

RECEIVED
Office of Oil and Gas
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WV Department of
Environmental Protection

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47-095-02712 County Tyler District Union/Meade
Quad Middlebourne/ Ben's Run Pad Name Gorrell Field/Pool Name ----
Farm name Elizabeth Gorrell Well Number Mills Unit 2H
Operator (as registered with the OOG) Antero Resources Corporation
Address 1615 Wynkoop Street City Denver State CO Zip 80202

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4363189m Easting 500805m
Landing Point of Curve Northing 4363251.60m Easting 500564.54m
Bottom Hole Northing 4367097m Easting 499183m

Elevation (ft) 1045' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine

Mud Type(s) and Additive(s)
Air - Foam & 4% KCL
Mud - Polymer

Date permit issued 10/26/2020 Date drilling commenced 3/12/2021 Date drilling ceased 4/21/2021
Date completion activities began 5/30/2021 Date completion activities ceased 7/4/2021
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 505' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1378' Void(s) encountered (Y/N) depths No
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by:
DCN
12/21/21
12/31/2021

API 47-095 - 02712 Farm name Elizabeth Gorrell Well number Mills Unit 2H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	24"	20"	80'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	620'	New	54.5#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2558'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	20288'	New	20#, P-110	N/A	Y
Tubing		2-3/8"	6457'		4.7#, P-110		
Packer type and depth set		N/A					

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Class A	266 sx	15.6	1.18	56	0'	8 Hrs.
Surface	Class A	600 sx	15.8	1.16	124	0'	8 Hrs.
Coal							
Intermediate 1	Class A	900 sx	15.8	1.17	186	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	792 sx (Lead) 3065 sx (Tail)	13.5 (Lead), 15.2(Tail)	1.4 (Lead), 1.32 (Tail)	719	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 20338' MD, 6195' TVD (BHL), 6258' (Deepest Point Drilled) Loggers TD (ft) 20338' MD

Deepest formation penetrated Marcellus Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 6562'

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

Conductor - 0

Surface - 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface

Intermediate - 1 above float joint, 1 above float collar, 1 every 4th joint to surface

Production - 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED N/A

API 47- 095 - 02712

Farm name Elizabeth Gorrell

Well number Mills Unit 2H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
*PLEASE SEE ATTACHED EXHIBIT 1					

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
*PLEASE SEE ATTACHED EXHIBIT 2								

Please insert additional pages as applicable.

API 47- 095 - 02712 Farm name Elizabeth Gorrell Well number Mills Unit 2H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Marcellus</u>	<u>6154' (TOP)</u>	<u>TVD</u>	<u>7299' (TOP)</u> <u>MD</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2800 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 20585 mcfpd Oil 523 bpd NGL --- bpd Water -4 bpd GAS MEASURED BY Estimated Orifice Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H₂S, ETC)</u>
	<u>DEPTH IN FT NAME TVD</u>	<u>DEPTH IN FT TVD</u>	<u>DEPTH IN FT MD</u>	<u>DEPTH IN FT MD</u>	

***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

Drilling Contractor H & P Drilling
Address 912 N Eagle Valley Rd City Howard State PA Zip 16841

Logging Company Nine Energy Services
Address 6500 West Fwy City Fort Worth State TX Zip 76116

Cementing Company Halliburton Energy Services
Address 3000 W. Sam Houston Pkwy City Houston State TX Zip 76114

Stimulating Company Halliburton
Address 3000 W. Sam Houston Pkwy City Houston State TX Zip 76114

Please insert additional pages as applicable.

Completed by Brandi Hankins Telephone 303-357-7223
Signature  Title Completions Technician Date 11/10/21

