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WR-35
Rev. 8/23/13

Page ___ of ___

WV GEOLOGICAL SURVEY
MORGANTOWN, WV

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

API 47 - 017 - 06434 County Doddridge District Greenbrier
Quad Big Isaac 7.5' Pad Name Wagner Pad Field/Pool Name _____
Farm name Perine, Junior Well Number Downs 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 4,340,237m Easting 534,186m
Landing Point of Curve Northing 4,340,363.75m Easting 534,427.49m
Bottom Hole Northing 4,343,264m Easting 533,501m

Elevation (ft) 1,270' 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 01/22/2014 Date drilling commenced 03/29/2014 Date drilling ceased 07/12/2014
Date completion activities began 08/18/2014 Date completion activities ceased 12/03/2014
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 49' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1,692' 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 47-017-06434 Farm Name Perine, Junior Well Number Downs Unit 2H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	18-Aug-14	17,559	17,728	60	Marcellus
2	27-Oct-14	17,357	17,527	60	Marcellus
3	27-Oct-14	17,156	17,326	60	Marcellus
4	27-Oct-14	16,954	17,124	60	Marcellus
5	28-Oct-14	16,753	16,923	60	Marcellus
6	28-Oct-14	16,552	16,722	60	Marcellus
7	28-Oct-14	16,350	16,520	60	Marcellus
8	29-Oct-14	16,149	16,319	60	Marcellus
9	29-Oct-14	15,948	16,117	60	Marcellus
10	29-Oct-14	15,746	15,916	60	Marcellus
11	30-Oct-14	15,545	15,715	60	Marcellus
12	30-Oct-14	15,344	15,513	60	Marcellus
13	30-Oct-14	15,142	15,312	60	Marcellus
14	30-Oct-14	14,941	15,111	60	Marcellus
15	31-Oct-14	14,739	14,909	60	Marcellus
16	31-Oct-14	14,538	14,708	60	Marcellus
17	31-Oct-14	14,337	14,507	60	Marcellus
18	31-Oct-14	14,135	14,305	60	Marcellus
19	1-Nov-14	13,934	14,104	60	Marcellus
20	1-Nov-14	13,733	13,902	60	Marcellus
21	1-Nov-14	13,531	13,701	60	Marcellus
22	2-Nov-14	13,330	13,500	60	Marcellus
23	2-Nov-14	13,129	13,298	60	Marcellus
24	2-Nov-14	12,927	13,097	60	Marcellus
25	2-Nov-14	12,726	12,896	60	Marcellus
26	3-Nov-14	12,525	12,694	60	Marcellus
27	3-Nov-14	12,323	12,493	60	Marcellus
28	3-Nov-14	12,122	12,292	60	Marcellus
29	3-Nov-14	11,920	12,090	60	Marcellus
30	4-Nov-14	11,719	11,889	60	Marcellus
31	4-Nov-14	11,518	11,688	60	Marcellus
32	4-Nov-14	11,316	11,486	60	Marcellus
33	4-Nov-14	11,115	11,285	60	Marcellus
34	5-Nov-14	10,914	11,083	60	Marcellus
35	5-Nov-14	10,712	10,882	60	Marcellus
36	5-Nov-14	10,511	10,681	60	Marcellus
37	5-Nov-14	10,310	10,479	60	Marcellus
38	5-Nov-14	10,108	10,278	60	Marcellus
39	6-Nov-14	9,907	10,077	60	Marcellus
40	6-Nov-14	9,705	9,875	60	Marcellus
41	6-Nov-14	9,504	9,674	60	Marcellus
42	6-Nov-14	9,303	9,473	60	Marcellus
43	7-Nov-14	9,101	9,271	60	Marcellus
44	7-Nov-14	8,900	9,070	60	Marcellus
45	7-Nov-14	8,699	8,868	60	Marcellus
46	7-Nov-14	8,497	8,667	60	Marcellus
47	8-Nov-14	8,296	8,466	60	Marcellus
48	8-Nov-14	8,095	8,264	60	Marcellus
49	8-Nov-14	7,893	8,063	60	Marcellus
50	8-Nov-14	7,692	7,862	60	Marcellus

