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March 31, 2023

Nelson Velez

New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, New Mexico 87504

Re: **2022 Annual Report**
Vacuum F-35 & G-35 SWDs, Sec 35, T17S, R35E
OCD Case No. AP-59

Sent via E-mail

Mr. Velez:

REVIEWED

By Mike Buchanan at 3:54 pm, Jun 21, 2023

Review of the 2022 Annual GW Monitoring Report for Vacuum F-35 & G-35: Content Satisfactory

1. Continue to conduct groundwater monitoring per plan for 2023 for both sites
2. Submit 2023 Annual GW monitoring report by April 1, 2024 for both sites.
3. Further investigate possible remediation options and considerations for (MW-1). Persistent free product consistently present.

This letter summarizes the results of groundwater monitoring over the past year pursuant to the NMOCD approved Abatement Plan for Rice Operating Company (ROC)'s Vacuum F&G-35 project. Site and monitor well locations are given in Figures 1 & 2, respectively.

Vacuum F-35 SWD

Data for Vacuum F-35 SWD are summarized in Figure 3 and Table 1. The full dataset is given in Table 3.

Groundwater has not been sampled in the at-source monitor well (MW-1) since 2018, as free product was observed since then. We have placed a recovery sock in the well and will attempt to sample it during 2023. Average annual groundwater chloride concentrations in the shallow down-gradient well (MW-3S) were essentially unchanged at 82 mg/l in 2022 vs 80 mg/l in 2021. Average annual groundwater chloride concentrations in the deep down-gradient monitor well (MW-3D) measured 66 mg/l in 2022 vs 82 mg/l in 2021. Groundwater chlorides have remained below the OCD standard of 250 mg/l in both of these down-gradient monitor wells since sampling began in 2007. Groundwater chlorides are clearly not an issue at this location. However, the

Rice Operating Company Vacuum F&G 35 SWD Annual Report

persistent presence of free product in the at-source monitor well (MW-1) warrants further consideration, which ROC will continue to monitor through 2023.

Vacuum G-35 SWD

Data for Vacuum G-35 SWD are summarized in Figure 4 and Table 2. The full dataset is given in Table 4.

Average annual groundwater chloride concentrations in the at-source monitor well (MW-1) were unchanged from the prior year at 90 mg/l in 2022. Average annual chloride concentrations in the shallow down-gradient well (MW-3S) decreased slightly from 220 mg/l in 2021 to 192 mg/l in 2022. Average annual chloride concentrations in the deep down-gradient well (MW-3D) dropped from 218 mg/l in 2021 to 200 mg/l in 2022. Average annual groundwater chlorides in the near-source down-gradient monitor well (MW-4) were essentially unchanged at 94 mg/l in 2022 vs 92 mg/l in 2021. Groundwater chlorides in all of these wells have measured below the OCD standard of 250 mg/l for the past five years. Groundwater chlorides are clearly not an issue at this location.

Average annual total BTEX concentrations in the at-source monitor well (MW-1) was unchanged from 2021, measuring 0.001 mg/l in 2022. Average annual total BTEX concentrations in the near-source down-gradient well (MW-4) continued to decline, dropping from 0.005 mg/l in 2021 to 0.003 mg/l in 2022. BTEX concentrations have clearly dropped at G-35. However, the persistent presence of free product in the at-source monitor well (MW-1) warrants further consideration, which ROC will continue to monitor.

ROC will continue to monitor groundwater concentrations at both sites in 2023.

ROC is the service provider (agent) for the Vacuum SWD System and has no ownership of any portion of the pipeline, well, or facility. The system is owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage ownership/usage basis. The Vacuum system is now abandoned.

Rice Operating Company Vacuum F&G 35 SWD Annual Report

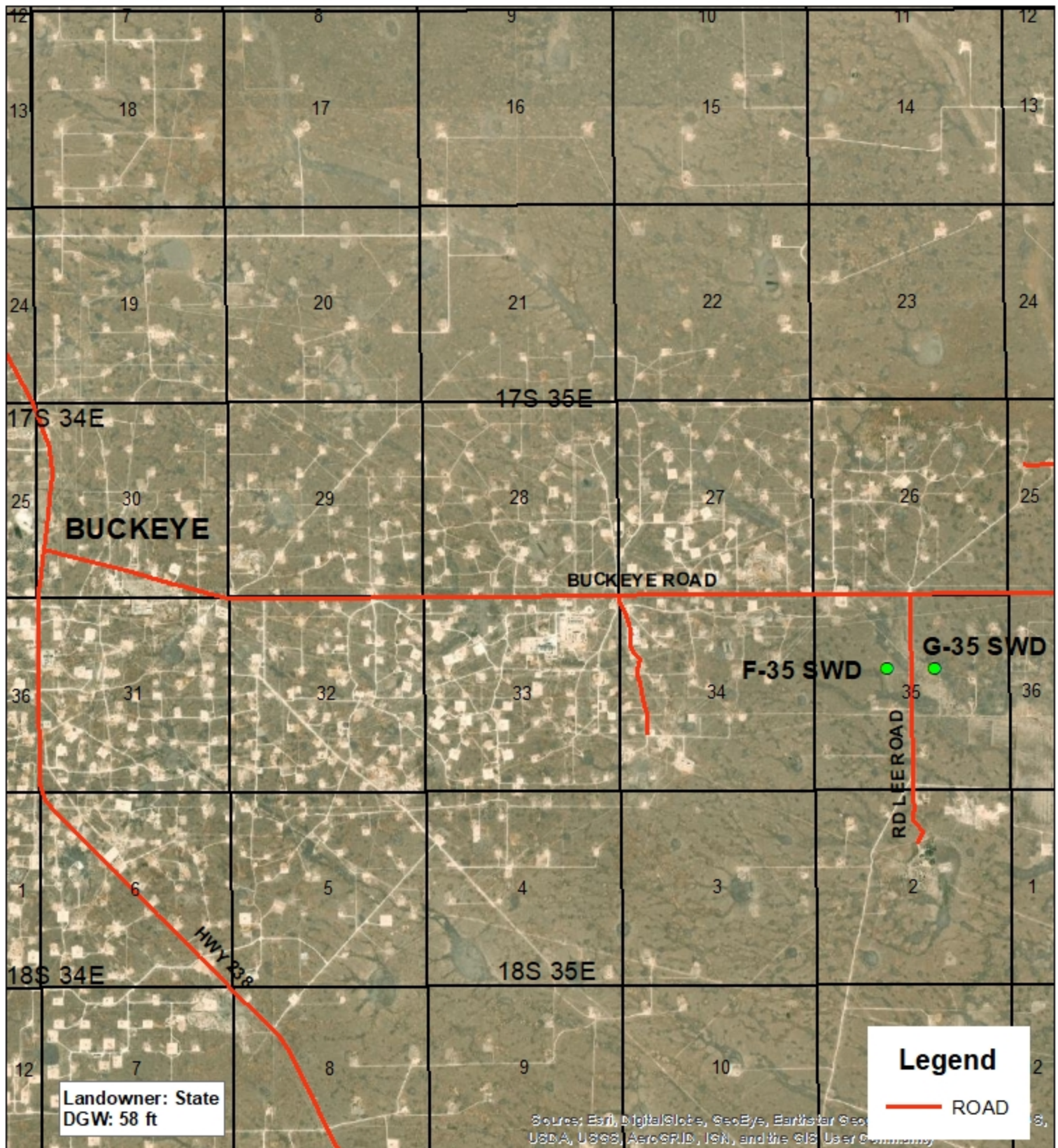
We submit this report for your review and consideration. Please call Katie Davis at Rice Operating Company or me if you have any questions or need additional information.

Sincerely,



L. Peter Galusky, Jr. P.E.
NM Prof. Engineer No. 22561

Copy: Rice Operating Company
Attachments: ... as noted, above.



VACUUM
F-35 & G-35
SWD
AP-59

UL F & G SECTION 35
T17S, R35E
LEA COUNTY, NM

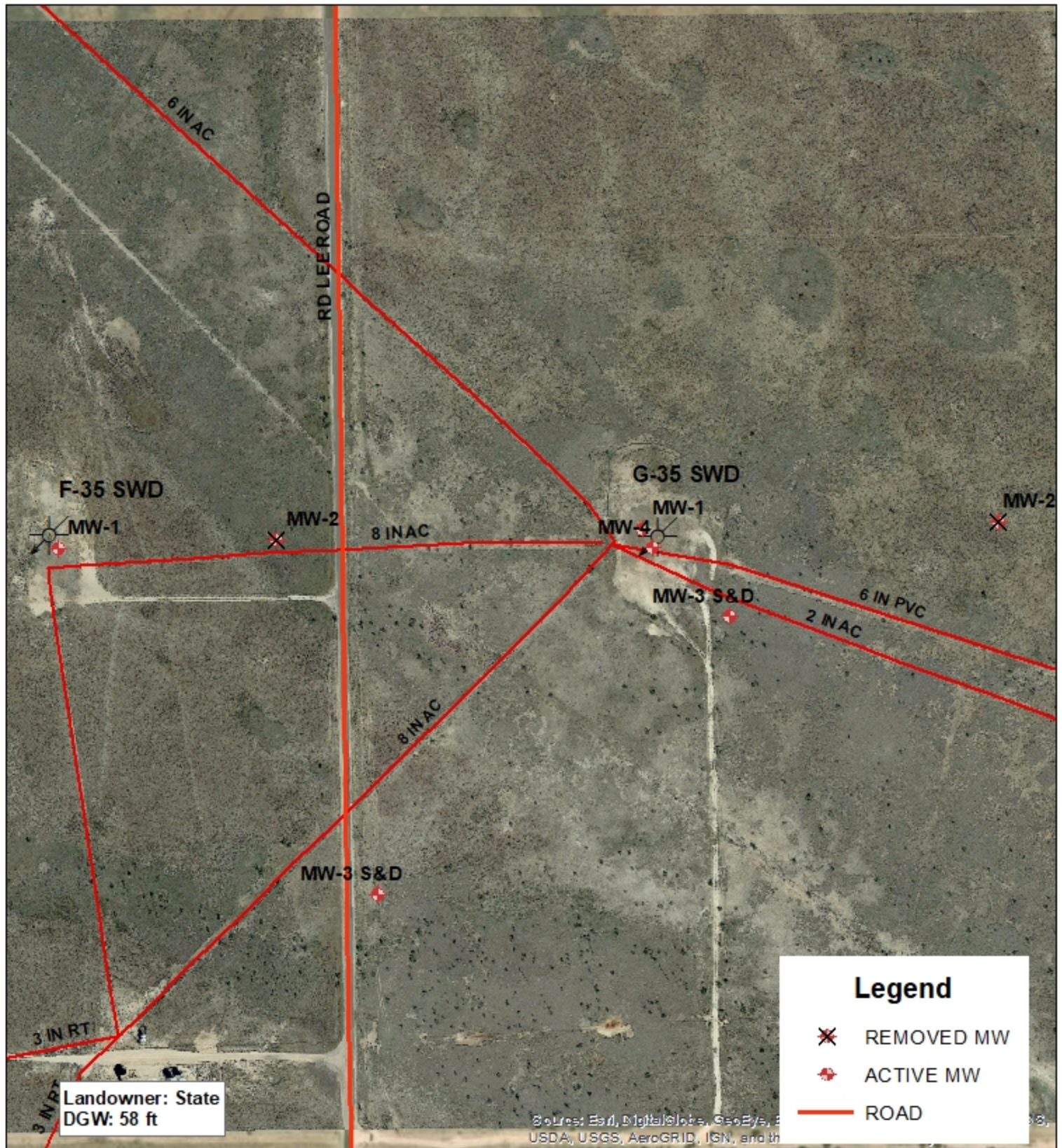
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G-35 SWD 32.793016 -103.426052
NAD83 STATE PLANE PROJ
NM EAST ZONE

