REVIEWED
By Nelson Velez at 9:52 am, Feb 13, 2023

ARCADIS Design & Consultancy for natural and built assets

Review of Proposed Groundwater Monitoring Reduction Workplan: **Content satisfactory**

1. OCD approves the sulfate analysis be discontinued from all site wells except MW-4A and RW-2R. These two identified wells will require only one annual sampling event for sulfate.
2. OCD approves the termination of future sampling from MW-2A, MW-3, MW-5A, MW-6R, MW-8, and MW-14.
3. OCD approves the second semi-annual sampling event elimination for MW-11.
4. OCD approves annual sampling for those monitoring and recovery wells with COC concentrations reported above the NMWQCC exceedance standards.

Mr. Bradford Billings
Project Manager
EMNRD/OCD
5200 Oakland, NE, Suite 100
Albuquerque, NM 87113

Subject:
Proposed Groundwater Monitoring Reduction Workplan
Chevron Environmental Management Company
Cooper-Jal Unit South Injection Station (1R289)
Lea County, New Mexico

ENVIRONMENT

Dear Mr. Billings:

At the request of Chevron Environmental Management Company (CEMC), Arcadis U.S., Inc. (Arcadis) is providing this Workplan to request a reduction of groundwater monitoring frequency on select monitoring wells for the Cooper-Jal Unit South Injection Station (Site).

The Site is located on Lea County Road J7, approximately five and a half miles northwest of Jal, New Mexico, in Section 24, Township 24 South, Range 36 East, Lea County, New Mexico. The latitude and longitude coordinates of the Site are N 32° 12’ 7.13” N and 103° 13’ 4.36” W.

Groundwater monitoring began at the Site in September 1997. The Site is currently monitored semi-annually from a network of 17 monitoring wells and three 3 recovery wells. No monitoring or recovery wells currently contain light non-aqueous phase liquid (LNAPL). All monitoring wells and the three (3) recovery wells are currently sampled during both semi-annual sampling events. The constituents of concern (COCs) in groundwater include chloride, total dissolved solids (TDS) and sulfate.

For additional Site-specific background information please refer to the Arcadis, 2019 Annual Groundwater Monitoring Report, dated March 25, 2020.

PROPOSED REDUCED SAMPLING PLAN

The following Workplan outlines the specifics of the proposed reduced sampling plan for select monitoring and recovery wells and the methodology for the selection of those monitoring and recovery wells. One semi-annual monitoring event will include sampling all Site wells as currently conducted with the exception of collecting Sulfate analysis. The second semi-annual sampling event will be

Date:
July 2, 2020

Contact:
Russell Grant

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reduced to only sampling select monitoring and recovery wells based on the following proposed sampling methodology. The groundwater sampling frequency will be assessed yearly based on the results of the sampling events for the lifespan of the project. It is understood that a minimum of 8 consecutive Site wide sampling events will be required prior to closure request for the Site.

The following sections provide specifics for the proposed reduced groundwater monitoring plan:

Sampling Reduction for Non-impacted Monitoring Wells

Site monitoring and recovery wells with COC concentrations reported below New Mexico Water Quality Control Commission (NMWQCC) exceedance standards or monitoring and recovery wells with COC concentrations reported above the NMWQCC exceedance standards showing stable to decreasing trends for two consecutive years or longer will not be sampled during one semi-annual monitoring event per year.

The Site wells selected for removal from the second semi-annual sampling event include: MW-2A, MW-3, MW-4A, MW-5A, MW-6R, MW-8, MW-9A, MW-11, and MW-14

The previously referenced wells have been evaluated based on historical concentration trends, historical concentration trends of nearby monitoring wells, potential receptors, and groundwater gradient.

The Site monitoring/recovery wells that will be sampled during each semi-annual event are presented on attached **Table 1** (Sampling Analysis Plan).

The Site monitoring/recovery wells that will be sampled during the reduced event are presented on **Figure 1** (Potentiometric Surface Map), **Figure 2** (Reduced Sampling Plan – Chloride), and **Figure 3** (Reduced Sampling Plan – TDS), and **Figure 4** (Reduced Sampling Plan – Sulfate).

The Summary of Historical Groundwater Analytical Results is presented in **Table 2**.

Sampling Reduction for Non-Impacted Monitoring Wells

Sulfate is assigned a NMWQCC standard of 600 milligrams per liter (mg/L) and only 2 wells (MW-4, RW-2R) have consistently shown sulfate exceedances above the NMWQCC standard. These exceedances are likely attributable to natural groundwater chemistry or offsite encroachment of a neighboring contaminant plume. Data suggest that it is unlikely that the Site release contributed to elevated sulfate concentrations at the Site due to the proximity of the 2 monitoring wells from the location of the unlined earthen overflow pits southern border. Monitor

well MW-1 is located on the south eastern corner of the unlined earthen pit and historical data does not indicate that there has been any downgradient Sulfate migration from the location of the unlined pit. Additionally, monitoring wells located adjacent to MW-4 and RW-2R (MW-4A and RW-2 respectfully) have not shown similar detections of Sulfate concentrations. Thus, Arcadis is requesting approval from the New Mexico Oil Conservation Division (NMOCD) to remove sulfate from the sampling program.

Contact

Arcadis is prepared to initiate the scope of work immediately. If you have any questions or comments, please contact either Russell Grant by phone at 432 217 2064 or by e-mail at russell.grant@arcadis.com or Greg Cutshall by phone at 859 327 4626 or by email at greg.cutshall@arcadis.com.

Sincerely,

Arcadis U.S., Inc.

Russell Grant

Project Manager

Copies:
Robert Speer, CEMC Project Manager

Enclosures:

Tables

Table 1 – Sampling and Analysis Plan

Table 2 – Summary of Historical Groundwater Analytical Results

Figures

Figure 1 – 2020 Reduced Sampling Plan - Potentiometric Surface Map

Figure 2 – 2020 Reduced Sampling Plan – Chloride Isoconcentration Map

Figure 3 – 2020 Reduced Sampling Plan – TDS Isoconcentration Map

Figure 4 – 2020 Reduced Sampling Plan – Sulfate Isoconcentration Map

TABLES

Table 1 - Groundwater Sampling and Analysis Plan
Chevron Environmental Management Company
Cooper Jal Unit South Injection Station (1R-289)
Lea County, NM

ARCADIS Design & Consultancy for natural and built assets

First Semi-Annual Monitoring Event						Second Semi-Annual Monitoring Event					
Monitoring Well ID	Gauge Depth to Groundwater and Total Depth	Collect Conductivity Level every two (2) feet	Total Dissolved Solids by State Method 2540C	Inorganic Anions by USEPA Method 300		Gauge Depth to Groundwater and Total Depth	Collect Conductivity Level every two (2) feet	Total Dissolved Solids by State Method 2540C	Inorganic Anions by USEPA Method 300		Rationale for Reduction
				Chloride	Sulfate				Chloride	Sulfate	
MW-1	X	X	X	X	--	X	--	X	X	--	
MW-2	X	X	X	X	--	X	--	X	X	--	
MW-2A	X	X	X	X	--	X	--	--	--	--	Stable Trend
MW-3	X	X	X	X	--	X	--	--	--	--	Stable Trend
MW-4	X	X	X	X	--	X	--	X	X	--	
MW-4A	X	X	X	X	--	X	--	--	--	--	Stable Trend
MW-5	X	X	X	X	--	X	--	X	X	--	
MW-5A	X	X	X	X	--	X	--	--	--	--	Stable Trend
MW-6R	X	X	X	X	--	X	--	--	--	--	Stable Trend
MW-7	X	X	X	X	--	X	--	X	X	--	
MW-8	X	X	X	X	--	X	--	--	--	--	Stable Trend
MW-9	X	X	X	X	--	X	--	X	X	--	
MW-9A	X	X	X	X	--	X	--	--	--	--	Stable Trend
MW-10	X	X	X	X	--	X	--	X	X	--	
MW-11	X	X	X	X	--	X	--	--	--	--	Stable Trend
MW-12	X	X	X	X	--	X	--	X	X	--	
MW-14	X	X	X	X	--	X	--	--	--	--	Stable Trend
RW-1	X	X	X	X	--	X	--	X	X	--	
RW-2	X	X	X	X	--	X	--	X	X	--	
RW-2R	X	X	X	X	--	X	--	X	X	--	

Notes:
USEPA = United States Environmental Protection Agency
X = Data will be collected at monitoring well during respective event.
-- = Data will not be collected at monitoring well during semi-annual event

Table 2 - Summary of Historical Groundwater Analytical Results
Chevron Environmental Management Company
Cooper Jal Unit South Injection Station (1R-289)
Lea County, NM