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API 47-017-06434 Farm Name Perine, Junior Well Number Downs 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	27-Oct-14	62.5	7,362	N/A	5,281	232,260	6,814	N/A
2	27-Oct-14	63.0	7,049	6,016	5,513	232,060	6,852	N/A
3	27-Oct-14	63.6	7,050	6,068	5,210	229,720	6,794	N/A
4	27-Oct-14	65.5	7,232	5,834	5,521	232,680	6,486	N/A
5	28-Oct-14	66.0	7,039	5,767	5,571	233,340	6,485	N/A
6	28-Oct-14	66.0	6,882	5,534	5,534	230,760	6,467	N/A
7	28-Oct-14	67.0	6,957	5,714	5,387	247,160	6,430	N/A
8	29-Oct-14	63.9	7,191	5,998	5,703	216,208	6,277	N/A
9	29-Oct-14	66.0	7,171	5,890	5,856	233,520	6,412	N/A
10	29-Oct-14	65.6	7,014	5,641	5,384	229,500	6,444	N/A
11	30-Oct-14	65.2	6,850	5,594	5,519	237,360	6,360	N/A
12	30-Oct-14	66.1	6,729	5,598	5,615	234,619	6,358	N/A
13	30-Oct-14	66.8	6,656	5,421	5,514	232,260	6,374	N/A
14	30-Oct-14	66.0	6,780	5,660	5,380	231,740	6,349	N/A
15	31-Oct-14	68.3	7,018	5,783	5,887	232,760	6,314	N/A
16	31-Oct-14	65.4	7,060	5,808	5,811	236,140	6,284	N/A
17	31-Oct-14	65.3	7,083	5,792	5,486	244,250	6,288	N/A
18	31-Oct-14	66.5	7,056	5,773	5,493	238,900	6,258	N/A
19	1-Nov-14	66.8	6,838	5,487	6,076	238,000	6,249	N/A
20	1-Nov-14	66.5	6,872	5,909	5,625	234,440	6,244	N/A
21	1-Nov-14	67.7	6,806	5,753	5,521	235,180	6,242	N/A
22	2-Nov-14	67.5	6,819	5,665	5,513	229,140	6,071	N/A
23	2-Nov-14	66.1	6,813	5,539	5,773	234,940	6,157	N/A
24	2-Nov-14	66.1	6,831	5,687	5,770	236,620	6,159	N/A
25	2-Nov-14	67.9	6,767	5,725	5,490	241,660	6,158	N/A
26	3-Nov-14	66.7	6,883	5,923	5,587	241,540	6,225	N/A
27	3-Nov-14	66.3	6,875	5,812	5,637	238,260	6,113	N/A
28	3-Nov-14	67.5	6,711	5,503	5,430	240,100	6,120	N/A
29	3-Nov-14	68.3	6,684	5,695	5,318	232,060	5,842	N/A
30	4-Nov-14	68.3	6,690	5,622	5,623	230,880	6,033	N/A
31	4-Nov-14	66.2	6,776	5,997	5,587	237,620	6,037	N/A
32	4-Nov-14	65.6	6,569	5,659	5,813	237,180	6,050	N/A
33	4-Nov-14	65.5	6,485	5,744	5,857	241,570	6,032	N/A
34	5-Nov-14	65.5	6,679	5,707	5,869	245,095	6,018	N/A
35	5-Nov-14	67.6	6,490	5,584	5,702	235,260	5,974	N/A
36	5-Nov-14	68.1	6,712	5,784	5,345	232,820	5,840	N/A
37	5-Nov-14	65.3	6,665	5,782	5,916	234,740	5,944	N/A
38	5-Nov-14	66.2	6,656	5,837	5,892	234,080	5,926	N/A
39	6-Nov-14	66.5	6,814	5,837	5,859	228,320	5,802	N/A
40	6-Nov-14	67.5	6,790	5,581	5,837	238,320	5,848	N/A
41	6-Nov-14	68.1	6,654	6,048	5,744	237,080	5,868	N/A
42	6-Nov-14	68.4	6,392	5,834	5,834	237,290	5,959	N/A
43	7-Nov-14	68.2	6,533	5,894	6,149	235,035	5,758	N/A
44	7-Nov-14	66.3	6,952	6,463	5,830	203,280	5,929	N/A
45	7-Nov-14	67.1	6,797	6,254	5,826	201,520	5,793	N/A
46	7-Nov-14	68.3	6,586	5,794	5,856	241,635	5,757	N/A
47	8-Nov-14	66.9	6,623	141	5,835	239,715	5,724	N/A
48	8-Nov-14	67.9	6,648	5,967	6,083	240,188	5,724	N/A
49	8-Nov-14	68.1	6,476	5,690	5,743	238,506	5,721	N/A
50	8-Nov-14	66.5	6,719	6,142	5,784	239,594	6,091	N/A
	AVG=	66.5	6,816	5,672	5,668	11,716,905	307,454	TOTAL

