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

API 47 - 017 - 06260 County Doddridge District Grant
Quad Smithburg 7.5' Pad Name Hamilton Pad Field/Pool Name ---
Farm name Hamilton, Kenneth E. et al Well Number Gaskins 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 4,357,622m Easting 522,091m
Landing Point of Curve Northing 4,357,375.46 Easting 521,946.99
Bottom Hole Northing 4,354,882m Easting 522,949m

Elevation (ft) 1,157' 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 06/25/2013 Date drilling commenced 08/24/2013 Date drilling ceased 10/01/2013
Date completion activities began 10/12/2013 Date completion activities ceased 12/28/2013
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

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Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 206'
Salt water depth(s) ft 611'
Coal depth(s) ft 821'
Is coal being mined in area (Y/N) No

Open mine(s) (Y/N) depths ---
Void(s) encountered (Y/N) depths None
Cavern(s) encountered (Y/N) depths None

Reviewed by:
8/21/15

10/23/2015

WR-35
Rev. 8/23/13

Page ___ of ___

API 47- 017 - 06260 Farm name Hamilton, Kenneth E. et al Well number Gaskins 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#; J-55	N/A	Yes*
Surface	17 1/2"	13 3/8"	365'	New	48#; H-40	N/A	Yes
Coal							
Intermediate 1	12 1/4"	9 5/8"	2,588'	New	36#; J-55	N/A	Yes
Intermediate 2							
Intermediate 3							
Production	8 3/4" & 8 1/2"	5 1/2"	16,342'	New	20#; P-110	N/A	Yes
Tubing		2 3/8"	7,166'		4.7#; N-80	N/A	
Packer type and depth set		N/A					

Comment Details *First attempt to cement conductor (332 sacks) unsuccessful. Top-off job was performed (48 sacks), which was successful in bringing returns to surface.

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	380 sx*	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	430 sx	15.6	1.18	254	0'	8 Hrs.
Coal							
Intermediate 1	Class A	932 sx	15.6	1.18	811	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1,011 sx (Lead); 1,607 sx (Tail)	14.5 (Lead); 15.2 (Tail)	1.3 (Lead); 1.86 (Tail)	3,266	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 16,342' MD; 6,981' TVD (BHL); 7,027' TVD (Deepest Point Drilled) Loggers TD (ft) 16,289'

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

Plug back procedure N/A

Kick off depth (ft) 6,611'

**This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Costlow Unit 1H, API #47-017-06194). Please reference the wireline logs submitted with Form WR-35 for the Costlow Unit 1H. 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 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 RA; Chemical

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WR-35
Rev. 8/23/13

Page ___ of ___

API 47- 017 - 06260 Farm name Hamilton, Kenneth E. et al Well number Gaskins 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- 017 - 06260 Farm name Hamilton, Kenneth E. et al Well number Gaskins Unit 1H

PRODUCING FORMATION(S)	DEPTHS		
Marcellus	6,924' (top) TVD	7,171' (top) MD	

Please insert additional pages as applicable.

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

SHUT-IN PRESSURE Surface 3,550 psi Bottom Hole ---------- psi DURATION OF TEST ---------- hrs

OPEN FLOW Gas 4,449 mcfpd Oil ---------- bpd NGL ---------- bpd Water 80 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 QUANTITYAND 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 Precision Drilling company, LP
Address 2640 Reach Road City Williamsport State PA Zip 17701

Logging Company Nine Energy Service
Address 125 Museum Rd. City Washington State PA Zip 15301

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

Stimulating Company GoFrac
Address 62787 Philips Rd. City Cambridge State OH Zip 43725

Please insert additional pages as applicable.

Completed by Megan Darling Telephone 303-357-7230
Signature Megan C. Darling Title Permitting Agent Date 07/31/2015

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

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10/23/2015

API 47-017-06260 Farm Name Hamilton, Kenneth E. et al Well Number Gaskins Unit 1H					
EXHIBIT 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	12-Oct-13	16,087	16,254	60	Marcellus
2	7-Nov-13	15,890	16,056	60	Marcellus
3	8-Nov-13	15,693	15,859	60	Marcellus
4	8-Nov-13	15,495	15,662	60	Marcellus
5	8-Nov-13	15,298	15,464	60	Marcellus
6	8-Nov-13	15,101	15,267	60	Marcellus
7	9-Nov-13	14,903	15,070	60	Marcellus
8	9-Nov-13	14,706	14,873	60	Marcellus
9	9-Nov-13	14,509	14,675	60	Marcellus
10	10-Nov-13	14,312	14,478	60	Marcellus
11	11-Nov-13	14,114	14,281	60	Marcellus
12	11-Nov-13	13,917	14,083	60	Marcellus
13	11-Nov-13	13,720	13,886	60	Marcellus
14	12-Nov-13	13,522	13,689	60	Marcellus
15	12-Nov-13	13,325	13,492	60	Marcellus
16	12-Nov-13	13,128	13,294	60	Marcellus
17	12-Nov-13	12,931	13,097	60	Marcellus
18	12-Nov-13	12,733	12,900	60	Marcellus
19	13-Nov-13	12,536	12,702	60	Marcellus
20	13-Nov-13	12,339	12,505	60	Marcellus
21	13-Nov-13	12,142	12,308	60	Marcellus
22	13-Nov-13	11,944	12,111	60	Marcellus
23	13-Nov-13	11,747	11,913	60	Marcellus
24	14-Nov-13	11,550	11,716	60	Marcellus
25	14-Nov-13	11,352	11,519	60	Marcellus
26	18-Nov-13	11,155	11,322	60	Marcellus
27	19-Nov-13	10,958	11,124	60	Marcellus
28	19-Nov-13	10,761	10,927	60	Marcellus
29	19-Nov-13	10,563	10,730	60	Marcellus
30	20-Nov-13	10,366	10,532	60	Marcellus
31	20-Nov-13	10,169	10,335	60	Marcellus
32	20-Nov-13	9,971	10,138	60	Marcellus
33	20-Nov-13	9,774	9,941	60	Marcellus
34	20-Nov-13	9,577	9,743	60	Marcellus
35	21-Nov-13	9,380	9,546	60	Marcellus
36	21-Nov-13	9,182	9,349	60	Marcellus
37	21-Nov-13	8,985	9,151	60	Marcellus
38	21-Nov-13	8,788	8,954	60	Marcellus
39	22-Nov-13	8,590	8,757	60	Marcellus
40	22-Nov-13	8,393	8,560	60	Marcellus
41	22-Nov-13	8,196	8,362	60	Marcellus
42	22-Nov-13	7,999	8,165	60	Marcellus
43	22-Nov-13	7,801	7,968	60	Marcellus
44	23-Nov-13	7,604	7,770	60	Marcellus
45	24-Nov-13	7,407	7,573	60	Marcellus
46	24-Nov-13	7,210	7,376	60	Marcellus

