

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

RECEIVED

JAN 27 2015

WV GEOLOGICAL SURVEY
MORGANTOWN, WV

API 47-017-06272 County Doddridge District Central
Quad West Union Pad Name McGill Field/Pool Name ---
Farm name Brown, Mary F. Well Number Mash Unit 1H
Operator (as registered with the OOG) Antero Resources Corporation
Address 1615 Wynkoop St. 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 4347269m Easting 513047m
Landing Point of Curve Northing 4346957.39m Easting 512846.33m
Bottom Hole Northing 4344436m Easting 514055m

Elevation (ft) 1,166' 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 6/28/2013 Date drilling commenced 8/18/2013 Date drilling ceased 11/7/2013
Date completion activities began 11/26/2013 Date completion activities ceased 2/18/2014
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 225' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1865' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 1240', 1300' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by:

API 47-017 - 06272 Farm name Brown, Mary F. Well number Mash 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 | 94# J-55 | N/A | Y |
| Surface | 17- 1/2" | 13- 3/8" | 400' | New | 48# H-40 | N/A | Y |
| Coal | | | | | | | |
| Intermediate 1 | 12-1/4" | 9-5/8" | 2514' | New | 36# J-55 | N/A | Y |
| Intermediate 2 | | | | | | | |
| Intermediate 3 | | | | | | | |
| Production | 8-3/4" & 8-1/2" | 5-1/2" | 16484' | New | 20# P-110 | N/A | Y |
| Tubing | | 2-3/8" | 6999' | | 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 | 200 sx | 15.6 | 1.18 | 38 | 0' | 8 Hrs. |
| Surface | Class A | 463 sx | 15.6 | 1.18 | 278 | 0' | 8 Hrs. |
| Coal | | | | | | | |
| Intermediate 1 | Class A | 921 sx | 15.6 | 1.18 | 787 | 0' | 8 Hrs. |
| Intermediate 2 | | | | | | | |
| Intermediate 3 | | | | | | | |
| Production | Class H | 814 sx (Lead) 1630 sx (Tail) | 13.5 Lead 15.2 Tail | 1.44 Lead 1.8 Tail | 3,315 | ~500' into Intermediate Casing | 8 Hrs. |
| Tubing | | | | | | | |

Drillers TD (ft) 16488' MD, 6771' TVD (BHL); 6792' TVD (Deepest point drilled) Loggers TD (ft) 16445'
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 4,200'

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Nero Unit 1H API#47-017-06211). Please reference the wireline logs submitted with Form WR-35 for Nero Unit 1H. 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

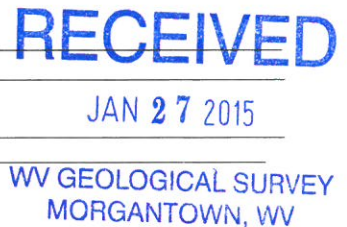
DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

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 Radioactive + Chemical



API 47- 017 - 06272 Farm name Brown, Mary F. Well number Mash Unit 1H

| <u>PRODUCING FORMATION(S)</u> | <u>DEPTHS</u> | |
|-------------------------------|------------------------|-----------------------|
| <u>Marcellus</u> | <u>6694' (TOP)</u> TVD | <u>7074' (TOP)</u> MD |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

RECEIVED

JAN 27 2015

WV GEOLOGICAL SURVEY
MORGANTOWN, WV

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 3600 psi Bottom Hole 3600 psi DURATION OF TEST --- hrs

OPEN FLOW Gas 8828 mcfpd Oil 66 bpd NGL --- bpd Water 0 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 ₂ S, ETC) |
|-------------------------|--------------------------------|------------------------------|--------------------------|-----------------------------|--|
| | 0 | | 0 | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

Drilling Contractor Patterson - UTI Drilling Company, LLC
Address 207 Carlton Dr. City Eighty Four State PA Zip 15330

Logging Company Rush Wellsite Services
Address 600 Alpha Drive City Canonsburg State PA Zip 15317

Cementing Company Allied Oil & Gas Services, LLC
Address 1036 East Main Street City Bridgeport State WV Zip 26330

Stimulating Company US Well Services
Address 533 Industrial Park Dr. City Jane Lew State WV Zip 26378

Please insert additional pages as applicable.

