

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

API 47 - 017 - 06487 County Doddridge District Grant  
Quad Smithburg 7.5' Pad Name Pearl Jean Pad Field/Pool Name \_\_\_\_\_  
Farm name Pennington, Dean R. et al Well Number Manser Unit 3H  
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 4,348,475m Easting 528,205m  
Landing Point of Curve Northing 4,348,630.77m Easting 528,521.46m  
Bottom Hole Northing 4,350,614m Easting 527,830m

Elevation (ft) 1,141' GL Type of Well  New  Existing Type of Report  Interim  Final  
Permit Type  Deviated  Horizontal  Horizontal 6A  Vertical Depth Type  Deep  Shallow  
Type of Operation  Convert  Deepen  Drill  Plug Back  Redrilling  Rework  Stimulate  
Well Type  Brine Disposal  CBM  Gas  Oil  Secondary Recovery  Solution Mining  Storage  Other \_\_\_\_\_  
Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil  Other \_\_\_\_\_  
Drilled with  Cable  Rotary

Drilling Media Surface hole  Air  Mud  Fresh Water Intermediate hole  Air  Mud  Fresh Water  Brine  
Production hole  Air  Mud  Fresh Water  Brine  
Mud Type(s) and Additive(s)  
Air- Foam & 4% KCL  
Mud- Polymer

Date permit issued 06/10/2014 Date drilling commenced 09/03/2014 Date drilling ceased 11/24/2014  
Date completion activities began 12/03/2014 Date completion activities ceased 02/04/2015  
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 108', 238' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft 1253' 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

Reviewed by:  
JL/S/K  
09/25/2015

API 47-017 - 06487 Farm name Pennington, Dean R. et al Well number Manser Unit 3H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	24"	20"	40'	New	94#; H-40	N/A	Yes
Surface	17 1/2"	13 3/8"	360'	New	48#; H-40	N/A	Yes
Coal							
Intermediate 1	12 1/4"	9 5/8"	2,614'	New	40#; J-55	N/A	Yes
Intermediate 2							
Intermediate 3							
Production	8 3/4" & 8 1/2"	5 1/2"	14,420'	New	20#; P-110	N/A	Yes
Tubing		2 3/8"	7,263'		5.95#; N-80	N/A	
Packer type and depth set		N/A					

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Class A	150 sx	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	400 sx	15.6	1.18	250	0'	8 Hrs.
Coal							
Intermediate 1	Class A	965 sx	15.6	1.18	819	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1,097 sx (Lead); 1,132 sx (Tail)	14.5 (Lead); 15.2 (Tail)	1.3 (Lead); 1.86 (Tail)	2,819	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 14,420' MD; 8,966' TVD (BHL); 6,978' TVD (Deepest Point Drilled) Loggers TD (ft) 14,369'  
 Deepest formation penetrated Marcellus Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 6,757

\*\*This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Manser Unit 2H, API #47-017-06486). Please reference the wireline logs submitted with Form WR-35 for the Manser Unit 2H. A Cement Bond Log has been included with this submittal.

Check all wireline logs run \*\*  
 caliper  density  deviated/directional  induction  temperature  sonic  
 neutron  resistivity  gamma ray

Well cored  Yes  No Conventional  Sidewall Were cuttings collected  Yes  No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING \_\_\_\_\_

Conductor- 0  
 Surface- 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface  
 Intermediate- 1 above float joint, 1 above float collar, 1 every 4th joint to surface  
 Production- 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS \_\_\_\_\_

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WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_

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WERE TRACERS USED  Yes  No TYPE OF TRACER(S) USED \_\_\_\_\_

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API 47- 017 - 06487 Farm name Pennington, Dean R. et al Well number Manser Unit 3H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
<b>* PLEASE SEE ATTACHED EXHIBIT 1</b>					

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)
<b>* PLEASE SEE ATTACHED EXHIBIT 2</b>								

Please insert additional pages as applicable.

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>			
Marcellus	6,894' (top)	TVD	7,229' (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

7,991 mcfpd \_\_\_\_\_ bpd \_\_\_\_\_ bpd \_\_\_\_\_ bpd  Estimated  Orifice  Pilot

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

Please insert additional pages as applicable.