API 47-017-06260 Farm Name Hamilton, Kenneth E. et al Well Number Gaskins 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	7-Nov-13	60.3	7,977	5,596	4,084	225,755	6,087	N/A
2	7-Nov-13	57.6	7,795	6,770	4,473	224,155	6,086	N/A
3	8-Nov-13	51.5	7,582	6,211	3,769	224,690	6,103	N/A
4	8-Nov-13	65.2	8,062	4,687	3,631	225,655	6,050	N/A
5	8-Nov-13	59.8	8,107	6,712	4,215	204,204	7,000	N/A
6	8-Nov-13	57.3	7,876	5,908	4,124	222,200	6,019	N/A
7	9-Nov-13	53.2	7,717	6,051	3,699	223,570	5,996	N/A
8	9-Nov-13	53.0	8,230	6,992	5,131	202,030	6,539	N/A
9	9-Nov-13	57.0	8,033	7,300	5,077	129,195	5,465	N/A
10	10-Nov-13	44.8	8,518	6,652	4,139	42,940	6,425	N/A
11	11-Nov-13	54.4	8,113	7,512	4,427	38,955	6,398	N/A
12	11-Nov-13	59.5	8,094	7,005	4,326	123,930	6,421	N/A
13	11-Nov-13	62.8	7,625	6,372	3,970	223,790	5,963	N/A
14	12-Nov-13	67.7	7,989	5,895	4,222	224,360	5,960	N/A
15	12-Nov-13	64.5	7,984	6,110	4,223	221,380	5,952	N/A
16	12-Nov-13	64.2	7,928	6,150	3,822	224,600	5,720	N/A
17	12-Nov-13	66.6	8,027	5,801	5,281	224,611	6,027	N/A
18	12-Nov-13	64.7	8,019	5,985	5,764	212,630	5,807	N/A
19	13-Nov-13	68.3	8,009	5,924	4,959	223,700	5,830	N/A
20	13-Nov-13	63.3	9,043	5,473	4,030	224,680	5,561	N/A
21	13-Nov-13	64.0	7,664	5,709	3,582	224,510	5,819	N/A
22	13-Nov-13	64.3	7,559	5,851	4,204	224,620	5,796	N/A
23	13-Nov-13	64.1	7,737	5,653	4,043	224,340	5,794	N/A
24	14-Nov-13	67.0	7,820	5,975	4,271	223,320	5,775	N/A
25	14-Nov-13	65.8	7,656	5,707	5,065	224,570	5,699	N/A
26	18-Nov-13	67.4	7,660	5,879	4,385	225,000	5,742	N/A
27	19-Nov-13	46.9	7,833	5,469	5,508	22,042	5,918	N/A
28	19-Nov-13	61.1	7,774	5,775	4,820	108,645	6,096	N/A
29	19-Nov-13	64.4	7,045	5,868	4,315	224,280	5,686	N/A
30	20-Nov-13	63.1	7,384	5,625	4,599	223,680	5,675	N/A
31	20-Nov-13	63.7	7,308	5,640	4,391	224,990	5,670	N/A
32	20-Nov-13	60.6	7,690	5,529	4,680	150,340	5,962	N/A
33	20-Nov-13	65.6	7,616	5,682	4,479	224,485	5,697	N/A
34	20-Nov-13	65.5	7,621	5,642	4,484	166,890	6,068	N/A
35	21-Nov-13	68.5	7,565	5,595	4,472	224,670	6,036	N/A
36	21-Nov-13	61.2	7,657	5,850	5,280	200,280	6,036	N/A
37	21-Nov-13	60.4	7,726	5,806	4,688	86,807	5,369	N/A
38	21-Nov-13	63.4	7,271	5,951	5,100	106,720	5,578	N/A
39	22-Nov-13	65.7	7,212	5,871	4,432	224,980	5,570	N/A
40	22-Nov-13	64.7	7,469	5,864	4,628	227,300	5,777	N/A
41	22-Nov-13	68.4	7,434	5,569	5,034	226,750	5,547	N/A
42	22-Nov-13	54.5	8,647	5,672	7,269	51,925	5,320	N/A
43	22-Nov-13	67.2	7,652	5,656	4,741	208,690	5,571	N/A
44	23-Nov-13	36.6	8,482	5,412	6,117	3,480	5,495	N/A
45	24-Nov-13	48.7	8,426	5,492	5,487	31,960	4,666	N/A
46	24-Nov-13	69.8	7,334	5,278	3,811	201,521	5,769	N/A
	AVG=	61.1	7,825	5,938	4,592	8,353,825	269,540	TOTAL

API 47-017-06260 Farm Name Hamilton, Kenneth E. et al Well Number Gaskins 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	206'	N/A	206'	N/A
Shale/ Sandstone	0	551	0	551
Sandstone	est. 551	611	est. 551	611
Shale/Siltstone	est. 611	731	est. 611	731
Sandstone	est. 731	821	est. 731	821
Coal	est. 821	851	est. 821	851
Sandstone	est. 851	941	est. 851	941
Sandstone/ Limestone	est. 941	971	est. 941	971
Sandstone	est. 971	1,061	est. 971	1,061
Siltstone/ Limestone	est. 1061	1,121	est. 1061	1,121
Sandstone	est. 1121	1,211	est. 1121	1,211
Siltstone/ Shale	est. 1211	1,271	est. 1211	1,271
Sandstone	est. 1271	1,361	est. 1271	1,361
Shale	est. 1361	1,391	est. 1361	1,391
Sandstone	est. 1391	1,451	est. 1391	1,451
Shale	est. 1451	1,631	est. 1451	1,631
Sandstone	est. 1631	1,781	est. 1631	1,781
Shale	est. 1781	1,871	est. 1781	1,871
Sandstone	est. 1871	1,931	est. 1871	1,931
Shale	est. 1931	1,991	est. 1931	1,991
Sandstone	est. 1991	2,156	est. 1991	2,156
Big Lime	2,156	2,272	2,156	2,272
Big Injun	2,272	2,703	2,272	2,703
Gantz Sand	2,703	2,846	2,703	2,846
Fifty Foot Sandstone	2,846	2,920	2,846	2,920
Gordon	2,920	3,262	2,920	3,262
Fifth Sandstone	3,262	3,280	3,262	3,280
Bayard	3,280	3,650	3,280	3,650
Warren	3,650	4,040	3,650	4,040
Speechley	4,040	4,292	4,040	4,292
Baltown	4,292	4,764	4,292	4,764
Bradford	4,764	5,234	4,764	5,235
Benson	5,234	5,498	5,235	5,502
Alexander	5,498	5,690	5,502	5,704
Elk	5,690	6,209	5,704	6,270
Rhinestreet	6,209	6,525	6,270	6,618
Sycamore	6,525	6,707	6,618	6,825
Middlesex	6,707	6,841	6,825	7,012
Burkett	6,841	6,869	7,012	7,058
Tully	6,869	6,924	7,058	7,171
Marcellus	6,924	NA	7,171	NA

*Please note Antero determines shallow 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.

