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

API 47 - 017 - 06398 County Doddridge District Grant
Quad Smithburg 7.5' Pad Name Chestnut Pad Field/Pool Name ----------
Farm name Trustees Chestnut Grove Church Well Number McMillan Unit 2H
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	4,357,129m	Easting	524,017m
Landing Point of Curve	Northing	4,357,330.14m	Easting	524,420.20m
Bottom Hole	Northing	4,354,546m	Easting	525,543m

Elevation (ft) 1,115' 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 12/30/2013 Date drilling commenced 02/26/2014 Date drilling ceased 05/22/2014
Date completion activities began 08/01/2014 Date completion activities ceased 02/07/2015
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 67', 122' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 900'; 1,143' Void(s) encountered (Y/N) depths None
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths None
Is coal being mined in area (Y/N) No

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Reviewed by:
JK 7/24/15

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API 47- 017 - 06398 Farm name Trustees Chestnut Grove Church Well number McMillan Unit 2H

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	133#; J-55	N/A	Yes
Surface	17 1/2"	13 3/8"	359'	New	48#; H-40	N/A	Yes
Coal							
Intermediate 1	12 1/4"	9 5/8"	2,500'	New	36#; J-55	N/A	Yes
Intermediate 2							
Intermediate 3							
Production	8 3/4" & 8 1/2"	5 1/2"	17,388'	New	23#; P-110	N/A	Yes
Tubing		2 3/8"	7,290'		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	100 sx	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	445 sx	15.6	1.18	249	0'	8 Hrs.
Coal							
Intermediate 1	Class A	996 sx	15.6	1.18	783	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1,173 sx (Lead); 1,298 sx (Tail)	14.5 (Lead); 15.2 (Tail)	1.3 (Lead); 1.86 (Tail)	3,525	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 17,388' MD; 7,010' TVD (BHL); 7,016' TVD (Deepest Point Drilled) Loggers TD (ft) 17,340'
Deepest formation penetrated Marcellus Plug back to (ft) N/A
Plug back procedure N/A

Kick off depth (ft) 6,812'

**This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Hoskinson Unit 2H, API #47-017-06398). Please reference the wireline logs submitted with Form WR-35 for the Hoskinson Unit 2H. 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

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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 _____

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API 47- 017 - 06398 Farm name Trustees Chestnut Grove Church Well number McMillan Unit 2H

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**

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Please insert additional pages as applicable.

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API 47- 017 - 06398 Farm name Trustees Chestnut Grove Church Well number McMillan Unit 2H

PRODUCING FORMATION(S)	DEPTHS			
Marcellus	6,948' (top)	TVD	7,317' (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	Oil	NGL	Water	GAS MEASURED BY
	12,974 mcfpd	14 bpd	---------- bpd	1 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 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 Frontier Drilling LLC
Address 562 Spring Run Road 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 Baker Hughes
Address 837 Philippi Pike City Clarksburg State WV Zip 26301

Please insert additional pages as applicable.

Completed by Megan Darling Telephone 303-357-7260
Signature Megan C. Darling Title Permitting Agent Date 07/10/2015

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

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API 47-017-06398 Farm Name Trustees Chestnut Grove Church Well Number McMillan Unit 2H					
EXHIBIT 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	1-Aug-14	17,128	17,296	60	Marcellus
2	16-Oct-14	16,929	17,097	60	Marcellus
3	16-Oct-14	16,729	16,897	60	Marcellus
4	16-Oct-14	16,530	16,698	60	Marcellus
5	17-Oct-14	16,331	16,499	60	Marcellus
6	17-Oct-14	16,131	16,300	60	Marcellus
7	17-Oct-14	15,932	16,100	60	Marcellus
8	18-Oct-14	15,733	15,901	60	Marcellus
9	18-Oct-14	15,533	15,702	60	Marcellus
10	18-Oct-14	15,334	15,502	60	Marcellus
11	18-Oct-14	15,135	15,303	60	Marcellus
12	19-Oct-14	14,936	15,104	60	Marcellus
13	19-Oct-14	14,736	14,904	60	Marcellus
14	19-Oct-14	14,537	14,705	60	Marcellus
15	19-Oct-14	14,338	14,506	60	Marcellus
16	19-Oct-14	14,138	14,306	60	Marcellus
17	20-Oct-14	13,939	14,107	60	Marcellus
18	20-Oct-14	13,740	13,908	60	Marcellus
19	20-Oct-14	13,540	13,708	60	Marcellus
20	20-Oct-14	13,341	13,509	60	Marcellus
21	21-Oct-14	13,142	13,310	60	Marcellus
22	21-Oct-14	12,942	13,111	60	Marcellus
23	21-Oct-14	12,743	12,911	60	Marcellus
24	22-Oct-14	12,544	12,712	60	Marcellus
25	22-Oct-14	12,344	12,513	60	Marcellus
26	22-Oct-14	12,145	12,313	60	Marcellus
27	22-Oct-14	11,946	12,114	60	Marcellus
28	23-Oct-14	11,747	11,915	60	Marcellus
29	23-Oct-14	11,547	11,715	60	Marcellus
30	23-Oct-14	11,348	11,516	60	Marcellus
31	24-Oct-14	11,149	11,317	60	Marcellus
32	24-Oct-14	10,949	11,117	60	Marcellus
33	25-Oct-14	10,750	10,918	60	Marcellus
34	11-Dec-14	10,551	10,719	60	Marcellus
35	12-Dec-14	10,351	10,519	60	Marcellus
36	12-Dec-14	10,152	10,320	60	Marcellus
37	12-Dec-14	9,953	10,121	60	Marcellus
38	13-Dec-14	9,753	9,921	60	Marcellus
39	13-Dec-14	9,554	9,722	60	Marcellus
40	13-Dec-14	9,355	9,523	60	Marcellus
41	13-Dec-14	9,155	9,324	60	Marcellus
42	13-Dec-14	8,956	9,124	60	Marcellus
43	14-Dec-14	8,757	8,925	60	Marcellus
44	14-Dec-14	8,558	8,726	60	Marcellus
45	14-Dec-14	8,358	8,526	60	Marcellus
46	18-Dec-14	8,159	8,327	60	Marcellus
47	19-Dec-14	7,960	8,128	60	Marcellus
48	19-Dec-14	7,760	7,928	60	Marcellus
49	19-Dec-14	7,561	7,729	60	Marcellus
50	19-Dec-14	7,362	7,530	60	Marcellus

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API 47-017-06398 Farm Name Trustees Chestnut Grove Church Well Number McMillan Unit 2H

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	15-Oct-14	77.0	7,526	5,790	5,246	236,166	6,820	N/A
2	16-Oct-14	76.0	7,526	5,687	5,187	232,730	6,809	N/A
3	16-Oct-14	74.0	7,151	5,663	5,400	235,490	6,744	N/A
4	16-Oct-14	78.0	7,151	5,860	4,978	236,856	6,755	N/A
5	17-Oct-14	80.0	7,164	5,594	4,972	232,493	6,704	N/A
6	17-Oct-14	80.0	7,186	5,467	4,816	230,763	6,686	N/A
7	17-Oct-14	84.0	7,379	5,534	5,237	233,189	6,714	N/A
8	18-Oct-14	78.0	7,398	5,262	5,325	218,525	6,610	N/A
9	18-Oct-14	83.0	7,450	5,315	5,557	234,814	6,623	N/A
10	18-Oct-14	75.0	7,058	5,698	5,509	232,931	6,528	N/A
11	18-Oct-14	78.0	7,287	5,860	5,575	233,628	6,565	N/A
12	19-Oct-14	79.0	7,230	5,770	5,265	235,082	6,546	N/A
13	19-Oct-14	79.0	7,329	5,792	5,646	232,935	6,501	N/A
14	19-Oct-14	79.0	7,228	5,500	5,560	236,058	6,562	N/A
15	19-Oct-14	76.0	7,007	5,409	5,019	236,945	6,439	N/A
16	19-Oct-14	80.0	7,010	5,412	5,410	236,193	6,465	N/A
17	20-Oct-14	80.0	7,146	5,505	5,137	234,291	6,442	N/A
18	20-Oct-14	77.0	7,165	5,477	5,348	239,051	6,519	N/A
19	20-Oct-14	74.4	7,097	5,776	5,518	168,320	6,293	N/A
20	20-Oct-14	74.4	7,097	5,776	5,518	168,320	6,293	N/A
21	21-Oct-14	79.0	6,905	5,481	5,641	242,927	6,460	N/A
22	21-Oct-14	78.0	6,983	5,532	5,461	232,020	6,193	N/A
23	21-Oct-14	75.6	6,968	5,648	4,740	234,177	6,383	N/A
24	22-Oct-14	78.3	7,016	5,274	4,856	237,093	6,391	N/A
25	22-Oct-14	79.0	6,917	5,800	5,117	234,810	6,265	N/A
26	22-Oct-14	80.0	6,888	5,713	5,130	234,413	6,286	N/A
27	22-Oct-14	77.8	6,870	5,286	5,261	236,556	6,354	N/A
28	23-Oct-14	77.5	6,961	5,374	5,396	384,880	6,308	N/A
29	23-Oct-14	78.9	7,053	5,581	5,234	381,416	6,645	N/A
30	23-Oct-14	81.9	7,098	5,899	5,481	384,520	6,259	N/A
31	24-Oct-14	77.6	6,983	5,598	5,619	383,731	6,252	N/A
32	24-Oct-14	77.0	6,991	5,413	5,445	255,430	6,112	N/A
33	25-Oct-14	81.0	7,186	6,046	N/A	225,314	6,136	N/A
34	11-Dec-14	79.0	6,917	NA	5,117	233,442	6,587	N/A
35	12-Dec-14	62.9	6,661	5,641	5,011	234,071	6,059	N/A
36	12-Dec-14	62.5	6,502	5,999	4,832	232,595	5,817	N/A
37	12-Dec-14	64.3	6,711	5,895	4,856	231,978	5,819	N/A
38	13-Dec-14	63.0	6,562	5,740	5,477	233,734	5,840	N/A
39	13-Dec-14	61.6	6,522	5,813	5,381	234,834	5,793	N/A
40	13-Dec-14	63.0	6,772	5,703	5,237	236,332	5,842	N/A
41	13-Dec-14	65.7	6,766	5,576	5,001	235,144	5,772	N/A
42	13-Dec-14	60.2	6,687	5,648	5,170	235,162	5,863	N/A
43	14-Dec-14	63.3	6,784	5,696	5,155	234,553	5,811	N/A
44	14-Dec-14	63.9	6,605	5,736	5,206	234,887	5,750	N/A
45	14-Dec-14	63.2	6,596	5,920	5,243	235,681	5,771	N/A
46	18-Dec-14	51.0	6,386	5,539	4,892	231,585	5,823	N/A
47	19-Dec-14	65.3	6,519	6,356	4,833	236,966	5,811	N/A
48	19-Dec-14	64.1	6,396	6,290	5,146	236,963	5,961	N/A
49	19-Dec-14	64.9	6,505	6,153	5,396	235,542	5,715	N/A
50	19-Dec-14	66.1	6,354	6,601	4,390	212,518	5,419	N/A
	AVG=	**73.3**	**6,953**	**5,696**	**5,223**	**12,178,054**	**313,115**	TOTAL

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API 47-017-06398 Farm Name Trustees Chestnut Grove Church Well Number McMillan Unit 2H				
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	67'	N/A	67'	N/A
Fresh Water	122'	N/A	122'	N/A
Shale/Siltstone	0	257	0	257
Shale w/ Coal	est. 257	347	est. 257	347
Shale and Siltstone	est. 347	377	est. 347	377
Shale/Sandstone/Siltstone	est. 377	1,457	est. 377	1,457
Shale and Siltstone w/trace coal	est. 1457	1,487	est. 1457	1,487
Shale/Sandstone/Siltstone	est. 1487	1,637	est. 1487	1,637
Sandstone	est. 1637	1,757	est. 1637	1,757
Sandstone w/trace coal	est. 1757	1,787	est. 1757	1,787
Shale/Sandstone/Siltstone	est. 1787	2,056	est. 1787	2,056
Big Lime	2,056	2,200	2,056	2,200
Big Injun	2,200	2,629	2,200	2,629
Gantz Sand	2,629	2,773	2,629	2,774
Fifty Foot Sandstone	2,773	2,836	2,774	2,838
Gordon	2,836	3,205	2,838	3,225
Fifth Sandstone	3,205	3,238	3,225	3,260
Bayard	3,238	3,579	3,260	3,634
Warren	3,579	3,954	3,634	4,036
Speechley	3,954	4,189	4,036	4,286
Baltown	4,189	4,719	4,286	4,848
Bradford	4,719	5,204	4,848	5,359
Benson	5,204	5,452	5,359	5,624
Alexander	5,452	5,661	5,624	5,850
Elk	5,661	6,207	5,850	6,437
Rhinestreet	6,207	6,527	6,437	6,785
Sycamore	6,527	6,718	6,785	6,992
Middlesex	6,718	6,855	6,992	7,159
Burkett	6,855	6,882	7,159	7,199
Tully	6,882	6,948	7,199	7,317
Marcellus	6,948	NA	7,317	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.

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Antero Resources

McMillan Unit 2H
Doddridge County WV
Northing: 14294298.87
Easting: 1719164.80
As Drilled

Scientific Drilling

To convert Magnetic North to Grid: Subtract 8.70°
To convert True North to Grid: Subtract 0.18°

Azimuths to Grid North
True North: -0.18°
Magnetic North: -8.70°

Magnetic Field
Strength: 52361.4snT
Dip Angle: 66.89°
Date: 2/27/2014
Model: IGRF2010

WELL DETAILS McMillan Unit 2H
Ground Level: 1115.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	14294298.87	1719164.80	39° 21' 47.527 N	80° 43' 16.990 W

SITE DETAILS: Mishka/McMillan/Hoskinson Pad

Site Center: Mishka Unit 2H
Mishka / McMillan / Hoskinson

Site Centre Northing: 14294295.71
Easting: 1719154.86

Positional Uncertainty: 2.8
Convergence: 0.18
Local North: Grid

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

Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Gr: 1115.0

LEGEND

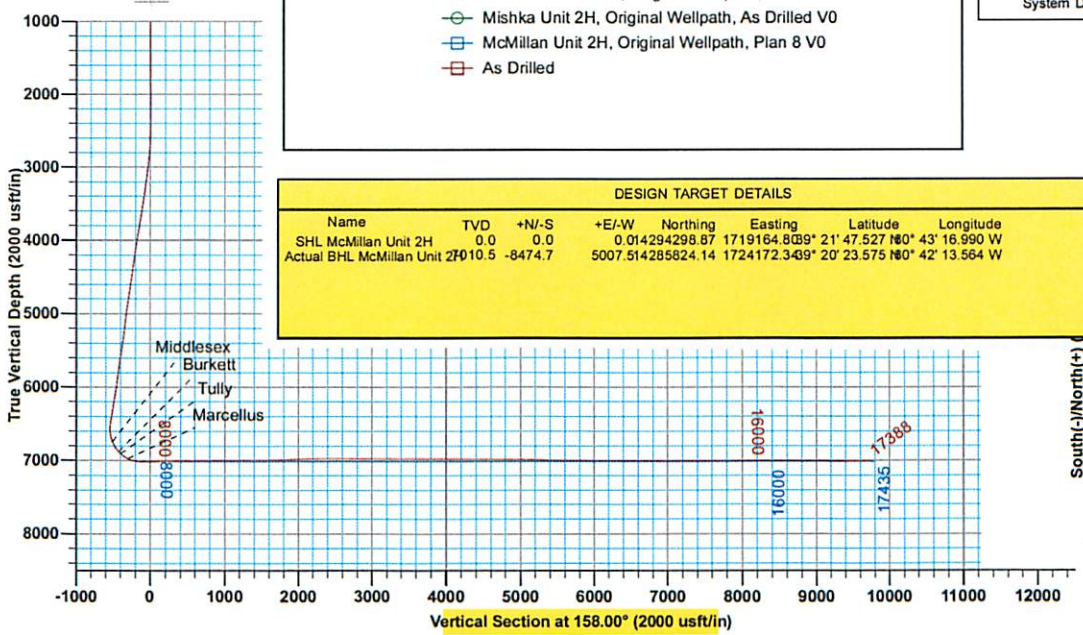
- Hoskinson Unit 2H, Original Wellpath, As Drilled V0
- Hoskinson Unit 1H, Original Wellpath, As Drilled V0
- Mishka Unit 2H, Original Wellpath, As Drilled V0
- McMillan Unit 2H, Original Wellpath, Plan 8 V0
- As Drilled

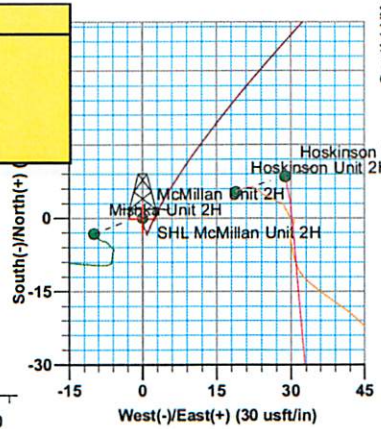
Genie Lightfoot
13:46, May 22 2014

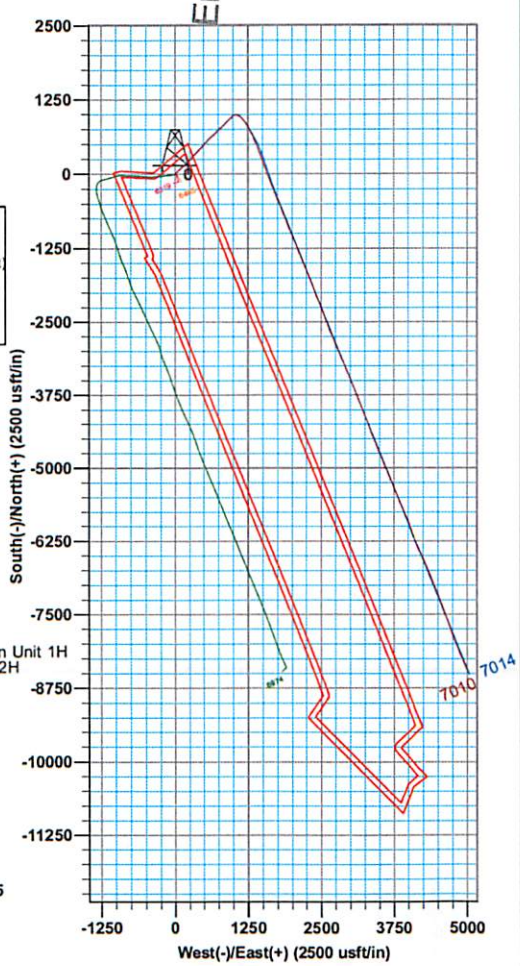
Scientific Drilling
421 South Eagle Lane
Oklahoma City, OK 73128

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL McMillan Unit 2H	0.0	0.0	0.0	14294298.87	1719164.80	39° 21' 47.527 N	80° 43' 16.990 W
Actual BHL McMillan Unit 2H	7010.5	-8474.7	5007.5	14285824.14	1724172.34	39° 20' 23.575 N	80° 42' 13.564 W







Antero Resources

Doddridge County WV
Mishka/McMillan/Hoskinson Pad
McMillan Unit 2H
Original Wellpath

Design: As Drilled

EOW Completion Report

22 May, 2014

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Scientific Drilling

Company:	Antero Resources	**Local Co-ordinate Reference:**	Well McMillan Unit 2H
Project:	Doddridge County WV	**TVD Reference:**	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Site:	Mishka/McMillan/Hoskinson Pad	**MD Reference:**	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Well:	McMillan Unit 2H	**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 Mishka/McMillan/Hoskinson Pad, Site Center: Mishka Unit 2H

Site Position:		**Northing:**	14,294,295.71 usft	**Latitude:**	39° 21' 47.496 N
From:	Map	**Easting:**	1,719,154.86 usft	**Longitude:**	80° 43' 17.117 W
Position Uncertainty:	2.8 usft	**Slot Radius:**	13-3/16"	**Grid Convergence:**	0.18 °

Well McMillan Unit 2H, Marcellus

Well Position	**+N/-S**	0.0 usft	**Northing:**	14,294,298.87 usft	**Latitude:**	39° 21' 47.527 N
	+E/-W	0.0 usft	**Easting:**	1,719,164.80 usft	**Longitude:**	80° 43' 16.990 W
Position Uncertainty		2.8 usft	**Wellhead Elevation:**	1,140.0 usft	**Ground Level:**	1,115.0 usft

Wellbore Original Wellpath

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/27/2014	-8.52	66.89	52,361

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	158.00

Survey Program Date 5/22/2014

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
112.0	5,788.0	Survey #4 Final Gyro (Original Wellpath)	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper
5,800.0	17,388.0	Survey #5 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
112.0	0.31	323.81	112.0	0.2	-0.2	-0.3	0.28
212.0	0.11	352.67	212.0	0.6	-0.4	-0.6	0.22
312.0	0.04	218.95	312.0	0.6	-0.4	-0.7	0.14
412.0	0.16	193.28	412.0	0.5	-0.4	-0.6	0.13
512.0	0.18	167.58	512.0	0.2	-0.4	-0.3	0.08
612.0	0.23	159.55	612.0	-0.2	-0.3	0.0	0.06
712.0	0.28	152.97	712.0	-0.6	-0.2	0.5	0.06
812.0	0.21	127.52	812.0	-0.9	0.1	0.9	0.13
912.0	0.19	185.86	912.0	-1.2	0.2	1.2	0.20
1,012.0	0.32	176.64	1,012.0	-1.6	0.2	1.6	0.14

