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WR-35  
Rev. 8/23/13

WV GEOLOGICAL SURVEY  
MORGANTOWN, WV

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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 47-017-06498 County Doddridge District Grant  
Quad Smithburg 7.5' Pad Name Misery Pad Field/Pool Name \_\_\_\_\_  
Farm name Spencer, Denzil C. et al Well Number Deano 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 4,356,827m Easting 521,640m  
Landing Point of Curve Northing 4,356,547.95m Easting 521,192.14m  
Bottom Hole Northing 4,354,296m Easting 522,101m

Elevation (ft) 1,001' 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 05/29/2014 Date drilling commenced 06/20/2014 Date drilling ceased 10/19/2014  
Date completion activities began 10/28/2014 Date completion activities ceased 03/09/2015  
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 475' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft 1,477'; 1,675' 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:  
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API 47-017 - 06498 Farm name Spencer, Denzil C. et al Well number Deano 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	94#; H-40	N/A	Yes
Surface	17 1/2"	13 3/8"	562'	New	54#; J-55	N/A	Yes
Coal							
Intermediate 1	12 1/4"	9 5/8"	2,543'	New	36#; J-55	N/A	Yes
Intermediate 2							
Intermediate 3							
Production	8 3/4" & 8 1/2"	5 1/2"	14,452'	New	23#; P-110	N/A	Yes
Tubing		2 3/8"	7,220'		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 <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Class A	196 sx	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	670 sx	15.6	1.18	390	0'	8 Hrs.
Coal							
Intermediate 1	Class A	928 sx	15.6	1.18	796	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	937 sx (Lead); 1,377 sx (Tail)	13.5 (Lead); 15.2 (Tail)	1.44 (Lead); 1.78 (Tail)	2,843	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15,398' MD; 6,944' TVD (BHL); 6968' TVD (Deepest Point Drilled) Loggers TD (ft) 15,042'  
Deepest formation penetrated Marcellus Plug back to (ft) N/A  
Plug back procedure N/A

Kick off depth (ft) 6,148'

\*\*This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Anne Unit 2H, API #47-017-06374). Please reference the wireline logs submitted with Form WR-35 for the Anne 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 \_\_\_\_\_

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 - 06498 Farm name Spencer, Denzil C. et al Well number Deano Unit 2H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
Marcellus	6,722' (top)	TVD	7,232' (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 11,121 mcfpd Oil 28 bpd NGL \_\_\_\_\_ bpd Water 1 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

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

**\* PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

Drilling Contractor Precision Drilling Company, LP  
Address 2640 Reach Road City Williamsport State PA Zip 17701

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

Please insert additional pages as applicable.

Completed by Megan Darling Telephone 303-357-7230  
Signature Megan C. Darling Title Permitting Agent Date 08/21/2015

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API 47-017-06498 Farm Name Spencer, Denzil C. et al Well Number Deano Unit 2H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	28-Oct-14	15,208	15,375	60	Marcellus
2	30-Dec-14	15,009	15,177	60	Marcellus
3	30-Dec-14	14,811	14,978	60	Marcellus
4	30-Dec-14	14,612	14,780	60	Marcellus
5	31-Dec-14	14,414	14,581	60	Marcellus
6	31-Dec-14	14,215	14,383	60	Marcellus
7	31-Dec-14	14,017	14,184	60	Marcellus
8	1-Jan-15	13,819	13,986	60	Marcellus
9	1-Jan-15	13,620	13,788	60	Marcellus
10	12-Jan-15	13,422	13,589	60	Marcellus
11	13-Jan-15	13,223	13,391	60	Marcellus
12	13-Jan-15	13,025	13,192	60	Marcellus
13	13-Jan-15	12,826	12,994	60	Marcellus
14	14-Jan-15	12,628	12,795	60	Marcellus
15	15-Jan-15	12,429	12,597	60	Marcellus
16	16-Jan-15	12,231	12,398	60	Marcellus
17	16-Jan-15	12,033	12,200	60	Marcellus
18	16-Jan-15	11,834	12,001	60	Marcellus
19	16-Jan-15	11,636	11,803	60	Marcellus
20	17-Jan-15	11,437	11,605	60	Marcellus
21	17-Jan-15	11,239	11,406	60	Marcellus
22	17-Jan-15	11,040	11,208	60	Marcellus
23	17-Jan-15	10,842	11,009	60	Marcellus
24	18-Jan-15	10,643	10,811	60	Marcellus
25	18-Jan-15	10,445	10,612	60	Marcellus
26	19-Jan-15	10,246	10,414	60	Marcellus
27	19-Jan-15	10,048	10,215	60	Marcellus
28	19-Jan-15	9,850	10,017	60	Marcellus
29	20-Jan-15	9,651	9,818	60	Marcellus
30	20-Jan-15	9,453	9,620	60	Marcellus
31	20-Jan-15	9,254	9,422	60	Marcellus
32	20-Jan-15	9,056	9,223	60	Marcellus
33	20-Jan-15	8,857	9,025	60	Marcellus
34	21-Jan-15	8,659	8,826	60	Marcellus
35	22-Jan-15	8,460	8,628	60	Marcellus
36	22-Jan-15	8,262	8,429	60	Marcellus
37	22-Jan-15	8,064	8,231	60	Marcellus
38	23-Jan-15	7,865	8,032	60	Marcellus
39	23-Jan-15	7,667	7,834	60	Marcellus
40	23-Jan-15	7,468	7,636	60	Marcellus
41	23-Jan-15	7,270	7,437	60	Marcellus