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					***250***	***1.6***	**10**	***600***					***1,000***
MW-1	9/16/97	--	--	280	**8,500**	--	--	**1,100**	520.0	630.0	50.00	4,300	**15,000**
	2/25/98	--	--	280	**5,600**	--	--	570	285.0	520.0	116.00	2,900	**9,300**
	2/14/01	<1.0	306	306	**11,000**	**4.40**	7.70	**1,000**	374.0	780.0	236.00	5,236	**20,000**
	5/17/02	<1.0	208	208	237	**5.83**	3.28	86.9	45.7	20.1	11.90	184	784
	10/23/02	--	--	--	168	--	--	96.8	--	--	--	--	696
	5/21/03	<1.0	290	290	**6,600**	<8.00	**10.90**	**875**	238.0	475.0	96.50	3,410	**13,200**
	11/25/03	<1.0	250	250	**402**	**7.03**	2.72	125	19.2	22.0	18.50	294	**1,158**
	5/12/04	<1.00	264	264	**504**	**7.31**	2.70	136	17.2	23.1	22.40	355	**1,328**
	11/16/04	<1.00	232	232	**384**	**4.94**	3.30	103	29.2	22.7	25.40	373	952
	11/16/05	<10.0	262	262	**1,210**	**3**	2.4	215 D1	85.4	92.6	23	847	**2,640**
	11/14/06	<10	200	200	96	**4.2**	2	76	13.2	6.49	15.6	172	624
	11/16/07	<10.0	255	255	**4,250**	**3.7**	**3.90 D1**	**602 D1**	154	187	54	2,100 D1	**10,900**
	11/4/08	<5.0	190	190	110	**6.3**	1.6	83	10	5.8	7.9	180	590
	11/3/09	<10	270	270	**4,100**	**4.1**	2.8	**640**	190	250	61	2,300	**8,000**
	11/10/10	<10	223	223	**2,670**	**1.92**	2.62	373	138	196	21.5	1,480	**5,020**
	11/10/11	<5.00	209	209	**3,220**	1.02	2.37	275	169	176	22.5	1,340	**5,250**
Dup	11/10/11	<5.00	213	213	**2,930**	1.05	2.35	240	183	197	22.6	1,480	**4,640**
	10/11/12	<5.00	190	190	**2,190**	**6.74**	4.52	301	132	145	17.9	1,140	**1,880**
	10/8/13	<6.00	211	211	**1,890**	1.46	2.39	247	131	114	15.3	914	**2,380**
	10/7/14	<4.00	205	205	**1,700**	0.46	2.37	277	118	126	14.9	860	**3,690**
	10/21/15	--	--	--	182	<4.00	--	78.1	--	--	--	--	559
	10/18/16	--	--	--	**1,320**	0.827	--	221	--	--	--	--	**2,700**
	10/24/17	--	--	--	148	**2.57**	--	79.4	--	--	--	--	594
	10/18/18	--	--	--	**1,290**	0.788	--	215	--	--	--	--	**2,360**
	6/20/19	--	--	--	**1,110**	--	--	--	--	--	--	--	**2,510**
	11/24/19	--	--	--	**1,110**	--	--	222	--	--	--	--	**2,190**
MW-2	2/25/98	--	--	210	**5,900**	--	--	**760**	840.0	380.0	30.00	2,650	**9,400**
	4/9/98	--	--	290	**8,200**	--	--	**990**	1,100.0	490.0	29.00	3,430	**15,000**
	2/14/01	<1.0	184	184	**7,400**	**2.30**	4.10	**870**	1,025.0	488.0	48.50	3,189	**15,000**
	5/17/02	<1.0	160	160	**3,200**	**1.72**	3.18	483	587.0	239.0	35.60	1,160	**6,040**
	10/23/02	--	--	--	**2,920**	--	--	451	--	--	--	--	**6,770**
	5/22/03	<1.0	158	158	**2,550**	**2.04**	3.87	386	448.0	176.0	20.00	1,020	**5,880**
	11/25/03	<1.0	160	160	**3,330**	<4.00	5.63	446	555.0	227.0	32.00	1,120	**6,760**
	5/12/04	<1.00	146	146	**1,750**	<2.00	2.78	246	308.0	112.0	29.70	549	**3,965**
	11/16/04	<1.00	120	120	**430**	<1.00	2.13	56.9	104.0	29.4	22.40	158	832
	11/16/05	<10.0	171	171	**4,720**	0.72	2.6	**645 D1**	594	209	20.8	3,290	**10,000**
	11/14/06	<10	160	160	**3,500**	0.78 N	2.1	470	535	212	21	15,400	**8,260**
	11/14/07	<10.0	178	178	**3,280**	0.76	1.93	462 D1	449	152	16.2	1310 D1	**9,110**
	11/4/08	<5.0	150	150	**2,900**	<1.0	1.1	430	380	160	26	1,200	**5,600**
	11/16/09	<10	150	150	**2,000**	1.1	1.6	340	290	120	20	750	**4,300**
	11/12/10	<10	186	186	**1,890**	0.726	1.86	327	326	120	9.8	795	**3,680**
	11/10/11	<5.00	175	175	**1,480**	0.814	1.31	150	227	83.2	9.75	668	**2,860**
	10/11/12	<5.00	149	149	**524**	0.546	1.92	231	119	31.7	8.78	286	**1,090**
	10/8/13	<6.00	269	269	**1,180**	1.2	<0.100	169	178	64.7	8.16	505	**2,520**
	10/7/14	<4.00	196	196	**695**	0.524	<0.0230	147	143	47.5	7.3	343	**1,310**
	10/21/15	--	--	--	27	<2.00	--	58.6	--	--	--	--	388
	10/18/16	--	--	--	26.7	<0.500	--	34.4	--	--	--	--	352
	10/25/17	--	--	--	35.8	0.995	--	36.3	--	--	--	--	331
	10/18/18	--	--	--	65.9	0.656	--	48.5	--	--	--	--	384
	6/20/19	--	--	--	**283**	--	--	--	--	--	--	--	960
	11/23/19	--	--	--	27.7	--	--	42	--	--	--	--	274
MW-2A	2/26/98	--	--	190	**280**	--	--	330	144.0	36.0	5.70	215.0	**1,200**
	2/14/01	<1.0	162	162	44	1.30	2.30	76	64.4	16.7	7.02	45.5	390
	5/15/02	<1.0	176	176	36.6	<1.00	2.34	79.1	57.6	13.9	4.35	43.8	435
	10/23/02	--	--	--	44.3	--	--	97	--	--	--	--	425
	5/22/03	<1.0	168	168	40.5	<1.00	2.18	75.5	67.2	14.3	3.76	47.9	418
	11/25/03	<1.0	166	166	43.1	1.00	2.23	77.4	51.7	14.4	3.98	43.8	452
	5/12/04	<1.00	176	176	44.8	<1.00	2.24	76.5	62.9	15.0	3.66	43.6	440
	11/16/04	<1.00	164	164	52.5	1.22	2.78	75.4	68.8	15.3	3.98	49.1	428
	11/16/05	<10.0	151	151	56.8	0.6	2.3	75.1 D1	157	18	4.2	49.8	630 N
	11/14/06	<10	180	180	49	0.55	1.6	76	69.8	15.6	3.47	49.9	488
	11/14/07	<10.0	170	170	74.6	0.58	1.51	66.8 D1	666	15.3	<5.000	45.4	504
	11/4/08	<5.0	220	220	68	0.49	1.4	74	67	15	3.2	42	470
	11/3/09	<10	230	230	62	0.59	1.6	81	66	15	3.4	50	480
	11/11/10	<10	158	158	86.1	0.453	1.73	74	53.9	14.9	2.86	42.8	474
	11/10/11	<5.00	175	175	129	0.28	1.25	101	92.5	23.3	4.17	64.7	614
	10/11/12	<5.00	173	173	76.5	0.455	1.6	79.4	69.2	15.7	3.62	45.3	500
	10/8/13	<6.00	248	248	78.6	0.412	0.622	75.4	92.6	18.7	4.06	51.2	496
	10/7/14	<4.00	188	188	72.5	0.202	1.55	79.4	77.1	17.2	3	44.3	496
	10/21/15	--	--	--	76.7	<4.00	--	77.5	--	--	--	--	441
	10/18/16	--	--	--	84.6	<0.500	--	83.4	--	--	--	--	455
	10/25/17	--	--	--	83.1	1.23	--	77.3	--	--	--	--	512
	10/18/18	--	--	--	103	0.667	--	88.3	--	--	--	--	491
	6/20/19	--	--	--	86.5	--	--	--	--	--	--	--	554
	11/23/19	--	--	--	88.0	--	--	76.5	--	--	--	--	414

Table 2 - Summary of Historical Groundwater Analytical Results
Chevron Environmental Management Company
Cooper Jal Unit South Injection Station (1R-289)
Lea County, NM

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					***250***	***1.6***	**10**	***600***					***1,000***
MW-3	2/27/98	--	--	190	**452**	--	--	406	200.0	50.0	11.00	237.0	**1,500**
	2/14/01	<1.0	158	158	34	**1.60**	2.40	100	54.5	19.0	7.61	48.6	440
	5/17/02	<1.0	158	158	30.6	1.56	2.35	102	55.6	18.4	5.04	50.0	433
	10/23/02	--	--	--	35.4	--	--	104	--	--	--	--	419
	5/22/03	<1.0	156	156	30.6	1.17	2.25	96.3	53.2	17.8	5.39	54.6	435
	11/25/03	<1.0	160	160	31.4	1.35	2.30	103	46.5	18.0	5.19	51.7	440
	5/12/04	<1.00	164	164	32.3	1.20	2.38	101	52.2	16.8	4.77	47.5	448
	11/16/04	<1.00	166	166	35.1	1.53	2.77	95.4	56.3	23.6	12.70	58.9	424
	11/17/05	<10.0	171	171	96.3	0.97	2.2	108 D1	89.2	22.1	8.87	93.4	840
	11/15/06	<10	170	170	30	0.92 N	1.7	96	51.3	17.3	4.3	57.2	505
	11/16/07	<10.0	170	170	39.7	0.93	1.58	88.2 D1	50.8	16.3	<5.000	50.6	570
	11/6/08	<5.0	150	150	36	1.1	1.4	97	50	17	4	48	430
	11/3/09	<10	160	160	35	1.1	1.6	110	49	17	4.2	56	410
	11/10/10	<10	164	164	35.4	0.836	1.77	99.9	48.8	15.2	3.42	45.1	380
	11/10/11	<5.00	165	165	36.4	0.833	1.35	87.9	57.9	18	3.79	53	404
	10/11/12	<5.00	162	162	36.6	1.01	1.74	100	51.2	16.9	4.11	51	438
	10/8/13	<6.00	194	194	38.4	1.02	1.17	98.7	56.5	18.3	4.08	54.9	450
	10/7/14	<4.00	187	187	19.5	0.369	1.39	62.8	44.3	9.82	22.4	38.8	332
	10/21/15	--	--	--	25.6	<2.00	--	74.8	--	--	--	--	307
	10/18/16	--	--	--	37.1	0.66	--	109	--	--	--	--	464
	10/24/17	--	--	--	35.9	1.5	--	98.7	--	--	--	--	442
	10/18/18	--	--	--	209	**5.35**	--	567	--	--	--	--	415
	6/20/19	--	--	--	40	--	--	--	--	--	--	--	448
	11/23/19	--	--	--	60	--	--	96.6	--	--	--	--	352
MW-4	2/27/98	--	--	230	**12,000**	--	--	**1,300**	1,700.0	880.0	48.00	5,300	**22,000**
	4/9/98	--	--	240	**13,000**	--	--	**1,500**	1,740.0	840.0	42.00	5,400	**23,000**
	2/14/01	<1.0	232	232	**15,000**	**1.80**	6.80	**1,500**	--	--	--	--	**29,000**
	5/17/02	<1.0	232	232	**11,300**	**2.01**	6.09	**1,380**	1,610.0	814.0	60.90	4,310	**22,600**
	10/23/02	--	--	--	**11,300**	--	--	**1,320**	--	--	--	--	**23,200**
	5/22/03	<1.0	220	220	**11,300**	<10.00	**12.30**	**1,370**	1,450.0	659.0	47.30	4,140	**62,500**
	11/26/03	<1.0	218	218	**12,100**	<8.00	**12.30**	**1,400**	1830.0	889.0	62.00	4,620	**54,450**
	5/11/04	<1.00	214	214	**14,200**	<8.00	8.97	**1,560**	1800.0	829.0	60.70	4,850	**65,450**
	11/17/04	<1.00	222	222	**13,600**	<20.00	**31.50**	**1,410**	2020.0	972.0	73.60	5,900	**25,200**
	11/17/05	<10.0	181	181	**9,440**	0.82	0.2	45.8 D1	849	387	28.1	3,880	**24,300**
	11/15/06	<10	260	260	**14,000**	<5.0 C	5.2	**1,400**	1,760.00	897	58.8	6,150	**28,700**
	11/14/07	<10.0	255	255	**14,800**	0.54	7.15 D1	**1,410 D1**	1170	382	48	4,760 D1	**36,300**
	11/12/08	<5.0	200	200	**12,000**	1.2	0.33	**1,300**	1,500	840	82	4,800	**22,000**
	11/4/09	<5.0	250	250	**15,000**	1.1	5.3	**1,600**	1,500	1,000	65	5,800	**30,000**
	11/11/10	<5.0	294	294	**15,500**	<1.00	**10**	**1,270**	1,380	904	40	5,450	**25,500**
	11/10/11	<5.00	277	277	**16,900**	0.112	6.16	**1,060**	1,680	1,110	40.0	6,490	**28,900**
	10/11/12	<5.00	256	256	**5,850**	**2.10**	4.58	**629**	434	334	21.2	2,620	**12,000**
	10/8/13	<6.00	294	294	**16,200**	0.72	6.79	**1,460**	1,690	1,180	40.8	7,370	**36,300**
	10/7/14	<4.00	291	291	**15,000**	<100	7.15	**1,740**	1,350	1,060	44.1	4,250	**32,400**
	10/20/15	--	--	--	**3,200**	<40.0	--	402	--	--	--	--	**7,070**
	10/18/16	--	--	--	**17,900**	<1.00	--	**1,890**	--	--	--	--	**35,300**
	10/25/17	--	--	--	**6,830**	<5.00	--	**754**	--	--	--	--	**12,300**
	10/18/18	--	--	--	**14,800**	<0.100	--	**1510**	--	--	--	--	**24,700**
	6/20/19	--	--	--	**2,760**	--	--	--	--	--	--	--	**7,830**
	11/24/19	--	--	--	**3,050**	--	--	420	--	--	--	--	**5,960**
MW-4A	2/27/98	--	--	180	**1,600**	--	--	410	470.0	130.0	11.00	620.0	**3,300**
	2/14/01	<1.0	154	154	**1,600**	1.40	2.80	210	--	--	--	--	**4,000**
	5/15/02	<1.0	156	156	**577**	<1.00	2.23	121	200.0	49.5	10.30	125.0	**1,610**
	10/23/02	--	--	--	**478**	--	--	114	--	--	--	--	**1,430**
	5/22/03	<1.0	154	154	**844**	<1.00	2.43	160	279.0	58.9	10.10	248.0	**2,200**
	11/26/03	<1.0	158	158	**1,060**	<4.00	5.82	182	337.0	79.3	15.20	329.0	**2,585**
	5/11/04	<1.00	156	156	**984**	<2.00	3.30	179	297.0	66.5	11.50	279.0	**2,300**
	11/17/04	<1.00	164	164	**1,110**	<2.00	4.62	186	369.0	75.4	14.90	413.0	**2,235**
	11/16/05	<10.0	181	181	**827 D1**	<0.5	2.2	160 D1	335	64.4	9.23	382	**2,340 N**
	11/15/06	<10	620	620	**960**	<0.50	2.6	170	227	53.5	8.1	406	**2,870**
	11/14/07	<10.0	311	311	**845 D1**	0.35	3.60 D1	167 D1	205	44.9	7.33	334	**2,650**
	11/12/08	<5.0	640	640	**650**	0.32	2.2	170	160	37	9.9	290	**1,700**
	11/4/09	<5.0	670	670	**670**	0.56	2.6	150	110	27	7.4	300	**1,600**
	11/11/10	<5.0	217	217	**663**	0.505	2.58	125	65.9	15.6	4.42	317	**1,760**
	11/10/11	<5.00	171	171	**621**	0.775	2.02	134	78.8	18.7	4.71	389	**1,400**
	10/11/12	<5.00	169	169	**516**	1.12	2.6	100	48.7	11.3	4.45	359	**1,200**
	10/8/13	<6.00	199	199	**512**	**2.63**	2.47	100	47.7	9.9	3.64	410	**1,170**
	10/7/14	<4.00	186	186	**387**	**1.69**	2.54	102	37.1	7.8	3.17	276	962
	10/20/15	--	--	--	**328**	<4.00	--	83.3	--	--	--	--	819
	10/18/16	--	--	--	**440**	1.49	--	97.6	--	--	--	--	**1,150**
	10/25/17	--	--	--	**341**	**2.83**	--	93.4	--	--	--	--	960
	10/18/18	--	--	--	**366**	1.29	--	99.6	--	--	--	--	901
	6/20/19	--	--	--	**336**	--	--	--	--	--	--	--	**1,040**
	11/24/19	--	--	--	**321**	--	--	94.5	--	--	--	--	824