0 2,500 5,000

Feet

Drawing date: 2/4/20
Drafted by: T. Grieco





VACUUM F-35 & G-35 SWD

AP-59

UL F & G SECTION 35
T17S, R35E
LEA COUNTY, NM

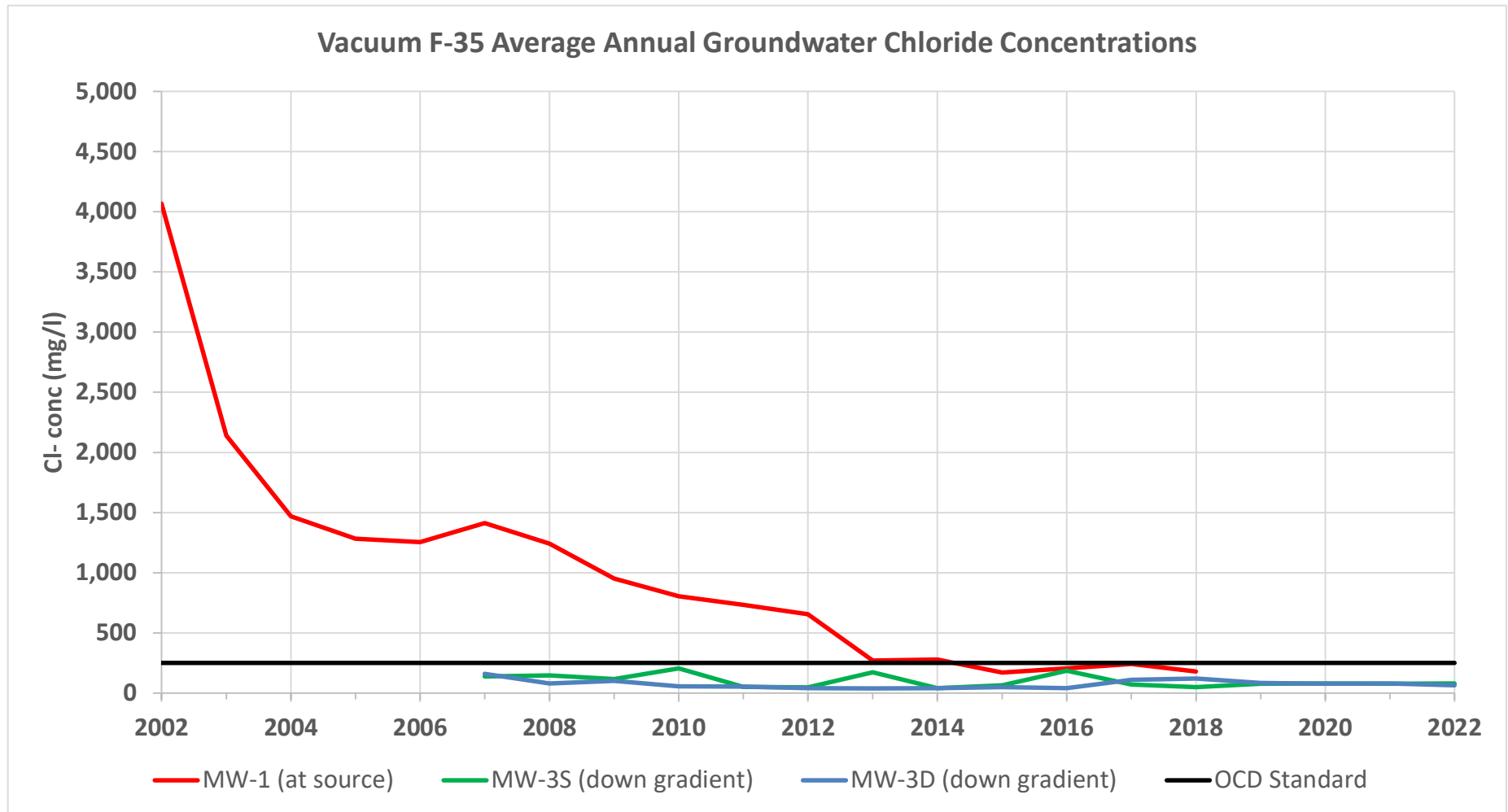
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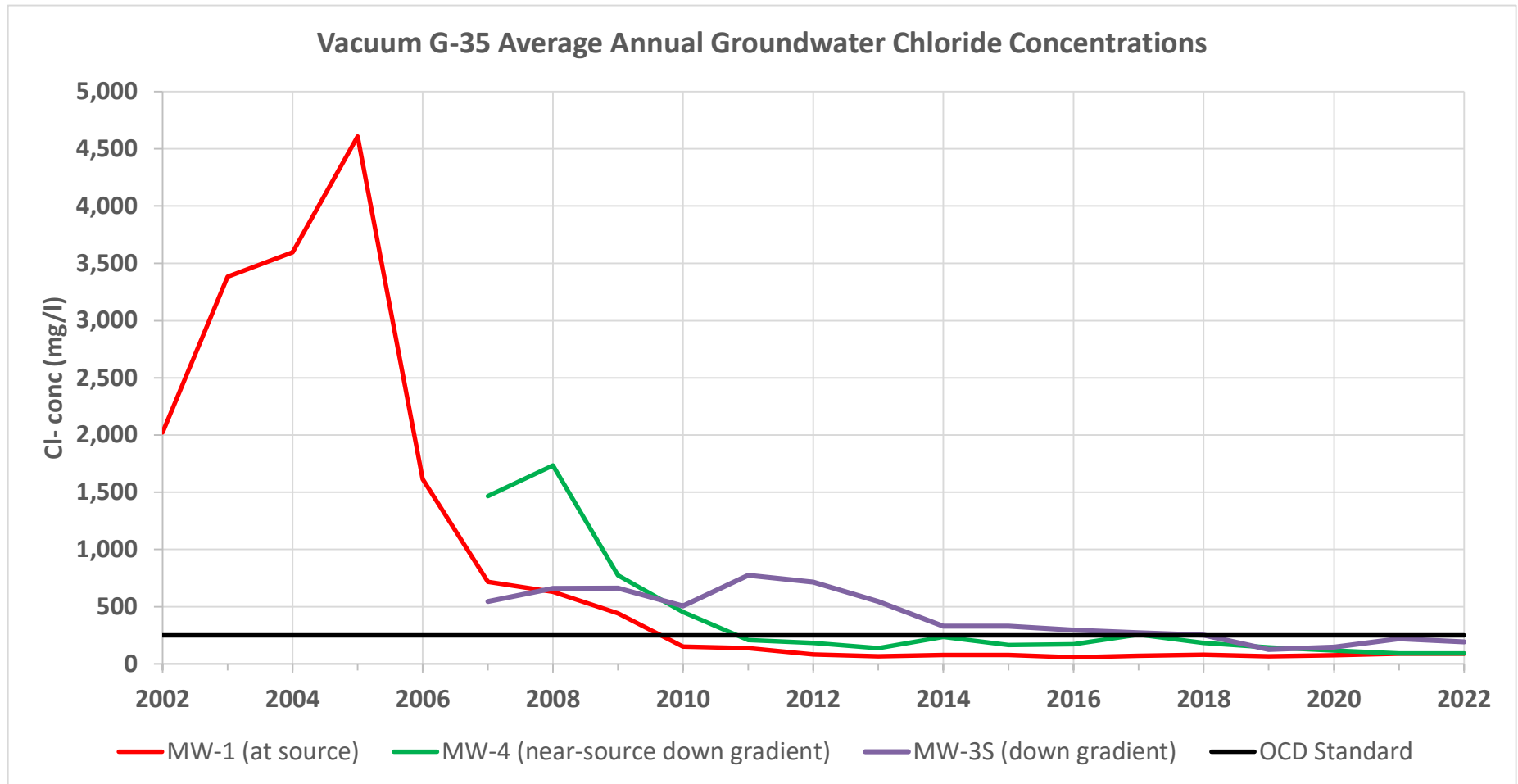
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Drafted by: T. Grieco





Vacuum F-35 SWD**Average Annual Groundwater Chloride & BTEX Concentrations (mg/l)**

year	Chlorides (mg/l)					Total BTEX (mg/l)			
	MW-1 (at source)	MW-2 (east of source)	MW-3S (down gradient)	MW-3D (down gradient)	OCD Standard	MW-1 (at source)	MW-2 (east of source)	MW-3S (down gradient)	MW-3D (down gradient)
2002	4,068				250	1.474			
2003	2,140				250	1.517			
2004	1,470				250	0.940			
2005	1,283				250	3.375			
2006	1,255	93			250	1.278	0.000		
2007	1,413	96	139	161	250	2.219	0.000	0.004	0.003
2008	1,243	98	149	81	250	0.615	0.000	0.000	0.000
2009	953	80	116	102	250	0.697	0.000	0.000	0.000
2010	805	128	206	56	250	0.446	0.000	0.000	0.000
2011	735		52	54	250	0.492			
2012	655		48	42	250	0.204			
2013	270		172	38	250	0.275			
2014	280		42	40	250	0.141			
2015	172		66	50	250	0.267			
2016	206		186	40	250	0.144			
2017	242		72	110	250	0.121			
2018	180		50	122	250	0.125			
2019			80	86	250				
2020			82	78	250				
2021			80	82	250				
2022			82	66	250				



Vacuum G-35 SWD**Average Annual Groundwater Chloride & BTEX Concentrations (mg/l)**

Chlorides (mg/l)						Total BTEX (mg/l)					
year	MW-1 (at source)	MW-2 (east of source)	MW-3S (down gradient)	MW-3D (down gradient)	MW-4 (near-source down gradient)	OCD Standard	MW-1 (at source)	MW-2 (east of source)	MW-3S (down gradient)	MW-3D (down gradient)	MW-4 (near-source down gradient)
2002	2,025					250	0.960				
2003	3,383					250	0.660				
2004	3,595					250	1.331				
2005	4,608					250					
2006	1,617	15				250	0.554	0.002			
2007	717	16	547	525	1,467	250	0.208	0.000	0.005	0.003	0.162
2008	630	16	661	858	1,735	250	1.282	0.000	0.000	0.000	0.680
2009	442	41	663	1,113	775	250	0.554	0.000			0.241
2010	152	17	508	828	455	250	0.058	0.000			0.066
2011	138		775	750	208	250	0.126				0.013
2012	84		715	990	186	250	0.117				1.009
2013	68		545	985	138	250	0.057				0.360
2014	78		330	675	238	250	0.008				0.494
2015	80		332	519	166	250	0.041				0.185
2016	58		296	298	174	250	0.004				0.063
2017	72		272	308	258	250	0.002				0.093
2018	82		254	248	184	250	0.058				0.053
2019	68		126	142	144	250	0.010				0.015
2020	76		148	168	116	250	0.006				0.006
2021	90		220	218	92	250	0.001				0.005
2022	90		192	200	94	250	0.001				0.003

