

WR-35
Rev. 8/23/13

Paul G...
12/19/18

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

API 47 - 017 - 06713 County Doddridge District Central
Quad West Union 7.5' Pad Name Balli Pad Field/Pool Name -----
Farm name Jeffrey K. Jones Sr. et al Well Number Spellman 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 4350342m Easting 513457m
Landing Point of Curve Northing 4350171.41m Easting 513276.43m
Bottom Hole Northing 4348105m Easting 513964m

Elevation (ft) 1135.5' 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 3/13/2015 Date drilling commenced 12/27/2015 Date drilling ceased 5/16/2016
Date completion activities began 9/23/2017 Date completion activities ceased 4/10/2018
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 107', 192' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 737' 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

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Reviewed by: _____

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API 47-017 - 06713 Farm name Jeffrey K. Jones Sr. et al Well number Spellman Unit 1H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade w/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24"	20"	72'	New	94#, K-55	N/A	Y
Surface	17-1/2"	13-3/8"	368'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2499'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	14305'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6899'		4.7#, N-80		
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	100 sx	15.6	1.18	118	0'	8 Hrs.
Surface	Class A	428 sx	15.6	1.19	509	0'	8 Hrs.
Coal							
Intermediate 1	Class A	925 sx	15.6	1.18	1092	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	982sx (Lead) 1198sx (Tail)	14.5(Lead), 15.2 (Tail)	1.31 (Lead), 1.83 (Tail)	3479	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 14305' MD, 6707' TVD (BHL), 6707' (Deepest Point Drilled) Loggers TD (ft) 14305' MD

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

Plug back procedure N/A

Kick off depth (ft) 6182'

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

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API 47- 017 - 06713 Farm name Jeffrey K. Jones Sr. et al Well number Spellman 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					

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.

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API 47-017-06713 Farm Name <u>Jeffrey K. Jones Sr. et al</u> Well Number <u>Spellman Unit 1H</u>					
EXHIBIT 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	9/23/2017	14044	14215	48	Marcellus
2	10/30/2017	13842	14012	48	Marcellus
3	10/30/2017	13639	13810	48	Marcellus
4	10/31/2017	13437	13607	48	Marcellus
5	10/31/2017	13234	13405	48	Marcellus
6	10/31/2017	13032	13202	48	Marcellus
7	11/1/2017	12829	13000	48	Marcellus
8	11/1/2017	12627	12797	48	Marcellus
9	11/2/2017	12424	12595	48	Marcellus
10	11/3/2017	12222	12392	48	Marcellus
11	11/3/2017	12019	12190	48	Marcellus
12	11/4/2017	11817	11988	48	Marcellus
13	11/4/2017	11614	11785	48	Marcellus
14	11/5/2017	11412	11583	48	Marcellus
15	11/5/2017	11209	11380	48	Marcellus
16	11/6/2017	11007	11178	48	Marcellus
17	11/7/2017	10804	10975	48	Marcellus
18	11/7/2017	10602	10773	48	Marcellus
19	11/8/2017	10400	10570	48	Marcellus
20	11/9/2017	10197	10368	48	Marcellus
21	11/9/2017	9995	10165	48	Marcellus
22	11/10/2017	9792	9963	48	Marcellus
23	11/10/2017	9590	9760	48	Marcellus
24	11/11/2017	9387	9558	48	Marcellus
25	11/11/2017	9185	9355	48	Marcellus
26	11/12/2017	8982	9153	48	Marcellus
27	11/12/2017	8780	8950	48	Marcellus
28	11/13/2017	8577	8748	48	Marcellus
29	11/14/2017	8375	8546	48	Marcellus
30	11/14/2017	8172	8343	48	Marcellus
31	11/15/2017	7970	8141	48	Marcellus
32	11/16/2017	7767	7938	48	Marcellus
33	11/16/2017	7565	7736	48	Marcellus
34	11/17/2017	7362	7533	48	Marcellus
35	11/17/2017	7160	7331	48	Marcellus
36	11/18/2017	6958	7128	48	Marcellus

