WR-35
Rev. 8/23/13

Page ___ of ___

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

RECEIVED
FEB 12 2016
WV GEOLOGICAL SURVEY
MORGANTOWN, WV

API 47 - 085 - 10138 County Ritchie District Union
Quad Pullman 7.5' Pad Name John Richards Pad Field/Pool Name ----
Farm name Richards, John Wayne Well Number Stalnaker Unit 1H
Operator (as registered with the OOG) Antero Resources Corporation
Address 1615 Wynkoop St. 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 4339579m Easting 506950m
Landing Point of Curve Northing 4339631.46m Easting 506512.33m
Bottom Hole Northing 4341489m Easting 506083m

Elevation (ft) 1025' 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 8/11/2014 Date drilling commenced 12/10/2014 Date drilling ceased 1/4/2015
Date completion activities began 9/3/2015 Date completion activities ceased 11/23/2015
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 42', 52', 172' Open mine(s) (Y/N) depths No
Salt water depth(s) ft None Identified 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:

WR-35
Rev. 8/23/13

Page ___ of ___

API 47- 085 - 10138 Farm name Richards, John Wayne Well number Stalnaker 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	30"	20"	40'	New	94# K-55	N/A	Y
Surface	17- 1/2"	13- 3/8"	417'	New	54.50# J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2487'	New	36# J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4" & 8-1/2"	5-1/2"	13533'	New	20# P-110	N/A	Y
Tubing		2-3/8"	6738'		5.95# 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	0'	8 Hrs.
Surface	Class A	489 sx	15.6	1.18	290	0'	8 Hrs.
Coal							
Intermediate 1	Class A	967 sx	15.6	1.00	779	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	982 sx (Lead) 1093 sx (Tail)	14.5 Lead 15.2 Tail	1.30 Lead 1.86 Tail	2645	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 13533' MD, 6375' TVD (BHL), 6390' (Deepest Point Drilled) Loggers TD (ft) 13533'

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

Plug back procedure N/A

Kick off depth (ft) 6254'

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Duckworth Unit 3H API #47-085-10103). Please reference the wireline logs submitted with Form WR-35 for Duckworth Unit 3H. A Cement Bond Log has been included with this submittal.

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 aboce 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

WR-35
Rev. 8/23/13

Page ___ of ___

API 47- 085 - 10138 Farm name Richards, John Wayne Well number Stalnaker 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.

WR-35
Rev. 8/23/13

Page ___ of ___

API 47- 085 - 10138 Farm name Richards, John Wayne Well number Stalnaker Unit 1H

PRODUCING FORMATION(S)	DEPTHS			
Marcellus	6339' (TOP)	TVD	6873' (TOP)	MD

Please insert additional pages as applicable.

GAS TEST □ Build up □ Drawdown ■ Open Flow OIL TEST ■ Flow □ Pump

SHUT-IN PRESSURE Surface 3000 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW	Gas	Oil	NGL	Water	GAS MEASURED BY
	3825 mcfpd	38 bpd	--- bpd	--- bpd	□ Estimated ■ Orifice □ Pilot

LITHOLOGY/ FORMATION NAME	TOP DEPTH IN FT 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_2S, ETC)
	0		0		

***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

Drilling Contractor Frontier Drilling LLC
Address 562 Spring Run Rd. City Pennsboro State WV Zip 26415

Logging Company Rush Wellsite Services
Address 600 Alpha Drive City Canonsburg State PA Zip 15317

Cementing Company Nabors Completion & Production Services, Co.
Address 1650 Hackers Creek City Jane Lew State WV Zip 26378

Stimulating Company US Well Services
Address 533 Industrial Park Dr. City Jane Lew State WV Zip 26378
Please insert additional pages as applicable.