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Company:	Antero Resources	**Local Co-ordinate Reference:**	Well McMillan Unit 2H
Project:	Doddridge County WV	**TVD Reference:**	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Site:	Mishka/McMillan/Hoskinson Pad	**MD Reference:**	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Well:	McMillan Unit 2H	**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)
1,112.0	0.32	150.23	1,112.0	-2.1	0.4	2.1	0.15
1,212.0	0.28	136.01	1,212.0	-2.6	0.7	2.6	0.08
1,312.0	0.09	72.12	1,312.0	-2.7	0.9	2.9	0.25
1,412.0	0.07	205.65	1,412.0	-2.7	1.0	2.9	0.15
1,512.0	0.08	235.31	1,512.0	-2.8	0.9	3.0	0.04
1,612.0	0.15	173.89	1,612.0	-3.0	0.9	3.1	0.13
1,712.0	0.10	181.96	1,712.0	-3.2	0.9	3.3	0.05
1,812.0	0.13	155.67	1,812.0	-3.4	0.9	3.5	0.06
1,912.0	0.01	282.82	1,912.0	-3.5	1.0	3.6	0.14
2,012.0	0.06	317.19	2,012.0	-3.5	0.9	3.6	0.05
2,112.0	0.18	355.84	2,112.0	-3.3	0.9	3.4	0.14
2,212.0	0.07	244.61	2,212.0	-3.2	0.8	3.2	0.22
2,312.0	0.07	192.47	2,312.0	-3.2	0.7	3.3	0.06
2,412.0	0.15	70.46	2,412.0	-3.3	0.8	3.3	0.20
2,512.0	0.08	349.42	2,512.0	-3.1	0.9	3.3	0.16
2,612.0	3.88	24.43	2,611.9	0.0	2.3	0.9	3.81
2,712.0	6.72	32.86	2,711.5	8.0	6.9	-4.8	2.94
2,812.0	10.06	37.49	2,810.4	19.9	15.4	-12.6	3.40
2,912.0	13.34	41.22	2,908.3	35.5	28.3	-22.3	3.36
3,012.0	16.40	44.73	3,004.9	54.2	45.9	-33.0	3.19
3,112.0	19.30	48.99	3,100.1	75.1	68.3	-44.0	3.18
3,212.0	22.27	49.09	3,193.6	98.3	95.1	-55.5	2.97
3,312.0	24.32	49.53	3,285.4	124.1	125.1	-68.2	2.06
3,412.0	24.93	49.31	3,376.4	151.2	156.7	-81.5	0.62
3,512.0	24.86	48.38	3,467.1	178.9	188.4	-95.3	0.40
3,612.0	22.53	46.87	3,558.6	206.0	218.1	-109.3	2.41
3,712.0	21.20	46.24	3,651.4	231.6	245.1	-122.9	1.35
3,812.0	21.02	44.59	3,744.7	256.8	270.8	-136.7	0.62
3,912.0	20.70	43.65	3,838.2	282.4	295.6	-151.1	0.46
4,012.0	20.60	43.10	3,931.7	308.0	319.8	-165.8	0.22
4,112.0	20.20	41.85	4,025.5	333.7	343.3	-180.8	0.59
4,212.0	20.38	41.64	4,119.3	359.6	366.4	-196.2	0.19
4,312.0	20.14	44.24	4,213.1	385.0	390.0	-210.8	0.93
4,412.0	19.56	46.16	4,307.1	408.9	414.1	-224.0	0.87
4,512.0	19.40	45.40	4,401.4	432.1	438.0	-236.6	0.30
4,612.0	19.66	44.89	4,495.7	455.7	461.7	-249.6	0.31
4,712.0	18.73	43.31	4,590.1	479.3	484.6	-262.8	1.07
4,812.0	18.63	42.55	4,684.8	502.8	506.4	-276.5	0.26
4,912.0	18.39	42.48	4,779.7	526.2	527.8	-290.1	0.24
5,012.0	18.57	41.74	4,874.5	549.7	549.1	-304.0	0.30
5,112.0	19.20	42.71	4,969.1	573.7	570.9	-318.0	0.70
5,212.0	18.06	46.52	5,063.9	596.4	593.3	-330.7	1.67
5,312.0	17.64	50.80	5,159.1	616.7	616.3	-340.9	1.38
5,412.0	19.84	47.79	5,253.8	637.6	640.6	-351.2	2.40

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Company:	Antero Resources	**Local Co-ordinate Reference:**	Well McMillan Unit 2H
Project:	Doddridge County WV	**TVD Reference:**	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Site:	Mishka/McMillan/Hoskinson Pad	**MD Reference:**	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Well:	McMillan Unit 2H	**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)
5,512.0	21.18	46.51	5,347.4	661.5	666.2	-363.7	1.41
5,612.0	22.07	45.86	5,440.4	687.0	692.8	-377.4	0.92
5,712.0	22.31	45.50	5,533.0	713.4	719.9	-391.8	0.28
5,788.0	21.82	44.91	5,603.4	733.5	740.1	-402.8	0.71
5,850.0	21.13	41.45	5,661.1	750.0	755.6	-412.3	2.33
5,947.0	21.21	48.91	5,751.6	774.7	780.4	-425.9	2.78
6,043.0	19.83	52.10	5,841.5	796.1	806.4	-436.0	1.85
6,139.0	20.54	46.90	5,931.6	817.6	831.5	-446.6	2.01
6,235.0	22.25	40.85	6,021.0	842.9	855.7	-460.9	2.91
6,331.0	22.98	42.79	6,109.6	870.4	880.3	-477.2	1.09
6,427.0	22.94	47.27	6,198.0	896.8	906.8	-491.8	1.82
6,523.0	22.91	47.84	6,286.4	922.0	934.4	-504.9	0.23
6,620.0	22.63	44.32	6,375.9	948.1	961.4	-518.9	1.43
6,703.0	22.67	44.78	6,452.5	970.8	983.9	-531.6	0.22
6,748.0	22.23	47.01	6,494.1	982.8	996.2	-538.1	2.13
6,780.0	21.00	54.88	6,523.8	990.2	1,005.3	-541.5	9.83
6,812.0	20.28	64.11	6,553.8	996.0	1,015.0	-543.2	10.40
6,844.0	20.12	73.77	6,583.8	999.9	1,025.3	-543.0	10.42
6,877.0	20.07	85.45	6,614.8	1,002.0	1,036.4	-540.8	12.14
6,909.0	20.62	94.93	6,644.8	1,001.9	1,047.5	-536.6	10.43
6,941.0	21.98	102.75	6,674.7	1,000.1	1,058.9	-530.6	9.83
6,972.0	23.94	109.43	6,703.2	996.7	1,070.5	-523.1	10.51
7,004.0	26.72	115.74	6,732.1	991.4	1,083.1	-513.5	12.10
7,017.0	27.56	118.30	6,743.7	988.7	1,088.4	-509.0	11.04
Middlesex							
7,037.0	28.93	121.95	6,761.3	984.0	1,096.6	-501.5	11.04
7,069.0	31.79	126.95	6,788.9	974.8	1,109.9	-488.1	11.92
7,101.0	35.02	130.93	6,815.6	963.7	1,123.6	-472.7	12.19
7,133.0	38.39	134.14	6,841.3	950.8	1,137.7	-455.4	12.12
7,166.0	41.99	137.05	6,866.5	935.6	1,152.5	-435.7	12.30
7,184.0	44.16	138.45	6,879.7	926.5	1,160.8	-424.2	13.16
Burkett							
7,197.0	45.73	139.40	6,888.9	919.6	1,166.8	-415.5	13.16
7,224.0	49.06	141.34	6,907.1	904.2	1,179.5	-398.6	13.42
Tully							
7,229.0	49.68	141.68	6,910.4	901.3	1,181.9	-392.9	13.42
7,261.0	53.38	143.79	6,930.3	881.3	1,197.0	-368.7	12.66
7,293.0	57.27	145.74	6,948.5	859.8	1,212.2	-343.1	13.15
7,326.0	61.36	147.40	6,965.3	836.2	1,227.8	-315.3	13.13
7,342.0	63.65	147.94	6,972.7	824.2	1,235.4	-301.4	14.64
Marcellus							
7,358.0	65.95	148.45	6,979.5	811.9	1,243.0	-287.1	14.64
7,390.0	70.38	149.60	6,991.4	786.4	1,258.3	-257.8	14.24
7,422.0	75.05	151.00	7,000.9	759.9	1,273.4	-227.5	15.18
7,454.0	79.44	152.36	7,008.0	732.4	1,288.2	-196.5	14.33

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Company:	Antero Resources	**Local Co-ordinate Reference:**	Well McMillan Unit 2H
Project:	Doddridge County WV	**TVD Reference:**	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Site:	Mishka/McMillan/Hoskinson Pad	**MD Reference:**	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Well:	McMillan Unit 2H	**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)
7,474.0	82.27	153.22	7,011.2	714.8	1,297.3	-176.8	14.77
7,535.0	89.60	156.51	7,015.5	659.8	1,323.1	-116.1	13.16
7,581.0	89.66	156.31	7,015.8	617.6	1,341.5	-70.1	0.45
7,677.0	91.88	159.09	7,014.5	528.8	1,377.9	25.8	3.71
7,773.0	90.30	156.29	7,012.7	440.1	1,414.3	121.8	3.35
7,869.0	91.68	158.85	7,011.0	351.3	1,451.0	217.8	3.03
7,966.0	92.86	161.07	7,007.2	260.3	1,484.2	314.6	2.59
8,062.0	89.53	159.26	7,005.2	170.0	1,516.7	410.5	3.95
8,158.0	91.75	159.89	7,004.1	80.1	1,550.2	506.5	2.40
8,253.0	89.80	157.14	7,002.8	-8.3	1,585.0	601.5	3.55
8,349.0	92.28	158.78	7,001.1	-97.3	1,621.0	697.4	3.10
8,445.0	92.05	159.80	6,997.4	-187.0	1,655.0	793.3	1.09
8,541.0	89.06	158.90	6,996.5	-276.8	1,688.8	889.3	3.25
8,637.0	89.83	157.79	6,997.4	-366.0	1,724.2	985.3	1.41
8,733.0	90.37	156.84	6,997.3	-454.6	1,761.2	1,081.3	1.14
8,830.0	90.74	157.07	6,996.3	-543.9	1,799.2	1,178.3	0.45
8,926.0	90.03	156.55	6,995.7	-632.1	1,837.0	1,274.2	0.92
9,022.0	92.35	159.25	6,993.7	-721.0	1,873.1	1,370.2	3.71
9,119.0	91.41	156.83	6,990.5	-810.9	1,909.4	1,467.1	2.68
9,215.0	90.77	156.47	6,988.7	-899.0	1,947.4	1,563.1	0.76
9,312.0	90.60	158.00	6,987.5	-988.5	1,984.9	1,660.1	1.59
9,408.0	90.77	156.97	6,986.4	-1,077.2	2,021.7	1,756.1	1.09
9,504.0	91.61	156.67	6,984.4	-1,165.4	2,059.5	1,852.0	0.93
9,601.0	92.75	157.18	6,980.7	-1,254.6	2,097.5	1,948.9	1.29
9,697.0	92.25	157.38	6,976.5	-1,343.0	2,134.5	2,044.8	0.56
9,793.0	91.17	157.36	6,973.6	-1,431.6	2,171.4	2,140.8	1.13
9,890.0	90.84	157.87	6,971.9	-1,521.3	2,208.4	2,237.8	0.63
9,986.0	90.50	156.96	6,970.8	-1,609.9	2,245.2	2,333.8	1.01
10,082.0	89.46	156.80	6,970.9	-1,698.2	2,282.9	2,429.7	1.10
10,179.0	89.26	157.54	6,971.9	-1,787.6	2,320.6	2,526.7	0.79
10,275.0	91.11	160.91	6,971.6	-1,877.3	2,354.6	2,622.7	4.00
10,372.0	88.89	158.82	6,971.6	-1,968.4	2,388.0	2,719.6	3.14
10,468.0	90.91	159.16	6,971.8	-2,058.0	2,422.4	2,815.6	2.13
10,559.0	89.73	156.99	6,971.3	-2,142.4	2,456.4	2,906.6	2.71
10,651.0	90.27	156.36	6,971.3	-2,226.9	2,492.6	2,998.6	0.90
10,741.0	90.17	158.93	6,970.9	-2,310.1	2,527.0	3,088.5	2.86
10,833.0	89.50	160.90	6,971.2	-2,396.5	2,558.6	3,180.5	2.26
10,925.0	89.03	158.80	6,972.4	-2,482.9	2,590.3	3,272.4	2.34
11,016.0	90.40	158.44	6,972.8	-2,567.6	2,623.5	3,363.4	1.56
11,105.0	90.57	158.43	6,972.1	-2,650.4	2,656.2	3,452.4	0.19
11,195.0	88.73	157.38	6,972.6	-2,733.8	2,690.1	3,542.4	2.85
11,287.0	90.20	158.26	6,973.5	-2,818.9	2,724.8	3,634.4	1.86
11,377.0	90.00	157.44	6,973.3	-2,902.3	2,758.7	3,724.4	0.94
11,468.0	89.56	156.48	6,973.7	-2,986.0	2,794.3	3,815.4	1.16

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Company:	Antero Resources	**Local Co-ordinate Reference:**	Well McMillan Unit 2H
Project:	Doddridge County WV	**TVD Reference:**	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Site:	Mishka/McMillan/Hoskinson Pad	**MD Reference:**	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Well:	McMillan Unit 2H	**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)
11,558.0	90.10	156.95	6,974.0	-3,068.7	2,829.9	3,905.4	0.80
11,655.0	89.83	156.44	6,974.0	-3,157.8	2,868.3	4,002.3	0.59
11,751.0	89.33	156.54	6,974.7	-3,245.8	2,906.6	4,098.3	0.53
11,846.0	89.33	158.13	6,975.8	-3,333.5	2,943.2	4,193.3	1.67
11,942.0	90.44	157.84	6,976.0	-3,422.5	2,979.2	4,289.3	1.20
12,038.0	90.64	157.67	6,975.1	-3,511.3	3,015.5	4,385.3	0.27
12,131.0	89.80	158.46	6,974.8	-3,597.6	3,050.3	4,478.3	1.24
12,228.0	89.09	156.14	6,975.7	-3,687.1	3,087.7	4,575.3	2.50
12,324.0	89.13	159.07	6,977.2	-3,775.8	3,124.2	4,671.2	3.05
12,420.0	90.17	159.77	6,977.8	-3,865.7	3,158.0	4,767.2	1.31
12,517.0	90.77	158.59	6,977.0	-3,956.3	3,192.5	4,864.2	1.36
12,613.0	88.49	156.24	6,977.6	-4,045.0	3,229.3	4,960.2	3.41
12,710.0	88.72	159.72	6,980.0	-4,134.8	3,265.7	5,057.1	3.59
12,805.0	88.15	159.27	6,982.6	-4,223.8	3,298.9	5,152.0	0.76
12,901.0	88.35	159.09	6,985.5	-4,313.5	3,333.1	5,248.0	0.28
12,997.0	88.49	158.37	6,988.1	-4,402.9	3,367.9	5,343.9	0.76
13,093.0	88.56	158.20	6,990.6	-4,492.1	3,403.4	5,439.9	0.19
13,188.0	90.44	158.21	6,991.4	-4,580.3	3,438.6	5,534.9	1.98
13,284.0	90.50	158.33	6,990.7	-4,669.4	3,474.2	5,630.9	0.14
13,381.0	90.60	158.56	6,989.7	-4,759.7	3,509.8	5,727.9	0.26
13,477.0	88.49	157.29	6,990.5	-4,848.6	3,545.9	5,823.9	2.57
13,573.0	89.56	156.69	6,992.1	-4,937.0	3,583.4	5,919.8	1.28
13,670.0	89.33	156.66	6,993.1	-5,026.0	3,621.8	6,016.8	0.24
13,766.0	89.56	157.58	6,994.0	-5,114.5	3,659.1	6,112.8	0.99
13,862.0	89.33	157.28	6,994.9	-5,203.1	3,696.0	6,208.8	0.39
13,958.0	89.40	157.37	6,996.0	-5,291.7	3,733.0	6,304.8	0.12
14,053.0	89.93	157.67	6,996.5	-5,379.5	3,769.3	6,399.8	0.64
14,149.0	89.73	156.79	6,996.8	-5,468.0	3,806.5	6,495.7	0.94
14,245.0	89.13	156.46	6,997.8	-5,556.1	3,844.6	6,591.7	0.71
14,342.0	90.64	158.17	6,998.0	-5,645.6	3,882.0	6,688.7	2.35
14,438.0	89.87	157.62	6,997.5	-5,734.5	3,918.1	6,784.7	0.99
14,534.0	89.26	156.22	6,998.3	-5,822.8	3,955.7	6,880.7	1.59
14,631.0	90.10	157.45	6,998.8	-5,912.0	3,993.9	6,977.7	1.54
14,727.0	89.03	158.05	6,999.5	-6,000.9	4,030.2	7,073.6	1.28
14,823.0	89.52	159.08	7,000.8	-6,090.2	4,065.3	7,169.6	1.19
14,920.0	89.97	159.07	7,001.2	-6,180.8	4,099.9	7,266.6	0.46
15,016.0	89.66	158.44	7,001.5	-6,270.3	4,134.7	7,362.6	0.73
15,113.0	89.60	157.58	7,002.1	-6,360.2	4,171.0	7,459.6	0.89
15,209.0	90.30	158.57	7,002.2	-6,449.3	4,206.9	7,555.6	1.26
15,306.0	88.66	153.73	7,003.1	-6,538.0	4,246.1	7,652.5	5.27
15,402.0	90.71	157.69	7,003.6	-6,625.4	4,285.6	7,748.4	4.64
15,498.0	90.47	158.83	7,002.6	-6,714.6	4,321.1	7,844.4	1.21
15,594.0	89.80	158.05	7,002.4	-6,803.9	4,356.4	7,940.4	1.07
15,691.0	90.00	157.66	7,002.6	-6,893.7	4,393.0	8,037.4	0.45
15,787.0	89.63	157.33	7,002.9	-6,982.4	4,429.7	8,133.4	0.52

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Company:	Antero Resources	**Local Co-ordinate Reference:**	Well McMillan Unit 2H
Project:	Doddridge County WV	**TVD Reference:**	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Site:	Mishka/McMillan/Hoskinson Pad	**MD Reference:**	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Well:	McMillan Unit 2H	**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)
15,884.0	89.69	158.29	7,003.5	-7,072.2	4,466.4	8,230.4	0.99
15,980.0	90.71	157.95	7,003.1	-7,161.3	4,502.1	8,326.4	1.12
16,076.0	90.84	159.64	7,001.8	-7,250.8	4,536.8	8,422.4	1.77
16,173.0	90.97	159.81	7,000.3	-7,341.8	4,570.5	8,519.3	0.22
16,269.0	90.79	160.96	6,998.8	-7,432.2	4,602.7	8,615.2	1.21
16,366.0	89.09	160.61	6,998.9	-7,523.8	4,634.6	8,712.1	1.79
16,462.0	89.73	160.19	6,999.9	-7,614.2	4,666.8	8,808.0	0.80
16,559.0	89.03	160.30	7,001.0	-7,705.5	4,699.6	8,904.9	0.73
16,655.0	89.76	160.80	7,002.0	-7,796.0	4,731.6	9,000.8	0.92
16,751.0	89.60	158.62	7,002.5	-7,886.1	4,764.8	9,096.8	2.28
16,848.0	88.99	158.23	7,003.7	-7,976.3	4,800.5	9,193.8	0.75
16,944.0	89.66	158.72	7,004.8	-8,065.6	4,835.7	9,289.8	0.86
17,041.0	87.45	155.96	7,007.3	-8,155.0	4,873.1	9,386.7	3.64
17,137.0	87.85	155.61	7,011.2	-8,242.5	4,912.4	9,482.5	0.55
17,233.0	91.07	159.08	7,012.1	-8,331.1	4,949.4	9,578.5	4.93
17,329.0	90.40	157.46	7,010.9	-8,420.2	4,984.9	9,674.5	1.83
17,388.0	90.40	157.46	7,010.5	-8,474.7	5,007.5	9,733.5	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
7,017.0	6,743.7	988.7	1,088.4	Middlesex
7,184.0	6,879.7	926.5	1,160.8	Burkett
7,224.0	6,907.1	904.2	1,179.5	Tully
7,342.0	6,972.7	824.2	1,235.4	Marcellus

Checked By: _____ Approved By: _____ Date: _____

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	10/15/2014
Job End Date:	10/24/2014
State:	West Virginia
County:	Doddridge
API Number:	47-017-06398-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	McMillan Unit 2H
Longitude:	-80.72121100
Latitude:	39.36328600
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	7,016
Total Base Water Volume (gal):	13,846,392
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	Operator	Carrier					
			Water	7732-18-5	100.00000	90.66404	
Sand, White, 40/70	Baker Hughes	Proppant					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		4.89844	
Sand, White, 20/40	Baker Hughes	Proppant					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		3.22271	
Sand, White, 100 mesh	Baker Hughes	Proppant					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.63677	
HCl, 10.1 - 15%	Baker Hughes	Acidizing					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.22584	SmartCare Product
GW-3LDF	Baker Hughes	Gelling Agent					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.11344	SmartCare Product
FRW-18	Baker Hughes	Friction Reducer					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.07123	SmartCare Product
Enzyme G-NE	Baker Hughes	Breaker					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.01619	SmartCare Product

Scaletrol 720	Baker Hughes	Scale Inhibitor					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.01605	SmartCare Product
Alpha 1427	Baker Hughes	Biocide					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.01223	SmartCare Product
Ferrotrol 300L	Baker Hughes	Iron Control					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.00154	SmartCare Product
CI-14	Baker Hughes	Corrosion Inhibitor					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.00037	SmartCare Product
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.							
Ingredients in Additive (s) (MSDS and non-MSDS)	Baker Hughes	See Trade Name(s) List					
			Crystalline Silica (Quartz)	14808-60-7	100.00000	8.74624	
			Water	7732-18-5	95.00000	0.25164	
			Mineral Oil	8042-47-5	70.00000	0.07930	
			Guar Gum	9000-30-0	60.00000	0.06797	
			Petroleum Distillates	64742-47-8	30.00000	0.03399	
			Paraffinic Petroleum Distillate	64742-55-8	30.00000	0.03399	
			Hydrochloric Acid	7647-01-0	15.00000	0.03383	
			Hydrotreated Light Distillate	64742-47-8	30.00000	0.02134	
			Poly (acrylamide-co-acrylic acid) partial sodium salt	62649-23-4	30.00000	0.02134	
			Ethylene Glycol	107-21-1	45.00000	0.00721	
			1-butoxy-2-propanol	5131-66-8	5.00000	0.00566	
			Crystalline Silica: Quartz	14808-60-7	5.00000	0.00566	
			Isotridecanol, ethoxylated	9043-30-5	5.00000	0.00566	
			Sodium Chloride	7647-14-5	5.00000	0.00372	
			Glutaraldehyde	111-30-8	30.00000	0.00366	
			2-Propenoic, Polymer with Sodium Phosphinate, Sodium Salt	71050-62-9	20.00000	0.00321	
			Ammonium Chloride	12125-02-9	3.00000	0.00213	
			Oleamide DEA	93-83-4	2.00000	0.00142	
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00142	
			Didecyl Dimethyl Ammonium Chloride	7173-51-5	10.00000	0.00122	
			Citric Acid	77-92-9	60.00000	0.00092	
			Hemicellulase Enzyme Concentrate	9025-56-3	5.00000	0.00081	
			Calcium Chloride	10043-52-4	5.00000	0.00080	
			Ethanol	64-17-5	5.00000	0.00061	
			Quaternary Ammonium Compound	68424-85-1	5.00000	0.00061	
			Methanol	67-56-1	100.00000	0.00037	
			Polyoxythylene Sorbitan Monooleate	9005-65-6	0.50000	0.00036	
			Sorbitan Monooleate	1338-43-8	0.50000	0.00036	