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API 47-017-06498 Farm Name Spencer, Denizil C. et al Well Number Deano 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	29-Dec-14	63.4	7,040	5,347	4,353	244,000	6,628	N/A
2	30-Dec-14	62.9	7,258	5,962	5,119	244,600	6,648	N/A
3	30-Dec-14	62.3	7,326	5,839	5,304	201,100	6,909	N/A
4	30-Dec-14	63.5	7,363	6,064	4,006	207,200	7,084	N/A
5	31-Dec-14	61.7	7,444	6,270	5,348	240,600	6,626	N/A
6	31-Dec-14	63.4	7,288	5,866	4,608	243,500	6,669	N/A
7	31-Dec-14	61.9	7,670	6,340	5,014	149,500	6,818	N/A
8	1-Jan-15	62.9	7,156	6,152	5,289	239,000	6,479	N/A
9	1-Jan-15	63.4	7,099	6,220	5,577	243,800	6,438	N/A
10	12-Jan-15	63.3	7,432	6,529	5,050	188,100	5,806	N/A
11	13-Jan-15	62.2	7,584	6,701	5,531	158,800	5,346	N/A
12	13-Jan-15	64.9	7,409	5,854	5,478	246,100	6,499	N/A
13	13-Jan-15	63.5	7,535	5,775	5,469	213,800	6,961	N/A
14	14-Jan-15	65.2	7,866	6,283	5,483	142,400	6,663	N/A
15	15-Jan-15	64.8	7,468	5,757	5,273	243,000	6,320	N/A
16	16-Jan-15	65.2	6,781	5,362	5,208	246,500	6,366	N/A
17	16-Jan-15	65.1	6,778	5,851	4,994	250,900	6,340	N/A
18	16-Jan-15	64.2	6,875	5,531	5,215	240,600	6,221	N/A
19	16-Jan-15	65.9	6,731	5,793	5,457	244,700	6,286	N/A
20	17-Jan-15	65.0	6,505	5,265	5,104	243,900	6,289	N/A
21	17-Jan-15	62.7	6,534	5,507	4,602	247,800	6,329	N/A
22	17-Jan-15	63.7	7,086	5,451	5,218	247,500	6,285	N/A
23	17-Jan-15	66.0	6,404	5,537	5,048	245,200	6,257	N/A
24	18-Jan-15	64.7	6,365	5,234	5,301	223,800	6,720	N/A
25	18-Jan-15	67.0	6,583	5,627	5,107	242,700	6,243	N/A
26	19-Jan-15	64.2	6,474	5,479	5,151	246,400	6,222	N/A
27	19-Jan-15	67.0	6,574	5,662	4,709	244,000	6,298	N/A
28	19-Jan-15	65.0	6,287	5,171	5,149	243,900	6,226	N/A
29	20-Jan-15	65.7	6,328	5,054	5,168	245,100	6,103	N/A
30	20-Jan-15	70.7	6,263	5,446	4,759	245,900	6,160	N/A
31	20-Jan-15	62.9	6,284	5,165	5,088	243,700	6,050	N/A
32	20-Jan-15	64.2	6,766	5,823	5,020	200,300	6,463	N/A
33	20-Jan-15	64.3	7,275	5,515	4,838	233,500	6,373	N/A
34	21-Jan-15	68.3	6,616	5,491	5,163	248,700	6,058	N/A
35	22-Jan-15	68.6	6,204	5,522	5,277	207,000	6,490	N/A
36	22-Jan-15	65.5	6,322	5,442	5,002	244,900	6,009	N/A
37	22-Jan-15	65.8	6,077	5,248	4,998	247,700	6,007	N/A
38	23-Jan-15	66.0	6,588	5,425	5,161	224,200	6,507	N/A
39	23-Jan-15	65.0	6,243	5,425	4,730	243,900	5,957	N/A
40	23-Jan-15	65.5	6,440	6,382	4,422	240,600	5,902	N/A
41	23-Jan-15	67.5	7,387	6,050	5,083	228,300	5,870	N/A
AVG=		64.8	6,871	5,717	5,070	9,427,200	259,925	TOTAL