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

12/31/2021

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	5/30/2021	20225	20187	36	Marcellus
2	5/30/2021	20147.60539	19982.6324	36	Marcellus
3	5/30/2021	19947.23775	19782.2647	36	Marcellus
4	5/30/2021	19746.8701	19581.8971	36	Marcellus
5	5/31/2021	19546.50245	19381.5294	36	Marcellus
6	5/31/2021	19346.1348	19181.1618	36	Marcellus
7	5/31/2021	19145.76716	18980.7941	36	Marcellus
8	5/31/2021	18945.39951	18780.4265	36	Marcellus
9	6/1/2021	18745.03186	18580.0588	36	Marcellus
10	6/1/2021	18544.66422	18379.6912	36	Marcellus
11	6/1/2021	18344.29657	18179.3235	36	Marcellus
12	6/1/2021	18143.92892	17978.9559	36	Marcellus
13	6/1/2021	17943.56127	17778.5882	36	Marcellus
14	6/1/2021	17743.19363	17578.2206	36	Marcellus
15	6/2/2021	17542.82598	17377.8529	36	Marcellus
16	6/2/2021	17342.45833	17177.4853	36	Marcellus
17	6/2/2021	17142.09069	16977.1176	36	Marcellus
18	6/2/2021	16941.72304	16776.75	36	Marcellus
19	6/2/2021	16741.35539	16576.3824	36	Marcellus
20	6/2/2021	16540.98775	16376.0147	36	Marcellus
21	6/3/2021	16340.6201	16175.6471	36	Marcellus
22	6/3/2021	16140.25245	15975.2794	36	Marcellus
23	6/3/2021	15939.8848	15774.9118	36	Marcellus
24	6/3/2021	15739.51716	15574.5441	36	Marcellus
25	6/3/2021	15539.14951	15374.1765	36	Marcellus
26	6/4/2021	15338.78186	15173.8088	36	Marcellus
27	6/4/2021	15138.41422	14973.4412	36	Marcellus
28	6/4/2021	14938.04657	14773.0735	36	Marcellus
29	6/5/2021	14737.67892	14572.7059	36	Marcellus
30	6/5/2021	14537.31127	14372.3382	36	Marcellus
31	6/5/2021	14336.94363	14171.9706	36	Marcellus
32	6/5/2021	14136.57598	13971.6029	36	Marcellus
33	6/6/2021	13936.20833	13771.2353	36	Marcellus
34	6/6/2021	13735.84069	13570.8676	36	Marcellus
35	6/6/2021	13535.47304	13370.5	36	Marcellus
36	6/6/2021	13335.10539	13170.1324	36	Marcellus
37	6/7/2021	13134.73775	12969.7647	36	Marcellus
38	6/7/2021	12934.3701	12769.3971	36	Marcellus
39	6/7/2021	12734.00245	12569.0294	36	Marcellus
40	6/7/2021	12533.6348	12368.6618	36	Marcellus
41	6/7/2021	12333.26716	12168.2941	36	Marcellus
42	6/7/2021	12132.89951	11967.9265	36	Marcellus
43	6/8/2021	11932.53186	11767.5588	36	Marcellus
44	6/8/2021	11732.16422	11567.1912	36	Marcellus
45	6/8/2021	11531.79657	11366.8235	36	Marcellus
46	6/9/2021	11331.42892	11166.4559	36	Marcellus
47	6/9/2021	11131.06127	10966.0882	36	Marcellus
48	6/9/2021	10930.69363	10765.7206	36	Marcellus
49	6/9/2021	10730.32598	10565.3529	36	Marcellus
50	6/10/2021	10529.95833	10364.9853	36	Marcellus
51	6/10/2021	10329.59069	10164.6176	36	Marcellus
52	6/10/2021	10129.22304	9964.25	36	Marcellus
53	6/11/2021	9928.855392	9763.88235	36	Marcellus
54	6/11/2021	9728.487745	9563.51471	36	Marcellus
55	6/11/2021	9528.120098	9363.14706	36	Marcellus
56	6/12/2021	9327.752451	9162.77941	36	Marcellus
57	6/12/2021	9127.384804	8962.41176	36	Marcellus
58	6/12/2021	8927.017157	8762.04412	36	Marcellus
59	6/13/2021	8726.64951	8561.67647	36	Marcellus
60	6/13/2021	8526.281863	8361.30882	36	Marcellus
61	6/13/2021	8325.914216	8160.94118	36	Marcellus
62	6/14/2021	8125.546569	7960.57353	36	Marcellus
63	6/14/2021	7925.178922	7760.20588	36	Marcellus
64	6/14/2021	7724.811275	7559.83824	36	Marcellus
65	6/14/2021	7524.443627	7359.47059	36	Marcellus
66	6/15/2021	7324.07598	7159.10294	36	Marcellus
67	6/15/2021	7123.708333	6958.73529	36	Marcellus
68	6/15/2021	6923.340686	6758.36765	36	Marcellus
69	6/15/2021	6722.973039	6558	36	Marcellus

