

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

API 47 - 095 - 02707 County Tyler District Ellsworth
Quad Porter Falls 7.5' Pad Name Margery Pad Field/Pool Name -----
Farm name Kayla Leek Well Number Grapevine Unit 1H
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 4374191m Easting 514642m
Landing Point of Curve Northing 4374201.58m Easting 514328.53m
Bottom Hole Northing 4377481m Easting 513231m

Elevation (ft) 1042' 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

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Date permit issued 9/23/2020 Date drilling commenced 11/16/2020 Date drilling ceased 11/26/2020
Date completion activities began 2/2/2021 Date completion activities ceased 3/14/2021
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 102' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1998' 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:

API 47- 095 - 02707 Farm name Kayla Leek Well number Grapevine Unit 1H

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"	106'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	372'	New	54.5#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2579'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	18457'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6876'		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	285 sx	15.6	1.18	60	0'	8 Hrs.
Surface	Class A	431 sx	15.6	1.20	92	0'	8 Hrs.
Coal							
Intermediate 1	Class A	884 sx	15.6	1.19	187	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	792 sx (Lead) 2842 sx (Tail)	13.5 (Lead), 15.2(Tail)	1.4 (Lead), 1.6 (Tail)	637	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 18477' MD, 6535' TVD (BHL), 6601' (Deepest Point Drilled) Loggers TD (ft) 18477' MD **RECEIVED**
 Deepest formation penetrated Marcellus Plug back to (ft) N/A Office of Oil and Gas
 Plug back procedure N/A

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Kick off depth (ft) 5927'

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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 - 02707 Farm name Kayla Leek Well number Grapevine Unit 1H

PERFORATION RECORD

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

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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 47-095-02707 Farm name Kayla Leek Well number Grapevine Unit 1H

PRODUCING FORMATION(S)	DEPTHS		
<u>Marcellus</u>	<u>6554' (TOP)</u>	<u>TVD</u>	<u>6930" (TOP)</u> MD
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

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 3718 mcfpd Oil 230 bpd NGL --- bpd Water 5122 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
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*PLEASE SEE ATTACHED EXHIBIT 3

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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 Schlumberger Oilfield Services
Address 300 Schlumberger Dr City Sugarland State TX Zip 77478

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

Please insert additional pages as applicable.

Completed by Carly Marvel Telephone 303-357-7373
Signature Carly Marvel Title Permitting Agent Date 3/27/2023