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			Potassium Chloride	7447-40-7	1.00000	0.00016	
			2-butoxy-1-propanol	15821-83-7	0.10000	0.00011	
			Polyoxyalkylenes	68951-67-7	30.00000	0.00011	
			Fatty Acids	61790-12-3	10.00000	0.00004	
			Modified Thiourea Polymer	68527-49-1	7.00000	0.00003	
			Olefin	64743-02-8	5.00000	0.00002	
			Propargyl Alcohol	107-19-7	5.00000	0.00002	
			Formaldehyde	50-00-0	1.00000	0.00000	

* 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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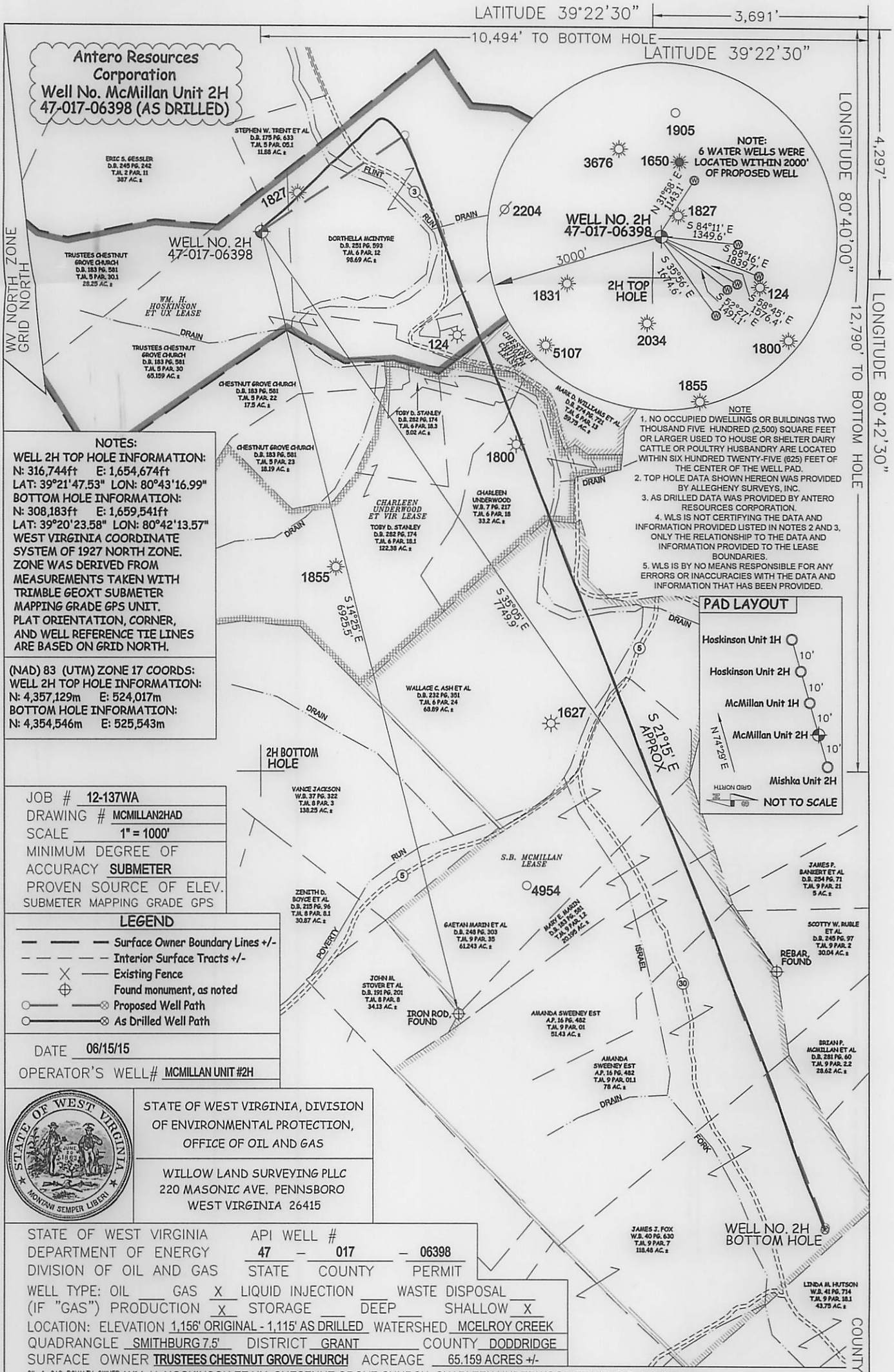

NOTES:

WELL 2H TOP HOLE INFORMATION:
N: 316,744ft E: 1,654,674ft
LAT: 39°21'47.53" LON: 80°43'16.99"
BOTTOM HOLE INFORMATION:
N: 308,183ft E: 1,659,541ft
LAT: 39°20'23.58" LON: 80°42'13.57"
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 2H TOP HOLE INFORMATION:
N: 4,357,129m E: 524,017m
BOTTOM HOLE INFORMATION:
N: 4,354,546m E: 525,543m

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 # 12-137WA
DRAWING # MCMILLAN2HAD
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

LEGEND

- Surface Owner Boundary Lines +/-
- Interior Surface Tracts +/-
- Existing Fence
- Found monument, as noted
- Proposed Well Path
- As Drilled Well Path

DATE 06/15/15
OPERATOR'S WELL# MCMILLAN UNIT #2H

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

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

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

API WELL # 47 – 017 – 06398
STATE COUNTY PERMIT

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
LOCATION: ELEVATION 1,156' ORIGINAL - 1,115' AS DRILLED WATERSHED MCELROY CREEK
QUADRANGLE SMITHBURG 7.5' DISTRICT GRANT COUNTY DODDRIDGE
SURFACE OWNER TRUSTEES CHESTNUT GROVE CHURCH ACREAGE 65.159 ACRES +/-
OIL & GAS ROYALTY OWNER WM. H. HOSKINSON ET UX; CHESTNUT GROVE CHURCH; CHARLEEN UNDERWOOD ET VIR; S.B. MCMILLAN
LEASE ACREAGE 228.5 ACRES±; 59 ACRES±; 127.11 ACRES±; 432 ACRES±
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 7,010' TVD 17,388' MD

WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER
ADDRESS 1615 WYNKOOP STREET ADDRESS CT CORPORATION SYSTEM
DENVER, CO 80202 5400 D BIG TYLER ROAD
CHARLESTON, WV 25313

COUNTY NAME PERMIT

FORM WW-6

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

API 47 - 017 - 06399 County Doddridge District Grant
Quad Smithburg 7.5' Pad Name Chestnut Field/Pool Name ----------
Farm name Trustees Chestnut Grove Church Well Number Hoskinson 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 4,357,132m Easting 524,026m
Landing Point of Curve Northing 4,356,871.13m Easting 523,901.67m
Bottom Hole Northing 4,354,015m Easting 525,052m

Elevation (ft) 1,115' 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 12/04/2013 Date drilling commenced 01/30/2014 Date drilling ceased 07/26/2014
Date completion activities began 08/02/2014 Date completion activities ceased 12/30/2014
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 67', 122' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 900'; 1,143' Void(s) encountered (Y/N) depths None
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths None
Is coal being mined in area (Y/N) No

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7/24/15

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API 47- 017 - 06399 Farm name Trustees Chestnut Grove Church Well number Hoskinson 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	133#; J-55	N/A	Yes
Surface	17 1/2"	13 3/8"	358'	New	48#; H-40	N/A	Yes*
Coal							
Intermediate 1	12 1/4"	9 5/8"	2,502'	New	36#; H-40	N/A	Yes
Intermediate 2							
Intermediate 3							
Production	8 3/4" & 8 1/2"	5 1/2"	17,779'	New	23#; P-110	N/A	Yes
Tubing		2 3/8"	7,240'		5.45#; N-80	N/A	
Packer type and depth set		N/A					

Comment Details *1st attempt at surface casing (383 sx) failed to bring cement to surface. Grout was performed (10 sx), 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	100 sx	15.2	1.18	38	0'	8 Hrs.
Surface	Class A	393 sx*	15.2	1.3	249	0'	8 Hrs.
Coal							
Intermediate 1	Class A	925 sx	15.6	1.18	784	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1,090 sx (Lead); 1,642 sx (Tail)	14.5 (Lead); 15.2 (Tail)	1.3 (Lead); 1.86 (Tail)	3,615	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 17,779' MD; 7,023' TVD (BHL); 7,024' TVD (Deepest Point Drilled) Loggers TD (ft) 17,759'

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

Plug back procedure N/A

Kick off depth (ft) 6,290'

**This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Hoskinson Unit 2H, API #47-017-06400). Please reference the wireline logs submitted with Form WR-35 for the Hoskinson Unit 2H. 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

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API 47- 017 - 06399 Farm name Trustees Chestnut Grove Church Well number Hoskinson 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 - 06399 Farm name Trustees Chestnut Grove Church Well number Hoskinson Unit 1H

PRODUCING FORMATION(S)	DEPTHS			
Marcellus	6,940' (top)	TVD	7,275' (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	Oil	NGL	Water	GAS MEASURED BY
	2,245 mcfpd	---------- bpd	---------- bpd	895 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 Road 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 Baker Hughes
Address 837 Philippi Pike City Clarksburg State WV Zip 26301

Please insert additional pages as applicable.

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Completed by Megan Darling Telephone 303-357-7230
Signature Megan C. Darling Title Permitting Agent Date 07/10/2015

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

API 47-017-06399 Farm Name Trustees Chestnut Grove Church Well Number Hoskinson Unit 1H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	2-Aug-14	17,518	17,687	60	Marcellus
2	23-Sep-14	17,318	17,487	60	Marcellus
3	24-Sep-14	17,119	17,287	60	Marcellus
4	24-Sep-14	16,919	17,087	60	Marcellus
5	6-Nov-14	16,719	16,887	60	Marcellus
6	6-Nov-14	16,519	16,687	60	Marcellus
7	7-Nov-14	16,319	16,487	60	Marcellus
8	7-Nov-14	16,119	16,287	60	Marcellus
9	7-Nov-14	15,919	16,087	60	Marcellus
10	7-Nov-14	15,719	15,887	60	Marcellus
11	8-Nov-14	15,519	15,687	60	Marcellus
12	8-Nov-14	15,319	15,487	60	Marcellus
13	8-Nov-14	15,119	15,287	60	Marcellus
14	9-Nov-14	14,919	15,088	60	Marcellus
15	9-Nov-14	14,719	14,888	60	Marcellus
16	9-Nov-14	14,519	14,688	60	Marcellus
17	9-Nov-14	14,319	14,488	60	Marcellus
18	10-Nov-14	14,119	14,288	60	Marcellus
19	10-Nov-14	13,919	14,088	60	Marcellus
20	10-Nov-14	13,719	13,888	60	Marcellus
21	11-Nov-14	13,519	13,688	60	Marcellus
22	11-Nov-14	13,319	13,488	60	Marcellus
23	11-Nov-14	13,119	13,288	60	Marcellus
24	12-Nov-14	12,919	13,088	60	Marcellus
25	12-Nov-14	12,719	12,888	60	Marcellus
26	12-Nov-14	12,519	12,688	60	Marcellus
27	12-Nov-14	12,319	12,488	60	Marcellus
28	13-Nov-14	12,119	12,288	60	Marcellus
29	13-Nov-14	11,919	12,088	60	Marcellus
30	13-Nov-14	11,719	11,888	60	Marcellus
31	14-Nov-14	11,519	11,688	60	Marcellus
32	14-Nov-14	11,319	11,488	60	Marcellus
33	14-Nov-14	11,119	11,288	60	Marcellus
34	14-Nov-14	10,920	11,088	60	Marcellus
35	15-Nov-14	10,720	10,888	60	Marcellus
36	15-Nov-14	10,520	10,688	60	Marcellus
37	15-Nov-14	10,320	10,488	60	Marcellus
38	15-Nov-14	10,120	10,288	60	Marcellus
39	16-Nov-14	9,920	10,088	60	Marcellus
40	16-Nov-14	9,720	9,888	60	Marcellus
41	16-Nov-14	9,520	9,688	60	Marcellus
42	17-Nov-14	9,320	9,488	60	Marcellus
43	17-Nov-14	9,120	9,288	60	Marcellus
44	17-Nov-14	8,920	9,088	60	Marcellus
45	17-Nov-14	8,720	8,889	60	Marcellus
46	18-Nov-14	8,520	8,689	60	Marcellus
47	18-Nov-14	8,320	8,489	60	Marcellus
48	18-Nov-14	8,120	8,289	60	Marcellus
49	18-Nov-14	7,920	8,089	60	Marcellus
50	18-Nov-14	7,720	7,889	60	Marcellus
51	18-Nov-14	7,520	7,689	60	Marcellus
52	20-Nov-14	7,320	7,489	60	Marcellus

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API 47-017-06399 Farm Name Trustees Chestnut Grove Church Well Number Hkoskins 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	23-Sep-14	69.0	7,835	N/A	5,080	150,976	6,944	N/A
2	23-Sep-14	79.0	7,804	5,943	4,603	220,803	7,444	N/A
3	24-Sep-14	74.0	7,612	5,805	5,365	236,033	7,199	N/A
4	24-Sep-14	78.0	7,733	5,946	5,869	234,883	6,787	N/A
5	6-Nov-14	63.0	6,816	6,073	4,298	240,479	6,559	N/A
6	6-Nov-14	55.0	6,895	6,009	4,492	247,732	6,756	N/A
7	7-Nov-14	65.0	6,865	5,884	5,664	242,963	6,565	N/A
8	7-Nov-14	60.0	6,811	5,746	4,729	242,940	6,733	N/A
9	7-Nov-14	64.0	6,830	5,813	4,840	247,503	6,620	N/A
10	7-Nov-14	61.0	7,053	5,626	5,279	224,366	6,285	N/A
11	8-Nov-14	65.0	6,960	5,554	4,858	246,748	6,582	N/A
12	8-Nov-14	63.0	6,965	5,633	5,254	247,113	6,570	N/A
13	8-Nov-14	65.0	6,730	5,483	4,745	247,118	6,545	N/A
14	9-Nov-14	66.0	6,987	5,672	5,391	244,525	6,878	N/A
15	9-Nov-14	62.0	6,855	5,560	5,312	244,283	6,597	N/A
16	9-Nov-14	64.0	6,774	5,798	5,063	248,012	6,588	N/A
17	9-Nov-14	64.0	7,240	5,588	4,661	239,474	6,455	N/A
18	10-Nov-14	64.0	6,834	5,848	4,886	245,884	6,502	N/A
19	10-Nov-14	63.0	6,827	5,403	4,741	248,260	6,533	N/A
20	10-Nov-14	64.0	6,698	5,640	4,884	252,531	6,557	N/A
21	11-Nov-14	63.0	6,855	5,345	4,794	245,943	7,003	N/A
22	11-Nov-14	64.0	6,866	5,674	4,982	248,665	7,083	N/A
23	11-Nov-14	63.0	6,768	1,616	4,955	250,351	6,985	N/A
24	12-Nov-14	67.0	6,831	5,601	5,073	234,895	6,761	N/A
25	12-Nov-14	61.0	6,699	5,186	5,109	244,712	6,708	N/A
26	12-Nov-14	63.0	6,649	5,641	4,899	245,735	6,790	N/A
27	12-Nov-14	67.7	6,844	6,017	4,947	240,108	6,692	N/A
28	13-Nov-14	64.9	6,745	5,754	4,979	237,760	6,655	N/A
29	13-Nov-14	80.0	6,445	5,622	4,790	248,103	6,793	N/A
30	13-Nov-14	62.0	6,568	5,688	5,007	247,596	6,783	N/A
31	14-Nov-14	63.9	6,553	5,677	5,342	240,753	6,497	N/A
32	14-Nov-14	72.0	6,635	5,660	5,143	235,401	6,621	N/A
33	14-Nov-14	65.0	6,524	5,668	5,366	239,912	6,553	N/A
34	14-Nov-14	63.0	6,706	5,619	5,068	242,244	6,400	N/A
35	15-Nov-14	64.4	6,578	5,480	5,803	237,758	6,362	N/A
36	15-Nov-14	63.0	6,656	5,865	5,377	242,694	6,518	N/A
37	15-Nov-14	64.0	6,542	5,892	5,424	246,905	6,419	N/A
38	15-Nov-14	70.7	6,615	5,855	4,921	245,635	6,295	N/A
39	16-Nov-14	65.0	6,786	5,623	4,877	244,171	6,232	N/A
40	16-Nov-14	66.0	6,518	5,812	5,334	249,066	6,349	N/A
41	16-Nov-14	65.0	6,663	6,113	5,268	247,211	6,307	N/A
42	17-Nov-14	65.5	6,540	5,967	4,990	245,568	6,281	N/A
43	17-Nov-14	64.7	6,471	5,745	5,202	243,021	6,242	N/A
44	17-Nov-14	63.1	6,619	5,906	4,754	244,664	6,182	N/A
45	17-Nov-14	66.3	6,551	5,877	4,781	258,690	6,707	N/A
46	18-Nov-14	65.1	6,645	5,614	4,976	244,270	6,157	N/A
47	18-Nov-14	65.7	6,731	5,836	4,826	243,707	6,445	N/A
48	18-Nov-14	64.0	6,564	5,874	5,522	243,113	6,057	N/A
49	18-Nov-14	65.0	6,286	5,574	4,941	244,605	6,012	N/A
50	18-Nov-14	65.4	6,473	6,057	5,017	245,839	6,118	N/A
51	18-Nov-14	61.0	6,311	6,148	5,503	246,640	5,987	N/A
52	20-Nov-14	61.8	6,299	7,359	5,161	235,199	5,935	N/A
	AVG=	**65.3**	**6,782**	**5,694**	**5,060**	**12,563,560**	**340,628**	TOTAL

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API 47-017-06399 Farm Name Trustees Chestnut Grove Church Well Number Hoskinson 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	67'	N/A	67'	N/A
Fresh Water	122'	N/A	122'	N/A
Shale/Siltstone	0	257	0	257
Shale w/ Coal	est. 257	347	est. 257	347
Shale and Siltstone	est. 347	377	est. 347	377
Shale/Sandstone/Siltstone	est. 377	1,457	est. 377	1,457
Shale and Siltstone w/trace coal	est. 1457	1,487	est. 1457	1,487
Shale/Sandstone/Siltstone	est. 1487	1,637	est. 1487	1,637
Sandstone	est. 1637	1,757	est. 1637	1,757
Sandstone w/trace coal	est. 1757	1,787	est. 1757	1,787
Shale/Sandstone/Siltstone	est. 1787	2,054	est. 1787	2,058
Big Lime	2,054	2,199	2,058	2,203
Big Injun	2,199	2,630	2,203	2,634
Gantz Sand	2,630	2,772	2,634	2,776
Fifty Foot Sandstone	2,772	2,844	2,776	2,848
Gordon	2,844	3,203	2,848	3,207
Fifth Sandstone	3,203	3,243	3,207	3,247
Bayard	3,243	3,578	3,247	3,582
Warren	3,578	3,958	3,582	3,962
Speechley	3,958	4,207	3,962	4,211
Baltown	4,207	4,711	4,211	4,715
Bradford	4,711	5,203	4,715	5,207
Benson	5,203	5,448	5,207	5,452
Alexander	5,448	5,651	5,452	5,655
Elk	5,651	6,211	5,655	6,215
Rhinestreet	6,211	6,516	6,215	6,547
Sycamore	6,516	6,711	6,547	6,845
Middlesex	6,711	6,851	6,845	7,076
Burkett	6,851	6,878	7,076	7,128
Tully	6,878	6,940	7,128	7,275
Marcellus	6,940	NA	7,275	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.