ROC - Vacuum F-35 (AP-59)
Unit Letter F, Section 35, T17S, R35E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	BTEX	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	58	66	1.3	3.9	1/10/2002	5,200	9,425	0.243	0.050	0.053	0.050	0.090	5	
1	XXX	XXX	XXX	XXX	5/15/2002	3,720	7,050	1.770	0.744	0.207	0.510	0.309	3.2	
1	XXX	XXX	XXX	XXX	8/19/2002	3,630	6,040	1.065	0.705	0.172	0.112	0.076	10.7	
1	XXX	XXX	XXX	XXX	11/11/2002	3,720	6,020	2.819	1.210	0.343	0.835	0.431	2.8	
1	XXX	XXX	XXX	XXX	2/28/2003	2,200	4,040	2.194	0.909	0.840	0.321	0.124	26.2	
1	XXX	XXX	XXX	XXX	6/5/2003	2,300	4,180	0.894	0.632	0.134	0.061	0.067	20.3	
1	XXX	XXX	XXX	XXX	8/21/2003	2,060	4,000	1.371	0.617	0.360	0.202	0.192	4.9	
1	XXX	XXX	XXX	XXX	11/19/2003	2,000	3,760	1.610	0.797	0.301	0.264	0.248	5.1	
1	58.2	64	0.93	2.78	2/18/2004	1,819	3,932	0.535	0.349	0.038	0.121	0.027	0.19	
1	58.5	64	0.88	2.64	5/27/2004	1,759	4,008	1.385	0.726	0.176	0.268	0.215	8.7	
1	58.2	64.2	0.96	2.9	9/7/2004	1,040	3,000	1.018	0.429	0.221	0.143	0.225	19.9	mod. odor; gray
1	57.81	64.2	1.02	3.1	11/24/2004	1,260	2,740	0.822	0.049	0.313	0.209	0.251	51	mod. odor; gray
1	57.18	64.2	1.2	3.6	3/21/2005	1,220	2,210	5.941	2.200	1.610	0.848	1.283	110	mod. odor; gray
1					5/11/2005	1,490	2,970		686.000	451.000	374.000	176.200	24.6	anomalous?
1	58.4	64.2	0.9	2.8	8/15/2005	1,340	2,890	2.462	0.819	0.393	0.666	0.584	69.5	
1	57.45	64.2	1.1	4	10/25/2005	1,080	2,540	1.722	0.779	0.243	0.394	0.306	72.7	
1	57.38	64.2	1.1	4	1/23/2006	886	2,080	1.250	0.447	0.222	0.280	0.301	88.2	Heavy skim of Oil: Septic Odor
1	57.58	64.2	1.1	4	4/25/2006	1,420	3,040	0.658	0.227	0.096	0.174	0.161	62.5	
1	XXX	64.2	XXX	XXX	10/24/2006	1,460	3,190	1.926	0.462	0.489	0.230	0.745	45.2	Clear Strong septic odor
1	XXX	64.2	XXX	5	1/9/2007	1,510	2,980	1.581	0.486	0.577	0.185	0.333	67.2	Clear Strong septic odor
1	XXX	64.2	XXX	XXX	5/23/2007	1,500	2,850	1.948	0.557	0.387	0.323	0.681	44.4	Clear Strong septic odor
1	XXX	64.2	XXX	XXX	9/19/2007	1,380	2,902	3.330	0.902	0.706	0.582	1.140	23.2	Clear Strong septic odor
1	XXX	64.2	XXX	XXX	11/19/2007	1,260	2,642	2.016	0.719	0.203	0.429	0.665	44.2	Clear Strong septic odor
1	XXX	64.2	XXX	XXX	2/15/2008	1,240	2,650	1.185	0.305	0.099	0.218	0.563	49.7	Clear Strong septic odor
1	58.38	63.08	0.8	4	6/3/2008	1,460	2,840	0.000	<0.002	<0.002	<0.002	<0.006	25.4	Sand/silt to clear Strong septic odor
1	XXX	XXX	XXX	XXX	7/28/2008	1,120	2,510	0.312	0.051	0.023	0.066	0.172	35	Clear Strong septic odor
1	59.12	64.2	0.8	5	10/23/2008	1,150	2,580	0.964	0.193	0.013	0.232	0.526	27	Clear Sheen present Strong septic odor
1	XXX	XXX	XXX	XXX	1/28/2009	1,150	2,440	1.169	0.431	0.044	0.332	0.362	16.8	Clear Sheen Strong septic odor
1	XXX	XXX	XXX	XXX	4/28/2009	980	1,970	0.814	0.260	0.038	0.234	0.282	15.2	Clear Sheen Strong septic odor
1	XXX	XXX	XXX	5	8/5/2009	740	1,660	0.439	0.063	0.024	0.116	0.236	18.7	Clear Sheen Strong hydrocarbon odor

1	XXX	XXX	XXX	5	10/26/2009	940	1,890	0.366	0.034	0.019	0.136	0.177	15.6	Clear Sheen Strong hydrocarbon odor
1	XXX	XXX	XXX	5	3/3/2010	970	2,010	0.337	0.041	0.020	0.122	0.154	15.8	Sheen present Strong septic odor
1	XXX	XXX	XXX	6	5/12/2010	880	1,840	0.145	0.004	0.011	0.050	0.080	22.1	Clear Sheen present Strong septic odor
1	XXX	XXX	XXX	6	8/4/2010	630	1,540	0.215	0.017	0.022	0.059	0.117	23.8	Clear Sheen present Strong septic odor
1	XXX	XXX	XXX	6	11/1/2010	740	1,850	1.086	0.075	0.115	0.312	0.584	18.1	Clear Sheen present Strong septic odor
1	XXX	XXX	XXX	6	6/2/2011	900	2,170	0.533	0.071	0.032	0.191	0.239	<10.0	Clear Sheen present Strong septic odor
1	XXX	XXX	XXX	6	11/30/2011	570	1,310	0.451	0.057	0.011	0.200	0.183	31.3	Clear Sheen present Strong septic odor
1	XXX	XXX	XXX	6	5/25/2012	580	1,420	0.240	0.061	0.016	0.078	0.085	30.8	Gray color/Product present with Strong septic odor
1	XXX	XXX	XXX	6	11/13/2012	730	1,900	0.168	0.040	0.013	0.058	0.057	34.9	Gray color/Product present with Strong septic odor
1	XXX	XXX	XXX	6	6/6/2013	280	887	0.367	0.060	0.059	0.099	0.149	63.1	Gray color/Product present with Strong septic odor
1	XXX	XXX	XXX	6	11/18/2013	260	810	0.182	0.040	0.015	0.064	0.063	26.2	Gray color/Product present with Strong septic odor
1	XXX	XXX	XXX	6	6/26/2014	296	834	0.102	0.025	0.004	0.033	0.040	44.1	Gray color/Product present with Strong septic odor
1	XXX	XXX	XXX	6	12/10/2014	264	810	0.179	0.048	0.006	0.075	0.050	55.2	Gray color/Product present with Strong septic odor
1	XXX	XXX	XXX	6	6/24/2015	172	914	0.116	0.018	<0.005	0.080	0.018	75	Gray color/Product present with Strong septic odor
1	XXX	XXX	0	2	11/11/2015	172	762	0.418	0.053	0.052	0.213	0.100	55	Gray color/Product present with Strong septic odor
1	XXX	XXX	XXX	6	5/23/2016	196	738	0.131	0.023	0.018	0.051	0.039	48.8	Gray color/Product present with Strong septic odor

1	XXX	64.2	XXX	6	11/15/2016	216	660	0.156	0.023	0.017	0.070	0.046	67	Gray color/Product present with Strong septic odor
1	XXX	64.2	XXX	6	5/31/2017	232	780	0.162	0.032	0.015	0.077	0.038	64	Gray color/Product present with Strong septic odor
1	XXX	64.2	XXX	6	12/5/2017	252	864	0.080	0.028	<0.001	0.052	<0.003	63	Gray color/Product present with Strong septic odor
1	XXX	XXX	XXX	6	5/23/2018	192	560	0.175	0.123	<0.001	0.052	<0.003	70.8	Gray color/Product present with Strong septic odor
1	XXX	XXX	XXX	6	11/27/2018	168	628	0.075	0.018	0.004	0.008	0.045	57.3	Gray color/Product present with Strong septic odor
1	XXX	XXX	XXX	XXX	6/7/2019	XXX	XXX	0.000	XXX	XXX	XXX	XXX	XXX	Product present PSH sock placed in well
1	XXX	XXX	XXX	XXX	11/18/2019	XXX	XXX	0.000	XXX	XXX	XXX	XXX	XXX	Product present PSH sock placed in well
1	XXX	XXX	XXX	XXX	6/11/2020	XXX	XXX	0.000	XXX	XXX	XXX	XXX	XXX	Product present PSH sock placed in well
1	XXX	XXX	XXX	XXX	11/12/2020	XXX	XXX	0.000	XXX	XXX	XXX	XXX	XXX	Product present PSH sock placed in well
1	XXX	XXX	XXX	XXX	6/16/2021	XXX	XXX	0.000	XXX	XXX	XXX	XXX	XXX	Product present PSH sock placed in well
1	XXX	XXX	XXX	XXX	9/16/2021	XXX	XXX	0.000	XXX	XXX	XXX	XXX	XXX	Product present PSH sock placed in well
1	XXX	XXX	XXX	XXX	6/9/2022	XXX	XXX	0.000	XXX	XXX	XXX	XXX	XXX	Product present PSH sock placed in well
1	XXX	XXX	XXX	XXX	11/28/2022	XXX	XXX	0.000	XXX	XXX	XXX	XXX	XXX	Product present PSH sock placed in well

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	BTEX	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
2	52.57	68.1	2.5	10	6/6/2006	97.6	724	0.000	<0.001	<0.001	<0.001	<0.001	63.3	Clear no odor
2	52.77	68.1	2.5	10	10/24/2006	89.1	598	0.000	<0.001	<0.001	<0.001	<0.001	67.2	
2	52.91	68.1	2.4	10	1/9/2007	101	590	0.000	<0.001	<0.001	<0.001	<0.001	69.4	Clear No Odor
2	53.12	67.24	2.3	10	5/23/2007	88.3	512	0.000	<0.001	<0.001	<0.001	<0.001	61	Clear No Odor
2	53.33	67.24	2.2	10	9/19/2007	100	587	0.000	<0.002	<0.002	<0.002	<0.006	71.7	Clear No Odor
2	53.41	67.24	2.2	10	11/18/2007	96	571	0.000	<0.002	<0.002	<0.002	<0.006	85.7	Clear No odor
2	53.49	67.4	2.2	10	2/4/2008	100	652	0.000	<0.002	<0.002	<0.002	<0.006	60.6	Clear No odor
2	53.5	67.4	2.2	10	4/28/2008	96	604	0.000	<0.002	<0.002	<0.002	<0.006	79.8	Clear No odor
2	53.68	67.4	2.2	10	7/28/2008	96	586	0.000	<0.001	<0.001	<0.001	<0.003	62	Clear No odor
2	53.84	67.4	2.2	10	10/23/2008	100	710	0.000	<0.001	<0.001	<0.001	<0.003	77.7	Clear No odor
2	53.91	68.07	2.3	10	1/28/2009	96	660	0.000	XXX	XXX	XXX	XXX	73.2	Clear No odor
2	53.98	68.07	2.3	10	4/28/2009	100	663	0.000	XXX	XXX	XXX	XXX	73.6	Clear No odor
2	54.12	68.07	2.2	10	8/5/2009	104	666	0.000	XXX	XXX	XXX	XXX	76.2	Clear No odor
2	54.21	68.07	2.2	10	10/26/2009	20	296	0.000	XXX	XXX	XXX	XXX	21.3	Clear No odor
2	54.39	67.98	2.2	10	3/3/2010	124	689	0.000	XXX	XXX	XXX	XXX	84.8	Clear No odor
2	54.44	67.98	2.2	10	5/12/2010	128	680	0.000	XXX	XXX	XXX	XXX	99.8	Clear No odor
2	54.53	67.98	2.2	10	8/4/2010	132	733	0.000	XXX	XXX	XXX	XXX	91	Clear No odor
MW-2 Plugged 10/20/2010														