Completed by Kara Quackenbush Telephone 303-357-7233
Signature [signature] Title Permit Representative Date 1/26/2016

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

API 47-085-10138 **Farm Name** Richards, John Wayne **Well Number** Stalnaker Unit 1H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	3-Sep-15	13,274	13,441	60	Marcellus
2	24-Oct-15	13,075	13,243	60	Marcellus
3	25-Oct-15	12,876	13,044	60	Marcellus
4	25-Oct-15	12,678	12,845	60	Marcellus
5	25-Oct-15	12,479	12,647	60	Marcellus
6	25-Oct-15	12,280	12,448	60	Marcellus
7	26-Oct-15	12,082	12,249	60	Marcellus
8	26-Oct-15	11,883	12,051	60	Marcellus
9	26-Oct-15	11,684	11,852	60	Marcellus
10	26-Oct-15	11,486	11,653	60	Marcellus
11	26-Oct-15	11,287	11,455	60	Marcellus
12	27-Oct-15	11,088	11,256	60	Marcellus
13	31-Oct-15	10,890	11,057	60	Marcellus
14	31-Oct-15	10,691	10,858	60	Marcellus
15	1-Nov-15	10,492	10,660	60	Marcellus
16	1-Nov-15	10,293	10,461	60	Marcellus
17	1-Nov-15	10,095	10,262	60	Marcellus
18	1-Nov-15	9,896	10,064	60	Marcellus
19	2-Nov-15	9,697	9,865	60	Marcellus
20	2-Nov-15	9,499	9,666	60	Marcellus
21	2-Nov-15	9,300	9,468	60	Marcellus
22	2-Nov-15	9,101	9,269	60	Marcellus
23	2-Nov-15	8,903	9,070	60	Marcellus
24	3-Nov-15	8,704	8,872	60	Marcellus
25	3-Nov-15	8,505	8,673	60	Marcellus
26	3-Nov-15	8,307	8,474	60	Marcellus
27	3-Nov-15	8,108	8,275	60	Marcellus
28	3-Nov-15	7,909	8,077	60	Marcellus
29	3-Nov-15	7,711	7,878	60	Marcellus
30	4-Nov-15	7,512	7,679	60	Marcellus
31	4-Nov-15	7,313	7,481	60	Marcellus
32	4-Nov-15	7,114	7,282	60	Marcellus
33	4-Nov-15	6,916	7,083	60	Marcellus

API 47-085-10138 **Farm Name** Richards, John Wayne **Well Number** Stalnaker 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	24-Oct-15	67.0	7,451	6,770	3,416	172,910	7,102	N/A
2	24-Oct-15	70.0	7,276	7,001	4,606	249,830	7,219	N/A
3	25-Oct-15	68.0	7,351	6,333	5,120	172,760	6,421	N/A
4	25-Oct-15	70.0	7,302	5,734	4,738	173,320	6,616	N/A
5	25-Oct-15	71.0	7,098	5,774	5,226	234,670	6,290	N/A
6	25-Oct-15	70.0	7,176	6,068	4,813	137,680	6,218	N/A
7	26-Oct-15	62.0	7,065	6,119	4,807	16,640	5,775	N/A
8	26-Oct-15	71.0	7,342	6,373	5,021	169,500	6,293	N/A
9	26-Oct-15	59.0	7,686	6,024	4,672	110,300	6,748	N/A
10	26-Oct-15	71.4	7,226	6,767	4,059	244,030	6,723	N/A
11	26-Oct-15	71.2	6,990	5,830	4,946	230,480	6,372	N/A
12	27-Oct-15	53.0	7,237	5,931	7,598	57,560	5,852	N/A
13	31-Oct-15	69.5	7,263	6,412	4,567	133,240	6,277	N/A
14	31-Oct-15	70.9	7,408	6,789	4,464	193,790	6,628	N/A
15	1-Nov-15	75.4	7,884	6,121	5,357	197,460	6,878	N/A
16	1-Nov-15	73.0	6,985	5,778	5,308	173,360	6,492	N/A
17	1-Nov-15	72.4	6,884	5,794	5,087	242,140	6,332	N/A
18	1-Nov-15	74.9	7,110	6,713	4,480	229,140	6,065	N/A
19	2-Nov-15	72.7	7,487	6,117	4,828	191,340	6,256	N/A
20	2-Nov-15	70.0	7,219	5,949	4,876	228,825	6,156	N/A
21	2-Nov-15	72.0	6,759	6,049	4,960	249,790	6,234	N/A
22	2-Nov-15	73.6	6,793	6,888	3,995	233,840	6,764	N/A
23	2-Nov-15	71.8	6,633	5,662	4,825	256,454	6,178	N/A
24	3-Nov-15	72.4	6,568	6,070	5,197	257,423	6,159	N/A
25	3-Nov-15	73.0	6,617	6,199	3,858	251,380	6,204	N/A
26	3-Nov-15	73.0	6,558	6,245	4,971	251,080	6,127	N/A
27	3-Nov-15	72.6	6,262	6,179	4,995	262,920	6,143	N/A
28	3-Nov-15	72.8	6,621	6,171	4,929	255,290	6,125	N/A
29	3-Nov-15	72.4	6,425	5,867	3,545	260,360	6,097	N/A
30	4-Nov-15	73.0	7,031	6,100	3,458	251,060	6,061	N/A
31	4-Nov-15	72.0	6,766	6,470	3,646	251,970	6,072	N/A
32	4-Nov-15	71.0	6,180	5,512	4,893	172,180	5,940	N/A
33	4-Nov-15	72.5	6,278	5,464	5,050	234,250	5,730	N/A
AVG=		**70.4**	**6,998**	**6,160**	**4,737**	**6,746,972**	**208,547**	TOTAL