EXHIBIT 2

Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	5/30/2021	86.82	8253	9004	2564.9	160883	201362	N/A
2	5/30/2021	91.34	8602	5604	3403	402140	299257	N/A
3	5/30/2021	88.77	8326	5244	3321	409040	311952	N/A
4	5/30/2021	98.53	8490	5526	3475	397623	316302	N/A
5	5/31/2021	98.13	8302	5178	3552	400229	309292	N/A
6	5/31/2021	99.12	8375	4856	3437	399998	309197	N/A
7	5/31/2021	90.53	8620	7320	3474	406820	293472	N/A
8	5/31/2021	91.27	8729	8100	3625	399326	288004	N/A
9	6/1/2021	66.5	8565	5437	3311	399795	398535	N/A
10	6/1/2021	98.07	8582	5665	3557	399863	296984	N/A
11	6/1/2021	94.68	8604	5756	3323	401233	285750	N/A
12	6/1/2021	94.57	8556	6015	3482	400600	283449	N/A
13	6/1/2021	89.53	8780	4803	3489	401860	312457	N/A
14	6/1/2021	93.56	8654	5873	3405	404140	288085	N/A
15	6/2/2021	99.25	8598	5527	3251	399791	286994	N/A
16	6/2/2021	98.84	8268	5625	3223	399877	279067	N/A
17	6/2/2021	91.08	8573	5263	3259	405336	282369	N/A
18	6/2/2021	96.89	8637	3632	3247	403080	281285	N/A
19	6/2/2021	94.07	8791	5583	3462	402300	283140	N/A
20	6/2/2021	95.32	8645	4116	3276	399803	285313	N/A
21	6/3/2021	96.03	8731	6716	3613	400006	318155	N/A
22	6/3/2021	95.66	8608	6062	3330	396360	280072	N/A
23	6/3/2021	97.78	8675	5427	3367	403960	280945	N/A
24	6/3/2021	98.46	8713	3928	3478	400105	280518	N/A
25	6/3/2021	96.2	8721	6334	3348	399960	279200	N/A
26	6/4/2021	99.13	8591	5647	3392	401013	281474	N/A
27	6/4/2021	96.66	8643	6389	3449	399298	277621	N/A
28	6/4/2021	80.81	8494	7980	3662	399686	338386	N/A
29	6/5/2021	95.63	8680	5326	3557	399877	281009	N/A
30	6/5/2021	98.9	8534	6109	3414	400141	279067	N/A
31	6/5/2021	86.56	8199	6610	3981	402720	314498	N/A
32	6/5/2021	97.98	8633	4905	3741	399892	282641	N/A
33	6/6/2021	99.22	8502	5795	3784	400151	278377	N/A
34	6/6/2021	99.6	8108	5658	3663	399915	311420	N/A
35	6/6/2021	98.53	8140	4288	3617	399790	278859	N/A
36	6/6/2021	99.11	8289	5267	3813	403560	282269	N/A
37	6/7/2021	99.62	8544	5905	3733	402860	285584	N/A
38	6/7/2021	98.96	8294	5175	3725	399940	275649	N/A
39	6/7/2021	99.43	8146	5575	3516.92	400234	279061	N/A
40	6/7/2021	99.26	8453	5418	3568	405460	279165	N/A
41	6/7/2021	97.51	7959	5411	3358	404600	286491	N/A
42	6/7/2021	99.28	8064	5689	3733	399337	276022	N/A
43	6/8/2021	99.38	7730	5041	3548	400200	277171	N/A
44	6/8/2021	99.88	7624	6697	3402	403620	277520	N/A
45	6/8/2021	91.49	7887	5073	3894	399881	326946	N/A
46	6/9/2021	98.67	8026	6163	3452	402140	285187	N/A
47	6/9/2021	99.45	7661	8360	3244	399645	280034	N/A
48	6/9/2021	99.66	7781	5201	3238	406040	282031	N/A
49	6/9/2021	99.01	8081	6890	3582	399902	281839	N/A
50	6/10/2021	97.62	7822	6319	3602	399708	281276	N/A
51	6/10/2021	100.1	8412	8925	3552	394915	276847	N/A
52	6/10/2021	98.65	7933	4667	3472	400013	279847	N/A
53	6/11/2021	99.4	7588	5638	3635	406620	283678	N/A
54	6/11/2021	99.57	7833	6380	3555	401063	295540	N/A
55	6/11/2021	96.39	7954	4509	3565	402860	306152	N/A
56	6/12/2021	99.31	7573	5961	3542	401691	302268	N/A
57	6/12/2021	99.83	7727	6680	3749	395105	293490	N/A
58	6/12/2021	95.32	7534	6343	3606	401781	299052	N/A
59	6/13/2021	99.84	7246	6597	3627	401356	328736	N/A
60	6/13/2021	100.44	7676	6767	3581	401304	295964	N/A
61	6/13/2021	98.93	7674	6937	3553	401699	299061	N/A
62	6/14/2021	98.9	6991	5864	3298	402549	299445	N/A
63	6/14/2021	100.69	7507	6826	3576	401565	289507	N/A
64	6/14/2021	100.1	7661	6174	3784	402363	296649	N/A
65	6/14/2021	98.69	7862	5871	3881	401811	295482	N/A
66	6/15/2021	100.29	7729	6334	3745	401645	294044	N/A
67	6/15/2021	99.24	7226	6530	3744	401526	295793	N/A
68	6/15/2021	99.38	7236	6167	3552	401879	286938	N/A
69	6/15/2021	99.58	7333	5992	3764	399702	300757	N/A
	AVG=	96	8,174	5,922	3,518	27,440,185	20,130,003	TOTAL

EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Silty Sandstone	70	300	70	300
Sandy Siltstone	300	380	300	380
Sandstone	380	540	380	540
Sandy Siltstone	540	580	540	580
Silty Sandstone	580	630	580	630
Silty Shale	630	720	630	720
Shale	720	1,280	720	1,280
Sandstone	1,280	1,660	1,280	1,660
Sandy Siltstone	1,660	1,780	1,660	1,780
Silty Sandstone, tr Shale	1,780	1,820	1,780	1,820
Sandstone	1,820	1,870	1,820	1,870
Sandy siltstone	1,870	1,880	1,870	1,880
Sandstone	1,880	1,934	1,880	N/A
Big Lime	1,964	2,798	1,934	2,798
Fifty Foot Sandstone	2,798	2,897	2,768	2,897
Gordon	2,897	3,232	2,867	3,237
Fifth Sandstone	3,232	3,323	3,207	3,332
Bayard	3,323	3,894	3,302	3,949
Speechley	3,894	4,164	3,919	4,235
Balltown	4,164	4,472	4,205	4,567
Bradford	4,472	4,905	4,537	5,015
Benson	4,905	5,203	4,985	5,315
Alexander	5,203	6,089	5,285	7,138
Sycamore	5,991	6,059	6,155	7,108
Middlesex	6,059	6,138	7,108	7,260
Burkett	6,138	6,150	7,260	7,290
Tully	6,150	6,154	7,290	7,299
Marcellus	6,154	NA	7,299	NA

*Please note Antero determines formation tops based on mud logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/30/2021
Job End Date:	6/15/2021
State:	West Virginia
County:	Tyler
API Number:	47-095-02712-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Mills Unit 2H
Latitude:	39.41814700
Longitude:	-80.99081000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,258
Total Base Water Volume (gal):	21,262,224
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Produced Water Mixture	Halliburton	Base Fluid					
			Water	7732-18-5	100.00000	86.67453	Density = 8.50
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.09663	

Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
MC B-8614A	MultiChem	Biocide					
				Listed Below			
HYDROCHLORIC ACID, 22 BAUME	Halliburton	Solvent					
				Listed Below			
OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker					
				Listed Below			
HAI-501	Halliburton	Acid Corrosion Inhibitor					
				Listed Below			
FLUID Enviro-Syn HCR-7000-WL	Fluid Energy Group	Acid Replacement					
				Listed Below			
Excelerate LX-15	Halliburton	Friction Reducer					
				Listed Below			

Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.