Drilling Contractor Patterson - UTI Drilling Company, LLC

Address 207 Carlton Drive City Eighty Four State PA Zip 15330

Logging Company STRC

Address 1560 Good Hope Pike City Clarksburg State WV Zip 26301

Cementing Company Allied Oil & Gas Services, LLC

Address 1036 East Main Street City Bridgeport State WV Zip 26330

Stimulating Company Halliburton

Address 121 Champion Way, Suite 200 City Canonsburg State PA Zip 15317

Please insert additional pages as applicable.

Completed by Megan Darling Telephone 303-357-7230

Signature  Title Permitting Agent Date 07/31/2015

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API 47-017-06487 Farm Name Pennington, Dean R. et al Well Number Manser Unit 3H

**EXHIBIT 1**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	3-Dec-14	14,164	14,330	60	Marcellus
2	20-Dec-14	13,967	14,133	60	Marcellus
3	20-Dec-14	13,770	13,936	60	Marcellus
4	21-Dec-14	13,573	13,739	60	Marcellus
5	21-Dec-14	13,376	13,542	60	Marcellus
6	22-Dec-14	13,179	13,345	60	Marcellus
7	22-Dec-14	12,982	13,148	60	Marcellus
8	22-Dec-14	12,786	12,952	60	Marcellus
9	23-Dec-14	12,589	12,755	60	Marcellus
10	24-Dec-14	12,392	12,558	60	Marcellus
11	24-Dec-14	12,195	12,361	60	Marcellus
12	24-Dec-14	11,998	12,164	60	Marcellus
13	26-Dec-14	11,801	11,967	60	Marcellus
14	26-Dec-14	11,604	11,770	60	Marcellus
15	27-Dec-14	11,408	11,574	60	Marcellus
16	27-Dec-14	11,211	11,377	60	Marcellus
17	28-Dec-14	11,014	11,180	60	Marcellus
18	28-Dec-14	10,817	10,983	60	Marcellus
19	28-Dec-14	10,620	10,786	60	Marcellus
20	29-Dec-14	10,423	10,589	60	Marcellus
21	29-Dec-14	10,226	10,392	60	Marcellus
22	30-Dec-14	10,029	10,196	60	Marcellus
23	30-Dec-14	9,833	9,999	60	Marcellus
24	30-Dec-14	9,636	9,802	60	Marcellus
25	31-Dec-14	9,439	9,605	60	Marcellus
26	31-Dec-14	9,242	9,408	60	Marcellus
27	1-Jan-15	9,045	9,211	60	Marcellus
28	1-Jan-15	8,848	9,014	60	Marcellus
29	1-Jan-15	8,651	8,818	60	Marcellus
30	2-Jan-15	8,455	8,621	60	Marcellus
31	2-Jan-15	8,258	8,424	60	Marcellus
32	3-Jan-15	8,061	8,227	60	Marcellus
33	3-Jan-15	7,864	8,030	60	Marcellus
34	4-Jan-15	7,667	7,833	60	Marcellus
35	4-Jan-15	7,470	7,636	60	Marcellus
36	4-Jan-15	7,273	7,440	60	Marcellus

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**API 47-017-06487 Farm Name Pennington, Dean R. et al Well Number Manser Unit 3H**

