

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

API 47 - 017 - 06369 County Doddridge District Greenbrier
Quad Salem & Big Isaac Pad Name Clarence Pad Field/Pool Name _____
Farm name Mutschelknaus, Clarence & Mary Well Number Caswell 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 4,344,022.278m Easting 537,262.947m
Landing Point of Curve Northing 4,344,067.01m Easting 536,883.15m
Bottom Hole Northing 4,346,949.234m Easting 536,009.643m

Elevation (ft) 1050' 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 10/15/2013 Date drilling commenced 10/28/2013 Date drilling ceased 3/5/2014
Date completion activities began 6/12/2014 Date completion activities ceased 11/25/2014
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', 260' Open mine(s) (Y/N) depths N
Salt water depth(s) ft None Identified Void(s) encountered depths N
Coal depth(s) ft 1736' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewed by:
AL 5/27/15
W.S. 06/05/2015

API 47-017 - 06369 Farm name Mutschelknaus, Clarence & Mary Well number Caswell 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"	40'	New	94#/H-40	N/A	Y
Surface	17-1/2"	13-3/8"	348'	New	48#/J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2531'	New	36#/J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	17,677'	New	23#/P-110	N/A	Y
Tubing		2-3/8"	7412'	New	4.7#/N-80		N/A
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	150 sx	15.6	1.18	38 Cu. Ft.	0'	8 Hrs.
Surface	Class A	415 sx	15.6	1.18	242 Cu. Ft.	0'	8 Hrs.
Coal							
Intermediate 1	Class A	706 sx	15.6	1.18	793 Cu. Ft.	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1023 sx (Lead), 1855 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.44 (Lead), 1.80 (Tail)	3584 Cu. Ft.	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 17,677' MD, 7241' TVD (BHL); 7243' TVD (Deepest Point Drilled) Loggers TD (ft) 17,622' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6929'

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 _____

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WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

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WERE TRACERS USED Yes No TYPE OF TRACER(S) USED Radioactive & Chemical

WV Department of Environmental Protection

API 47- 017 - 06369 Farm name Mutschelknaus, Clarence & Mary Well number Caswell Unit 1H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
			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)	
			SEE ATTACHED EXHIBIT 2						

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Please insert additional pages as applicable.

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PRODUCING FORMATION(S)	DEPTHS	
<u>Marcellus</u>	<u>7100' (Top)</u> TVD	<u>7494' (Top)</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump
 SHUT-IN PRESSURE Surface 3600 psi Bottom Hole ---- psi DURATION OF TEST ---- hrs
 OPEN FLOW Gas 4146 mcfpd Oil ---- bpd NGL ---- bpd Water ---- bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	<u>0</u>		<u>0</u>		
			SEE ATTACHED EXHIBIT 3		

Please insert additional pages as applicable.

Drilling Contractor Patterson - UTI Drilling Company, LLC
 Address 207 Carlton Drive City Eighty Four State PA Zip 15330
 Logging Company Rush Wellsite Services
 Address 600 Alpha Drive City Canonsburg State PA Zip 15317
 Cementing Company Allied Oil & Gas Services, LLC
 Address 1036 East Main Street City Bridgeport State WV Zip 26330
 Stimulating Company U.S. Well Services
 Address 533 Industrial Park Drive City Jane Lew State WV Zip 26378

Please insert additional pages as applicable.

Completed by Natalie Komp Telephone 303-357-6820
 Signature *Natalie Komp* Title Permitting Agent Date 5/18/2015