Table 2 - Summary of Historical Groundwater Analytical Results
Chevron Environmental Management Company
Cooper Jal Unit South Injection Station (1R-289)
Lea County, NM

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					***250***	***1.6***	**10**	***600***					***1,000***
MW-5	2/26/98	--	--	180	**6,600**	--	--	**910**	1,400.0	470.0	31.00	2,400.0	**12,000**
	2/14/01	<1.0	166	166	**7,700**	**1.80**	4.10	**910**	--	--	--	--	**18,000**
	5/17/02	<1.0	156	156	**4,040**	1.53	4.56	586	757.0	319.0	60.90	1,260.0	**8,340**
	10/23/02	--	--	--	**3,900**	--	--	94.8	--	--	--	--	422
	5/22/03	<1.0	158	158	**3,170**	<4.00	6.52	550	644.0	215.0	49.90	1,240.0	**7,860**
	11/25/03	<1.0	168	168	**5,120**	<4.00	6.77	**739**	978.0	365.0	54.90	1,680.0	**11,940**
	5/11/04	<1.00	160	160	**6,760**	<3.00	4.65	**1,030**	1,180.0	417.0	40.30	2,120.0	**20,380**
	11/17/04	<1.00	172	172	**6,750**	<10	**16.60**	**786**	1,210.0	486.0	40.60	2,300.0	**11,980**
	11/17/05	<10.0	161	161	**2,140 D1**	0.79	0.16	334 D1	339	126	10.8	791	**7,120 N**
	11/14/06	<10	160	160	**2,000**	0.6	1.5	300	437	173	14.2	918	**4,420**
	11/14/07	<10.0	161	161	**5,790 D1**	0.37	4.01 D1	**668 D1**	812	240	23.3	1,850 D1	**16,300**
	11/6/08	<5.0	160	160	**4,900**	0.78	0.32	540	660	310	35	1,600	**9,700**
	11/3/09	<10	160	160	**5,100**	0.51	2.3	**710**	860	320	<13	1,800	**11,000**
	11/11/10	<5.0	176	176	**4,200**	0.159	2.37	554	687	250	17.3	1,400	**8,890**
	11/10/11	<5.00	172	172	**4,340**	0.243	0.549	411	944	326	19.7	1,780	**7,840**
	10/11/12	<5.00	164	164	**3,630**	0.376	2.26	474	671	239	17	1,360	**8,300**
	10/8/13	<6.00	176	176	**3,730**	0.369	1.56	425	659	253	15.4	1,440	**8,060**
	10/7/14	<4.00	172	172	**2,830**	<0.100	2.19	398	521	195	15.1	979	**5,280**
	10/21/15	--	--	--	**2,480**	<40.0	--	362	--	--	--	--	**5,510**
	10/18/16	--	--	--	**2,260**	<0.500	--	326	--	--	--	--	**5,380**
	10/25/17	--	--	--	**2,090**	<5.00	--	318	--	--	--	--	**3,780**
Dup	10/25/17	--	--	--	**2,010**	<5.00	--	300	--	--	--	--	**3,240**
	10/18/18	--	--	--	**1,890**	<0.100	--	323	--	--	--	--	**3,420**
	6/20/19	--	--	--	**1,700**	--	--	--	--	--	--	--	**4,280**
	11/23/19	--	--	--	**1,530**	--	--	250	--	--	--	--	**3,900**
MW-5A	2/26/98	--	--	170	190	--	--	180	107.0	23.0	3.50	117.0	740
	2/15/01	<1.0	164	164	140	1.20	2.10	130	90.2	27.9	8.70	74.6	670
	5/15/02	<1.0	182	182	53.5	<1.00	2.23	84.4	63.2	16.1	4.69	43.6	475
	10/23/02	--	--	--	50	--	--	**616**	--	--	--	--	**8,670**
	5/22/03	<1.0	158	158	32.5	<1.00	2.10	69.9	55.5	13.8	3.41	41.5	416
	11/25/03	<1.0	332	332	34.1	1.05	2.20	75.5	60.9	14.6	4.08	45.0	422
	5/11/04	<1.00	164	164	38.8	<1.00	2.25	75.8	60.9	15.0	3.40	43.2	484
	11/17/04	<1.00	152	152	39.6	1.37	2.66	74.3	58.1	13.6	3.83	48.5	430
	11/16/05	<10.0	191	191	40.2	0.82	2.1	75.2 D1	176	17.8	4.22	45.3	570 N
	11/14/06	<10	240	240	47	0.64	1.5	79	90.4	16.1	3.58	51.4	588
	11/14/07	<10.0	227	227	54.4	0.66	1.45	68.7 D1	73.7	14	<5.000	44.2	528
	11/6/08	<5.0	350	350	53	0.7	1.3	72	76	15	3.4	43	450
	11/3/09	<10	710	710	47	0.72	1.5	79	65	14	3.3	50	440
	11/11/10	<5.00	182	182	49.6	0.568	1.61	73.6	55.7	12.9	2.79	42	606
	11/10/11	<5.00	170	170	131	0.492	1.15	116	83.8	29.9	5.16	85.7	594
	10/11/12	<5.00	163	163	68	0.631	1.57	69.8	60.6	15.3	3.96	49.2	534
	10/8/13	<6.00	182	182	80.2	0.568	1.6	67.5	69.3	16.2	3.29	53.4	462
	10/7/14	<4.00	168	168	73.6	0.288	1.56	64.9	66.2	15.7	2.76	45.2	432
	10/21/15	--	--	--	84.9	<4.00	--	65.6	--	--	--	--	499
	10/18/16	--	--	--	101	<0.500	--	65.4	--	--	--	--	466
	10/25/17	--	--	--	99.6	1.14	--	59.3	--	--	--	--	537
	10/18/18	--	--	--	132	0.792	--	67.5	--	--	--	--	477
	6/20/19	--	--	--	118	--	--	--	--	--	--	--	650
	11/23/19	--	--	--	116	--	--	61.1	--	--	--	--	502
MW-6	2/26/98	--	--	200	**260**	--	--	400	180.0	44.0	6.20	205.0	**1,200**
	2/14/01	<1.0	158	158	59	**1.70**	2.20	99	67.5	22.1	7.67	52.3	470
	5/17/02	<1.0	162	162	37.8	**1.62**	2.14	99.3	63.1	19.6	5.12	48.6	427
	10/23/02	--	--	--	46.1	--	--	109	--	--	--	--	331
	5/22/03	<1.0	162	162	40.3	1.24	2.13	94.4	61.7	17.4	4.23	51.9	464
	11/25/03	<1.0	154	154	53.6	1.40	2.18	98	53.6	18.7	4.97	51.7	482
	5/11/04	<1.00	156	156	54.4	1.23	2.19	97	59.0	18.1	4.22	47.8	506
	11/16/04	<1.00	162	162	57.9	**1.64**	2.68	99.8	66.6	19.6	5.16	57.0	464
	11/17/05	<10.0	201	201	101	0.97	0.35	97.8 D1	103	20.2	4.1	59.1	730
	11/15/06	<10	750	750	68	0.99	1.5	93	64.6	20.4	4.23	57.1	507
	11/15/07	<10.0	284	284	162	**51.00**	1.35	96.3 D1	84.1	25.2	<5.000	62.1	630
	11/6/08	<5.0	220	220	84	1.20	1.2	95	67	21	4.3	53	490
	11/3/09	<10	190	190	81	1.20	1.4	100	66	20	4.5	59	550
	11/8/10	NS - Well Damaged											
	11/10/11	NS - Well Damaged											
	10/11/12	NS - Well Damaged											
	9/30/13	Well Plugged and Abandoned											

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Chevron Environmental Management Company
Cooper Jal Unit South Injection Station (1R-289)
Lea County, NM