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API 47-017-06498 Farm Name Spencer, Denzil C. et al Well Number Deano Unit 2H

**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	475'	N/A	475'	N/A
Shale/ Siltstone	0	177	0	177
Shale/ Trace Coal	est. 177	207	est. 177	207
Shale/ Siltstone	est. 207	257	est. 207	257
Shale/ Trace Coal	est. 257	277	est. 257	277
Shale/ Sandstone	est. 277	657	est. 277	657
Limestone/ Siltstone	est. 657	967	est. 657	967
Sandstone	est. 967	987	est. 967	987
Shale/ Limestone/ Siltstone	est. 987	1,117	est. 987	1,117
Siltstone/ Sandstone	est. 1117	1,177	est. 1117	1,177
Shale/ Siltstone	est. 1177	1,237	est. 1177	1,237
Sandstone	est. 1237	1,257	est. 1237	1,257
Shale/ Siltstone	est. 1257	1,397	est. 1257	1,397
Sandstone/ Siltstone	est. 1397	1,542	est. 1397	1,542
Sandstone/ Coal	est. 1542	1,602	est. 1542	1,602
Siltstone/ Shale	est. 1602	1,995	est. 1602	1,995
Big Lime	1,995	2,114	1,995	2,114
Big Injun	2,114	2,545	2,114	2,545
Gantz Sand	2,545	2,689	2,545	2,689
Fifty Foot Sandstone	2,689	2,762	2,689	2,763
Gordon	2,762	3,117	2,763	3,129
Fifth Sandstone	3,117	3,156	3,129	3,170
Bayard	3,156	3,459	3,170	3,495
Warren	3,459	3,846	3,495	3,916
Speechley	3,846	4,091	3,916	4,181
Baltown	4,091	4,569	4,181	4,700
Bradford	4,569	5,047	4,700	5,221
Benson	5,047	5,311	5,221	5,510
Alexander	5,311	5,501	5,510	5,716
Elk	5,501	6,007	5,716	6,272
Rhinestreet	6,007	6,330	6,272	6,634
Sycamore	6,330	6,508	6,634	6,847
Middlesex	6,508	6,641	6,847	7,051
Burkett	6,641	6,669	7,051	7,104
Tully	6,669	6,722	7,104	7,232
Marcellus	6,722	NA	7,232	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**

