400		26.0	500	500	01/23/2020 04:10	WG1415117
Sulfate	283		0.774	50.0	10	01/23/2020 08:05	WG1415117

DUP
Collected date/time: 01/15/20 00:00
L1181021

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	20800		113	400	1	01/20/2020 19:22	WG1413654

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	26.1		0.790	10.0	10	01/23/2020 08:18	WG1415117
Chloride	11700		26.0	500	500	01/23/2020 04:23	WG1415117
Sulfate	210		0.774	50.0	10	01/23/2020 08:18	WG1415117

Method Blank (MB)

(MB) R3492479-1 01/20/20 16:47

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		2.82	10.0

L1181021-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1181021-05 01/20/20 16:47 • (DUP) R3492479-3 01/20/20 16:47

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	9040	9100	1	0.662		5

Laboratory Control Sample (LCS)

(LCS) R3492479-2 01/20/20 16:47

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8640	98.2	85.0-115	

Method Blank (MB)

(MB) R3492493-1 01/20/20 19:22

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		2.82	10.0

L1181021-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1181021-07 01/20/20 19:22 • (DUP) R3492493-3 01/20/20 19:22

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1580	2010	1	24.3	J3	5

Laboratory Control Sample (LCS)

(LCS) R3492493-2 01/20/20 19:22

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	7580	86.1	85.0-115	

Method Blank (MB)

(MB) R3493466-1 01/22/20 19:54

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Bromide	U		0.0790	1.00
Chloride	0.418	J	0.0519	1.00
Sulfate	0.564	J	0.0774	5.00

L1180951-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1180951-01 01/22/20 22:33 • (DUP) R3493466-3 01/22/20 22:47

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	ND	0.000	1	0.000		15
Chloride	5.32	5.21	1	2.19		15
Sulfate	27.3	27.0	1	1.21		15

L1181246-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1181246-01 01/23/20 04:36 • (DUP) R3493466-6 01/23/20 04:49

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	ND	0.700	1	0.143	J	15
Chloride	68.3	69.9	1	2.38		15
Sulfate	23.2	23.9	1	3.34		15

Laboratory Control Sample (LCS)

(LCS) R3493466-2 01/22/20 20:07

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromide	40.0	40.0	100	80.0-120	
Chloride	40.0	39.7	99.3	80.0-120	
Sulfate	40.0	40.1	100	80.0-120	

L1180951-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1180951-01 01/22/20 22:33 • (MS) R3493466-4 01/22/20 23:00 • (MSD) R3493466-5 01/22/20 23:13

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Bromide	50.0	ND	52.6	52.2	105	104	1	80.0-120			0.711	15
Chloride	50.0	5.32	58.3	58.1	106	105	1	80.0-120			0.346	15
Sulfate	50.0	27.3	80.3	80.1	106	106	1	80.0-120			0.244	15

L1181246-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1181246-01 01/23/20 04:36 • (MS) R3493466-7 01/23/20 05:02

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Bromide	50.0	ND	52.1	103	1	80.0-120	
Chloride	50.0	68.3	116	96.3	1	80.0-120	E
Sulfate	50.0	23.2	75.4	105	1	80.0-120	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

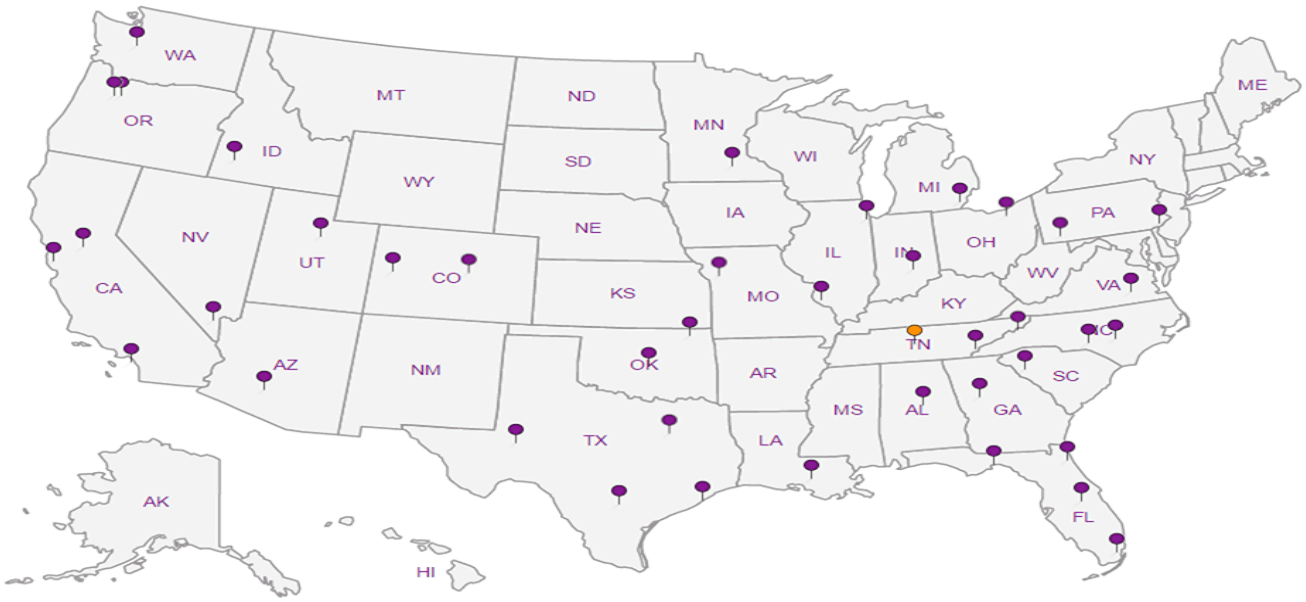
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



ConocoPhillips - Tetra Tech
901 West Wall Suite 100 Midland, TX 79701

Billing Information:
Accounts Payable
901 West Wall
Suite 100
Midland, TX 79701

Pres Chk

Report to: Julie Evans

Email To: Julie.Evans@tetratech.com

Project Description: MCA 357

City/State Collected: Maljamar, NM

Phone:
Fax:

Client Project # 212C-MD-01645

Lab Project # COPTETRA-212CMD01654

Collected by (print): Preston Poteet

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Immediately Packed on Ice N ___ Y X

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Br, Cl, SO4 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
Mw-9		GW		1-14-20	1100	2	X	X		-01
Mw-8		GW		1-14-20	1155	2	X	X		-02
Mw-7		GW		1-14-20	1245	2	X	X		-03
Mw-3		GW		1-14-20	1335	2	X	X		-04
Mw-4		GW		1-14-20	1420	2	X	X		-05
Mw-2		GW		1-15-20	1050	2	X	X		-06
Mw-5		GW		1-15-20	1140	2	X	X		-07
Mw-1		GW		1-15-20	1255	2	X	X		-08
DUP		GW		1-15-20	—	2	X	X		-09

Chain of Custody Page ___ of ___

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L1181021

T D199

Acctnum: COPTETRA

Template:: T141970

Prelogin:

TSR: 526 - Chris McCord

PB:

Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking # 4510 1659 7085

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD SCREEN <0.5 mR/hr

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
	1-17-20	1425	1-17-2020 14:25	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 3.6+.2=3.8 18
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1/18/2020 Time: 900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

May 11, 2020

ConocoPhillips - Tetra Tech

Sample Delivery Group:	L1214806
Samples Received:	05/05/2020
Project Number:	212C-MD-02100
Description:	MCA #357

Report To: Julie Evans
901 West Wall
Suite 100
Midland, TX 79701

Entire Report Reviewed By:

Chris McCord
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

TABLE OF CONTENTS

MW-9 L1214806-01 GW

Collected by: Preston Poitevint | Collected date/time: 04/30/20 11:20 | Received date/time: 05/05/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1470762	1	05/07/20 16:40	05/07/20 17:34	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1470725	10	05/06/20 10:07	05/06/20 10:07	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1470725	100	05/06/20 03:06	05/06/20 03:06	ELN	Mt. Juliet, TN

MW-8 L1214806-02 GW

Collected by: Preston Poitevint | Collected date/time: 04/30/20 12:35 | Received date/time: 05/05/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1470762	1	05/07/20 16:40	05/07/20 17:34	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1470725	100	05/06/20 03:35	05/06/20 03:35	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1470725	5	05/06/20 03:20	05/06/20 03:20	ELN	Mt. Juliet, TN

MW-3 L1214806-03 GW

Collected by: Preston Poitevint | Collected date/time: 04/30/20 14:10 | Received date/time: 05/05/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1470762	1	05/07/20 16:40	05/07/20 17:34	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1470725	100	05/06/20 04:33	05/06/20 04:33	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1470725	5	05/06/20 08:52	05/06/20 08:52	ELN	Mt. Juliet, TN

MW-4 L1214806-04 GW

Collected by: Preston Poitevint | Collected date/time: 04/30/20 11:45 | Received date/time: 05/05/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1470762	1	05/07/20 16:40	05/07/20 17:34	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1470725	100	05/06/20 05:01	05/06/20 05:01	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1470725	5	05/06/20 10:22	05/06/20 10:22	ELN	Mt. Juliet, TN

MW-7 L1214806-05 GW

Collected by: Preston Poitevint | Collected date/time: 04/30/20 14:40 | Received date/time: 05/05/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1470762	1	05/07/20 16:40	05/07/20 17:34	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1470725	1	05/06/20 05:16	05/06/20 05:16	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1470725	5	05/06/20 05:59	05/06/20 05:59	ELN	Mt. Juliet, TN