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					***250***	***1.6***	**10**	***600***					***1,000***
MW-6R	10/8/13	<6.00	225	225	110	**1.91**	<0.100	102	69.9	24.4	5.17	85.6	600
	10/7/14	<4.00	182	182	39.7	0.546	0.675	93	59.2	18.2	3.1	48.2	402
	10/21/15	--	--	--	40.7	<2.00	--	98.6	--	--	--	--	390
	10/18/16	--	--	--	42.3	0.63	--	105 J	--	--	--	--	442
	10/25/17	--	--	--	49.3	1.46	--	93.8	--	--	--	--	465
	10/18/18	--	--	--	69.1	1.05	--	107	--	--	--	--	442
	6/20/19	--	--	--	59.1	--	--	--	--	--	--	--	482
Dup	6/20/19	--	--	--	64.4	--	--	--	--	--	--	--	592
	11/23/19	--	--	--	69.4	--	--	95.2	--	--	--	--	384
MW-7	5/14/98	--	--	230	**430**	--	--	340	214.0	66.0	13.00	165.0	**1,200**
	2/14/01	<1.0	150	150	**510**	**1.70**	2.40	150	--	--	--	--	**1,500**
	5/16/02	<1.0	150	150	75.7	1.59	2.27	97.4	68.6	23.2	6.63	54.3	501
	10/22/02	--	--	--	88.6	--	--	109	--	--	--	--	490
	5/22/03	<1.0	140	140	173	1.17	2.14	88.9	85.5	28.2	6.18	64.6	631
	11/26/03	<1.0	136	136	189	1.29	2.23	93.5	95.7	31.0	7.91	63.6	704
	5/13/04	<1.00	130	130	**267**	1.11	2.18	94.7	107.0	34.7	6.59	62.9	914
	11/16/04	<1.00	130	130	**367**	1.49	2.72	97.3	142.0	49.3	8.61	87.9	870
	11/17/05	<10.0	121	121	**456 D1**	0.53	0.28	106 D1	412	64.7	12.1	100	**1,440**
	11/15/06	<10	240	240	**550**	0.63	1.5	110	202	70.3	7.4	102	**2,100**
	11/15/07	<10.0	189	189	**458 D1**	1.2	1.39	176 D1	144	59.5	9.95	148	**1,880**
	11/12/08	<5.0	110	110	**650.00**	0.84	1.2	140	210	76	12	120	**1,600**
	11/4/09	<5.0	110	110	**1100.00**	0.63	1.5	160	310	120	11	130	**2,800**
	11/10/10	<5.0	111	111	**1,310**	0.372	1.64	173	415	149	10	150	**3,130**
	11/10/11	<5.00	106	109	**1,710**	0.296	1.45	147	662	203	12.3	198	**3,660**
	10/11/12	<5.00	108	108	**2,020**	0.439	1.71	261	619	215	12.3	208	**5,580**
	10/8/13	<6.00	142	142	**2,840**	0.445	2.11	331	916	258	13.3	265	**7,530**
	10/7/14	<4.00	116	116	**2,190**	<0.100	2.03	317	682	238	12.2	227	**7,920**
	10/20/15	--	--	--	**1,420**	<20.0	--	231	--	--	--	--	**3,130**
	10/18/16	--	--	--	**2,920**	<0.500	--	385	--	--	--	--	**7,160**
	10/24/17	--	--	--	**1,670**	<2.00	--	249	--	--	--	--	**2,660**
	10/18/18	--	--	--	**4,000**	<0.100	--	482	--	--	--	--	**6,450**
	6/20/19	--	--	--	**4,210**	--	--	--	--	--	--	--	**15,500**
	11/24/19	--	--	--	**2,080**	--	--	272	--	--	--	--	**6,300**
MW-8	5/13/98	--	--	200	**270**	--	--	390	190.0	60.0	12.00	170.0	**1,200**
	2/14/01	<1.0	156	156	49	**1.80**	2.50	100	59.9	21.5	7.84	52.9	400
	5/16/02	<1.0	158	158	32.9	1.57	2.33	101	56.6	19.2	5.20	49.5	432
	10/22/02	--	--	--	40.8	--	--	104	--	--	--	--	392
	5/22/03	8	160	168	33.2	1.40	2.32	98.3	53.9	18.3	9.31	46.4	410
	11/26/03	<1.0	142	142	31.7	1.59	2.38	95.6	55.3	18.2	5.31	50.2	443
	5/12/04	<1.00	154	154	36.3	1.39	2.38	101	53.0	17.3	4.56	48.1	435
	11/16/04	<1.00	170	170	39.8	**1.94**	2.94	103	57.8	18.6	5.63	56.4	435
	5/17/05	4	152	156	41	**1.64**	2.94	105	61.0	18.6	5.78	47.3	434
	11/17/05	<10.0	171	171	113.0	1.1	<0.05	115 D1	83.4	21.7	5.74	102	750
	5/9/06	<10	160	160	210.0	0.89	1.4	200	72.7	33.3	7.12	125	896
	11/14/06	<10	150	150	230.0	1.1	1.2	200	74.2	38.3	9.61	162	912
	5/30/07	<10	141	141	62.0	1.2	1.74	120	54.1	19.1	<5	59.3	500
	11/15/07	<10.0	159	159	43.1	1.33	1.56	94.2 D1	52.1	17.2	<5.000	49.8	540
	5/15/08	<1.53	151	151	40.7	1.4	1.78	99.6 D1	51.7	16.8	4.1	54.8 D1	427
	11/12/08	<5.0	140	140	39	1.4	1.5	97	52	17	<2.6	46	350
	5/20/09	<5.0	140	140	39	1.3	1.6	110	50	17	4.3	49	430
	11/4/09	<5.0	150	150	41	1.4	1.7	110	46	16	3.3	47	450
	5/7/10	<5.0	<5.00	172	34.9	1.09	1.7	97.8	49.5	15.7	3.52	45.5	426
Dup	5/7/10	<5.0	<5.00	157	34.9	1.09	1.71	98	51	14.5	3.21	43.6	466
	11/12/10	<5.0	172	172	38.7	1.1	1.77	98.2	48.9	15.7	3.4	45.4	410
Dup	11/12/10	<5.0	160	160	38.7	1.1	1.76	98.3	50.5	15.3	3.44	44.8	398
	5/11/11	<5.0	170	170	185	1.2	1.6	93	73	28.4	5.68	165	692
	11/10/11	<5.0	161	161	36.9	1.06	1.41	87.4	57.1	17	3.46	48.6	406
	5/17/12	<5.0	173	173	37.9	1.09	1.59	92.9	53.3	16.4	3.83	56.7	440
	10/11/12	<5.0	158	158	39.9	1.29	1.83	103	49	16.6	4.3	49	444
	5/17/13	<5.0	167	167	38.3	1.37	1.7	106	55.3	17.5	3.67	45.9	416
	10/8/13	<6.00	182	182	39.5	1.17	1.78	96.2	57.4	19.7	4.35	57.6	446
	5/1/14	<10.0	165	165	40.6	1.12 J	1.81	106	55.1	19.9	3.82	52.9	436
	10/7/14	<4.00	176	176	8.1	0.159	1.07	30.5	40	4.98	7.81	35.1	259
	5/22/15	--	--	--	10	<2.00	--	30.1	--	--	--	--	252
	10/20/15	--	--	--	8.03	<2.00	--	32.5	--	--	--	--	146
	5/25/16	--	--	--	30.0	0.847	--	88.7	--	--	--	--	434
	10/18/16	--	--	--	4.28	<0.500	--	32.8	--	--	--	--	261
	05/11/17	--	--	--	9.1	<0.0222	--	32.2	--	--	--	--	214
Dup	05/11/17	--	--	--	8.62	<0.0222	--	32.2	--	--	--	--	182
	10/24/17	--	--	--	3.69	0.228	--	18.3	--	--	--	--	286
	05/22/18	--	--	--	5.22	0.317	--	21.9	--	--	--	--	282
	10/18/18	--	--	--	5.41	0.608	--	19.1	--	--	--	--	258
	6/20/19	--	--	--	NS	--	--	--	--	--	--	--	NS
	11/24/19	--	--	--	12.9	--	--	27.6	--	--	--	--	239

Table 2 - Summary of Historical Groundwater Analytical Results
Chevron Environmental Management Company
Cooper Jal Unit South Injection Station (1R-289)
Lea County, NM

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					***250***	***1.6***	**10**	***600***					***1,000***
MW-9	5/14/98	--	--	190	**350**	--	--	470	207.0	61.0	12.00	200.0	**1,300**
	2/15/01	<1.0	156	156	35	**2.60**	2.40	110	60.4	19.8	7.47	47.0	430
	5/16/02	<1.0	160	160	31.7	**2.22**	2.28	99.4	60.8	17.6	5.32	50.1	440
	10/23/02	--	--	--	39	--	--	102	--	--	--	--	436
	5/22/03	<1.0	160	160	31	**1.75**	2.19	93.3	52.2	15.8	4.75	50.2	455
	11/26/03	<1.0	150	150	31.8	**1.99**	2.34	99.8	57.7	16.6	4.69	46.3	452
	5/12/04	<1.00	164	164	33.6	**1.79**	2.29	99.2	54.8	16.0	4.27	43.5	467
	11/16/04	8	154	162	**367**	1.49	2.72	97.3	63.2	17.8	5.59	55.5	433
	5/17/05	4	154	154	44.2	**2.43**	3.05	117	58.8	16.7	5.94	44.1	434
	11/17/05	<10.0	161	161	83.5	1.3	0.14	111 D1	149	26.2	7.43	80.4	790 N
	5/9/06	<10	170	170	37	**1.8**	1.8	99	52.7	15	3.21	45.5	428
	11/15/06	<10	150	150	210	1.1	1.2	190	70.5	35.8	8.64	152	905
	5/30/07	<10	153	153	35	**2.1**	1.69	110	52.2	15.8	<5	44.7	464
	11/14/07	<10.0	151	151	186	1.49	1.48	156 D1	74.1	39.4	8.73	141	808
	5/15/08	<1.53	174	174	42.5	**2.38**	1.72	105 D1	55.6	17	3.99	54.1 D1	467
	11/4/08	<5.0	160	160	39	**2.1**	1.4	98	54	16	3.7	47	440
	5/20/09	<5.0	320	320	69	**2.1**	1.5	120	58	19	4.6	58	520
	11/4/09	<5.0	160	160	42	**2.2**	1.6	110	50	15	3	43	460
	5/7/10	<5.0	<5.00	162	50.2	**2.02**	1.66	97.5	53.6	15.7	3.32	43.5	442
	11/9/10	<5.0	186	186	60.7	**1.97**	1.74	98	59.2	18.1	3.64	50	446
	5/11/11	<5.0	160	160	80.3	**1.71**	1.72	75.7	73.9	25.8	4.61	67.9	518
	11/10/11	<5.00	151	151	138	**1.66**	1.38	107	82.7	26.9	4.34	65.4	582
	5/16/12	<5.00	162	162	137	**1.75**	1.61	93.5	83.8	23.2	4.39	60.3	584
	10/11/12	<5.00	147	147	148	**1.9**	1.71	98.7	80.5	25.8	4.94	59.8	644
	5/17/13	<5.00	144	144	246	**1.86**	1.61	99.3	107	30.2	4.43	60.2	**1,010**
	10/8/13	<6.00	164	164	150	**1.88**	1.81	99.8	90	25.2	4.62	60.8	620
	5/2/14	<10.0	143	143	**382**	1.56	1.77	103	132	35.7	5.74	73.7	906
	10/7/14	<4.00	151	151	**292**	0.887	1.33	98.1	136	41	4.65	67.4	**1,110**
	5/22/15	--	--	--	**307**	<8.00	--	87.7	--	--	--	--	**1,170**
	10/20/15	--	--	--	202	<4.00	--	93.7	--	--	--	--	593
	5/25/16	--	--	--	**404**	**1.61**	--	108	--	--	--	--	**1,430**
Dup	5/26/16	--	--	--	**418**	**1.60**	--	111	--	--	--	--	**1,430**
	10/18/16	--	--	--	**445**	1.34	--	115	--	--	--	--	**1,490**
	05/11/17	--	--	--	**481**	<0.222	--	118	--	--	--	--	**1,090**
	10/24/17	--	--	--	**387**	**2.42**	--	102	--	--	--	--	**1,020**
	05/22/18	--	--	--	**460**	1.28	--	119	--	--	--	--	**1,010**
	10/18/18	--	--	--	**381**	1.41	--	117	--	--	--	--	903
	6/20/19	--	--	--	**621**	--	--	--	--	--	--	--	**2,930**
	11/24/19	--	--	--	**337**	--	--	80.6	--	--	--	--	**1,170**
MW-9A	5/14/98	--	--	280	**600**	--	--	**770**	338.0	96.0	12.00	334.0	**2,200**
	2/15/01	<1.0	142	142	85	1.40	2.20	71	71.6	19.2	6.94	46.0	400
	5/15/02	<1.0	136	136	148	<1.00	2.18	65.3	62.9	16.1	4.62	46.8	445
	10/23/02	--	--	--	168	--	--	75.5	--	--	--	--	651
	5/22/03	<1.0	126	126	207	<1.00	2.09	62.1	102.0	25.2	4.80	55.7	672
	11/26/03	<1.0	118	118	216	1.14	2.26	62.7	107.0	25.1	5.31	53.2	648
	5/12/04	<1.00	122	122	242	<1.00	2.10	64.7	105.0	26.2	5.11	26.2	950
	11/16/04	<1.00	114	114	**296**	1.24	2.74	67.5	130.0	33.1	6.24	70.3	826
	5/17/05	<1.00	112	112	**354**	1.04	2.85	77.1	131.0	31.7	6.39	60.5	828
	11/17/05	<10.0	121	121	**310 D1**	0.82	0.31	74.7 D1	337	41.4	8.08	74.5	**1,520 N**
	5/9/06	<10	670	670	**270**	0.67	1.6	78	111	27.1	3.88	58.7	992
	11/15/06	<10	1,600	1,600	**290**	0.62	1.6	72	126	33.4	4.74	68.4	**1,280**
	5/30/07	<10	586	586	**400**	0.7	1.69	83	153	36.9	<5	71.8	**1,450**
	11/14/07	<10.0	605	605	**285 D1**	0.62	1.52	64.7 D1	153	35.4	5.03	70.7	**1,430**
	5/15/08	<1.53	738	738	**380 D1**	0.45	1.62	86.8 D1	146	35.5	5.45	77.2 D1	**1,390**
	11/4/08	<5.0	370	370	**330**	<1.0	1.2	84	130	32	5.1	66	**1,000**
	5/20/09	<5.0	600	600	**480**	0.49	1.5	86	170	43	6.4	76	**1,600**
	11/4/09	<5.0	110	110	**430**	0.49	1.6	82	160	41	5.3	71	**1,500**
	5/7/10	<5.0	<5.00	121	**510**	0.21	1.62	80.5	188	44.9	4.9	73.6	**1,680**
	11/9/10	<5.0	115	115	**529**	0.328	1.72	86	159	44.3	5	76.1	**1,660**
	5/11/11	<5.0	146	146	**587**	1.18	1.9	415	166	80.6	11.3	211	**1,850**
	11/10/11	<5.0	115	115	**841**	0.189	1.56	125	280	84.8	7.51	117	**2,160**
	5/16/12	<5.0	135	135	**958**	0.366	1.74	143	249	62.6	6.5	97.7	**3,450**
Dup	5/16/12	<5.0	128	128	**882**	0.308	1.7	134	270	65.7	6.72	92.3	**3,050**
	10/11/12	<5.0	125	125	**628**	0.366	1.7	121	235	60.4	6.72	94	**1,810**
	5/17/13	<5.0	137	137	**754**	0.337	1.67	145	224	53.9	5.49	86.8	**1,930**
	10/8/13	<6.00	153	153	**534**	0.37	1.69	118	185	43.1	5.23	81.3	**1,210**
	10/7/14	Not Sampled											
	10/20/2015	--	--	--	232	<4.00	--	95.4	--	--	--	--	599
	10/18/16	--	--	--	**337**	<0.500	--	113	--	--	--	--	**1,250**
	10/24/17	--	--	--	206	<0.500	--	96.6	--	--	--	--	681
	10/18/18	--	--	--	**276**	0.596	--	119	--	--	--	--	816
	06/20/19	--	--	--	**268**	--	--	--	--	--	--	--	**1,220**
	11/24/19	--	--	--	231	--	--	83.2	--	--	--	--	838