API 47-017-06369 Farm Name Mutschelknaus, Clarence Well Number Caswell Unit 1H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	12-Jun-14	17418'	17585'	60	Marcellus
2	7-Sep-14	17221'	17387'	60	Marcellus
3	15-Oct-14	17023'	17190'	60	Marcellus
4	16-Oct-14	16826'	16992'	60	Marcellus
5	16-Oct-14	16628'	16795'	60	Marcellus
6	16-Oct-14	16430'	16597'	60	Marcellus
7	17-Oct-14	16233'	16400'	60	Marcellus
8	17-Oct-14	16035'	16202'	60	Marcellus
9	17-Oct-14	15838'	16004'	60	Marcellus
10	17-Oct-14	15640'	15807'	60	Marcellus
11	18-Oct-14	15443'	15609'	60	Marcellus
12	19-Oct-14	15245'	15412'	60	Marcellus
13	19-Oct-14	15047'	15214'	60	Marcellus
14	20-Oct-14	14850'	15016'	60	Marcellus
15	20-Oct-14	14652'	14819'	60	Marcellus
16	20-Oct-14	14455'	14621'	60	Marcellus
17	20-Oct-14	14257'	14424'	60	Marcellus
18	21-Oct-14	14059'	14226'	60	Marcellus
19	21-Oct-14	13862'	14029'	60	Marcellus
20	21-Oct-14	13664'	13831'	60	Marcellus
21	22-Oct-14	13467'	13633'	60	Marcellus
22	22-Oct-14	13269'	13436'	60	Marcellus
23	23-Oct-14	13072'	13238'	60	Marcellus
24	23-Oct-14	12874'	13041'	60	Marcellus
25	23-Oct-14	12676'	12843'	60	Marcellus
26	24-Oct-14	12479'	12646'	60	Marcellus
27	24-Oct-14	12281'	12448'	60	Marcellus
28	24-Oct-14	12084'	12250'	60	Marcellus
29	24-Oct-14	11886'	12053'	60	Marcellus
30	25-Oct-14	11689'	11855'	60	Marcellus
31	25-Oct-14	11491'	11658'	60	Marcellus
32	25-Oct-14	11293'	11460'	60	Marcellus
33	25-Oct-14	11096'	11262'	60	Marcellus
34	26-Oct-14	10898'	11065'	60	Marcellus
35	26-Oct-14	10701'	10867'	60	Marcellus
36	26-Oct-14	10503'	10670'	60	Marcellus
37	26-Oct-14	10305'	10472'	60	Marcellus
38	27-Oct-14	10108'	10275'	60	Marcellus
39	27-Oct-14	9910'	10077'	60	Marcellus
40	27-Oct-14	9713'	9879'	60	Marcellus
41	27-Oct-14	9515'	9682'	60	Marcellus
42	28-Oct-14	9318'	9484'	60	Marcellus
43	28-Oct-14	9120'	9287'	60	Marcellus
44	28-Oct-14	8922'	9089'	60	Marcellus
45	28-Oct-14	8725'	8891'	60	Marcellus
46	29-Oct-14	8527'	8694'	60	Marcellus
47	29-Oct-14	8330'	8496'	60	Marcellus
48	29-Oct-14	8132'	8299'	60	Marcellus
49	29-Oct-14	7935'	8101'	60	Marcellus
50	30-Oct-14	7737'	7904'	60	Marcellus
51	30-Oct-14	7539'	7706'	60	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	1-Jul-14	64.0	7,903	6,466	6,760	167,000	6,915	N/A
2	7-Sep-14	50.0	7,998	7,528	5,994	11,100	7,107	N/A
3	15-Oct-14	64.0	7,675	6,458	5,467	222,980	6,567	N/A
4	16-Oct-14	64.7	7,636	6,394	5,778	231,800	6,688	N/A
5	16-Oct-14	66.0	7,595	6,594	5,501	229,280	6,657	N/A
6	16-Oct-14	65.7	7,830	6,309	6,126	229,800	6,651	N/A
7	17-Oct-14	65.4	7,850	6,397	6,109	230,300	6,607	N/A
8	17-Oct-14	64.7	7,586	6,431	5,734	229,090	6,615	N/A
9	17-Oct-14	63.8	7,553	6,294	5,770	223,900	7,172	N/A
10	17-Oct-14	65.4	7,612	6,191	5,827	230,500	6,557	N/A
11	18-Oct-14	65.1	7,506	6,123	5,426	229,100	6,526	N/A
12	19-Oct-14	64.0	7,588	6,180	5,662	232,560	6,526	N/A
13	19-Oct-14	65.1	7,457	6,096	5,895	232,200	6,473	N/A
14	20-Oct-14	65.2	7,435	6,201	5,916	232,850	6,475	N/A
15	20-Oct-14	63.4	7,321	6,209	5,830	213,750	7,031	N/A
16	20-Oct-14	65.3	7,505	6,345	5,782	235,000	6,431	N/A
17	20-Oct-14	64.8	7,344	6,231	5,773	235,500	6,391	N/A
18	21-Oct-14	64.8	7,345	6,400	5,907	232,550	6,414	N/A
19	21-Oct-14	64.9	7,384	6,585	5,354	233,870	6,373	N/A
20	21-Oct-14	65.5	7,220	6,403	5,666	234,900	6,330	N/A
21	22-Oct-14	65.3	7,250	6,121	5,768	231,760	6,335	N/A
22	22-Oct-14	65.8	7,214	6,836	5,950	232,500	6,203	N/A
23	23-Oct-14	65.8	7,291	6,001	6,000	230,700	6,274	N/A
24	23-Oct-14	64.9	7,084	5,919	5,622	231,300	6,242	N/A
25	23-Oct-14	64.5	7,243	5,822	5,731	231,500	6,217	N/A
26	24-Oct-14	65.7	7,123	5,980	5,967	230,400	6,209	N/A
27	24-Oct-14	63.0	7,037	5,825	5,633	229,150	6,182	N/A
28	24-Oct-14	65.4	7,226	6,176	5,471	232,500	6,170	N/A
29	24-Oct-14	66.3	7,387	6,030	5,865	232,000	6,147	N/A
30	25-Oct-14	64.0	7,147	5,859	5,728	230,000	6,136	N/A
31	25-Oct-14	63.0	7,230	5,756	5,745	232,200	6,101	N/A
32	25-Oct-14	65.9	7,179	5,912	5,641	232,500	6,075	N/A
33	25-Oct-14	65.7	7,220	6,076	5,912	232,350	6,062	N/A
34	26-Oct-14	64.0	7,139	5,865	5,280	234,300	6,029	N/A
35	26-Oct-14	64.0	7,018	5,764	5,721	232,000	6,021	N/A
36	26-Oct-14	64.0	7,140	5,835	5,943	232,240	5,999	N/A
37	26-Oct-14	66.0	6,796	5,915	5,863	232,620	5,980	N/A
38	27-Oct-14	64.7	6,986	5,933	5,873	233,220	5,943	N/A
39	27-Oct-14	64.9	6,954	5,642	5,855	233,670	5,945	N/A
40	27-Oct-14	66.0	6,788	5,867	5,882	233,700	5,928	N/A
41	27-Oct-14	65.0	7,034	5,962	5,782	232,000	5,793	N/A
42	28-Oct-14	65.0	6,906	5,761	5,894	231,300	5,727	N/A
43	28-Oct-14	64.8	6,834	5,634	5,885	232,320	5,705	N/A
44	28-Oct-14	66.4	6,696	5,969	5,710	231,000	5,689	N/A
45	28-Oct-14	69.9	6,877	5,889	5,695	232,200	5,703	N/A
46	29-Oct-14	65.3	6,774	5,860	5,797	231,700	5,732	N/A
47	29-Oct-14	65.1	6,630	6,007	5,378	233,120	5,710	N/A
48	29-Oct-14	64.8	6,647	5,845	5,389	232,500	5,624	N/A
49	29-Oct-14	65.3	6,624	5,883	5,420	233,700	5,605	N/A
50	30-Oct-14	65.3	6,675	5,967	5,588	222,050	5,447	N/A
51	30-Oct-14	64.9	6,659	6,209	5,158	232,570	5,592	N/A
AVG=		64.8	7,219	6,117	5,753	11,503,100	317,031	TOTAL