**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	19-Dec-14	63.1	7,091	5,414	5,089	247,288	6,789	N/A
2	20-Dec-14	63.2	6,966	5,564	5,341	242,839	6,604	N/A
3	20-Dec-14	62.8	6,779	5,570	5,298	228,413	7,049	N/A
4	21-Dec-14	63.3	6,587	5,589	4,942	244,973	6,676	N/A
5	21-Dec-14	64.2	6,803	5,395	4,951	244,137	6,493	N/A
6	22-Dec-14	60.4	6,635	5,382	5,210	158,147	7,184	N/A
7	22-Dec-14	62.6	6,783	5,440	5,212	239,895	6,472	N/A
8	22-Dec-14	58.9	6,760	5,412	5,237	241,460	6,394	N/A
9	23-Dec-14	62.0	6,420	5,351	5,155	242,862	6,413	N/A
10	24-Dec-14	64.0	6,378	5,203	4,969	244,204	6,395	N/A
11	24-Dec-14	67.2	6,568	5,355	5,108	242,923	6,391	N/A
12	24-Dec-14	65.9	6,607	5,368	4,942	243,960	6,491	N/A
13	26-Dec-14	63.0	6,563	5,786	5,237	180,940	6,888	N/A
14	26-Dec-14	62.9	6,575	5,471	5,158	241,131	6,312	N/A
15	27-Dec-14	63.2	6,647	5,446	5,364	241,497	6,392	N/A
16	27-Dec-14	66.2	6,645	5,430	5,296	240,654	6,321	N/A
17	28-Dec-14	61.3	6,931	5,580	5,208	232,863	6,797	N/A
18	28-Dec-14	66.2	6,834	5,547	5,537	240,733	6,277	N/A
19	28-Dec-14	59.7	6,522	5,657	5,477	209,292	5,682	N/A
20	29-Dec-14	63.3	6,576	5,699	5,643	233,421	6,012	N/A
21	29-Dec-14	66.6	6,836	5,655	5,373	243,248	6,209	N/A
22	30-Dec-14	61.8	6,914	5,766	5,183	244,131	6,320	N/A
23	30-Dec-14	64.0	6,507	5,616	5,443	242,232	6,182	N/A
24	30-Dec-14	63.9	6,510	5,540	5,151	241,951	6,201	N/A
25	31-Dec-14	64.1	6,551	5,576	5,211	243,368	6,254	N/A
26	31-Dec-14	63.7	6,509	5,826	5,087	243,816	6,178	N/A
27	1-Jan-15	63.9	6,406	5,552	5,122	241,520	6,147	N/A
28	1-Jan-15	63.8	6,276	5,356	5,074	242,706	6,251	N/A
29	1-Jan-15	65.6	6,328	5,445	5,168	244,831	6,147	N/A
30	2-Jan-15	64.3	6,435	5,563	5,401	242,404	5,985	N/A
31	2-Jan-15	63.2	6,304	5,641	5,341	242,240	6,056	N/A
32	3-Jan-15	64.9	6,256	5,467	5,556	242,652	6,059	N/A
33	3-Jan-15	64.2	6,583	5,686	5,395	239,208	5,901	N/A
34	4-Jan-15	63.9	6,387	5,766	5,564	242,252	5,916	N/A
35	4-Jan-15	64.4	6,489	5,876	5,809	240,455	5,922	N/A
36	4-Jan-15	63.4	6,461	5,984	4,863	242,451	6,130	N/A
	<b>AVG=</b>	<b>63.6</b>	<b>6,595</b>	<b>5,555</b>	<b>5,253</b>	<b>8,521,097</b>	<b>227,893</b>	<b>TOTAL</b>

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**EXHIBIT 3**

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Fresh Water	108'	N/A	108'	N/A
Fresh Water	238'	N/A	238'	N/A
Shale	0	168	0	168
Shale/ Trace Coal	est. 168	188	est. 168	188
Shale	est. 188	228	est. 188	228
Sandstone/ Siltstone	est. 228	288	est. 228	288
Shale/ Coal	est. 288	368	est. 288	368
Limestone/ Shale	est. 368	408	est. 368	408
Siltstone/ Shale	est. 408	568	est. 408	568
Shale/ Coal	est. 568	588	est. 568	588
Siltstone/ Limestone	est. 588	628	est. 588	628
Shale/ Limestone	est. 628	788	est. 628	788
Shale/ Siltstone	est. 788	988	est. 788	988
Shale/ Sandstone	est. 988	1,228	est. 988	1,228
Sandstone	est. 1228	1,408	est. 1228	1,408
Sandstone/ Coal	est. 1408	1,448	est. 1408	1,448
Sandstone	est. 1448	1,688	est. 1448	1,688
Siltstone	est. 1688	1,933	est. 1688	1,933
Big Lime	1,933	2,039	1,933	2,039
Big Injun	2,039	2,421	2,039	2,421
Gantz Sand	2,421	2,548	2,421	2,548
Fifty Foot Sandstone	2,548	2,612	2,548	2,612
Gordon	2,612	2,953	2,612	2,953
Fifth Sandstone	2,953	2,969	2,953	2,969
Bayard	2,969	3,370	2,969	3,370
Warren	3,370	3,682	3,370	3,682
Speechley	3,682	3,994	3,682	3,994
Baltown	3,994	4,464	3,994	4,465
Bradford	4,464	4,968	4,465	4,981
Benson	4,968	5,237	4,981	5,268
Alexander	5,237	5,451	5,268	5,511
Elk	5,451	6,016	5,511	6,153
Rhinestreet	6,016	6,408	6,153	6,591
Sycamore	6,408	6,638	6,591	6,849
Middlesex	6,638	6,776	6,849	7,027
Burkett	6,776	6,802	7,027	7,065
Tully	6,802	6,894	7,065	7,229
Marcellus	6,894	NA	7,229	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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# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/19/2014
Job End Date:	1/4/2015
State:	West Virginia
County:	Doddridge
API Number:	47-017-06487-08-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Manser Unit 3H
Longitude:	-80.67296100
Latitude:	39.28518100
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,979
Total Base Water Volume (gal):	10,145,458
Total Base Non Water Volume:	0

