

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

API 47-017-06228 County Doddridge District Greenbrier  
Quad Salem & Big Isaac Pad Name Leonard Pad Field/Pool Name \_\_\_\_\_  
Farm name Davidson, Walter V. & Leonard J. Well Number Rikk 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 4346303.70 Easting 534815.98  
Landing Point of Curve Northing 4,346,129.97m Easting 534,932.80m  
Bottom Hole Northing 4343729.12 Easting 536612.51

Elevation (ft) 1,320' 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

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**OCT 19 2015**

Date permit issued 06/13/2013 Date drilling commenced 12/06/2013 Date drilling ceased 05/15/2015  
Date completion activities began WOC Date completion activities ceased WOC  
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 57'; 212' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft 1,302'; 1,911' Void(s) encountered (Y/N) depths None  
Coal depth(s) ft 517'; 1,077'; 2,013' Cavern(s) encountered (Y/N) depths None  
Is coal being mined in area (Y/N) No

Reviewed by:  
[Signature]  
**10/30/2015**

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CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade w/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	24"	20"	40'	New	94#; K-55	N/A	Yes
Surface	17 1/2"	13 3/8"	350'	New	48#; H-40	N/A	Yes
Coal							
Intermediate 1	12 1/4"	9 5/8"	2,621'	New	36#; J-55	N/A	Yes
Intermediate 2							
Intermediate 3							
Production	8 3/4" & 8 1/2"	5 1/2"	17,523'	New	23#; P-110	N/A	Yes
Tubing							
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	100 sx	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	412 sx	15.6	1.18	243	0'	8 Hrs.
Coal							
Intermediate 1	Class A	979 sx	15.6	1.18	821	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1,179 sx (Lead), 1,533 sx (Tail)	14.5 (Lead); 15.2 (Tail)	1.3 (Lead); 1.86 (Tail)	3,529	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 17,523' Md; 7,423' TVD (BHL); 7,505' Loggers TD (ft) 17,473'  
 Deepest formation penetrated Marcellus Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 6,973'

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

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 N/A - WOC

WAS WELL COMPLETED OPEN HOLE?  Yes  No    DETAILS N/A - WOC

WERE TRACERS USED  Yes  No    TYPE OF TRACER(S) USED N/A - WOC

\*\*Logs will be submitted with  
 FINISHED ACTION REPORT  
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**PERFORATION RECORD**

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
<b>*WELL IS WAITING ON COMPLETION*</b>					

**\*WELL IS WAITING ON COMPLETION\***

**Information will be updated on FINAL WR-35 once completed**


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>*WELL IS WAITING ON COMPLETION*</b>								

**\*WELL IS WAITING ON COMPLETION\***

**Information will be updated on FINAL WR-35 once completed**


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PRODUCING FORMATION(S)	DEPTHS	
Marcellus	7,421' (top) TVD	7,559' (top) MD
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface \_\_\_\_\_ psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST \_\_\_\_\_ hrs

OPEN FLOW Gas \_\_\_\_\_ 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, H <sub>2</sub> S, ETC)
	0		0		

**\*PLEASE SEE EXHIBIT 3**

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 \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Cementing Company Nabors Completion & Production Services, Co.  
Address 1650 Hackers Creek City Jane Lew State WV Zip 26037

Stimulating Company \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Please insert additional pages as applicable.

Completed by Megan Darling Telephone 303-357-7230  
Signature Megan C. Darling Title Permitting Agent Date 10/09/2015