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Antero Resources

Hoskinson Unit 1H
Doddridge County WV
Northing: 14294307.35
Easting: 1719193.66
As Drilled

Scientific Drilling

To convert Magnetic North to Grid, Subtract 8.70°
To convert True North to Grid, Subtract 0.18°

Azimuths to Grid North
True North: -0.18°
Magnetic North: -8.70°

Magnetic Field
Strength: 52370.8snT
Dip Angle: 66.90°
Date: 1/30/2014
Model: IGRF2010

WELL DETAILS Hoskinson Unit 1H
Ground Level: 1115.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	14294307.35	1719193.66	39° 21' 47.610 N	80° 43' 16.622 W

FORMATION TOP DETAILS
No formation data is available

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

Genie Lightfoot
15:50, August 04 2014

Scientific Drilling
421 South Eagle Lane
Oklahoma City, OK 73128

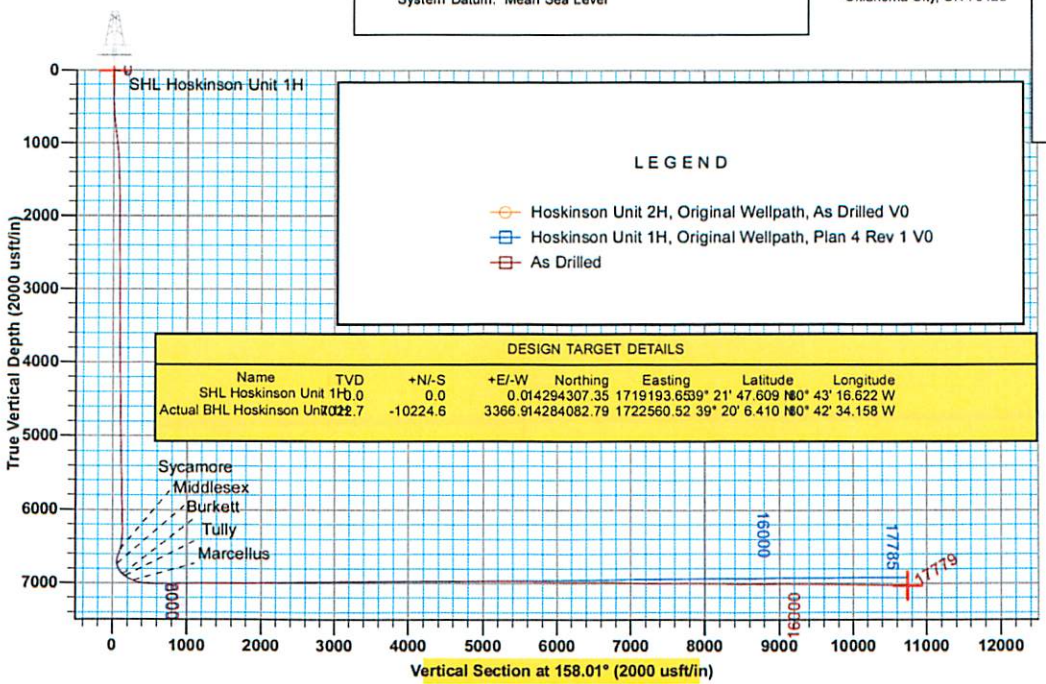
SITE DETAILS: Mishka/McMillan/Hoskinson Pad

Site Center: Mishka Unit 2H
Mishka / McMillan / Hoskinson

Site Centre Northing: 14294295.71
Easting: 1719154.86

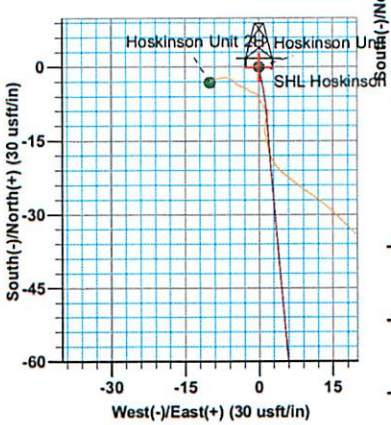
Positional Uncertainity: 2.0
Convergence: 0.18
Local North: Grid

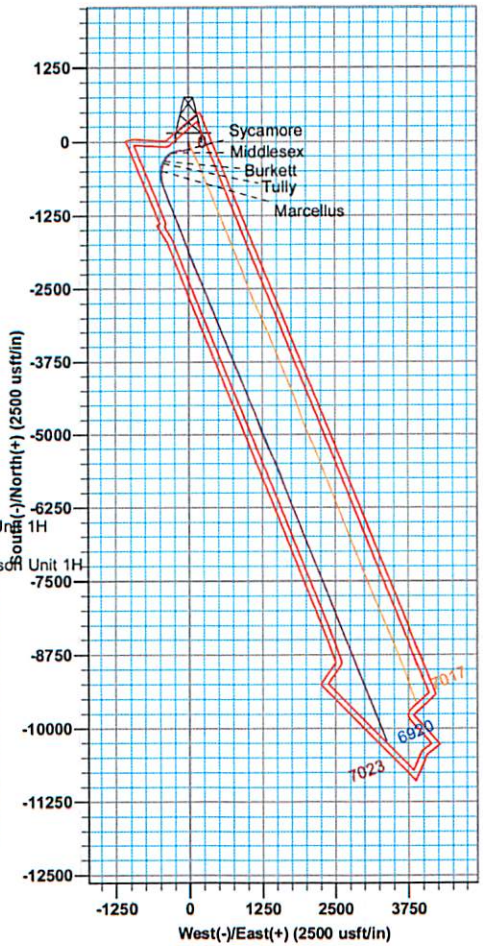
Frontier 22: 1115' GL + 25' RKB @ 1140.0usft



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL Hoskinson Unit 1H	0.0	0.0	0.0	14294307.35	1719193.66	39° 21' 47.609 N	80° 43' 16.622 W
Actual BHL Hoskinson Unit	7022.7	-10224.6	3366.91	14284082.79	1722560.52	39° 20' 6.410 N	80° 42' 34.158 W





Antero Resources

Doddridge County WV
Mishka/McMillan/Hoskinson Pad
Hoskinson Unit 1H
Original Wellpath

Design: As Drilled

EOW Completion Report

04 August, 2014

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Scientific Drilling

Company:	Antero Resources	**Local Co-ordinate Reference:**	Well Hoskinson Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Frontier 22: 1115' GL + 25' RKB @ 1140.0usft
Site:	Mishka/McMillan/Hoskinson Pad	**MD Reference:**	Frontier 22: 1115' GL + 25' RKB @ 1140.0usft
Well:	Hoskinson 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 Mishka/McMillan/Hoskinson Pad, Site Center: Mishka Unit 2H

Site Position:		**Northing:**	14,294,295.71 usft	**Latitude:**	39° 21' 47.496 N
From:	Map	**Easting:**	1,719,154.86 usft	**Longitude:**	80° 43' 17.117 W
Position Uncertainty:	2.0 usft	**Slot Radius:**	13-3/16"	**Grid Convergence:**	0.18 °

Well Hoskinson Unit 1H, Marcellus

Well Position	**+N/-S**	0.0 usft	**Northing:**	14,294,307.35 usft	**Latitude:**	39° 21' 47.610 N
	+E/-W	0.0 usft	**Easting:**	1,719,193.66 usft	**Longitude:**	80° 43' 16.622 W
Position Uncertainty		2.0 usft	**Wellhead Elevation:**	1,140.0 usft	**Ground Level:**	1,115.0 usft

Wellbore Original Wellpath

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/30/2014	-8.52	66.90	52,371

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** 8/4/2014

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
112.0	6,223.0	Survey #4 Def Gyro to KOP (Original Well	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper
6,258.0	17,779.0	Survey #5 MWD (Original Wellpath)	MWD SDI	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
112.0	0.21	156.62	112.0	-0.2	0.1	0.2	0.19
212.0	0.19	184.06	212.0	-0.5	0.1	0.5	0.10
312.0	0.21	172.95	312.0	-0.9	0.2	0.9	0.04
412.0	1.12	167.73	412.0	-2.0	0.4	2.0	0.91
512.0	2.36	169.98	511.9	-5.0	0.9	5.0	1.24
612.0	4.19	175.26	611.8	-10.7	1.6	10.5	1.85
712.0	6.48	175.55	711.3	-19.9	2.3	19.4	2.29
812.0	7.27	174.76	810.6	-31.9	3.4	30.8	0.80
912.0	7.48	174.98	909.8	-44.6	4.5	43.1	0.21
1,012.0	5.99	174.78	1,009.1	-56.3	5.6	54.3	1.49

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Company:	Antero Resources	**Local Co-ordinate Reference:**	Well Hoskinson Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Frontier 22: 1115' GL + 25' RKB @ 1140.0usft
Site:	Mishka/McMillan/Hoskinson Pad	**MD Reference:**	Frontier 22: 1115' GL + 25' RKB @ 1140.0usft
Well:	Hoskinson 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)
1,112.0	4.28	173.94	1,108.7	-65.2	6.4	62.9	1.71
1,212.0	3.35	174.46	1,208.5	-71.8	7.1	69.3	0.93
1,312.0	2.40	176.30	1,308.3	-76.8	7.5	74.1	0.95
1,412.0	1.74	173.53	1,408.3	-80.4	7.8	77.5	0.67
1,512.0	1.30	168.28	1,508.2	-83.1	8.2	80.1	0.46
1,612.0	1.15	168.13	1,608.2	-85.2	8.7	82.2	0.15
1,712.0	0.79	168.32	1,708.2	-86.8	9.0	83.9	0.36
1,812.0	0.64	154.24	1,808.2	-88.0	9.4	85.1	0.23
1,912.0	0.58	157.01	1,908.2	-89.0	9.8	86.2	0.07
2,012.0	0.49	164.05	2,008.2	-89.8	10.1	87.1	0.11
2,112.0	0.33	161.08	2,108.2	-90.5	10.4	87.8	0.16
2,212.0	0.32	169.08	2,208.2	-91.1	10.5	88.4	0.05
2,312.0	0.23	174.12	2,308.2	-91.5	10.6	88.8	0.09
2,412.0	0.20	183.78	2,408.2	-91.9	10.6	89.2	0.05
2,512.0	0.20	204.30	2,508.2	-92.2	10.5	89.5	0.07
2,612.0	0.24	220.83	2,608.2	-92.6	10.3	89.7	0.07
2,712.0	0.19	227.00	2,708.2	-92.8	10.0	89.8	0.06
2,812.0	0.27	227.02	2,808.2	-93.1	9.7	90.0	0.08
2,912.0	0.32	222.57	2,908.2	-93.5	9.4	90.2	0.05
3,012.0	0.29	219.24	3,008.2	-93.9	9.0	90.4	0.03
3,112.0	0.29	192.47	3,108.2	-94.3	8.8	90.8	0.13
3,212.0	0.30	176.78	3,208.2	-94.8	8.8	91.2	0.08
3,312.0	0.32	181.99	3,308.2	-95.4	8.8	91.7	0.03
3,412.0	0.44	159.61	3,408.2	-96.0	8.9	92.4	0.19
3,512.0	0.44	170.46	3,508.2	-96.7	9.1	93.1	0.08
3,612.0	0.47	161.12	3,608.2	-97.5	9.3	93.9	0.08
3,712.0	0.46	171.23	3,708.2	-98.3	9.5	94.7	0.08
3,812.0	0.47	161.83	3,808.2	-99.1	9.7	95.5	0.08
3,912.0	0.46	156.44	3,908.2	-99.8	10.0	96.3	0.04
4,012.0	0.47	164.95	4,008.1	-100.6	10.2	97.1	0.07
4,112.0	0.54	148.35	4,108.1	-101.4	10.6	98.0	0.16
4,212.0	0.65	145.41	4,208.1	-102.3	11.2	99.0	0.11
4,312.0	0.72	139.31	4,308.1	-103.2	11.9	100.2	0.10
4,412.0	0.71	145.92	4,408.1	-104.2	12.7	101.4	0.08
4,512.0	0.79	137.49	4,508.1	-105.2	13.5	102.6	0.14
4,612.0	0.76	136.72	4,608.1	-106.2	14.4	103.9	0.03
4,712.0	0.84	131.69	4,708.1	-107.2	15.4	105.1	0.11
4,812.0	0.94	139.75	4,808.1	-108.3	16.5	106.6	0.16
4,912.0	0.96	135.56	4,908.1	-109.5	17.6	108.1	0.07
5,012.0	1.00	136.51	5,008.1	-110.8	18.8	109.7	0.04
5,112.0	1.03	136.75	5,108.0	-112.0	20.0	111.4	0.03
5,212.0	0.98	134.53	5,208.0	-113.3	21.2	113.0	0.06
5,312.0	0.89	141.76	5,308.0	-114.5	22.3	114.5	0.15
5,412.0	0.92	144.04	5,408.0	-115.8	23.3	116.1	0.05

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Company:	Antero Resources	**Local Co-ordinate Reference:**	Well Hoskinson Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Frontier 22: 1115' GL + 25' RKB @ 1140.0usft
Site:	Mishka/McMillan/Hoskinson Pad	**MD Reference:**	Frontier 22: 1115' GL + 25' RKB @ 1140.0usft
Well:	Hoskinson 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)
5,512.0	0.93	141.17	5,508.0	-117.0	24.2	117.6	0.05
5,612.0	0.93	144.35	5,608.0	-118.3	25.2	119.2	0.05
5,712.0	1.16	142.91	5,708.0	-119.8	26.3	120.9	0.23
5,812.0	1.51	138.60	5,807.9	-121.6	27.8	123.2	0.36
5,912.0	1.70	141.86	5,907.9	-123.8	29.6	125.8	0.21
6,012.0	1.69	145.14	6,007.8	-126.1	31.3	128.7	0.10
6,112.0	1.57	152.52	6,107.8	-128.6	32.8	131.5	0.24
6,212.0	1.32	152.46	6,207.8	-130.8	34.0	134.0	0.25
6,223.0	1.25	156.95	6,218.8	-131.0	34.1	134.2	1.11
6,258.0	1.50	221.01	6,253.8	-131.7	33.9	134.8	4.21
6,290.0	6.08	251.27	6,285.7	-132.6	32.0	134.9	15.14
6,322.0	11.15	258.64	6,317.3	-133.7	27.4	134.3	16.18
6,354.0	15.31	260.07	6,348.5	-135.1	20.2	132.8	13.04
6,386.0	18.77	260.20	6,379.0	-136.7	11.0	130.8	10.81
6,418.0	22.03	261.21	6,409.0	-138.5	0.0	128.4	10.25
6,450.0	25.47	262.00	6,438.3	-140.3	-12.8	125.3	10.80
6,482.0	29.12	262.79	6,466.8	-142.3	-27.3	121.7	11.46
6,514.0	32.91	264.96	6,494.2	-144.0	-43.7	117.2	12.35
6,547.0	36.62	267.87	6,521.3	-145.2	-62.5	111.2	12.31
6,572.0	39.74	268.82	6,540.9	-145.6	-77.9	105.8	12.71
Sycamore							
6,579.0	40.62	269.06	6,546.3	-145.7	-82.5	104.2	12.71
6,611.0	44.39	268.49	6,569.9	-146.2	-104.1	96.6	11.84
6,643.0	47.11	266.92	6,592.2	-147.1	-127.0	88.8	9.20
6,675.0	51.09	267.01	6,613.1	-148.4	-151.1	81.0	12.44
6,706.0	53.04	265.12	6,632.2	-150.1	-175.5	73.4	7.92
6,738.0	52.62	260.31	6,651.5	-153.3	-200.8	66.9	12.05
6,770.0	51.06	254.51	6,671.3	-158.7	-225.3	62.8	15.06
6,802.0	49.55	248.85	6,691.8	-166.5	-248.7	61.2	14.40
6,834.0	48.84	244.12	6,712.7	-176.1	-270.9	61.9	11.40
6,866.0	49.15	238.80	6,733.7	-187.7	-292.1	64.6	12.58
6,870.0	49.21	238.19	6,736.3	-189.2	-294.7	65.1	11.67
Middlesex							
6,898.0	49.68	233.93	6,754.5	-201.1	-312.3	69.5	11.67
6,931.0	50.56	230.05	6,775.7	-216.7	-332.3	76.5	9.41
6,963.0	51.51	225.35	6,795.8	-233.4	-350.6	85.2	11.80
6,995.0	53.55	220.47	6,815.3	-252.0	-367.9	95.9	13.68
7,027.0	54.68	216.41	6,834.0	-272.4	-384.0	108.7	10.87
7,059.0	55.50	211.83	6,852.4	-294.1	-398.7	123.4	12.01
7,091.0	56.45	206.51	6,870.3	-317.2	-411.6	140.0	14.09
7,101.0	56.96	205.73	6,875.8	-324.7	-415.3	145.6	8.25
Burkett							
7,123.0	58.10	204.06	6,887.6	-341.6	-423.1	158.3	8.25
7,153.0	59.41	201.56	6,903.1	-365.2	-433.1	176.5	8.35
Tully							

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Company:	Antero Resources	**Local Co-ordinate Reference:**	Well Hoskinson Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Frontier 22: 1115' GL + 25' RKB @ 1140.0usft
Site:	Mishka/McMillan/Hoskinson Pad	**MD Reference:**	Frontier 22: 1115' GL + 25' RKB @ 1140.0usft
Well:	Hoskinson 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)
7,155.0	59.50	201.40	6,904.2	-366.8	-433.7	177.7	8.35
7,187.0	61.98	197.70	6,919.8	-393.1	-443.0	198.6	12.72
7,220.0	64.56	193.57	6,934.7	-421.5	-451.0	222.0	13.64
7,251.0	66.62	190.36	6,947.5	-449.1	-456.8	245.4	11.53
7,283.0	69.79	187.76	6,959.3	-478.4	-461.5	270.8	12.45
7,300.0	71.76	186.34	6,964.9	-494.4	-463.4	284.9	14.02
Marcellus							
7,315.0	73.51	185.12	6,969.4	-508.6	-464.9	297.5	14.02
7,347.0	75.03	181.62	6,978.1	-539.3	-466.7	325.4	11.55
7,379.0	76.84	178.55	6,985.9	-570.4	-466.7	354.1	10.89
7,412.0	80.58	177.19	6,992.3	-602.7	-465.5	384.6	12.03
7,444.0	83.69	173.36	6,996.7	-634.3	-462.9	414.8	15.33
7,476.0	85.10	170.18	6,999.8	-665.8	-458.3	445.7	10.83
7,508.0	85.23	167.78	7,002.5	-697.1	-452.3	477.0	7.48
7,522.0	86.14	166.65	7,003.6	-710.7	-449.2	490.8	10.35
7,576.0	91.14	163.59	7,004.9	-762.9	-435.3	544.4	10.85
7,672.0	89.97	162.10	7,003.9	-854.6	-407.0	640.0	1.97
7,768.0	90.10	158.51	7,003.9	-945.0	-374.6	735.9	3.74
7,865.0	91.07	159.59	7,002.9	-1,035.5	-340.0	832.9	1.50
7,961.0	90.54	155.60	7,001.5	-1,124.3	-303.4	928.9	4.19
8,057.0	89.83	156.56	7,001.2	-1,212.0	-264.5	1,024.8	1.24
8,154.0	90.50	156.53	7,001.0	-1,301.0	-225.9	1,121.8	0.69
8,250.0	89.73	157.84	7,000.8	-1,389.5	-188.6	1,217.8	1.58
8,346.0	90.00	157.49	7,001.0	-1,478.3	-152.1	1,313.8	0.46
8,443.0	89.13	156.25	7,001.7	-1,567.5	-114.0	1,410.7	1.56
8,539.0	88.76	157.83	7,003.5	-1,655.9	-76.6	1,506.7	1.69
8,635.0	91.38	161.78	7,003.4	-1,745.9	-43.5	1,602.6	4.94
8,732.0	91.81	161.67	7,000.7	-1,838.0	-13.1	1,699.4	0.46
8,828.0	90.34	158.92	6,998.9	-1,928.4	19.3	1,795.3	3.25
8,924.0	91.58	158.03	6,997.3	-2,017.6	54.5	1,891.3	1.59
9,021.0	90.97	155.00	6,995.1	-2,106.6	93.2	1,988.2	3.19
9,117.0	90.94	155.55	6,993.5	-2,193.8	133.3	2,084.1	0.57
9,213.0	92.08	157.50	6,991.0	-2,281.8	171.5	2,180.0	2.35
9,310.0	90.34	156.06	6,988.9	-2,370.9	209.8	2,277.0	2.33
9,406.0	90.84	159.87	6,987.9	-2,459.9	245.8	2,372.9	4.00
9,502.0	91.14	159.32	6,986.3	-2,549.8	279.2	2,468.9	0.65
9,598.0	90.57	157.13	6,984.9	-2,639.0	314.8	2,564.9	2.36
9,695.0	91.10	159.79	6,983.4	-2,729.2	350.4	2,661.8	2.80
9,792.0	90.74	158.67	6,981.9	-2,819.8	384.8	2,758.8	1.21
9,887.0	90.24	157.14	6,981.1	-2,907.9	420.6	2,853.8	1.69
9,983.0	91.38	157.83	6,979.7	-2,996.5	457.3	2,949.8	1.39
10,079.0	91.51	158.06	6,977.3	-3,085.5	491.4	3,045.7	0.28
10,175.0	91.64	157.72	6,974.7	-3,174.4	529.5	3,141.7	0.38
10,272.0	89.33	157.62	6,973.8	-3,264.1	566.3	3,238.7	2.38
10,362.0	90.34	158.87	6,974.1	-3,347.7	599.7	3,328.7	1.79

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Site:	Mishka/McMillan/Hoskinson Pad	**MD Reference:**	Frontier 22: 1115' GL + 25' RKB @ 1140.0usft
Well:	Hoskinson 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)
10,453.0	91.11	158.26	6,972.9	-3,432.4	632.9	3,419.7	1.08
10,543.0	89.97	158.68	6,972.1	-3,516.1	666.0	3,509.7	1.35
10,634.0	89.46	157.85	6,972.5	-3,600.6	699.7	3,600.7	1.07
10,725.0	89.97	158.35	6,973.0	-3,685.1	733.6	3,691.7	0.78
10,815.0	90.24	158.23	6,972.8	-3,768.7	766.9	3,781.7	0.33
10,906.0	90.48	158.29	6,972.3	-3,853.2	800.6	3,872.7	0.27
10,996.0	90.40	157.11	6,971.6	-3,936.5	834.8	3,962.7	1.31
11,087.0	90.34	156.27	6,971.0	-4,020.0	870.8	4,053.6	0.93
11,178.0	90.74	158.50	6,970.1	-4,104.0	905.7	4,144.6	2.49
11,268.0	90.67	158.05	6,969.0	-4,187.6	939.1	4,234.6	0.51
11,359.0	91.31	157.71	6,967.4	-4,271.9	973.3	4,325.6	0.80
11,455.0	90.00	157.06	6,966.3	-4,360.5	1,010.2	4,421.6	1.52
11,551.0	89.43	156.04	6,966.8	-4,448.6	1,048.4	4,517.5	1.22
11,648.0	89.33	156.17	6,967.9	-4,537.3	1,087.7	4,614.5	0.17
11,744.0	90.34	160.78	6,968.1	-4,626.6	1,122.9	4,710.5	4.92
11,841.0	89.90	161.66	6,967.9	-4,718.4	1,154.2	4,807.3	1.01
11,937.0	90.47	162.79	6,967.6	-4,809.8	1,183.5	4,903.0	1.32
12,033.0	89.26	159.50	6,967.9	-4,900.7	1,214.5	4,998.9	3.65
12,130.0	89.33	157.30	6,969.1	-4,990.8	1,250.2	5,095.9	2.27
12,226.0	90.20	160.06	6,969.4	-5,080.2	1,285.1	5,191.9	3.01
12,322.0	89.77	155.85	6,969.5	-5,169.2	1,321.1	5,287.8	4.41
12,419.0	89.56	153.39	6,970.0	-5,256.8	1,362.7	5,384.6	2.55
12,515.0	89.16	151.29	6,971.1	-5,341.9	1,407.2	5,480.2	2.23
12,611.0	89.06	153.84	6,972.6	-5,427.0	1,451.5	5,575.7	2.66
12,708.0	89.77	156.37	6,973.6	-5,515.0	1,492.3	5,672.6	2.71
12,804.0	88.49	158.72	6,975.1	-5,603.7	1,529.0	5,768.6	2.79
12,900.0	88.89	159.20	6,977.2	-5,693.3	1,563.4	5,864.5	0.65
12,997.0	89.60	161.73	6,978.5	-5,784.7	1,595.8	5,961.4	2.71
13,093.0	89.20	160.50	6,979.5	-5,875.5	1,626.9	6,057.3	1.35
13,189.0	89.66	161.40	6,980.5	-5,966.3	1,658.2	6,153.1	1.05
13,286.0	88.42	156.59	6,982.1	-6,056.8	1,693.0	6,250.1	5.12
13,382.0	88.93	157.28	6,984.3	-6,145.1	1,730.6	6,346.0	0.89
13,478.0	89.33	158.22	6,985.8	-6,233.9	1,766.9	6,442.0	1.06
13,574.0	89.23	157.02	6,987.0	-6,322.7	1,803.5	6,538.0	1.25
13,670.0	90.40	158.47	6,987.3	-6,411.5	1,839.8	6,634.0	1.94
13,766.0	89.60	156.42	6,987.3	-6,500.2	1,876.7	6,730.0	2.29
13,863.0	87.95	159.68	6,989.4	-6,590.1	1,912.9	6,826.9	3.77
13,959.0	88.62	160.16	6,992.3	-6,680.2	1,945.9	6,922.9	0.86
14,056.0	87.86	157.07	6,995.2	-6,770.5	1,981.2	7,019.8	3.28
14,152.0	87.78	156.40	6,998.9	-6,858.6	2,019.1	7,115.6	0.70
14,248.0	89.80	157.23	7,000.9	-6,946.8	2,056.9	7,211.6	2.27
14,344.0	88.89	157.51	7,002.0	-7,035.4	2,093.8	7,307.6	0.99
14,440.0	90.30	160.19	7,002.7	-7,125.0	2,128.4	7,403.6	3.15
14,537.0	89.70	157.44	7,002.7	-7,215.4	2,163.5	7,500.6	2.90

