

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

API 47 - 095 - 02705 County Tyler District Ellsworth
Quad Porter Falls 7.5' Pad Name Margery Pad Field/Pool Name -----
Farm name Kayla Leek Well Number Specter Unit 1H
Operator (as registered with the OOG) Antero Resources Corporation
Address 1615 Wynkoop Street City Denver State CO

REC-80202
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As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4374196m Easting 514650m
Landing Point of Curve Northing 4374332.17m Easting 514792.89m
Bottom Hole Northing 4377646m Easting 513618m

MAR 28 2023

WV Department of
Environmental Protection

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

Date permit issued 9/23/2020 Date drilling commenced 11/12/2020 Date drilling ceased 12/8/2020
Date completion activities began 2/3/2021 Date completion activities ceased 3/22/2021
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 - 02705 Farm name Kayla Leek Well number Specter 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"	367'	New	54.5#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2612'	New	40#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	18580'	New	20#, P-110	N/A	Y
Tubing		2-3/8"	6818'		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	885 sx	15.6	1.19	187	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	792 sx (Lead) 2841 sx (Tail)	13.5 (Lead), 15.2(Tail)	1.4 (Lead), 1.26 (Tail)	645	-500' Into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 18600' MD, 6565' TVD (BHL), 6632' (Deepest Point Drilled) Loggers TD (ft) 18600' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

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Kick off depth (ft) 5862'

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

WV Department of
Environmental Protection

API 47-095-02705 Farm Name Kayla Leek Well Number Specter Unit 1H

Exhibit 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	2/3/2021	18475	18427	36	Marcellus
2	2/4/2021	18388.44737	18222.6842	36	Marcellus
3	2/4/2021	18187.13158	18021.3684	36	Marcellus
4	2/5/2021	17985.81579	17820.0526	36	Marcellus
5	2/6/2021	17784.5	17618.7368	36	Marcellus
6	2/6/2021	17583.18421	17417.4211	36	Marcellus
7	2/7/2021	17381.86842	17216.1053	36	Marcellus
8	2/7/2021	17180.55263	17014.7895	36	Marcellus
9	2/7/2021	16979.23684	16813.4737	36	Marcellus