MW-2 L1214806-06 GW

Collected by: Preston Poitevint | Collected date/time: 04/30/20 12:00 | Received date/time: 05/05/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1470762	1	05/07/20 16:40	05/07/20 17:34	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1470725	100	05/06/20 07:11	05/06/20 07:11	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1470725	5	05/06/20 06:28	05/06/20 06:28	ELN	Mt. Juliet, TN

MW-5 L1214806-07 GW

Collected by: Preston Poitevint
Collected date/time: 05/01/20 13:00
Received date/time: 05/05/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1470818	1	05/08/20 11:41	05/08/20 13:55	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1470725	5	05/06/20 10:36	05/06/20 10:36	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1470725	50	05/06/20 07:40	05/06/20 07:40	ELN	Mt. Juliet, TN

MW-1 L1214806-08 GW

Collected by: Preston Poitevint
Collected date/time: 05/01/20 13:10
Received date/time: 05/05/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1470818	1	05/08/20 11:41	05/08/20 13:55	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1470725	1000	05/06/20 08:09	05/06/20 08:09	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1470725	20	05/06/20 10:50	05/06/20 10:50	ELN	Mt. Juliet, TN

DUP L1214806-09 GW

Collected by: Preston Poitevint
Collected date/time: 04/30/20 00:00
Received date/time: 05/05/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1470762	1	05/07/20 16:40	05/07/20 17:34	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1470725	1000	05/06/20 08:38	05/06/20 08:38	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1470725	20	05/06/20 11:05	05/06/20 11:05	ELN	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris McCord
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	14500		56.4	200	1	05/07/2020 17:34	WG1470762

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	8.51	J	3.53	10.0	10	05/06/2020 10:07	WG1470725
Chloride	6030		37.9	100	100	05/06/2020 03:06	WG1470725
Sulfate	423		5.94	50.0	10	05/06/2020 10:07	WG1470725

Sample Narrative:

L1214806-01 WG1470725: Reporting Bromide @ 10x dilution due to high Sulfate

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	5580		28.2	100	1	05/07/2020 17:34	WG1470762

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	3.95	J	1.76	5.00	5	05/06/2020 03:20	WG1470725
Chloride	2390		37.9	100	100	05/06/2020 03:35	WG1470725
Sulfate	95.1		2.97	25.0	5	05/06/2020 03:20	WG1470725

Sample Narrative:

L1214806-02 WG1470725: Reporting Bromide @ 5x dilution due to high Sulfate

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	10600		56.4	200	1	05/07/2020 17:34	WG1470762

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	7.18		1.76	5.00	5	05/06/2020 08:52	WG1470725
Chloride	4380		37.9	100	100	05/06/2020 04:33	WG1470725
Sulfate	177		2.97	25.0	5	05/06/2020 08:52	WG1470725

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	13300		56.4	200	1	05/07/2020 17:34	WG1470762

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	5.23		1.76	5.00	5	05/06/2020 10:22	WG1470725
Chloride	5770		37.9	100	100	05/06/2020 05:01	WG1470725
Sulfate	187		2.97	25.0	5	05/06/2020 10:22	WG1470725

MW-7
Collected date/time: 04/30/20 14:40
L1214806

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	846		5.64	20.0	1	05/07/2020 17:34	WG1470762

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	1.18		0.353	1.00	1	05/06/2020 05:16	WG1470725
Chloride	239		1.90	5.00	5	05/06/2020 05:59	WG1470725
Sulfate	98.1		0.594	5.00	1	05/06/2020 05:16	WG1470725

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	12700		56.4	200	1	05/07/2020 17:34	WG1470762

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	5.41		1.76	5.00	5	05/06/2020 06:28	WG1470725
Chloride	5640		37.9	100	100	05/06/2020 07:11	WG1470725
Sulfate	253		2.97	25.0	5	05/06/2020 06:28	WG1470725

Sample Narrative:

L1214806-06 WG1470725: Reporting Bromide @ 5x dilution due to high Sulfate

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	2740		14.1	50.0	1	05/08/2020 13:55	WG1470818

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	3.04	J	1.76	5.00	5	05/06/2020 10:36	WG1470725
Chloride	1240		19.0	50.0	50	05/06/2020 07:40	WG1470725
Sulfate	130		2.97	25.0	5	05/06/2020 10:36	WG1470725

Sample Narrative:

L1214806-07 WG1470725: Reporting Bromide @ 5x dilution due to high Sulfate

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	98200		282	1000	1	05/08/2020 13:55	WG1470818

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	79.6		7.06	20.0	20	05/06/2020 10:50	WG1470725
Chloride	37200		379	1000	1000	05/06/2020 08:09	WG1470725
Sulfate	490		11.9	100	20	05/06/2020 10:50	WG1470725

DUP
Collected date/time: 04/30/20 00:00
L1214806

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	93800		282	1000	1	05/07/2020 17:34	WG1470762

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	109		7.06	20.0	20	05/06/2020 11:05	WG1470725
Chloride	50600		379	1000	1000	05/06/2020 08:38	WG1470725
Sulfate	661		11.9	100	20	05/06/2020 11:05	WG1470725

Method Blank (MB)

(MB) R3526066-1 05/07/20 17:34

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		2.82	10.0

L1214521-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1214521-02 05/07/20 17:34 • (DUP) R3526066-3 05/07/20 17:34

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	777	787	1	1.19		5

Laboratory Control Sample (LCS)

(LCS) R3526066-2 05/07/20 17:34

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8830	100	85.0-115	

Method Blank (MB)

(MB) R3526360-1 05/08/20 13:55

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		2.82	10.0

L1214583-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1214583-02 05/08/20 13:55 • (DUP) R3526360-3 05/08/20 13:55

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	717	729	1	1.66		5

Laboratory Control Sample (LCS)

(LCS) R3526360-2 05/08/20 13:55

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8810	100	85.0-115	

Method Blank (MB)

(MB) R3525139-1 05/05/20 21:53

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Bromide	U		0.353	1.00
Chloride	U		0.379	1.00
Sulfate	U		0.594	5.00

L1214806-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1214806-05 05/06/20 05:16 • (DUP) R3525139-6 05/06/20 05:30

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	1.18	1.22	1	3.15		15
Sulfate	98.1	98.0	1	0.0440		15

L1214806-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1214806-05 05/06/20 05:59 • (DUP) R3525139-8 05/06/20 06:13

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	239	234	5	2.11		15

L1213637-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1213637-01 05/06/20 09:39 • (DUP) R3525139-9 05/06/20 09:53

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	ND	0.000	1	0.000		15
Chloride	15.8	15.8	1	0.00883		15
Sulfate	160	159	1	0.300	E	15

Laboratory Control Sample (LCS)

(LCS) R3525139-2 05/05/20 22:08

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromide	40.0	38.1	95.2	80.0-120	
Chloride	40.0	40.2	101	80.0-120	
Sulfate	40.0	39.5	98.8	80.0-120	

L1213637-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1213637-01 05/06/20 09:39 • (MS) R3525139-4 05/05/20 23:30 • (MSD) R3525139-5 05/05/20 23:44

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Bromide	50.0	ND	38.3	38.3	76.5	76.6	1	80.0-120	J6	J6	0.137	15
Chloride	50.0	15.8	66.3	64.6	101	97.6	1	80.0-120			2.49	15
Sulfate	50.0	160	191	193	63.5	66.7	1	80.0-120	E J6	E J6	0.834	15

L1214806-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1214806-05 05/06/20 05:16 • (MS) R3525139-7 05/06/20 05:45

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Bromide	50.0	1.18	45.1	87.9	1	80.0-120	
Chloride	50.0	242	285	86.0	1	80.0-120	E
Sulfate	50.0	98.1	139	82.3	1	80.0-120	E

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

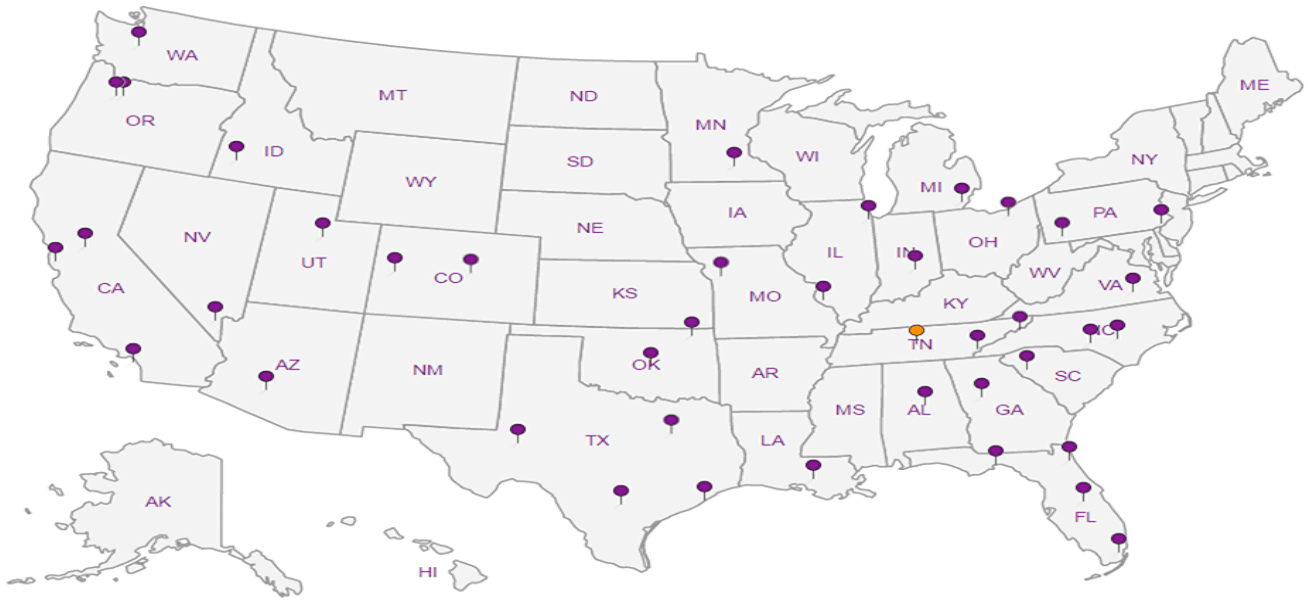
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