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EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD) From Surface	BOTTOM DEPTH (TVD) From Surface	TOP DEPTH (MD) From Surface	BOTTOM DEPTH (MD) From Surface
Freshwater	107	NA	107	NA
Freshwater	260	NA	260	NA
Shale	0	566	0	566
Shale/Siltstone	est 566	676	est 566	676
Shale	est 676	716	est 676	716
Shale/Coal	est 716	836	est 716	836
Shale/Siltstone	est 836	1,696	est 836	1,696
Sandstone	est 1696	1,736	est 1696	1,736
Coal	est 1736	1,766	est 1736	1,766
Shale	est 1766	2,023	est 1766	2,023
Big Lime	2,023	2,121	2,023	2,121
Big Injun	2,121	2,483	2,121	2,483
Gantz Sand	2,483	2,599	2,483	2,599
Fifty Foot Sandstone	2,599	2,683	2,599	2,683
Gordon	2,683	2,856	2,683	2,856
Fifth Sandstone	2,856	2,895	2,856	2,895
Bayard	2,895	3,371	2,895	3,371
Warren	3,371	3,577	3,371	3,577
Speechley	3,577	3,910	3,577	3,910
Baltown	3,910	4,398	3,910	4,398
Bradford	4,398	4,982	4,398	4,984
Benson	4,982	5,290	4,984	5,303
Alexander	5,290	5,446	5,303	5,470
Elk	5,446	6,062	5,470	6,174
Rhinestreet	6,062	6,578	6,174	6,724
Sycamore	6,553	6,780	6,699	6,956
Middlesex	6,780	6,927	6,956	7,149
Burkett	6,927	6,953	7,149	7,187
Tully	6,953	7,100	7,187	7,494
Marcellus	7,100	NA	7,494	NA