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Job Start Date	12/29/2014
Job End Date	1/23/2015
State	West Virginia
County	Doddridge
API Number	47-017-06498-00-00
Operator Name	Antero Resources Corporation
Well Name and Number	Deano Unit 2H
Longitude	-80.74881100
Latitude	39.36062800
Datum	NAD83
Federal/Tribal Well	NO
True Vertical Depth	6,848
Total Base Water Volume (gal)	10,916,850
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
Water	ANTERO RESOURCES	Water					
WV Specific 40/70 mesh Sand	Nabors Completion and Production Services	Sand - Bulk - West Virginia		7732-18-5	100.00000	90.20718	
			Crystalline Silica, quartz	14808-60-7	99.90000	5.27182	
			Aluminum Oxide	1344-28-1	1.10000	0.05805	
			Iron Oxide	1309-37-1	0.10000	0.00528	
			Titanium Oxide	13463-67-7	0.10000	0.00528	
WV Specific 20/40 mesh Sand	Nabors Completion and Production Services	Sand - Bulk - West Virginia					
			Crystalline Silica, quartz	14808-60-7	99.90000	3.35420	
			Aluminum Oxide	1344-28-1	1.10000	0.03693	
			Titanium Oxide	13463-67-7	0.10000	0.00336	
			Iron Oxide	1309-37-1	0.10000	0.00336	
WV Specific 100 mesh Sand	Nabors Completion and Production Services	Sand - Bulk - West Virginia					
			Crystalline Silica, quartz	14808-60-7	99.90000	0.70493	
			Aluminum Oxide	1344-28-1	1.10000	0.00776	



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				Iron Oxide	1309-37-1	0.10000	0.00071
HCl Acid (12.5-18.0%) 22 Baume	Nabors Completion and Production Services	Bulk Acid	Titanium Oxide	13463-67-7	0.10000	0.00071	
			Water	7732-18-5	87.50000	0.18220	
LSG-100L	Nabors Completion and Production Services	Gelling Agents	Hydrochloric Acid	7647-01-0	18.00000	0.03748	
WFR-6W	Nabors Completion and Production Services	Friction Reducer	Petroleum Distillates	64742-47-8	70.00000	0.09258	
AQUACAR DB 20	Nabors Completion and Production Services	Biocides	Anionic Water-Soluble Polymer Emulsion	Proprietary	100.00000	0.07365	
			Polyethylene glycol	25322-68-3	54.50000	0.00665	
			2,2-Dibromo-3-nitro- propionamide (DBNPA)	10222-01-2	20.00000	0.00244	
			Sodium bromide	7647-15-6	4.00000	0.00049	
			Dibromoacetonitrile	3252-43-5	3.00000	0.00037	
Calcium Chloride (CaCl2)	Nabors Completion and Production Services	Cement Accelerators					
EXP-F0923-14	Nabors Completion and Production Services	Paraffin & Scale Additives	Calcium Chloride	10043-52-4	100.00000	0.00763	
			Methanol	67-56-1	30.00000	0.00420	
			Bis(hexamethylene triaminepenta (methylenephosphonic acid))	Proprietary	10.00000	0.00140	
Super GREEN SOLV- M	Nabors Completion and Production Services	Paraffin & Scale Additives					
			Aliphatic Hydrocarbons	Proprietary	95.00000	0.00192	
			Dodecane	Proprietary	14.00000	0.00028	
			Tetradecane	Proprietary	11.00000	0.00022	
			Tridecane	Proprietary	9.00000	0.00018	
			Undecane	Proprietary	8.00000	0.00016	
OB-2 LT	Nabors Completion and Production Services	Gel Breakers					
			Ammonium Persulfate	7727-54-0	85.00000	0.00147	
			Crystalline Silica (in the form of quartz)	14808-60-7	10.00000	0.00017	
Acid Inhibitor 2 (AI-2)	Nabors Completion and Production Services	Acid Corrosion Inhibitors					
			Propargyl Alcohol	107-19-7	40.00000	0.00016	