ConocoPhillips - Tetra Tech

Billing Information:
901 West Wall St
Suite 100
Midland, TX 79701

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to: Julie Evans

Email To: Julie.evans@tetratech.com

Project Description: MCA #357

City/State Collected: Maljamar, NM

Phone: 432-687-8137
Fax:

Client Project # 212C-MD-~~00982~~ 02100

Lab Project # COPTETRA-212CMD00982

L# L214806

Ta A049

Collected by (print): Preston Poiteviet

Site/Facility ID #

P.O. #

Acctnum: COPTETRA

Template:

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Prelogin:

TSR: 526 - Chris McCord

PB:

Shipped Via:

Immediately Packed on Ice N ___ Y ✓

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of cntrs	Br,Cl,SO4 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-9				4-30-20	1120	2	X	X		-01
MW-8				4-30-20	1235	2	X	X		-02
MW-3				4-30-20	1410	2	X	X		-03
MW-4				4-31-20	1145	2	X	X		-04
MW-7				4-31-20	~~1145~~ 1440	2	X	X		-05
MW-2				4-31-20	1200	2	X	X		-06
MW-5				5-1-20	~~1300~~ 1300	2	X	X		-07
MW-1				5-1-20	1310	2	X	X		-08
DUP				—	—	2	X	X		-09

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking # 443034237325

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

RAD SCREEN: <0.5 mR/hr

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
	5-4-20	13:00		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp °C Bottles Received:
	5-4-20	16:30	FedEX	1.9+3=22 18
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:
			Sandy Yosef	5/5/20 8:45

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

July 24, 2020

ConocoPhillips - Tetra Tech

Sample Delivery Group:	L1239364
Samples Received:	07/14/2020
Project Number:	212C-MD-02100
Description:	Conoco MCA 357

Report To: Julie Evans
901 West Wall
Suite 100
Midland, TX 79701

Entire Report Reviewed By:

Chris McCord
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

TABLE OF CONTENTS

MW-10 L1239364-01 GW

Collected by: Preston Poitevint | Collected date/time: 07/08/20 11:25 | Received date/time: 07/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1509260	1	07/15/20 16:44	07/15/20 17:39	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1509211	1	07/16/20 08:26	07/16/20 08:26	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1509211	50	07/15/20 16:38	07/15/20 16:38	ELN	Mt. Juliet, TN

MW-9 L1239364-02 GW

Collected by: Preston Poitevint | Collected date/time: 07/08/20 12:40 | Received date/time: 07/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1509260	1	07/15/20 16:44	07/15/20 17:39	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1509211	10	07/15/20 16:53	07/15/20 16:53	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1509211	100	07/15/20 17:08	07/15/20 17:08	ELN	Mt. Juliet, TN

MW-8 L1239364-03 GW

Collected by: Preston Poitevint | Collected date/time: 07/08/20 13:35 | Received date/time: 07/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1509260	1	07/15/20 16:44	07/15/20 17:39	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1509211	10	07/15/20 17:23	07/15/20 17:23	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1509211	100	07/15/20 17:38	07/15/20 17:38	ELN	Mt. Juliet, TN

MW-7 L1239364-04 GW

Collected by: Preston Poitevint | Collected date/time: 07/08/20 14:40 | Received date/time: 07/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1509260	1	07/15/20 16:44	07/15/20 17:39	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1509211	1	07/15/20 17:53	07/15/20 17:53	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1509211	5	07/15/20 18:08	07/15/20 18:08	ELN	Mt. Juliet, TN

MW-3 L1239364-05 GW

Collected by: Preston Poitevint | Collected date/time: 07/09/20 10:20 | Received date/time: 07/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1510463	1	07/16/20 19:04	07/16/20 19:29	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1509211	10	07/15/20 18:23	07/15/20 18:23	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1509211	100	07/15/20 18:38	07/15/20 18:38	ELN	Mt. Juliet, TN

MW-4 L1239364-06 GW

Collected by: Preston Poitevint | Collected date/time: 07/09/20 11:25 | Received date/time: 07/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1510463	1	07/16/20 19:04	07/16/20 19:29	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1509211	10	07/15/20 18:52	07/15/20 18:52	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1509211	100	07/15/20 19:37	07/15/20 19:37	ELN	Mt. Juliet, TN

MW-2 L1239364-07 GW

Collected by: Preston Poitevint | Collected date/time: 07/09/20 12:30 | Received date/time: 07/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1510463	1	07/16/20 19:04	07/16/20 19:29	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1509211	10	07/15/20 19:52	07/15/20 19:52	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1509211	100	07/15/20 20:07	07/15/20 20:07	ELN	Mt. Juliet, TN

MW-5 L1239364-08 GW

Collected by: Preston Poitevint | Collected date/time: 07/09/20 13:40 | Received date/time: 07/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1510463	1	07/16/20 19:04	07/16/20 19:29	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1509211	20	07/15/20 20:37	07/15/20 20:37	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1509211	5	07/15/20 20:22	07/15/20 20:22	ELN	Mt. Juliet, TN

MW-1 L1239364-09 GW

Collected by: Preston Poitevint | Collected date/time: 07/09/20 15:05 | Received date/time: 07/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1510463	1	07/16/20 19:04	07/16/20 19:29	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1509211	10	07/15/20 20:52	07/15/20 20:52	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1509211	500	07/15/20 21:07	07/15/20 21:07	ELN	Mt. Juliet, TN

DUP L1239364-10 GW

Collected by: Preston Poitevint | Collected date/time: 07/09/20 00:00 | Received date/time: 07/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1510463	1	07/16/20 19:04	07/16/20 19:29	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1509211	10	07/15/20 21:22	07/15/20 21:22	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1509211	500	07/15/20 21:37	07/15/20 21:37	ELN	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris McCord
Project Manager

MW-10
Collected date/time: 07/08/20 11:25
L1239364

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	4630		28.2	100	1	07/15/2020 17:39	WG1509260

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	2.16		0.353	1.00	1	07/16/2020 08:26	WG1509211
Chloride	1770		19.0	50.0	50	07/15/2020 16:38	WG1509211
Sulfate	66.0		0.594	5.00	1	07/16/2020 08:26	WG1509211

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	16000		56.4	200	1	07/15/2020 17:39	WG1509260

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	10.3		3.53	10.0	10	07/15/2020 16:53	WG1509211
Chloride	6460		37.9	100	100	07/15/2020 17:08	WG1509211
Sulfate	438		5.94	50.0	10	07/15/2020 16:53	WG1509211

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	5750		28.2	100	1	07/15/2020 17:39	WG1509260

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	6.43	J	3.53	10.0	10	07/15/2020 17:23	WG1509211
Chloride	2330		37.9	100	100	07/15/2020 17:38	WG1509211
Sulfate	98.6		5.94	50.0	10	07/15/2020 17:23	WG1509211

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	880		3.75	13.3	1	07/15/2020 17:39	WG1509260

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	1.47		0.353	1.00	1	07/15/2020 17:53	WG1509211
Chloride	289		1.90	5.00	5	07/15/2020 18:08	WG1509211
Sulfate	94.7		0.594	5.00	1	07/15/2020 17:53	WG1509211

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	11000		56.4	200	1	07/16/2020 19:29	WG1510463

Sample Narrative:

L1239364-05 WG1510463: Due to an unknown compound in the sample, achieving a constant weight is not possible

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	10.3		3.53	10.0	10	07/15/2020 18:23	WG1509211
Chloride	4540		37.9	100	100	07/15/2020 18:38	WG1509211
Sulfate	178		5.94	50.0	10	07/15/2020 18:23	WG1509211

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	13700		56.4	200	1	07/16/2020 19:29	WG1510463

Sample Narrative:

L1239364-06 WG1510463: Due to an unknown compound in the sample, achieving a constant weight is not possible

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	8.55	J	3.53	10.0	10	07/15/2020 18:52	WG1509211
Chloride	6170		37.9	100	100	07/15/2020 19:37	WG1509211
Sulfate	184		5.94	50.0	10	07/15/2020 18:52	WG1509211

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	13600		56.4	200	1	07/16/2020 19:29	WG1510463

Sample Narrative:

L1239364-07 WG1510463: Due to an unknown compound in the sample, achieving a constant weight is not possible

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	8.24	J	3.53	10.0	10	07/15/2020 19:52	WG1509211
Chloride	5610		37.9	100	100	07/15/2020 20:07	WG1509211
Sulfate	252		5.94	50.0	10	07/15/2020 19:52	WG1509211

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	3260		14.1	50.0	1	07/16/2020 19:29	WG1510463

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	3.63	J	1.76	5.00	5	07/15/2020 20:22	WG1509211
Chloride	953		7.58	20.0	20	07/15/2020 20:37	WG1509211
Sulfate	142		2.97	25.0	5	07/15/2020 20:22	WG1509211

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	30600		113	400	1	07/16/2020 19:29	WG1510463

Sample Narrative:

L1239364-09 WG1510463: Due to an unknown compound in the sample, achieving a constant weight is not possible