## 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
Fresh Water	Operator	Base Fluid	Fresh Water	7732-18-5	100.00000	90.59912	Density = 8.380
SAND - PREMIUM WHITE	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00000	5.02576	
SAND - PREMIUM - 20/40	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00000	3.33236	
SSA-2	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00000	0.72229	
HCl > 10%	Halliburton	Solvent	Hydrochloric Acid	7647-01-0	100.00000	0.20501	
WG-36 GELLING AGENT	Halliburton	Gelling Agent	Guar gum	9000-30-0	100.00000	0.04663	
FR-76	Halliburton	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01759	
SP BREAKER	Halliburton	Breaker	Sodium persulfate	7775-27-1	100.00000	0.00179	
P-65	Halliburton	Scale Inhibitor					



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BE-9W	Halliburton	Biocide	Ammonium Chloride	12125-02-9	10.00000	0.00141	
			Tributyl tetradecyl phosphonium chloride	81741-28-8	10.00000	0.00080	
HALOS ACID INHIBITOR	Halliburton	Corrosion Inhibitor	Methanol	67-56-1	60.00000	0.00010	
			Propargyl alcohol	107-19-7	10.00000	0.00002	
Ingredients shown above are subject to 29 CFR 1910.1200(f) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
		Other Ingredient(s)	Water	7732-18-5		0.04321	
		Other Ingredient(s)	Polyacrylamide copolymer	Confidential		0.01759	
		Other Ingredient(s)	Propylene glycol	57-55-6		0.00481	
		Other Ingredient(s)	Amide	Confidential		0.00293	
		Other Ingredient(s)	Ammonium chloride	12125-02-9		0.00293	
		Other Ingredient(s)	Alcohols ethoxylated	Confidential		0.00293	Denise Tuck, Halliburton 3000 N. Sam Houston Pkwy E., Houston, TX 77032 281-871-6226
		Other Ingredient(s)	Sodium chloride	7647-14-5		0.00293	
		Other Ingredient(s)	Bentonite, benzyl(hydrogenated tallow alkyl) dimethylammonium stearate complex	121888-68-4		0.00234	
		Other Ingredient(s)	Sorbital, mono-9-octadecenoate, (Z)	1338-43-8		0.00059	
		Other Ingredient(s)	Sorbital monooleate polyoxyethylene derivative	9005-65-6		0.00059	
		Other Ingredient(s)	Surfactant mixture	Confidential		0.00047	
		Other Ingredient(s)	Silica gel	112926-00-8		0.00047	
		Other Ingredient(s)	Surfactant mixture	Confidential		0.00047	
		Other Ingredient(s)	Alcohols, C14-C15, ethoxylated	68951-67-7		0.00005	

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			Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1			0.00005	
	Other Ingredient(s)		Fatty acids, tall oil	Confidential			0.00005	
	Other Ingredient(s)		Crystalline Silica, Quartz	14808-60-7			0.00005	
	Other Ingredient(s)		Olefins	Confidential			0.00001	
	Other Ingredient(s)		Olefins	Confidential			0.00001	
	Other Ingredient(s)		Sodium sulfate	7757-82-6			0.00000	
	Other Ingredient(s)		Olefins	Confidential			0.00000	
	Other Ingredient(s)		Olefins	Confidential			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°17'30" 1,832'

LATITUDE 39°20'00"

LONGITUDE 80°40'00" 10,545' TO BOTTOM HOLE  
LONGITUDE 80°40'00" 2,393'