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	BTEX	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
3 Shallow	52.35	102.75	32.8	100	1/9/2007	144	512	0.015	<0.001	0.015	<0.001	<0.001	99	Clear Slight Odor
3 Shallow	52.5	102.75	32.7	100	5/23/2007	117	494	0.001	<0.001	0.001	<0.001	<0.001	56.9	Clear Slight Odor
3 Shallow	52.82	102.75	32.5	100	9/19/2007	192	789	0.000	<0.002	<0.002	<0.002	<0.006	73.5	Clear Slight Odor
3 Shallow	52.82	102.75	32.5	150	11/19/2007	104	467	0.000	<0.002	<0.002	<0.002	<0.006	66.3	Clear Slight odor
3 Shallow	52.92	102.75	32.4	200	2/5/2008	212	821	0.000	<0.002	<0.002	<0.002	<0.006	60.6	Clear Slight odor
3 Shallow	52.93	102.75	32.4	200	4/28/2008	116	502	0.000	<0.002	<0.002	<0.002	<0.006	63.1	Clear Slight odor
3 Shallow	53.12	102.75	32.3	200	7/28/2008	164	650	0.000	<0.001	<0.001	<0.001	<0.003	58	Clear Slight odor
3 Shallow	53.31	102.75	32.1	200	10/22/2008	104	690	0.000	<0.001	<0.001	<0.001	<0.003	74.3	Clear Slight odor
3 Shallow	53.38	101.09	31	200	1/28/2009	100	445	0.000	XXX	XXX	XXX	XXX	65	Clear Slight odor
3 Shallow	53.44	101.09	31	200	4/28/2009	128	579	0.000	XXX	XXX	XXX	XXX	74	Clear Slight odor
3 Shallow	53.6	101.09	31	200	8/5/2009	128	560	0.000	XXX	XXX	XXX	XXX	70.6	Clear Slight odor
3 Shallow	53.67	101.09	31	200	10/26/2009	108	535	0.000	XXX	XXX	XXX	XXX	63.1	Clear Slight odor
3 Shallow	53.84	101.09	31	200	3/4/2010	108	541	0.000	XXX	XXX	XXX	XXX	77.4	Clear Slight odor
3 Shallow	53.89	101.09	31	200	5/12/2010	80	442	0.000	XXX	XXX	XXX	XXX	79.2	Clear Slight odor
3 Shallow	53.93	101.09	31	200	8/3/2010	64	430	0.000	XXX	XXX	XXX	XXX	63.6	Clear Slight odor
3 Shallow	54.03	101.09	31	200	11/2/2010	570	1,320	0.000	XXX	XXX	XXX	XXX	19.4	Clear Slight odor
3 Shallow	54.13	101.09	31	200	6/2/2011	52	375	0.000	XXX	XXX	XXX	XXX	61.8	Clear Slight odor
3 Shallow	54.26	101.09	30	200	11/30/2011	52	420	0.000	XXX	XXX	XXX	XXX	64.6	Clear Slight odor
3 Shallow	54.5	101.09	30	200	5/25/2012	52	406	0.000	XXX	XXX	XXX	XXX	54.9	Clear Slight odor
3 Shallow	54.55	101.09	30	200	11/14/2012	44	393	0.000	XXX	XXX	XXX	XXX	61.9	Clear Slight odor
3 Shallow	54.62	101.09	30	200	6/7/2013	292	1,090	0.000	XXX	XXX	XXX	XXX	47.2	Clear Slight odor
3 Shallow	54.86	101.09	30	200	11/17/2013	52	380	0.000	XXX	XXX	XXX	XXX	60.5	Clear Slight odor
3 Shallow	55.04	101.09	30	200	6/27/2014	56	358	0.000	XXX	XXX	XXX	XXX	59.9	Clear Slight odor
3 Shallow	54.67	101.09	30	200	12/10/2014	28	246	0.000	XXX	XXX	XXX	XXX	29	Clear Slight odor
3 Shallow	55.17	101.09	30	200	6/24/2015	52	510	0.000	XXX	XXX	XXX	XXX	99	Clear Slight odor
3 Shallow	55.51	101.09	29.63	200	11/11/2015	80	500	0.000	XXX	XXX	XXX	XXX	62.3	Clear Slight odor
3 Shallow	55.48	101.09	30	200	5/23/2016	300	1,070	0.000	XXX	XXX	XXX	XXX	62	Clear Slight odor
3 Shallow	55.6	101.09	29	200	11/15/2016	72	456	0.000	XXX	XXX	XXX	XXX	34	Clear Slight odor
3 Shallow	56.05	101.09	29	200	5/31/2017	84	452	0.000	XXX	XXX	XXX	XXX	56	Clear Slight odor
3 Shallow	59.92	101.09	29	200	12/5/2017	60	374	0.000	XXX	XXX	XXX	XXX	57	Clear Slight odor
3 Shallow	56.04	101.09	29	200	5/23/2018	36	347	0.000	XXX	XXX	XXX	XXX	76.5	Clear Slight odor
3 Shallow	56.42	101.09	29	200	11/27/2018	64	345	0.000	XXX	XXX	XXX	XXX	49.1	Clear Slight odor
3 Shallow	56.82	101.09	29	100	6/7/2019	84	399	0.000	XXX	XXX	XXX	XXX	49	Clear Slight odor
3 Shallow	57.14	101.09	29	100	11/18/2019	76	236	0.000	XXX	XXX	XXX	XXX	48	Clear Slight odor
3 Shallow	57.2	101.09	29	100	6/11/2020	72	369	0.000	XXX	XXX	XXX	XXX	54.7	Clear Slight odor
3 Shallow	57.42	101.09	28	100	11/12/2020	92	387	0.000	XXX	XXX	XXX	XXX	54	Clear Slight Odor
3 Shallow	58.13	101.09	28	100	6/15/2021	80	424	0.000	XXX	XXX	XXX	XXX	50.7	Clear Slight Odor

3 Shallow	58.5	101.09	28	100	9/17/2021	80	423	0.000	XXX	XXX	XXX	XXX	69.7	Clear Slight Odor
3 Shallow	58.41	101.09	28	200	6/9/2022	72	386	0.000	XXX	XXX	XXX	XXX	54.5	Clear Slight Odor
3 Shallow	58.62	101.09	28	200	11/28/2022	92	472	0.000	XXX	XXX	XXX	XXX	52.6	Clear Slight Odor

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	BTEX	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
3 Deep	52.35	102.75	32.8	100	1/9/2007	133	500	0.010	<0.001	0.010	<0.001	<0.001	86.9	Clear Slight Odor
3 Deep	52.5	102.75	32.7	100	5/23/2007	92	452	0.002	<0.001	0.002	<0.001	<0.001	47.5	Clear Slight Odor
3 Deep	52.82	102.75	32.5	100	9/19/2007	204	772	0.000	<0.002	<0.002	<0.002	<0.006	72.8	Clear Slight Odor
3 Deep	52.82	102.75	32.5	150	11/19/2007	216	735	0.000	<0.002	<0.002	<0.002	<0.006	64.6	Clear Slight odor
3 Deep	52.92	102.75	32.4	200	2/5/2008	52	393	0.000	<0.002	<0.002	<0.002	<0.006	59.8	Clear Slight odor
3 Deep	52.93	102.75	32.4	200	4/28/2008	104	485	0.000	<0.002	<0.002	<0.002	<0.006	65.2	Clear Slight odor
3 Deep	53.12	102.75	32.2	200	7/28/2008	96	510	0.000	<0.001	<0.001	<0.001	<0.003	52	Clear Slight odor
3 Deep	53.31	102.75	32.1	200	10/22/2008	72	665	0.000	<0.001	<0.001	<0.001	<0.003	160	Clear Slight odor
3 Deep	53.38	101.09	31	200	1/28/2009	84	477	0.000	XXX	XXX	XXX	XXX	65	Clear Slight odor
3 Deep	53.44	101.09	31	200	4/28/2009	60	416	0.000	XXX	XXX	XXX	XXX	61.9	Clear Slight odor
3 Deep	53.6	101.09	30.9	200	8/5/2009	56	397	0.000	XXX	XXX	XXX	XXX	58.4	Clear Slight odor
3 Deep	53.67	101.09	30.8	200	10/26/2009	208	542	0.000	XXX	XXX	XXX	XXX	42	Clear Slight odor
3 Deep	53.84	101.09	30.7	200	3/4/2010	56	428	0.000	XXX	XXX	XXX	XXX	70.4	Clear Slight odor
3 Deep	53.89	101.09	30.7	200	5/12/2010	64	397	0.000	XXX	XXX	XXX	XXX	74.1	Clear Slight odor
3 Deep	53.93	101.09	30.7	200	8/3/2010	52	396	0.000	XXX	XXX	XXX	XXX	59.8	Clear Slight odor
3 Deep	54.03	101.09	30.6	200	11/2/2010	52	382	0.000	XXX	XXX	XXX	XXX	64.7	Clear Slight odor
3 Deep	54.13	101.09	30.5	200	6/2/2011	68	423	0.000	XXX	XXX	XXX	XXX	66.3	Clear Slight odor
3 Deep	54.26	101.09	30.4	200	11/30/2011	40	352	0.000	XXX	XXX	XXX	XXX	59.5	Clear Slight odor
3 Deep	54.5	101.09	30.3	200	5/25/2012	44	368	0.000	XXX	XXX	XXX	XXX	54.6	Clear Slight odor
3 Deep	54.55	101.09	30.3	200	11/14/2012	40	362	0.000	XXX	XXX	XXX	XXX	55.6	Clear Slight odor
3 Deep	54.62	101.09	30.2	200	6/7/2013	32	599	0.000	XXX	XXX	XXX	XXX	24.8	Clear Slight odor
3 Deep	54.86	101.09	30	200	11/17/2013	44	343	0.000	XXX	XXX	XXX	XXX	60.3	Clear Slight odor
3 Deep	55.04	101.09	29.9	200	6/27/2014	52	354	0.000	XXX	XXX	XXX	XXX	60.2	Clear Slight odor
3 Deep	54.67	101.09	30.2	200	12/10/2014	28	252	0.000	XXX	XXX	XXX	XXX	25.6	Clear Slight odor
3 Deep	55.07	101.09	29.9	200	6/24/2015	56	394	0.000	XXX	XXX	XXX	XXX	52.2	Clear Slight odor
3 Deep	55.51	101.09	29.63	200	11/11/2015	44	578	0.000	XXX	XXX	XXX	XXX	34.2	Clear Slight odor
3 Deep	55.48	101.09	30	200	5/23/2016	40	372	0.000	XXX	XXX	XXX	XXX	69.5	Clear Slight odor
3 Deep	55.6	101.09	29	200	11/15/2016	40	560	0.000	XXX	XXX	XXX	XXX	38	Clear Slight odor
3 Deep	56.05	101.09	29	200	5/31/2017	168	564	0.000	XXX	XXX	XXX	XXX	63	Clear Slight odor
3 Deep	59.92	101.09	29	200	12/5/2017	52	378	0.000	XXX	XXX	XXX	XXX	64	Clear Slight odor
3 Deep	56.04	101.09	29.3	200	5/23/2018	164	546	0.000	XXX	XXX	XXX	XXX	71.8	Clear Slight odor
3 Deep	56.42	101.09	29	200	11/27/2018	80	273	0.000	XXX	XXX	XXX	XXX	49.1	Clear Slight odor
3 Deep	56.82	101.09	29	100	6/7/2019	96	428	0.000	XXX	XXX	XXX	XXX	55	Clear Slight odor
3 Deep	57.14	101.09	29	100	11/18/2019	76	273	0.000	XXX	XXX	XXX	XXX	48	Clear Slight odor
3 Deep	57.2	101.09	29	100	6/11/2020	80	407	0.000	XXX	XXX	XXX	XXX	86	Clear Slight odor
3 Deep	57.2	101.09	29	100	11/12/2020	76	386	0.000	XXX	XXX	XXX	XXX	54.6	Clear Slight odor
3 Deep	58.13	101.09	28	100	6/15/2021	80	417	0.000	XXX	XXX	XXX	XXX	52.9	Clear Slight Odor
3 Deep	58.5	101.09	28	100	9/17/2021	84	450	0.000	XXX	XXX	XXX	XXX	74.2	Clear Slight Odor