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

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10/30/2015

**EXHIBIT 3**

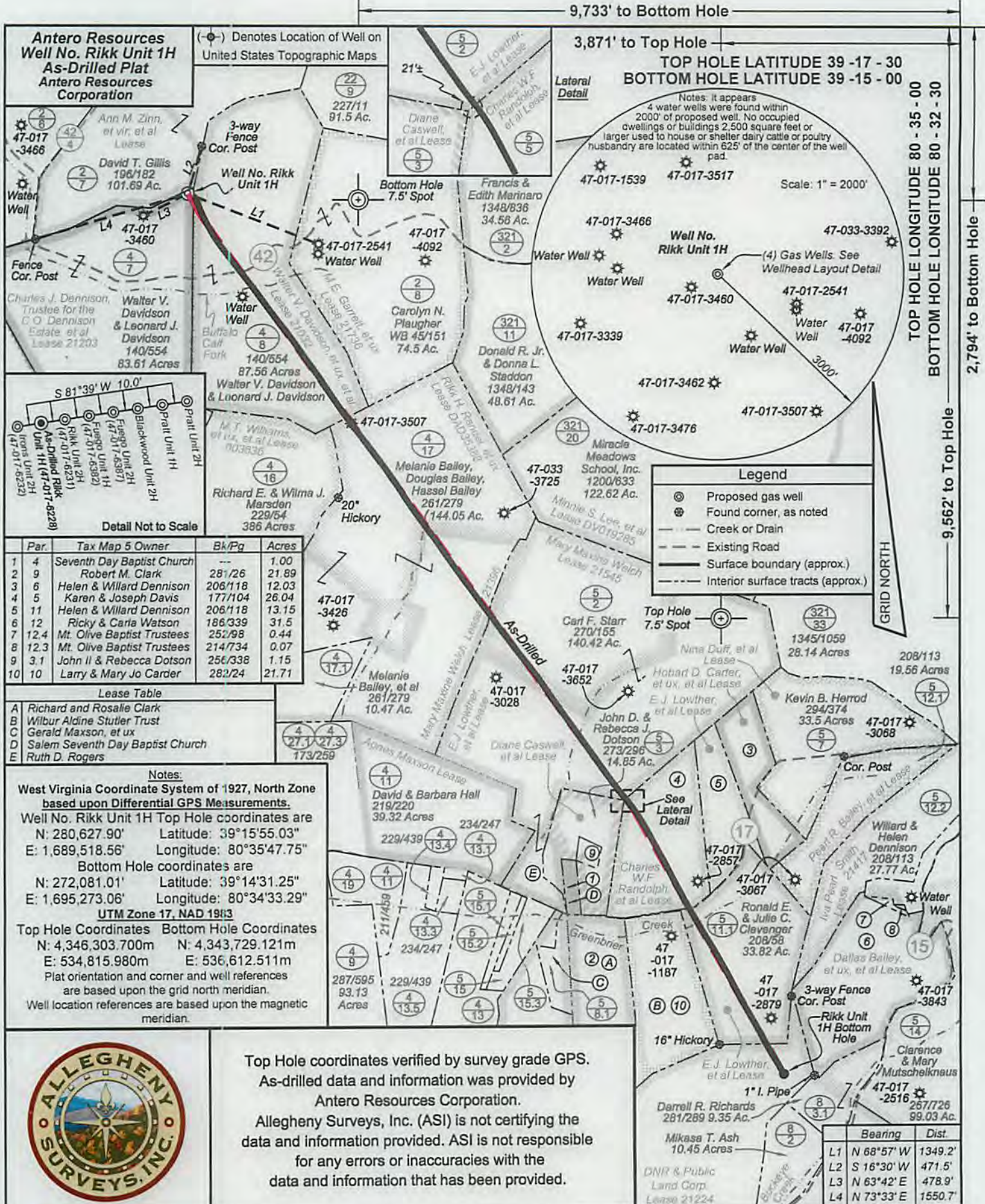
LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Fresh Water	57'	N/A	57'	N/A
Fresh Water	212'	N/A	212'	N/A
Siltstone	0	217	0	217
Sand	217	457	217	457
Siltstone	457	497	457	497
Sandstone	497	517	497	517
Coal	517	657	517	657
Siltstone	657	697	657	697
Sandstone	697	857	697	857
Siltstone	857	927	857	927
Limestone	927	1,057	927	1,057
Sandstone/ Silt	1,057	1,077	1,057	1,077
Coal	1,077	1,477	1,077	1,477
Limestone/Silt	1,477	1,577	1,477	1,577
Siltstone	1,577	1,737	1,577	1,737
Sandstone/ Limestone	1,737	2,004	1,737	2,004
Sandstone/ Silt	2,004	2,013	2,004	2,013
Coal	2,013	2,317	2,013	2,317
Sandstone/ Silt	2,317	2,398	2,317	2,391
Big Lime	2,398	2,506	2,391	2,499
Big Injun	2,506	2,836	2,499	2,826
Gantz Sand	2,836	2,969	2,826	2,952
Fifty Foot Sandstone	2,969	3,128	2,952	3,122
Gordon	3,128	3,398	3,122	3,389
Fifth Sandstone	3,398	3,473	3,389	3,464
Bayard	3,473	3,742	3,464	3,732
Warren	3,742	3,978	3,732	3,971
Speechley	3,978	4,294	3,971	4,293
Baltown	4,294	4,752	4,293	4,739
Bradford	4,752	5,357	4,739	5,350
Benson	5,357	5,606	5,350	5,600
Alexander	5,606	5,836	5,600	5,828
Elk	5,836	6,396	5,828	6,383
Rhinestreet	6,396	6,896	6,383	6,864
Sycamore	6,873	7,106	6,841	7,113
Middlesex	7,106	7,251	7,113	7,280
Burkett	7,251	7,284	7,280	7,323
Tully	7,284	7,421	7,323	7,559
Marcellus	7,421	NA	7,559	NA