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Chevron Environmental Management Company
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Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					***250***	***1.6***	**10**	***600***					***1,000***
MW-10	5/14/98	--	--	240	**360**	--	--	450	211.0	62.0	11.00	190.0	**1,400**
	2/15/01	<1.0	140	140	190	**2.00**	2.30	97	108.0	32.3	8.20	61.0	660
	5/17/02	<1.0	152	152	204	**1.93**	2.19	99.1	109.0	31.7	7.60	62.4	713
	10/22/02	--	--	--	213	--	--	108	--	--	--	--	758
	5/22/03	<1.0	152	152	213	1.45	2.17	96.6	109.0	29.9	8.65	74.2	764
	11/26/03	<1.0	152	152	220	1.54	2.26	103	120.0	35.7	6.96	64.0	752
	5/13/04	<1.00	158	158	232	1.39	2.23	102	114.0	31.6	5.95	57.2	802
	11/17/04	<1.00	170	170	245	**1.73**	2.78	104	121.0	35.7	7.07	70.3	764
	5/17/05	<1.00	150	150	233	**1.77**	2.80	106	113.0	32.3	6.83	60.2	776
	11/17/05	<10.0	151	151	205 D1	1.2	0.26	111 D1	482	47.4	13.1	82.4	970 N
	5/9/06	<10	190	190	180	1.4	1.6	98	93.3	27.1	4.31	60.4	724
	11/16/06	<10	320	320	190	1.2	1.6	92	101	30	4.75	64.1	900
	5/30/07	<10	340	340	200	1.4	1.68	110	101	28.6	<5	62.4	820
	11/15/07	<10.0	189	189	**251 D1**	1.44	1.44	152 D1	104	33.4	6.01	84.7	**1,010**
	5/15/08	<1.53	374	374	**342 D1**	1.47	1.28	257 D1	106	52.9	11.7	165 D1	**1,140**
	11/6/08	<5.0	150	150	210	1.5	1.3	89	110	32	5.4	64	730
	5/20/09	<5.0	240	240	**270**	1.3	1.5	120	110	35	6.2	72	960
	11/4/09	<5.0	150	150	240	1.5	1.3	130	100	35	5.4	78	**1,000**
	5/7/10	<5.0	<5.00	157	236	1.18	1.62	106	111	30.7	4.59	60.3	940
	11/10/10	<5.0	166	166	**280**	1.16	1.61	112	98.4	36.9	5.63	81	812
	5/11/11	<5.0	157	157	**274**	1.11	1.99	87.2	117	32.2	5.63	85	930
	11/15/11	<5.0	150	150	**266**	1.03	6.93	94.9	128	32.3	4.58	62.8	**1,450**
	5/16/12	<5.0	163	163	**284**	1.12	1.58	99.9	132	36.8	5.22	72.9	**1,120**
	10/11/12	<5.0	151	151	**255**	1.32	1.75	98.7	113	34.3	5.68	67.6	**1,010**
	5/17/13	<5.0	154	154	**299**	1.34	1.61	108	117	33.7	4.57	64.6	**1,180**
	10/8/13	<6.00	165	165	**324**	1.14	1.62	103	154	41.6	5.36	78.1	**1,240**
	5/1/14	<10.0	156	156	**298**	**1.05 J**	1.58	111	135	41.6	5.3	75.5	**1,050**
Dup	5/1/14	<10.0	158	158	**301**	<0.100 J	1.66	112	134	42.5	5.29	79.5	**1,080**
	10/7/14	<4.00	163	163	249	0.711	1.64	108	127	36.8	4.91	67.2	**1,050**
	5/22/15	--	--	--	**298**	<8.00	--	102	--	--	--	--	975
	10/20/15	--	--	--	**250**	<4.00	--	108	--	--	--	--	823
	5/25/16	--	--	--	**307**	1.44	--	107	--	--	--	--	**1,080**
	10/18/16	--	--	--	**330**	0.855	--	103	--	--	--	--	**1,350**
	05/11/17	--	--	--	**353**	<0.222	--	112	--	--	--	--	**1,080**
	10/24/17	--	--	--	240	**1.6**	--	97	--	--	--	--	742
	05/22/18	--	--	--	**346**	0.965	--	113	--	--	--	--	**1070**
	10/18/18	--	--	--	**351**	1.1	--	118	--	--	--	--	892
	6/20/19	--	--	--	NS	--	--	--	--	--	--	--	NS
	11/24/19	--	--	--	230.0	--	--	78	--	--	--	--	826
MW-11	1/22/99	30	<1.0	30	46	**2.30**	4.20	94	33.0	7.0	9.10	58.0	370
	2/15/01	<1.0	156	156	37	**2.40**	2.40	120	64.0	19.1	7.83	50.1	360
	5/16/02	<1.0	160	160	31.9	**2.13**	2.33	98.8	63.5	17.2	4.83	47.0	444
	10/23/02	--	--	--	37.2	--	--	102	--	--	--	--	447
	5/22/03	12	154	166	32.3	**1.74**	2.28	96.7	62.3	0.0	4.63	47.6	437
	11/26/03	<1.0	160	160	32.4	**1.83**	2.23	96.4	59.2	16.6	4.67	48.6	448
	5/12/04	<1.00	164	164	34.6	**1.71**	2.38	97.7	54.8	15.7	4.28	46.2	457
	11/16/04	<1.00	160	160	39	**2.17**	2.81	100	65.2	16.8	5.14	54.3	454
	5/17/05	4	158	162	43.1	**1.87**	2.82	94.6	68.4	16.9	6.45	44.0	429
	11/17/05	<10.0	161	161	58.1	1.5	2.1	91.3 D1	75	17.7	4.55	64.7	700 N
	5/9/06	<10	180	180	37	**1.8**	1.7	100	54.1	16.2	3.26	46.9	456
	11/14/06	<10	170	170	34	**1.8**	1.8	110	58	18.2	4.13	53.4	532
	5/30/07	<10	142	142	36	**1.9**	1.79	120	54	16.7	<5	50.8	456
	11/14/07	<10.0	189	189	42.3	**1.98**	1.54	95.6 D1	57.2	17.4	<5.000	52.4	452
	5/15/08	<1.53	177	177	72.4 D1	**1.86**	1.71	141	58	19.4	4.93	66.5 D1	544
	11/4/08	<5.0	170	170	49	1.5	1.3	90	60	16	3.6	47	440
	5/20/09	<5.0	360	360	40	**2.2**	1.7	130	51	17	4.5	53	450
	11/4/09	<5.0	150	150	43	**1.6**	1.6	100	52	15	2.9	42	470
	5/7/10	<5.0	<5.00	167	36.5	**1.97**	1.78	117	49.7	14.9	3.42	44.7	494
	11/9/10	<5.0	269	269	52.5	1.45	1.79	95.4	61	16.7	3.56	50	438
	5/11/11	<5.0	161	161	133	1.43	2.08	140	78.1	37	6.32	103	664
Dup	5/11/11	<5.0	161	161	130	1.44	2.01	137	77.4	37	6.29	104	706
	11/10/11	<5.0	162	162	38.8	**1.86**	1.49	97.1	66.2	17.9	3.62	52.3	420
	5/17/12	<5.0	176	176	45.8	1.29	1.62	88.5	63.6	16.3	3.66	53.4	456
	10/11/12	<5.0	166	166	44.6	1.49	1.74	95.1	55.8	15.8	3.8	49.3	440
	5/17/13	<5.0	171	171	43.6	**1.87**	1.67	106	57.7	14.8	3.18	42.9	428
	10/8/13	<6.00	178	178	45.2	1.55	1.74	95.5	60.9	16.1	3.33	52	450
	5/1/14	<10.0	173	173	63.3	<0.100	2.06	93.3	64.4	17.6	3.38	51.5	434
	10/7/14	<4.00	176	176	34.7	1.1	1.71	101	59.2	16.7	3.06	46.5	399
	5/22/15	--	--	--	40.4	<4.00	--	87.2	--	--	--	--	428
	10/20/15	--	--	--	37.6	<2.00	--	89.3	--	--	--	--	356
	5/25/16	--	--	--	34.3	**1.87**	--	103	--	--	--	--	475
	10/18/16	--	--	--	39.3	0.87	--	96.4	--	--	--	--	418
	05/11/17	--	--	--	35.1	<0.111	--	110	--	--	--	--	416
	10/24/17	--	--	--	35.1	**1.87**	--	95.3	--	--	--	--	438