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API 47-017-06713 Farm Name Jeffrey K. Jones Sr. et al Well Number Spellman 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	9/23/2017	69.9	7419	7760	4480	514650	10077	N/A
2	10/30/2017	74	7279	6304	4250	513900	10067	N/A
3	10/30/2017	74.9	7106	5916	4129	528500	10174	N/A
4	10/31/2017	75.1	7293	5927	5320	513810	10050	N/A
5	10/31/2017	72.8	7326	5954	4728	513050	10240	N/A
6	10/31/2017	69.3	7345	5770	3756	513750	10106	N/A
7	11/1/2017	74.4	7323	5832	3671	513700	10094	N/A
8	11/1/2017	75.9	7803	6453	5653	499150	11635	N/A
9	11/2/2017	69.9	7517	5546	5797	514350	11910	N/A
10	11/3/2017	70.1	7023	5467	3854	514300	9964	N/A
11	11/3/2017	72.8	7201	5822	3487	514050	9968	N/A
12	11/4/2017	74.1	7524	6729	3657	514650	11151	N/A
13	11/4/2017	75.7	7334	5775	3822	514000	9821	N/A
14	11/5/2017	70.6	7701	6127	3786	514100	12127	N/A
15	11/5/2017	72.2	7519	5813	4138	476500	11063	N/A
16	11/6/2017	67.5	7110	6205	3733	513850	11739	N/A
17	11/7/2017	62.5	7256	5914	3617	513800	12500	N/A
18	11/7/2017	73.6	7199	5980	5138	513250	11932	N/A
19	11/8/2017	76.2	7097	5922	5310	514150	9845	N/A
20	11/9/2017	74.9	7433	6141	3521	513800	9763	N/A
21	11/9/2017	75.8	7147	6165	3484	513600	9815	N/A
22	11/10/2017	74.9	7330	6703	3290	514300	9993	N/A
23	11/10/2017	73.6	7462	6775	3758	514700	9793	N/A
24	11/11/2017	72.4	7283	5989	3661	514050	9766	N/A
25	11/11/2017	76.1	7361	7114	3400	513500	9761	N/A
26	11/12/2017	72.6	7303	6913	3624	513350	9829	N/A
27	11/12/2017	77.1	7426	6465	3520	513400	9653	N/A
28	11/13/2017	72.1	7332	6647	3511	513150	9764	N/A
29	11/14/2017	76.5	7356	6743	4134	513600	9718	N/A
30	11/14/2017	75.3	7476	7085	4741	447500	11607	N/A
31	11/15/2017	70	7298	6509	4009	517550	11768	N/A
32	11/16/2017	78.2	7101	6074	4208	493250	9645	N/A
33	11/16/2017	75.3	6947	5915	3261	513150	9922	N/A
34	11/17/2017	77.6	7000	6370	3313	513600	9697	N/A
35	11/17/2017	79	7191	7114	4272	513400	10846	N/A
36	11/18/2017	77.1	6669	6579	3344	514400	10081	N/A
	AVG=	74	7,291	6,292	4,038	18,377,810	375,884	TOTAL

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API 47-017-06713 Farm Name Jeffrey K. Jones Sr. et al Well Number Spellman Unit 1H				
EXHIBIT 3				
LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Freshwater	107'	N/A	107'	N/A
Freshwater	192'	N/A	192'	N/A
Siltstone/Sandstone	0	147	0	147
Sandstone	est. 147	205	est. 147	205
Sandstone/Siltstone/Shale	est. 205	327	est. 205	327
Sandstone/Shale/Trace Coal	est. 327	447	est. 327	447
Sandstone	est. 447	547	est. 447	547
Sandstone/Shale	est. 547	607	est. 547	607
Sandstone	est. 607	687	est. 607	687
Siltstone	est. 687	727	est. 687	727
Shale	est. 727	767	est. 727	767
Limestone	est. 767	787	est. 767	787
Siltstone	est. 787	907	est. 787	907
Shale	est. 907	1,147	est. 907	1,147
Shale/Tr Coal	est. 1147	1,167	est. 1147	1,167
Shale	est. 1167	1,207	est. 1167	1,207
Sandstone	est. 1207	1,227	est. 1207	1,227
Shale	est. 1227	1,245	est. 1227	1,245
Sandstone	est. 1245	1,307	est. 1245	1,307
Shale/Siltstone	est. 1307	1,367	est. 1307	1,367
Limestone	est. 1367	1,387	est. 1367	1,387
Sandstone	est. 1387	1,447	est. 1387	1,447
Siltstone	est. 1447	1,489	est. 1447	1,489
Sandstone/Shale/Siltstone	est. 1489	2,019	est. 1489	2,022
Big Lime	2,019	2,615	2,022	2,618
Fifty Foot Sandstone	2,615	2,695	2,618	2,698
Gordon	2,695	3,094	2,698	3,097
Fifth Sandstone	3,094	3,129	3,097	3,132
Bayard	3,129	3,759	3,132	3,762
Speechley	3,759	4,112	3,762	4,115
Balltown	4,112	4,531	4,115	4,534
Bradford	4,531	5,011	4,534	5,018
Benson	5,011	5,011	5,018	5,308
Alexander	5,011	6,214	5,308	6,336
Sycamore	6,214	6,379	6,336	6,543
Middlesex	6,379	6,501	6,543	6,741
Burkett	6,501	6,528	6,741	6,802
Tully	6,528	6,563	6,802	6,906
Marcellus	6,563	NA	6,906	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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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	10/31/2017
Job End Date:	11/20/2017
State:	West Virginia
County:	Doddridge
API Number:	47-017-06713-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Spellman 1H
Latitude:	39.30235800
Longitude:	-80.84392500
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,706
Total Base Water Volume (gal):	16,144,217
Total Base Non Water Volume:	0