10	2/8/2021	16777.92105	16612.1579	36	Marcellus
11	2/8/2021	16576.60526	16410.8421	36	Marcellus
12	2/9/2021	16375.28947	16209.5263	36	Marcellus
13	2/9/2021	16173.97368	16008.2105	36	Marcellus
14	2/10/2021	15972.65789	15806.8947	36	Marcellus
15	2/11/2021	15771.34211	15605.5789	36	Marcellus
16	2/11/2021	15570.02632	15404.2632	36	Marcellus
17	2/12/2021	15368.71053	15202.9474	36	Marcellus
18	2/12/2021	15167.39474	15001.6316	36	Marcellus
19	2/12/2021	14966.07895	14800.3158	36	Marcellus
20	2/13/2021	14764.76316	14599	36	Marcellus
21	2/14/2021	14563.44737	14397.6842	36	Marcellus
22	2/14/2021	14362.13158	14196.3684	36	Marcellus
23	2/15/2021	14160.81579	13995.0526	36	Marcellus
24	2/15/2021	13959.5	13793.7368	36	Marcellus
25	2/17/2021	13758.18421	13592.4211	36	Marcellus
26	2/18/2021	13556.86842	13391.1053	36	Marcellus
27	2/19/2021	13355.55263	13189.7895	36	Marcellus
28	2/20/2021	13154.23684	12988.4737	36	Marcellus
29	2/20/2021	12952.92105	12787.1579	36	Marcellus
30	2/21/2021	12751.60526	12585.8421	36	Marcellus
31	2/21/2021	12550.28947	12384.5263	36	Marcellus
32	2/22/2021	12348.97368	12183.2105	36	Marcellus
33	2/22/2021	12147.65789	11981.8947	36	Marcellus
34	2/23/2021	11946.34211	11780.5789	36	Marcellus
35	2/23/2021	11745.02632	11579.2632	36	Marcellus
36	2/24/2021	11543.71053	11377.9474	36	Marcellus
37	2/24/2021	11342.39474	11176.6316	36	Marcellus
38	2/25/2021	11141.07895	10975.3158	36	Marcellus
39	2/25/2021	10939.76316	10774	36	Marcellus
40	2/26/2021	10738.44737	10572.6842	36	Marcellus
41	2/26/2021	10537.13158	10371.3684	36	Marcellus
42	2/26/2021	10335.81579	10170.0526	36	Marcellus
43	2/26/2021	10134.5	9968.73684	36	Marcellus
44	2/27/2021	9933.184211	9767.42105	36	Marcellus
45	2/27/2021	9731.868421	9566.10526	36	Marcellus
46	2/27/2021	9530.552632	9364.78947	36	Marcellus
47	2/27/2021	9329.236842	9163.47368	36	Marcellus
48	2/28/2021	9127.921053	8962.15789	36	Marcellus
49	2/28/2021	8926.605263	8760.84211	36	Marcellus
50	2/28/2021	8725.289474	8559.52632	36	Marcellus
51	2/28/2021	8523.973684	8358.21053	36	Marcellus
52	3/1/2021	8322.657895	8156.89474	36	Marcellus
53	3/1/2021	8121.342105	7955.57895	36	Marcellus
54	3/1/2021	7920.026316	7754.26316	36	Marcellus
55	3/2/2021	7718.710526	7552.94737	36	Marcellus
56	3/2/2021	7517.394737	7351.63158	36	Marcellus
57	3/3/2021	7316.078947	7150.31579	36	Marcellus
58	3/3/2021	7114.763158	6949	36	Marcellus