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Site:	Mishka/McMillan/Hoskinson Pad	**MD Reference:**	Frontier 22: 1115' GL + 25' RKB @ 1140.0usft
Well:	Hoskinson Unit 1H	**North Reference:**	Grid
Wellbore:	Original Wellpath	**Survey Calculation Method:**	Minimum Curvature
Design:	As Drilled	**Database:**	Oklahoma District

Survey

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14,633.0	89.36	154.69	7,003.5	-7,303.1	2,202.4	7,596.5	2.89
14,729.0	89.53	157.17	7,004.4	-7,390.8	2,241.6	7,692.4	2.59
14,825.0	89.66	158.88	7,005.1	-7,479.8	2,277.5	7,788.4	1.79
14,921.0	90.30	157.93	7,005.1	-7,569.1	2,312.8	7,884.4	1.19
15,017.0	88.79	156.37	7,005.9	-7,657.5	2,350.1	7,980.4	2.26
15,114.0	89.36	158.48	7,007.4	-7,747.1	2,387.3	8,077.4	2.25
15,210.0	90.13	159.98	7,007.9	-7,836.8	2,421.4	8,173.4	1.76
15,306.0	90.87	159.82	7,007.0	-7,927.0	2,454.4	8,269.3	0.79
15,401.0	90.00	158.19	7,006.3	-8,015.7	2,488.4	8,364.3	1.94
15,498.0	88.59	159.09	7,007.5	-8,106.0	2,523.7	8,461.3	1.72
15,594.0	88.62	158.74	7,009.8	-8,195.5	2,558.3	8,557.2	0.37
15,691.0	90.30	158.24	7,010.8	-8,285.8	2,593.8	8,654.2	1.81
15,787.0	90.10	157.04	7,010.4	-8,374.5	2,630.4	8,750.2	1.27
15,883.0	90.84	158.91	7,009.6	-8,463.5	2,666.3	8,846.2	2.09
15,979.0	89.16	156.79	7,009.6	-8,552.4	2,702.5	8,942.2	2.82
16,075.0	89.50	155.75	7,010.8	-8,640.3	2,741.2	9,038.1	1.14
16,171.0	88.72	157.05	7,012.3	-8,728.3	2,779.6	9,134.1	1.58
16,267.0	90.17	160.18	7,013.2	-8,817.6	2,814.6	9,230.1	3.59
16,363.0	90.40	159.83	7,012.7	-8,907.9	2,847.4	9,326.0	0.44
16,460.0	88.69	159.10	7,013.5	-8,998.7	2,881.4	9,423.0	1.92
16,556.0	89.36	158.62	7,015.1	-9,088.2	2,916.1	9,518.9	0.86
16,652.0	90.23	158.45	7,015.5	-9,177.6	2,951.2	9,614.9	0.92
16,748.0	89.80	157.30	7,015.4	-9,266.5	2,987.3	9,710.9	1.28
16,844.0	89.30	156.86	7,016.2	-9,354.9	3,024.7	9,806.9	0.69
16,941.0	89.09	156.11	7,017.5	-9,443.8	3,063.4	9,903.9	0.80
17,037.0	89.46	159.18	7,018.8	-9,532.6	3,099.9	9,999.9	3.22
17,134.0	90.13	158.84	7,019.1	-9,623.2	3,134.7	10,096.8	0.77
17,229.0	90.40	158.44	7,018.7	-9,711.6	3,169.3	10,191.8	0.51
17,326.0	89.16	158.37	7,019.0	-9,801.8	3,205.0	10,288.8	1.28
17,422.0	88.53	157.14	7,021.0	-9,890.7	3,241.3	10,384.8	1.44
17,518.0	88.56	156.39	7,023.4	-9,978.8	3,279.2	10,480.8	0.78
17,615.0	90.57	161.01	7,024.1	-10,069.2	3,314.4	10,577.7	5.19
17,711.0	90.44	161.61	7,023.3	-10,160.1	3,345.2	10,673.5	0.64
17,747.0	90.50	161.41	7,023.0	-10,194.3	3,356.6	10,709.5	0.58
17,779.0	90.60	161.09	7,022.7	-10,224.6	3,366.9	10,741.4	1.05

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Company:	Antero Resources	**Local Co-ordinate Reference:**	Well Hoskinson Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Frontier 22: 1115' GL + 25' RKB @ 1140.0usft
Site:	Mishka/McMillan/Hoskinson Pad	**MD Reference:**	Frontier 22: 1115' GL + 25' RKB @ 1140.0usft
Well:	Hoskinson Unit 1H	**North Reference:**	Grid
Wellbore:	Original Wellpath	**Survey Calculation Method:**	Minimum Curvature
Design:	As Drilled	**Database:**	Oklahoma District

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
6,572.0	6,540.9	-145.6	-77.9	Sycamore
6,870.0	6,736.3	-189.2	-294.7	Middlesex
7,101.0	6,875.8	-324.7	-415.3	Burkett
7,153.0	6,903.1	-365.2	-433.1	Tully
7,300.0	6,964.9	-494.4	-463.4	Marcellus

Checked By: _____ Approved By: _____ Date: _____

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	9/23/2014
Job End Date:	11/20/2014
State:	West Virginia
County:	Doddridge
API Number:	47-017-06399-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Hoskinson Unit 1H
Longitude:	-80.72110600
Latitude:	39.36331100
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	7,024
Total Base Water Volume (gal):	15,004,710
Total Base Non Water Volume:	0

FracFocus Chemical Disclosure Registry

GROUNDWATER PROTECTION COUNCIL

Interstate Oil & Gas Compact Commission

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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	Operator	Carrier					
			Water	7732-18-5	100.00000	90.43641	
Sand, White, 40/70	Baker Hughes	Proppant					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		5.10947	
Sand, White, 20/40	Baker Hughes	Proppant					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		3.35452	
Sand, White, 100 mesh	Baker Hughes	Proppant					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.61421	
HCl, 10.1 - 15%	Baker Hughes	Acidizing					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.19245	SmartCare Product
GW-3LDF	Baker Hughes	Gelling Agent					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.09462	SmartCare Product
FRW-18	Baker Hughes	Friction Reducer					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.05513	SmartCare Product
Scaletrol 720	Baker Hughes	Scale Inhibitor					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.01434	SmartCare Product

Enzyme G-NE	Baker Hughes	Breaker					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.01378	SmartCare Product
Alpha 1427	Baker Hughes	Biocide					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.01274	SmartCare Product
Ferrotrol 300L	Baker Hughes	Iron Control					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.00132	SmartCare Product
CI-14	Baker Hughes	Corrosion Inhibitor					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.00030	SmartCare Product
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.							
Ingredients in Additive (s) (MSDS and non-MSDS)	Baker Hughes	See Trade Name(s) List					
			Crystalline Silica (Quartz)	14808-60-7	100.00000	9.06810	
			Water	7732-18-5	95.00000	0.21396	
			Mineral Oil	8042-47-5	70.00000	0.06616	
			Guar Gum	9000-30-0	60.00000	0.05671	
			Hydrochloric Acid	7647-01-0	15.00000	0.02884	
			Petroleum Distillates	64742-47-8	30.00000	0.02836	
			Paraffinic Petroleum Distillate	64742-55-8	30.00000	0.02836	
			Poly (acrylamide-co-acrylic acid) partial sodium salt	62649-23-4	30.00000	0.01652	
			Hydrotreated Light Distillate	64742-47-8	30.00000	0.01652	
			Ethylene Glycol	107-21-1	45.00000	0.00645	
			Crystalline Silica: Quartz	14808-60-7	5.00000	0.00473	
			Isotridecanol, ethoxylated	9043-30-5	5.00000	0.00473	
			1-butoxy-2-propanol	5131-66-8	5.00000	0.00473	
			Glutaraldehyde	111-30-8	30.00000	0.00382	
			Sodium Chloride	7647-14-5	5.00000	0.00290	
			2-Propenoic, Polymer with Sodium Phosphinate, Sodium Salt	71050-62-9	20.00000	0.00286	
			Ammonium Chloride	12125-02-9	3.00000	0.00165	
			Didecyl Dimethyl Ammonium Chloride	7173-51-5	10.00000	0.00127	
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00110	
			Oleamide DEA	93-83-4	2.00000	0.00110	
			Citric Acid	77-92-9	60.00000	0.00079	
			Calcium Chloride	10043-52-4	5.00000	0.00072	
			Hemicellulase Enzyme Concentrate	9025-56-3	5.00000	0.00069	
			Quaternary Ammonium Compound	68424-85-1	5.00000	0.00064	
			Ethanol	64-17-5	5.00000	0.00064	
			Methanol	67-56-1	100.00000	0.00030	
			Sorbitan Monooleate	1338-43-8	0.50000	0.00028	
			Polyoxythylene Sorbitan Monooleate	9005-65-6	0.50000	0.00028	

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			Potassium Chloride	7447-40-7	1.00000	0.00014	
			2-butoxy-1-propanol	15821-83-7	0.10000	0.00009	
			Polyoxyalkylenes	68951-67-7	30.00000	0.00009	
			Fatty Acids	61790-12-3	10.00000	0.00003	
			Modified Thiourea Polymer	68527-49-1	7.00000	0.00002	
			Propargyl Alcohol	107-19-7	5.00000	0.00002	
			Olefin	64743-02-8	5.00000	0.00002	
			Formaldehyde	50-00-0	1.00000	0.00000	

* 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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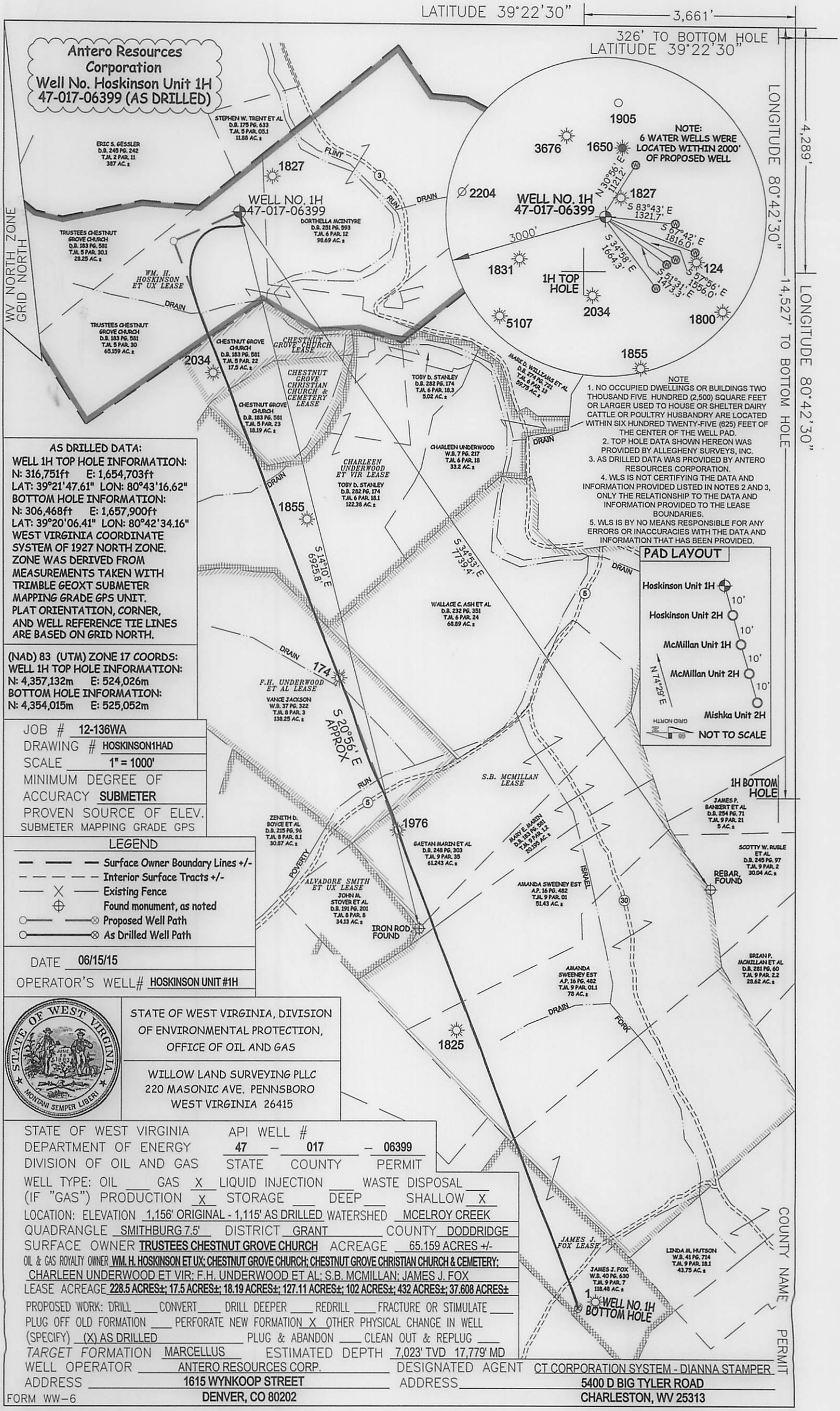
LATITUDE 39°22'30"
3,661'
326' TO BOTTOM HOLE
LATITUDE 39°22'30"
LONGITUDE 80°42'30"
4,289'
14,527' TO BOTTOM HOLE
LONGITUDE 80°42'30"
Antero Resources Corporation
Well No. Hoskinson Unit 1H
47-017-06399 (AS DRILLED)
WV NORTH ZONE GRID NORTH
NOTE: 6 WATER WELLS WERE LOCATED WITHIN 2000' OF PROPOSED WELL
WELL NO. 1H 47-017-06399
1H TOP HOLE
1H BOTTOM HOLE
3000'
N 30°56' E 1121.2'
S 83°43' E 1321.7'
S 67°42' E 1816.0'
S 57°56' E 1556.0'
S 51°31' E 1473.3'
S 34°58' E 1664.3'
S 14°10' E 6925.8'
S 34°53' E 7139.4'
S 20°56' E APPROX
N 74°29' E
1905
3676
1650
1827
2204
1831
124
2034
1800
5107
1855
174
1976
1825
2034
STEPHEN W. TRENT ET AL D.B. 175 PG. 633 T.M. 5 PAR. 05.1 11.88 AC. ±
ERIC S. GESSLER D.B. 245 PG. 242 T.M. 2 PAR. 11 387 AC. ±
TRUSTEES CHESTNUT GROVE CHURCH D.B. 183 PG. 581 T.M. 5 PAR. 30.1 28.25 AC. ±
WM. H. HOSKINSON ET UX LEASE
TRUSTEES CHESTNUT GROVE CHURCH D.B. 183 PG. 581 T.M. 5 PAR. 30 65.159 AC. ±
DORTHELLA MCINTYRE D.B. 251 PG. 593 T.M. 6 PAR. 12 98.69 AC. ±
CHESTNUT GROVE CHURCH D.B. 183 PG. 581 T.M. 5 PAR. 22 17.5 AC. ±
CHESTNUT GROVE CHURCH LEASE
CHESTNUT GROVE CHRISTIAN CHURCH & CEMETERY LEASE
CHESTNUT GROVE CHURCH D.B. 183 PG. 581 T.M. 5 PAR. 23 18.19 AC. ±
TOBY D. STANLEY D.B. 282 PG. 174 T.M. 6 PAR. 18.3 5.02 AC. ±
MARK D. WILLIAMS ET AL D.B. 274 PG. 721 T.M. 6 PAR. 13 59.73 AC. ±
CHARLEEN UNDERWOOD ET VIR LEASE
TOBY D. STANLEY D.B. 282 PG. 174 T.M. 6 PAR. 18.1 122.38 AC. ±
CHARLEEN UNDERWOOD W.B. 7 PG. 217 T.M. 6 PAR. 18 33.2 AC. ±
WALLACE C. ASH ET AL D.B. 232 PG. 351 T.M. 6 PAR. 24 68.89 AC. ±
F.H. UNDERWOOD ET AL LEASE
VANCE JACKSON W.B. 37 PG. 322 T.M. 8 PAR. 3 138.25 AC. ±
S.B. MCMILLAN LEASE
ZENITH D. BOYCE ET AL D.B. 215 PG. 96 T.M. 8 PAR. 8.1 30.87 AC. ±
GAETAN MARIN ET AL D.B. 248 PG. 303 T.M. 9 PAR. 35 61.243 AC. ±
MARY E. MARIN D.B. 183 PG. 581 T.M. 9 PAR. 12 20.195 AC. ±
ALVADORE SMITH ET UX LEASE
JOHN M. STOVER ET AL D.B. 191 PG. 201 T.M. 8 PAR. 8 34.13 AC. ±
AMANDA SWEENEY EST A.P. 16 PG. 482 T.M. 9 PAR. 01 51.43 AC. ±
AMANDA SWEENEY EST A.P. 16 PG. 482 T.M. 9 PAR. 01.1 78 AC. ±
JAMES P. BANKERT ET AL D.B. 254 PG. 71 T.M. 9 PAR. 21 5 AC. ±
SCOTTY W. RUBLE ET AL D.B. 245 PG. 97 T.M. 9 PAR. 2 30.04 AC. ±
REBAR FOUND
IRON ROD FOUND
BRIAN P. MCMILLAN ET AL D.B. 281 PG. 60 T.M. 9 PAR. 2.2 28.62 AC. ±
JAMES J. FOX LEASE
JAMES J. FOX W.B. 40 PG. 630 T.M. 9 PAR. 7 118.48 AC. ±
LINDA M. HUTSON W.B. 41 PG. 714 T.M. 9 PAR. 18.1 43.75 AC. ±
WELL NO. 1H BOTTOM HOLE
POVERTY
RUN
DRAIN
FLINT
ISRAEL
FORK
COUNTY NAME
PERMIT
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.
PAD LAYOUT
Hoskinson Unit 1H
Hoskinson Unit 2H
McMillan Unit 1H
McMillan Unit 2H
Mishka Unit 2H
10'
GRID NORTH
NOT TO SCALE
AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
N: 316,751ft E: 1,654,703ft
LAT: 39°21'47.61" LON: 80°43'16.62"
BOTTOM HOLE INFORMATION:
N: 306,468ft E: 1,657,900ft
LAT: 39°20'06.41" LON: 80°42'34.16"
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: 4,357,132m E: 524,026m
BOTTOM HOLE INFORMATION:
N: 4,354,015m E: 525,052m
JOB # 12-136WA
DRAWING # HOSKINSON1HAD
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS
LEGEND
Surface Owner Boundary Lines +/-
Interior Surface Tracts +/-
Existing Fence
Found monument, as noted
Proposed Well Path
As Drilled Well Path
DATE 06/15/15
OPERATOR'S WELL# HOSKINSON UNIT #1H
STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WILLOW LAND SURVEYING PLLC
220 MASONIC AVE. PENNSBORO
WEST VIRGINIA 26415
STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY
DIVISION OF OIL AND GAS
API WELL # 47 – 017 – 06399
STATE COUNTY PERMIT
WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
LOCATION: ELEVATION 1,156' ORIGINAL - 1,115' AS DRILLED WATERSHED MCELROY CREEK
QUADRANGLE SMITHBURG 7.5' DISTRICT GRANT COUNTY DODDRIDGE
SURFACE OWNER TRUSTEES CHESTNUT GROVE CHURCH ACREAGE 65.159 ACRES +/-
OIL & GAS ROYALTY OWNER WM. H. HOSKINSON ET UX; CHESTNUT GROVE CHURCH; CHESTNUT GROVE CHRISTIAN CHURCH & CEMETERY; CHARLEEN UNDERWOOD ET VIR; F.H. UNDERWOOD ET AL; S.B. MCMILLAN; JAMES J. FOX
LEASE ACREAGE 228.5 ACRES±; 17.5 ACRES±; 18.19 ACRES±; 127.11 ACRES±; 102 ACRES±; 432 ACRES±; 37.608 ACRES±
PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___
PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL
(SPECIFY) (X) AS DRILLED PLUG & ABANDON ___ CLEAN OUT & REPLUG ___
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7,023' TVD 17,779' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT CT CORPORATION SYSTEM - DIANNA STAMPER
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
DENVER, CO 80202 CHARLESTON, WV 25313
FORM WW-6

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

API 47 - 017 - 06574 County Doddridge District West Union
Quad West Union 7.5' Pad Name WEU51 Field/Pool Name
Farm name Mary H. Holland Estate/Jane M. Hardin Well Number 515642
Operator (as registered with the OOG) EQT Production Company
Address 625 Liberty Ave. EQT Plaza, Suite 1700 City Pittsburgh State PA Zip 15222

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,345,197 Easting 520,428
Landing Point of Curve Northing 4,345,460 Easting 521,316
Bottom Hole Northing 4,344,501 Easting 521,783

Elevation (ft) 1208 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)
Water base Mud 12.5 ppg barium sulfate, sodium chloride, xanthan gum, polyanionic cellulose, modified starch, sodium hydroxide, phosphonates and alkyl phophates, glutaraldehyde solution, calcium hydroxide,
partially hydrolyzed polyacrylamide/polyacrylate, potassium chloride, sodium carbonate, ground walnut shells, alcohol and modified fatty acid, ferrochrome lignosulfonate, calcium carbonate, fibrous cellulose

Date permit issued 10/20/2014 Date drilling commenced 10/22/2014 Date drilling ceased 12/22/2014
Date completion activities began 4/18/2015 Date completion activities ceased 4/23/2015
Verbal plugging (Y/N) N 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 334 Open mine(s) (Y/N) depths N
Salt water depth(s) ft Void(s) encountered (Y/N) depths N
Coal depth(s) ft 101,170,294,314,486,555 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:
JK 7/24/15

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API 47- 017 - 06574 Farm name Mary H. Holland Estate/Jane M. Hardin Well number 515642

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"	26"	40'	New	82.6#/ft	None	Y
Surface	17-1/2"	13-3/8"	1,186'	New	54.5#/ft	902' & 419'	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	5,316'	New	40#/ft	None	Y
Intermediate 2							
Intermediate 3							
Production	8-1/2"	5-1/2"	12,240'	New	20#/ft	None	N
Tubing							
Packer type and depth set							

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	49	15.6	1.18	58	0	8
Surface	Class A	925	15.6	1.19	1100	0	8
Coal							
Intermediate 1	Class A	375/340/1140	14.2/15.6/15.6	1.28/1.18/1.18	2226	0	8
Intermediate 2							
Intermediate 3							
Production	Class A/Class H	625/485	14.2/15.2	1.26/1.97	1743	5,400'	72
Tubing							

Drillers TD (ft) 12,250' MD Loggers TD (ft) N/A
Deepest formation penetrated Marcellus Plug back to (ft) N/A
Plug back procedure N/A

Kick off depth (ft) 5,492' MD

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-N/A
Surface- Ran 10 centralizers, one every other jnt. up 211'
Intermediate- RAN AT LEAST EVERY 500' FEET JOINTS: ,2, 13, 24, 35, 46, 56, 67, 78, 89, 100, 111, 122, 133
Production- Composite bodied centralizers on every joint from TD up to 4,971'

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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

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API 47- 017 - 06574 Farm name Mary H. Holland Estate/Jane M. Hardin Well number 515642

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
					Please See Attached

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

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Please insert additional pages as applicable.