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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	49'	N/A	49'	N/A
Shale	0	29	0	29
Siltstone	est. 29	289	est. 29	289
Siltstone/ Trace Coal	est. 289	449	est. 289	449
Siltstone/ Sandstone	est. 449	649	est. 449	649
Sandy Shale/ Trace Coal	est. 649	669	est. 649	669
Siltstone	est. 669	829	est. 669	829
Limestone/ Coal	est. 829	889	est. 829	889
Siltstone	est. 889	1,269	est. 889	1,269
Sandstone	est. 1269	1,389	est. 1269	1,389
Siltstone	est. 1389	1,469	est. 1389	1,469
Sandstone	est. 1469	1,509	est. 1469	1,509
Limestone/ Siltstone	est. 1509	1,589	est. 1509	1,589
Sandstone/ Trace Coal	est. 1589	1,649	est. 1589	1,649
Siltstone/ Trace Coal	est. 1649	1,789	est. 1649	1,789
Sandstone	est. 1789	1,909	est. 1789	1,909
Shale/ Trace Coal	est. 1909	2,049	est. 1909	2,049
Siltstone/ Shale	est. 2049	2,272	est. 2049	2,272
Big Lime	2,272	2,374	2,272	2,374
Big Injun	2,374	2,602	2,374	2,602
Gantz Sand	2,602	2,687	2,602	2,688
Fifty Foot Sandstone	2,687	2,895	2,688	2,898
Gordon	2,895	3,226	2,898	3,231
Fifth Sandstone	3,226	3,267	3,231	3,272
Bayard	3,267	3,587	3,272	3,592
Warren	3,587	3,886	3,592	3,891
Speechley	3,886	4,091	3,891	4,096
Baltown	4,091	4,699	4,096	4,704
Bradford	4,699	5,198	4,704	5,214
Benson	5,198	5,506	5,214	5,541
Alexander	5,506	5,722	5,541	5,777
Elk	5,722	6,197	5,777	6,290
Rhinestreet	6,197	6,759	6,290	6,906
Sycamore	6,759	6,928	6,906	7,095
Middlesex	6,928	7,080	7,095	7,287
Burkett	7,080	7,109	7,287	7,330
Tully	7,109	7,249	7,330	7,653
Marcellus	7,249	NA	7,653	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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MORGANTOWN, WV

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	10/27/2014
Job End Date:	11/8/2014
State:	West Virginia
County:	Doddridge
API Number:	47-017-06434-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Downs Unit 2H
Longitude:	-80.60401700
Latitude:	39.21073300
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	7,353
Total Base Water Volume (gal):	12,657,246
Total Base Non Water Volume:	575,376



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Antero Resources	Base Fluid	Water	7732-18-5	100.00000	89.90028	
Sand	J.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	9.77453	
LGC-15	J.S. Well Services, LLC	Gelling Agents	Guar Gum	9000-30-0	50.00000	0.05054	
			Petroleum Distillates	64742-47-8	60.00000	0.04786	
			Suspending agent (solid)	14808-60-7	3.00000	0.00773	
			Surfactant	68439-51-0	3.00000	0.00303	
HCL Acid (12.6%-18.0%)	J.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.50000	0.08382	
			Hydrogen Chloride	7647-01-1	18.00000	0.02002	
WFRA-405	J.S. Well Services, LLC	Friction Reducer	Water	7732-18-5	40.00000	0.02529	
			Anionic Polyacrylamide	Proprietary	40.00000	0.02529	
			Petroleum Distillates	64742-47-8	40.00000	0.02035	
			Crystalline Salt	12125-02-9	5.00000	0.00316	