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	26.0		3.53	10.0	10	07/15/2020 20:52	WG1509211
Chloride	13200		190	500	500	07/15/2020 21:07	WG1509211
Sulfate	232		5.94	50.0	10	07/15/2020 20:52	WG1509211

DUP
Collected date/time: 07/09/20 00:00

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	26000		113	400	1	07/16/2020 19:29	WG1510463

Sample Narrative:

L1239364-10 WG1510463: Due to an unknown compound in the sample, achieving a constant weight is not possible

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	22.7		3.53	10.0	10	07/15/2020 21:22	WG1509211
Chloride	11800		190	500	500	07/15/2020 21:37	WG1509211
Sulfate	195		5.94	50.0	10	07/15/2020 21:22	WG1509211

Method Blank (MB)

(MB) R3550238-1 07/15/20 17:39

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		2.82	10.0

L1239364-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1239364-04 07/15/20 17:39 • (DUP) R3550238-3 07/15/20 17:39

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	880	921	1	4.59		5

Laboratory Control Sample (LCS)

(LCS) R3550238-2 07/15/20 17:39

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8730	99.2	85.0-115	

Method Blank (MB)

(MB) R3550644-1 07/16/20 19:29

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		2.82	10.0

L1240047-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1240047-01 07/16/20 19:29 • (DUP) R3550644-3 07/16/20 19:29

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1270	1250	1	1.27		5

Sample Narrative:

OS: Due to an unknown compound in the sample, achieving a constant weight is not possible

Laboratory Control Sample (LCS)

(LCS) R3550644-2 07/16/20 19:29

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8750	99.4	85.0-115	

Method Blank (MB)

(MB) R3549928-1 07/15/20 07:00

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Bromide	U		0.353	1.00
Chloride	U		0.379	1.00
Sulfate	U		0.594	5.00

Original Sample (OS) • Duplicate (DUP)

(OS) • (DUP) R3549928-3 07/15/20 12:24

Analyte	Original Result	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide		U	1	0.000		15
Chloride		5.77	1	3.21		15
Sulfate		12.0	1	0.334		15

L1239340-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1239340-03 07/15/20 15:23 • (DUP) R3549928-7 07/15/20 15:38

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	U	U	1	0.000		15
Chloride	1.04	0.977	1	6.72	J	15
Sulfate	2.59	2.56	1	1.37	J	15

Laboratory Control Sample (LCS)

(LCS) R3549928-2 07/15/20 07:15

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromide	40.0	39.3	98.3	80.0-120	
Chloride	40.0	40.3	101	80.0-120	
Sulfate	40.0	40.0	100	80.0-120	

L1239336-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1239336-02 07/15/20 12:39 • (MS) R3549928-4 07/15/20 12:54 • (MSD) R3549928-5 07/15/20 13:39

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Bromide	50.0	U	47.8	48.9	95.6	97.9	1	80.0-120			2.28	15
Chloride	50.0	14.9	67.1	67.1	104	104	1	80.0-120			0.0696	15
Sulfate	50.0	3.96	56.0	55.7	104	104	1	80.0-120			0.550	15

L1239340-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1239340-02 07/15/20 14:53 • (MS) R3549928-6 07/15/20 15:08

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Bromide	50.0	U	49.0	98.0	1	80.0-120	
Chloride	50.0	4.66	56.3	103	1	80.0-120	
Sulfate	50.0	13.1	64.9	104	1	80.0-120	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

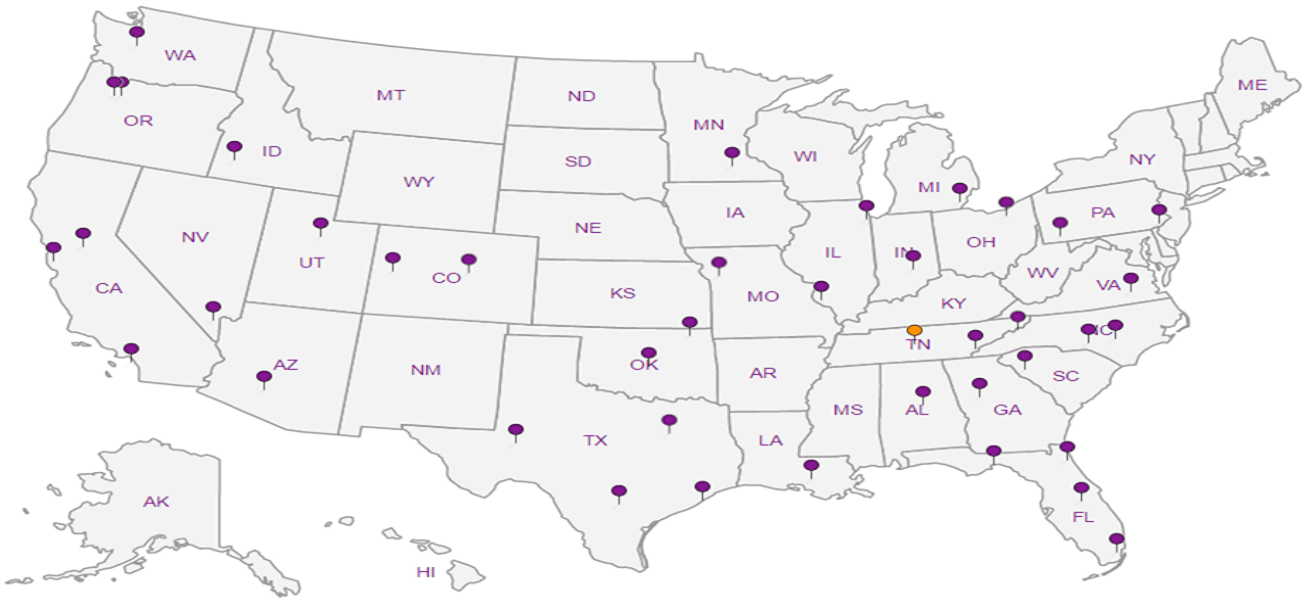
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



ConocoPhillips - Tetra Tech

Billing Information:
901 West Wall St
Suite 100
Midland, TX 79701

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to: Julie Evans

Email To: Julie.evans@tetratech.com

Project Description: Conoco MCA 357

City/State Collected:

Phone: 432-687-8137
Fax:

Client Project # 212C-MD-02100

Lab Project # COPTETRA-212CMD02100

L# L1239364
H172

Collected by (print): Preston Patevint

Site/Facility ID #

P.O. #

Acctnum: COPTETRA

Template:

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Prelogin:

TSR: 526 - Chris McCord

PB:

Immediately Packed on Ice N ___ Y ___

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Br,Cl,SO4 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-10		GW		7-8-20	1125	1	X	X		-01
MW-9		GW		7-8-20	1240	1	X	X		02
MW-8		GW		7-8-20	1335	1	X	X		03
MW-7		GW		7-8-20	1440	1	X	X		04
MW-3		GW		7-9-20	1020	1	X	X		05
MW-4		GW		7-9-20	1125	1	X	X		06
MW-2		GW		7-9-20	1230	1	X	X		07
MW-5		GW		7-9-20	1340	1	X	X		08
MW-1		GW		7-9-20	1505	1	X	X		09
DUP		GW		7-9-20	—	1	X	X		10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking # 179030302640

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N

Relinquished by: (Signature)	Date: 7-13-20	Time: 1045	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.1 °C Bottles Received: 10
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 7/14/20 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

3.6+.1=3.7

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

October 15, 2020

ConocoPhillips - Tetra Tech

Sample Delivery Group:	L1269511
Samples Received:	10/03/2020
Project Number:	212C-MD-02100
Description:	Conoco MCA 357

Report To: Julie Evans
901 West Wall
Suite 100
Midland, TX 79701

Entire Report Reviewed By:

Chris McCord
Project Manager

TABLE OF CONTENTS

MW-10 L1269511-01 GW

Collected by: Preston Poitevint | Collected date/time: 09/30/20 12:10 | Received date/time: 10/03/20 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1555751	1	10/07/20 19:39	10/07/20 22:13	MJA	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1555495	1	10/08/20 02:23	10/08/20 02:23	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1555495	100	10/08/20 02:40	10/08/20 02:40	MSP	Mt. Juliet, TN

MW-9 L1269511-02 GW

Collected by: Preston Poitevint | Collected date/time: 09/30/20 13:15 | Received date/time: 10/03/20 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1555751	1	10/07/20 19:39	10/07/20 22:13	MJA	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1555495	10	10/08/20 02:58	10/08/20 02:58	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1555495	100	10/08/20 03:15	10/08/20 03:15	MSP	Mt. Juliet, TN

MW-8 L1269511-03 GW

Collected by: Preston Poitevint | Collected date/time: 09/30/20 14:10 | Received date/time: 10/03/20 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1555751	1	10/07/20 19:39	10/07/20 22:13	MJA	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1555495	10	10/08/20 04:01	10/08/20 04:01	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1555495	100	10/08/20 04:19	10/08/20 04:19	MSP	Mt. Juliet, TN

MW-7 L1269511-04 GW

Collected by: Preston Poitevint | Collected date/time: 09/30/20 15:05 | Received date/time: 10/03/20 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1555751	1	10/07/20 19:39	10/07/20 22:13	MJA	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1555495	1	10/08/20 04:36	10/08/20 04:36	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1555495	5	10/08/20 06:21	10/08/20 06:21	MSP	Mt. Juliet, TN

MW-3 L1269511-05 GW

Collected by: Preston Poitevint | Collected date/time: 10/01/20 10:20 | Received date/time: 10/03/20 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1555850	1	10/08/20 01:40	10/08/20 02:57	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1555495	10	10/08/20 06:55	10/08/20 06:55	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1555495	100	10/08/20 07:13	10/08/20 07:13	MSP	Mt. Juliet, TN