PROFILE VIEW (Gaskins Unit 1H)

ANTERO RESOURCES

Antero Resources
Gaskins Unit 1H
Doddridge County WV
Northing: 14295919.09
Easting: 1712845.07
As Drilled

WELL DETAILS: Gaskins Unit 1H

Ground Level: 1157.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	14295919.09	1712845.07	39° 22' 3.731 N	80° 44' 37.425 W	

PROJECT DETAILS: Doddridge County WV

Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Zone 17N (84 W to 78 W)

System Datum: Mean Sea Level

Scientific Drilling

Genie Lightfoot
14:29, October 21 2013

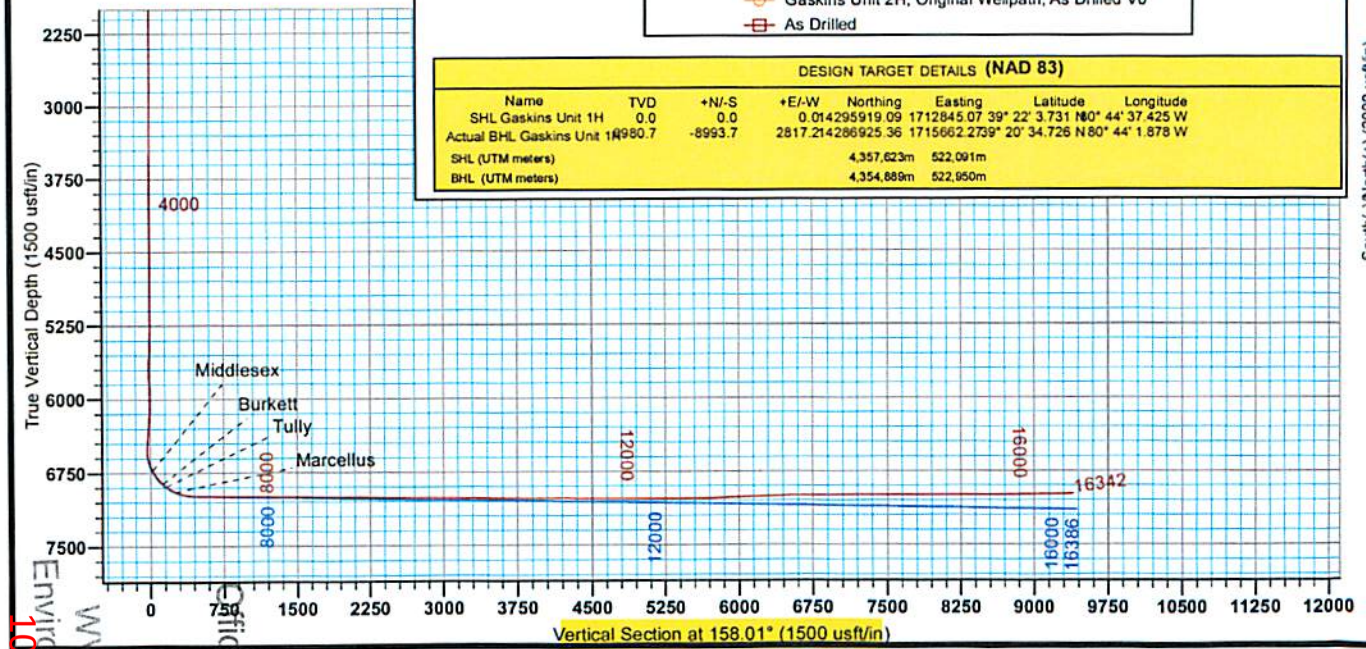
Scientific Drilling
421 South Eagle Lane
Oklahoma City, OK

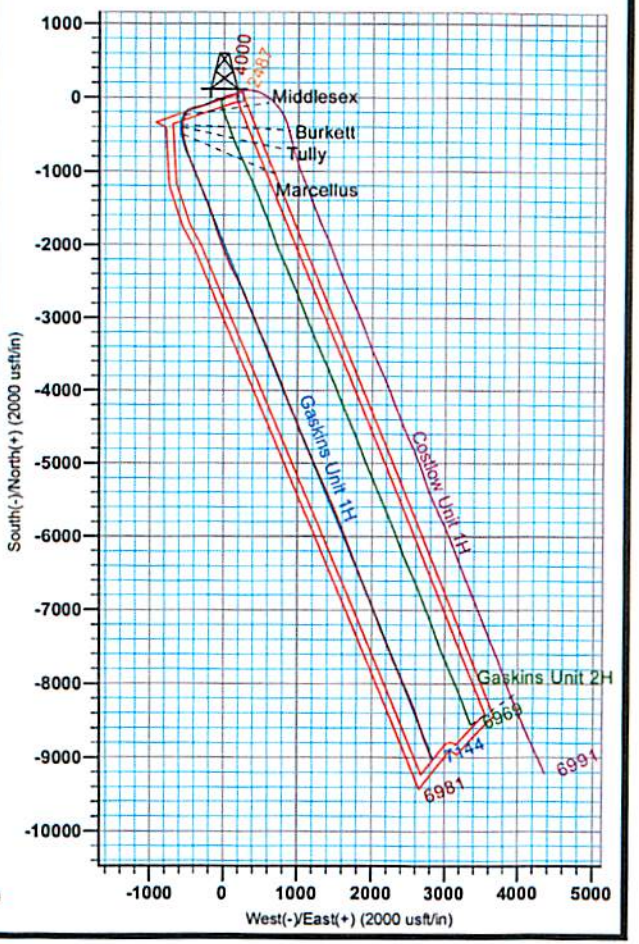
LEGEND

- Costlow Unit 1H, Original Wellpath, As Drilled V0
- Gaskins Unit 1H, Original Wellpath, Plan 3 V0
- Gaskins Unit 2H, Sidetrack 1, As Drilled ST1 V0
- Gaskins Unit 2H, Original Wellpath, As Drilled V0
- As Drilled

DESIGN TARGET DETAILS (NAD 83)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL Gaskins Unit 1H	0.0	0.0	0.0	14295919.09	1712845.07	39° 22' 3.731 N	80° 44' 37.425 W
Actual BHL Gaskins Unit 1H	6980.7	-8993.7	2817.2	14286925.36	1715662.27	39° 20' 34.726 N	80° 44' 1.878 W
SHL (UTM meters)				4,357,623m	522,091m		
BHL (UTM meters)				4,354,889m	522,950m		