Completed by Kara Quackenbush Telephone 303-357-7233
Signature Kara Quackenbush Title Permit Representative Date 1/14/2015

EXHIBIT 1

| Stage No. | Perforation Date | Perforated from MD ft. | Perforated to MD ft. | Number of Perforations | Formations |
|-----------|------------------|------------------------|----------------------|------------------------|------------|
| 1 | 26-Nov-13 | 16,229 | 16,389 | 60 | Marcellus |
| 2 | 6-Jan-14 | 16,030 | 16,198 | 60 | Marcellus |
| 3 | 6-Jan-14 | 15,832 | 15,999 | 60 | Marcellus |
| 4 | 7-Jan-14 | 15,633 | 15,800 | 60 | Marcellus |
| 5 | 7-Jan-14 | 15,434 | 15,602 | 60 | Marcellus |
| 6 | 8-Jan-14 | 15,236 | 15,403 | 60 | Marcellus |
| 7 | 8-Jan-14 | 15,037 | 15,205 | 60 | Marcellus |
| 8 | 9-Jan-14 | 14,839 | 15,006 | 60 | Marcellus |
| 9 | 10-Jan-14 | 14,640 | 14,807 | 60 | Marcellus |
| 10 | 10-Jan-14 | 14,441 | 14,609 | 60 | Marcellus |
| 11 | 11-Jan-14 | 14,243 | 14,410 | 60 | Marcellus |
| 12 | 11-Jan-14 | 14,044 | 14,212 | 60 | Marcellus |
| 13 | 11-Jan-14 | 13,846 | 14,013 | 60 | Marcellus |
| 14 | 12-Jan-14 | 13,647 | 13,815 | 60 | Marcellus |
| 15 | 12-Jan-14 | 13,448 | 13,616 | 60 | Marcellus |
| 16 | 12-Jan-14 | 13,250 | 13,417 | 60 | Marcellus |
| 17 | 12-Jan-14 | 13,051 | 13,219 | 60 | Marcellus |
| 18 | 13-Jan-14 | 12,853 | 13,020 | 60 | Marcellus |
| 19 | 13-Jan-14 | 12,654 | 12,822 | 60 | Marcellus |
| 20 | 13-Jan-14 | 12,456 | 12,623 | 60 | Marcellus |
| 21 | 13-Jan-14 | 12,257 | 12,424 | 60 | Marcellus |
| 22 | 14-Jan-14 | 12,058 | 12,226 | 60 | Marcellus |
| 23 | 14-Jan-14 | 11,860 | 12,027 | 60 | Marcellus |
| 24 | 14-Jan-14 | 11,661 | 11,829 | 60 | Marcellus |
| 25 | 14-Jan-14 | 11,463 | 11,630 | 60 | Marcellus |
| 26 | 15-Jan-14 | 11,264 | 11,431 | 60 | Marcellus |
| 27 | 15-Jan-14 | 11,065 | 11,233 | 60 | Marcellus |
| 28 | 15-Jan-14 | 10,867 | 11,034 | 60 | Marcellus |
| 29 | 15-Jan-14 | 10,668 | 10,836 | 60 | Marcellus |
| 30 | 15-Jan-14 | 10,470 | 10,637 | 60 | Marcellus |
| 31 | 16-Jan-14 | 10,271 | 10,439 | 60 | Marcellus |
| 32 | 16-Jan-14 | 10,072 | 10,240 | 60 | Marcellus |
| 33 | 16-Jan-14 | 9,874 | 10,041 | 60 | Marcellus |
| 34 | 16-Jan-14 | 9,675 | 9,843 | 60 | Marcellus |
| 35 | 17-Jan-14 | 9,477 | 9,644 | 60 | Marcellus |
| 36 | 17-Jan-14 | 9,278 | 9,446 | 60 | Marcellus |
| 37 | 17-Jan-14 | 9,080 | 9,247 | 60 | Marcellus |
| 38 | 17-Jan-14 | 8,881 | 9,048 | 60 | Marcellus |
| 39 | 18-Jan-14 | 8,682 | 8,850 | 60 | Marcellus |
| 40 | 18-Jan-14 | 8,484 | 8,651 | 60 | Marcellus |
| 41 | 18-Jan-14 | 8,285 | 8,453 | 60 | Marcellus |
| 42 | 18-Jan-14 | 8,087 | 8,254 | 60 | Marcellus |
| 43 | 18-Jan-14 | 7,888 | 8,056 | 60 | Marcellus |
| 44 | 18-Jan-14 | 7,689 | 7,857 | 60 | Marcellus |
| 45 | 19-Jan-14 | 7,491 | 7,658 | 60 | Marcellus |
| 46 | 19-Jan-14 | 7,292 | 7,460 | 60 | Marcellus |
| 47 | 19-Jan-14 | 7,094 | 7,261 | 60 | Marcellus |