3 Deep	58.41	101.09	28	200	6/9/2022	52	436	0.000	XXX	XXX	XXX	XXX	55.1	Clear Slight Odor
3 Deep	58.62	101.09	28	200	11/28/2022	80	487	0.000	XXX	XXX	XXX	XXX	52.9	Clear Slight Odor

ROC - Vacuum G-35 (AP-59)
Unit Letter G, Section 35, T17S, R35E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	CI	TDS	BTEX	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	53.6	64.3	1.8	5.3	1/10/2002	568	1,284	0.122	0.011	0.022	0.034	0.055	23	
1	52.89	65.03	1.94	6	5/15/2002	1,950	3,260	0.667	0.414	0.057	0.131	0.065	2.1	oil skim
1	53.02	64.75	1.877	5.75	8/19/2002	1,950	3,850	1.765	0.705	0.598	0.209	0.253	7	
1	53.08	64.7	1.859	5.6	11/11/2002	3,630	6,740	1.284	0.921	0.078	0.154	0.131	5.8	oil skim; yellow
1	53.06	64.19	1.78	5.3	2/28/2003	2,730	4,770	0.768	0.713	0.01	0.018	0.027	24.6	
1	53.2	64.2	1.75	5.28	5/22/2003	3,860	7,320	0.732	0.583	0.002	0.12	0.027	5.3	
1	53.21	64.1	1.74	5.2	8/21/2003	5,010	8,850	1.032	0.689	0.004	0.307	0.032	3.5	
1	53.29	64.2	1.746	5.2	11/19/2003	1,930	3,590	0.107	0.012	0.002	0.09	0.003	20.9	
1	53.3	64.15	1.73	5.2	2/18/2004	2,579	5,000	0.416	0.059	<0.002	0.35	0.007	1.49	
1	52.9	64.15	1.8	5	5/27/2004	1,899	4,188	2.154	1.17	0.308	0.357	0.319	2.15	
1	52.6	64.4	1.89	5.66	9/7/2004	4,700	8,270	1.647	1.11	0.0525	0.346	0.1382	17.7	mod. odor; gray
1	52.91	64.4	1.84	5.5	11/24/2004	5,200	10,400	1.108	0.881	0.0226	0.133	0.0717	799	mod. odor; gray
1	52.4	64.4	1.92	5.8	3/21/2005	5,750	9,190	3.692	2.76	0.247	0.399	0.2862	136	mod. odor; gray; sheen
1					5/11/2005	5,890	10,700	4321	2490	466	672	693	9.75	
1	52.35	64.4	1.93	5.8	8/15/2005	4,430	6,960	1.934	1.07	0.226	0.396	0.2417	126	
1	52.51	64.4	1.9	6	10/25/2005	2,360	4,420	1.09	0.799	0.0607	0.146	0.0839	166	light skim oil: strong septic odor
1	52.46	64.4	1.9	6	1/23/2006	1,960	3,540	0.242	0.141	J[0.00537]	0.078	0.0229	80.5	light skim oil: strong septic odor
1	52.7	64.4	1.9	6	4/25/2006	1,540	3,280	0.885	0.749	0.0143	0.093	0.0282	67.4	
1	52.88	64.4	1.8	6	10/25/2006	1,350	2,800	0.536	0.394	0.0204	0.0774	0.0438	45.2	Light
1	53.08	64.4	1.8	6	1/9/2007	873	1,950	0.284	0.188	<0.001	0.0883	0.00764	34.6	Light skim of oil Clear to dark gray Strong septic odor
1	53.2	64.4	1.8	10	5/24/2007	873	1,820	0.239	0.143	0.00735	0.0664	0.0227	41.2	Light skim of oil Clear to dark gray Strong septic odor
1	53.37	64.4	1.8	10	9/20/2007	800	1,738	0.304	0.189	0.004	0.082	0.029	22.2	Light skim of oil Clear to dark gray Strong septic odor
1	53.39	64.4	1.8	10	11/20/2007	320	969	0.003	0.003	<0.002	<0.002	<0.006	35.3	Light skim of oil Clear to dark gray Strong septic odor
1	53.68	64.4	1.7	6	2/4/2008	540	1,380	0.365	0.159	0.061	0.087	0.058	23.1	Light skim of oil Clear to dark gray Strong septic odor
1	53.74	64.4	1.7	6	4/29/2008	440	1,150	0.241	0.109	0.02	0.074	0.038	22.4	Light skim of oil Clear to dark gray Strong septic odor
1	53.81	64.4	1.7	6	7/29/2008	860	2,160	2.565	0.915	0.261	0.74	0.649	<10	Light skim of oil Clear to dark gray Strong septic odor
1	53.9	64.4	1.7	6	10/23/2008	680	1,790	1.958	0.785	0.192	0.531	0.45	<10	Clear turning to dark gray Light sheen Strong septic odor

1	53.77	64.45	1.7	6	1/26/2009	500	1,330	1.209	0.62	0.044	0.372	0.173	<10	Clear turning to dark gray Light sheen Strong septic odor
1	54.04	64.45	1.7	6	4/27/2009	550	1,300	0.542	0.216	0.004	0.212	0.11	14.9	Clear turning to dark gray Light sheen Strong septic odor
1	54.23	64.45	1.6	6	8/6/2009	384	1,090	0.302	0.091	0.016	0.086	0.109	14.8	Clear turning to dark gray Light sheen Strong septic odor
1	54.32	64.45	1.6	6	10/23/2009	332	896	0.164	0.04	0.001	0.086	0.037	10.9	Clear turning to dark gray Light sheen Strong septic odor
1	54.5	64.39	1.6	6	3/3/2010	232	795	0.133	0.013	0.004	0.075	0.041	22.6	Light sheen Clear to dark gray Strong septic odor
1	54.55	64.39	1.6	6	5/13/2010	152	599	0.021	<0.001	<0.001	0.016	0.005	29.9	Light sheen Clear to dark gray Strong septic odor
1	54.6	64.39	1.6	6	8/3/2010	124	520	0.033	0.003	0.001	0.023	0.006	24.1	Light sheen Clear to dark gray Strong septic odor
1	54.65	64.39	1.6	6	11/1/2010	100	489	0.045	0.003	0.003	0.031	0.008	25.4	Light sheen Clear to dark gray Strong septic odor
1	54.81	64.39	1.5	6	6/2/2011	156	565	0.119	0.018	<0.001	0.076	0.025	30.9	Light sheen Clear to dark gray Strong septic odor
1	54.96	64.39	1.5	6	11/30/2011	120	526	0.133	0.043	0.001	0.078	0.011	29.1	Light sheen Clear to dark gray Strong septic odor
1	55.08	64.39	1.5	6	5/25/2012	100	488	0.146	0.072	0.003	0.054	0.017	26.2	Light sheen Clear to dark gray Strong septic odor
1	55.24	64.39	1.5	6	11/13/2012	68	421	0.087	0.017	<0.001	0.058	0.012	30.9	Light sheen Clear to dark gray Strong septic odor
1	55.33	64.39	1.4	6	6/6/2013	72	441	0.003	0.002	0.001	<0.001	<0.003	38.6	Light sheen Clear to dark gray Strong septic odor
1	55.53	64.39	1.4	6	11/18/2013	64	425	0.111	0.022	0.002	0.08	0.007	40.1	Light sheen Clear to dark gray Strong septic odor
1	55.79	64.39	1.4	6	6/26/2014	68	408	0.003	0.003	<0.001	<0.001	<0.003	38	Light sheen Clear to dark gray Strong septic odor
1	55.65	64.39	1.4	6	12/9/2014	88	432	0.013	0.01	0.002	0.001	<0.003	44.6	Light sheen Clear to dark gray Strong septic odor
1	55.77	64.39	1.4	6	6/23/2015	84	492	0.077	0.02	<0.001	0.054	0.003	45.4	Light sheen Clear to dark gray Strong septic odor
1	55.98	64.39	1.35	6	11/12/2015	76	422	0.004	0.004	<0.001	<0.001	<0.003	52.8	Light sheen Clear to dark gray Strong septic odor
1	56.14	64.39	1.3	6	5/24/2016	56	372	0.002	0.002	<0.001	<0.001	<0.003	43.4	Light sheen Clear to dark gray Strong septic odor
1	56.28	64.39	1.3	6	11/14/2016	60	422	0.005	0.005	<0.001	<0.001	<0.003	39	Light sheen Clear to dark gray Strong septic odor
1	56.43	64.39	1.3	6	5/30/2017	52	420	0	<0.001	<0.001	<0.002	<0.003	74	Light sheen Clear to dark gray Strong septic odor
1	56.62	64.39	1.2	6	12/4/2017	92	492	0.003	0.003	<0.001	<0.001	<0.003	37	Light sheen Clear to dark gray Strong septic odor

1	56.77	64.39	1.2	6	5/22/2018	88	476	0.012	0.008	<0.001	0.004	<0.003	38.5	Light sheen Clear to dark gray Strong septic odor
1	57.03	64.39	1.2	6	11/26/2018	76	481	0.104	0.051	<0.001	0.044	0.009	31.8	Light sheen Clear to dark gray Strong septic odor
1	57.38	64.39	1.1	6	6/6/2019	64	439	0.012	0.004	0.004	0.004	<0.003	36	Light sheen Clear to dark gray Strong septic odor
1	57.62	64.39	1.1	6	11/19/2019	72	451	0.007	0.002	<0.001	0.005	<0.003	33	Light sheen Clear to dark gray Strong septic odor
1	57.81	64.39	1.1	6	6/12/2020	72	461	0.011	0.011	<0.001	<0.001	<0.003	38.9	Light sheen Clear to dark gray Strong septic odor
1	57.94	64.39	1	6	11/13/2020	80	373	0	<0.001	<0.001	<0.001	<0.003	36.5	Light sheen Clear to dark gray Strong septic odor
1	58.32	64.39	1	6	6/16/2021	92	490	0.002	0.002	<0.001	<0.001	<0.003	32.5	Light sheen Clear to dark gray Strong septic odor
1	58.64	64.39	1	6	9/16/2021	88	484	0	<0.001	<0.001	<0.001	<0.003	37.5	Light sheen Clear to dark gray Strong septic odor
1	58.96	64.39	1	6	6/10/2022	96	465	0.001	0.001	<0.001	<0.001	<0.003	70.5	Light sheen Clear to dark gray Strong septic odor
1	59.13	64.39	0.8	6	11/29/2022	84	499	0	<0.001	<0.001	<0.001	<0.003	51.4	Light sheen Clear to dark gray Strong septic odor