To convert Magnetic North to Grid, Subtract 8.65°
To convert True North to Grid, Subtract 0.16°

Azimuths to Grid North
True North: -0.16°
Magnetic North: -8.65°

Magnetic Field
Strength: 52429.3snT
Dip Angle: 66.95°
Date: 8/22/2013
Model: IGRF2010

17-062360

DEVIATION SURVEY (Gaskins Unit 1H)

17-06260

Antero Resources

Doddridge County WV
Costlow/Gaskins/Haskins/Knight Pad
Gaskins Unit 1H
Original Wellpath

Design: As Drilled

EOW Completion Report

21 October, 2013

Scientific Drilling

17-06260

EOW Completion Report

Scientific Drilling

Company:	Antero Resources	**Local Co-ordinate Reference:**	Well Gaskins Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Gaskins Unit 1H GL 1157' + 19' KB @ 1176.0usft
Site:	Costlow/Gaskins/Haskins/Knight Pad	**MD Reference:**	Gaskins Unit 1H GL 1157' + 19' KB @ 1176.0usft
Well:	Gaskins Unit 1H	**North Reference:**	Grid
Wellbore:	Original Wellpath	**Survey Calculation Method:**	Minimum Curvature
Design:	As Drilled	**Database:**	Oklahoma District

Project Doddridge County WV, McClellan District

Map System:	Universal Transverse Mercator (US Survey Fee	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Zone 17N (84 W to 78 W)		

Site Costlow/Gaskins/Haskins/Knight Pad

Site Position:		**Northing:**	14,295,936.28 usft	**Latitude:**	39° 22' 3.901 N
From:	Map	**Easting:**	1,712,856.78 usft	**Longitude:**	80° 44' 37.275 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16"	**Grid Convergence:**	0.16 °

Well Gaskins Unit 1H, Marcellus

Well Position	**+N/-S**	0.0 usft	**Northing:**	14,295,919.09 usft	**Latitude:**	39° 22' 3.731 N
	+E/-W	0.0 usft	**Easting:**	1,712,845.07 usft	**Longitude:**	80° 44' 37.425 W
Position Uncertainty		2.0 usft	**Wellhead Elevation:**	1,176.0 usft	**Ground Level:**	1,157.0 usft

Wellbore Original Wellpath

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/22/2013	-8.49	66.95	52,429

Design As Drilled

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	158.01

Survey Program **Date** 10/21/2013

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	2,528.0	Survey #2 Def Gyro to Int (Original Wellpa	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper
2,600.0	6,491.5	Survey #3 Def Gyro to KOP (Original Well	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper
6,566.0	16,342.0	Survey #4 MWD (Original Wellpath)	SDI MWD	Scientific Drilling Intl. MWD - Standard ver 1.0.1

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00
100.0	0.63	81.54	100.0	0.1	0.5	0.1	0.63
200.0	0.68	82.66	200.0	0.2	1.7	0.4	0.05
300.0	0.54	80.59	300.0	0.4	2.7	0.7	0.14
400.0	0.45	89.15	400.0	0.5	3.6	0.9	0.12
500.0	0.37	83.33	500.0	0.5	4.3	1.1	0.09
600.0	0.29	92.40	600.0	0.5	4.9	1.3	0.10
700.0	0.34	93.57	700.0	0.5	5.4	1.6	0.05
800.0	0.26	110.08	800.0	0.4	5.9	1.8	0.12
900.0	0.31	111.25	900.0	0.2	6.4	2.2	0.05

10/23/2015

17-06260

ANTERO RESOURCES

EOW Completion Report

Scientific Drilling

Company:	Antero Resources	**Local Co-ordinate Reference:**	Well Gaskins Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Gaskins Unit 1H GL 1157' + 19' KB @ 1176.0usft
Site:	Costlow/Gaskins/Haskins/Knight Pad	**MD Reference:**	Gaskins Unit 1H GL 1157' + 19' KB @ 1176.0usft
Well:	Gaskins Unit 1H	**North Reference:**	Grid
Wellbore:	Original Wellpath	**Survey Calculation Method:**	Minimum Curvature
Design:	As Drilled	**Database:**	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
1,000.0	0.24	119.37	1,000.0	0.0	6.8	2.5	0.08
1,100.0	0.15	135.39	1,100.0	-0.2	7.1	2.8	0.10
1,200.0	0.20	157.38	1,200.0	-0.4	7.3	3.1	0.08
1,300.0	0.29	174.59	1,300.0	-0.8	7.4	3.5	0.12
1,400.0	0.19	223.56	1,400.0	-1.2	7.3	3.8	0.22
1,500.0	0.22	225.17	1,500.0	-1.4	7.0	4.0	0.03
1,600.0	0.25	254.81	1,600.0	-1.6	6.7	4.0	0.12
1,700.0	0.31	246.72	1,700.0	-1.8	6.2	4.0	0.07
1,800.0	0.26	246.28	1,800.0	-2.0	5.8	4.0	0.05
1,900.0	0.25	218.63	1,900.0	-2.3	5.4	4.1	0.12
2,000.0	0.34	230.15	2,000.0	-2.6	5.0	4.3	0.11
2,100.0	0.31	220.76	2,100.0	-3.0	4.6	4.5	0.06
2,200.0	0.30	236.44	2,200.0	-3.4	4.2	4.7	0.08
2,300.0	0.22	220.46	2,300.0	-3.7	3.9	4.9	0.11
2,400.0	0.35	288.52	2,400.0	-3.7	3.5	4.7	0.34
2,500.0	0.51	268.37	2,500.0	-3.6	2.8	4.4	0.22
2,528.0	0.56	262.40	2,528.0	-3.6	2.5	4.3	0.27
2,600.0	0.34	277.13	2,600.0	-3.7	1.9	4.1	0.34
2,700.0	0.40	265.26	2,700.0	-3.7	1.3	3.9	0.10
2,800.0	0.46	271.81	2,799.9	-3.7	0.5	3.6	0.08
2,900.0	0.65	271.30	2,899.9	-3.7	-0.4	3.2	0.19
3,000.0	0.58	268.05	2,999.9	-3.7	-1.5	2.8	0.08
3,100.0	0.70	274.92	3,099.9	-3.6	-2.6	2.4	0.14
3,200.0	0.77	275.11	3,199.9	-3.5	-3.9	1.8	0.07
3,300.0	0.78	276.13	3,299.9	-3.4	-5.2	1.2	0.02
3,400.0	0.70	278.29	3,399.9	-3.2	-6.5	0.5	0.08
3,500.0	0.67	277.32	3,499.9	-3.1	-7.7	-0.1	0.03
3,600.0	0.71	276.66	3,599.9	-2.9	-8.9	-0.6	0.04
3,700.0	0.65	274.63	3,699.9	-2.8	-10.1	-1.2	0.06
3,800.0	0.66	276.47	3,799.9	-2.7	-11.2	-1.7	0.02
3,900.0	0.53	279.87	3,899.9	-2.5	-12.2	-2.2	0.13
4,000.0	0.58	275.97	3,999.9	-2.4	-13.2	-2.7	0.06
4,100.0	0.60	274.27	4,099.9	-2.3	-14.2	-3.2	0.03
4,200.0	0.33	248.57	4,199.9	-2.4	-15.0	-3.4	0.33
4,300.0	0.37	244.07	4,299.9	-2.6	-15.6	-3.4	0.05
4,400.0	0.37	245.70	4,399.9	-2.9	-16.2	-3.4	0.01
4,500.0	0.50	247.04	4,499.9	-3.2	-16.9	-3.3	0.13
4,600.0	0.42	243.12	4,599.8	-3.5	-17.6	-3.3	0.09
4,700.0	0.49	246.68	4,699.8	-3.9	-18.3	-3.3	0.08
4,800.0	0.52	246.88	4,799.8	-4.2	-19.1	-3.2	0.03
4,900.0	0.49	245.26	4,899.8	-4.6	-19.9	-3.2	0.03
5,000.0	0.53	244.68	4,999.8	-5.0	-20.7	-3.2	0.04
5,100.0	2.83	246.30	5,099.8	-6.1	-23.4	-3.1	2.30
5,200.0	4.11	249.62	5,199.6	-8.4	-29.0	-3.1	1.30
5,300.0	6.40	257.49	5,299.2	-10.8	-37.8	-4.1	2.40

