

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

API 47 - 017 - 06373 County Doddridge District Grant  
Quad Smithburg 7.5' Pad Name Misery Pad Field/Pool Name \_\_\_\_\_  
Farm name Spencer, Denzil C. et al Well Number Anne 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 4,356,838m Easting 521,636m  
Landing Point of Curve Northing 4,356,553.29m Easting 521,405.91m  
Bottom Hole Northing 4,354,392m Easting 522,281m

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 11/20/2013 Date drilling commenced 05/08/2014 Date drilling ceased 08/26/2014  
Date completion activities began 10/27/2014 Date completion activities ceased 02/27/2015  
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

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Reviewed by:

JK f/28

10/09/2015

API 47-017 - 06373

Farm name Spencer, Denzil C. et al

Well number Anne Unit 1H

| CASING STRINGS            | Hole Size       | Casing Size | Depth   | New or Used | Grade wt/ft | Basket Depth(s) | Did cement circulate (Y/N)<br>* Provide details below* |
|---------------------------|-----------------|-------------|---------|-------------|-------------|-----------------|--|
| Conductor                 | 24"             | 20"         | 40'     | New         | 94#; H-40   | N/A             | Yes  |
| Surface                   | 17 1/2"         | 13 3/8"     | 565'    | New         | 54.5#; J-55 | N/A             | Yes  |
| Coal                      |                 |             |         |             |             |                 |  |
| Intermediate 1            | 12 1/4"         | 9 5/8"      | 2,531'  | New         | 36#; J-55   | N/A             | Yes  |
| Intermediate 2            |                 |             |         |             |             |                 |  |
| Intermediate 3            |                 |             |         |             |             |                 |  |
| Production                | 8 3/4" & 8 1/2" | 5 1/2"      | 15,042' | New         | 23#; P-110  | N/A             | Yes  |
| Tubing                    |                 | 2 3/8"      | 7,043'  |             | 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              | 95 sx                          | 15.6                     | 1.18                         | 38                        | 0'                             | 8 Hrs.    |
| Surface        | Class A              | 671 sx                         | 15.6                     | 1.18                         | 392                       | 0'                             | 8 Hrs.    |
| Coal           |                      |                                |                          |                              |                           |                                |           |
| Intermediate 1 | Class A              | 924 sx                         | 15.6                     | 1.18                         | 793                       | 0'                             | 8 Hrs.    |
| Intermediate 2 |                      |                                |                          |                              |                           |                                |           |
| Intermediate 3 |                      |                                |                          |                              |                           |                                |           |
| Production     | Class H              | 899 sx (Lead); 1,343 sx (Tail) | 13.5 (Lead); 15.2 (Tail) | 1.44 (Lead); 1.8 (Tail)      | 2,981                     | -500' into Intermediate Casing | 8 Hrs.    |
| Tubing         |                      |                                |                          |                              |                           |                                |           |

Drillers TD (ft) 15,042' MD; 6,820' TVD (BHL); 6,846' TVD (Deepest Point Drilled)

Loggers TD (ft) 14,994'

Deepest formation penetrated Marcellus

Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 6,270'

\*\*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  
 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 \_\_\_\_\_

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API 47-017-06373 Farm Name Spencer, Denzil C. et al Well Number Anne Unit 1H