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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
Water	Supplied by Operator	Base Fluid					
			Water	7732-18-5	0.70000	87.62345	
SANIFRAC 8844	CWS	Biocide					
				Listed Below			

Hydrochloric Acid	CWS	Clean Perforations					
				Listed Below			
DAP-902	CWS	Scale Inhibitor					
				Listed Below			
Sand (Proppant)	CWS	Propping Agent					
				Listed Below			
DWP-641	CWS	Friction Reducer					
				Listed Below			
DAP-103	CWS	Iron Control					
				Listed Below			
CI-9100G	CWS	Corrosion Inhibitor					
				Listed Below			
DWP-111	CWS	Gel Slurry					
				Listed Below			
Calbreak 5501	CWS	Breaker					
				Listed Below			
Other Chemical (s)	Listed Above	See Trade Name (s) List					

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				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	1.00000	11.96406	
			Calcite	471-34-1	0.01000	0.08658	
			Distillates (petroleum), hydrotreated middle	64742-46-7	0.60000	0.04877	
			Guar gum	9000-30-0	0.60000	0.04877	
			Hydrochloric acid	7647-01-0	0.37000	0.04640	
			Illite	12173-60-3	0.01000	0.03302	
			Polymer	26100-47-0	0.45000	0.03302	
			Distillates (petroleum), hydrotreated light	64742-47-8	0.30000	0.02201	
			Ammonium Persulfate	64742-47-8	1.00000	0.01364	
			Goethite	1310-14-1	0.00100	0.01196	
			Biotite	1302-27-8	0.00100	0.01196	
			Apatite	64476-38-6	0.00100	0.01196	
			Ammonium chloride	12125-02-9	0.11000	0.00807	
			Polyethylene glycol mixture	25322-68-3	0.54500	0.00614	
			2-Propenoic acid, homopolymer, sodium salt	9003-04-7	0.40000	0.00605	
			Quaternary ammonium compounds, bis (hydrogenated tallow alkyl)dimethyl, salts with bentonite	68953-58-2	0.05000	0.00406	
			Ilmenite	98072-94-7	0.00100	0.00330	
			Sorbitan monooleate	1338-43-8	0.04000	0.00293	
			Vinylidene chloride-methyl acrylate copolymer	69418-26-4	0.20000	0.00273	
			2,2-Dibromo-3-Nitrilopropionamide	10222-01-2	0.20000	0.00225	
			Polyethylene glycol monooleate	9004-96-0	0.03000	0.00220	

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			1,2-Propanediol	57-55-6	0.10000	0.00151	
			Sorbitol tetraoleate	61723-83-9	0.02000	0.00147	
			Oxirane, 2-methyl-, polymer with oxirane, monodecyl ether	37251-67-5	0.01500	0.00122	
			Amines, tallow alkyl, ethoxylated	61791-26-2	0.01000	0.00073	
			Sodium bromide	7647-15-6	0.04000	0.00045	
			Citric acid	77-92-9	0.60000	0.00042	
			Alkyloxypolyethyleneoxy ethanol	84133-50-6	0.00500	0.00037	
			Dibromoacetonitrile	3252-43-5	0.03000	0.00034	
			Acrylamide	79-06-1	0.00100	0.00007	
			Ethylene glycol	107-21-1	0.40000	0.00003	
			Tar bases, quinolone derivs, benzyl chloride- quatenized	72480-70-7	0.10000	0.00001	
			Cinnamaldehyde	104-55-2	0.10000	0.00001	
			Formic Acid	64-18-6	0.10000	0.00001	
			Diethylene glycol	111-46-6	0.01000	0.00001	
			Diethylene glycol (mono) methyl ether	34590-94-8	0.20000	0.00001	
			Isopropanol	67-63-0	0.05000	0.00001	
			Tar bases, quinolone derivs	68513-87-1	0.01000	0.00001	
			Ethoxylated alcohols	Proprietary	0.10000	0.00001	Proprietary CAS