10/23/2015

17-06260

ANTERO RESOURCES

EOW Completion Report

Scientific Drilling

Company:	Antero Resources	**Local Co-ordinate Reference:**	Well Gaskins Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Gaskins Unit 1H GL 1157' + 19' KB @ 1176.0usft
Site:	Costlow/Gaskins/Haskins/Knight Pad	**MD Reference:**	Gaskins Unit 1H GL 1157' + 19' KB @ 1176.0usft
Well:	Gaskins Unit 1H	**North Reference:**	Grid
Wellbore:	Original Wellpath	**Survey Calculation Method:**	Minimum Curvature
Design:	As Drilled	**Database:**	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
5,400.0	10.06	260.00	5,398.1	-13.6	-51.9	-6.8	3.68
5,500.0	13.62	254.25	5,496.0	-18.3	-71.8	-9.9	3.75
5,600.0	17.86	253.29	5,592.2	-25.9	-97.8	-12.6	4.25
5,700.0	20.91	247.36	5,686.5	-37.2	-129.0	-13.8	3.63
5,800.0	23.79	245.62	5,779.0	-52.4	-163.9	-12.8	2.95
5,900.0	23.44	243.35	5,870.7	-69.6	-200.0	-10.3	0.97
6,000.0	22.63	243.09	5,962.7	-87.2	-234.9	-7.1	0.82
6,100.0	24.13	251.05	6,054.5	-102.6	-271.4	-6.5	3.49
6,200.0	23.76	256.38	6,145.9	-114.0	-310.4	-10.5	2.19
6,300.0	24.35	256.72	6,237.2	-123.5	-350.0	-16.6	0.61
6,400.0	24.93	254.54	6,328.1	-133.8	-390.4	-22.1	1.08
6,491.5	24.59	254.88	6,411.2	-143.9	-427.4	-26.6	0.40
6,566.0	23.93	255.66	6,479.1	-151.7	-456.9	-30.4	0.99
6,611.0	23.61	247.72	6,520.3	-157.4	-474.1	-31.6	7.14
6,656.0	23.78	232.57	6,561.5	-166.3	-489.7	-29.1	13.50
6,702.0	25.28	218.46	6,603.4	-179.7	-503.2	-21.8	13.11
6,746.0	27.90	209.97	6,642.8	-195.9	-514.2	-10.8	10.48
6,792.0	31.48	204.66	6,682.8	-216.2	-524.6	4.0	9.65
6,836.0	36.03	202.73	6,719.3	-238.6	-534.4	21.1	10.62
6,844.0	36.84	202.46	6,725.8	-243.0	-536.2	24.5	10.35
Middlesex							
6,882.0	40.71	201.32	6,755.4	-265.0	-545.0	41.7	10.35
6,926.0	43.94	197.40	6,787.9	-293.0	-554.8	63.9	9.48
6,971.0	46.70	189.26	6,819.6	-324.1	-562.1	90.0	14.24
7,015.0	48.88	183.11	6,849.2	-356.5	-565.6	118.7	11.47
7,031.0	50.05	181.81	6,859.6	-368.6	-566.1	129.8	9.59
Burkett							
7,061.0	52.29	179.49	6,878.4	-392.0	-566.4	151.4	9.59
7,077.0	53.97	178.14	6,888.0	-404.8	-566.1	163.3	12.48
Tully							
7,105.0	56.94	175.90	6,903.8	-427.8	-564.9	185.1	12.48
7,150.0	63.02	173.52	6,926.3	-466.6	-561.3	222.4	14.26
7,190.0	67.60	172.35	6,943.0	-502.6	-556.8	257.6	11.76
Marcellus							
7,194.0	68.06	172.24	6,944.6	-506.3	-556.3	261.1	11.76
7,240.0	73.24	169.15	6,959.8	-549.1	-549.3	303.5	12.92
7,284.0	77.37	166.97	6,971.0	-590.7	-540.5	345.4	10.54
7,330.0	82.31	164.94	6,979.1	-634.6	-529.5	390.2	11.58
7,384.0	83.78	163.68	6,985.6	-686.2	-515.0	443.5	3.57
7,440.0	87.65	160.59	6,989.8	-739.4	-497.9	499.2	8.83
7,517.0	89.26	159.02	6,991.9	-811.6	-471.3	576.1	2.92
7,607.0	89.60	158.85	6,992.8	-895.6	-439.0	666.1	0.42
7,696.0	89.76	158.28	6,993.3	-978.4	-406.4	755.1	0.67
7,786.0	89.69	158.52	6,993.7	-1,062.1	-373.3	845.1	0.28
7,876.0	89.70	158.23	6,994.2	-1,145.8	-340.1	935.1	0.32