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NMWQCC Groundwater Standard					***250***	***1.6***	**10**	***600***					***1,000***
	05/22/18	--	--	--	34.6	1.58	--	110	--	--	--	--	421
Dup	05/22/18	--	--	--	34.5	**1.64**	--	110	--	--	--	--	415
	10/18/18	--	--	--	36.9	**1.69**	--	114	--	--	--	--	413
	06/20/19	--	--	--	34.4	--	--	--	--	--	--	--	407
	11/24/19	--	--	--	45.8	--	--	113	--	--	--	--	364
MW-12*	5/15/02	<1.0	160	160	58.3	1.09	2.44	91.3	53.5	15.9	5.52	50.3	462
	10/23/02	--	--	--	65	--	--	102	--	--	--	--	477
	5/22/03	<1.0	148	148	91.1	1.04	2.30	87.7	74.2	21.0	4.89	57.6	516
	11/25/03	<1.0	142	142	93.1	1.18	2.36	90.9	74.7	20.9	5.41	52.5	548
	5/12/04	<1.00	458	458	72.9	1.04	2.35	86.7	58.1	19.0	5.92	51.8	489
	11/15/04	<1.00	184	184	79.8	1.39	2.83	88.8	59.7	21.5	16.50	77.4	512
	11/17/05	<10.0	151	151	109	0.93	0.12	94.6 D1	193	26.6	13.4	87.5	700
	11/16/06	<10	270	270	120	0.71	1.7	84	82.3	27	4.82	62.2	620
	11/16/07	<10.0	170	170	**258**	1.21	1.55	191 D1	77.2	42.7	11	154	**1270**
	11/6/08	<5.0	130	130	110	0.89	1.4	79	61	20	4.5	52	460
	11/3/09	<25	2,000	2,000	120	0.87	1.6	98	68	24	6	79	600
	11/9/10	<5.0	144	144	211	0.566	1.76	89.8	75.6	27.8	4.6	60.6	712
	11/10/11	<5.00	134	134	179	0.464	1.37	92.8	93.8	27.8	4.53	64	594
	10/11/12	<5.00	145	145	179	0.705	0.791	86.5	80.4	25.4	5.44	62.9	724
	10/8/13	<6.00	160	160	246	0.621	1.64	84.5	110	30.4	4.92	67.8	944
	10/7/14	<4.00	145	145	200	0.292	1.7	86.8	93.1	29.3	5.06	65	765
	10/21/15	--	--	--	165	<4.00	--	72.6	--	--	--	--	487
	10/18/16	--	--	--	**270**	<0.500	--	95.0	--	--	--	--	888
	10/24/17	--	--	--	150	<0.500	--	64.9	--	--	--	--	579
Dup	10/24/17	--	--	--	149	<0.500	--	64.8	--	--	--	--	565
	10/18/18	--	--	--	**290**	0.738	--	106	--	--	--	--	790
	06/20/19	--	--	--	**254**	--	--	--	--	--	--	--	580
	11/23/19	--	--	--	**337**	--	--	140	--	--	--	--	**1010**
MW-13*	5/13/02	<1.0	100	100	**517**	<1.00	1.61	437	116.0	76.0	19.40	269.0	**1,596**
	10/23/02	--	--	--	**549**	--	--	370	--	--	--	--	**1,740**
	5/22/03	<1.0	186	186	**944**	<2.00	2.33	361	289.0	101.0	15.30	458.0	**3,060**
	11/25/03	<1.0	226	226	**1,460**	<2.00	2.22	372	369.0	117.0	20.00	478.0	**3,445**
	5/12/04	<1.00	234	234	**1,550**	<4.00	4.58	369	384.0	114.0	18.60	485.0	**4,240**
	11/15/04	<1.00	226	226	**1,870**	<2.00	4.92	384	510.0	164.0	16.50	627.0	**3,600**
	11/17/05	<10.0	201	201	**722**	1	2.5	206 D1	786	91.6	19.7	276	**2,350**
	11/16/06	<10	1,500	1,500	**2,000**	<0.50 N	2.7	500 N	529	176	14.2	493	**5,060**
	11/16/07	<10.0	236	236	**2,000**	0.33	3.05 D1	312 D1	361	105	11.4	553 D1	**6,320**
	11/6/08	<5.0	180	180	**970**	0.98	1.8	280	240	96	17	370	**2,400**
	11/3/09	<25	15,000	15,000	**2,200**	<0.50	2.6	440	490	180	22	490	**5,600**
	11/9/10	<5.0	267	267	**1,680**	0.217	2.82	405	400	120	10.4	540	**4,270**
	11/10/11	<5.00	206	206	**2,110**	0.177	<0.500	273	690	223	13.2	472	**4,870**
	10/11/12	<5.00	204	204	**2,360**	0.307	2.7	422	706	228	14.4	423	**6,290**
	10/8/13	<6.00	1780	1780	**2,710**	0.303	2.59	448	768	225	14	457	**7,320**
	10/7/14	<4.00	267	267	**1,430**	<0.100	1.91	379	355	109	11.3	612	**3,940**
	10/21/15	--	--	--	**1,400**	<40.0	--	353	--	--	--	--	**3,260**
	10/18/16	--	--	--	**1,940**	<0.500	--	440	--	--	--	--	**5,310**
	Well Plugged and Abandoned on 7/11/2017												
MW-14	10/8/13	<6.00	267	267	162	**3.69**	<0.100	127	74.4	32.3	8.42	145	854
Dup	10/8/13	<6.00	271	271	166	**3.74**	<0.100	130	60.7	26.3	7.97	145	848
	5/1/14	<10.0	199	199	64	1.19 J	<0.100	84.9	60.8	21.7	3.82	59.8	468
	10/7/14	<4.00	227	2227	95.2	0.794	<0.0230	22.9	71.3	24.9	3.99	61.8	460
Dup	10/7/14	<4.00	194	194	55.7	1.36	<0.0230	88.8	59.3	19.1	3.21	49.5	490
	5/22/15	--	--	--	77.8	<4.00	--	45.4	--	--	--	--	468
Dup	5/22/15	--	--	--	77.4	<4.00	--	49.0	--	--	--	--	470
	10/20/15	--	--	--	29.1 J	<2.00	--	53.5 J	--	--	--	--	294
Dup	10/21/15	--	--	--	58.9 J	<2.00	--	101 J	--	--	--	--	407
	5/25/16	--	--	--	79.0	1.37	--	19.9	--	--	--	--	552
	10/18/16	--	--	--	51.8	1.07	--	104	--	--	--	--	422
Dup	10/18/16	--	--	--	61.2	1.25	--	108 J	--	--	--	--	459
	05/11/17	--	--	--	70.5	<0.111	--	17.7	--	--	--	--	412
	10/24/17	--	--	--	57.4	**1.77**	--	42.2	--	--	--	--	423
	05/22/18	--	--	--	54.9	1.2	--	47.8	--	--	--	--	390
	10/18/18	--	--	--	57.2	1.35	--	47.2	--	--	--	--	401
	06/20/19	--	--	--	42.1	--	--	--	--	--	--	--	481
	11/24/19	--	--	--	37.1	--	--	94.5	--	--	--	--	328
Dup	11/24/19	--	--	--	40.4	--	--	95.9	--	--	--	--	324

Table 2 - Summary of Historical Groundwater Analytical Results
Chevron Environmental Management Company
Cooper Jal Unit South Injection Station (1R-289)
Lea County, NM

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					***250***	***1.6***	**10**	***600***					***1,000***
RW-1	5/27/99	0	224	224	**8,700**	**2.70**	7.00	**840**	679.0	521.0	34.00	3,290	**14,000**
	5/22/03	<1.0	190	190	**2,410**	**2.46**	4.23	345	162.0	145.0	25.40	1,180.0	**5,260**
	11/26/03	<1.0	184	184	**1,990**	<4.00	**20.00**	324	199.0	147.0	38.60	1,080.0	**5,050**
	5/11/04	<1.00	148	148	**491**	1.32	2.65	109	66.3	23.4	11.20	252.0	**1,224**
	11/17/04	<1.00	160	160	**633**	**1.65**	3.23	121	89.7	43.5	18.00	382.0	**1,314**
	11/17/05	<10.0	221	221	**895**	1	1.4	166 D1	122	70.9	8.4	493	**2,380**
	11/16/06	<10	380	380	**11,000**	<0.50	<20 HC	**1,100**	539	694	43.3	5,580	**22,000**
	11/15/07	<10.0	359	359	**2,380**	1.26	3.74 D1	252 D1	141	137	16	1,100 D1	**5,280**
Dup	11/15/07	<10.0	208	208	**2,620**	1.24	3.85 D1	316 D1	136	133	15.5	1,040 D1	**5,360**
	11/12/08	<5.0	210	210	**370**	0.82	1.9	97	66	34	5	190	920
	11/4/09	<5.0	170	170	**1,700**	1.1	2.6	250	110	120	22	750	**3,800**
	11/11/10	<5.0	192	192	**1,340**	0.716	2.72	204	95.5	104	12.6	792	**2,830**
	11/10/11	<5.00	396	396	**14,000**	**3.32**	9.16	**1,540**	942	1,260	44.6	8,720	**32,200**
	10/11/12	<5.00	263	263	**6,530**	**2.19**	4.75	**625**	314	445	28	3,490	**10,100**
Dup	10/11/12	<5.00	286	286	**2,440**	0.308	1.23	194	128	156	18.6	1,260	**17000****
	10/8/13	<6.00	285	285	**6,050**	0.951	4.29	546	760	919	39	6,370	**11,200**
Dup	10/8/13	<6.00	216	216	**10,500**	1.270	5.98	**926**	490	581	31.4	4,170	**1870****
	10/7/14	<4.00	207	207	**2,240**	1.360	3.62	338	69.6	106	24	1,130	**2,760**
Dup	10/7/14	<4.00	192	192	**2,570**	**2.510**	3.7	363	82	125	26.8	1,350	**1970****
	10/21/15	--	--	--	**9,110**	<80.0	--	**953 J**	--	--	--	--	**15,300**
Dup	10/20/15	--	--	--	**10,200**	<200	--	**1120 J**	--	--	--	--	**21,600**
	12/15/15	--	--	--	**1,130**	--	--	--	--	--	--	--	**2,290**
	12/16/15	--	--	--	**1,190**	--	--	--	--	--	--	--	**2,580**
	12/17/15	--	--	--	**1,030**	--	--	--	--	--	--	--	**2,260**
	12/18/15	--	--	--	**988**	--	--	--	--	--	--	--	**2,350**
	1/4/16	--	--	--	**1,200**	--	--	--	--	--	--	--	**2,280**
	1/5/16	--	--	--	**1,080**	--	--	--	--	--	--	--	**2,190**
	1/6/16	--	--	--	**1,120**	--	--	--	--	--	--	--	**2,240**
	1/7/16	--	--	--	**1,080**	--	--	--	--	--	--	--	**2,200**
	1/8/16	--	--	--	**1,310**	--	--	--	--	--	--	--	**2,370**
	1/11/16	--	--	--	**1,030**	--	--	--	--	--	--	--	**2,210**
	1/12/16	--	--	--	**1,520**	--	--	--	--	--	--	--	**2,850**
	10/18/16	--	--	--	**277**	<0.500	--	87.5	--	--	--	--	715
Dup	10/18/16	--	--	--	**316**	<0.500	--	88.9 J	--	--	--	--	922
	10/25/17	--	--	--	**254**	1.02	--	75.5	--	--	--	--	**2,040**
	10/16/18***	--	--	--	**304**	0.612	--	93.4	--	--	--	--	757
	10/18/18	--	--	--	**7,870**	<0.100	--	**807**	--	--	--	--	**15,400**
Dup	10/18/18	--	--	--	**7,830**	<0.100	--	**873**	--	--	--	--	**12,700**
	6/20/19	--	--	--	**9,290**	--	--	--	--	--	--	--	**22,100**
Dup	6/20/19	--	--	--	**9,200**	--	--	--	--	--	--	--	**22,800**
	11/24/19	--	--	--	**5,780**	--	--	**722**	--	--	--	--	**12,200**
RW-2	5/22/03	324	<4.00	780	**1,580**	<2.00	2.43	23.9	1,060.0	<0.500	20.20	258.0	**4,310**
	11/26/03	64	<4.00	704	**1,480**	<5.00	5.81	38.3	988.0	<0.500	23.80	240.0	**3,535**
	11/17/04	104.0	<4.00	692	**2,280**	<10.0	<10.0	116	1180.0	<0.500	18.50	415.0	**3,915**
	11/17/05	281	<10.0	422	**1,770**	0.89	0.6	175 D1	861	16.6	13.1	361	**7,350**
	11/16/06	49	150	199	**2,500**	0.57	1.9	370	978	48.8	18	437	**5,270**
	11/15/07	170	37.8	208	**1,680**	0.49	1.52	166 D1	586	<5.000	11.2	245	**5,590**
	11/12/08	150	<5.0	390	**2,500**	<0.50	0.24	250	1,200	<0.38	6	400	**4,800**
	11/4/09	34	<5.0	220	**2,200**	<0.50	1.7	240	940	0.18	16	420	**6,300**
	11/11/10	113	<5.0	172	**2,100**	<0.50	2.03	233	967	4.06	8.86	426	**4,550**
	11/10/11	36.9	<5.00	384	**4,330**	<10.0	2.13	305	2,040	1.12	18.7	711	**8,300**
	10/11/12	27.1	<5.00	202	**1,920**	<0.50	1.93	223	842	0.464	9.3	385	**6,680**
Dup	10/11/12	31.9	<5.00	206	**2,310**	<0.50	1.98	228	1,090	2.42	10.5	430	**5,250**
	10/8/13	66.3	<6.00	117	**2,450**	0.14	2.36	309	1,570	2.15	15.3	639	**4,420**
	10/7/14	35.2	<4.00	35.2	**2,250**	<0.10	2.52	378	995	21.6	10.3	408	**3,090**
	10/20/15	--	--	--	**699**	<20.0	--	118	--	--	--	--	**2,190**
	12/15/15	--	--	--	**1,130**	--	--	--	--	--	--	--	**2,290**
	12/16/15	--	--	--	**1,190**	--	--	--	--	--	--	--	**2,580**
	12/17/15	--	--	--	**1,030**	--	--	--	--	--	--	--	**2,260**
	12/18/15	--	--	--	**988**	--	--	--	--	--	--	--	**2,350**
	1/4/16	--	--	--	**1,200**	--	--	--	--	--	--	--	**2,280**
	1/5/16	--	--	--	**1,080**	--	--	--	--	--	--	--	**2,190**
	1/6/16	--	--	--	**1,120**	--	--	--	--	--	--	--	**2,240**
	1/7/16	--	--	--	**1,080**	--	--	--	--	--	--	--	**2,200**
	1/8/16	--	--	--	**1,310**	--	--	--	--	--	--	--	**2,370**
	1/11/16	--	--	--	**1,030**	--	--	--	--	--	--	--	**2,210**
	1/12/16	--	--	--	**1,520**	--	--	--	--	--	--	--	**2,850**
	10/18/16	--	--	--	**1,450**	<0.500	--	270	--	--	--	--	**3,910**
	10/25/17	--	--	--	**1,760**	<5.00	--	288	--	--	--	--	**4,440**
	10/18/18	--	--	--	**3,640**	<0.100	--	534	--	--	--	--	**6,890**
	6/20/19	--	--	--	**3,180**	--	--	--	--	--	--	--	**10,200 H**
	11/24/19	--	--	--	**5,780**	--	--	464	--	--	--	--	**9,880**