*Please note Antero determines shallow formation tops based on mud and/or wireline logs that are only run on one well on a multi-well pad (Please reference Wireline Logs submitted for the Ruth Unit 1H API# 47-017-06164). 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:	7/1/2014
Job End Date:	10/30/2014
State:	West Virginia
County:	Doddridge
API Number:	47-017-06369-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Caswell Unit 1H
Longitude:	-80.56818100
Latitude:	39.24470800
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	7,243
Total Base Water Volume (gal):	13,315,302
Total Base Non Water Volume:	597,967



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Hydraulic Fracturing Fluid Composition:

WV Department of Environmental Protection

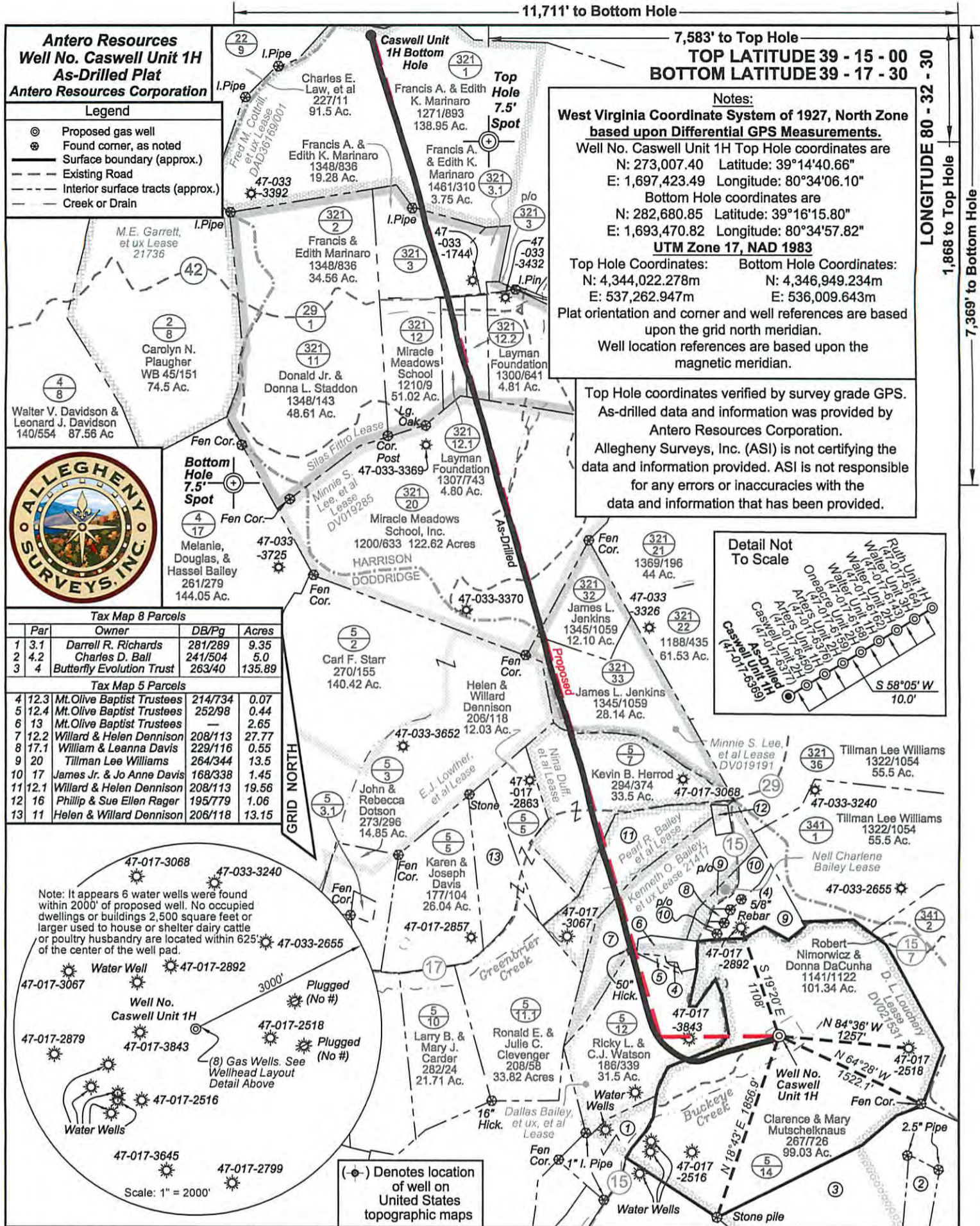
Trade Name	Supplier	Purpose	Ingredients	Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Antero Resources	Base Fluid	Water	7732-18-5	100.00000	90.20702	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	9.34411	
LGC-15	U.S. Well Services, LLC	Gelling Agents	Guar Gum	9000-30-0	50.00000	0.10511	
			Petroleum Distillates	64742-47-8	60.00000	0.09955	
			Suspending agent (solid)	14808-60-7	3.00000	0.01608	
			Surfactant	68439-51-0	3.00000	0.00631	
HCL Acid (12.6%-18.0%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.50000	0.08587	
			Hydrogen Chloride	7647-01-0	18.00000	0.02051	
WFRA-405	U.S. Well Services, LLC	Friction Reducer	Water	7732-18-5	40.00000	0.02636	
			Anionic Polyacrylamide	Proprietary		0.02636	
			Petroleum Distillates	64742-47-8	22.00000	0.02122	
			Crystalline Salt	12125-02-9	5.00000	0.00329	