API 47-095-02707 Farm Name Kavla Leek Well Number Grapevine Unit 1H

Exhibit 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	2/2/2021	18361	18314	36	Marcellus
2	2/3/2021	18275.27083	18108.625	36	Marcellus
3	2/5/2021	18072.89583	17906.25	36	Marcellus
4	2/5/2021	17870.52083	17703.875	36	Marcellus
5	2/6/2021	17668.14583	17501.5	36	Marcellus
6	2/6/2021	17465.77083	17299.125	36	Marcellus
7	2/7/2021	17263.39583	17096.75	36	Marcellus
8	2/7/2021	17061.02083	16894.375	36	Marcellus
9	2/8/2021	16858.64583	16692	36	Marcellus
10	2/8/2021	16656.27083	16489.625	36	Marcellus
11	2/9/2021	16453.89583	16287.25	36	Marcellus
12	2/9/2021	16251.52083	16084.875	36	Marcellus
13	2/10/2021	16049.14583	15882.5	36	Marcellus
14	2/10/2021	15846.77083	15680.125	36	Marcellus
15	2/11/2021	15644.39583	15477.75	36	Marcellus
16	2/11/2021	15442.02083	15275.375	36	Marcellus
17	2/12/2021	15239.64583	15073	36	Marcellus
18	2/12/2021	15037.27083	14870.625	36	Marcellus
19	2/13/2021	14834.89583	14668.25	36	Marcellus
20	2/13/2021	14632.52083	14465.875	36	Marcellus
21	2/14/2021	14430.14583	14263.5	36	Marcellus
22	2/15/2021	14227.77083	14061.125	36	Marcellus
23	2/15/2021	14025.39583	13858.75	36	Marcellus
24	2/16/2021	13823.02083	13656.375	36	Marcellus
25	2/16/2021	13620.64583	13454	36	Marcellus
26	2/17/2021	13418.27083	13251.625	36	Marcellus
27	2/17/2021	13215.89583	13049.25	36	Marcellus
28	2/17/2021	13013.52083	12846.875	36	Marcellus
29	2/18/2021	12811.14583	12644.5	36	Marcellus
30	2/18/2021	12608.77083	12442.125	36	Marcellus
31	2/18/2021	12406.39583	12239.75	36	Marcellus
32	2/18/2021	12204.02083	12037.375	36	Marcellus
33	2/19/2021	12001.64583	11835	36	Marcellus
34	2/19/2021	11799.27083	11632.625	36	Marcellus
35	2/19/2021	11596.89583	11430.25	36	Marcellus
36	2/20/2021	11394.52083	11227.875	36	Marcellus
37	2/20/2021	11192.14583	11025.5	36	Marcellus
38	2/20/2021	10989.77083	10823.125	36	Marcellus
39	2/20/2021	10787.39583	10620.75	36	Marcellus
40	2/21/2021	10585.02083	10418.375	36	Marcellus
41	2/21/2021	10382.64583	10216	36	Marcellus
42	2/21/2021	10180.27083	10013.625	36	Marcellus
43	2/22/2021	9977.895833	9811.25	36	Marcellus
44	2/22/2021	9775.520833	9608.875	36	Marcellus
45	2/22/2021	9573.145833	9406.5	36	Marcellus
46	2/22/2021	9370.770833	9204.125	36	Marcellus
47	2/22/2021	9168.395833	9001.75	36	Marcellus
48	2/23/2021	8966.020833	8799.375	36	Marcellus
49	2/23/2021	8763.645833	8597	36	Marcellus
50	2/23/2021	8561.270833	8394.625	36	Marcellus
51	2/24/2021	8358.895833	8192.25	36	Marcellus
52	2/24/2021	8156.520833	7989.875	36	Marcellus
53	2/24/2021	7954.145833	7787.5	36	Marcellus
54	2/24/2021	7751.770833	7585.125	36	Marcellus
55	2/25/2021	7549.395833	7382.75	36	Marcellus
56	2/25/2021	7347.020833	7180.375	36	Marcellus
57	2/25/2021	7144.645833	6978	36	Marcellus

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API 47-095-02707 Farm Name, Kayla Leek, Well Number Grapevine Unit 1H