SI-1100	U.S. Well Services	Scale Inhibitor	Ethoxylated alcohol blend	Proprietary	5.00000	0.00316
			DI Water	7732-18-5	80.00000	0.01063
			Ethylene Glycol	107-21-1	40.00000	0.00601
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	10.00000	0.00179
			2-Phosphonobutane 1,2,4 tricarboxylic salt	37971-36-1	10.00000	0.00171
			hexamethylenediamine tetra (methylene phosphonic acid)	38820-59-6	10.00000	0.00166
			Copolymer of Maleic and Acrylic acid	26677-99-6	10.00000	0.00157
			bis (hexamethylene) tramine penta (methylene phosphonic acid) - phosphate acid	40623-75-4	10.00000	0.00153
X-BAC 1020	U.S. Well Services, LLC	Anti-Bacterial Agent	Acrylic polymer	52255-49-9	5.00000	0.00066
			2,2-dibromo-3-nitropropionamide	10222-01-2	20.00000	0.00466
AP One	U.S. Well Services, LLC	Gel Breakers	Deionized Water	7732-18-5	28.00000	0.00266
AI-301	U.S. Well Services, LLC	Acid Corrosion Inhibitors	Ammonium Persulfate	7727-54-0	100.00000	0.00171
			Diethylene Glycol	111-46-6	30.00000	0.00013
			Methanamine	100-97-0	20.00000	0.00011
			Hydrogen Chloride	7647-01-0	10.00000	0.00005
			Polyethylene polyamine	38603-67-8	10.00000	0.00004
			Coco amine	51791-14-8	5.00000	0.00002

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

* Total Water Volume sources may include fresh water, produced water, and/or recycled water
 ** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided. Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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LATITUDE 39°15'00"

LATITUDE 39°15'00"

4,390' TO BOTTOM HOLE
LONGITUDE 80°35'00"

14,334'

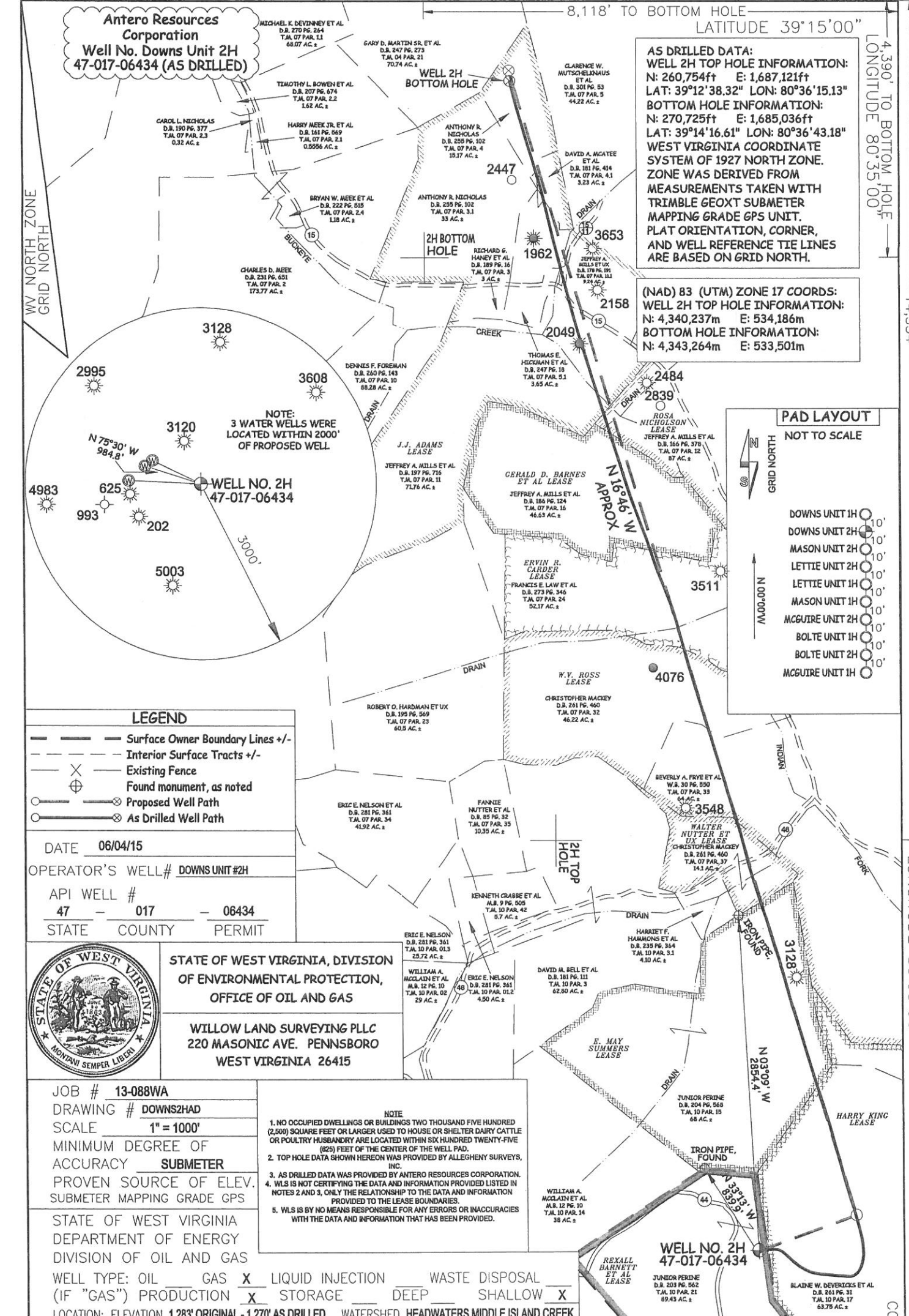
LONGITUDE 80°35'00"