API 47-085-10138 Farm Name Richards, John Wayne Well Number Stalnaker Unit 1H				
EXHIBIT 3				
LITHOLOGY/ FORMATION	**TOP DEPTH (TVD) From Surface**	**BOTTOM DEPTH (TVD) From Surface**	**TOP DEPTH (MD) From Surface**	**BOTTOM DEPTH (MD) From Surface**
Fresh Water	42'	N/A	42'	N/A
Fresh Water	52'	N/A	52'	N/A
Fresh Water	172'	N/A	172'	N/A
Silt	0	37	0	37
Sandstone	est. 37	97	est. 37	97
Silty Shale	est. 97	417	est. 97	417
Silty Sandstone	est. 417	657	est. 417	657
Sandy siltstone	est. 657	737	est. 657	737
Limey Shale	est. 737	817	est. 737	817
Silty Shale	est. 817	1317	est. 817	1317
Sandstone	est. 1317	1357	est. 1317	1357
Sandy shale	est. 1357	1417	est. 1357	1417
Sandstone	est. 1417	1497	est. 1417	1497
Sandy shale	est. 1497	1577	est. 1497	1577
Shale / Coal	est. 1577	1637	est. 1577	1637
Sandstone (Tr Coal)	est. 1637	1817	est. 1637	1817
Shale	est. 1817	1897	est. 1817	1897
Limey Siltstone	est. 1897	1941	est. 1897	1964
Big Lime	1941	2033	1964	2035
Big Injun	2033	2288	2035	2290
Gantz Sand	2288	2455	2290	2457
Fifty Foot Sandstone	2455	2659	2457	2661
Gordon	2659	2945	2661	2947
Fifth Sandstone	2945	3064	2947	3066
Bayard	3064	3435	3066	6441
Warren	3435	3836	6441	3862
Speechley	3836	3953	3862	3990
Baltown	3953	4509	3990	4604
Bradford	4509	4893	4604	5030
Benson	4893	5122	5030	5288
Alexander	5122	5301	5288	5486
Elk	5301	5719	5486	5952
Rhinestreet	5719	6027	5952	6308
Sycamore	6027	6182	6308	6507
Middlesex	6182	6291	6507	6707
Burkett	6291	6322	6707	6795
Tully	6322	6339	6795	6873
Marcellus	6339	NA	6873	NA

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

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	10/24/2015
Job End Date:	11/4/2015
State:	West Virginia
County:	Ritchie
API Number:	47-085-10138-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Stalnaker 1H
Longitude:	-80.91950600
Latitude:	39.20545000
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,390
Total Base Water Volume (gal):	9,120,972
Total Base Non Water Volume:	0