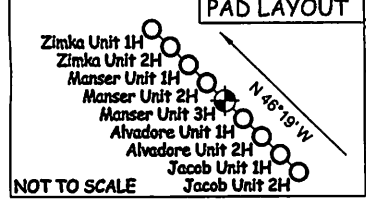
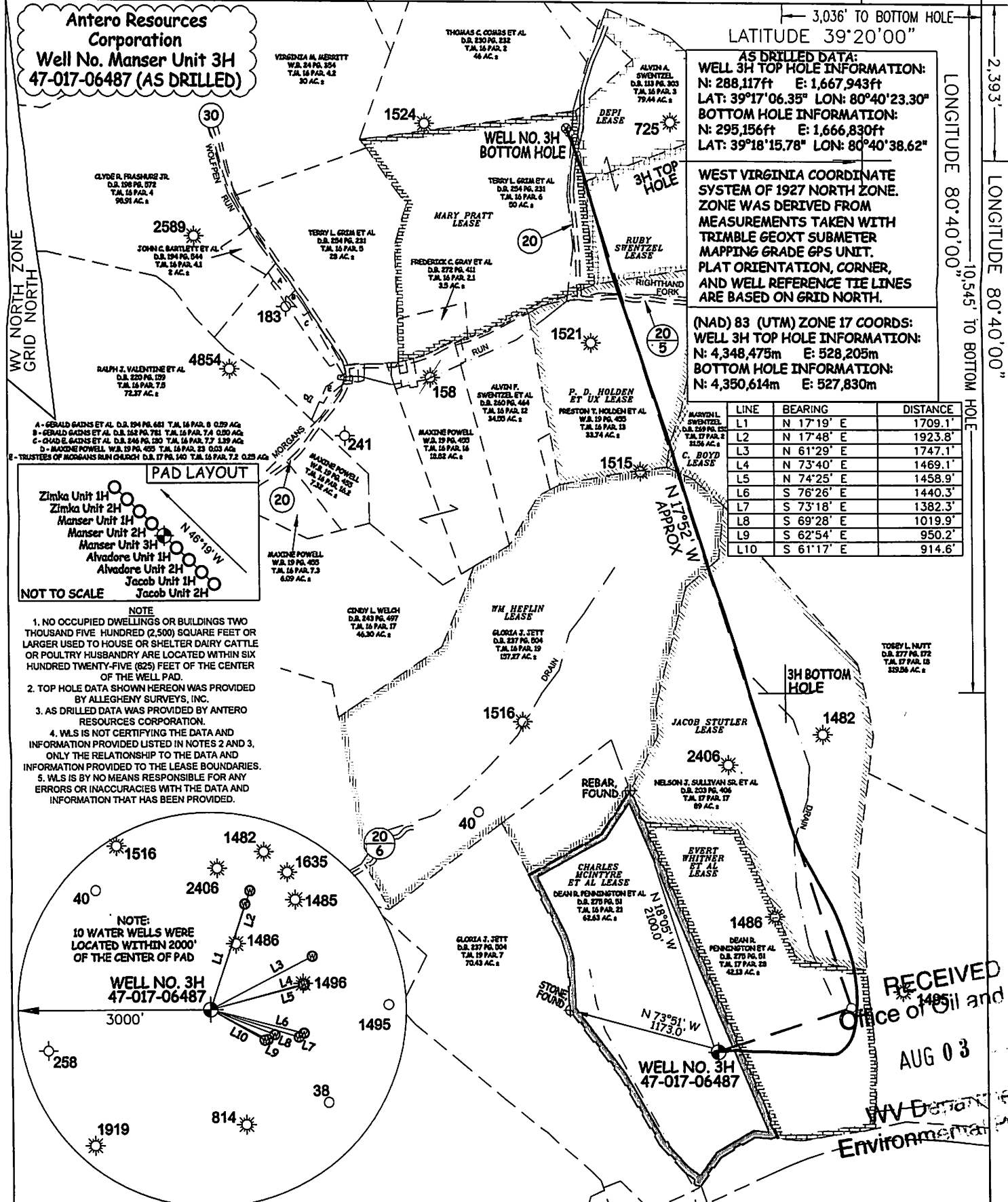
Antero Resources Corporation  
Well No. Manser Unit 3H  
47-017-06487 (AS DRILLED)