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\*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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10/30/2015



Par	Tax Map 5 Owner	Bk/Pg	Acres
1	4	Seventh Day Baptist Church	1.00
2	9	Robert M. Clark	281/26 21.89
3	6	Helen & Willard Dennison	206/118 12.03
4	5	Karen & Joseph Davis	177/104 26.04
5	11	Helen & Willard Dennison	206/118 13.15
6	12	Ricky & Carla Watson	186/339 31.5
7	12.4	Mt. Olive Baptist Trustees	252/98 0.44
8	12.3	Mt. Olive Baptist Trustees	214/734 0.07
9	3.1	John II & Rebecca Dotson	256/338 1.15
10	10	Larry & Mary Jo Carder	282/24 21.71

Lease Table

A	Richard and Rosalie Clark
B	Wilbur Aldine Stutler Trust
C	Gerald Maxson, et ux
D	Salem Seventh Day Baptist Church
E	Ruth D. Rogers

Notes:

West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.

Well No. Rikk Unit 1H Top Hole coordinates are  
N: 280,627.90' Latitude: 39°15'55.03"  
E: 1,689,518.56' Longitude: 80°35'47.75"

Bottom Hole coordinates are  
N: 272,081.01' Latitude: 39°14'31.25"  
E: 1,695,273.06' Longitude: 80°34'33.29"

UTM Zone 17, NAD 1983

Top Hole Coordinates Bottom Hole Coordinates  
N: 4,346,303.700m N: 4,343,729.121m  
E: 534,815.980m E: 536,612.511m

Plat orientation and corner and well references are based upon the grid north meridian.  
Well location references are based upon the magnetic meridian.



Top Hole coordinates verified by survey grade GPS. As-drilled data and information was provided by Antero Resources Corporation. Allegheny Surveys, Inc. (ASI) is not certifying the data and information provided. ASI is not responsible for any errors or inaccuracies with the data and information that has been provided.

Bearing	Dist.
L1	N 68°57' W 1349.2'
L2	S 16°30' W 471.5'
L3	N 63°42' E 478.9'
L4	N 73°33' E 1550.7'

FILE NO: 41-30-GR-13  
DRAWING NO: Rikk 1H Well Plat As-Drilled  
SCALE: 1" = 1200'  
MINIMUM DEGREE OF ACCURACY: Submeter  
PROVEN SOURCE OF ELEVATION: WV DOT, Bridgeport, WV

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

DATE: March 3 2015  
OPERATOR'S WELL NO. Rikk Unit 1H  
API WELL NO  
47 - 017 - 06228  
STATE COUNTY PERMIT

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

LOCATION: ELEVATION: 1320' WATERSHED: Headwaters Middle Island Creek QUADRANGLE: Salem & Big Isaac  
DISTRICT: Greenbrier COUNTY: Boone

SURFACE OWNER: Walter V. Davidson & Leonard J. Davidson  
ROYALTY OWNER: Charles J. Dennison, Trustee for the C.O. Dennison Estate, et al LEASE NO: DAD35388; 21545; 21224 ACREAGE: 84, 87, 90, 127, 85

PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale TVD 7,423' MD 17,523'

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stampler  
ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road  
Denver, CO 80202 Charleston, WV 25313