* 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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LATITUDE 39°20'00" 3,045'

1,397' TO BOTTOM HOLE
LATITUDE 39°17'30"

LONGITUDE 80°50'00"

3,482' TO BOTTOM HOLE

1,311'

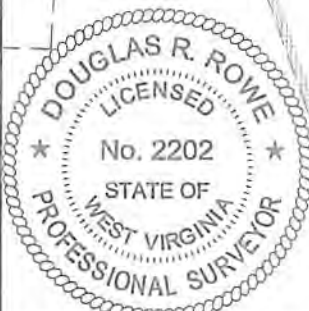
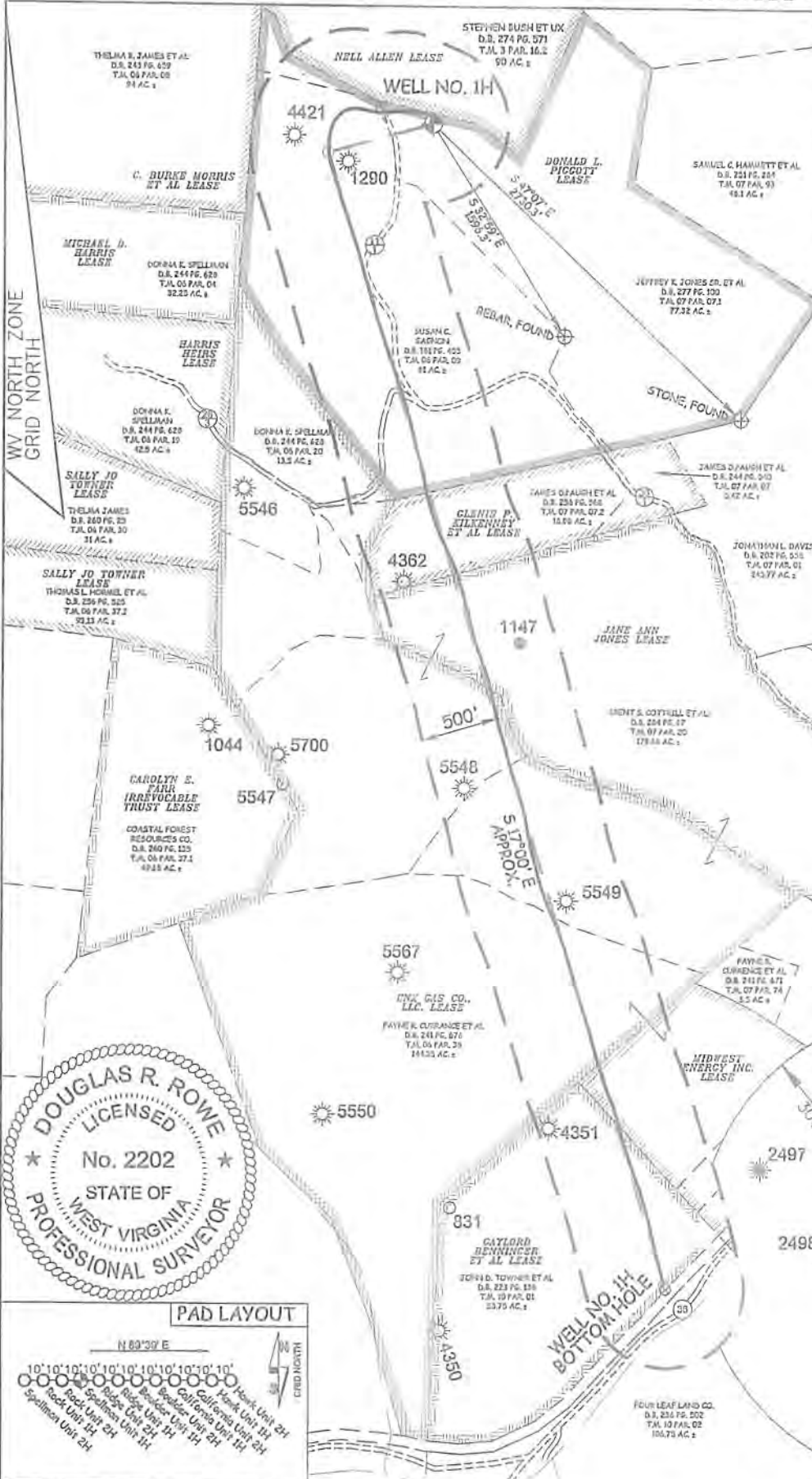
LONGITUDE 80°50'00"