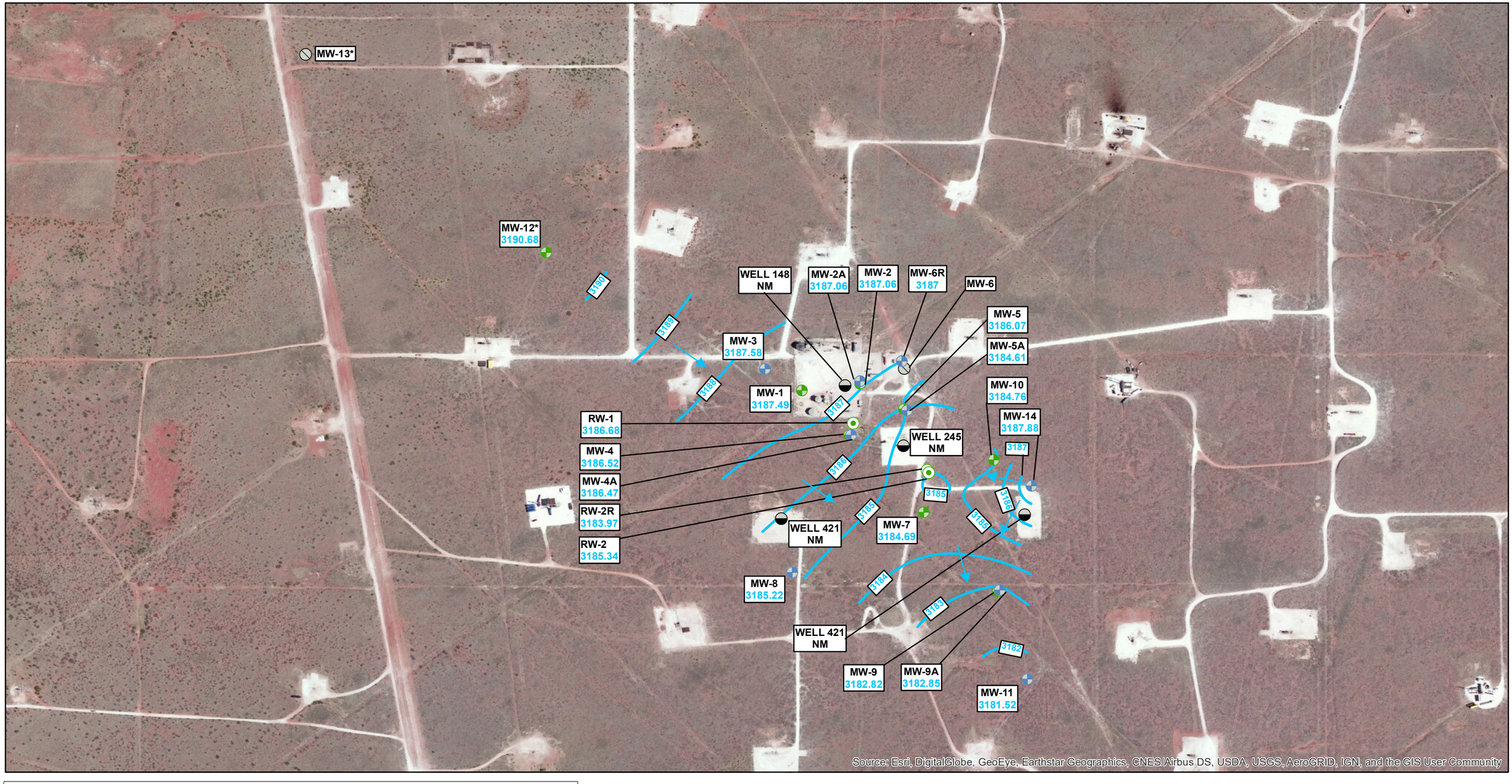
Table 2 - Summary of Historical Groundwater Analytical Results
Chevron Environmental Management Company
Cooper Jal Unit South Injection Station (1R-289)
Lea County, NM

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					***250***	***1.6***	**10**	***600***					***1,000***
RW-2R	10/8/13	<6.00	146	146	**6,550**	0.452	1.79	**762**	1,850	616	25.5	1350	**14,600**
	10/7/14	<4.00	169	169	**5,400**	1.56	2.17	**707**	1,280	470	20.9	1170	**13,200**
	10/20/15	--	--	--	**5,990**	<80.0	--	**806**	--	--	--	--	**16,200**
	10/18/16	--	--	--	**6,390**	<0.500	--	**797**	--	--	--	--	**15,200**
	10/25/17	--	--	--	**7,030**	<5.00	--	**872**	--	--	--	--	**12,300**
	10/16/18***	--	--	--	**1,960**	<0.100	--	467	--	--	--	--	**3,380**
	10/18/18	--	--	--	**7,920**	<0.100	--	**891**	--	--	--	--	**13,700**
Dup	10/18/18	--	--	--	**8,060**	<0.100	--	**815**	--	--	--	--	**13,300**
	6/20/19	--	--	--	**7,860**	--	--	--	--	--	--	--	**29,400**
	11/24/19	--	--	--	**7,720**	--	--	**943**	--	--	--	--	**21,000**

Notes:
1. Bold value indicates a laboratory detection.
2. Shaded cells indicate New Mexico Water Quality Control Commission (NMWQCC) exceedance.
3. Results shown in mg/L.
4. NS - Not Sampled
5. D1 - The analysis was performed at a dilution due to the high analyte concentration.
6. H - The analysis was performed past holding time.
7. C - Elevated detection limit due to matrix effect.
8. J - Estimated Concentration
9. < - Analyte detected below quantitation limit
10. [1] Human Health Standards for Groundwater.
11. [2] Other Standards for Domestic Water Supply.
12. * - Indicates groundwater monitor well installed off-Site and upgradient of plume.
13. ** - Reported TDS concentration includes a low bias. Not used in trend comparison.
14. *** - Indicates groundwater monitor well that was sampled prior to semiannual groundwater event via low-flow purge for internal use.

FIGURES



Legend

- Monitoring Well Location
- Monitoring Well Location to be Sampled During Reduced Event
- Recovery Well Location to be Sampled During Reduced Event
- Recovery Well
- Cooper Jal Oil Well
- Plugged & Abandoned Monitoring Well
- 3184 — Potentiometric Contour and Elevation
- 3182.82 — Groundwater Elevation (ft above mean sea level)
- Approximate Groundwater Flow

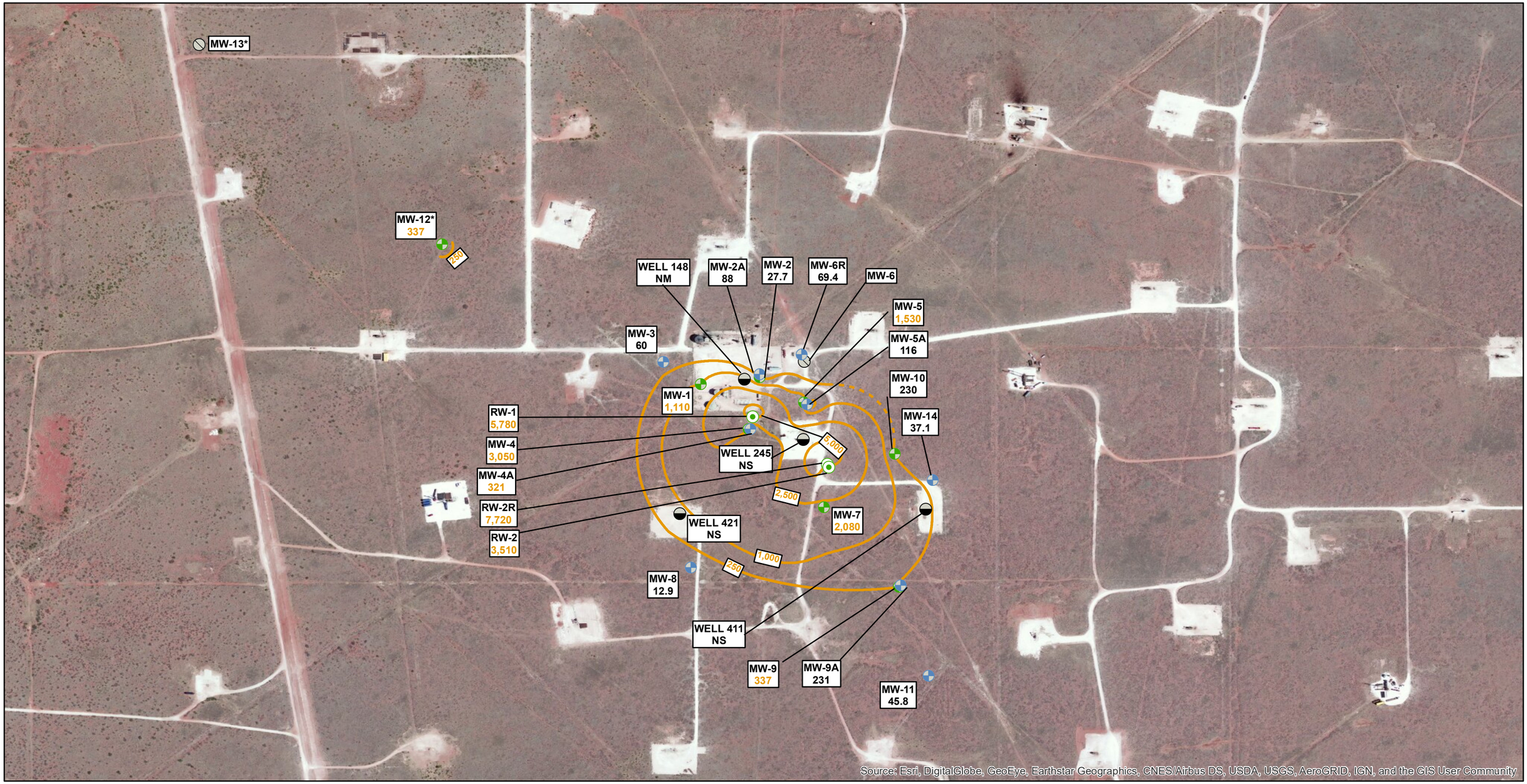
Notes:
1. Datum: D_WGS_1984
2. Cooper Jal Oil Wells were not guaged
3. Site Location: 32.19891, -103.21523
4. NM: Not Measured
5. * - Indicates groundwater monitor well installed off-Site and upgradient of plume.
6. Monitoring Wells Highlighted Green are Proposed to be Sampled During Reduced Sampling Event (One Semi-annual Event)

Chevron Environmental Management Company
Cooper-Jal Unit South Injection Site
Lea County, New Mexico