MW-4 L1269511-06 GW

Collected by: Preston Poitevint | Collected date/time: 10/01/20 11:25 | Received date/time: 10/03/20 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1555850	1	10/08/20 01:40	10/08/20 02:57	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1555495	10	10/08/20 07:30	10/08/20 07:30	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1555495	100	10/08/20 07:48	10/08/20 07:48	MSP	Mt. Juliet, TN

MW-2 L1269511-07 GW

Collected by: Preston Poitevint | Collected date/time: 10/01/20 12:20 | Received date/time: 10/03/20 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1555850	1	10/08/20 01:40	10/08/20 02:57	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1555495	10	10/08/20 08:05	10/08/20 08:05	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1555495	100	10/08/20 08:57	10/08/20 08:57	MSP	Mt. Juliet, TN

MW-5 L1269511-08 GW

Collected by: Preston Poitevint | Collected date/time: 10/01/20 13:15 | Received date/time: 10/03/20 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1555850	1	10/08/20 01:40	10/08/20 02:57	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1555495	20	10/08/20 09:32	10/08/20 09:32	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1555495	5	10/08/20 09:15	10/08/20 09:15	MSP	Mt. Juliet, TN

MW-1 L1269511-09 GW

Collected by: Preston Poitevint | Collected date/time: 10/01/20 14:30 | Received date/time: 10/03/20 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1555850	1	10/08/20 01:40	10/08/20 02:57	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1555495	10	10/08/20 09:50	10/08/20 09:50	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1555495	500	10/08/20 10:07	10/08/20 10:07	MSP	Mt. Juliet, TN

DUP L1269511-10 GW

Collected by: Preston Poitevint | Collected date/time: 10/01/20 00:00 | Received date/time: 10/03/20 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1555850	1	10/08/20 01:40	10/08/20 02:57	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1555495	10	10/09/20 14:40	10/09/20 14:40	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1555495	500	10/09/20 14:55	10/09/20 14:55	MSP	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris McCord
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	3970		5.64	20.0	1	10/07/2020 22:13	WG1555751

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	2.01		0.353	1.00	1	10/08/2020 02:23	WG1555495
Chloride	1520		37.9	100	100	10/08/2020 02:40	WG1555495
Sulfate	56.5		0.594	5.00	1	10/08/2020 02:23	WG1555495

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	16900		28.2	100	1	10/07/2020 22:13	WG1555751

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	9.03	J	3.53	10.0	10	10/08/2020 02:58	WG1555495
Chloride	6400		37.9	100	100	10/08/2020 03:15	WG1555495
Sulfate	461		5.94	50.0	10	10/08/2020 02:58	WG1555495

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	5880		14.1	50.0	1	10/07/2020 22:13	WG1555751

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	7.03	J	3.53	10.0	10	10/08/2020 04:01	WG1555495
Chloride	5730		37.9	100	100	10/08/2020 04:19	WG1555495
Sulfate	156		5.94	50.0	10	10/08/2020 04:01	WG1555495

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	866		2.82	10.0	1	10/07/2020 22:13	WG1555751

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	1.08		0.353	1.00	1	10/08/2020 04:36	WG1555495
Chloride	240		1.90	5.00	5	10/08/2020 06:21	WG1555495
Sulfate	111		2.97	25.0	5	10/08/2020 06:21	WG1555495

MW-3
Collected date/time: 10/01/20 10:20
L1269511

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	8860		14.1	50.0	1	10/08/2020 02:57	WG1555850

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	8.98	J	3.53	10.0	10	10/08/2020 06:55	WG1555495
Chloride	4440		37.9	100	100	10/08/2020 07:13	WG1555495
Sulfate	183		5.94	50.0	10	10/08/2020 06:55	WG1555495

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	11500		28.2	100	1	10/08/2020 02:57	WG1555850

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	7.47	J	3.53	10.0	10	10/08/2020 07:30	WG1555495
Chloride	6140		37.9	100	100	10/08/2020 07:48	WG1555495
Sulfate	193		5.94	50.0	10	10/08/2020 07:30	WG1555495

MW-2
Collected date/time: 10/01/20 12:20
L1269511

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	11100		28.2	100	1	10/08/2020 02:57	WG1555850

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	7.23	J	3.53	10.0	10	10/08/2020 08:05	WG1555495
Chloride	5690		37.9	100	100	10/08/2020 08:57	WG1555495
Sulfate	268		5.94	50.0	10	10/08/2020 08:05	WG1555495

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	2200		5.64	20.0	1	10/08/2020 02:57	WG1555850

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	2.94	J	1.76	5.00	5	10/08/2020 09:15	WG1555495
Chloride	773		7.58	20.0	20	10/08/2020 09:32	WG1555495
Sulfate	164		2.97	25.0	5	10/08/2020 09:15	WG1555495

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	17500		28.2	100	1	10/08/2020 02:57	WG1555850

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	16.1		3.53	10.0	10	10/08/2020 09:50	WG1555495
Chloride	8700		190	500	500	10/08/2020 10:07	WG1555495
Sulfate	161		5.94	50.0	10	10/08/2020 09:50	WG1555495

DUP
Collected date/time: 10/01/20 00:00

ONE LAB. NATIONWIDE.

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	19100		28.2	100	1	10/08/2020 02:57	WG1555850

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Bromide	17.0		3.53	10.0	10	10/09/2020 14:40	WG1555495
Chloride	9740		190	500	500	10/09/2020 14:55	WG1555495
Sulfate	181		5.94	50.0	10	10/09/2020 14:40	WG1555495

Method Blank (MB)

(MB) R3580685-1 10/07/20 22:13

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	3.00	J	2.82	10.0

L1269547-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1269547-09 10/07/20 22:13 • (DUP) R3580685-3 10/07/20 22:13

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1110	U	1	200	J3	5

L1269564-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1269564-02 10/07/20 22:13 • (DUP) R3580685-4 10/07/20 22:13

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	3570	3510	1	1.58		5

Laboratory Control Sample (LCS)

(LCS) R3580685-2 10/07/20 22:13

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8690	98.8	77.4-123	

Method Blank (MB)

(MB) R3579686-1 10/08/20 02:57

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		2.82	10.0

L1268635-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1268635-01 10/08/20 02:57 • (DUP) R3579686-3 10/08/20 02:57

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	814	808	1	0.740		5

L1269886-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1269886-01 10/08/20 02:57 • (DUP) R3579686-4 10/08/20 02:57

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	702	696	1	0.858		5

Laboratory Control Sample (LCS)

(LCS) R3579686-2 10/08/20 02:57

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8720	99.1	77.4-123	

Method Blank (MB)

(MB) R3580057-1 10/08/20 01:31

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Bromide	U		0.353	1.00
Chloride	U		0.379	1.00
Sulfate	U		0.594	5.00

L1269511-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1269511-04 10/08/20 04:36 • (DUP) R3580057-3 10/08/20 05:28

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	1.08	1.07	1	0.915		15
Chloride	242	242	1	0.0563	E	15
Sulfate	111	111	1	0.0730	E	15

L1269511-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1269511-04 10/08/20 06:21 • (DUP) R3580057-6 10/08/20 06:38

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	240	239	5	0.381		15
Sulfate	111	110	5	1.23		15

L1269696-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1269696-02 10/09/20 15:41 • (DUP) R3580058-1 10/09/20 15:57

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	U	U	1	0.000		15
Chloride	178	179	1	0.117	E	15
Sulfate	262	262	1	0.128	E	15

Laboratory Control Sample (LCS)

(LCS) R3580057-2 10/08/20 01:48

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromide	40.0	39.8	99.5	80.0-120	
Chloride	40.0	40.4	101	80.0-120	
Sulfate	40.0	40.7	102	80.0-120	

L1269511-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1269511-04 10/08/20 04:36 • (MS) R3580057-4 10/08/20 05:46 • (MSD) R3580057-5 10/08/20 06:03

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Bromide	50.0	1.08	45.9	46.3	89.7	90.5	1	80.0-120			0.918	15

L1269696-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L1269696-04 10/09/20 16:28 • (MS) R3580058-2 10/09/20 16:43

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Bromide	50.0	U	48.5	97.0	1	80.0-120	
Chloride	50.0	37.5	86.0	97.1	1	80.0-120	
Sulfate	50.0	11.6	60.1	97.0	1	80.0-120	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