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	BTEX	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
2	52.08	63.65	1.9	6	6/6/2006	17	286	0.004	<0.001	j[0.000839]	j[0.000385]	0.0044	24.7	
2	52.35	63.65	1.8	6	10/25/2006	13	264	0.000	<0.001	<0.001	<0.001	<0.001	22.8	Clear
2	52.56	63.65	1.8	6	1/9/2007	14	322	0.000	<0.001	j[0.000540]	<0.001	<0.001	21.7	Clear No odor Well pumps off
2	52.66	63.94	1.8	6	5/24/2007	17	254	0.000	<0.001	<0.001	<0.001	<0.001	20.1	Clear No odor Well pumps off
2	52.84	63.94	1.8	6	9/20/2007	16	262	0.000	<0.002	<0.002	<0.002	<0.006	25.6	Clear No odor Well pumps off
2	52.86	63.94	1.8	6	11/20/2007	16	283	0.000	<0.002	<0.002	<0.002	<0.006	25	Clear No odor Well pumps off
2	52.95	64.2	1.8	6	2/4/2008	16	296	0.000	<0.002	<0.002	<0.002	<0.006	23	Clear No odor Well pumps off
2	53.01	64.2	1.8	6	4/29/2008	16	283	0.000	<0.002	<0.002	<0.002	<0.006	23.8	Clear No odor Well pumps off
2	53.15	64.2	1.8	6	7/29/2008	16	312	0.000	<0.001	<0.001	<0.001	<0.003	24	Clear No odor Well pumps off
2	53.36	64.2	1.7	6	10/23/2008	16	386	0.000	<0.001	<0.001	<0.001	<0.003	24.6	Clear No odor
2	53.42	66.51	2.1	6	1/28/2009	16	282	0.000	XXX	XXX	XXX	XXX	24	Clear No odor
2	53.51	66.51	2.1	8	4/27/2009	16	288	0.000	XXX	XXX	XXX	XXX	21.6	Clear No odor
2	53.62	66.51	2.1	8	8/6/2009	16	296	0.000	XXX	XXX	XXX	XXX	21.2	Clear No odor
2	53.66	66.51	2.1	8	10/23/2009	116	666	0.000	XXX	XXX	XXX	XXX	71	Clear No odor
2	53.8	66.51	2	8	3/3/2010	16	333	0.000	XXX	XXX	XXX	XXX	26.2	Clear No odor
2	53.86	66.51	2	8	5/13/2010	16	273	0.000	XXX	XXX	XXX	XXX	22.6	Clear No odor
2	53.87	66.51	2	8	8/4/2010	20	311	0.000	XXX	XXX	XXX	XXX	19.3	Clear No odor
MW-2 Plugged 10/20/2010														

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	BTEX	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
3 Shallow	52.77	103.05	32.7	100	1/9/2007	311	804	0.019	<0.001	0.0191	<0.001	<0.001	48.9	Clear Slight odor
3 Shallow	52.9	103.05	32.6	100	5/24/2007	599	1,070	0.000	<0.001	j[0.000380]	<0.001	<0.001	34.5	Clear Slight odor
3 Shallow	53.11	103.05	32.5	120	9/20/2007	500	1,373	0.000	<0.002	<0.002	<0.002	<0.006	39.1	Clear Strong odor
3 Shallow	53.15	103.05	32.4	150	11/20/2007	776	1,670	0.000	<0.002	<0.002	<0.002	<0.006	40.4	Clear Strong odor
3 Shallow	53.29	103.05	32.3	200	2/5/2008	670	1,590	0.000	<0.002	<0.002	<0.002	<0.006	34.3	Clear Strong odor
3 Shallow	53.31	103.05	32.3	200	4/29/2008	750	1,790	0.000	<0.002	<0.002	<0.002	<0.006	31.8	Clear Strong odor
3 Shallow	53.47	103.05	32.2	200	7/29/2008	760	1,870	0.000	<0.001	<0.001	<0.001	<0.003	27	Clear Strong odor
3 Shallow	53.6	103.05	32.1	200	10/22/2008	464	1,570	0.000	<0.001	<0.001	<0.001	<0.003	68.6	Clear Strong odor
3 Shallow	53.68	102.95	32	200	1/28/2009	710	1,690	0.000	XXX	XXX	XXX	XXX	24.3	Clear Strong odor
3 Shallow	53.79	102.95	32	200	4/27/2009	630	1,790	0.000	XXX	XXX	XXX	XXX	18.8	Clear Strong odor
3 Shallow	53.59	102.95	32.1	200	8/6/2009	710	1,680	0.000	XXX	XXX	XXX	XXX	16.5	Clear Strong odor
3 Shallow	53.97	102.95	31.8	200	10/23/2009	600	1,320	0.000	XXX	XXX	XXX	XXX	17.3	Clear Strong odor
3 Shallow	54.13	102.95	31.7	200	3/4/2010	740	1,950	0.000	XXX	XXX	XXX	XXX	26.9	Clear Strong odor
3 Shallow	54.21	102.95	31.7	200	5/12/2010	660	1,620	0.000	XXX	XXX	XXX	XXX	25.8	Clear Strong odor
3 Shallow	54.23	102.95	31.7	200	8/3/2010	580	1,470	0.000	XXX	XXX	XXX	XXX	21	Clear Strong odor
3 Shallow	54.25	102.95	31.7	200	11/2/2010	52	396	0.000	XXX	XXX	XXX	XXX	62.1	Clear Strong odor
3 Shallow	54.45	102.95	31.5	200	6/2/2011	770	1,560	0.000	XXX	XXX	XXX	XXX	34.6	Clear Strong odor
3 Shallow	54.56	102.95	31.5	200	11/30/2011	780	1,690	0.000	XXX	XXX	XXX	XXX	38.7	Clear Strong odor
3 Shallow	54.71	102.95	31.4	200	5/25/2012	830	1,680	0.000	XXX	XXX	XXX	XXX	38.7	Clear Strong odor
3 Shallow	54.8	102.95	31.3	200	11/14/2012	600	1,380	0.000	XXX	XXX	XXX	XXX	30.3	Clear Strong odor
3 Shallow	54.89	102.95	31.2	200	6/7/2013	630	1,410	0.000	XXX	XXX	XXX	XXX	64.3	Clear Strong odor
3 Shallow	55.18	102.95	31.1	200	11/17/2013	460	1,200	0.000	XXX	XXX	XXX	XXX	35.9	Clear Strong odor
3 Shallow	55.41	102.95	30.9	200	6/27/2014	428	1,140	0.000	XXX	XXX	XXX	XXX	30.3	Clear Strong odor
3 Shallow	55.09	102.95	31.1	200	12/9/2014	232	600	0.000	XXX	XXX	XXX	XXX	24	Clear Strong odor
3 Shallow	55.39	102.95	30.9	200	6/26/2015	348	874	0.000	XXX	XXX	XXX	XXX	27.2	Clear Strong odor
3 Shallow	55.61	102.95	30.77	200	11/12/2015	316	1,130	0.000	XXX	XXX	XXX	XXX	48.8	Clear Strong odor
3 Shallow	55.78	102.95	30.7	200	5/24/2016	300	1,070	0.000	XXX	XXX	XXX	XXX	37.8	Clear Strong odor
3 Shallow	55.89	102.95	29	200	11/14/2016	292	1,070	0.000	XXX	XXX	XXX	XXX	50	Clear Strong odor
3 Shallow	56.04	102.95	30	200	5/30/2017	296	998	0.000	XXX	XXX	XXX	XXX	48	Clear Strong odor
3 Shallow	56.23	102.95	30	200	12/4/2017	248	922	0.000	XXX	XXX	XXX	XXX	35	Clear Strong odor
3 Shallow	56.39	102.95	30.3	200	5/22/2018	232	896	0.000	XXX	XXX	XXX	XXX	58.1	Clear Strong odor
3 Shallow	56.66	102.95	30.1	200	11/26/2018	276	906	0.000	XXX	XXX	XXX	XXX	39.6	Clear Strong odor
3 Shallow	57.01	102.95	30	100	6/6/2019	116	806	0.000	XXX	XXX	XXX	XXX	27	Clear Strong odor
3 Shallow	57.25	102.95	30	100	11/19/2019	136	471	0.000	XXX	XXX	XXX	XXX	38	Clear Strong odor
3 Shallow	57.45	102.95	30	200	6/12/2020	148	661	0.000	XXX	XXX	XXX	XXX	33.3	Clear Strong odor
3 Shallow	57.61	102.95	29	200	11/13/2020	148	661	0.000	XXX	XXX	XXX	XXX	33.3	Clear Strong odor
3 Shallow	57.97	102.95	30	100	6/16/2021	224	862	0.000	XXX	XXX	XXX	XXX	25.5	Clear Strong odor
3 Shallow	58.25	102.95	30	100	9/16/2021	216	946	0.000	XXX	XXX	XXX	XXX	14.4	Clear Strong odor
3 Shallow	58.59	102.95	29	200	6/10/2022	212	939	0.000	XXX	XXX	XXX	XXX	<10	Clear Strong odor
3 Shallow	58.76	102.95	29	200	11/29/2022	172	898	0.000	XXX	XXX	XXX	XXX	26.6	Clear Strong odor