SI-1100	J.S. Well Services	Scale Inhibitor	Ethoxylated alcohol blend	Proprietary	5.00000	0.00329
			Di Water	7732-18-5	80.00000	0.01047
			Ethylene Glycol	107-21-1	40.00000	0.00591
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	10.00000	0.00177
			2-Phosphonobutane 1,2,4 tricarboxylic salt	37971-36-1	10.00000	0.00165
			hexamethylenediamine tetra (methylene phosphonic acid)	38820-59-6	10.00000	0.00164
			Copolymer of Maleic and Acrylic acid	26677-99-6	10.00000	0.00154
			bis (hexamethylene) tramine penta (methylene phosphonic acid) - phosphate acid	40623-75-4	10.00000	0.00150
			Acrylic polymer	52255-49-9	5.00000	0.00065
K-BAC 1020	J.S. Well Services, LLC	Anti-Bacterial Agent				
			2,2-dibromo-3-nitropropionamide	10222-01-2	20.00000	0.00444
			Deionized Water	7732-18-5	28.00000	0.00253
AP One	J.S. Well Services, LLC	Gel Breakers				
			Ammonium Persulfate	7727-54-0	100.00000	0.00242
AI-301	J.S. Well Services, LLC	Acid Corrosion Inhibitors				
			Diethylene Glycol	111-46-6	30.00000	0.00012
			Methenamine	100-97-0	20.00000	0.00009
			Hydrogen Chloride	7647-01-0	10.00000	0.00004
			Polyethylene polyamine	68603-67-8	10.00000	0.00004
			Coco amine	61791-14-8	5.00000	0.00002
AI-300	J.S. Well Services, LLC	Acid Corrosion Inhibitors				
			Ethylene Glycol	107-21-1	31.00000	0.00002
			Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7	13.00000	0.00001
			Cinnamaldehyde	104-55-2	5.00000	0.00001
			2-Butoxyethanol	111-76-2	7.00000	0.00001
			N,N-Dimethylformamide	68-12-2	15.00000	0.00001
			isopropyl Alcohol	67-63-0	3.00000	
			Water	7732-18-5	20.00000	
			Triethyl Phosphate	78-40-0	3.00000	
			Ethoxylated Nonylphenol	68412-54-4	5.00000	

Ingredients shown above are subject to 29 CFR, 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS items.