			Crystalline silica, quartz	14808-60-7	100.00000	13.15985
			Complex Amine Compound	Proprietary	60.00000	0.02784
			Hydrochloric acid	7647-01-0	30.00000	0.01817
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01392
			Proprietary	Proprietary	20.00000	0.00902
			Guar gum	9000-30-0	100.00000	0.00520
			Proprietary	Proprietary	10.00000	0.00451
			Glutaraldehyde	111-30-8	30.00000	0.00246
			Sobitan, mono-9-octadecenoate, (Z)	1338-43-8	5.00000	0.00232
			Surfactant	Proprietary	5.00000	0.00232
			Ethoxylated alcohols	Proprietary	5.00000	0.00047
			Alkoxylated polyhydric alcohol	Proprietary	1.00000	0.00046
			Organic chloride compound	Proprietary	1.00000	0.00046
			Alkyl (C12-16) dimethylbenzyl ammonium chloride	68424-85-1	5.00000	0.00041
			Methanol	67-56-1	100.00000	0.00011
			Ethanol	64-17-5	1.00000	0.00008
			Ammonium persulfate	7727-54-0	100.00000	0.00004
			Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00003
			Modified thiourea polymer	Proprietary	30.00000	0.00003
			Oxylated phenolic resin	Proprietary	30.00000	0.00001
			Propargyl alcohol	107-19-7	5.00000	0.00001
			Hexadecene	629-73-2	5.00000	0.00001
			Organic salt #2	Proprietary	0.01000	0.00000
			Formaldehyde	50-00-0	0.01000	0.00000

			Sodium glycolate	2836-32-0	0.01000	0.00000	
			Organic salt #1	Proprietary	0.01000	0.00000	
			Sodium hydroxide	1310-73-2	0.01000	0.00000	
			Acrylamide	79-06-1	0.01000	0.00000	
			Nitrated acetate salt	Proprietary	0.01000	0.00000	
			C.I. pigment Orange 5	3468-63-1	1.00000	0.00000	

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

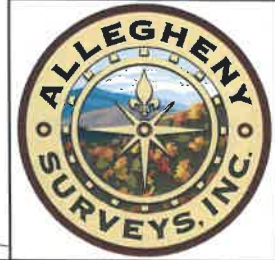
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

9,175' to Top Hole

2,728' to Bottom Hole

LATITUDE 39 - 27 - 30

BTM LONGITUDE 81 - 00 - 00
TOP LONGITUDE 80 - 57 - 30



1,811' to Bottom Hole

14,637' to Top Hole

Mills Unit 2H As-Drilled
POE Coordinates
West Virginia
Coordinate System
of 1927, North Zone
N: 337,767.44'
E: 1,578,237.01'
Latitude: 39°25'03.90"
Longitude: 80°59'34.54"
UTM Zone 17, NAD 1983
N: 4,363,144.927m
E: 500,623.346m

Legend

- Proposed gas well
- Well Reference, as noted
- Monument, as noted
- Existing Well, as noted
- Existing Plugged Well, as noted
- Existing Abandon Well, as noted
- Digitized Well, as noted
- Existing Road
- Surface boundary (approx.)
- Interior surface tracts (approx.)

Notes:

West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
Well No. Mills Unit 2H Top Hole coordinates are
N: 337,902.40' Latitude: 39°25'05.33"
E: 1,578,837.95' Longitude: 80°59'26.91"
Bottom Hole coordinates are
N: 350,815.37' Latitude: 39°27'12.10"
E: 1,573,727.48' Longitude: 81°00'34.79"
UTM Zone 17, NAD 1983
Top Hole Coordinates Bottom Hole Coordinates
N: 4,363,189.105m N: 4,367,097.055m
E: 500,805.737m E: 499,183.134m
Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

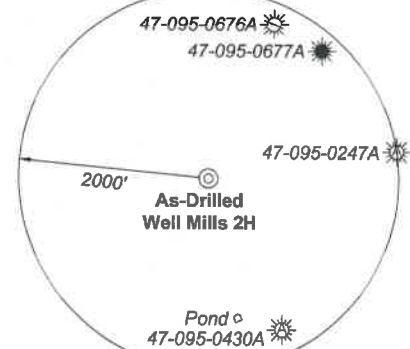
Top Hole Coordinates, As-drilled data, and information was provided by Antero Resources Corporation. Allegheny Surveys Inc. (ASI) is not certifying the data and information provided. ASI is not responsible for any errors or inaccuracies with the data and information that has been provided.



SEAL

I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

Bradley D. Miller
Bradley D. Miller, P.S. 2167



Note: 0 water wells and a pond were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad.

Tag	Bearing	Dist.
L1	S 84°28' E	420.1'
L2	S 26°43' E	2,246.5'
L3	N 47°54' W	2,525.7'
L4	N 02°48' W	2,157.9'

FILE NO: 51-54-M-17

DRAWING NO: Mills Unit 2H As-Drilled

SCALE: 1" = 2000'

MINIMUM DEGREE OF ACCURACY: Submeter

PROVEN SOURCE OF ELEVATION: CORS, Bridgeport, WV

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE: October 4 20 21

OPERATOR'S WELL NO. Mills Unit 2H

API WELL NO

47 - 095 - 02712
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW

LOCATION: ELEVATION: 1045' As-Built

WATERSHED: Outlet Middle Island Creek

Top: Middlebourne
QUADRANGLE: Btm: Bens Run

DISTRICT: Union / Meade

Dale V. Hadley; Craig E. Smith (2);
Kenneth & Lora G. Thomas; WVDNR;
BRC Appalachian Minerals I LLC (2); Jimmy B. Bailey;
Janet Sue Baker; Elizabeth Gorrell, et al; Black Gold Group;