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	CI	TDS	BTEX	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
3 Deep	52.77	103.05	32.7	100	1/9/2007	313	830	0.014	<0.001	0.0136	<0.001	<0.001	46.5	Clear Slight odor
3 Deep	52.9	103.05	32.6	100	5/24/2007	648	1,090	0.000	<0.001	j[0.000320]	<0.001	<0.001	34.7	Clear Slight odor
3 Deep	53.11	103.05	32.5	120	9/20/2007	570	1,442	0.000	<0.002	<0.002	<0.002	<0.006	34	Clear Strong Odor
3 Deep	53.15	103.05	32.4	150	11/20/2007	570	1,312	0.000	<0.002	<0.002	<0.002	<0.006	42.5	Clear Strong odor
3 Deep	53.29	103.05	32.3	200	2/5/2008	820	1,710	0.000	<0.002	<0.002	<0.002	<0.006	32.7	Clear Strong odor
3 Deep	53.31	103.05	32.3	200	4/29/2008	930	1,920	0.000	<0.002	<0.002	<0.002	<0.006	36.7	Clear Strong odor
3 Deep	53.47	103.05	32.2	200	7/29/2008	1,010	2,110	0.000	<0.001	<0.001	<0.001	<0.003	40	Clear Strong odor
3 Deep	53.6	103.05	32.1	200	10/22/2008	670	1,710	0.000	<0.001	<0.001	<0.001	<0.003	<10	Clear Strong odor
3 Deep	53.68	102.95	32	200	1/28/2009	1,560	3,000	0.000	XXX	XXX	XXX	XXX	31	Clear Strong odor
3 Deep	53.79	102.95	32	200	4/27/2009	1,080	2,770	0.000	XXX	XXX	XXX	XXX	19.2	Clear Strong odor
3 Deep	53.59	102.95	32.1	200	8/6/2009	1,090	2,110	0.000	XXX	XXX	XXX	XXX	26.8	Clear Strong odor
3 Deep	53.97	102.95	31.8	200	10/23/2009	720	1,930	0.000	XXX	XXX	XXX	XXX	14.4	Clear Strong odor
3 Deep	54.13	102.95	31.7	200	3/4/2010	810	1,860	0.000	XXX	XXX	XXX	XXX	32.2	Clear Strong odor
3 Deep	54.21	102.95	31.7	200	5/12/2010	760	1,940	0.000	XXX	XXX	XXX	XXX	28.2	Clear Strong odor
3 Deep	54.23	102.95	31.7	200	8/3/2010	790	1,510	0.000	XXX	XXX	XXX	XXX	29.4	Clear Strong odor
3 Deep	54.25	102.95	31.7	200	11/2/2010	950	2,050	0.000	XXX	XXX	XXX	XXX	22.4	Clear Strong odor
3 Deep	54.45	102.95	31.5	200	6/2/2011	570	1,400	0.000	XXX	XXX	XXX	XXX	48.6	Clear Strong odor
3 Deep	54.56	102.95	31.5	200	11/30/2011	930	2,140	0.000	XXX	XXX	XXX	XXX	23.2	Clear Strong odor
3 Deep	54.71	102.95	31.4	200	5/25/2012	940	2,090	0.000	XXX	XXX	XXX	XXX	35.5	Clear Strong odor
3 Deep	54.8	102.95	31.3	200	11/14/2012	1,040	2,450	0.000	XXX	XXX	XXX	XXX	27.6	Clear Strong odor
3 Deep	54.89	102.95	31.2	200	6/7/2013	1,040	2,520	0.000	XXX	XXX	XXX	XXX	55.1	Clear Strong odor
3 Deep	55.18	102.95	31.1	200	11/17/2013	930	2,090	0.000	XXX	XXX	XXX	XXX	29	Clear Strong odor
3 Deep	55.71	102.95	30.7	200	6/27/2014	940	2,200	0.000	XXX	XXX	XXX	XXX	22.2	Clear Strong odor
3 Deep	55.09	102.95	31.1	200	12/9/2014	410	1,040	0.000	XXX	XXX	XXX	XXX	27.6	Clear Strong odor
3 Deep	55.39	102.95	30.9	200	6/23/2015	328	998	0.000	XXX	XXX	XXX	XXX	27.4	Clear Strong odor
3 Deep	55.61	102.95	30.77	200	11/12/2015	710	1,500	0.000	XXX	XXX	XXX	XXX	37.4	Clear Strong odor
3 Deep	55.78	102.95	30.7	200	5/24/2016	304	1,070	0.000	XXX	XXX	XXX	XXX	41.1	Clear Strong odor
3 Deep	55.89	102.95	30.6	200	11/14/2016	292	1,070	0.000	XXX	XXX	XXX	XXX	50.8	Clear Strong odor
3 Deep	56.04	102.95	30	200	5/30/2017	392	992	0.000	XXX	XXX	XXX	XXX	68	Clear Strong odor
3 Deep	56.23	102.95	30	200	12/4/2017	224	956	0.000	XXX	XXX	XXX	XXX	19	Clear Strong odor
3 Deep	56.39	102.95	30.3	200	5/22/2018	260	794	0.000	XXX	XXX	XXX	XXX	61.6	Clear Strong odor
3 Deep	56.66	102.95	30.1	200	11/26/2018	236	452	0.000	XXX	XXX	XXX	XXX	33.5	Clear Strong odor
3 Deep	57.01	102.95	29	200	6/6/2019	116	806	0.000	XXX	XXX	XXX	XXX	27	Clear Strong odor
3 Deep	67.25	102.95	29	200	11/19/2019	168	535	0.000	XXX	XXX	XXX	XXX	27	Clear Strong odor
3 Deep	57.45	102.95	30	200	6/12/2020	160	669	0.000	XXX	XXX	XXX	XXX	36	Clear Strong odor
3 Deep	57.61	102.95	29	200	11/13/2020	176	715	0.000	XXX	XXX	XXX	XXX	32.5	Clear Strong odor
3 Deep	57.97	102.95	29	200	6/16/2021	220	873	0.000	XXX	XXX	XXX	XXX	24.6	Clear Strong odor
3 Deep	58.25	102.95	29	200	9/16/2021	216	939	0.000	XXX	XXX	XXX	XXX	11	Clear Strong odor
3 Deep	58.59	102.95	29	200	6/10/2022	212	942	0.000	XXX	XXX	XXX	XXX	<10	Clear Strong odor
3 Deep	58.76	102.95	29	200	11/29/2022	188	908	0.000	XXX	XXX	XXX	XXX	25	Clear Strong odor

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	BTEX	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
4	52.98	68.25	9.9	35	5/24/2007	1,200	2,050	0.155	0.0521	0.0582	0.017	0.02819	43.2	Clear to gray Strong odor Light sheen of oil
4	53.18	68.25	9.8	35	9/20/2007	1,600	3,262	0.269	0.146	0.058	0.023	0.042	17.8	Clear to gray Strong odor Light sheen of oil
4	53.21	68.25	9.8	35	11/20/2007	1,600	3,256	0.061		0.034	0.01	0.017	26	Clear to gray Strong odor Light sheen of oil
4	53.28	68.25	9.7	35	2/4/2008	2,680	5,140	0.736	0.411	0.151	0.082	0.092	9.94	Clear to gray Light sheen of oil Clear to dark gray Strong septic odor
4	53.33	68.25	9.7	35	4/29/2008	1,800	3,370	1.077	0.529	0.222	0.15	0.176	11.2	Clear turning to dark gray Light sheen of oil Strong septic odor
4	53.43	68.25	9.6	35	7/29/2008	1,420	2,620	0.395	0.208	0.086	0.041	0.06	20	Clear turning to dark gray Light sheen of oil Strong septic odor
4	53.52	68.25	9.6	35	10/23/2008	1,040	2,110	0.513	0.189	0.137	0.078	0.109	21.5	Clear turning to dark gray Light sheen of oil Strong septic odor
4	53.58	68.17	9.5	35	1/26/2009	730	1,650	0.463	0.196	0.16	0.048	0.059	21.9	Clear turning to dark gray Light sheen Strong septic odor
4	53.72	68.17	9.4	35	4/27/2009	940	1,970	0.199	0.097	0.033	0.037	0.032	20.9	Clear turning to dark gray Light sheen Strong septic odor
4	53.72	68.17	9.4	35	8/6/2009	770	1,750	0.249	0.079	0.055	0.046	0.069	16.9	Clear turning to dark gray Light sheen Strong septic odor
4	53.94	68.17	9.2	35	10/23/2009	660	1,420	0.052	0.018	0.012	0.012	0.01	13.6	Clear turning to dark gray Light sheen Strong septic odor
4	54.13	68.17	9.1	35	3/3/2010	670	1,490	0.202	0.066	0.064	0.025	0.047	20.2	Product present Sock in well Clear to gray Strong odor
4	54.19	66.17	9.1	35	5/13/2010	500	1,270	0.014	0.002	0.005	0.002	0.005	26.4	Product present Sock in well Clear to gray Strong odor
4	54.22	68.17	9.1	35	8/3/2010	396	1,010	0.027	0.011	0.008	0.003	0.005	23.3	Product present Sock in well Clear to gray Strong odor
4	54.27	68.17	9	35	11/1/2010	252	689	0.020	0.006	0.007	0.003	0.004	24.5	Heavy sheen Clear to gray Strong odor Sock in well
4	54.42	68.17	8.9	35	6/2/2011	328	887	0.009	0.003	0.003	0.003	<0.003	32.5	Heavy sheen Clear to gray Strong odor Sock in well
4	54.64	68.17	8.8	35	11/30/2011	88	457	0.017	0.008	0.006	0.003	<0.003	30.8	Heavy sheen Clear to gray Strong odor Sock in well

4	54.78	68.17	8.7	35	5/25/2012	280	792	1.137	0.157	0.405	0.212	0.363	25.9	Heavy sheen Clear to gray Strong odor Sock in well
4	54.91	68.17	8.6	35	11/13/2012	92	469	0.880	0.142	0.224	0.2	0.314	27.4	Heavy sheen Clear to gray Strong odor Sock in well
4	55.01	68.17	8.6	35	6/6/2013	96	462	0.313	0.153	0.019	0.118	0.023	23.6	Heavy sheen present/Sock placed in well/Clear to gray/Strong odor
4	55.24	68.17	8.4	35	11/18/2013	180	590	0.406	0.118	0.05	0.195	0.043	23.3	Heavy sheen present/Sock placed in well/Clear to gray/Strong odor
4	55.49	68.17	8.2	35	6/27/2014	144	478	0.558	0.244	0.082	0.177	0.055	13.8	Heavy sheen present/Sock placed in well/Clear to gray/Strong odor
4	55.12	68.17	8.5	35	12/9/2014	332	852	0.429	0.143	0.086	0.156	0.044	28.5	Heavy sheen present/Sock placed in well/Clear to gray/Strong odor
4	55.47	68.17	8.3	35	6/23/2015	180	656	0.222	0.08	0.025	0.101	0.016	15.8	Heavy sheen present/Sock placed in well/Clear to gray/Strong odor
4	55.6	68.17	8	35	11/12/2015	152	604	0.148	0.048	0.015	0.076	0.009	12.2	Heavy sheen present/Sock placed in well/Clear to gray/Strong odor
4	55.84	68.17	8	35	5/24/2016	204	666	0.123	0.074	0.011	0.032	0.006	33.4	Heavy sheen present/Sock placed in well/Clear to gray/Strong odor
4	55.95	68.17	8	35	11/14/2016	144	800	0.003	0.003	<0.001	<0.001	<0.003	48	Heavy sheen present/Sock placed in well/Clear to gray/Strong odor
4	56.1	68.17	7.8	35	5/30/2017	312	988	0.144	0.02	<0.001	0.052	0.072	64	Heavy sheen present/Sock placed in well/Clear to gray/Strong odor
4	56.28	68.17	7.7	35	12/4/2017	204	650	0.042	0.023	0.007	0.008	0.004	27	Heavy sheen present/Sock placed in well/Clear to gray/Strong odor
4	56.45	68.17	7.6	35	5/22/2018	208	600	0.051	0.031	0.007	0.008	0.005	30.1	Heavy sheen present/Sock placed in well/Clear to gray/Strong odor
4	56.85	68.17	7.4	35	11/26/2018	160	624	0.055	0.028	0.01	0.01	0.007	37.4	Heavy sheen present/Sock placed in well/Clear to gray/Strong odor
4	57.08	67.17	7.2	35	6/6/2019	148	574	0.017	0.009	0.004	0.004	<0.003	28	Heavy sheen present/Sock placed in well/Clear to gray/Strong odor

4	57.32	67.17	7.1	25	11/19/2019	140	552	0.013	0.007	0.003	0.003	<0.003	28	Heavy sheen present/Sock placed in well/Clear to gray/Strong odor
4	57.52	68.17	6.9	35	6/12/2020	112	513	0.012	0.007	0.003	0.002	<0.003	30.2	Heavy sheen present/Sock placed in well/Clear to gray/Strong odor
4	57.65	68.17	6.8	35	11/13/2020	120	509	0.000	<0.001	<0.001	<0.001	<0.003	30.4	Heavy sheen present/Sock placed in well/Clear to gray/Strong odor
4	58.07	67.17	6.6	35	6/16/2021	96	494	0.009	0.005	0.003	0.001	<0.003	32.4	Heavy sheen present/Sock placed in well/Clear to gray/Strong odor
4	58.39	67.17	6.6	35	9/16/2021	88	477	0.000	<0.001	<0.001	<0.001	<0.003	40.6	Heavy sheen present/Sock placed in well/Clear to gray/Strong odor
4	58.64	67.17	6.2	30	6/10/2022	104	467	0.005	0.003	0.002	<0.001	<0.003	15.2	Heavy sheen present/Sock placed in well/Clear to gray/Strong odor
4	58.81	67.17	6.2	30	11/29/2022	84	491	0.000	<0.001	<0.001	<0.001	<0.003	53.4	Heavy sheen present/Sock placed in well/Clear to gray/Strong odor



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

June 17, 2022

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM F-35 SWD AND G-35 SWD

Enclosed are the results of analyses for samples received by the laboratory on 06/13/22 10:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-21-14. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	06/13/2022	Sampling Date:	06/09/2022
Reported:	06/17/2022	Sampling Type:	Water
Project Name:	VACUUM F-35 SWD AND G-35 SWD	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC35 F&G-LEA CTY., NM		