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ANTERO RESOURCES

EOW Completion Report

Scientific Drilling

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Well:	Gaskins Unit 1H	**North Reference:**	Grid
Wellbore:	Original Wellpath	**Survey Calculation Method:**	Minimum Curvature
Design:	As Drilled	**Database:**	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
7,965.0	89.56	157.48	6,994.7	-1,228.2	-306.6	1,024.0	0.86
8,055.0	89.60	157.17	6,995.4	-1,311.2	-271.9	1,114.0	0.35
8,144.0	89.46	156.12	6,996.1	-1,392.9	-236.6	1,203.0	1.19
8,234.0	88.49	157.98	6,997.7	-1,475.8	-201.5	1,293.0	2.33
8,323.0	89.87	162.53	6,999.0	-1,559.5	-171.5	1,381.9	5.34
8,413.0	90.54	163.52	6,998.7	-1,645.6	-145.2	1,471.5	1.33
8,503.0	88.76	161.50	6,999.3	-1,731.4	-118.2	1,561.2	2.99
8,592.0	90.91	164.47	6,999.5	-1,816.5	-92.1	1,649.9	4.12
8,682.0	89.63	162.29	6,999.1	-1,902.8	-66.4	1,739.5	2.81
8,771.0	88.72	157.80	7,000.4	-1,986.4	-36.0	1,828.4	5.15
8,861.0	89.33	157.98	7,001.9	-2,069.8	-2.2	1,918.4	0.71
8,951.0	89.16	156.94	7,003.1	-2,152.9	32.3	2,008.4	1.17
9,040.0	90.71	158.89	7,003.2	-2,235.3	65.8	2,097.4	2.80
9,130.0	90.07	154.31	7,002.6	-2,317.9	101.5	2,187.3	5.14
9,219.0	88.25	150.11	7,003.9	-2,396.6	143.0	2,275.8	5.14
9,309.0	89.19	154.04	7,005.9	-2,476.1	185.1	2,365.3	4.49
9,399.0	89.70	157.58	7,006.8	-2,558.2	222.0	2,455.2	3.97
9,488.0	89.53	156.21	7,007.4	-2,640.0	256.9	2,544.2	1.55
9,578.0	90.17	156.74	7,007.6	-2,722.6	292.9	2,634.2	0.92
9,667.0	90.37	156.32	7,007.2	-2,804.2	328.3	2,723.1	0.52
9,757.0	88.36	154.82	7,008.2	-2,886.1	365.5	2,813.0	2.79
9,846.0	88.59	157.41	7,010.5	-2,967.5	401.5	2,901.9	2.92
9,936.0	90.50	160.27	7,011.3	-3,051.4	434.0	2,991.9	3.82
10,031.0	90.34	158.08	7,010.6	-3,140.2	467.8	3,086.9	2.31
10,126.0	88.15	155.41	7,011.8	-3,227.4	505.3	3,181.8	3.63
10,220.0	88.72	156.52	7,014.4	-3,313.3	543.6	3,275.7	1.33
10,315.0	90.81	159.22	7,014.8	-3,401.2	579.3	3,370.7	3.59
10,410.0	89.19	158.19	7,014.8	-3,489.8	613.8	3,465.7	2.02
10,505.0	89.19	157.58	7,016.1	-3,577.8	649.6	3,560.7	0.64
10,600.0	89.43	157.85	7,017.3	-3,665.7	685.6	3,655.7	0.38
10,694.0	89.63	157.70	7,018.0	-3,752.7	721.2	3,749.7	0.27
10,789.0	88.96	158.66	7,019.2	-3,840.9	756.5	3,844.7	1.23
10,884.0	88.89	158.89	7,021.0	-3,929.4	790.9	3,939.7	0.25
10,979.0	90.31	161.33	7,021.6	-4,018.7	823.2	4,034.6	2.97
11,042.0	90.91	161.53	7,021.0	-4,078.4	843.3	4,097.5	1.00
11,132.0	90.27	158.80	7,020.0	-4,163.1	873.8	4,187.4	3.12
11,221.0	88.65	155.24	7,020.9	-4,245.0	908.5	4,276.4	4.39
11,311.0	88.66	156.95	7,023.0	-4,327.2	945.9	4,366.3	1.90
11,401.0	90.64	159.76	7,023.5	-4,410.9	978.2	4,456.3	3.82
11,490.0	91.07	160.00	7,022.2	-4,494.4	1,008.8	4,545.2	0.55
11,580.0	88.09	158.26	7,022.9	-4,578.5	1,040.8	4,635.2	3.83
11,669.0	88.64	158.61	7,025.4	-4,661.3	1,073.5	4,724.1	0.73
11,759.0	88.90	156.06	7,027.3	-4,744.3	1,108.2	4,814.1	2.85
11,849.0	91.07	157.29	7,027.4	-4,826.9	1,143.8	4,904.1	2.77