COUNTY: Tyler 0.35242;
ACREAGE: 242.50 5; 81; 172.68125;
100.93125;
24.18;
50; 35.13; 16;
155.5; 16; 20.41;

SURFACE OWNER: Elizabeth Gorrell

ROYALTY OWNER: Kerr-McGee Oil & Gas Onshore LP; Julie Summers (2); Ronald Aston

LEASE NO:

ACREAGE:

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled

PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 20,338' MD

WELL OPERATOR: Antero Resources Corporation

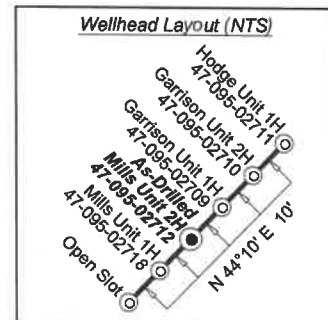
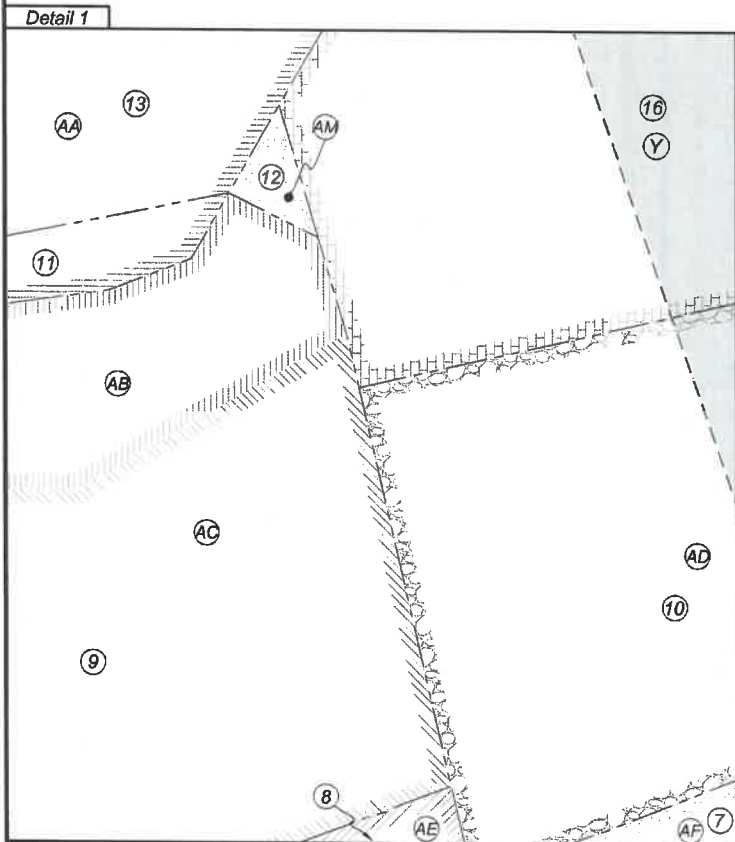
DESIGNATED AGENT: Dianna Stamper - CT Corporation System

ADDRESS: 1615 Wynkoop Street
Denver CO 80202

ADDRESS: 5400 D Big Tyler Road
Charleston, WV 25313



ID	Lease
A	Jerry M. & Anna A. Cooper
B	Francis M. Thorn
C	Kenneth & Lora G. Thomas
D	Black Gold Group
E	WVDNR
F	BRC Appalachian Minerals I, LLC
G	James & Anita Carr
H	Gerald W. & Carmen Silliman
I	Craig E. Smith
J	Jay L. & Carla Summers
K	Julie Summers
L	Brian L. Vandruff
M	Sherry R. Brookover
N	Antero Resources Corp.
O	Julie Summers
P	Craig E. Smith
Q	Mack Percy Gas Wells, LLC
R	Mack Percy Gas Wells, LLC
S	J. Bradford Wells
T	Orville Dale Kemp
U	Daniel K. Pancake
V	Ethel Bell Yekel
W	Charles N. Grachanin
X	Jimmy B. Bailey
Y	Dale V. Hadley
Z	John M. Garrison
AA	Fisher Oil Co.
AB	Randy L. Myers
AC	Gregory L. & Tammy L. Bever
AD	Ronald Aston
AE	Richard W. & Elisa L. Barnhart
AF	Kay Lynn & Michael Lee Wells
AG	Harry E. West, Jr., et ux
AH	BRC Appalachian Minerals I, LLC
AI	Wilma Jane Benefield
AJ	Kerr-McGee Oil & Gas Onshore LP
AK	Janet Sue Baker
AL	Elizabeth Gorrell, et al
AM	Linda Baker, et al



FILE NO: _____
DRAWING NO: Mills Unit 2H As-Drilled
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: CORS, Bridgeport, WV