Antero Resources Corporation
Well No. Spellman Unit 1H
47-017-06713

AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
N: 295,051ft E: 1,619,651ft
LAT: 39°18'08.20" LON: 80°50'38.74"
1H BOTTOM HOLE
BOTTOM HOLE INFORMATION:
N: 287,681ft E: 1,621,190ft
LAT: 39°16'55.58" LON: 80°50'17.77"
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.

(NAD) 83 (UTM) ZONE 17 COORDS:
WELL 1H TOP HOLE INFORMATION:
N: 4,350,342m E: 513,457m
BOTTOM HOLE INFORMATION:
N: 4,348,105m E: 513,964m

- NOTE
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 ALLEGHENY SURVEYS, INC.
 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.



JOB # 14-085WA NOT TO SCALE
DRAWING # SPELLMAN1HAD
SCALE 1" = 1000'

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
WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF "GAS") PRODUCTION STORAGE DEEP SHALLOW
LOCATION: ELEVATION 1,135.5' AS BUILT WATERSHED HEADWATERS MIDDLE ISLAND CREEK
QUADRANGLE WEST UNION 7.5' DISTRICT CENTRAL COUNTY DODDRIDGE

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.



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

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

DOUGLAS R. ROWE P.S. 2202
DATE 07/17/18

OPERATOR'S WELL# SPELLMAN UNIT #1H
API WELL # 47 - 017 - 06713
STATE COUNTY PERMIT

SURFACE OWNER JEFFREY K. JONES SR. ET AL ACREAGE 77.32 ACRES +/-
OIL & GAS ROYALTY OWNER DONALD L. PIGGOTT; GLENIS P. KILKENNEY ET AL; LEASE ACREAGE 81 ACRES±; 25 ACRES±;
JANE ANN JONES; CNX GAS CO., LLC; MIDWEST ENERGY INC.; GAYLORD BENNINGER ET AL 114.5 ACRES±; 230.04 ACRES±; 34.17 ACRES±; 57 ACRES±
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
TARGET FORMATION MARCELLUS PLUG & ABANDON CLEAN OUT & REPLUG
WELL OPERATOR ANTERO RESOURCES CORP. ESTIMATED DEPTH 6,707' TVD 14,305' MD
DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
DENVER, CO 80202 CHARLESTON, WV 25313

COUNTY NAME PERMIT

12/21/2018

RECEIVED
Office of Oil and Gas
SEP 10 2018
WV Department of
Environmental Protection