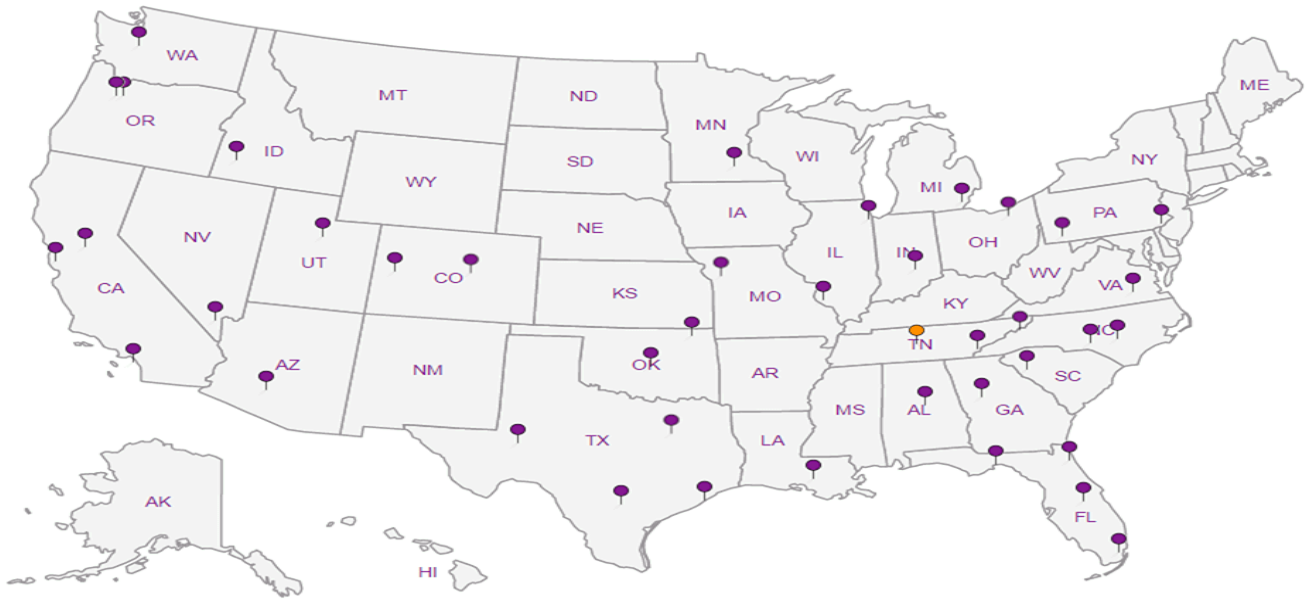
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



ACCOUNT:	PROJECT:	SDG:	DATE/TIME:	PAGE:
ConocoPhillips - Tetra Tech	212C-MD-02100	L1269511	10/15/20 16:07	21 of 22

ConocoPhillips - Tetra Tech

Billing Information:
901 West Wall St
Suite 100
Midland, TX 79701

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

L1269511

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858

D208

Report to:
Julie Evans

Email To:
Julie.evans@tetratech.com

Project Description: Conoco MCA 357

City/State Collected: Maljimar, NM

Phone: 432-687-8137

Fax:

Client Project #: 212C-MD-02100

Lab Project #: COPTETRA-212CMD02100

Collected by (print): Preston Poitevint

Site/Facility ID #

P.O. #

Collected by (signature): [signature]

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Acctnum: COPTETRA

Template:

Prelogin:

TSR: Chris McCord

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Br,Cl,SO4 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-10		GW		9-30-20	1210	2	X	X		-01
MW-9		GW		9-30-20	1315	2	X	X		-02
MW-8		GW		9-30-20	1410	2	X	X		-03
MW-7		GW		9-30-20	1505	2	X	X		-04
MW-3		GW		10-1-20	1020	2	X	X		-05
MW-4		GW		10-1-20	1125	2	X	X		-06
MW-2		GW		10-1-20	1220	2	X	X		-07
MW-5		GW		10-1-20	1315	2	X	X		-08
MW-1		GW		10-1-20	1430	2	X	X		-09
DUP		GW		—	—	2				-10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks: TD

pH ___ Temp ___
Flow ___ Other ___

Samples returned via: ___ UPS ___ FedEx ___ Courier

Sample Receipt Checklist
COC Seal Present/Intact:
COC Signed/Accurate:
Bottles arrive intact:
Correct bottles used:

Relinquished by: (Signature) [signature] Date: 10-2-20 Time: 1500 Received by: (Signature) [signature]

Trip Blank Received: Yes / No
HCL / MeOH
TBR
.6+0=.6 [illegible]

Preservation Correct/Checked: ___ Y ___ N

Relinquished by: (Signature) [signature] Date: 10-2-20 Time: 1400 Received by: (Signature) SWA

Temp: ___ °C Bottles Received: 20

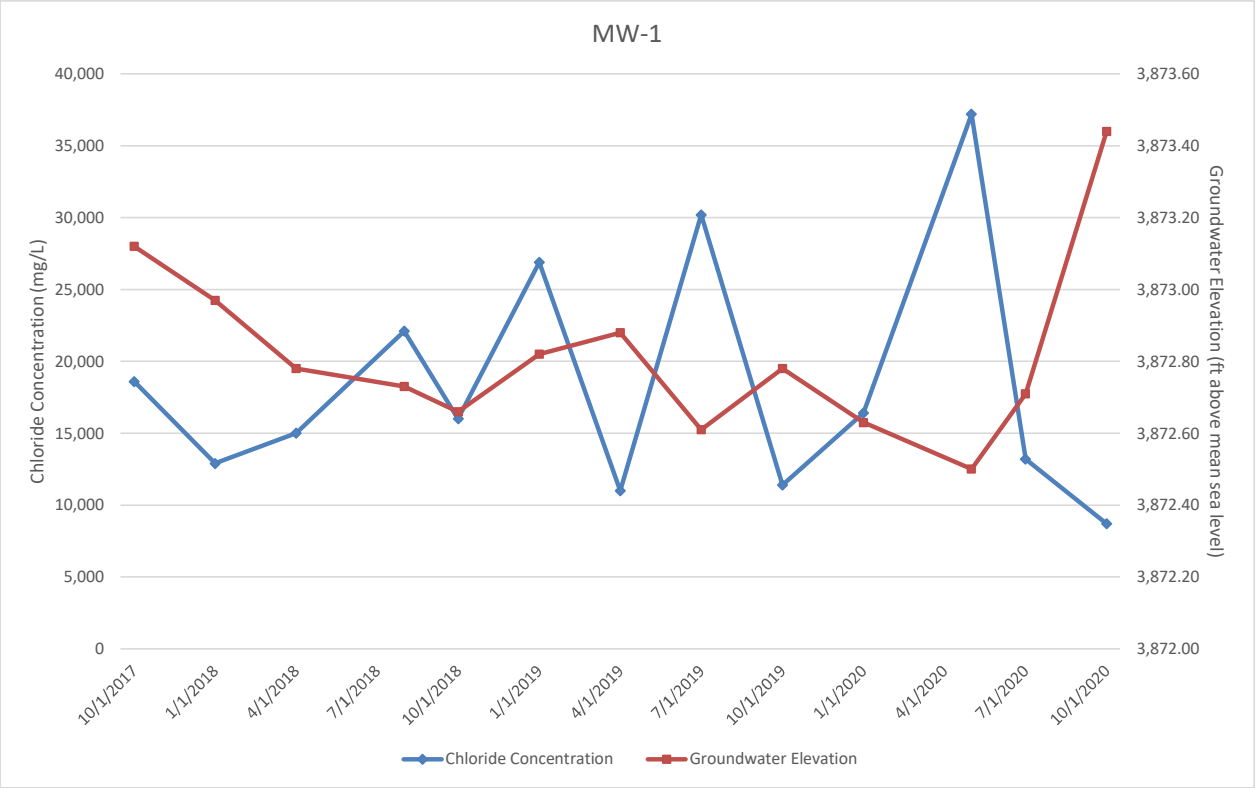
If preservation required by Login: Date/Time

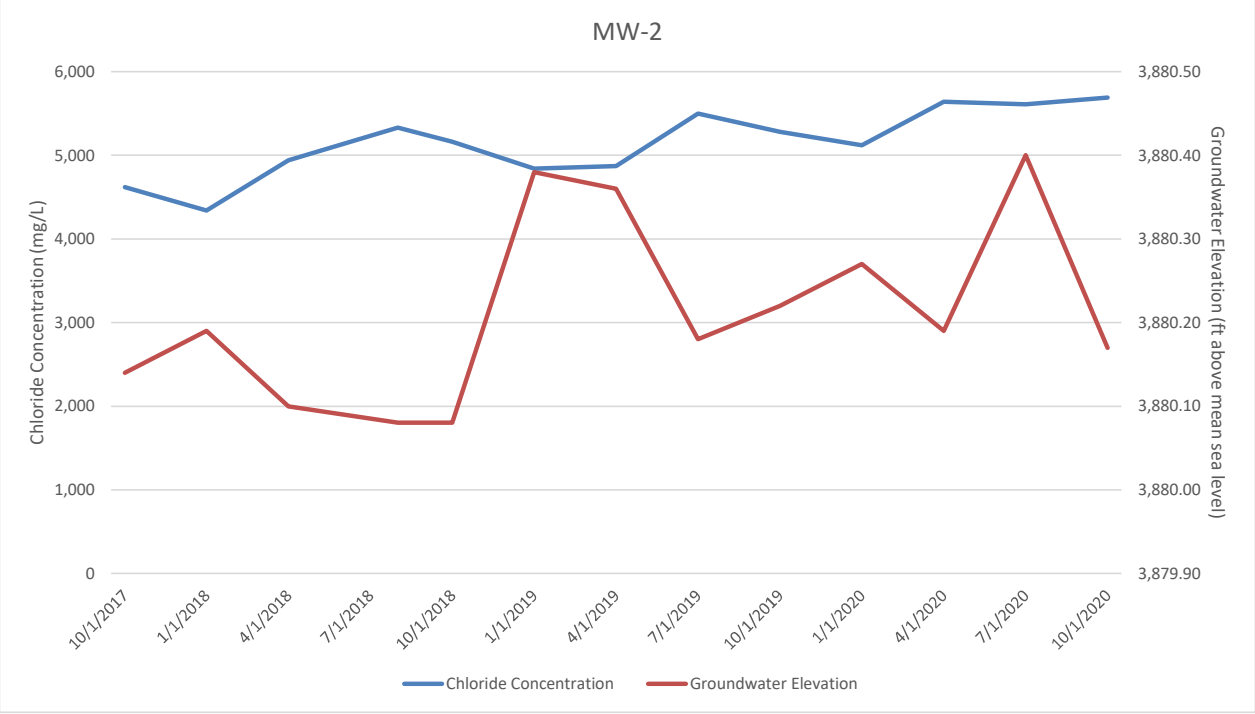
Relinquished by: (Signature) Date: Time: Received for lab by: (Signature) [signature] Date: 10-3 Time: 0915 Hold: 0