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

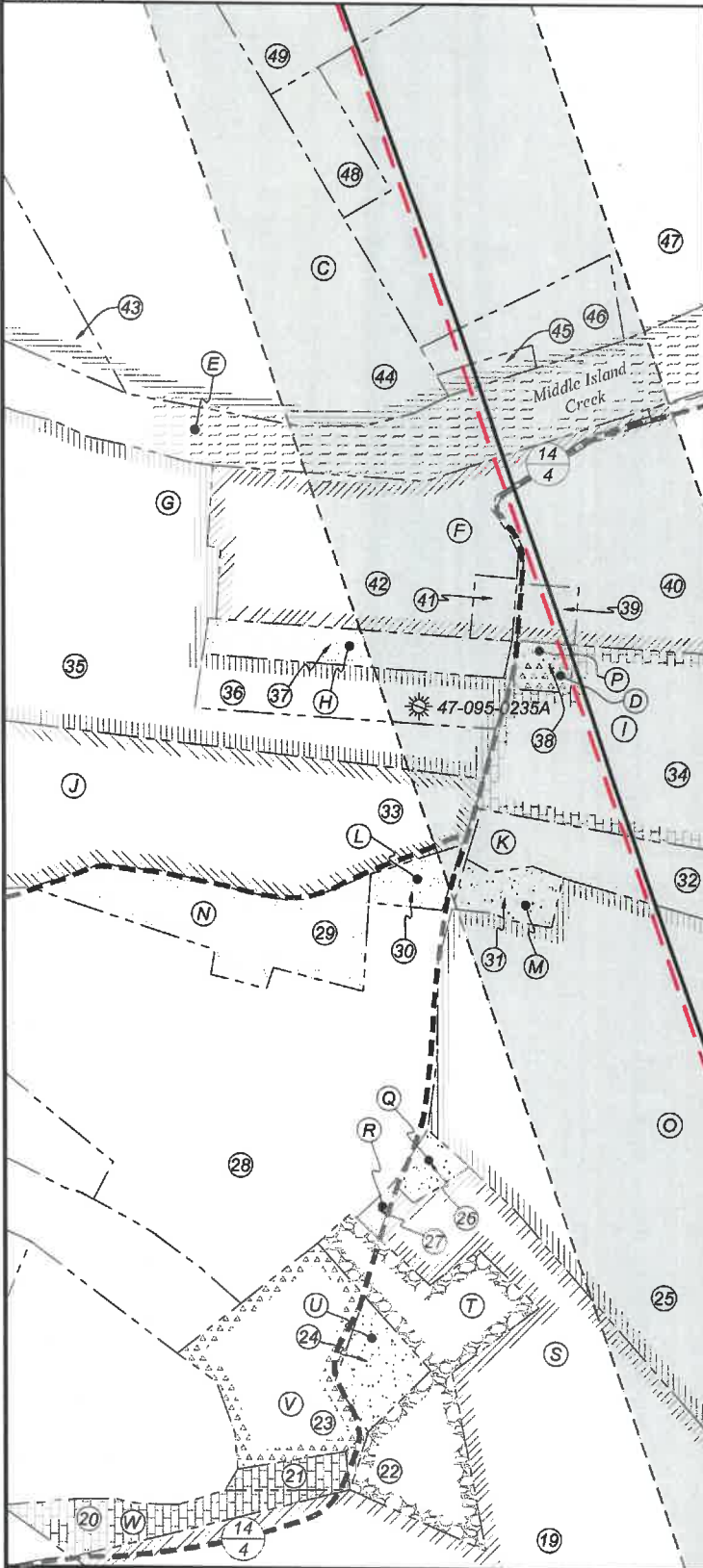
DATE: October 4 20 21
OPERATOR'S WELL NO. Mills Unit 2H
API WELL NO
47 — 095 — 02712
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
As-Built
LOCATION: ELEVATION: 1045' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Top: Middlebourne Btm: Bens Run 0.35242;
DISTRICT: Union / Meade Dale V. Hadley; Craig E. Smith (2); Kenneth & Lora G. Thomas; WVDNR; COUNTY: Tyler 5; 81; 172.68125;
SURFACE OWNER: Elizabeth Gorrell BRC Appalachian Minerals I LLC (2); Jimmy B. Bailey; ACREAGE: 242.30 145; 100.93125;
ROYALTY OWNER: Kerr-McGee Oil & Gas Onshore LP; Julie Summers (2); Ronald Aston LEASE NO: _____ ACREAGE: 50; 35.13; 16; 155.5; 16; 20.41;
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled 6,195' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 20,338' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System
ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road
Denver CO 80202 Charleston, WV 25313



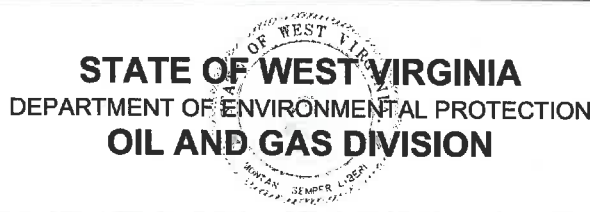
Detail 2



Tyler County - Meade District				
No.	TM / Par	Owner	Bk / Pg	Ac.
1	7 / 15	Elizabeth Gorrell	321 / 360	242.50
2	7 / 5	Coastal Forest Resources Co.	301 / 131	74.30
3	7 / 14	Russell G. Smith & Ruth M. Smith Family Trust	541 / 608	50.00
4	7 / 9	Russell G. Smith & Ruth M. Smith Family Trust	541 / 608	66.85
5	7 / 4	Marcia A. Hill	506 / 479	74.50
6	7 / 3	Noreen M. & Harry E. West, Jr.	328 / 530	88.00
7	4 / 33	Michael L. & Kay L. Wells	300 / 362	11.56
8	4 / 20.1	Richard W. Barnhart, Jr.	213 / 162	49.74
9	4 / 26	Gregory L. Tammy L. Bever	620 / 145	53.30
10	4 / 27	Stanley M. & Shelba J. Shultz	202 / 438	271.29
11	4 / 21.1	Clayton Hill	321 / 360	5.00
12	4 / 10.1	Lori C. Kemp, et al	343 / 714	0.89
13	4 / 21	Lori C. Kemp, et al	343 / 714	27.27
14	4 / 9	Lori C. Kemp, et al	343 / 714	35.18
15	4 / 10	Lori C. Kemp, et al	343 / 714	84.00
16	4 / 22	Lori C. Kemp, et al	343 / 714	63.60
17	4 / 11	Lori C. Kemp, et al	343 / 714	25.08
18	4 / 12	Gerald W. Bailey, et al Revocable Living Trust	374 / 647	47.00