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	2/2/2021	58.19	8396	6985	3287.77	177557	421905	N/A
2	2/3/2021	80.07	8505	6143	3776	406560	325919	N/A
3	2/5/2021	79.45	8487	6041	3595	402700	310780	N/A
4	2/5/2021	79.06	8365	5905	4029	405915	313550	N/A
5	2/6/2021	75.8	8090	5478	4165	405897	308493	N/A
6	2/6/2021	79.03	8232	5874	3962	406320	309871	N/A
7	2/7/2021	79.33	8122	6301	4194	412080	307065	N/A
8	2/7/2021	79.49	8258	5797	4150	409850	304539	N/A
9	2/8/2021	73.82	8046	5884	4697	409300	381173	N/A
10	2/8/2021	79.42	8302	6080	4455	413600	304720	N/A
11	2/9/2021	78.81	8364	6044	4512	413670	305265	N/A
12	2/9/2021	76.85	8298	8804	4518	405979	301852	N/A
13	2/10/2021	75.25	8412	5745	4461	412330	303736	N/A
14	2/10/2021	74.53	8323	5765	4578	405926	300286	N/A
15	2/11/2021	80.45	8362	5613	4532	406000	292777	N/A
16	2/11/2021	81.09	8329	5697	4283	406534	305673	N/A
17	2/12/2021	77.35	8037	6355	4362	409790	300889	N/A
18	2/12/2021	73.82	7745	5580	4428	406050	299031	N/A
19	2/13/2021	77.71	7940	5358	4205	409910	297685	N/A
20	2/13/2021	45.05	6230	5228	4194	279613	294508	N/A
21	2/14/2021	73.45	7798.83	5643.71	4038.05	420925	298662	N/A
22	2/15/2021	81.74	8157	5781	4351	412830	304804	N/A
23	2/15/2021	79.63	7827	6502	4660	405979	326798	N/A
24	2/16/2021	80.96	7949	5534	4422	414220	299476	N/A
25	2/16/2021	83.38	8111	7548	3533	405811	300005	N/A
26	2/17/2021	83.61	8047	7880	3730	405186	295290	N/A
27	2/17/2021	82.42	8022	5121	3515	406657	296985	N/A
28	2/17/2021	81.74	7988	5065	4175	405855	296980	N/A
29	2/18/2021	82.43	7816	7740	3656	405810	295540	N/A
30	2/18/2021	82.29	8030	6464	4359	406074	294820	N/A
31	2/18/2021	81.57	8037	4074	4379	98144	299378	N/A
32	2/18/2021	84.18	8107	8469	4434	405921	294491	N/A
33	2/19/2021	83.93	7973	8236	4446	408914	297507	N/A
34	2/19/2021	82.85	7656	3656	4607	405904	298939	N/A
35	2/19/2021	84.12	7922	7795	3903	406070	296371	N/A
36	2/20/2021	83.81	7780	7936	3845	410430	293741	N/A
37	2/20/2021	81.3	7840	5525	4232	406116	322849	N/A
38	2/20/2021	82.85	7515	8055	4029	406590	341283	N/A
39	2/20/2021	84.34	7740	8229	3948	393252	296170	N/A
40	2/21/2021	81.48	7530	7847	4323	406126	350466	N/A
41	2/21/2021	83.38	7636	5270	4339	406332	295485	N/A
42	2/21/2021	84.84	7529	8119	4387	405970	291816	N/A
43	2/22/2021	84.24	7360	7754	4397	406517	291204	N/A
44	2/22/2021	83.87	7389	8321	3600	407690	293873	N/A
45	2/22/2021	80.76	7312	5221	4236	408260	287407	N/A
46	2/22/2021	82.3	7374	5213	4723	406980	285728	N/A
47	2/22/2021	84.69	7324	5534	4317	411890	294557	N/A
48	2/23/2021	84.76	7343	5417	4248	408340	306158	N/A
49	2/23/2021	80.31	6937	5732	4493	368511	294248	N/A
50	2/23/2021	83.95	7097	6073	4279	407210	283272	N/A
51	2/24/2021	84.19	6957	5451	4224	406494	292676	N/A
52	2/24/2021	82.95	6782	4703	4541	413990	302056	N/A
53	2/24/2021	84.05	6901	5425	4407	412020	292169	N/A
54	2/24/2021	83.78	7166	6165	4264	410030	295079	N/A
55	2/25/2021	84.15	7158	5686	4439	406590	289305	N/A
56	2/25/2021	84.92	7229	5868	4578	346000	293196	N/A
57	2/25/2021	83.78	7116	5630	4455	224740	286191	N/A
	AVG=	80	7,777	6,234	4,226	22,299,959	17,364,692	TOTAL