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API 47- 017 - 06574 Farm name Mary H. Holland Estate/Jane M. Hardin Well number 515642

PRODUCING FORMATION(S)	DEPTHS			
Marcellus	6,685	TVD	8,706	MD

Please insert additional pages as applicable.

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

SHUT-IN PRESSURE Surface 1,703 psi Bottom Hole N/A psi DURATION OF TEST 89.5 hrs

OPEN FLOW	Gas	Oil	NGL	Water	GAS MEASURED BY
	7,690 mcfpd	0 bpd	13.4 bpd	816 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 insert additional pages as applicable.

Drilling Contractor Savanna Drilling
Address 2204 Timberloch Place Suite 230 City Woodlands State TX Zip 77380

Logging Company GyroData
Address 601 Mayer St City Bridgeville State PA Zip 15017

Cementing Company Nabors
Address 380 Southpointe Boulevard Suite 210 City Canonsburg State PA Zip 15317

Stimulating Company FTSI
Address 301 E 18th Street City Cisco State TX Zip 76437

Please insert additional pages as applicable.

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Completed by Jim Helmick Telephone 412-395-5518
Signature _____ Title VP Completions Date 7/6/2015

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

API 47 - 017 - 06574

Formation Name	Final Top MD (ftGL) (ft)	Final Top TVD (ft)	Final Btm MD (ftGL) (ft)	Final Btm TVD (ft)
Fresh Water Zone	0	0	334	334
SAND/SHALE	0	0	101	101
Washington Coal	101	101	104	104
SAND/SHALE	104	104	170	170
Waynesburg A Coal	170	170	172	172
SAND/SHALE	172	172	294	294
Coal	294	294	298	298
SAND/SHALE	298	298	314	314
Uniontown Coal	314	314	317	317
SAND/SHALE	317	317	486	486
Redstone Coal	486	486	487	487
SAND/SHALE	487	487	555	555
Pittsburgh Coal	555	555	558	558
SAND/SHALE	558	558	1,484	1,484
MAXTON	1,484	1,484	1,880	1,880
Big Lime	1,880	1,880	1,949	1,949
KEENER	1,949	1,949	2,179	2,179
Weir	2,179	2,179	2,375	2,375
BEREA	2,375	2,375	2,381	2,381
Gantz	2,381	2,381	2,495	2,495
Fifty foot	2,495	2,495	2,585	2,584
Thirty foot	2,585	2,584	2,729	2,728
Forth Sand	2,729	2,728	2,922	2,921
Bayard	2,922	2,921	3,239	3,238
Warren	3,239	3,238	3,300	3,299
Speechley	3,300	3,299	3,971	3,970
Balltown A	3,971	3,970	4,247	4,246
BRADFORD	4,247	4,246	4,453	4,452
Riley	4,453	4,452	4,890	4,889
Benson	4,890	4,889	5,137	5,132
Alexander	5,137	5,132	7,453	6,309
Sonyea	7,453	6,309	7,881	6,456
Middlesex	7,881	6,456	8,035	6,510
Genesee	8,035	6,510	8,349	6,601
Geneseo	8,349	6,601	8,441	6,627
Tully	8,441	6,627	8,555	6,655
Hamilton	8,555	6,655	8,706	6,685
Marcellus	8,706	6,685	12,250	6,750

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API 47 - 017 - 06574

EQT Production - Marcellus

Doddridge County, WV Grid
Doddridge County 515642
Well #515642

Main Wellbore

Design: 515642 As Drilled Surveys

Standard Survey Report

22 December, 2014

Receive
Office of Oil &
JUL 08 20

Phoenix Technologies

Survey Report

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Doddridge County 515642
Company:	EQT Production - Marcellus	**TVD Reference:**	KB @ 1224.0usft
Project:	Doddridge County, WV Grid	**MD Reference:**	KB @ 1224.0usft
Site:	Doddridge County 515642	**North Reference:**	Grid
Well:	Well #515642	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515642 As Drilled Surveys		

Project Doddridge County, WV Grid

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	West Virginia North 4701		Using geodetic scale factor

Site Doddridge County 515642

Site Position:		**Northing:**	277,783.20 usft	**Latitude:**	39.26
From:	Map	**Easting:**	1,642,245.00 usft	**Longitude:**	-80.76
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-0.81 °

Well Well #515642

Well Position	**+N/-S**	0.0 usft	**Northing:**	277,783.20 usft	**Latitude:**	39° 15' 20.780 N
	+E/-W	0.0 usft	**Easting:**	1,642,245.00 usft	**Longitude:**	80° 45' 48.250 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	1,208.0 usft

Wellbore Main Wellbore

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	11/24/2014	-8.50	66.74	52,220

Design 515642 As Drilled Surveys

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	118.15

Survey Program **Date** 12/22/2014

From ()	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	4,639.0	515642 Gyrodata Gyros (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0.00	12,250.0	515642 PHX MWD (Main Wellbore)	MWD+IGRF	MWD+IGRF v3:standard declination

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	-1,224.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.28	149.33	100.0	-1,124.0	-0.2	0.1	0.2	0.28	0.28	0.00
200.0	0.37	141.88	200.0	-1,024.0	-0.7	0.4	0.7	0.10	0.09	-7.45
300.0	0.34	141.68	300.0	-924.0	-1.2	0.8	1.3	0.03	0.03	-0.20
400.0	0.36	143.15	400.0	-824.0	-1.6	1.2	1.8	0.02	0.02	1.47
500.0	0.42	139.81	500.0	-724.0	-2.2	1.6	2.5	0.06	0.06	-3.34
600.0	0.50	128.66	600.0	-624.0	-2.7	2.2	3.2	0.12	0.08	-11.15
700.0	0.49	131.87	700.0	-524.0	-3.3	2.9	4.1	0.03	-0.01	3.21

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Phoenix Technologies

Survey Report

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Doddridge County 515642
Company:	EQT Production - Marcellus	**TVD Reference:**	KB @ 1224.0usft
Project:	Doddridge County, WV Grid	**MD Reference:**	KB @ 1224.0usft
Site:	Doddridge County 515642	**North Reference:**	Grid
Well:	Well #515642	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515642 As Drilled Surveys		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
800.0	0.50	139.25	800.0	-424.0	-3.9	3.5	4.9	0.06	0.01	7.38
900.0	0.48	184.02	900.0	-324.0	-4.7	3.7	5.5	0.37	-0.02	44.77
1,000.0	0.67	212.56	1,000.0	-224.0	-5.6	3.4	5.6	0.34	0.19	28.54
1,100.0	0.48	200.88	1,100.0	-124.0	-6.4	2.9	5.6	0.22	-0.19	-11.68
1,200.0	0.60	107.50	1,200.0	-24.0	-7.0	3.3	6.2	0.79	0.12	-93.38
1,300.0	0.88	112.40	1,300.0	76.0	-7.4	4.5	7.5	0.29	0.28	4.90
1,400.0	1.54	121.32	1,399.9	175.9	-8.4	6.3	9.6	0.68	0.66	8.92
1,500.0	1.79	122.23	1,499.9	275.9	-10.0	8.8	12.5	0.25	0.25	0.91
1,600.0	1.85	122.27	1,599.8	375.8	-11.7	11.5	15.6	0.06	0.06	0.04
1,700.0	1.88	122.10	1,699.8	475.8	-13.4	14.2	18.9	0.03	0.03	-0.17
1,800.0	1.93	121.40	1,799.7	575.7	-15.1	17.1	22.2	0.06	0.05	-0.70
1,900.0	1.88	123.08	1,899.7	675.7	-16.9	19.9	25.5	0.07	-0.05	1.68
2,000.0	1.83	124.41	1,999.6	775.6	-18.7	22.6	28.7	0.07	-0.05	1.33
2,100.0	1.63	125.84	2,099.6	875.6	-20.5	25.0	31.7	0.20	-0.20	1.43
2,200.0	1.51	125.61	2,199.5	975.5	-22.1	27.3	34.4	0.12	-0.12	-0.23
2,300.0	1.39	130.01	2,299.5	1,075.5	-23.6	29.3	36.9	0.16	-0.12	4.40
2,400.0	1.25	131.89	2,399.5	1,175.5	-25.1	31.0	39.2	0.15	-0.14	1.88
2,500.0	1.18	135.41	2,499.5	1,275.5	-26.6	32.5	41.2	0.10	-0.07	3.52
2,600.0	0.99	140.85	2,599.4	1,375.4	-28.0	33.8	43.0	0.22	-0.19	5.44
2,700.0	0.87	145.98	2,699.4	1,475.4	-29.3	34.8	44.5	0.15	-0.12	5.13
2,800.0	0.79	153.24	2,799.4	1,575.4	-30.5	35.5	45.7	0.13	-0.08	7.26
2,900.0	0.78	155.84	2,899.4	1,675.4	-31.8	36.1	46.8	0.04	-0.01	2.60
3,000.0	0.79	148.70	2,999.4	1,775.4	-33.0	36.7	47.9	0.10	0.01	-7.14
3,100.0	0.92	159.66	3,099.4	1,875.4	-34.3	37.4	49.1	0.21	0.13	10.96
3,200.0	0.86	154.81	3,199.4	1,975.4	-35.7	38.0	50.3	0.10	-0.06	-4.85
3,300.0	0.94	158.03	3,299.4	2,075.4	-37.2	38.6	51.6	0.09	0.08	3.22
3,400.0	0.94	164.64	3,399.4	2,175.4	-38.7	39.1	52.8	0.11	0.00	6.61
3,500.0	1.02	169.99	3,499.3	2,275.3	-40.4	39.5	53.9	0.12	0.08	5.35
3,600.0	1.02	168.13	3,599.3	2,375.3	-42.1	39.8	55.0	0.03	0.00	-1.86
3,700.0	0.97	169.91	3,699.3	2,475.3	-43.8	40.2	56.1	0.06	-0.05	1.78
3,800.0	1.04	167.55	3,799.3	2,575.3	-45.6	40.5	57.2	0.08	0.07	-2.36
3,900.0	1.01	171.65	3,899.3	2,675.3	-47.3	40.8	58.3	0.08	-0.03	4.10
4,000.0	0.85	194.76	3,999.3	2,775.3	-48.9	40.8	59.0	0.40	-0.16	23.11
4,100.0	0.78	212.41	4,099.3	2,875.3	-50.2	40.2	59.1	0.26	-0.07	17.65
4,200.0	0.81	227.57	4,199.2	2,975.2	-51.3	39.3	58.9	0.21	0.03	15.16
4,300.0	0.81	246.01	4,299.2	3,075.2	-52.0	38.2	58.2	0.26	0.00	18.44
4,400.0	0.85	260.65	4,399.2	3,175.2	-52.4	36.8	57.2	0.22	0.04	14.64
4,500.0	0.63	272.27	4,499.2	3,275.2	-52.5	35.5	56.1	0.27	-0.22	11.62
4,600.0	0.66	287.38	4,599.2	3,375.2	-52.3	34.4	55.0	0.17	0.03	15.11
Gyro Tie In=4639' MD										
4,639.0	0.83	285.78	4,638.2	3,414.2	-52.2	33.9	54.5	0.44	0.44	-4.10
4,721.0	1.40	26.20	4,720.2	3,496.2	-51.1	33.8	53.9	2.14	0.70	122.46
4,752.0	2.90	44.60	4,751.2	3,527.2	-50.2	34.5	54.1	5.27	4.84	59.35

Phoenix Technologies

Survey Report

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Site:	Doddridge County 515642	**North Reference:**	Grid
Well:	Well #515642	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515642 As Drilled Surveys		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,783.0	4.40	51.80	4,782.1	3,558.1	-48.9	36.0	54.8	5.05	4.84	23.23
4,815.0	5.60	51.10	4,814.0	3,590.0	-47.2	38.2	55.9	3.75	3.75	-2.19
4,847.0	6.30	54.50	4,845.8	3,621.8	-45.2	40.8	57.3	2.45	2.19	10.63
4,878.0	6.50	61.50	4,876.6	3,652.6	-43.4	43.8	59.0	2.60	0.65	22.58
4,910.0	7.10	66.90	4,908.4	3,684.4	-41.7	47.2	61.3	2.74	1.88	16.88
4,941.0	7.50	69.30	4,939.1	3,715.1	-40.3	50.8	63.8	1.62	1.29	7.74
4,973.0	7.80	72.40	4,970.9	3,746.9	-38.9	54.8	66.7	1.59	0.94	9.69
5,004.0	8.70	74.00	5,001.5	3,777.5	-37.6	59.1	69.8	3.00	2.90	5.16
5,035.0	9.60	74.60	5,032.1	3,808.1	-36.3	63.8	73.4	2.92	2.90	1.94
5,067.0	11.10	75.40	5,063.6	3,839.6	-34.8	69.4	77.6	4.71	4.69	2.50
5,098.0	12.40	74.60	5,094.0	3,870.0	-33.1	75.5	82.2	4.23	4.19	-2.58
5,130.0	13.70	73.30	5,125.1	3,901.1	-31.1	82.4	87.4	4.16	4.06	-4.06
5,161.0	14.80	71.50	5,155.2	3,931.2	-28.8	89.7	92.7	3.83	3.55	-5.81
5,193.0	15.70	69.70	5,186.1	3,962.1	-26.0	97.6	98.4	3.18	2.81	-5.63
5,224.0	16.20	68.50	5,215.9	3,991.9	-23.0	105.6	104.0	1.93	1.61	-3.87
5,256.0	17.10	68.00	5,246.5	4,022.5	-19.6	114.1	109.9	2.85	2.81	-1.56
5,287.0	18.10	68.00	5,276.1	4,052.1	-16.1	122.8	115.9	3.23	3.23	0.00
5,351.0	19.40	69.30	5,336.7	4,112.7	-8.6	142.0	129.2	2.13	2.03	2.03
5,414.0	19.30	69.40	5,396.1	4,172.1	-1.2	161.5	143.0	0.17	-0.16	0.16
5,446.0	18.80	69.60	5,426.4	4,202.4	2.4	171.3	149.9	1.58	-1.56	0.63
5,477.0	18.20	68.20	5,455.8	4,231.8	6.0	180.5	156.3	2.41	-1.94	-4.52
5,509.0	19.20	67.30	5,486.1	4,262.1	9.9	190.0	162.8	3.25	3.13	-2.81
5,540.0	21.40	66.10	5,515.1	4,291.1	14.1	199.8	169.5	7.22	7.10	-3.87
5,572.0	24.20	65.30	5,544.6	4,320.6	19.2	211.1	177.1	8.80	8.75	-2.50
5,603.0	27.10	66.30	5,572.6	4,348.6	24.7	223.4	185.3	9.46	9.35	3.23
5,635.0	29.90	68.80	5,600.7	4,376.7	30.5	237.5	195.0	9.51	8.75	7.81
5,666.0	33.10	71.10	5,627.1	4,403.1	36.1	252.7	205.8	11.02	10.32	7.42
5,698.0	36.30	71.60	5,653.4	4,429.4	41.9	270.0	218.3	10.04	10.00	1.56
5,729.0	40.20	71.10	5,677.8	4,453.8	48.0	288.1	231.4	12.62	12.58	-1.61
5,760.0	44.50	71.10	5,700.7	4,476.7	54.8	307.9	245.6	13.87	13.87	0.00
5,792.0	48.70	70.90	5,722.7	4,498.7	62.4	329.9	261.4	13.13	13.13	-0.63
5,824.0	52.40	70.40	5,743.0	4,519.0	70.5	353.2	278.1	11.63	11.56	-1.56
5,855.0	55.30	67.90	5,761.3	4,537.3	79.5	376.6	294.5	11.40	9.35	-8.06
5,919.0	62.50	66.10	5,794.3	4,570.3	100.9	427.0	328.9	11.50	11.25	-2.81
5,982.0	70.50	66.40	5,819.4	4,595.4	124.1	479.8	364.5	12.71	12.70	0.48
6,044.0	72.90	66.10	5,838.9	4,614.9	147.8	533.7	400.8	3.90	3.87	-0.48
6,107.0	73.10	66.10	5,857.3	4,633.3	172.3	588.8	437.9	0.32	0.32	0.00
6,170.0	72.10	66.10	5,876.2	4,652.2	196.6	643.7	474.9	1.59	-1.59	0.00
6,233.0	72.40	65.40	5,895.4	4,671.4	221.3	698.4	511.5	1.16	0.48	-1.11
6,296.0	73.40	65.70	5,913.9	4,689.9	246.2	753.2	548.0	1.65	1.59	0.48
6,358.0	72.70	65.90	5,932.0	4,708.0	270.5	807.3	584.3	1.17	-1.13	0.32
6,422.0	73.30	66.10	5,950.7	4,726.7	295.4	863.2	621.8	0.98	0.94	0.31

Phoenix Technologies

Survey Report

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Project:	Doddridge County, WV Grid	**MD Reference:**	KB @ 1224.0usft
Site:	Doddridge County 515642	**North Reference:**	Grid
Well:	Well #515642	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515642 As Drilled Surveys		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,484.0	72.70	66.70	5,968.8	4,744.8	319.1	917.6	658.5	1.34	-0.97	0.97
6,548.0	68.70	67.50	5,989.9	4,765.9	342.6	973.2	696.5	6.36	-6.25	1.25
6,611.0	68.80	67.30	6,012.8	4,788.8	365.2	1,027.4	733.7	0.34	0.16	-0.32
6,674.0	70.00	67.20	6,034.9	4,810.9	388.0	1,081.8	770.9	1.91	1.90	-0.16
6,736.0	69.00	66.80	6,056.7	4,832.7	410.7	1,135.3	807.3	1.72	-1.61	-0.65
6,799.0	69.50	66.20	6,079.0	4,855.0	434.2	1,189.3	843.8	1.19	0.79	-0.95
6,862.0	69.50	66.80	6,101.0	4,877.0	457.7	1,243.4	880.5	0.89	0.00	0.95
6,925.0	67.80	67.30	6,124.0	4,900.0	480.6	1,297.4	917.3	2.80	-2.70	0.79
6,988.0	67.60	67.00	6,147.9	4,923.9	503.2	1,351.1	954.0	0.54	-0.32	-0.48
7,051.0	68.70	66.60	6,171.3	4,947.3	526.3	1,404.9	990.5	1.84	1.75	-0.63
7,115.0	69.60	66.40	6,194.1	4,970.1	550.1	1,459.7	1,027.6	1.44	1.41	-0.31
7,177.0	70.20	66.70	6,215.4	4,991.4	573.3	1,513.1	1,063.8	1.07	0.97	0.48
7,240.0	70.20	66.00	6,236.8	5,012.8	597.0	1,567.4	1,100.5	1.05	0.00	-1.11
7,303.0	70.50	65.60	6,257.9	5,033.9	621.4	1,621.6	1,136.7	0.76	0.48	-0.63
7,366.0	70.50	65.40	6,279.0	5,055.0	646.0	1,675.6	1,172.7	0.30	0.00	-0.32
7,429.0	70.00	66.60	6,300.3	5,076.3	670.1	1,729.8	1,209.1	1.96	-0.79	1.90
7,492.0	68.50	67.50	6,322.6	5,098.6	693.1	1,784.0	1,246.1	2.73	-2.38	1.43
7,555.0	68.40	67.20	6,345.7	5,121.7	715.7	1,838.1	1,283.1	0.47	-0.16	-0.48
7,618.0	69.20	66.70	6,368.5	5,144.5	738.7	1,892.1	1,320.0	1.47	1.27	-0.79
7,681.0	69.80	66.90	6,390.6	5,166.6	761.9	1,946.4	1,356.8	1.00	0.95	0.32
7,745.0	71.30	67.00	6,411.9	5,187.9	785.5	2,001.9	1,394.6	2.35	2.34	0.16
7,808.0	71.60	67.10	6,431.9	5,207.9	808.8	2,056.9	1,432.1	0.50	0.48	0.16
7,871.0	69.90	66.70	6,452.7	5,228.7	832.1	2,111.6	1,469.4	2.76	-2.70	-0.63
7,935.0	69.40	66.10	6,474.9	5,250.9	856.2	2,166.6	1,506.5	1.18	-0.78	-0.94
7,998.0	69.90	65.30	6,496.9	5,272.9	880.5	2,220.4	1,542.5	1.43	0.79	-1.27
8,060.0	70.00	64.10	6,518.1	5,294.1	905.4	2,273.1	1,577.2	1.83	0.16	-1.94
8,124.0	70.70	66.10	6,539.6	5,315.6	930.7	2,327.7	1,613.4	3.14	1.09	3.13
8,155.0	72.50	70.10	6,549.4	5,325.4	941.7	2,355.0	1,632.3	13.55	5.81	12.90
8,186.0	74.70	74.50	6,558.2	5,334.2	950.7	2,383.4	1,653.0	15.35	7.10	14.19
8,218.0	75.10	78.60	6,566.5	5,342.5	957.9	2,413.4	1,676.1	12.43	1.25	12.81
8,250.0	75.00	82.30	6,574.8	5,350.8	963.0	2,443.9	1,700.6	11.18	-0.31	11.56
8,281.0	75.00	85.70	6,582.8	5,358.8	966.2	2,473.7	1,725.4	10.59	0.00	10.97
8,312.0	74.50	90.30	6,591.0	5,367.0	967.2	2,503.5	1,751.2	14.41	-1.61	14.84
8,344.0	73.50	95.10	6,599.8	5,375.8	965.8	2,534.3	1,779.0	14.75	-3.13	15.00
8,376.0	73.10	98.20	6,609.0	5,385.0	962.2	2,564.7	1,807.5	9.36	-1.25	9.69
8,407.0	73.00	99.60	6,618.0	5,394.0	957.6	2,594.0	1,835.5	4.33	-0.32	4.52
8,439.0	74.70	102.70	6,626.9	5,402.9	951.7	2,624.1	1,864.9	10.71	5.31	9.69
8,471.0	75.90	108.70	6,635.0	5,411.0	943.3	2,653.9	1,895.1	18.52	3.75	18.75
8,503.0	75.80	111.60	6,642.9	5,418.9	932.6	2,683.0	1,925.8	8.79	-0.31	9.06
8,535.0	76.00	114.40	6,650.7	5,426.7	920.5	2,711.6	1,956.7	8.51	0.63	8.75
8,567.0	77.20	117.60	6,658.1	5,434.1	906.9	2,739.6	1,987.8	10.43	3.75	10.00
8,598.0	78.50	121.30	6,664.6	5,440.6	892.0	2,766.0	2,018.1	12.40	4.19	11.94
8,630.0	79.20	124.20	6,670.8	5,446.8	875.0	2,792.4	2,049.4	9.16	2.19	9.06