				Glycol Ethers	111-46-6		40.00000	0.00016
				Isopropyl Alcohol	87-63-0		40.00000	0.00016
				Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7		10.00000	0.00004
EB-4L	Nabors Completion and Production Services	Gel Breakers						
				Ethylene Glycol	107-21-1		40.00000	0.00017
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.								
Other Ingredients	Nabors Completion and Production Services	Other Ingredients						
				Copolymer	Proprietary		100.00000	0.07365
				guar gum	9000-30-0		50.00000	0.06613
				Water	7732-18-5		40.00000	0.02946
				isoparaffinic Solvent	64742-47-8		26.00000	0.01915
				Water	7732-18-5		85.00000	0.01190
				Water	7732-18-5		32.00000	0.00391
				Ethoxylated alcohols	Proprietary		4.00000	0.00295
				Ethylene Glycol	107-21-1		4.00000	0.00295
				Crystalline Silica (in the form of quartz)	14808-60-7		2.00000	0.00265
				Surfactant	68439-51-0		2.00000	0.00265
				Surfactant Blend	Proprietary		3.00000	0.00221
				Sugar	57-50-1		100.00000	0.00041
				Proprietary	Proprietary		100.00000	0.00041
				Potassium Chloride	7447-40-7		5.00000	0.00038
				Sodium Chloride	7647-14-5		5.00000	0.00038
				Alkali Chloride salt	Proprietary		15.00000	0.00026
				Water	7732-18-5		100.00000	0.00021
				Water	7732-18-5		48.00000	0.00019
				Proprietary	Proprietary		100.00000	0.00014
				Monobromo-3-nitropropionamide	1113-55-9		1.00000	0.00012
				2,2-Dibromomalonamide	73003-80-2		1.00000	0.00012
				Water	7732-18-5		1.00000	0.00008
				2-Propenamide as residual	79-06-1		0.10000	0.00007
				2-Butoxyethanol	111-76-2		13.00000	0.00005
				Proprietary	Proprietary		10.00000	0.00004
				Proprietary	Proprietary		1.00000	0.00000
				Proprietary	Proprietary		0.99000	0.00000
				Proprietary	Proprietary		1.00000	0.00000
				Proprietary	Proprietary		1.00000	0.00000
				Proprietary	Proprietary		1.00000	0.00000
				Proprietary	Proprietary		0.02000	
				Organophylic Clay	68953-58-2			

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 WV GEOLOGICAL SURVEY  
 MORNINGTOWN, WV

\* 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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WV GEOLOGICAL SURVEY  
MORGANTOWN, WV

LATITUDE 39°22'30"

11,494'

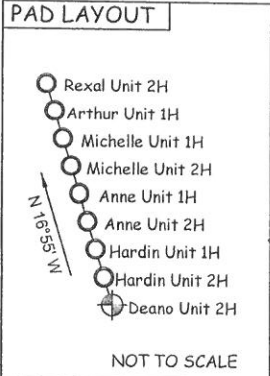
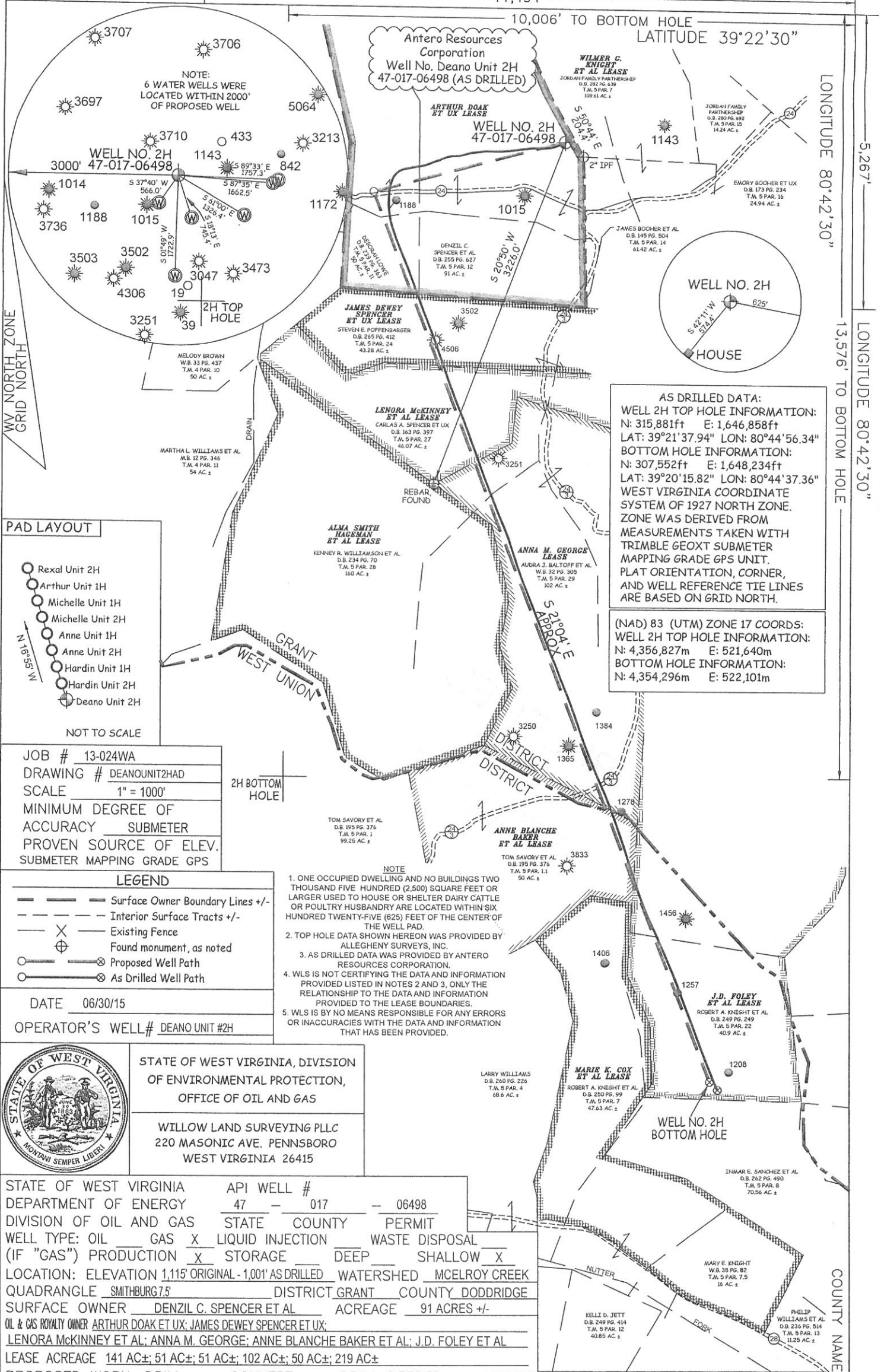
10,006' TO BOTTOM HOLE  
LATITUDE 39°22'30"