RECEIVED

JAN 27 2015

WV GEOLOGICAL SURVEY
MORGANTOWN, WV

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 (bbbls) | Amount of Nitrogen/ other (units) |
|-----------|-------------------|---------------|------------------------------|------------------------------|--------------|--------------------------|-------------------------|-----------------------------------|
| 1 | 6-Jan-14 | 65.8 | 7,346 | N/A | 5,779 | 139,370 | 6,562 | N/A |
| 2 | 6-Jan-14 | 70.6 | 7,575 | 5,856 | 4,879 | 159,320 | 6,746 | N/A |
| 3 | 7-Jan-14 | 68.4 | 7,408 | 5,280 | 5,039 | 226,770 | 6,669 | N/A |
| 4 | 7-Jan-14 | 70.2 | 7,624 | 6,306 | 4,898 | 199,260 | 6,312 | N/A |
| 5 | 8-Jan-14 | 62.5 | 7,748 | 5,550 | 4,911 | 92,720 | 6,532 | N/A |
| 6 | 8-Jan-14 | 68.4 | 7,414 | 5,607 | 4,990 | 143,850 | 6,674 | N/A |
| 7 | 8-Jan-14 | 70.3 | 7,911 | 5,456 | 5,027 | 125,320 | 6,467 | N/A |
| 8 | 10-Jan-14 | 66.7 | 7,521 | 5,660 | 5,042 | 38,850 | 7,119 | N/A |
| 9 | 10-Jan-14 | 69.1 | 7,439 | 5,423 | 5,090 | 230,760 | 6,422 | N/A |
| 10 | 11-Jan-14 | 73.2 | 7,517 | 5,616 | 5,054 | 228,140 | 6,420 | N/A |
| 11 | 11-Jan-14 | 73.7 | 7,391 | 5,700 | 5,188 | 227,970 | 6,274 | N/A |
| 12 | 11-Jan-14 | 73.2 | 7,309 | 5,537 | 5,071 | 230,040 | 6,030 | N/A |
| 13 | 11-Jan-14 | 74.4 | 7,644 | 5,736 | 5,302 | 221,820 | 5,898 | N/A |
| 14 | 12-Jan-14 | 72.0 | 7,354 | 5,408 | 5,188 | 230,240 | 5,950 | N/A |
| 15 | 12-Jan-14 | 71.0 | 7,455 | 5,534 | 5,269 | 224,060 | 6,078 | N/A |
| 16 | 12-Jan-14 | 78.9 | 7,749 | 5,536 | 5,016 | 226,300 | 5,916 | N/A |
| 17 | 13-Jan-14 | 78.5 | 7,764 | 5,828 | 4,993 | 228,960 | 5,925 | N/A |
| 18 | 13-Jan-14 | 74.5 | 7,352 | 5,250 | 5,210 | 232,040 | 5,898 | N/A |
| 19 | 13-Jan-14 | 77.0 | 7,331 | 5,095 | 5,596 | 228,780 | 6,053 | N/A |
| 20 | 13-Jan-14 | 80.0 | 7,168 | 5,269 | 4,892 | 227,030 | 5,925 | N/A |
| 21 | 14-Jan-14 | 77.0 | 7,155 | 5,277 | 5,104 | 227,610 | 5,958 | N/A |
| 22 | 14-Jan-14 | 75.9 | 7,195 | 5,282 | 5,183 | 224,840 | 5,879 | N/A |
| 23 | 14-Jan-14 | 76.0 | 7,189 | 5,312 | 5,163 | 226,570 | 5,815 | N/A |
| 24 | 14-Jan-14 | 76.1 | 7,311 | 5,350 | 4,971 | 227,930 | 5,852 | N/A |
| 25 | 15-Jan-14 | 75.5 | 7,277 | 5,196 | 5,052 | 231,530 | 5,782 | N/A |
| 26 | 15-Jan-14 | 75.8 | 7,234 | 5,051 | 5,218 | 231,050 | 5,800 | N/A |
| 27 | 15-Jan-14 | 75.5 | 7,309 | 5,318 | 4,972 | 225,250 | 5,779 | N/A |
| 28 | 15-Jan-14 | 79.1 | 7,425 | 5,281 | 5,257 | 229,450 | 5,799 | N/A |
| 29 | 15-Jan-14 | 78.9 | 7,264 | 5,573 | 5,195 | 231,070 | 5,764 | N/A |
| 30 | 16-Jan-14 | 77.6 | 7,239 | 5,258 | 5,191 | 224,040 | 5,760 | N/A |
| 31 | 16-Jan-14 | 72.2 | 7,229 | 5,395 | 5,500 | 226,830 | 5,746 | N/A |
| 32 | 16-Jan-14 | 78.7 | 6,922 | 4,940 | 5,068 | 228,930 | 5,726 | N/A |
| 33 | 16-Jan-14 | 81.0 | 6,975 | 5,042 | 5,028 | 228,680 | 5,702 | N/A |
| 34 | 17-Jan-14 | 79.4 | 7,068 | 4,939 | 5,136 | 227,270 | 5,801 | N/A |
| 35 | 17-Jan-14 | 77.9 | 7,123 | 5,192 | 5,197 | 229,210 | 5,721 | N/A |
| 36 | 17-Jan-14 | 78.8 | 7,259 | 5,184 | 5,258 | 226,320 | 5,727 | N/A |
| 37 | 17-Jan-14 | 76.0 | 6,917 | 5,030 | 4,914 | 228,740 | 5,648 | N/A |
| 38 | 17-Jan-14 | 77.1 | 7,137 | 5,447 | 4,767 | 228,240 | 5,626 | N/A |
| 39 | 18-Jan-14 | 78.0 | 7,137 | 5,232 | 5,592 | 227,795 | 5,643 | N/A |
| 40 | 18-Jan-14 | 77.9 | 6,985 | 5,242 | 5,459 | 232,040 | 5,687 | N/A |
| 41 | 18-Jan-14 | 78.9 | 6,966 | 5,071 | 5,015 | 230,520 | 5,609 | N/A |
| 42 | 18-Jan-14 | 77.5 | 6,818 | 5,260 | 4,841 | 230,660 | 5,611 | N/A |
| 43 | 19-Jan-14 | 76.7 | 6,773 | 4,777 | 4,964 | 228,560 | 5,562 | N/A |
| 44 | 19-Jan-14 | 76.8 | 7,025 | 5,026 | 4,335 | 228,450 | 5,659 | N/A |
| 45 | 19-Jan-14 | 77.1 | 7,014 | 128 | 5,440 | 225,160 | 5,599 | N/A |
| 46 | 19-Jan-14 | 75.5 | 6,931 | 5,332 | 5,142 | 230,900 | 5,583 | N/A |
| 47 | 20-Jan-14 | 72.6 | 6,819 | 5,525 | 4,245 | 224,200 | 5,564 | N/A |
| AVG= | | 75 | 7,271 | 5,246 | 5,099 | 10,023,445 | 280,272 | TOTAL |