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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	74	134	74	134
Shaley Siltstone	134	194	134	194
Shaley Sandstone	194	344	194	344
Shaley Siltstone	344	734	344	734
Sandy Siltstone	734	854	734	854
Shaley Siltstone, Tr Limestone	854	1,334	854	1,334
Shaley Sandstone	1,334	1,454	1,334	1,454
Sandstone, Tr Shale	1,454	1,634	1,454	1,634
Silty Shale	1,634	1,784	1,634	1,784
Shaley Siltstone	1,784	1,844	1,784	1,844
Sandy Shale	1,844	1,874	1,844	1,874
Shale, Tr Limestone	1,874	1,904	1,874	1,904
Shaley Limestone	1,904	1,980	1,904	1,983
Big Lime	2,006	2,692	2,009	2,695
Fifty Foot Sandstone	2,692	2,853	2,695	2,856
Gordon	2,853	3,161	2,856	3,167
Fifth Sandstone	3,161	3,228	3,167	3,236
Bayard	3,228	4,021	3,236	4,057
Speechley	4,021	4,333	4,057	4,379
Balltown	4,333	4,701	4,379	4,762
Bradford	4,701	5,109	4,762	5,185
Benson	5,109	5,338	5,185	5,424
Alexander	5,338	6,404	5,424	6,578
Sycamore	6,268	6,378	6,407	6,552
Middlesex	6,378	6,476	6,552	6,715
Burkett	6,476	6,499	6,715	6,764
Tully	6,499	6,554	6,764	6,930
Marcellus	6,554	NA	6,930	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.

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LATITUDE 39°32'30"

10,768'

LATITUDE 39°35'00"

3,623' TO BOTTOM HOLE

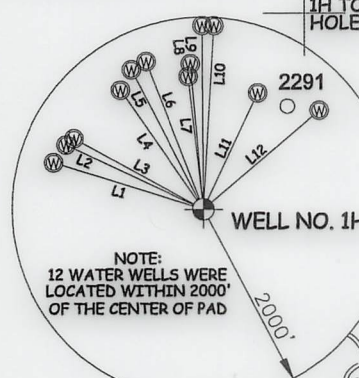
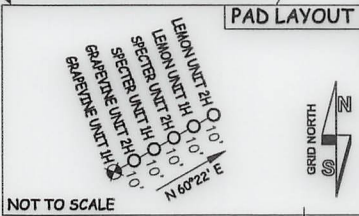
Antero Resources Corporation Well No. Grapevine Unit 1H

NOTES:
WELL 1H TOP HOLE INFORMATION:
 N: 373,247ft E: 1,624,844ft
 LAT: 39°31'01.77" LON: 80°49'47.41"
BOTTOM HOLE INFORMATION:
 N: 384,120ft E: 1,620,395ft
 LAT: 39°32'48.57" LON: 80°50'46.25"
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:
WELL 1H TOP HOLE INFORMATION:
 N: 4,374,191m E: 514,642m
BOTTOM HOLE INFORMATION:
 N: 4,377,481m E: 513,231m

LINE	BEARING	DISTANCE
L1	N 72°40' W	1638.0'
L2	N 64°54' W	1582.1'
L3	N 61°22' W	1537.8'
L4	N 34°54' W	1512.5'
L5	N 27°19' W	1636.7'
L6	N 21°11' W	1650.6'
L7	N 06°24' W	1392.9'
L8	N 05°00' W	1521.3'
L9	N 00°15' W	1911.8'
L10	N 03°26' E	1913.5'
L11	N 25°08' E	1338.5'
L12	N 49°41' E	1592.6'

WV NORTH ZONE GRID NORTH



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 PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
 WILLOW LAND SURVEYING PLLC
 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

- A1- LEE ROY HOWELL D.B. 170409 TM 11-41 1.87 AC
- B1- ROBERT D. MILLER D.B. 208401 TM 11-42 2.707 AC
- C1- LEE ROY HOWELL D.B. 224837 TM 11-42 0.818 AC
- D1- ROBERT D. MILLER D.B. 270432 TM 11-40 3.944 AC
- E1- RICHARD J. FERRELL D.B. 220147 TM 11-42 1.909 AC
- F1- DAVID LEEK D.B. 434483 TM 10-24 0.79 AC
- G1- DAVID LEEK D.B. 434483 TM 10-24 1.46 AC
- H1- RICHARD J. FERRELL D.B. 206089 TM 11-42 2 18.08 AC
- I1- CHARLES J. FERRELL D.B. 341025 TM 11-44 3 1.992 AC
- J1- RONALD R. JONES D.B. 400208 TM 11-43 0.9 AC
- K1- BARBARA E. PITTMAN D.B. 214009 TM 11-43 2.4 AC
- L1- RICHARD J. FERRELL D.B. 421678 TM 11-40 1.13 AC