FracFocus Chemical Disclosure Registry

GROUNDWATER PROTECTION COUNCIL

Oil & Gas

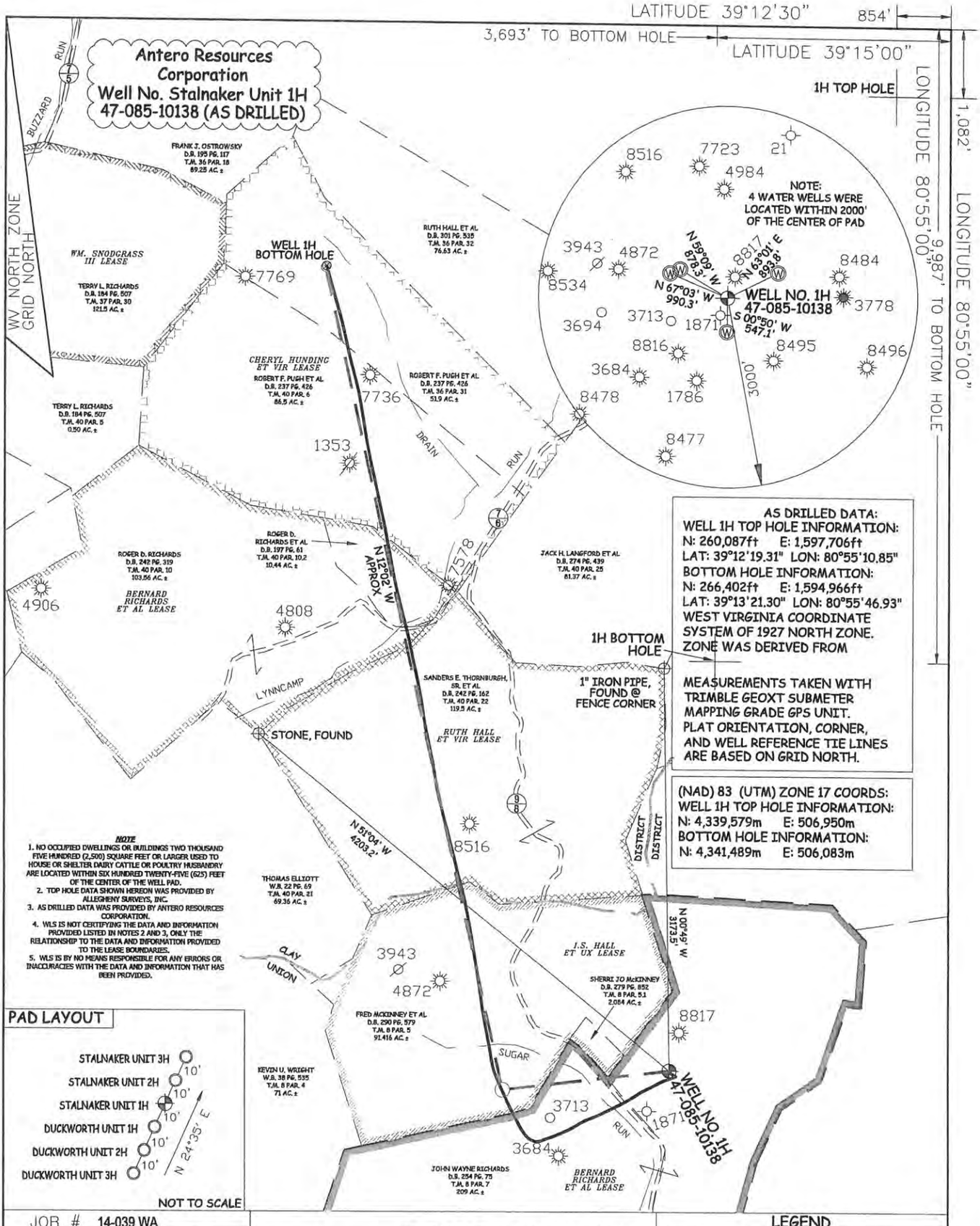
Hydraulic Fracturing Fluid Composition:

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	Antero Resources	Base Fluid					
			Water	7732-18-5	100.00000	91.37661	
Sand	U.S. Well Services, LLC	Proppant					
			Crystalline Silica, quartz	14808-60-7	100.00000	8.10470	
HCL Acid (12.6%-18.0%)	U.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	87.50000	0.17514	
			Hydrogen Chloride	7647-01-0	18.00000	0.04184	
LGC-15	U.S. Well Services	Gelling Agents					
			Guar Gum	9000-30-0	50.00000	0.09129	
			Petroleum Distillates	64742-47-8	60.00000	0.08646	
			Suspending agent (solid)	14808-60-7	3.00000	0.01396	
			Surfactant	68439-51-0	3.00000	0.00548	
WFRA-405	U.S. Well Services	Friction Reducer					
			Water	7732-18-5	40.00000	0.03034	
			2-Propenoic acid, polymer with 2 propenamide	9003-06-9	30.00000	0.03034	
			Petroleum Distillates	64742-47-8	20.00000	0.01221	
			Ethoxylated alcohol blend	68002-97-1	4.00000	0.00379	
SI-1100	U.S. Well Services	Scale Inhibitor					

			Water	7732-18-5	80.00000	0.01044	
			Ethylene Glycol	107-21-1	25.00000	0.00369	
			Copolymer of Maleic and Acrylic acid	52255-49-9	10.00000	0.00154	
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	7.50000	0.00132	
			Hexamethylene tramine penta (methylene phosphonic acid)	34690-00-1	5.00000	0.00085	
			Phosphino carboxylic acid polymer	71050-62-9	5.00000	0.00085	
			Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5	2.00000	0.00034	
K-BAC 1020	U.S. Well Services	Anti-Bacterial Agent					
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00397	
			Deionized Water	7732-18-5	28.00000	0.00227	
AP One	U.S. Well Services	Gel Breakers					
			Ammonium Persulfate	7727-54-0	100.00000	0.00223	
AI-301	U.S. Well Services	Acid Corrosion Inhibitors					
			Diethylene Glycol	111-46-6	30.00000	0.00013	
			Methenamine	100-97-0	20.00000	0.00011	
			Hydrogen Chloride	7647-01-0	10.00000	0.00005	
			Polyethylene polyamine	68603-67-8	10.00000	0.00004	
			Coco amine	61791-14-8	5.00000	0.00002	
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.							

* 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)



JOB # 14-039 WA
DRAWING # STALNAKER1HADR
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

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

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

DATE 07/13/15
OPERATOR'S WELL# STALNAKER UNIT #1H
API WELL # 47 – 085 – 10138
STATE COUNTY PERMIT

'STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY
DIVISION OF OIL AND GAS
WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
LOCATION: ELEVATION 1,035' ORIGINAL - 1,025' AS DRILLED WATERSHED SOUTH FORK HUGHES RIVER
QUADRANGLE PULLMAN 7.5' DISTRICT UNION COUNTY RITCHIE
SURFACE OWNER JOHN WAYNE RICHARDS ACREAGE 209 ACRES +/-
OIL & GAS ROYALTY OWNER BERNARD RICHARDS ET AL; I.S. HALL ET UX; RUTH HALL ET VIR; BERNARD RICHARDS ET AL; CHERYL HUNDING ET VIR LEASE ACREAGE 214 AC.±; 100 AC.±; 120 AC.±; 114 AC.±; 143 AC.±
PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___
PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) (X) AS DRILLED PLUG & ABANDON ___ CLEAN OUT & REPLUG ___
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,375' TVD 13,533' MD

WELL OPERATOR ANTERO RESOURCES CORP.
ADDRESS 1615 WYNKOOP ST.
DENVER, CO 80202

DESIGNATED AGENT DIANNA STAMPER
CT CORPORATION SYSTEM
ADDRESS 5400 D BIG TYLER ROAD
CHARLESTON, WV 25313

COUNTY NAME PERMIT

FORM WW-6