12/21/2018

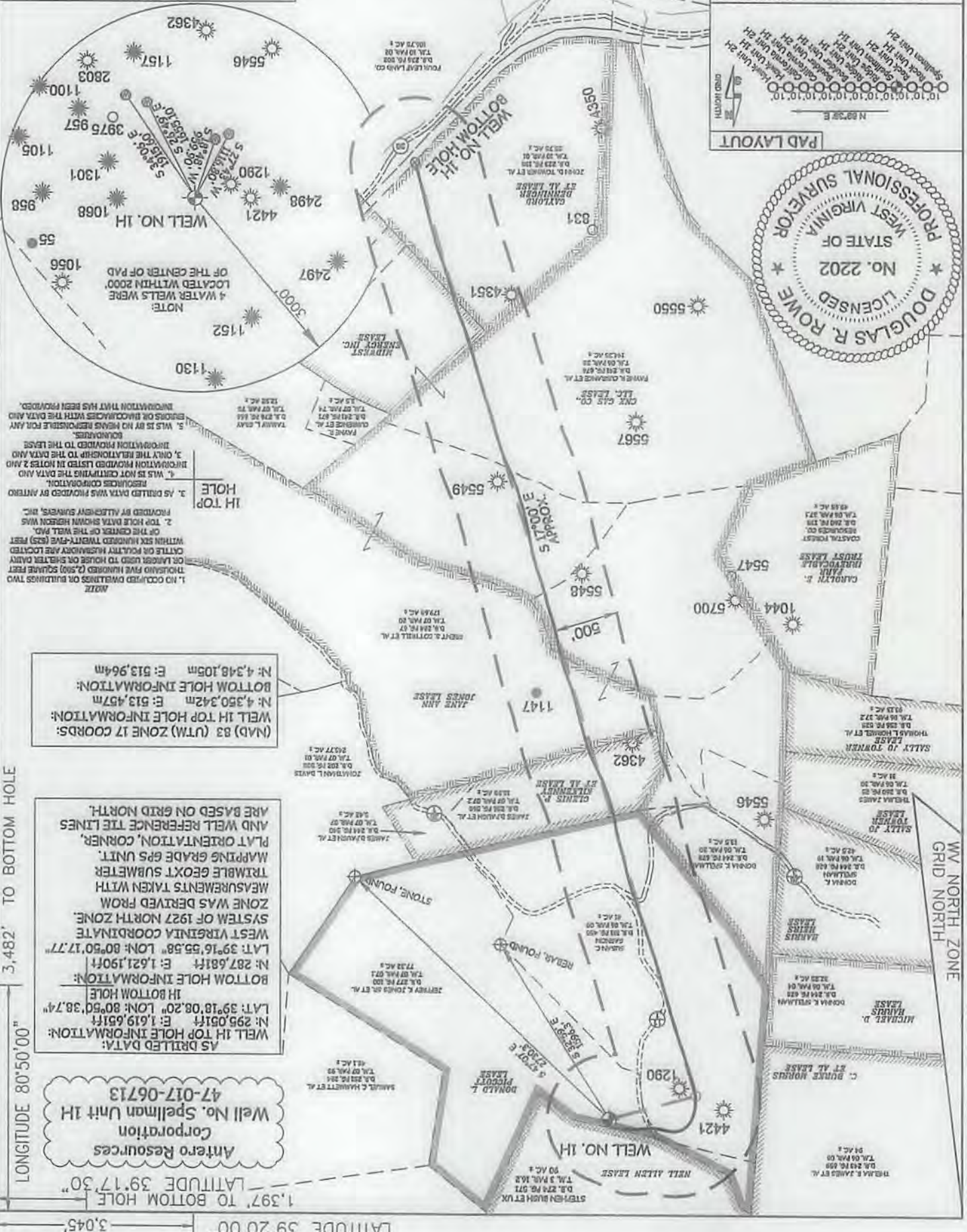
FORM MW-6
 ADDRESS 1616 WYMKOP STREET DENVER, CO 80202
 WELL OPERATOR ANTERO RESOURCES CORP.
 TARGET FORMATION MARCELLUS
 (SPECIFY) AS DRILLED
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL
 CLEAN OUT & REPLUG
 ESTIMATED DEPTH 6,707 TVD 14,305 MD
 DESIGNATED AGENT MANNING STAMPER-CT CORPORATION SYSTEM
 ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

COUNTY NAME DISTRICT CENTRAL COUNTY DODDRIDGE
 SURFACE OWNER JEFFREY K. JONES SR. ET AL
 OIL & GAS ROYALTY OWNER DONALD L. PIGGOTT, GLENIS P. KILKENNY ET AL
 LEASE ACREAGE 81 ACRES±, 25 ACRES±
 JANE ANN JONES, CNX GAS CO, LLC, MIDWEST ENERGY INC., GAYLORD BENNINGER ET AL
 114.5 ACRES±, 230.04 ACRES±, 34.17 ACRES±, 57 ACRES±
 QUADRANGLE WEST UNION 7.5
 ELEVATION 1,135.5 AS BUILT WATERSHED HEADWATERS MIDDLE ISLAND CREEK
 STATE COUNTY PERMIT 47 - 017 - 06713

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL
 DIVISION OF OIL AND GAS
 STATE OF WEST VIRGINIA
 DEPARTMENT OF ENERGY
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS
 ACCURACY SUBMETER
 MINIMUM DEGREE OF SCALE 1" = 1000'
 DRAWING # SPELLMAN14
 JOB # 14-085WA NOT TO SCALE