Received
Office of Oil & Gas
JUL 08 2015

Phoenix Technologies

Survey Report

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Doddridge County 515642
Company:	EQT Production - Marcellus	**TVD Reference:**	KB @ 1224.0usft
Project:	Doddridge County, WV Grid	**MD Reference:**	KB @ 1224.0usft
Site:	Doddridge County 515642	**North Reference:**	Grid
Well:	Well #515642	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515642 As Drilled Surveys		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,662.0	78.90	126.30	6,676.9	5,452.9	856.8	2,818.0	2,080.6	6.51	-0.94	6.56
8,693.0	78.80	129.20	6,682.9	5,458.9	838.2	2,842.1	2,110.6	9.18	-0.32	9.35
8,725.0	77.80	131.90	6,689.4	5,465.4	817.9	2,865.9	2,141.2	8.83	-3.13	8.44
8,755.0	77.70	134.50	6,695.7	5,471.7	797.8	2,887.2	2,169.5	8.48	-0.33	8.67
8,787.0	78.20	137.40	6,702.4	5,478.4	775.3	2,909.0	2,199.3	9.00	1.56	9.06
8,818.0	79.40	141.60	6,708.4	5,484.4	752.2	2,928.7	2,227.6	13.84	3.87	13.55
8,850.0	79.80	144.00	6,714.2	5,490.2	727.1	2,947.8	2,256.2	7.48	1.25	7.50
8,881.0	82.50	147.10	6,719.0	5,495.0	701.9	2,965.1	2,283.4	13.17	8.71	10.00
8,913.0	83.70	148.80	6,722.8	5,498.8	674.9	2,981.9	2,311.0	6.47	3.75	5.31
8,945.0	85.30	151.30	6,725.9	5,501.9	647.3	2,997.8	2,338.0	9.25	5.00	7.81
8,976.0	87.20	153.50	6,727.9	5,503.9	619.9	3,012.2	2,363.6	9.37	6.13	7.10
LP= 9008' MD/6729' TVD										
9,008.0	89.10	156.20	6,729.0	5,505.0	591.0	3,025.8	2,389.2	10.31	5.94	8.44
9,071.0	90.30	157.10	6,729.3	5,505.3	533.1	3,050.7	2,438.5	2.38	1.90	1.43
9,133.0	90.50	156.70	6,728.9	5,504.9	476.1	3,075.1	2,486.8	0.72	0.32	-0.65
9,197.0	90.60	156.10	6,728.2	5,504.2	417.5	3,100.7	2,537.1	0.95	0.16	-0.94
9,260.0	91.10	156.70	6,727.3	5,503.3	359.7	3,125.9	2,586.6	1.24	0.79	0.95
9,322.0	91.60	156.30	6,725.8	5,501.8	302.9	3,150.6	2,635.2	1.03	0.81	-0.65
9,385.0	92.20	156.50	6,723.8	5,499.8	245.2	3,175.8	2,684.6	1.00	0.95	0.32
9,448.0	90.00	156.00	6,722.6	5,498.6	187.6	3,201.2	2,734.2	3.58	-3.49	-0.79
9,511.0	88.90	154.80	6,723.2	5,499.2	130.3	3,227.4	2,784.3	2.58	-1.75	-1.90
9,574.0	89.50	155.20	6,724.0	5,500.0	73.2	3,254.0	2,834.7	1.14	0.95	0.63
9,637.0	89.80	155.40	6,724.4	5,500.4	16.0	3,280.4	2,884.9	0.57	0.48	0.32
9,700.0	89.00	154.10	6,725.1	5,501.1	-41.0	3,307.2	2,935.5	2.42	-1.27	-2.06
9,763.0	89.30	154.10	6,726.0	5,502.0	-97.7	3,334.7	2,986.5	0.48	0.48	0.00
9,826.0	89.50	153.60	6,726.7	5,502.7	-154.2	3,362.5	3,037.7	0.85	0.32	-0.79
9,889.0	89.90	153.10	6,727.0	5,503.0	-210.5	3,390.8	3,089.1	1.02	0.63	-0.79
9,952.0	88.10	153.40	6,728.1	5,504.1	-266.8	3,419.1	3,140.7	2.90	-2.86	0.48
10,015.0	87.60	153.20	6,730.5	5,506.5	-323.0	3,447.4	3,192.1	0.85	-0.79	-0.32
10,078.0	87.90	153.10	6,732.9	5,508.9	-379.2	3,475.8	3,243.7	0.50	0.48	-0.16
10,140.0	88.80	154.10	6,734.7	5,510.7	-434.7	3,503.4	3,294.2	2.17	1.45	1.61
10,203.0	89.70	154.10	6,735.6	5,511.6	-491.4	3,530.9	3,345.2	1.43	1.43	0.00
10,266.0	90.10	153.30	6,735.7	5,511.7	-547.9	3,558.8	3,396.4	1.42	0.63	-1.27
10,328.0	90.00	153.30	6,735.6	5,511.6	-603.2	3,586.7	3,447.1	0.16	-0.16	0.00
10,391.0	90.10	153.70	6,735.6	5,511.6	-659.6	3,614.8	3,498.5	0.65	0.16	0.63
10,454.0	90.50	153.90	6,735.2	5,511.2	-716.1	3,642.6	3,549.7	0.71	0.63	0.32
10,517.0	90.30	152.50	6,734.8	5,510.8	-772.4	3,671.0	3,601.3	2.24	-0.32	-2.22
10,580.0	91.80	153.70	6,733.6	5,509.6	-828.5	3,699.5	3,652.9	3.05	2.38	1.90
10,643.0	92.50	154.30	6,731.3	5,507.3	-885.1	3,727.1	3,703.9	1.46	1.11	0.95
10,705.0	91.60	154.60	6,729.0	5,505.0	-941.0	3,753.8	3,753.8	1.53	-1.45	0.48
10,768.0	90.90	154.50	6,727.7	5,503.7	-997.9	3,780.9	3,804.5	1.12	-1.11	-0.16
10,831.0	90.10	155.00	6,727.1	5,503.1	-1,054.9	3,807.8	3,855.1	1.50	-1.27	0.79

Phoenix Technologies

Survey Report

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Doddridge County 515642
Company:	EQT Production - Marcellus	**TVD Reference:**	KB @ 1224.0usft
Project:	Doddridge County, WV Grid	**MD Reference:**	KB @ 1224.0usft
Site:	Doddridge County 515642	**North Reference:**	Grid
Well:	Well #515642	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515642 As Drilled Surveys		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,894.0	89.70	155.90	6,727.2	5,503.2	-1,112.2	3,833.9	3,905.2	1.56	-0.63	1.43
10,956.0	90.30	156.20	6,727.2	5,503.2	-1,168.8	3,859.1	3,954.1	1.08	0.97	0.48
11,019.0	88.50	156.30	6,727.9	5,503.9	-1,226.5	3,884.5	4,003.7	2.86	-2.86	0.16
11,082.0	87.60	156.50	6,730.0	5,506.0	-1,284.2	3,909.7	4,053.1	1.46	-1.43	0.32
11,145.0	87.90	156.50	6,732.5	5,508.5	-1,341.9	3,934.8	4,102.5	0.48	0.48	0.00
11,208.0	87.90	155.70	6,734.8	5,510.8	-1,399.5	3,960.3	4,152.2	1.27	0.00	-1.27
11,271.0	88.10	155.30	6,737.0	5,513.0	-1,456.8	3,986.4	4,202.2	0.71	0.32	-0.63
11,334.0	88.00	154.50	6,739.2	5,515.2	-1,513.8	4,013.1	4,252.7	1.28	-0.16	-1.27
11,397.0	88.20	154.40	6,741.2	5,517.2	-1,570.6	4,040.3	4,303.4	0.35	0.32	-0.16
11,460.0	88.80	154.60	6,742.9	5,518.9	-1,627.5	4,067.4	4,354.1	1.00	0.95	0.32
11,523.0	89.50	156.00	6,743.8	5,519.8	-1,684.7	4,093.7	4,404.3	2.48	1.11	2.22
11,586.0	89.90	156.40	6,744.2	5,520.2	-1,742.3	4,119.1	4,453.9	0.90	0.63	0.63
11,649.0	89.90	156.50	6,744.3	5,520.3	-1,800.1	4,144.3	4,503.4	0.16	0.00	0.16
11,713.0	90.20	156.80	6,744.2	5,520.2	-1,858.8	4,169.7	4,553.4	0.66	0.47	0.47
11,776.0	90.00	155.40	6,744.1	5,520.1	-1,916.4	4,195.2	4,603.1	2.24	-0.32	-2.22
11,839.0	89.20	152.10	6,744.5	5,520.5	-1,972.9	4,223.1	4,654.3	5.39	-1.27	-5.24
11,902.0	88.70	150.50	6,745.7	5,521.7	-2,028.2	4,253.3	4,707.1	2.66	-0.79	-2.54
11,965.0	88.70	150.20	6,747.1	5,523.1	-2,082.9	4,284.5	4,760.4	0.48	0.00	-0.48
12,028.0	88.80	150.90	6,748.5	5,524.5	-2,137.8	4,315.4	4,813.5	1.12	0.16	1.11
12,091.0	89.40	151.30	6,749.5	5,525.5	-2,192.9	4,345.9	4,866.4	1.14	0.95	0.63
Deepest Point of Well= 12154' MD/6750' TVD										
12,154.0	89.80	152.60	6,749.9	5,525.9	-2,248.5	4,375.5	4,918.7	2.16	0.63	2.06
Final Survey= 12196' MD/6750' TVD										
12,196.0	90.60	154.40	6,749.8	5,525.8	-2,286.1	4,394.2	4,953.0	4.69	1.90	4.29
Projection to TD= 12250' MD/6749' TVD										
12,250.0	90.60	154.40	6,749.2	5,525.2	-2,334.8	4,417.6	4,996.5	0.00	0.00	0.00

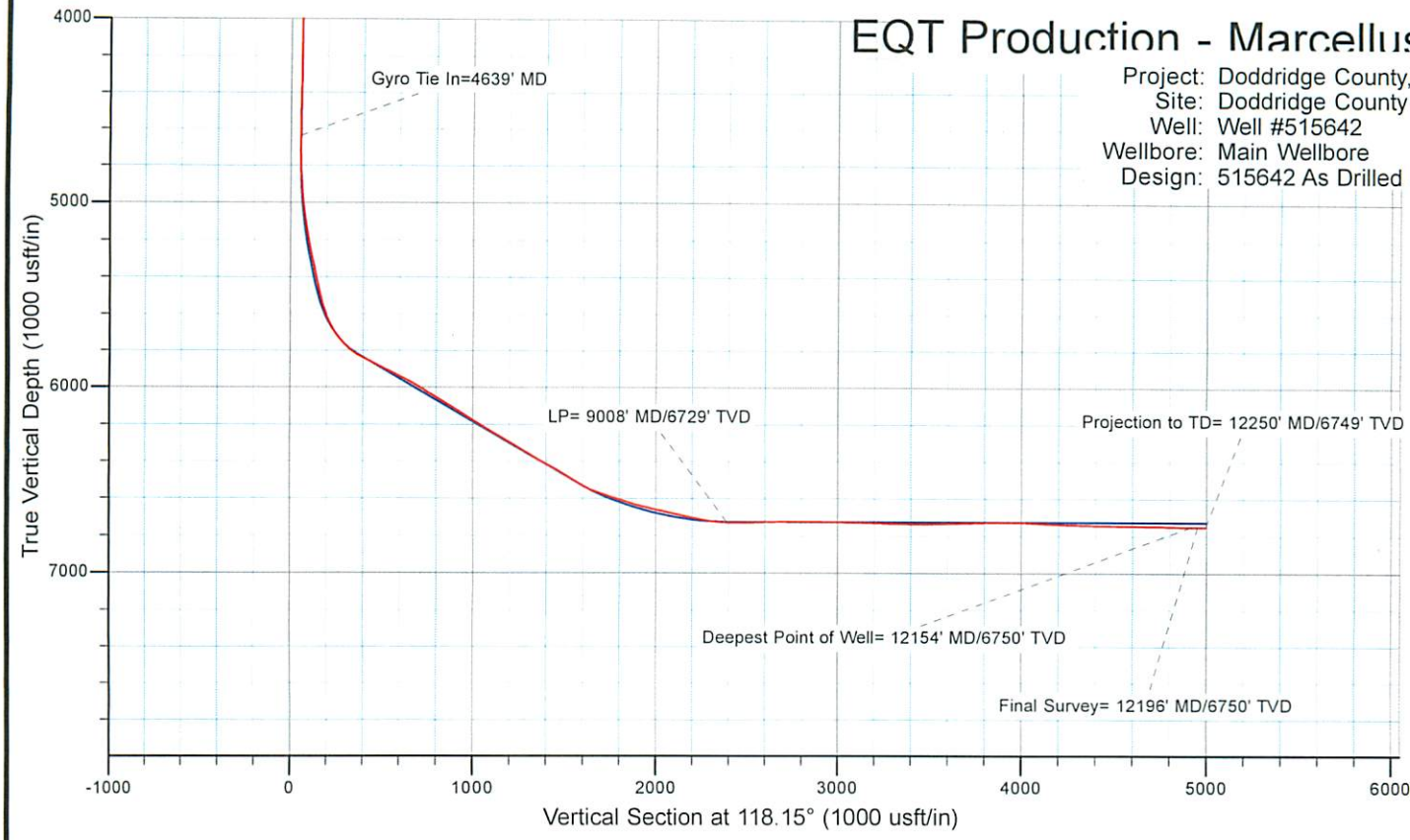
Design Annotations

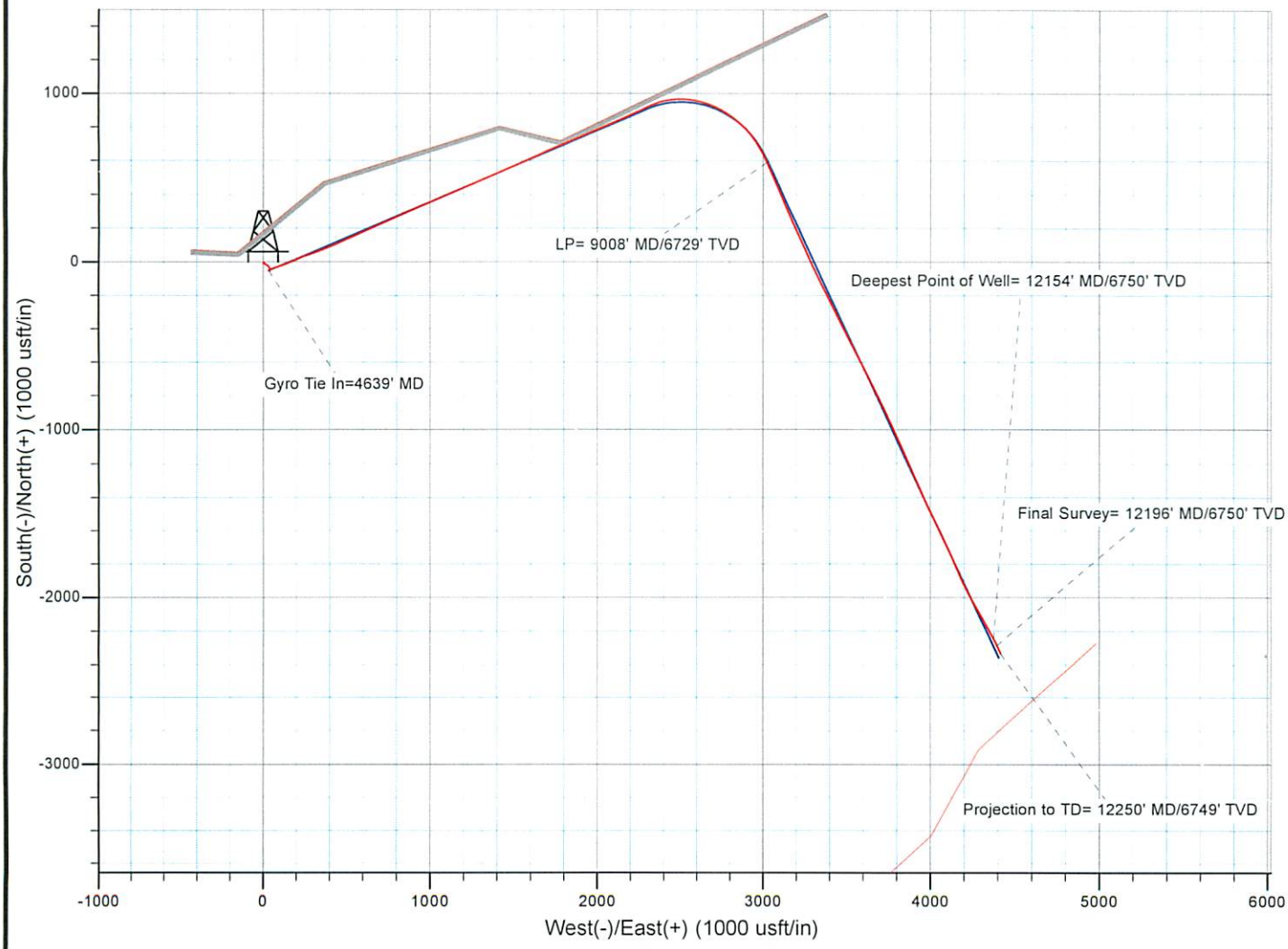
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
4,639.0	4,638.2	-52.2	33.9	Gyro Tie In=4639' MD
9,008.0	6,729.0	591.0	3,025.8	LP= 9008' MD/6729' TVD
12,154.0	6,749.9	-2,248.5	4,375.5	Deepest Point of Well= 12154' MD/6750' TVD
12,196.0	6,749.8	-2,286.1	4,394.2	Final Survey= 12196' MD/6750' TVD
12,250.0	6,749.2	-2,334.8	4,417.6	Projection to TD= 12250' MD/6749' TVD

Checked By: _____ Approved By: _____ Date: _____

EQT Production - Marcellus

Project: Doddridge County, WV Grid
Site: Doddridge County 515642
Well: Well #515642
Wellbore: Main Wellbore
Design: 515642 As Drilled Surveys





515642 - 47-017-06574-0000- Perforations					
Stage Number	*Perforation Date*	*Top Perf Depth (ftKB)*	*Bottom Perf Depth (ftKB)*	*Number of Shots*	*Formation*
Initiation Sleeve	1/30/2015	12,238.00	12,240.00	10	MARCELLUS
1	4/18/2015	12,093.00	12,155.00	28	MARCELLUS
2	4/18/2015	11,913.00	12,035.00	42	MARCELLUS
3	4/18/2015	11,733.00	11,855.00	42	MARCELLUS
4	4/19/2015	11,553.00	11,675.00	42	MARCELLUS
5	4/19/2015	11,373.00	11,493.00	42	MARCELLUS
6	4/19/2015	11,373.00	11,493.00	42	MARCELLUS
7	4/19/2015	11,015.00	11,135.00	42	MARCELLUS
8	4/19/2015	10,833.00	10,955.00	42	MARCELLUS
9	4/20/2015	10,653.00	10,775.00	42	MARCELLUS
10	4/20/2015	10,473.00	10,595.00	42	MARCELLUS
11	4/20/2015	10,293.00	10,415.00	42	MARCELLUS
12	4/20/2015	10,113.00	10,235.00	42	MARCELLUS
13	4/21/2015	9,933.00	10,055.00	42	MARCELLUS
14	4/22/2015	9,753.00	9,871.00	42	MARCELLUS
15	4/22/2015	9,573.00	9,693.00	42	MARCELLUS
16	4/22/2015	9,394.00	9,515.00	42	MARCELLUS
17	4/22/2015	9,217.00	9,335.00	42	MARCELLUS
18	4/22/2015	9,033.00	9,155.00	42	MARCELLUS
19	4/23/2015	8,853.00	8,975.00	42	MARCELLUS

515642 - 47-017-06574-0000 -- Stimulated Stages								
Stage Number	Stimulation 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)
Initiation Sleeve	4/18/2015	8.8	5,827	7,991	4,331	0	623	0
1	4/18/2015	99.2	8,352	8,848	5,168	302,768	8,086	0
2	4/18/2015	84.5	8,010	9,046	5,136	299,471	10,802	0
3	4/18/2015	100.3	7,698	8,192	5,328	309,511	8,022	0
4	4/19/2015	99.2	7,783	8,297	5,332	302,559	6,418	0
5	4/19/2015	100.1	7,640	8,504	5,218	299,250	6,259	0
6	4/19/2015	99.2	7,633	8,288	5,019	300,647	5,980	0
7	4/19/2015	100.7	7,980	8,907	5,247	300,616	7,101	0
8	4/20/2015	96.8	7,973	9,207	5,004	302,355	6,381	0
9	4/20/2015	100.0	7,609	8,379	5,057	302,184	6,099	0
10	4/20/2015	97.4	7,723	8,634	5,092	301,051	5,818	0
11	4/20/2015	95.7	7,788	8,497	5,119	300,950	7,026	0
12	4/20/2015	98.8	7,452	8,803	4,864	304,830	6,046	0
13	4/21/2015	97.5	8,088	8,568	5,080	302,439	7,035	0
14	4/22/2015	99.0	7,124	7,361	4,974	301,062	5,791	0
15	4/22/2015	101.9	7,231	7,824	4,883	299,734	5,723	0
16	4/22/2015	100.2	7,089	7,532	4,849	301,269	5,736	0
17	4/22/2015	100.8	7,063	7,866	5,077	305,308	6,204	0
18	4/23/2015	100.2	7,240	7,659	4,856	304,026	6,253	0
19	4/23/2015	99.1	7,295	8,210	4,732	309,372	6,076	0