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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	2/3/2021	75.06	8133	6540	2813	179216	224804	N/A
2	2/4/2021	80.53	8304	6124	3751	405932	314196	N/A
3	2/4/2021	79.48	8547	5830	3803	405760	312295	N/A
4	2/5/2021	79.42	8240	5740	3853	405955	320105	N/A
5	2/6/2021	80.97	8229	5763	4079	408710	309725	N/A
6	2/6/2021	80.72	8323	5840	5028	405960	305813	N/A
7	2/7/2021	78.3	8350	6026	4138	414900	308244	N/A
8	2/7/2021	77.85	8326	6130	4437	412360	304793	N/A
9	2/7/2021	79.4	8312	5727	4429	406830	311145	N/A
10	2/8/2021	80.17	8364	6189	4482	413290	305927	N/A
11	2/8/2021	81.05	8406	5699	3924	405900	304588	N/A
12	2/9/2021	81.01	8381	5338	4449	413820	308294	N/A
13	2/9/2021	80.14	8232	4947	4216	408001	303540	N/A
14	2/10/2021	79.62	8219	5069	4124	405576	301954	N/A
15	2/11/2021	82.29	8195	5389	4159	404940	297123	N/A
16	2/11/2021	81.86	8224	6481	4074	406021	300354	N/A
17	2/12/2021	69.32	7397	5836	4431	408630	299204	N/A
18	2/12/2021	78.93	8076	5426	4086	420127	302704	N/A
19	2/12/2021	73.66	7667	5162	4243	409850	304356	N/A
20	2/13/2021	79.9	8209	5429	4169	404487	296669	N/A
21	2/14/2021	80.5	8118	5502	4282	405905	298903	N/A
22	2/14/2021	76.29	8323	5150	4022	410135	299637	N/A
23	2/15/2021	81.9	8138	4989	4397	406061	302335	N/A
24	2/15/2021	82.16	8101	5118	4257	410350	300485	N/A
25	2/17/2021	82.39	8171	8585	4324	405838	299564	N/A
26	2/18/2021	82.98	8158	8330	4335	409836	302016	N/A
27	2/19/2021	81.3	7944	3871	4236	406148	303852	N/A
28	2/20/2021	84.2	8132	7284	3586	406570	297743	N/A
29	2/20/2021	82.3	8110	5130	4289	406016	297501	N/A
30	2/21/2021	84.01	8105	7583	3879	406034	297789	N/A
31	2/21/2021	82.02	7802	3719	4519	405863	296831	N/A
32	2/22/2021	82.69	8074	6095	4348	406537	293927	N/A
33	2/22/2021	80.54	7703	4131	4333	406600	292126	N/A
34	2/23/2021	84.05	7963	4693	4506	405940	294815	N/A
35	2/23/2021	80.95	7684	6081	4215	402770	298334	N/A
36	2/24/2021	80.84	7532	6116	4208	412337	300915	N/A
37	2/24/2021	82.67	7769	6205	4457	411270	297101	N/A
38	2/25/2021	84.56	8023	6085	4274	409110	294705	N/A
39	2/25/2021	84.23	8091	6565	4619	402060	294445	N/A
40	2/26/2021	84.58	8193	6668	4495	408410	294784	N/A
41	2/26/2021	84.41	8297	6235	4936	411160	296725	N/A
42	2/26/2021	84	7400	5366	4222	412940	297559	N/A
43	2/26/2021	84.46	7515	5692	4290	408680	291929	N/A
44	2/27/2021	82.97	7801	5412	4580	407020	381713	N/A
45	2/27/2021	84.22	7600	5738	4454	406290	290197	N/A
46	2/27/2021	84.46	7661	5782	4320	406890	290076	N/A
47	2/27/2021	84.43	7628	5452	4398	406910	286968	N/A
48	2/28/2021	84.79	7576	6466	4604	407680	294610	N/A
49	2/28/2021	84.08	7574	6288	4559	406250	294095	N/A
50	2/28/2021	81.15	7726	7855	4704.88	399730	279367	N/A
51	2/28/2021	73.58	7763	6328	4776	405420	415749	N/A
52	3/1/2021	83.71	7076	5340	4237	407410	292614	N/A
53	3/1/2021	81.08	7250	5818	4914	407000	350958	N/A
54	3/1/2021	84.66	7403	6257	4272	404840	292249	N/A
55	3/2/2021	74.74	6683	5191	3827	414255	289117	N/A
56	3/2/2021	83.4	6939	5463	4882.52	408490	352651	N/A
57	3/3/2021	80.81	6783	6237	4173	406144	408712	N/A
58	3/3/2021	76.96	6765	6491	3971	448669	327561	N/A
	AVG=	81	7,892	5,862	4,283	23,465,833	17,726,491	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	1,898	1,904	1,901
Big Lime	1,924	2,595	1,927	2,598
Fifty Foot Sandstone	2,595	2,763	2,598	2,766
Gordon	2,763	3,066	2,766	3,071
Fifth Sandstone	3,066	3,144	3,071	3,150
Bayard	3,144	3,925	3,150	3,943
Speechley	3,925	4,238	3,943	4,262
Balltown	4,238	4,610	4,262	4,644
Bradford	4,610	5,028	4,644	5,072
Benson	5,028	5,261	5,072	5,311
Alexander	5,261	6,426	5,311	6,547
Sycamore	6,293	6,400	6,382	6,521
Middlesex	6,400	6,500	6,521	6,685
Burkett	6,500	6,526	6,685	6,740
Tully	6,526	6,581	6,740	6,901
Marcellus	6,581	NA	6,901	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"