Tyler County - Union District				
No.	TM / Par	Owner	Bk / Pg	Ac.
19	15 / 26	Jay L. & Carla Summers	429 / 201	24.18
20	15 / 25	Charles N. & Marie A. Grachanin	344 / 722	1.25
21	15 / 25.1	Charles N. & Marie A. Grachanin	345 / 162	0.34
22	15 / 28	Orville Dale Kemp	332 / 416	6.00
23	15 / 31	Doris A. & Leo M. Herrick, Jr.	329 / 501	4.30
24	15 / 30	Harold W. Pancake	313 / 662	0.75
25	15 / 27	Jay L. & Carla Summers	429 / 201	35.13
26	15 / 29	Nelson C. Smith	W28 / 603	1.07
27	15 / 32	Delma M. Smith	173 / 468	0.15
28	15 / 12	Matthew Wagner, et al	W31 / 132	26.77
29	15 / 6	Harry G. Buchanan	356 / 235	2.00
30	15 / 12.1	Brian L. Vanduff	311 / 191	0.60
31	15 / 13	Brian L. Vanduff	311 / 191	0.87
32	15 / 14	Jay L. & Carla Summers, et al	W24 / 47	16.00
33	15 / 11	Jay L. & Carla Summers, et al	W24 / 47	13.00
34	15 / 10	Craig E. Smith	335 / 275	16.00
35	15 / 2	James E. & Anita M. Carr	334 / 779	34.63
36	15 / 2.1	James E. & Anita M. Carr	314 / 693	2.82
37	15 / 7	Gerold W. Carmen M. Sillman	221 / 66	2.30
38	15 / 8	E.U.B. Church	51 / 496	0.47
39	15 / 9	Stephen P. & Susan C. Racer	318 / 82	0.56
40	15 / 4	Stephen P. Racer	301 / 595	60.00
41	15 / 5	Thomas L. Ash	323 / 589	0.45
42	15 / 3	George P. Greenaway III	373 / 339	7.80
43	13 / 71	Richard W. Heath II, et al	370 / 542	35.00
44	13 / 72	The Wilharm Cabin Trust	568 / 172	32.00
45	13 / 67	Christopher W. Elliott	350 / 820	1.00
46	13 / 68	Christopher W. Elliott	350 / 820	3.25
47	13 / 69	The Wilharm Cabin Trust	568 / 172	28.50
48	13 / 70	The Wilharm Cabin Trust	568 / 172	1.00
49	13 / 73	Jerry M. & Anna A. Cooper	343 / 778	39.00
50	13 / 37	Frances M. Asher Thom	398 / 45	112.74
51	13A / 16	Robert Standiford	343 / 530	3.43
52	13 / 40	Jerry M. & Anna A. Cooper	352 / 148	6.60

FILE NO: _____
DRAWING NO: Mills Unit 2H As-Drilled
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: CORS, Bridgeport, WV



DATE: October 4 20 21
OPERATOR'S WELL NO. Mills Unit 2H
API WELL NO
47 - 095 - 02712
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
As-Built
LOCATION: ELEVATION: 1045' WATERSHED: Outlet Middle Island Creek Top: Middlebourne
DISTRICT: Union / Meade QUADRANGLE: Btm: Bens Run 0.35242;
SURFACE OWNER: Elizabeth Gorrell COUNTY: Tyler 5; 81; 172.68125;
ROYALTY OWNER: Kerr-McGee Oil & Gas Onshore LP; Julie Summers (2); Ronald Aston LEASE NO: _____ ACREAGE: 115.100.93125;
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION ACREAGE: 242.50 242.41; 24.18;
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled 50; 35.13; 16;
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 20,338' MD 155.5; 16; 20.41;

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System
ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road
Denver CO 80202 Charleston, WV 25313

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Discharge Monitoring Report
Oil and Gas General Permit

Company Name: Antero Resources Corporation
API No: 47-095-02712 County: Tyler
District: Union /Meade Well No: Mills Unit 2H
Farm Name: Elizabeth Gorrell

Discharge Date/s From: (MMDDYY) 07/13/21 To: (MMDDYY) 08/12/21

Discharge Times. From: 0:00 To: 24:00

Total Volume to be Disposed from this facility (gallons): 1,030,780

Disposal Option(s) Utilized (write volumes in gallons):

- (1) Land Application: 0 (Include a topographical map of the Area.)
(2) UIC: 1087 Permit No. 3400923821, 3400923823, 3400923824
(3) Offsite Disposal: 0 Site Location: _____
(4) Reuse: 1,029,692 Alternate Permit Number: _____
(5) Centralized Facility: 0 Permit No. _____
(6) Other method: 0 (Include an explanation)

Follow Instructions below to determine your treatment category:

Optional Pretreatment test: N/A Cl- mg/l N/A DO mg/l

1. Do you have permission to use expedited treatment from the Director or his representative?
(Y/N) N/A If yes, who? N/A and place a four (4) on line 7.
If not go to line 2
2. Was Frac Fluid or flowback put into the pit? (Y/N) N/A If yes, go to line 5. If not, go to line 3.
3. Do you have a chloride value pretreatment (see above)? (Y/N) N/A If yes, go to line 4
If not, go to line 5.
4. Is the Chloride level less than 5000 mg/l? (Y/N) N/A If yes, then enter a one (1) on line 7.
5. Do you have a pretreatment value for DO? (See above) (Y/N) N/A If yes, go to line 6
If not, enter a three (3) in line 7.
6. Is the DO level greater than 2.5 mg/l?(Y/N) N/A If yes, enter a two (2) on line 7. If not, enter a three (3) on line 7.
7. N/A is the category of your pit. Use the Appropriate section.
8. Comments on Pit condition: N/A no pit on site

Name of Principal Exec. Officer: Gretchen Kohler

Title of Officer: Director, Environmental and Regulatory Compliance

Date Completed: 10/27/21

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Gretchen Kohler

Signature of a Principal Exec. Officer or Authorized agent.

12/31/2021

Category 1
Sampling Results
API No : _____

Parameter	Predischarge		Discharge		Units
	Limits	Reported	Limits	Reported	
pH	6-10	_____	6-10	_____	S.U
Settling Time	5	_____	N/A	N/A	Days
Fe	6	_____	6	_____	mg/l
D.O.	2.5	_____	2.5	_____	mg/l
Settleable Sol.	0.5	_____	0.5	_____	mg/l
Cl	5,000	_____	5,000	_____	mg/l
Oil	Trace	_____	Trace	_____	Obs.
TOC**		_____	Monitor	_____	mg/l
Oil and Grease		_____	Monitor	_____	mg/l
Total Al***		_____	Monitor	_____	mg/l
TSS		_____	Monitor	_____	mg/l
Total Mn	Monitor	_____	Monitor	_____	mg/l
Volume		_____	Monitor	_____	Gal
Flow		_____	Monitor	_____	Gal/min
Disposal Area		_____	Monitor	_____	Acres

*** Al is only reported if the pH is above 9.0

Category 2
Sampling Results
API No : _____

Parameter	Predischarge		Discharge		Units
	Limits	Reported	Limits	Reported	
pH	6-10	_____	6-10	_____	S.U
Settling Time	10	_____	N/A	N/A	Days
Fe	6	_____	6	_____	mg/l
D.O.	2.5	_____	2.5	_____	mg/l
Settleable Sol.	0.5	_____	0.5	_____	mg/l
Cl*	12,500	_____	12,500	_____	mg/l
Oil	Trace	_____	Trace	_____	Obs.
TOC**		_____	Monitor	_____	mg/l
Oil and Grease		_____	Monitor	_____	mg/l
Total Al***		_____	Monitor	_____	mg/l
TSS		_____	Monitor	_____	mg/l
Total Mn	Monitor	_____	Monitor	_____	mg/l
Volume		_____	Monitor	_____	Gal
Flow		_____	Monitor	_____	Gal/min
Disposal Area		_____	Monitor	_____	Acres

* Can be 25,000 with inspector's approval,

(Inspector's signature): _____

Date: _____

** Include a description of your aeration technique.

Aeration Code: _____

*** Al is only reported if the pH is above 9.0

Category 3
Sampling Results
API No : _____

Parameter	Predischarge		Discharge		Units
	Limits	Reported	Limits	Reported	
pH	6-10	_____	6-10	_____	S.U
Settling Time	20	_____	N/A	N/A	Days
Fe	6	_____	6	_____	mg/l
D.O.	2.5	_____	2.5	_____	mg/l
Settleable Sol.	0.5	_____	0.5	_____	mg/l
Cl*	12,500	_____	12,500	_____	mg/l
Oil	Trace	_____	Trace	_____	Obs.
TOC**			Monitor	_____	mg/l
Oil and Grease			Monitor	_____	mg/l
Total Al***			Monitor	_____	mg/l
TSS			Monitor	_____	mg/l
Total Mn	Monitor	_____	Monitor	_____	mg/l
Volume			Monitor	_____	Gal
Flow			Monitor	_____	Gal/min
Disposal Area			Monitor	_____	Acres

* Can be 25,000 with inspector's approval,

(Inspector's signature): _____

Date: _____

** Include a description of your aeration technique.

Aeration Code: _____

*** Al is only reported if the pH is above 9.0.

Category 4
Sampling Results
API No: _____

Parameter	Predischarge		Discharge		Units
	Limits	Reported	Limits	Reported	
pH	6-10	_____	6-10	_____	S.U
Settling Time	1	_____	N/A	N/A	Days
Fe	Monitor	_____	Monitor	_____	mg/l
D.O.	Monitor	_____	Monitor	_____	mg/l
Settleable Sol.	Monitor	_____	Monitor	_____	mg/l
Cl*	12,500	_____	12,500	_____	mg/l
Oil	Trace	_____	Trace	_____	Obs.
TOC**			Monitor	_____	mg/l
Oil and Grease			Monitor	_____	mg/l
TSS			Monitor	_____	mg/l
Total Mn	Monitor	_____	Monitor	_____	mg/l
Volume			Monitor	_____	Gal
Flow			Monitor	_____	Gal/min
Activated Carbon (0.175)			N/A	N/A	lb/B1
Date Site Reclaimed	N/A	N/A			10 days from dis.
Disposal Area			Monitor	_____	Acres

* Can be 25,000 with inspector's approval,

(Inspector's signature): _____

Date: _____