TETRA TECH

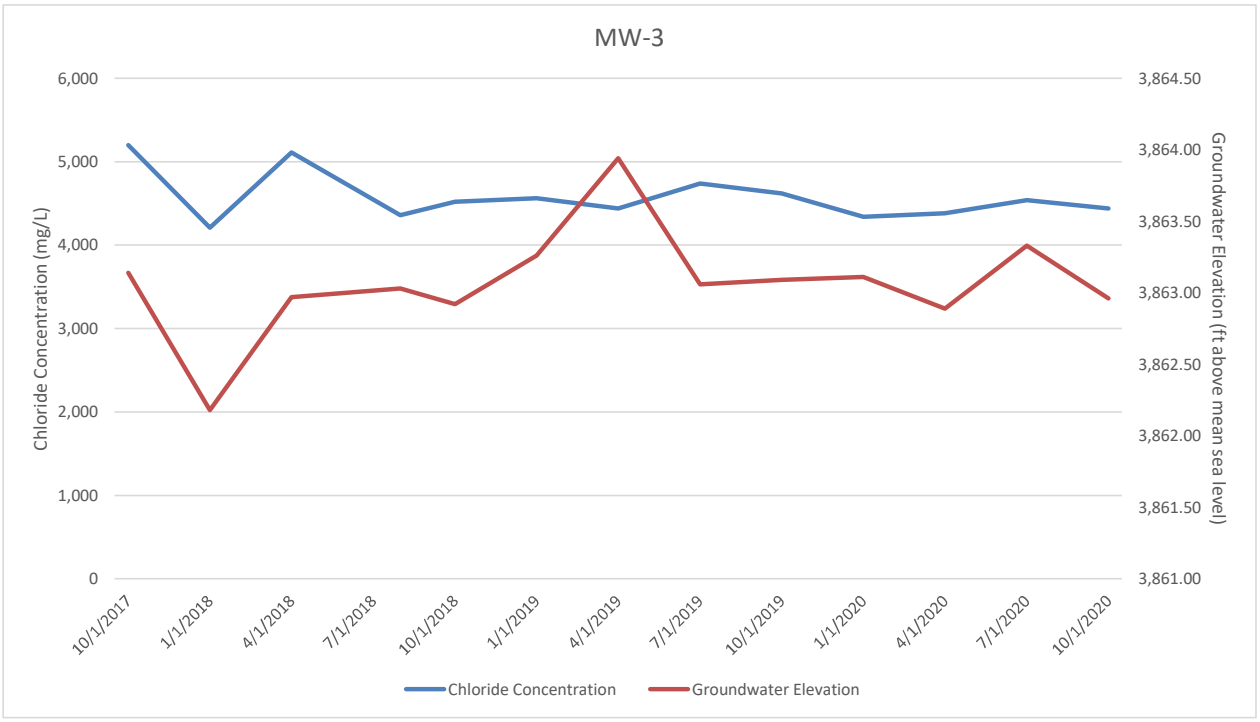
APPENDIX C

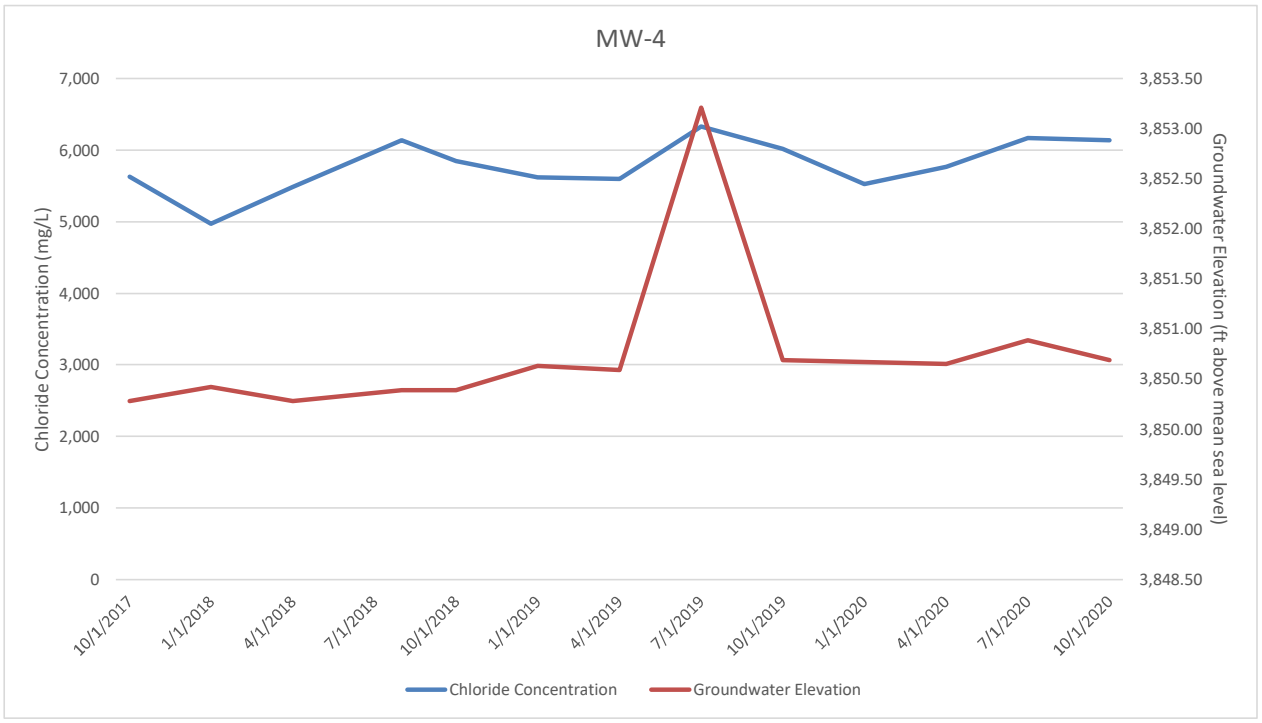
Chloride Concentration Graphs
ConocoPhillips - MCA #357
Lea County, New Mexico