10,742'

LATITUDE 39°35'00"

2,145' TO BOTTOM HOLE

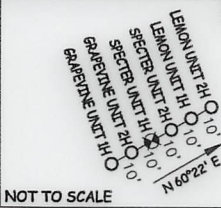
Antero Resources Corporation Well No. Specter Unit 1H

(NAD) 83 (UTM) ZONE 17 COORDS: WELL 1H TOP HOLE INFORMATION: N: 4,374,196m E: 514,650m BOTTOM HOLE INFORMATION: N: 4,377,646m E: 513,681m

NOTES: WELL 1H TOP HOLE INFORMATION: N: 373,262ft E: 1,624,870ft LAT: 39°31'01.92" LON: 80°49'47.08" BOTTOM HOLE INFORMATION: N: 384,637ft E: 1,621,881ft LAT: 39°32'53.90" LON: 80°50'27.38" WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. 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.

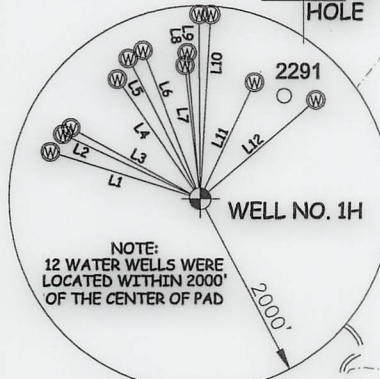
Table with 3 columns: LINE, BEARING, DISTANCE. Lists 12 lines (L1-L12) with bearings and distances.

PAD LAYOUT



NOT TO SCALE

1H TOP HOLE



NOTE: 12 WATER WELLS WERE LOCATED WITHIN 2000' OF THE CENTER OF PAD

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.



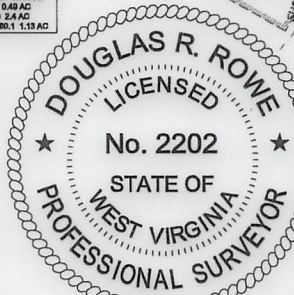
STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

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

- List of surveyors and their details, including names like Lee Roy Howell, Robert D. Miller, etc.

JOB # 20-007WA DRAWING # SPECTER1HAD 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. Includes signature of Douglas R. Rowe and date 06/09/21.



- Notes: 1. NO OCCUPIED DWELLINGS OR BUILDINGS... 2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ANTERO RESOURCES CORPORATION... 3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION... 4. WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3... 5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___ 47 - 095 - 02705 (IF "GAS") PRODUCTION X STORAGE ___ DEEP SHALLOW X 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; BRC APPALACHIAN MINERALS I LLC LEASE ACREAGE 69.06 AC.±; 58.56 AC.±; RONALD R. JONES; CHARLES R. FERRELL ET UX; RONALD R. JONES; MICHAEL W. EDDY; MELISSA DAWN PILANT; GARY A. SOLE; 4.38 AC.±; 2.0 AC.±; 0.49 AC.±; 33.74 AC.±; 50.05 AC.±; 92.5 AC.±; RALPH D. THACKER; JOHN E. KEPLER; CARR FAMILY TRUST; FISHER OIL COMPANY; 25 AC.±; 38 AC.±; 64.81 AC.±; 45.67 AC.±; FISHER OIL COMPANY; BRC APPALACHIAN MINERALS I LLC; HERITAGE RESOURCES-MARCELLUS MINERALS, LLC 38 AC.±; 55 AC.±; 69.22 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 6,565' TVD 18,600' 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

12,758' TO BOTTOM HOLE 8,911' LONGITUDE 80°47'30" LONGITUDE 80°50'00" COUNTY NAME PERMIT

LATITUDE 39°32'30"

10,742'

LATITUDE 39°35'00"

2,145' TO BOTTOM HOLE

Antero Resources Corporation Well No. Specter Unit 1H

(NAD) 83 (UTM) ZONE 17 COORDS: WELL 1H TOP HOLE INFORMATION: N: 4,374,196m E: 514,650m BOTTOM HOLE INFORMATION: N: 4,377,646m E: 513,681m

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PAD LAYOUT

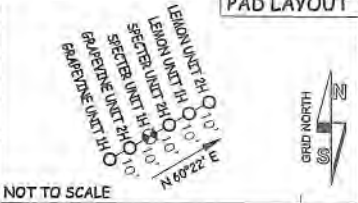


Table listing land parcels A through J1 with owner names and acreage.