2020 REDUCED SAMPLING PLAN POTENTIOMETRIC SURFACE MAP NOVEMBER 2019

ARCADIS

FIGURE 1



Legend

- Monitoring Well Location
- Monitoring Well Location to be Sampled During Reduced Event
- Recovery Well Location to be Sampled During Reduced Event
- Recovery Well
- Cooper Jal Oil Well
- Plugged & Abandoned Monitoring Well
- 250 — Chloride Isoconcentration Contour
- 118 — Chloride Concentration in milligrams per liter (mg/L)
- 268 — Chloride Concentration (mg/L) Exceeds NMWQCC Other Standards for Domestic Water Supply

Notes:
1. Datum: D_WGS_1984
2. Cooper Jal Oil Wells were not guaged
3. Site Location: 32.19891, -103.21523
4. NS: Not Sampled
5. * - Indicates groundwater monitor well installed off-Site and upgradient of plume.
6. Monitoring Wells Highlighted Green are Proposed to be Sampled During Reduced Sampling Event

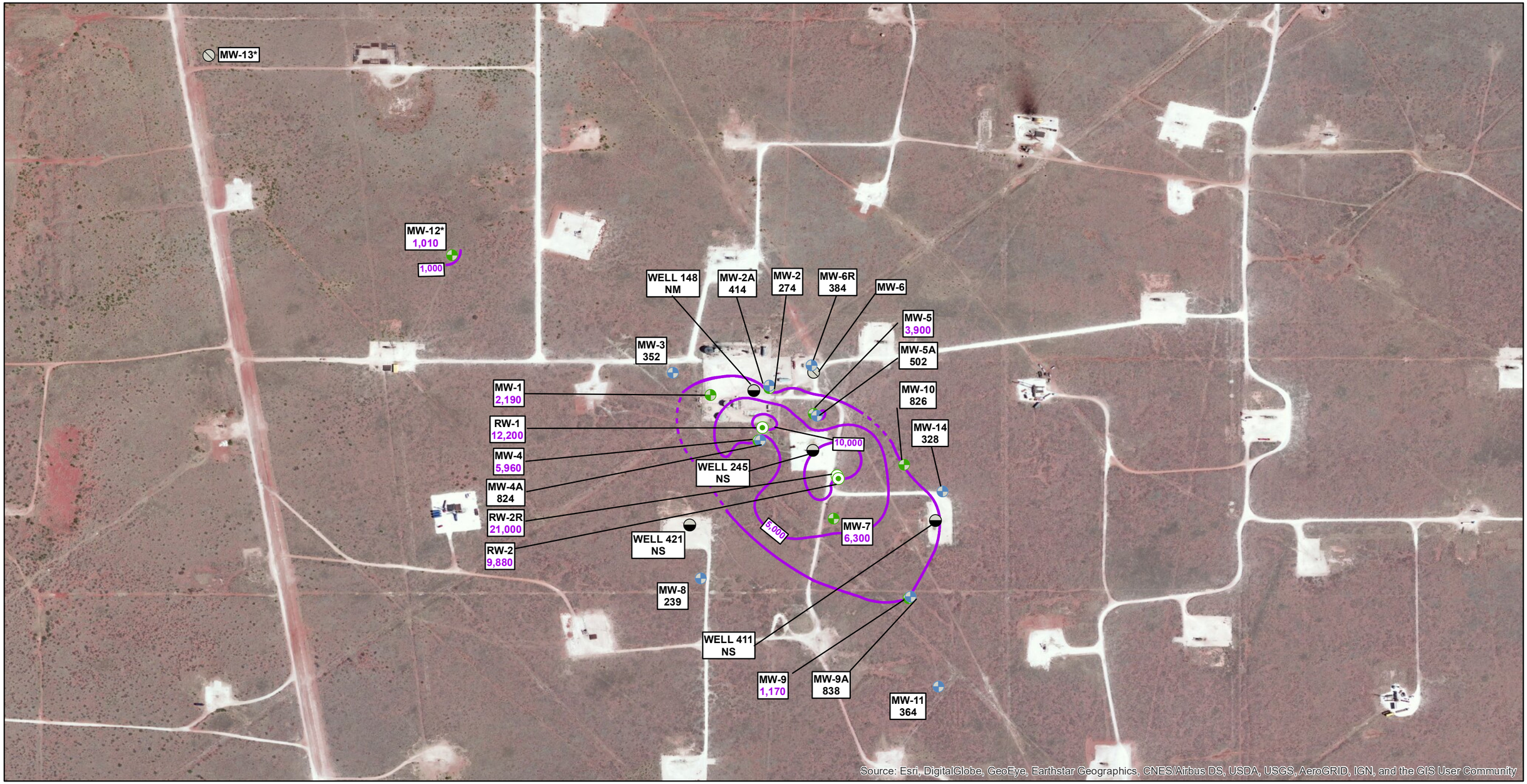
Chevron Environmental Management Company
Cooper-Jal Unit South Injection Site
Lea County, New Mexico

2020 REDUCED SAMPLING PLAN
CHLORIDE ISOCONCENTRATION MAP
NOVEMBER 2019

ARCADIS

FIGURE
2

Document Path: \\arcadis-us\officedata\Houston-TX\ENV\Chevron Texaco TX8\HES Transfer\04 Field Investigations\2019\6 - Annual GWMR\Cooper Jal\GIS - Cooper Jal\Figure 4 Chloride Map Combined 01.08.2020



Legend

- Monitoring Well Location
- Monitoring Well Location to be Sampled During Reduced Event
- Recovery Well Location to be Sampled During Reduced Event
- Recovery Well
- Cooper Jal Oil Well
- Plugged & Abandoned Monitoring Well
- 1,000 — Total Dissolved Solids (TDS) Isoconcentration Contour
- 407 — TDS Concentration in milligrams per liter (mg/L)
- 1,040 — TDS Concentration (mg/L) Exceeds NMWQCC Other Standards for Domestic Water Supply

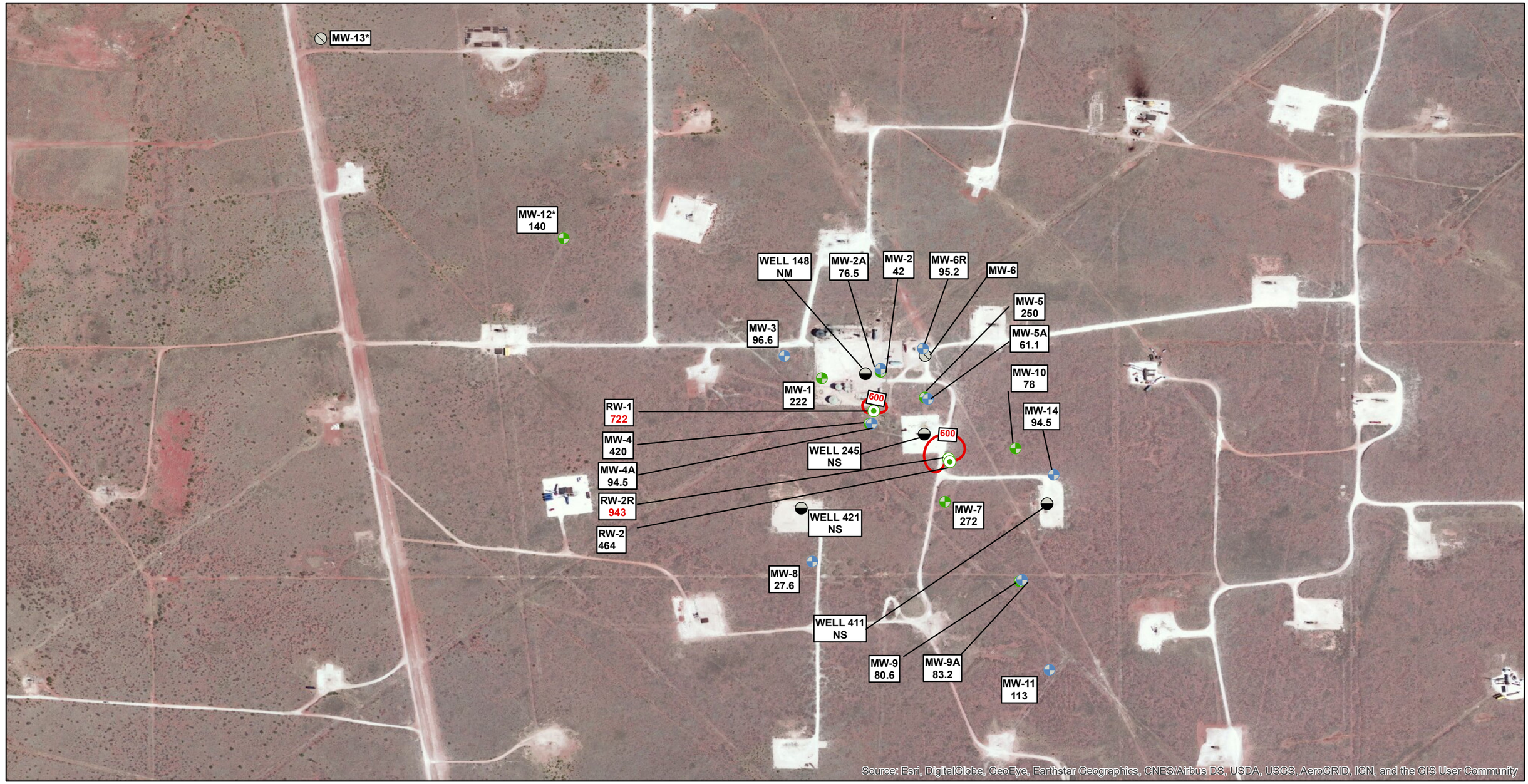
Notes:
1. Datum: D_WGS_1984
2. Cooper Jal Oil Wells were not guaged
3. Site Location: 32.19891, -103.21523
4. NS: Not Sampled
5. * - Indicates groundwater monitor well installed off-Site and upgradient of plume.
6. Monitoring Wells Highlighted Green are Proposed to be Sampled During Reduced Sampling Event

Chevron Environmental Management Company
Cooper-Jal Unit South Injection Site
Lea County, New Mexico

2020 REDUCED SAMPLING PLAN
TDS ISOCONCENTRATION MAP
NOVEMBER 2019

ARCADIS

FIGURE
3



Legend

- Monitoring Well Location
- Monitoring Well Location to be Sampled During Reduced Event
- Recovery Well Location to be Sampled During Reduced Event
- Recovery Well
- Cooper Jal Oil Well
- Plugged & Abandoned Monitoring Well
- 600 — Sulfate Isoconcentration Contour
- 464 — Sulfate Concentration in milligrams per liter (mg/L)
- 722 — Sulfate Concentration (mg/L) Exceeds NMWQCC Other Standards for Domestic Water Supply

Notes:
1. Datum: D_WGS_1984
2. Cooper Jal Oil Wells were not guaged
3. Site Location: 32.19891, -103.21523
4. * - Indicates groundwater monitor well installed off-Site and upgradient of plume.
5. Monitoring Wells Highlighted Green are Proposed to be Sampled During Reduced Sampling Event

Chevron Environmental Management Company
Cooper-Jal Unit South Injection Site
Lea County, New Mexico

2020 REDUCED SAMPLING PLAN
SULFATE ISOCONCENTRATION MAP
NOVEMBER 2019

ARCADIS

FIGURE
4

Document Path: \\arcadis-us\officedata\Houston-TX\ENV\Chevron Texaco TX8\HES Transfer\04 Field Investigations\2019\6 - Annual GWMR\Cooper Jal\GIS - Cooper Jal\Figure 6 Sulfate Map Combined 01.08.2020

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District III
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Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 9290

CONDITIONS

Operator: Arcadis U.S., Inc 630 Plaza Drive Highlands Ranch, CO 80129	OGRID: 329073
	Action Number: 9290
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Review of Proposed Groundwater Monitoring Reduction Workplan: Content satisfactory 1. OCD approves the sulfate analysis be discontinued from all site wells except MW-4A and RW-2R. These two identified wells will require only one annual sampling event for sulfate. 2. OCD approves the termination of future sampling from MW-2A, MW-3, MW-5A, MW-6R, MW-8, and MW-14. 3. OCD approves the second semi-annual sampling event elimination for MW-11. 4. OCD approves annual sampling for those monitoring and recovery wells with COC concentrations reported above the NMWQCC exceedance standards.	2/13/2023