LONGITUDE 80°42'30"

5,267'

LONGITUDE 80°42'30"

13,576' TO BOTTOM HOLE



**AS DRILLED DATA:**  
**WELL 2H TOP HOLE INFORMATION:**  
 N: 315,881ft E: 1,646,858ft  
 LAT: 39°21'37.94" LON: 80°44'56.34"  
**BOTTOM HOLE INFORMATION:**  
 N: 307,552ft E: 1,648,234ft  
 LAT: 39°20'15.82" LON: 80°44'37.36"  
 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: 4,356,827m E: 521,640m  
**BOTTOM HOLE INFORMATION:**  
 N: 4,354,296m E: 522,101m

JOB # 13-024WA  
 DRAWING # DEANOUNIT2HAD  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY SUBMETER  
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

**LEGEND**

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

DATE 06/30/15  
 OPERATOR'S WELL# DEANO UNIT #2H

- NOTE**
- ONE OCCUPIED DWELLING AND NO 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.
  - TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
  - AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
  - 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.
  - WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.



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 - 06498  
 STATE COUNTY PERMIT  
 WELL TYPE: OIL GAS  LIQUID INJECTION WASTE DISPOSAL  
 (IF "GAS") PRODUCTION  STORAGE DEEP SHALLOW   
 LOCATION: ELEVATION 1,115' ORIGINAL - 1,001' AS DRILLED WATERSHED MCELROY CREEK  
 QUADRANGLE SMITHBURG 7.5 DISTRICT GRANT COUNTY DODDRIDGE  
 SURFACE OWNER DENZIL C. SPENCER ET AL ACREAGE 91 ACRES +/-  
 OIL & GAS ROYALTY OWNER ARTHUR DOAK ET UX; JAMES DEWEY SPENCER ET UX;  
 LENORA MCKINNEY ET AL; ANNA M. GEORGE; ANNE BLANCHE BAKER ET AL; J.D. FOLEY ET AL

LEASE ACREAGE 141 AC±; 51 AC±; 51 AC±; 102 AC±; 50 AC±; 219 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 6,823' TVD 15,452' MD  
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT CT CORPORATION SYSTEM-DIANNA STAMPER  
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD  
 FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

COUNTY NAME

PERMIT