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN 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

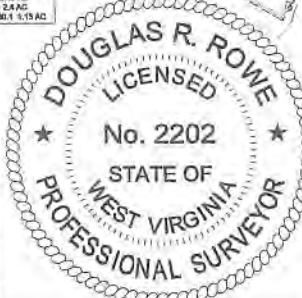
WILLOW LAND SURVEYING PLLC 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

List of surveyors and their credentials.

Table with job details: JOB # 20-007WA, DRAWING # SPECTER1HAD, SCALE 1" = 2000', MINIMUM DEGREE OF ACCURACY SUBMETER, PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS.

Table with legend: Surface Owner Boundary Lines +/-, Interior Surface Tracts +/-, Proposed Well Path, As Drilled Well Path.

DATE 06/09/21 OPERATOR'S WELL # SPECTER 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 HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD. 2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ANTERO RESOURCES CORPORATION. 3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION. 4. 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. 5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL 47 095 02705 (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X 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; BRC APPALACHIAN MINERALS I LLC LEASE ACREAGE 69.06 AC.±; 58.56 AC.±; RONALD R. JONES; CHARLES R. FERRELL ET UX; RONALD R. JONES; MICHAEL W. EDDY; MELISSA DAWN PILANT; GARY A. SOLE; 4.38 AC.±; 2.0 AC.±; 0.49 AC.±; 33.74 AC.±; 50.05 AC.±; 92.5 AC.±; RALPH D. THACKER; JOHN E. KEPLER; CARR FAMILY TRUST; FISHER OIL COMPANY; 25 AC.±; 38 AC.±; 84.81 AC.±; 45.67 AC.±; FISHER OIL COMPANY; BRC APPALACHIAN MINERALS I LLC; HERITAGE RESOURCES-MARCELLUS MINERALS, LLC 38 AC.±; 55 AC.±; 69.22 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 6,565' TVD 18,600' 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-8 DENVER, CO 80202 CHARLESTON, WV 25313

12,758' TO BOTTOM HOLE

8,911' LONGITUDE 80°47'30"

LONGITUDE 80°50'00"

COUNTY NAME

PERMIT

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	2/3/2021
Job End Date:	3/3/2021
State:	West Virginia
County:	Tyler
API Number:	47-095-02705-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Specter 1H
Latitude:	39.51720000
Longitude:	-80.82975000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,632
Total Base Water Volume (gal):	18,502,090
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	86.85404	Density = 8.50
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.16680	

MC B-8614	Halliburton	Biocide					
				Listed Below			
Excelerate LX-15	Halliburton	Friction Reducer					
				Listed Below			
HYDROCHLORIC ACID, 22 BAUME	Halliburton	Solvent					
				Listed Below			
HAI-501	Halliburton	Acid Corrosion Inhibitor					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant					
				Listed Below			
OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker					
				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	12.95161	
			Hydrochloric acid	7647-01-0	30.00000	0.03741	
			Complex Amine Compound	Proprietary	60.00000	0.03375	

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			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01687	
			Guar gum	9000-30-0	100.00000	0.00471	
			Surfactant	Proprietary	5.00000	0.00281	
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	5.00000	0.00281	
			Glutaraldehyde	111-30-8	30.00000	0.00250	
			Ethoxylated alcohols	Proprietary	5.00000	0.00057	
			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	0.00042	
			Methanol	67-56-1	100.00000	0.00032	
			Ammonium persulfate	7727-54-0	100.00000	0.00011	
			Ethanol	64-17-5	1.00000	0.00008	
			Modified thiourea polymer	Proprietary	30.00000	0.00007	
			Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00007	
			Oxylated phenolic resin	Proprietary	30.00000	0.00003	
			Hexadecene	629-73-2	5.00000	0.00001	
			Propargyl alcohol	107-19-7	5.00000	0.00001	
			Phosphoric acid	7664-38-2	0.10000	0.00001	
			Organic salt #2	Proprietary	0.01000	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	
			Sodium hydroxide	1310-73-2	0.01000	0.00001	
			Nitrated acetate salt	Proprietary	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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