* Total Water Volume sources may include fresh water, produced water, and/or recycled water
 ** Information is based on the maximum potential for concentration and thus the total may be over 100%
 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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Antero Resources
Well No. Caswell Unit 1H
As-Drilled Plat
Antero Resources Corporation

- Legend**
- ⊙ Proposed gas well
 - ⊛ Found corner, as noted
 - Surface boundary (approx.)
 - - - Existing Road
 - - - Interior surface tracts (approx.)
 - - - Creek or Drain

M.E. Garrett, et ux Lease 21736
 Carolyn N. Plaughter WB 45/151 74.5 Ac.
 Walter V. Davidson & Leonard J. Davidson 140/554 87.56 Ac.



Bottom Hole 7.5' Spot

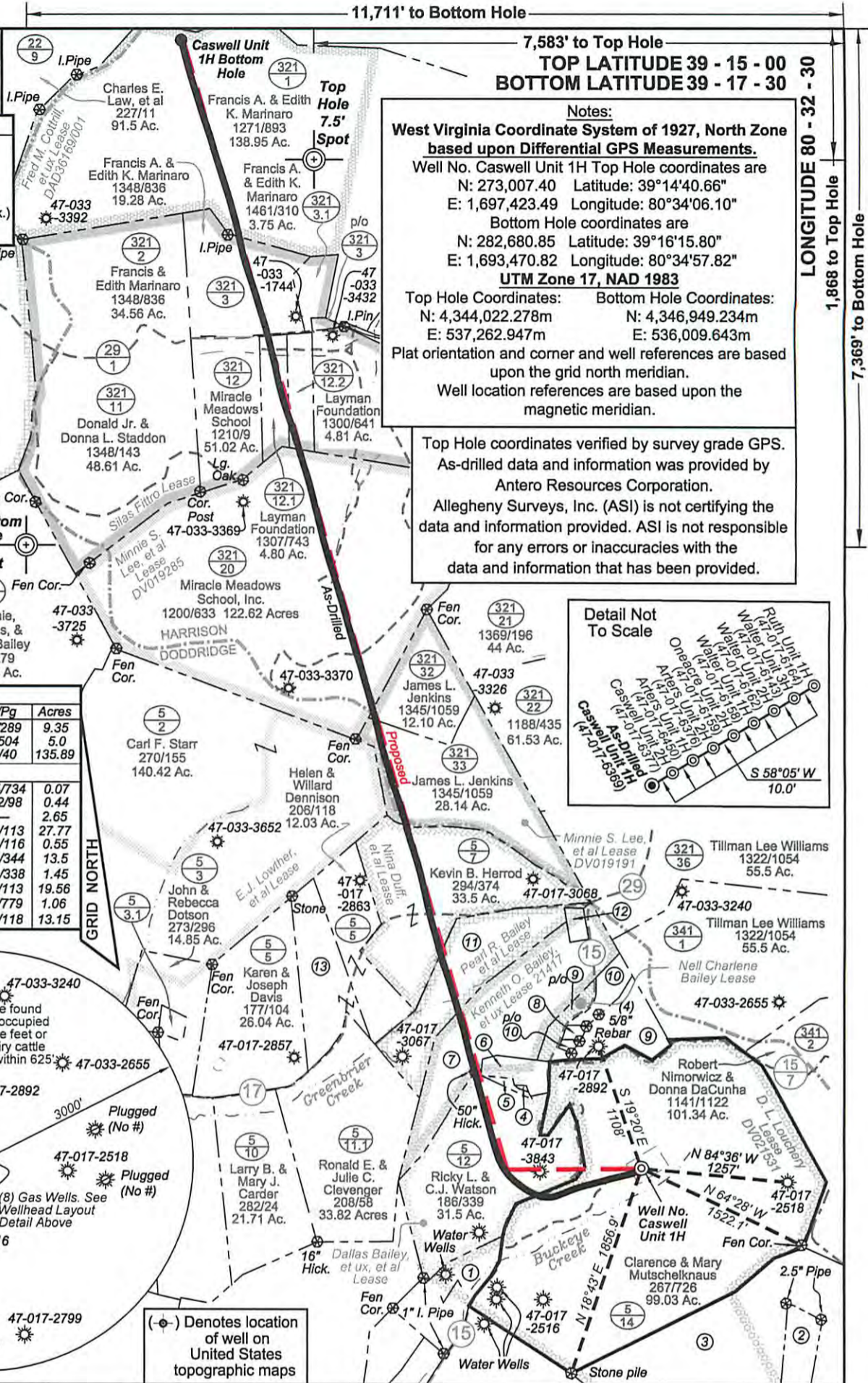
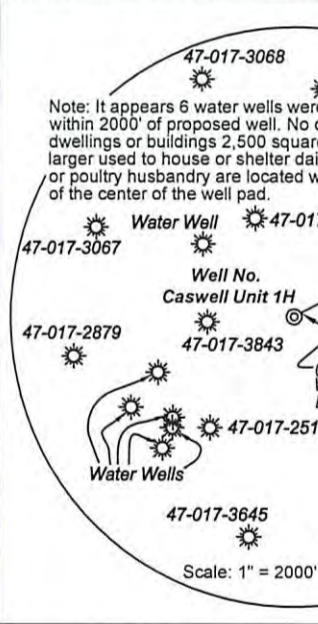
4 Fen Cor.
 17 Melanie, Douglas, & Hassel Bailey 261/279 144.05 Ac.