AS DRILLED DATA:  
WELL 3H TOP HOLE INFORMATION:  
N: 288,117ft E: 1,667,943ft  
LAT: 39°17'06.35" LON: 80°40'23.30"  
BOTTOM HOLE INFORMATION:  
N: 295,156ft E: 1,666,830ft  
LAT: 39°18'15.78" LON: 80°40'38.62"

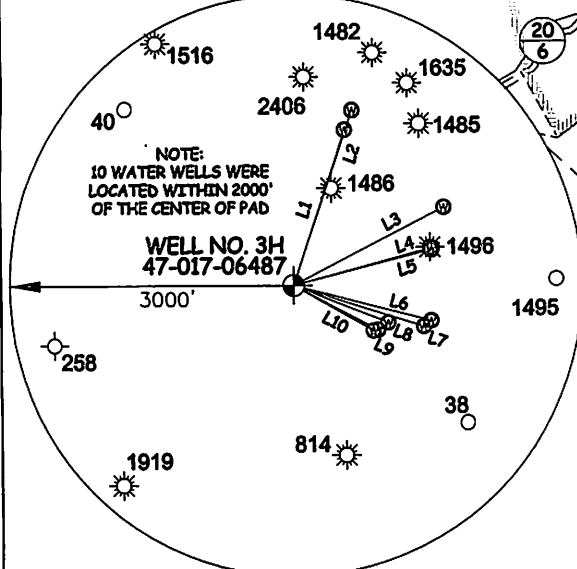
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:  
WELL 3H TOP HOLE INFORMATION:  
N: 4,348,475m E: 528,205m  
BOTTOM HOLE INFORMATION:  
N: 4,350,614m E: 527,830m

LINE	BEARING	DISTANCE
L1	N 17°19' E	1709.1'
L2	N 17°48' E	1923.8'
L3	N 61°29' E	1747.1'
L4	N 73°40' E	1469.1'
L5	N 74°25' E	1458.9'
L6	S 76°26' E	1440.3'
L7	S 73°18' E	1382.3'
L8	S 69°28' E	1019.9'
L9	S 62°54' E	950.2'
L10	S 61°17' E	914.6'

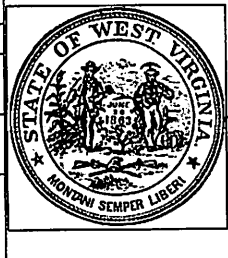


- NOTE
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.
  2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY 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.



RECEIVED  
Office of Oil and Gas  
AUG 03  
WV Department of Environmental Protection

JOB # 14-027WA  
DRAWING # MANSER3HAD  
SCALE 1" = 1000'  
MINIMUM DEGREE OF ACCURACY SUBMETER  
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS



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

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

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS  
WELL TYPE: OIL \_\_\_ GAS  LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
(IF "GAS") PRODUCTION  STORAGE \_\_\_ DEEP \_\_\_ SHALLOW   
LOCATION: ELEVATION 1,198' ORIGINAL - 1,141' AS DRILLED WATERSHED HEADWATERS MIDDLE ISLAND CREEK  
QUADRANGLE SMITHBURG 7.5' DISTRICT GRANT COUNTY **09/25/2015**  
SURFACE OWNER DEAN R. PENNINGTON ET AL ACREAGE 62.63 ACRES +/-  
OIL & GAS ROYALTY OWNER CHARLES MCINTYRE ET AL; EVERT WHITNER ET AL; JACOB STUTLER; LEASE ACREAGE 70 AC±; 42 AC±; 91.5 AC±; WM. HEFLIN; CAROL BOYD; P.D. HOLDEN ET UX; RUBY SWENTZEL; DEPI; MARY PRATT 120.6 AC±; 31.56 AC±; 35 AC±; 21.25 AC±; 33.5 AC±; 54 AC±  
PROPOSED WORK: DRILL \_\_\_ CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE \_\_\_  
PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY)  AS DRILLED \_\_\_ PLUG & ABANDON \_\_\_ CLEAN OUT & REPLUG \_\_\_  
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,966' TVD 14,420' MD  
WELL OPERATOR ANTERO RESOURCES CORPORATION DESIGNATED AGENT DIANNA STAMPER  
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD  
DENVER, CO 80202 CHARLESTON, WV 25313