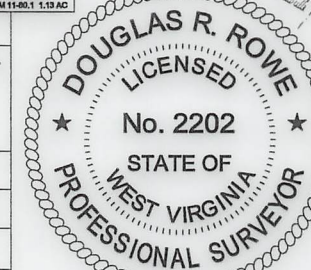
JOB # 20-006WA
 DRAWING # GRAPEVINE1HAD
 SCALE 1" = 2000'
 MINIMUM DEGREE OF ACCURACY SUBMETER
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

LEGEND
 - - - - - Surface Owner Boundary Lines +/-
 - - - - - Interior Surface Tracts +/-
 ○ - - - - Proposed Well Path
 ⊗ - - - - As Drilled Well Path

D.R. Rowe
 DOUGLAS R. ROWE P.S. 2202

DATE 06/09/21
 OPERATOR'S WELL # GRAPEVINE UNIT #1H



- NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.
- TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
- AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
- WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3, ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.
- WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL API WELL # 47-095-02707
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW STATE COUNTY PERMIT
 LOCATION: ELEVATION 1,042' AS BUILT WATERSHED OUTLET MIDDLE ISLAND CREEK
 QUADRANGLE PORTER FALLS 7.5' DISTRICT ELLSWORTH COUNTY TYLER
 SURFACE OWNER KAYLA LEEK ACREAGE 69.06 ACRES +/-
 OIL & GAS ROYALTY OWNER RIDGETOP CAPITAL LP; DAVID LEEK; RICHARD J. FERRELL ET UX LEASE ACREAGE 69.06 AC.±; 34.38 AC.±; 15.08 AC.±; DAVID LEEK; RICHARD J. FERRELL; ROBERT PITTMAN ET UX; REITA JANE HALL; JERRY R. BRIGHTWELL ET UX; 2.25 AC.±; 1.69 AC.±; 2.4 AC.±; 21.39 AC.±; 31.74 AC.±; PATHFINDER RESOURCES II, LLC; DARWIN MARTIN ET UX; RIDGETOP CAPITAL II LP; HELEN M. KARCINSKI ET AL; HELEN M. KARCINSKI ET AL; LINDA K. LOEHR; WACO OIL AND GAS CO., INC; BRC APPALACHIAN MINERALS I LLC 50.5 AC.±; 24.47 AC.±; 50.25 AC.±; 28.77 AC.±
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,535' TVD 18,477' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
 ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD
 FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

13,298' TO BOTTOM HOLE

LONGITUDE 80°47'30"

LONGITUDE 80°50'00"

COUNTY NAME PERMIT

LATITUDE 39°32'30"

10,768'

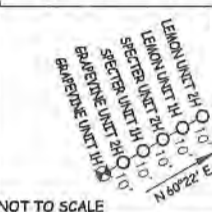
LATITUDE 39°35'00"

3,623' TO BOTTOM HOLE

Antero Resources Corporation Well No. Grapevine Unit 1H

Table with 3 columns: LINE, BEARING, DISTANCE. Lists 12 lines from L1 to L12 with bearings and distances.

PAD LAYOUT



NOT TO SCALE



NOTES: WELL 1H TOP HOLE INFORMATION: N: 373,247ft E: 1,624,844ft... BOTTOM HOLE INFORMATION: N: 384,120ft E: 1,620,395ft...

(NAD) 83 (UTM) ZONE 17 COORDS: WELL 1H TOP HOLE INFORMATION: N: 4,374,191m E: 514,642m... BOTTOM HOLE INFORMATION: N: 4,377,481m E: 513,231m

Table listing land parcels A through AA with owner names and acreage, such as HELEN M. KARCINSKI ET AL (5.1 ACRES±) and ROSE ENTERPRISES LLC (19.84 ACRES±).