10/23/2015

Company:	Antero Resources	**Local Co-ordinate Reference:**	Well Gaskins Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Gaskins Unit 1H GL 1157' + 19' KB @ 1176.0usft
Site:	Costlow/Gaskins/Haskins/Knight Pad	**MD Reference:**	Gaskins Unit 1H GL 1157' + 19' KB @ 1176.0usft
Well:	Gaskins Unit 1H	**North Reference:**	Grid
Wellbore:	Original Wellpath	**Survey Calculation Method:**	Minimum Curvature
Design:	As Drilled	**Database:**	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
11,938.0	90.81	156.44	7,025.9	-4,908.8	1,178.8	4,993.0	1.00
12,028.0	89.76	155.23	7,025.5	-4,990.9	1,215.7	5,083.0	1.78
12,118.0	89.56	155.23	7,026.0	-5,072.6	1,253.4	5,172.9	0.22
12,208.0	90.64	157.30	7,025.8	-5,155.0	1,289.6	5,262.8	2.59
12,297.0	90.34	157.34	7,025.1	-5,237.1	1,323.9	5,351.8	0.34
12,387.0	90.57	156.33	7,024.4	-5,319.8	1,359.3	5,441.8	1.15
12,476.0	90.07	155.44	7,023.9	-5,401.1	1,395.7	5,530.7	1.15
12,566.0	88.72	156.45	7,024.8	-5,483.2	1,432.3	5,620.7	1.87
12,657.0	92.52	158.75	7,023.8	-5,567.3	1,467.0	5,711.6	4.88
12,745.0	93.36	158.51	7,019.3	-5,649.2	1,499.0	5,799.5	0.99
12,835.0	92.85	158.42	7,014.4	-5,732.8	1,532.0	5,889.4	0.58
12,925.0	91.65	158.46	7,010.9	-5,816.4	1,565.1	5,979.3	1.33
13,014.0	91.17	158.76	7,008.7	-5,899.3	1,597.5	6,068.3	0.64
13,104.0	91.88	160.22	7,006.3	-5,983.5	1,629.0	6,158.2	1.80
13,193.0	92.18	159.92	7,003.2	-6,067.1	1,659.4	6,247.1	0.48
13,283.0	91.95	159.69	6,999.9	-6,151.5	1,690.4	6,337.0	0.36
13,373.0	91.58	158.50	6,997.2	-6,235.6	1,722.5	6,426.9	1.38
13,462.0	91.41	158.12	6,994.8	-6,318.2	1,755.4	6,515.9	0.47
13,552.0	89.90	159.38	6,993.8	-6,402.1	1,788.0	6,605.9	2.19
13,642.0	90.10	159.39	6,993.8	-6,486.4	1,819.7	6,695.8	0.22
13,731.0	90.94	159.87	6,993.0	-6,569.8	1,850.7	6,784.8	1.09
13,821.0	90.30	158.60	6,992.0	-6,653.9	1,882.6	6,874.8	1.58
13,910.0	90.10	158.65	6,991.7	-6,736.8	1,915.0	6,963.8	0.23
14,000.0	89.46	157.08	6,992.1	-6,820.2	1,948.9	7,053.8	1.88
14,090.0	89.53	158.04	6,992.9	-6,903.4	1,983.3	7,143.8	1.07
14,179.0	91.54	159.16	6,992.0	-6,986.2	2,015.7	7,232.7	2.59
14,269.0	90.54	158.86	6,990.4	-7,070.2	2,048.0	7,322.7	1.16
14,358.0	90.07	160.33	6,989.9	-7,153.6	2,079.0	7,411.7	1.73
14,448.0	89.26	158.06	6,990.4	-7,237.8	2,111.0	7,501.6	2.68
14,538.0	90.03	157.37	6,991.0	-7,321.0	2,145.1	7,591.6	1.15
14,627.0	89.53	156.16	6,991.3	-7,402.8	2,180.2	7,680.6	1.47
14,717.0	90.54	159.21	6,991.3	-7,486.1	2,214.4	7,770.6	3.57
14,806.0	90.40	158.21	6,990.6	-7,569.0	2,246.7	7,859.6	1.13
14,896.0	90.27	158.97	6,990.0	-7,652.8	2,279.5	7,949.6	0.86
14,986.0	89.23	155.72	6,990.4	-7,735.8	2,314.2	8,039.6	3.79
15,075.0	89.16	155.27	6,991.7	-7,816.8	2,351.1	8,128.5	0.51
15,165.0	90.23	156.35	6,992.2	-7,898.9	2,388.0	8,218.4	1.69
15,254.0	89.73	155.56	6,992.2	-7,980.2	2,424.3	8,307.3	1.05
15,344.0	90.03	156.13	6,992.4	-8,062.3	2,461.1	8,397.3	0.72
15,434.0	89.56	155.61	6,992.7	-8,144.4	2,497.9	8,487.2	0.78
15,523.0	89.40	156.60	6,993.5	-8,225.8	2,533.9	8,576.2	1.13
15,613.0	90.94	159.86	6,993.2	-8,309.3	2,567.3	8,666.1	4.01
15,703.0	91.55	159.62	6,991.3	-8,393.8	2,598.5	8,756.1	0.73
15,792.0	90.17	160.00	6,989.9	-8,477.3	2,629.2	8,845.0	1.61
15,882.0	90.64	161.09	6,989.3	-8,562.1	2,659.1	8,934.9	1.32

17-06260

ANTERO RESOURCES

EOW Completion Report

Scientific Drilling

Company:	Antero Resources	**Local Co-ordinate Reference:**	Well Gaskins Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Gaskins Unit 1H GL 1157' + 19' KB @ 1176.0usft
Site:	Costlow/Gaskins/Haskins/Knight Pad	**MD Reference:**	Gaskins Unit 1H GL 1157' + 19' KB @ 1176.0usft
Well:	Gaskins Unit 1H	**North Reference:**	Grid
Wellbore:	Original Wellpath	**Survey Calculation Method:**	Minimum Curvature
Design:	As Drilled	**Database:**	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
15,971.0	91.55	163.55	6,987.6	-8,646.9	2,686.2	9,023.7	2.95
16,061.0	90.70	160.51	6,985.8	-8,732.5	2,713.9	9,113.4	3.51
16,151.0	90.50	157.98	6,984.9	-8,816.6	2,745.8	9,203.4	2.82
16,240.0	91.24	157.55	6,983.5	-8,899.0	2,779.5	9,292.4	0.96
16,288.0	91.71	158.52	6,982.3	-8,943.5	2,797.4	9,340.3	2.24
16,342.0	91.71	158.52	6,980.7	-8,993.7	2,817.2	9,394.3	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
6,844.0	6,725.8	-243.0	-536.2	Middlesex
7,031.0	6,859.6	-368.6	-566.1	Burkett
7,077.0	6,888.0	-404.8	-566.1	Tully
7,190.0	6,943.0	-502.6	-556.8	Marcellus

Checked By: _____ Approved By: _____ Date: _____

10/23/2015

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	11/7/2013
Job End Date:	11/24/2013
State:	West Virginia
County:	Doddridge
API Number:	47-017-06260-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Gaskins Unit 1H
Longitude:	-80.74372800
Latitude:	39.36770300
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	7,027
Total Base Water Volume (gal):	0
Total Base Non Water Volume:	0

FracFocus Chemical Disclosure Registry

GROUNDWATER PROTECTION COUNCIL

Interstate Oil & Gas Compact Commission

10/23/2015

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
Freshwater	Antero Resources	Water					
			Water	7732-18-5	100.00000	90.70898	
40/70 White	US Silica	Propppant					
			Sand	14808-60-7	100.00000	4.91440	
20/40 White	US Silica	Propppant					
			Sand	14808-60-7	100.00000	2.92370	
100 Mesh	US Silica	Propppant					
			Sand	14808-60-7	100.00000	1.26770	
CFS40	PQS	Guar Gel					
			Petroleum Distillate	64742-47-8	55.00000	0.04677	
			Guar Gum	9000-30-0	50.00000	0.04252	
			Clay	1302-78-9	5.00000	0.00425	
			Surfactant	154518-36-2	1.00000	0.00085	
Plexslick 953	Chemplex	Friction Reducer					
			Water	7732-18-5	35.00000	0.02152	
			Polyacrylamide-co-acrylic acid	9003-06-9	32.00000	0.01967	
			Hydrotreated Petroleum Distillate	64742-47-8	30.00000	0.01844	
			Alcohol Ethoxylate Surfactants	Proprietary	8.00000	0.00492	