Sample ID: F -35 SWD MONITOR WELL #3- SHALLOW (H222511-01)

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	72.0	4.00	06/13/2022	ND	100	100	100	0.00		
Sulfate 375.4		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	54.5	25.0	06/15/2022	ND	18.8	93.8	20.0	3.31		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	386	5.00	06/14/2022	ND	514	103	500	7.31		

Sample ID: F -35 SWD MONITOR WELL #3- DEEP (H222511-02)

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	52.0	4.00	06/13/2022	ND	100	100	100	0.00		
Sulfate 375.4		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	55.1	25.0	06/15/2022	ND	18.8	93.8	20.0	3.31		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	436	5.00	06/15/2022	ND	514	103	500	7.31		

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	06/13/2022	Sampling Date:	06/10/2022
Reported:	06/17/2022	Sampling Type:	Water
Project Name:	VACUUM F-35 SWD AND G-35 SWD	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC35 F&G-LEA CTY., NM		

Sample ID: G-35 SWD MONITOR WELL #1 (H222511-03)

BTEX 8021B		mg/L		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	0.001	0.001	06/16/2022	ND	0.020	99.9	0.0200	1.35		
Toluene*	<0.001	0.001	06/16/2022	ND	0.019	96.4	0.0200	1.17		
Ethylbenzene*	<0.001	0.001	06/16/2022	ND	0.019	92.8	0.0200	1.19		
Total Xylenes*	<0.003	0.003	06/16/2022	ND	0.059	99.0	0.0600	1.68		
Total BTEX	<0.006	0.006	06/16/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 77.1-124

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	96.0	4.00	06/13/2022	ND	100	100	100	0.00	

Sulfate 375.4		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	70.5	25.0	06/15/2022	ND	18.8	93.8	20.0	3.31		

TDS 160.1		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	465	5.00	06/15/2022	ND	514	103	500	7.31	

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Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	06/13/2022	Sampling Date:	06/10/2022
Reported:	06/17/2022	Sampling Type:	Water
Project Name:	VACUUM F-35 SWD AND G-35 SWD	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC35 F&G-LEA CTY., NM		

Sample ID: G-35 SWD MONITOR WELL #3 - SHALLOW (H222511-04)

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	212	4.00	06/13/2022	ND	100	100	100	0.00		
Sulfate 375.4		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	<10.0	10.0	06/15/2022	ND	18.8	93.8	20.0	3.31		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	939	5.00	06/15/2022	ND	514	103	500	7.31		

Sample ID: G-35 SWD MONITOR WELL #3 - DEEP (H222511-05)

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM						
	Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*		212	4.00	06/13/2022	ND	100	100	100	0.00	
Sulfate 375.4		mg/L		Analyzed By: GM						
	Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*		<10.0	10.0	06/15/2022	ND	18.8	93.8	20.0	3.31	
TDS 160.1										
TDS 160.1		mg/L		Analyzed By: GM						
	Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*		942	5.00	06/14/2022	ND	514	103	500	7.31	

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	06/13/2022	Sampling Date:	06/10/2022
Reported:	06/17/2022	Sampling Type:	Water
Project Name:	VACUUM F-35 SWD AND G-35 SWD	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC35 F&G-LEA CTY., NM		

Sample ID: G-35 SWD MONITOR WELL #4 (H222511-06)

BTX 8021B		mg/L		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.003	0.001	06/16/2022	ND	0.020	99.9	0.0200	1.35	
Toluene*	0.002	0.001	06/16/2022	ND	0.019	96.4	0.0200	1.17	
Ethylbenzene*	<0.001	0.001	06/16/2022	ND	0.019	92.8	0.0200	1.19	
Total Xylenes*	<0.003	0.003	06/16/2022	ND	0.059	99.0	0.0600	1.68	
Total BTX	<0.006	0.006	06/16/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 77.1-124

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	104	4.00	06/13/2022	ND	100	100	100	0.00	

Sulfate 375.4		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	15.2	10.0	06/15/2022	ND	18.8	93.8	20.0	3.31	

TDS 160.1		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	467	5.00	06/14/2022	ND	514	103	500	7.31	

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Celey D. Keene, Lab Director/Quality Manager

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Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
BS-3	Blank spike recovery outside of lab established statistical limits, but still within method limits. Data is not adversely affected.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager

Cardinal Laboratories, Inc.

Page 7 of 7

ANALYSIS REQUEST
(Circle or Specify Method No.)[illegible]

Phone Results	Yes	No
Fax Results	Yes	No Additional Fax Number:

REMARKS:

Email Results to: kjones@riceswd.com
rozanne@sdacres.com



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

December 12, 2022

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM F-35 SWD AND G-35 SWD

Enclosed are the results of analyses for samples received by the laboratory on 12/02/22 15:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



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Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	12/02/2022	Sampling Date:	11/28/2022
Reported:	12/12/2022	Sampling Type:	Water
Project Name:	VACUUM F-35 SWD AND G-35 SWD	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC35 F&G-LEA CTY., NM		

Sample ID: F -35 SWD MONITOR WELL #3- SHALLOW (H225667-01)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	92.0	4.00	12/05/2022	ND	100	100	100	0.00		
Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	52.6	25.0	12/05/2022	ND	18.4	92.0	20.0	5.55		
TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	472	5.00	12/06/2022	ND	491	98.2	500	3.46		

Sample ID: F -35 SWD MONITOR WELL #3- DEEP (H225667-02)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	80.0	4.00	12/05/2022	ND	100	100	100	0.00		
Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	52.9	10.0	12/05/2022	ND	18.4	92.0	20.0	5.55		
TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	487	5.00	12/06/2022	ND	491	98.2	500	3.46		

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Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	12/02/2022	Sampling Date:	11/29/2022
Reported:	12/12/2022	Sampling Type:	Water
Project Name:	VACUUM F-35 SWD AND G-35 SWD	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC35 F&G-LEA CTY., NM		

Sample ID: G-35 SWD MONITOR WELL #1 (H225667-03)

BTEX 8021B		mg/L		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	12/09/2022	ND	0.021	105	0.0200	1.50	
Toluene*	<0.001	0.001	12/09/2022	ND	0.021	106	0.0200	2.11	
Ethylbenzene*	<0.001	0.001	12/09/2022	ND	0.021	107	0.0200	1.78	
Total Xylenes*	<0.003	0.003	12/09/2022	ND	0.065	109	0.0600	1.48	
Total BTEX	<0.006	0.006	12/09/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 77.1-124

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	84.0	4.00	12/05/2022	ND	100	100	100	0.00	

Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	51.4	25.0	12/05/2022	ND	18.4	92.0	20.0	5.55		

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	499	5.00	12/06/2022	ND	491	98.2	500	3.46	

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Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	12/02/2022	Sampling Date:	11/29/2022
Reported:	12/12/2022	Sampling Type:	Water
Project Name:	VACUUM F-35 SWD AND G-35 SWD	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC35 F&G-LEA CTY., NM		

Sample ID: G-35 SWD MONITOR WELL #3 - SHALLOW (H225667-04)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	172	4.00	12/05/2022	ND	100	100	100	0.00		
Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	26.6	10.0	12/05/2022	ND	18.4	92.0	20.0	5.55		
TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	898	5.00	12/06/2022	ND	491	98.2	500	3.46		

Sample ID: G-35 SWD MONITOR WELL #3 - DEEP (H225667-05)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	188	4.00	12/05/2022	ND	100	100	100	0.00		
Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	25.0	10.0	12/05/2022	ND	18.4	92.0	20.0	5.55		
TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	908	5.00	12/06/2022	ND	491	98.2	500	3.46		

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Analytical Results For:

Rice Operating Company
 KATIE JONES
 112 W. Taylor
 Hobbs NM, 88240
 Fax To: (575) 397-1471

Received:	12/02/2022	Sampling Date:	11/29/2022
Reported:	12/12/2022	Sampling Type:	Water
Project Name:	VACUUM F-35 SWD AND G-35 SWD	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC35 F&G-LEA CTY., NM		

Sample ID: G-35 SWD MONITOR WELL #4 (H225667-06)

BTEX 8021B		mg/L		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	12/09/2022	ND	0.021	105	0.0200	1.50	
Toluene*	<0.001	0.001	12/09/2022	ND	0.021	106	0.0200	2.11	
Ethylbenzene*	<0.001	0.001	12/09/2022	ND	0.021	107	0.0200	1.78	
Total Xylenes*	<0.003	0.003	12/09/2022	ND	0.065	109	0.0600	1.48	
Total BTEX	<0.006	0.006	12/09/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 77.1-124

Chloride, SM4500CI-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	84.0	4.00	12/05/2022	ND	100	100	100	0.00	

Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	53.4	10.0	12/05/2022	ND	18.4	92.0	20.0	5.55		

TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	491	5.00	12/06/2022	ND	491	98.2	500	3.46		

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager

Cardinal Laboratories, Inc.

Company Name: RICE Operating Company		BILL TO Company: RICE Operating Company		PO#
Project Manager: Katie Jones		Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240		
Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240		Phone#: (575) 393-9174		Fax#: (575) 397-1471
Phone #: (575) 393-9174		Fax #: (575) 397-1471		
Project #:		Project Name: Vacuum F-35 SWD and G-35 SWD		
Project Location: T17S-R35E-Sec35 F and G ~ Lea County - New Mexico		Sampler Signature: Rozanne Johnson (575) 631-9310		

LAB # (LAB USE ONLY)	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX				PRESERVATIVE METHOD						SAMPLING	
				WATER	SOIL	AIR	SLUDGE	HCL (2 40ml VOA)	HNO ₃	NaHSO ₄	H ₂ SO ₄	ICE (1-1Liter HDPE)	NONE	DATE (2022)	TIME
1	F-35 SWD Monitor Well #3-Shallow	G	1	X								1		11/28	14:10
2	F-35 SWD Monitor Well #3-Deep	G	1	X								1		11/28	14:20
3	G-35 SWD Monitor Well #1	G	3	X					2			1		11/29	10:10
4	G-35 SWD Monitor Well #3-Shallow	G	1	X								1		11/29	15:20
5	G-35 SWD Monitor Well #3-Deep	G	1	X								1		11/29	15:30
6	G-35 SWD Monitor Well #4	G	3	X					2			1		11/29	11:50

Relinquished by: <i>[Signature]</i>	Date: <i>12/2/2022</i>	Time: <i>15:40</i>	Received by: <i>[Signature]</i>	Date: <i>12-2-22</i>	Time: <i>1540</i>
Relinquished by: <i>[Signature]</i>	Date:	Time:	Received By: (Laboratory Staff)	Date:	Time:
Delivered By: (Circle One)	Sample Condition		CHECKED BY:		
☒ UPS ☐ Bus ☐ Other:	Yes	☒ Cool ☐ Intact	Yes	(Initials) <i>[Signature]</i>	
	No	☐ Yes ☐ No	No		

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # _____

ANALYSIS REQUEST

(Circle or Specify Method No.)

[illegible]

REMARKS:

Email Results to:

kjones@riceswd.com
rozanne@sdacres.com

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Turn Around Time ~ 24 Hours

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 202302

CONDITIONS

Operator: RICE OPERATING COMPANY 122 W Taylor Hobbs, NM 88240	OGRID: 19174
	Action Number: 202302
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Review of the 2022 Annual GW Monitoring Report for Vacuum F-35 & G-35: Content Satisfactory 1. Continue to conduct groundwater monitoring per plan for 2023 for both sites 2. Submit 2023 Annual GW monitoring report by April 1, 2024 for both sites. 3. Further investigate possible remediation options and considerations for (MW-1). Persistent free product consistently present.	6/21/2023