RECEIVED

JAN 27 2015

WV GEOLOGICAL SURVEY

EXHIBIT 3

| LITHOLOGY/ FORMATION | TOP DEPTH (TVD) | BOTTOM DEPTH (TVD) | TOP DEPTH (MD) | BOTTOM DEPTH (MD) | ROCK TYPE | FLUID PRODUCED |
|---|-----------------------|--------------------------|----------------------|----------------------|---------------------------|----------------|
| Undifferentiated Pennsylvanian Sedimentary Sequence | 0' | 2123' | 0' | 2131' | Sandstone/Shale/Siltstone | |
| Big Lime | est. 2124' | 2229' | est. 2132' | 2238' | Limestone | |
| Big Injun | est. 2230' | 2625' | est. 2239' | 2634' | Sandstone | |
| Gantz Sand | est. 2626' | 2777' | est. 2635' | 2786' | Sandstone | |
| Fifty Foot Sandstone | est. 2778' | 2866' | est. 2787' | 2875' | Sandstone | |
| Gordon | est. 2867' | 3182' | est. 2876' | 3191' | Sandstone | |
| Fifth Sandstone | est. 3183' | 3214' | est. 3192' | 3223' | Sandstone | |
| Bayard | est. 3215' | 2955' | est. 3224' | 3964' | Sandstone | |
| Speechley | est. 3956' | 4240' | est. 3965' | 4249' | Sandstone | |
| Baltown | est. 4241' | 4691' | est. 4250' | 4700' | Sandstone | |
| Bradford | est. 4692' | 5109' | est. 4701' | 5118' | Sandstone | |
| Benson | est. 5110' | 5396' | est. 5119' | 5426' | Sandstone | |
| Alexander | 5397' | 5546' | 5427' | 5590' | Sandstone | |
| Elk | 5547' | 6038' | 5591' | 6047' | Sandstone | |
| Rhinestreet | est. 6039' | 6347' | est. 6048' | 6378' | Sandstone | |
| Sycamore | est. 6348' | 6509' | est. 6379' | 6739' | Sandstone | |
| Middlesex | 6510' | 6632' | 6740' | 6928' | Shale | |
| Burkett | 6633' | 6661' | 6929' | 6988' | Shale | Gas |
| Tully | 6662' | 6686' | 6989' | 7052' | Limestone | N/A |
| Hamilton | 6687' | 6693' | 7053' | 7073' | Shale | N/A |
| Marcellus | 6694' | 6792' | 7074' | 14673' | Shale | Gas |

*Please note Antero determines formation tops based on wireline logs that are only run on one well on a multi-well pad (Please reference Nero Unit 1H #47-017-06211). The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

RECEIVED
 JAN 27 2015
 WV GEOLOGICAL SURVEY
 MORGANTOWN, WV