Tax Map 8 Parcels

Par	Owner	DB/Pg	Acres
1 3.1	Darrell R. Richards	281/289	9.35
2 4.2	Charles D. Ball	241/504	5.0
3 4	Butterfly Evolution Trust	263/40	135.89

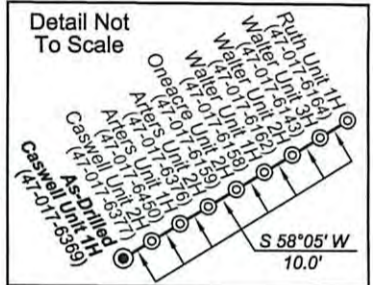
Tax Map 5 Parcels

Parcel	Owner	DB/Pg	Acres
4 12.3	Mt. Olive Baptist Trustees	214/734	0.07
5 12.4	Mt. Olive Baptist Trustees	252/98	0.44
6 13	Mt. Olive Baptist Trustees	—	2.65
7 12.2	Willard & Helen Dennison	208/113	27.77
8 17.1	William & Leanna Davis	229/116	0.55
9 20	Tillman Lee Williams	264/344	13.5
10 17	James Jr. & Jo Anne Davis	168/338	1.45
11 12.1	Willard & Helen Dennison	208/113	19.56
12 16	Phillip & Sue Ellen Rager	195/779	1.06
13 11	Helen & Willard Dennison	206/118	13.15



Notes:
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
 Well No. Caswell Unit 1H Top Hole coordinates are
 N: 273,007.40 Latitude: 39°14'40.66"
 E: 1,697,423.49 Longitude: 80°34'06.10"
 Bottom Hole coordinates are
 N: 282,680.85 Latitude: 39°16'15.80"
 E: 1,693,470.82 Longitude: 80°34'57.82"
UTM Zone 17, NAD 1983
 Top Hole Coordinates: N: 4,344,022.278m E: 537,262.947m
 Bottom Hole Coordinates: N: 4,346,949.234m E: 536,009.643m
 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 verified by survey grade GPS. 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.



FILE NO: 356-30-G-12
 DRAWING NO: Caswell 1H As-Drilled Plat
 SCALE: 1" = 1200'
 MINIMUM DEGREE OF ACCURACY: Submeter
 PROVEN SOURCE OF ELEVATION: WVDOT, Bridgeport, WV

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

DATE: March 25 2015
 OPERATOR'S WELL NO. Caswell Unit 1H
 API WELL NO: 47-017-06369
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL

(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW

LOCATION ELEVATION: Existing Grade - 1045' Proposed Grade - 1050' WATERSHED: Headwaters of Middle Island Creek QUADRANGLE: Salem & Big Isaac

DISTRICT: Greenbrier COUNTY: Doddridge

SURFACE OWNER: Clarence & Mary Mutschelknaus Minnie S. Lee, et al; Silas Fitfro; Fred M. Cottrill, et ux Pearl R. Bailey, et al; Nina Duff, et al; Minnie S. Lee, et al DV019285; DAD36169/001; ACREAGE: 99.03 176; 111.75; 42; 283; 130;

ROYALTY OWNER: D.L. Louchery; Dallas Bailey, et ux, et al; Kenneth O. Bailey, et ux; LEASE NO: DV021531; 21417; DV019191 ACREAGE: 172; 35; 27.12; 20

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 TVD 7,241' DEPTH: MD 17,677'

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

06/05/2015