17-06260

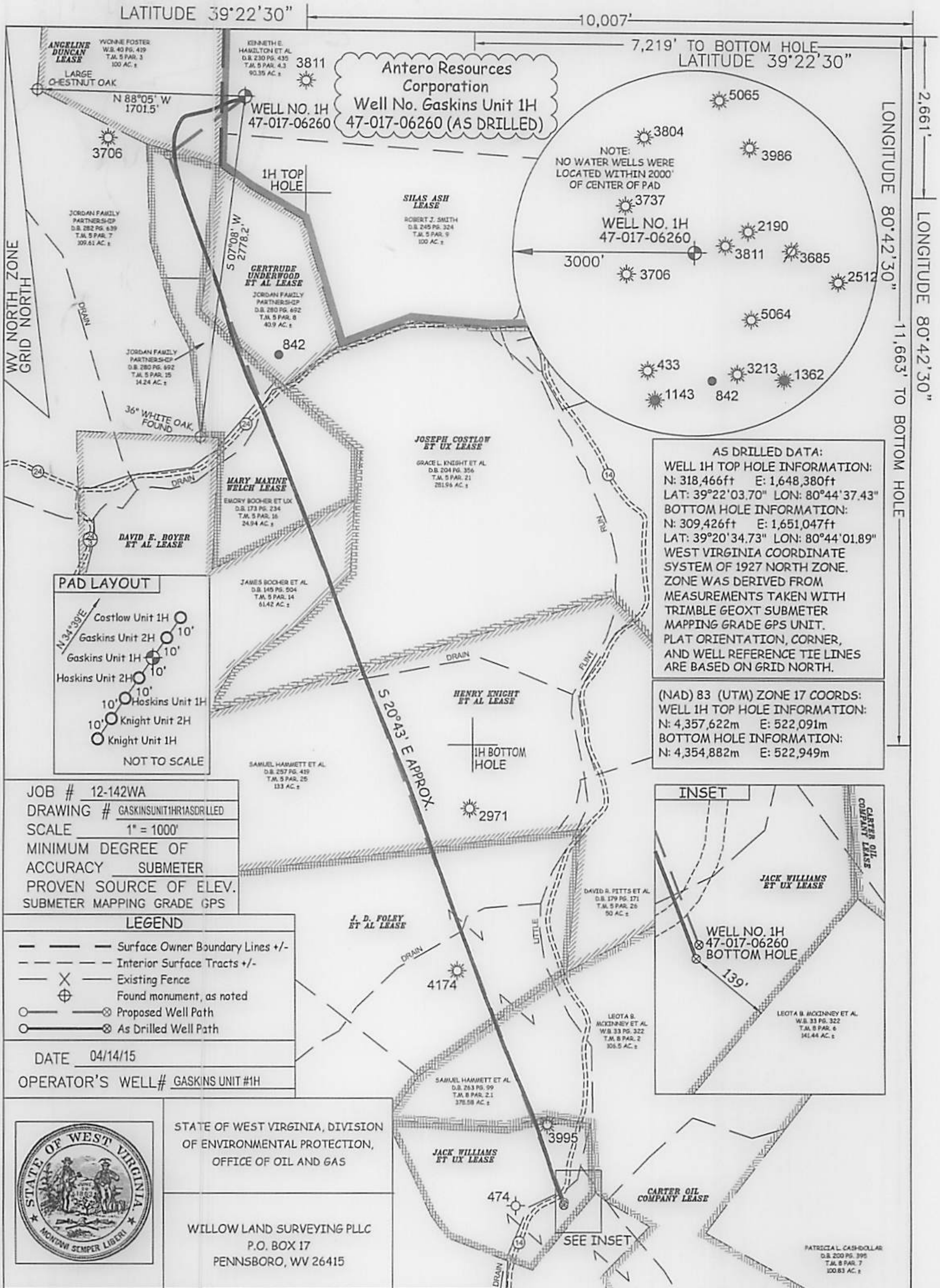
Hydrochloric Acid 10-15%	Reagent	Acid					
			Hydrchloric Acid	7647-01-0	15.00000	0.03424	
Plexcide 15G	Chemplex	Biocide					
			Water	7732-18-5	90.00000	0.02285	
			Glutaraldehyde	111-30-8	14.00000	0.00355	
			Ethanol	64-17-5	3.00000	0.00076	
			Alkyl Dimethyl Benzyl Ammonium Chloride	68424-85-1	3.00000	0.00076	
			Didecyl Dimethyl Ammonium Chloride	7173-51-5	3.00000	0.00076	
Plexaid 673	Chemplex	Scale Inhibitor					
			Water	7732-18-5	85.00000	0.01335	
			Methyl Alcohol	67-56-1	25.00000	0.00393	
			Sodium Salt of Phosphonodimethylated Diamine	Proprietary	5.00000	0.00079	
Sodium Persulfate	Chemplex	Breaker					
			Sodium Persulfate	7775-27-1	100.00000	0.00123	
Plexhib 256	Chemplex	Corrosion					
			Methyl Alcohol	67-56-1	70.00000	0.00049	
			Alcohol Ethoxylate Surfactants	Proprietary	30.00000	0.00021	
			thiourea-formaldehyde copolymer	68527-49-1	30.00000	0.00021	
			n-olefins	Proprietary	10.00000	0.00007	
			Propargyl Alcohol	107-19-7	8.00000	0.00006	
Plexbreak 145	Chemplex	Non-emulsifier					
			Water	732-18-5	66.00000	0.00052	
			Methyl Alcohol	67-56-1	15.00000	0.00012	
			Ethylene Glycol Monobutyl Ether	111-76-2	15.00000	0.00012	
			Cocamide Diethanolamine Salt	68603-42-9	10.00000	0.00008	
			Diethanolamine	111-42-2	5.00000	0.00004	
Ferriplex 66	Chemplex	Iron Control					
			Acetic Acid	64-19-7	50.00000	0.00022	
			Water	7732-18-5	35.00000	0.00016	
			Citric Acid	77-92-9	30.00000	0.00013	

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)

17-06260



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

API WELL # 47 – 017 – 06260
STATE COUNTY PERMIT

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X

LOCATION: ELEVATION 1,171' ORIGINAL - 1,157' AS DRILLED WATERSHED MCELROY CREEK
QUADRANGLE SMITHBURG 7.5' DISTRICT GRANT COUNTY DODDRIDGE
SURFACE OWNER KENNETH E. HAMILTON ET AL ACREAGE 90.35 ACRES +/-
OIL & GAS ROYALTY OWNER SILAS ASH; ANGELINE DUNCAN; MARY M. WELCH; G. UNDERWOOD ET AL; DAVID E. BOYER ET AL; J. COSTLOW ET UX; HENRY KNIGHT ET AL; J.D. FOLEY ET AL; CARTER OIL CO.; J. WILLIAMS ET UX
LEASE ACREAGE 291 AC±; 100 AC±; 52 AC±; 30.24 AC±; 61.87 AC±; 350 AC±; 213 AC±; 219 AC±; 224.75 AC±; 33.125 AC±

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.

10/23/2015

COUNTY NAME PERMIT

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 6,981' TVD 16,342' 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

FORM WW-6