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	4/18/2015
Job End Date:	4/23/2015
State:	West Virginia
County:	Doddridge
API Number:	47-017-06574-00-00
Operator Name:	EQT Production
Well Name and Number:	515642
Longitude:	-80.76340200
Latitude:	39.25577200
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,750
Total Base Water Volume (gal):	5,354,118
Total Base Non Water Volume:	0

FracFocus Chemical Disclosure Registry

GROUNDWATER PROTECTION COUNCIL

INTERSTATE Oil & Gas COMPACT COMMISSION

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	FTS International	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	88.27584	None
Sand (Proppant)	FTS International	Proppant					
			Crystalline Silica	14808-60-7	100.00000	11.35927	None
MC MX 437-5	Multi-Chem	Calcium nitrate solution					
			Calcium nitrate	10124-37-5	60.00000	0.05723	None
Hydrochloric Acid (15%)	FTS International	Acidizing					
			Hydrochloric Acid	7647-01-0	15.00000	0.03043	None
FRW-900	FTS International	Friction reducer					
			Hydrotreated light distillate	64742-47-8	30.00000	0.00843	None
			Alkyl Alcohol	Proprietary	10.00000	0.00281	None
			Ozyalkylated alcohal A	Proprietary	5.00000	0.00140	None
LTB-1	FTS International	Breaker					
			Ammonium persulfate	7727-54-0	75.00000	0.00328	None
			Cured acrylic resin	Proprietary	16.00000	0.00070	None
			Silica, Crystalline-Quartz	14808-60-7	10.00000	0.00044	None
CS-500-SI	FTS International	Scale inhibitor					
			Ethylene glycol	107-21-1	10.00000	0.00247	None

APB-1	FTS International	Breaker					
			Ammonium persulfate	7727-54-0	95.00000	0.00244	None
FRW-600	FTS International	Friction reducer					
			Hydrotreated light distillate	64742-47-8	30.00000	0.00121	None
			Ammonium acetate	631-61-8	6.00000	0.00024	None
FE-100L	FTS International	Iron control					
			Citric acid	77-92-9	55.00000	0.00069	None
CI-150	FTS International	Acid Corrosion Inhibitor					
			Organic amine resin salt	Proprietary	30.00000	0.00010	None
			Isopropanol	67-63-0	30.00000	0.00010	None
			Ethylene glycol	107-21-1	30.00000	0.00010	None
			Quaternary ammonium compound	Proprietary	10.00000	0.00003	None
			Dimethylformamide	68-12-2	10.00000	0.00003	None
			Aromatic aldehyde	Proprietary	10.00000	0.00003	None
FRW-200	FTS International	Friction reducer					
			Petroleum distillate hydrotreated light	64742-47-8	26.00000	0.00020	None
HVG-1	FTS International	Gelling agent					
			Petroleum distillate	64742-47-8	55.00000	0.00005	None
			Guar gum	9000-30-0	50.00000	0.00004	None
			Clay	14808-60-7	2.00000	0.00000	None
			Surfactant	68439-51-0	2.00000	0.00000	None
NE-100	FTS International	Non-emulsifier					
			2-Propanol	67-63-0	10.00000	0.00004	None
			2-Butoxyethanol	111-76-2	10.00000	0.00004	None
			Dodecylbenzenesulfonic acid	27176-87-0	5.00000	0.00002	None

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)

Well Operator's Report of Well Work

EQT

Where energy meets innovation.

Well Number: 515642

API: 47 - 017 - 06574

Submission: ☑ Initial ☐ Amended

Notes:

Received
Office of Oil & Gas
JUL 08 2015

FORM WW 6

3,795'

LATITUDE 39°17'30"

LONGITUDE 80°45'00"

13,074'

NAD' 27 GRID NORTH

AS DRILLED COORDINATES FOR WELL NO. WV 515642

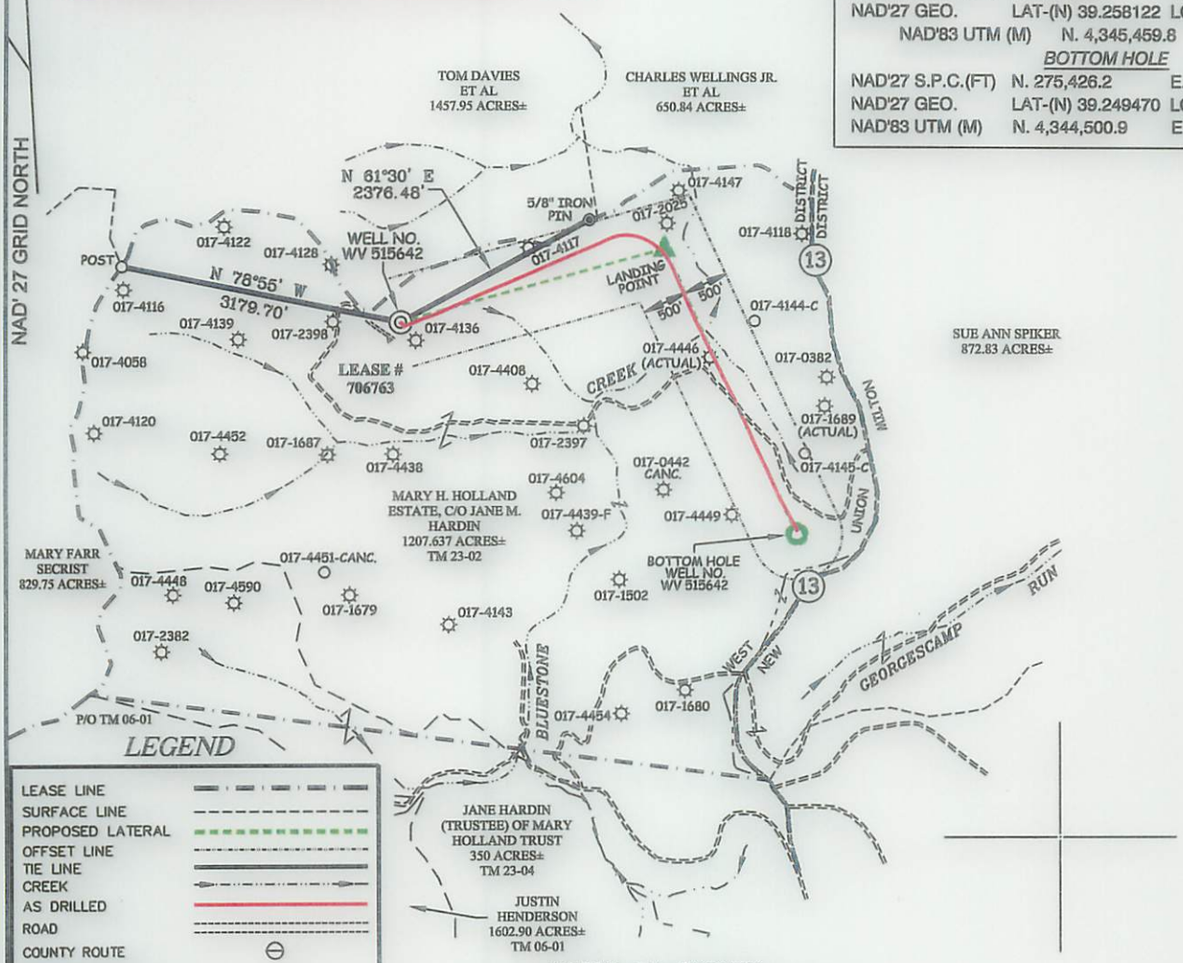
(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'27 S.P.C.(FT)	N. 277,783.2	E. 1,642,245.0
NAD'27 GEO.	LAT-(N) 39.255772	LONG-(W)80.763403
NAD'83 UTM (M)	N. 4,345,196.6	E.520,428.3
BOTTOM HOLE		
NAD'27 S.P.C.(FT)	N.275,448.5	E. 1,646,662.4
NAD'27 GEO.	LAT-(N)39.249532	LONG-(W)80.747690
NAD'83 UTM (M)	N. 4,344,507.8	E. 521,786.0

EQT PRODUCTION COMPANY LEEMAN MAXWELL LEASE 1000 ACRES± WELL NO. WV 515642

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'27 S.P.C.(FT)	N. 277,783.2	E. 1,642,245.0
NAD'27 GEO.	LAT-(N) 39.255772	LONG-(W) 80.763403
NAD'83 UTM (M)	N. 4,345,196.6	E. 520,428.3
LANDING POINT		
NAD'27 S.P.C.(FT)	N. 278,598.2	E. 1,645,171.6
NAD'27 GEO.	LAT-(N) 39.258122	LONG-(W) 80.753109
NAD'83 UTM (M)	N. 4,345,459.8	E. 521,315.8
BOTTOM HOLE		
NAD'27 S.P.C.(FT)	N. 275,426.2	E. 1,646,650.8
NAD'27 GEO.	LAT-(N) 39.249470	LONG-(W) 80.747730
NAD'83 UTM (M)	N. 4,344,500.9	E. 521,782.5



LEGEND

LEASE LINE	
SURFACE LINE	
PROPOSED LATERAL	
OFFSET LINE	
TIE LINE	
CREEK	
AS DRILLED	
ROAD	
COUNTY ROUTE	⊖
PROPOSED WELL	◎
EXISTING WELL	☼
TAX MAP–PARCEL	TM 00–00

NOTES ON SURVEY

1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
2. AS DRILLED INFORMATION PROVIDED BY EQT.

Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING, INC.
SLS
SURVEYORS ENGINEERS ENVIRONMENTAL PROJECT MGMT.
(304) 462-5634 WWW.SLSSURVEYS.COM

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 REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 849 C. Victor Moyers

C. VICTOR MOYERS LICENSED No. 849 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

DATE MAY 30 , 20 14

REVISED 08/06/14 & 01/13/15

OPERATORS WELL NO. WV 515642

API WELL NO. 47 — 017 — 06574
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 8051ASDRILLED515642

SCALE 1" = 2000'

HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK)

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

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

LOCATION:

ELEVATION 1,224'(GROUND) 1,208'(PROPOSED) WATERSHED BLUESTONE CREEK

DISTRICT WEST UNION COUNTY DODDRIDGE QUADRANGLE WEST UNION 7.5'

SURFACE OWNER MARY H. HOLLAND ESTATE, C/O JANE M. HARDIN ACREAGE 1207.637±

ROYALTY OWNER LEEMAN MAXWELL HEIRS ACREAGE 1,000±

PROPOSED WORK: LEASE NO. 706763

DRILL X CONVERT ____ DRILL DEEPER ____ REDRILL ____ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ____ PERFORATE NEW FORMATION ____ PLUG AND ABANDON ____ CLEAN OUT AND REPLUG ____ OTHER ____

PHYSICAL CHANGE IN WELL (SPECIFY) ____ TARGET FORMATION MARCELLUS

ESTIMATED DEPTH TVD 6661'

COUNTY NAME

PERMIT

WELL OPERATOR EQT PRODUCTION COMPANY **DESIGNATED AGENT** REX C. RAY

ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280 BRIDGEPORT, WV 26330 **ADDRESS** 115 PROFESSIONAL PLACE P.O. BOX 280 BRIDGEPORT, WV 26330

SLS

124588

WR-35
Rev. 8/23/13

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

API 47- 39 - 06371 County Kanawha District Union
Quad St. Albans Pad Name Field/Pool Name WVSU
Farm name WVSU Board of Governors Well Number #3
Operator (as registered with the OOG) Reserve Oil and Gas, Inc
Address 929 Charleston Road City Spencer State WV Zip 25276

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 504623 NAD83 4248624 UTM NAD83 Easting 1748343 NAD83 0432917 UTM NAD83
Landing Point of Curve Northing N/A Easting N/A
Bottom Hole Northing N/A Easting N/A

Elevation (ft) 606 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)

Date permit issued 02/12/2015 Date drilling commenced 3/18/2015 Date drilling ceased 3/28/2015
Date completion activities began 4/14/2015 Date completion activities ceased 4/14/2015
Verbal plugging (Y/N) No 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

Received
JUL 10 2015
Office of Oil and Gas
WV Dept. of Environmental Protection

Freshwater depth(s) ft 80ft Open mine(s) (Y/N) depths No
Salt water depth(s) ft N/A Void(s) encountered (Y/N) depths No
Coal depth(s) ft N/A Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by:
R.F.

WR-35
Rev. 8/23/13

API 47- 39 - 06371 Farm name WVSU Board of Governors Well number WVSU #3

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	20" / 17½"	20" / 13⅜"	20' / 63'	New/New	/42#	No	Grout in w/Excavator / CTS
Surface	12⅜"	9⅝"	336'	New	26#	1684'	Yes, 5bbls
Coal							
Intermediate 1	8⅞"	7"	1740'	New	23#	N/A	Yes, 5bbls
Intermediate 2							
Intermediate 3							
Production	6¼"	4½"	4497'	New	11.6#	56 jts: 10, 20, 30, 40, 50	No
Tubing							
Packer type and depth set							

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	Type 1	80	15.6	1.18	268 bbl	CTS	24 hrs
Surface	Type 1	125	15.6	1.18	79.0 bbl	CTS	24 hrs
Coal							
Intermediate 1	Type 1	195	13.8	1.83	66 BBl	CTS	24 hrs
Intermediate 2							
Intermediate 3							
Production	Super Yield 260	120	11.8	2.63	56.0 bbl	1656' est.	24 hrs
Tubing							

Drillers TD (ft) 4500 Loggers TD (ft) 4483
Deepest formation penetrated Devonian Shale Plug back to (ft)
Plug back procedure

Kick off depth (ft)

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
20" : 0
13⅜" : 0
9⅝" : 1
7" : 0
4½" : 66 jts: 10, 20, 30, 40, 50, & 60

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

Received
JUL 10 2015
Office of Oil and Gas
WV Dept. of Environmental Protection

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Rev. 8/23/13

API 47- 39 - 06371 Farm name WVSU Board of Governors Well number WVSU #3

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	4/14/2015	4127	4472	40	Devonian Shale
2	4/14/2015	3341	3850	33	Lower Huron / Devonian Shale

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) 15% HCL	Amount of Nitrogen/other (units)
1	4/14/2015	56	2300	N/A	N/A	N/A	600 gallons	827 mcf
2	4/14/2015	54	2236	N/A	N/A	N/A	600 gallons	827 mcf

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Office of Oil and Gas
WV Dept. of Environmental Protection

Please insert additional pages as applicable.

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API 47- 39 - 06371 Farm name WVSU Board of Governors Well number WVSU #3

PRODUCING FORMATION(S)	DEPTHS	
Lower Huron	3334 to 3713 TVD	3341 to 3720 MD
Devonian Shale	3713 to 4465	3720 to 4472

Please insert additional pages as applicable.

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

SHUT-IN PRESSURE Surface 90 psi Bottom Hole _____ psi DURATION OF TEST 16 hrs

OPEN FLOW Gas 0 mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd GAS MEASURED BY ☐ 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		
					See Attachment A

Please insert additional pages as applicable.

Received
JUL 10 2015
Office of Oil and Gas
WV Dept. of Environmental Protection

Drilling Contractor Kanawha Valley Drilling LLC
Address 929 Charleston Road City Spencer State WV Zip 25276

Logging Company Nabors
Address 515 West Greens Rd, Suite 100 City Houston State TX Zip 77067

Cementing Company ConServ / Nabors
Address 929 Charleston Rd / 515 West Greens Rd, St 100 City Spencer / Houston State WV/TX Zip 25276 / 77067

Stimulating Company Nabors
Address 515 West Greens Rd, Suite 100 City Houston State TX Zip 77067
Please insert additional pages as applicable.

Completed by Ryan Fields Telephone 304-927-6970
Signature Ryan Fields Title Equipment Yard Manager Date 7/6/2015

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

Formation	TOP (TVD)	BOTTOM (TVD)	TOP (MD)	BOTTOM (MD)	Remarks
K.B. to G.L.			0	7	80' hole was
Fill, Fly Ash & Sand	0	48	7	55	damp
Rock	48	63	55	70	
Sand / Rock	63	103	70	110	
Sand / Shale	103	833	110	840	
Sand / Salt Sand	833	953	840	960	
Salt Sand	953	1181	960	1188	
Shale	1181	1333	1188	1340	
Maxton	1333	1438	1340	1445	
Little Lime	1438	1458	1445	1465	
Big Lime	1458	1655	1465	1662	
Injun	1655	1683	1662	1690	
Sand / Shale	1683	2253	1690	2260	
Upper Huron	2253	3333	2260	3340	
Lower Huron	3333	3713	3340	3720	
Devonian Shale	3713	4493	3720	4500	

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JUL 10 2015
Office of Oil and Gas
WV Dept. of Environmental Protection

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Rev. 8/23/13

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

API 47- 39 - 06372 County Kanawha District Spring Hill Corporation
Quad Charleston West Pad Name _____ Field/Pool Name State Police
Farm name WV State Police Well Number #1
Operator (as registered with the OOG) Reserve Oil and Gas, Inc.
Address 929 Charleston Road City Spencer State WV Zip 25276

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 494512 NAD83/4245543 UTM NAD83 Easting 1763112 NAD83/0437418 UTM NAD 83
Landing Point of Curve Northing N/A Easting N/A
Bottom Hole Northing " " Easting " "

Elevation (ft) 583 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)

Date permit issued 03/11/2015 Date drilling commenced 4/6/2015 Date drilling ceased 4/18/2015
Date completion activities began 4/28/2015 Date completion activities ceased 4/28/2015
Verbal plugging (Y/N) No Date permission granted N/A Granted by N/A

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JUL 10 2015
Office of Oil and Gas
WV Dept. of Environmental Protection

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

Freshwater depth(s) ft 40ft, 78ft, 245ft Open mine(s) (Y/N) depths No
Salt water depth(s) ft 980ft Void(s) encountered (Y/N) depths No
Coal depth(s) ft N/A Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by:
R.F.
7/24/15
E

WR-35
Rev. 8/23/13

API 47- 39 - 06372 Farm name WV State Police Well number State Police #1

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	17½"	13⅜"	55'	New	40.0	N/A	CTS
Surface	12⅜"	9⅝"	210'	New	26.0	1 @84'	No, grout backside w/ 70 sacks
Coal							
Intermediate 1	8⅞"	7"	1489'	New	23.0	N/A	Yes, 5bbl
Intermediate 2	8⅞"	5½"	1727'	Used	15.0	N/A	No, CT 990'
Intermediate 3							
Production	4¾"	3½"	4430'	Used	7.7	N/A	
Tubing							
Packer type and depth set							

Comment Details

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft³/sks)	Volume (ft³)	Cement Top (MD)	WOC (hrs)
Conductor	Type 1 + 3% cal	60	15.6	1.18	20.0 bbl	CTS	24 hrs
Surface	Type 1 + 3% cal + ¼ flake	140	15.6	1.18	57.0 bbl	CTS	24 hrs
Coal							
Intermediate 1	Type 1 + 3% cal + ¼ flake	190	12.3/15.6	2.24/1.18	105.5 bbl	CTS	24 hrs
Intermediate 2	Type 1	102	15.6	1.18	34.2 bbl	990'	24 hrs
Intermediate 3							
Production	Super Yield 260	75	11.8	2.63	35 bbl		24 hrs
Tubing							

Drillers TD (ft) 4436 Loggers TD (ft) 4408
Deepest formation penetrated Devonian Shale Plug back to (ft)
Plug back procedure

Kick off depth (ft)

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
13⅜" : 0
9⅝" : 1
7" : 0
5½" : 0
3½" : 0

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JUL 10 2015
Office of Oil and Gas
WV Dept. of Environmental Protection

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

API 47- 39 - 06372 Farm name WV State Police Well number State Police #1

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	4/28/2015	3600	4400	60	Huron / Devonian Shale

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) 15% HCL	Amount of Nitrogen/other (units)
1	4/28/15	48,000 SCF	3960	3998	2960	N/A	1200 gallons	1,800,000 mcf

Please insert additional pages as applicable.

Received
JUL 10 2015
Office of Oil and Gas
WV Dept. of Environmental Protection

WR-35
Rev. 8/23/13

API 47- 39 - 06372 Farm name WV State Police Well number State Police #1

PRODUCING FORMATION(S)	DEPTHS	
Huron	3593 to 3853 TVD	3600 to 3860 MD
Devonian Shale	3853 to 4393	3860 to 4400

Please insert additional pages as applicable.

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

SHUT-IN PRESSURE Surface 350 psi Bottom Hole _____ psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 73 mcfpd Oil _____ bpd NGL _____ bpd Water _____ 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 QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H2S, ETC)
	0		0		
					See attached

Please insert additional pages as applicable.

Drilling Contractor Kanawha Valley Drilling LLC
Address 929 Charleston Road City Spencer State WV Zip 25276

Logging Company Nabors
Address 515 West Greens Rd, Suite 100 City Houston State TX Zip 77067

Cementing Company ConServ / Nabors
Address 929 Charleston Rd / 515 West Greens Rd, St 100 City Spencer / Houston State WV / TX Zip 25276 / 77067

Stimulating Company Nabors
Address 515 West Greens Rd, Suite 100 City Houston State TX Zip 77067
Please insert additional pages as applicable.

Completed by Ryan Fields Telephone 304-927-6970
Signature Ryan Fields Title Equipment Yard Manager Date 7/6/2015

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

Received
JUL 10 2015
Office of Oil and Gas
WV Dept. of Environmental Protection

Formation	TOP (TVD)	BOTTOM (TVD)	TOP (MD)	BOTTOM (MD)	Remarks
K.B. to G.L.			0	7	40' 1/4" stream
Dirt & Fill	0	13	7	20	of water
Sand	13	43	20	50	
Rock	43	68	50	75	78' 5" stream
Sand / Creek Gravel	68	71	75	78	of water
Sand	71	208	78	215	
Shale	208	216	215	223	245' hole was
Sand / Shale	216	998	223	1005	damp, started
Salt Sand	998	1208	1005	1215	soaping
Maxton	1208	1373	1215	1380	
Shale	1373	1395	1380	1402	980' 2 1/2"
Little Lime	1395	1431	1402	1438	stream of water
Big Lime	1431	1625	1438	1632	
Injun	1625	1646	1632	1653	2440' gas check
Sand / Shale	1646	2095	1653	2102	no show
Berea	2095	2104	2102	2111	
Sand / Shale	2104	3193	2111	3200	3552' gas check
Huron	3193	3853	3200	3860	3/10 thru 2"
Devonian Shale	3853	4429	3860	4436	73,000
					3807' gas check
					3/10 thru 2"
					73,000

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