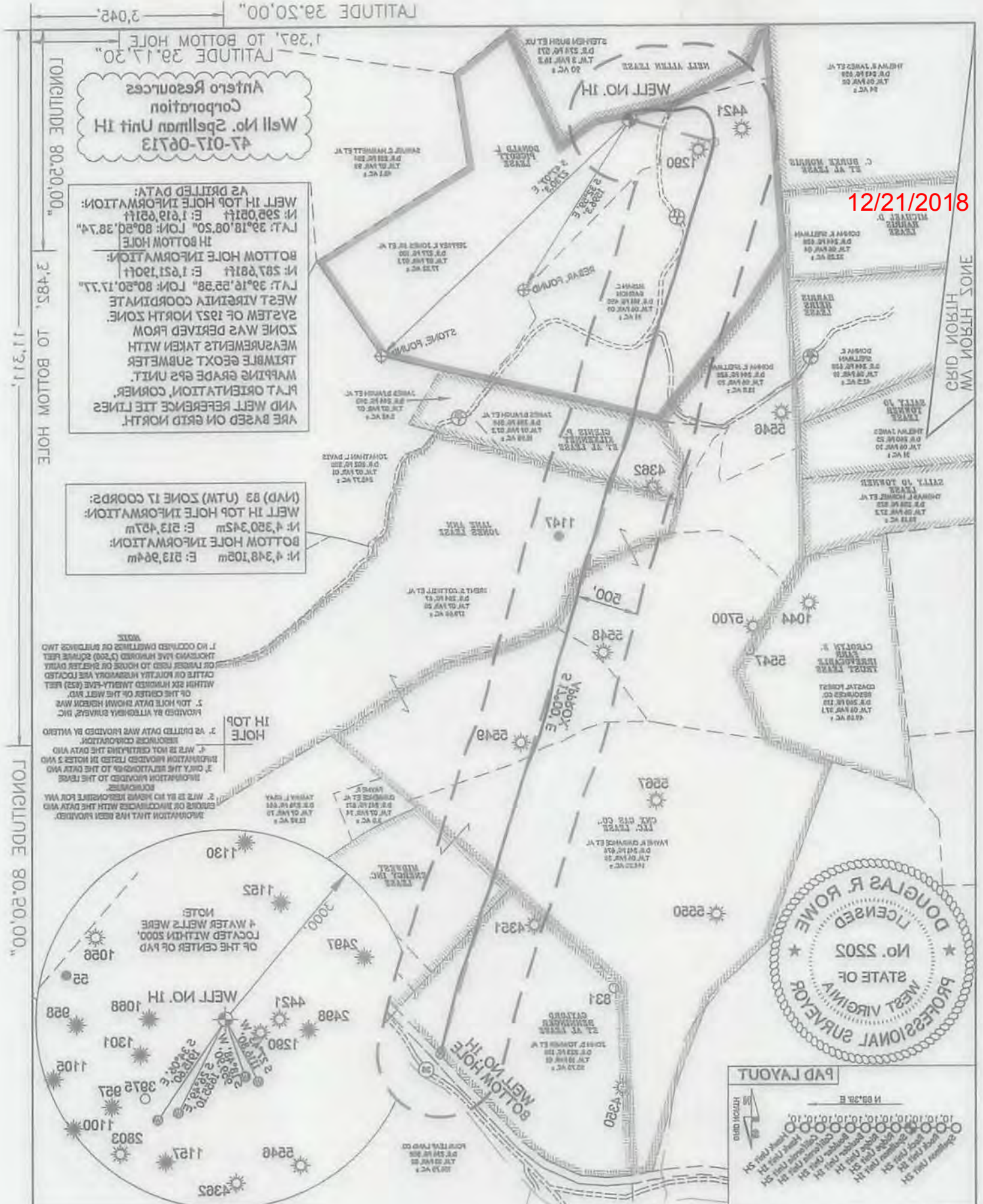
DATE 07/17/18
 OPERATOR'S WELL # SPELLMAN UNIT #14
 WILLLOW LAND SURVEYING PLLC
 220 MASONIC AVE. PENNSBORO
 WEST VIRGINIA 26415

STATE OF WEST VIRGINIA
 OFFICE OF OIL AND GAS
 OF ENVIRONMENTAL PROTECTION,
 DOUGLAS R. ROWE P.S. 2202



LATITUDE 39°20'00" LONGITUDE 80°50'00"
 3,045' 11,311' TO BOTTOM HOLE 3,482' TO BOTTOM HOLE
 W. NORTH ZONE GRID NORTH

12/21/2018



Antero Resources Corporation
Well No. Spelman Unit 1H
47-017-06713

AS DRILLED DATA:
WELL IN TOP HOLE INFORMATION:
N: 292,811 E: 1,819,811
LAT: 39°18.08'20" N, LONG: 80°20.38'24" W
IN BOTTOM HOLE:
BOTTOM HOLE INFORMATION:
N: 287,811 E: 1,821,201
LAT: 39°16.55'28" N, LONG: 80°20.17'27" W
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. MEASUREMENTS TAKEN WITH TRIANGLE GEODX SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(MAD) 83 (UTM) ZONE 17 COORDS:
WELL IN TOP HOLE INFORMATION:
N: 4,380,345 E: 513,457
BOTTOM HOLE INFORMATION:
N: 4,348,108 E: 513,964