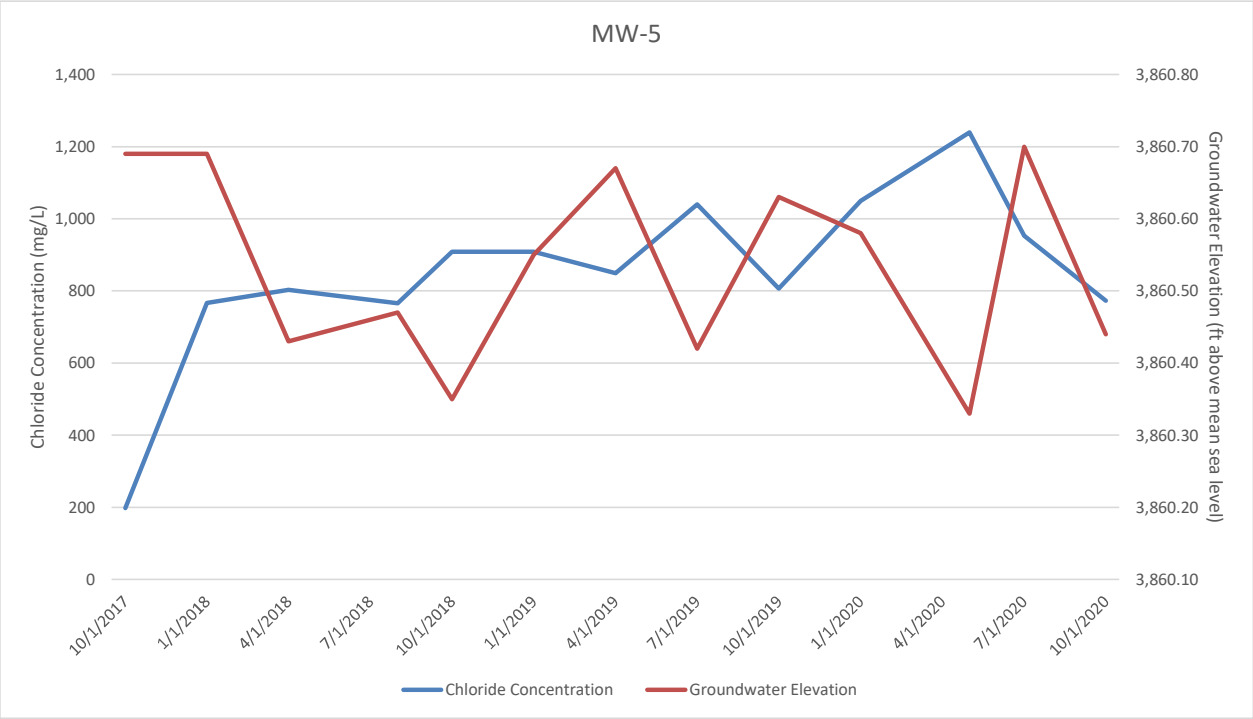


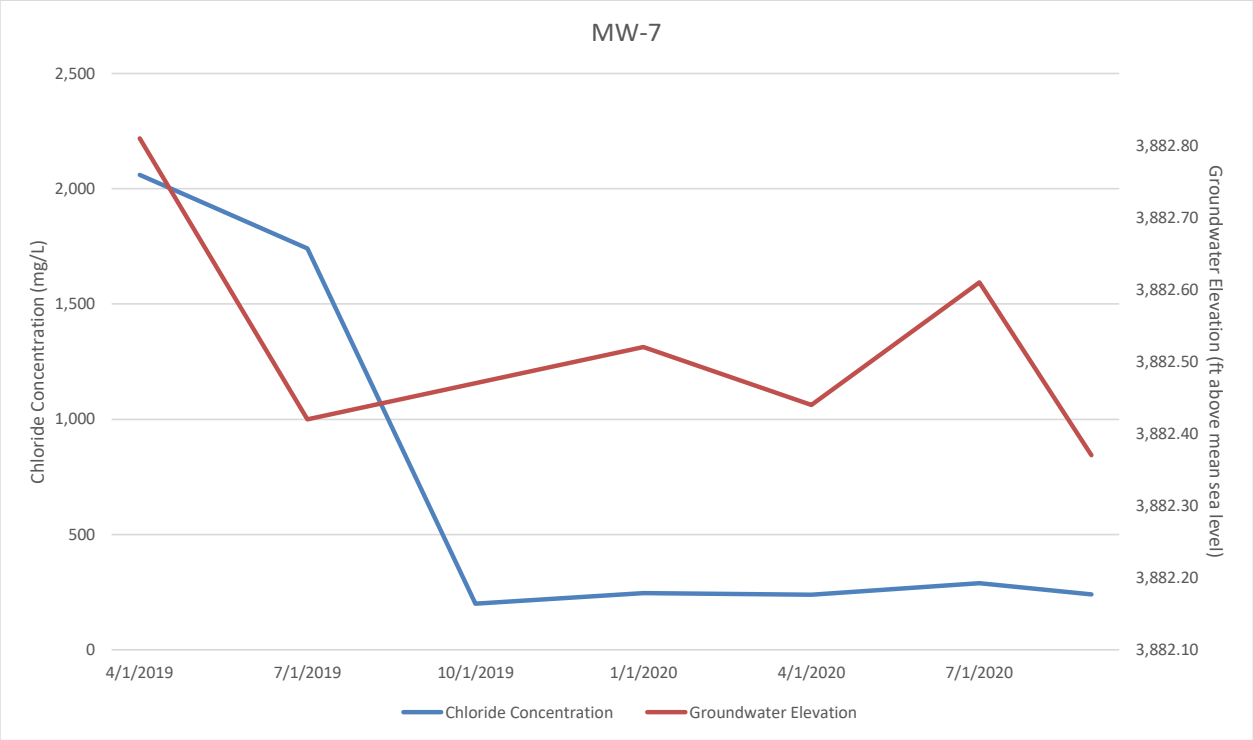
Chloride Concentration Graphs
ConocoPhillips - MCA #357
Lea County, New Mexico



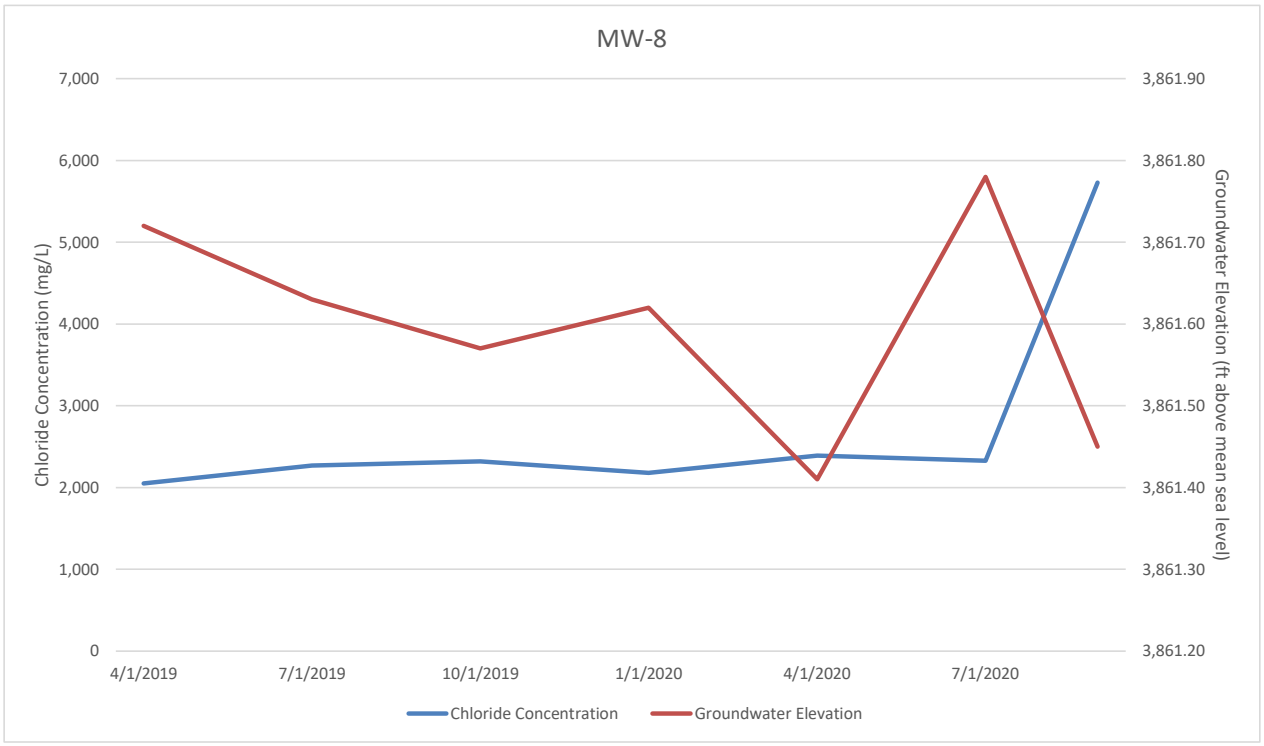


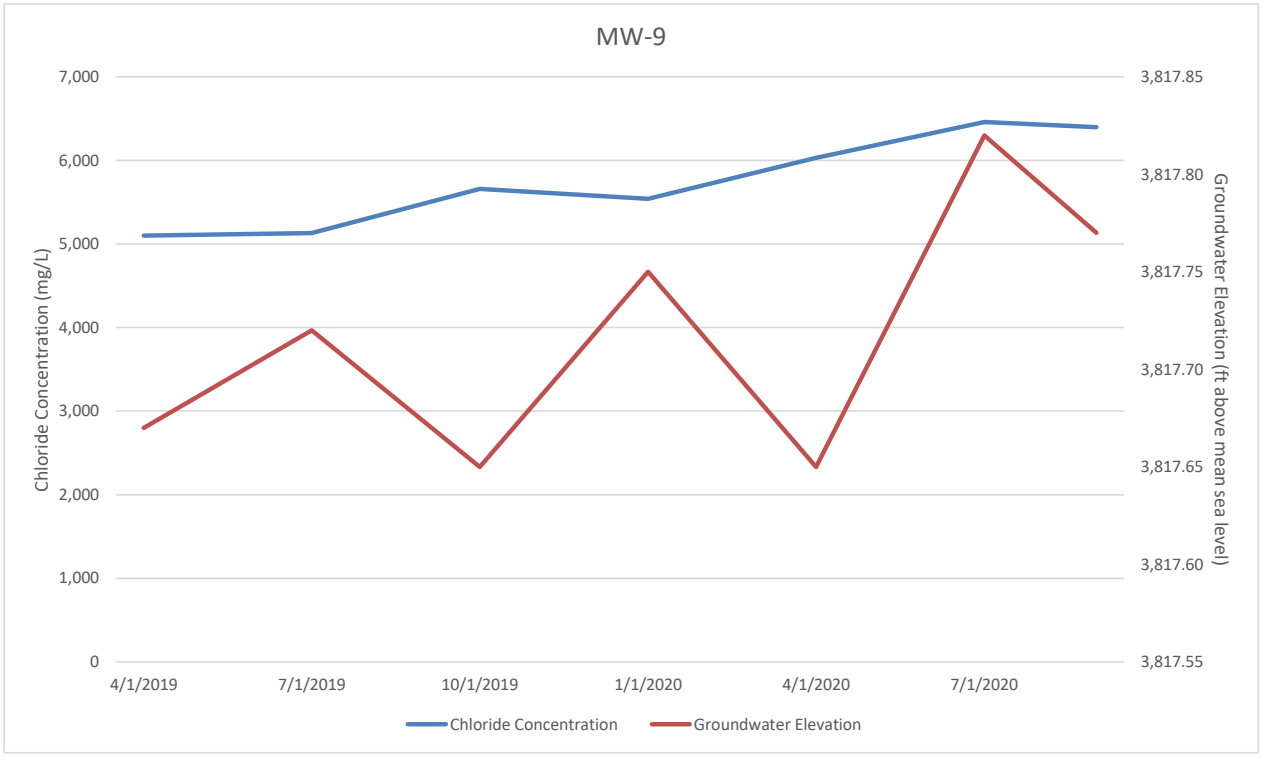
Chloride Concentration Graphs
ConocoPhillips - MCA #357
Lea County, New Mexico





Chloride Concentration Graphs
ConocoPhillips - MCA #357
Lea County, New Mexico





District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 21583

CONDITIONS

Operator: CONOCOPHILLIPS COMPANY 600 W. Illinois Avenue Midland, TX 79701	OGRID: 217817
	Action Number: 21583
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Review of 2020 Semi-Annual Monitoring and Remedial Activities Report: Content satisfactory 1. Continued groundwater monitoring and sampling on a semi-annual basis 2. Submit the Annual Monitoring Report to the OCD no later than March 31, 2022	12/29/2021