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 PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

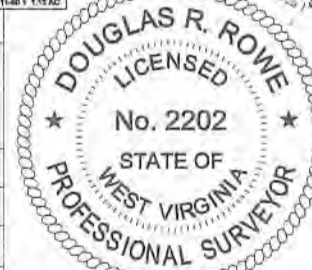
WILLOW LAND SURVEYING PLLC 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

JOB # 20-006WA DRAWING # GRAPEVINE1HAD SCALE 1" = 2000' MINIMUM DEGREE OF ACCURACY SUBMETER

LEGEND: Surface Owner Boundary Lines +/-, Interior Surface Tracts +/-, Proposed Well Path, As Drilled Well Path. Includes signature of Douglas R. Rowe.

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

DATE 06/09/21 OPERATOR'S WELL# GRAPEVINE UNIT #1H



- NOTES: 1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY...

Form containing well details: WELL TYPE: OIL GAS X LIQUID INJECTION, WASTE DISPOSAL REACTIVE - 095 - 02707, LOCATION: ELEVATION 1,042' AS BUILT, QUADRANGLE PORTER FALLS 7.5', SURFACE OWNER KAYLA LEEK, OIL & GAS ROYALTY OWNER RIDGETOP CAPITAL LP, DAVID LEEK, RICHARD J. FERRELL ET UX, etc.

13,298' TO BOTTOM HOLE

8,927'

LONGITUDE 80°47'30"

COUNTY NAME PERMIT

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	2/2/2021
Job End Date:	2/25/2021
State:	West Virginia
County:	Tyler
API Number:	47-095-02707-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Grapevine 1H
Latitude:	39.51716000
Longitude:	-80.82984000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,601
Total Base Water Volume (gal):	18,116,396
Total Base Non Water Volume:	0



WV Department of
Environmental Protection

MAR 28 2023



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	86.88568	Density = 8.50
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.16997	

HAI-501	Halliburton	Acid Corrosion Inhibitor					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker					
				Listed Below			
MC B-8614	Halliburton	Biocide					
				Listed Below			
Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant					
				Listed Below			
Excelerate LX-15	Halliburton	Friction Reducer					
				Listed Below			
HYDROCHLORIC ACID, 22 BAUME	Halliburton	Solvent					
				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	12.91614	
			Hydrochloric acid	7647-01-0	30.00000	0.03827	
			Complex Amine Compound	Proprietary	60.00000	0.03389	

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			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01694	
			Guar gum	9000-30-0	100.00000	0.00526	
			Surfactant	Proprietary	5.00000	0.00282	
			Sobitan, mono-9-octadecenoate, (Z)	1338-43-8	5.00000	0.00282	
			Glutaraldehyde	111-30-8	30.00000	0.00256	
			Ethoxylated alcohols	Proprietary	5.00000	0.00058	
			Alkoxylated polyhydric alcohol	Proprietary	1.00000	0.00056	
			Organic chloride compound	Proprietary	1.00000	0.00056	
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00043	
			Methanol	67-56-1	100.00000	0.00032	
			Ammonium persulfate	7727-54-0	100.00000	0.00013	
			Ethanol	64-17-5	1.00000	0.00009	
			Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00007	
			Modified thiourea polymer	Proprietary	30.00000	0.00007	
			Oxylated phenolic resin	Proprietary	30.00000	0.00004	
			Propargyl alcohol	107-19-7	5.00000	0.00001	
			Hexadecene	629-73-2	5.00000	0.00001	
			Phosphoric acid	7664-38-2	0.10000	0.00001	
			Acrylamide	79-06-1	0.01000	0.00001	
			Organic salt #1	Proprietary	0.01000	0.00001	
			Sodium glycolate	2836-32-0	0.01000	0.00001	
			Organic salt #2	Proprietary	0.01000	0.00001	
			Nitrated acetate salt	Proprietary	0.01000	0.00001	
			Sodium hydroxide	1310-73-2	0.01000	0.00001	
			Formaldehyde	50-00-0	0.01000	0.00001	

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			C.I. pigment Orange 5	3468-63-1	1.00000	0.00000	
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* 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)

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