COUNTY NAME PERMIT

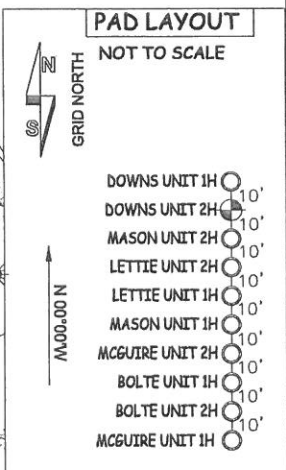
Antero Resources Corporation
Well No. Downs Unit 2H
47-017-06434 (AS DRILLED)

AS DRILLED DATA:
WELL 2H TOP HOLE INFORMATION:
N: 260,754ft E: 1,687,121ft
LAT: 39°12'38.32" LON: 80°36'15.13"
BOTTOM HOLE INFORMATION:
N: 270,725ft E: 1,685,036ft
LAT: 39°14'16.61" LON: 80°36'43.18"
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: 4,340,237m E: 534,186m
BOTTOM HOLE INFORMATION:
N: 4,343,264m E: 533,501m



NOTE:
3 WATER WELLS WERE LOCATED WITHIN 2000' OF PROPOSED WELL



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

DATE 06/04/15
OPERATOR'S WELL# DOWNS UNIT #2H
API WELL # 47 - 017 - 06434
STATE COUNTY PERMIT

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

JOB # 13-088WA
DRAWING # DOWNS2HAD
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS
STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS
WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X
LOCATION: ELEVATION 1,283' ORIGINAL - 1,270' AS DRILLED WATERSHED HEADWATERS MIDDLE ISLAND CREEK

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.

QUADRANGLE BIG ISSAC 7.5' DISTRICT GREENBRIER COUNTY DODDRIDGE
SURFACE OWNER JUNIOR PERINE ACREAGE 89.43 ACRES +/-
OIL & GAS ROYALTY OWNER REXALL BARNETT ET AL; HARRY KING; E. MAY SUMMERS; LEASE ACREAGE 81.4 AC±; 59.3 AC±; 68 AC±;
WALTER NUTTER ET UX; W.V. ROSS; ERVIN R. CARDER; GERALD D. BARNES ET AL; ROSA NICHOLSON; J.J. ADAMS 14.1 AC±; 132 AC±; 52.2 AC±; 46.5 AC±; 96 AC±; 136.3 AC±
PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL
(SPECIFY) (X) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7,356' TVD 17,820' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
DENVER, CO 80202 CHARLESTON, WV 25313