NOTE:
1. NO OCCUPIED DWELLINGS OR BUILDINGS WERE THOUGHT TO BE WITHIN THE SURVEY AREA OR HAZARD TO HOLE OR SHOOTER DATA. ALL PLAT INFORMATION IS LOCATED WITHIN SIX HOURS OF THE SURVEY OR THE CENTER OF THE WELL AND 5. TOP HOLE DATA SHOWS HOLE WAS PROVIDED BY ANTERO SURVEY, INC. 2. AS DRILLED DATA WAS PROVIDED BY ANTERO SURVEY, INC. 3. THIS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED TO THE STATE OF WEST VIRGINIA. 4. THIS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED TO THE STATE OF WEST VIRGINIA. 5. THIS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED TO THE STATE OF WEST VIRGINIA.



ADDRESS	1815 WYKOP STREET DENVER, CO 80202
WELL OPERATOR	ANTERO RESOURCES CORP.
TARGET FORMATION	MARCELLUS
DESIGNATED AGENT	DIANNA STAMPER - CT CORPORATION SYSTEM
PLUG & ABANDON	CLEAN OUT & REPLUG
PERMIT	
NAME	JANE ANI JONES, CHX GAS CO., L.L.C. MIDWEST ENERGY INC.; GAYLORD BENNINGER ET AL. LEASE ACRES: 81 ACRES; 28 ACRES; 11.5 ACRES; 230.0 ACRES; 37.17 ACRES; 51 ACRES
NAME	OIL & GAS ROYALTY OWNER DONALD L. PIGOTT; GLENIS P. KILKENNY ET AL. LEASE ACRES: 81 ACRES; 28 ACRES; 11.5 ACRES; 230.0 ACRES; 37.17 ACRES; 51 ACRES
NAME	SURFACE OWNER JEFFREY K. JONES SR. ET AL. QUADRANGLE WEST UNION 7.5
LOCATION	ELEVATION 1,135.7 AS BUILT WATERSHED HEADWATERS MIDDLE ISLAND CREEK
WELL TYPE	OIL GAS X LIQUID INJECTION WASTE DISPOSAL
DIVISION OF OIL AND GAS	WEST VIRGINIA 26415
DEPARTMENT OF ENERGY	520 WALSONIC AVE. PENNSBORO
STATE OF WEST VIRGINIA	OFFICE OF OIL AND GAS
PROVEN SOURCE OF ELEV.	STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION,
ACCURACY	SUBMETER MAPPING GRADE GPS
MINIMUM DEGREE OF	INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND
SCALE	1" = 1000'
DRAWING #	SPELMAN14H
JOB #	14-085WA NOT TO SCALE
DATE	07/11/18
OPERATOR'S WELL #	SPELMAN UNIT 1H
STATE	COUNTY PERMIT
COUNTY	DODDGE
DISTRICT	CENTRAL
ACREAGE	77.32 ACRES +/-
ADDRESS	5400 D BIG TYLER ROAD CHARLESTON, WV 25313

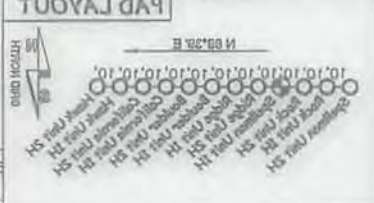
LEGEND
 - - - Surface Owner Boundary Lines +/-
 - - - Interior Surface Tracts +/-
 - - - Proposed Well Path
 - - - As Drilled Well Path

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

WILLOW LAND SURVEYING PLLC
 520 WALSONIC AVE. PENNSBORO
 WEST VIRGINIA 26415

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 PERFORMED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

STATE OF WEST VIRGINIA



LATITUDE 39.20'00" LONGITUDE 80.20'00"

LATITUDE 39.17'30" LONGITUDE 80.20'00"

3'485.10 BOTTOM HOLE

11'311