**EXHIBIT 1**

| Stage No. | Perforation Date | Perforated from MD ft. | Perforated to MD ft. | Number of Perforations | Formations |
|-----------|------------------|------------------------|----------------------|------------------------|------------|
| 1         | 27-Oct-14        | 14,800                 | 14,967               | 60                     | Marcellus  |
| 2         | 14-Dec-14        | 14,603                 | 14,769               | 60                     | Marcellus  |
| 3         | 14-Dec-14        | 14,405                 | 14,572               | 60                     | Marcellus  |
| 4         | 15-Dec-14        | 14,208                 | 14,374               | 60                     | Marcellus  |
| 5         | 15-Dec-14        | 14,010                 | 14,177               | 60                     | Marcellus  |
| 6         | 15-Dec-14        | 13,813                 | 13,979               | 60                     | Marcellus  |
| 7         | 15-Dec-14        | 13,615                 | 13,782               | 60                     | Marcellus  |
| 8         | 16-Dec-14        | 13,417                 | 13,584               | 60                     | Marcellus  |
| 9         | 16-Dec-14        | 13,220                 | 13,387               | 60                     | Marcellus  |
| 10        | 17-Dec-14        | 13,022                 | 13,189               | 60                     | Marcellus  |
| 11        | 17-Dec-14        | 12,825                 | 12,991               | 60                     | Marcellus  |
| 12        | 17-Dec-14        | 12,627                 | 12,794               | 60                     | Marcellus  |
| 13        | 18-Dec-14        | 12,430                 | 12,596               | 60                     | Marcellus  |
| 14        | 18-Dec-14        | 12,232                 | 12,399               | 60                     | Marcellus  |
| 15        | 18-Dec-14        | 12,035                 | 12,201               | 60                     | Marcellus  |
| 16        | 18-Dec-14        | 11,837                 | 12,004               | 60                     | Marcellus  |
| 17        | 19-Dec-14        | 11,639                 | 11,806               | 60                     | Marcellus  |
| 18        | 19-Dec-14        | 11,442                 | 11,609               | 60                     | Marcellus  |
| 19        | 19-Dec-14        | 11,244                 | 11,411               | 60                     | Marcellus  |
| 20        | 19-Dec-14        | 11,047                 | 11,213               | 60                     | Marcellus  |
| 21        | 20-Dec-14        | 10,849                 | 11,016               | 60                     | Marcellus  |
| 22        | 20-Dec-14        | 10,652                 | 10,818               | 60                     | Marcellus  |
| 23        | 20-Dec-14        | 10,454                 | 10,621               | 60                     | Marcellus  |
| 24        | 21-Dec-14        | 10,257                 | 10,423               | 60                     | Marcellus  |
| 25        | 21-Dec-14        | 10,059                 | 10,226               | 60                     | Marcellus  |
| 26        | 21-Dec-14        | 9,862                  | 10,028               | 60                     | Marcellus  |
| 27        | 21-Dec-14        | 9,664                  | 9,831                | 60                     | Marcellus  |
| 28        | 23-Dec-14        | 9,466                  | 9,633                | 60                     | Marcellus  |
| 29        | 23-Dec-14        | 9,269                  | 9,436                | 60                     | Marcellus  |
| 30        | 23-Dec-14        | 9,071                  | 9,238                | 60                     | Marcellus  |
| 31        | 26-Dec-14        | 8,874                  | 9,040                | 60                     | Marcellus  |
| 32        | 26-Dec-14        | 8,676                  | 8,843                | 60                     | Marcellus  |
| 33        | 26-Dec-14        | 8,479                  | 8,645                | 60                     | Marcellus  |
| 34        | 27-Dec-14        | 8,281                  | 8,448                | 60                     | Marcellus  |
| 35        | 27-Dec-14        | 8,084                  | 8,250                | 60                     | Marcellus  |
| 36        | 27-Dec-14        | 7,886                  | 8,053                | 60                     | Marcellus  |
| 37        | 27-Dec-14        | 7,688                  | 7,855                | 60                     | Marcellus  |
| 38        | 27-Dec-14        | 7,491                  | 7,658                | 60                     | Marcellus  |
| 39        | 28-Dec-14        | 7,293                  | 7,460                | 60                     | Marcellus  |
| 40        | 28-Dec-14        | 7,096                  | 7,262                | 60                     | Marcellus  |

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10/09/2015

**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         | 14-Dec-14         | 65.8          | 7,181                        | 6,025                        | 4,965      | 202,900                  | 7,069                  | N/A                               |
| 2         | 14-Dec-14         | 61.7          | 7,244                        | 5,866                        | 5,131      | 201,300                  | 6,052                  | N/A                               |
| 3         | 14-Dec-14         | 59.3          | 7,383                        | 6,153                        | 4,583      | 161,000                  | 6,209                  | N/A                               |
| 4         | 15-Dec-14         | 57.2          | 7,410                        | 5,887                        | 4,554      | 83,200                   | 6,616                  | N/A                               |
| 5         | 15-Dec-14         | 63.8          | 7,237                        | 5,647                        | 5,189      | 242,600                  | 6,513                  | N/A                               |
| 6         | 15-Dec-14         | 63.7          | 7,210                        | 6,210                        | 4,901      | 245,500                  | 6,503                  | N/A                               |
| 7         | 15-Dec-14         | 64.1          | 6,964                        | 5,657                        | 5,309      | 244,600                  | 6,438                  | N/A                               |
| 8         | 16-Dec-14         | 63.3          | 6,836                        | 5,610                        | 5,117      | 244,700                  | 6,485                  | N/A                               |
| 9         | 16-Dec-14         | 64.1          | 6,927                        | 5,924                        | 5,110      | 243,600                  | 6,456                  | N/A                               |
| 10        | 17-Dec-14         | 61.8          | 6,801                        | 5,888                        | 5,310      | 244,200                  | 6,414                  | N/A                               |
| 11        | 17-Dec-14         | 63.0          | 6,980                        | 5,823                        | 5,234      | 244,500                  | 6,439                  | N/A                               |
| 12        | 17-Dec-14         | 61.0          | 7,668                        | 5,698                        | 5,817      | 116,400                  | 6,328                  | N/A                               |
| 13        | 18-Dec-14         | 61.9          | 7,254                        | 5,695                        | 5,515      | 210,300                  | 6,933                  | N/A                               |
| 14        | 18-Dec-14         | 63.3          | 7,162                        | 5,601                        | 5,461      | 221,500                  | 6,295                  | N/A                               |
| 15        | 18-Dec-14         | 64.4          | 6,921                        | 5,614                        | 5,141      | 247,300                  | 6,307                  | N/A                               |
| 16        | 18-Dec-14         | 64.2          | 6,931                        | 5,483                        | 4,767      | 242,500                  | 6,322                  | N/A                               |
| 17        | 19-Dec-14         | 63.9          | 6,970                        | 5,482                        | 4,978      | 244,000                  | 6,219                  | N/A                               |
| 18        | 19-Dec-14         | 64.3          | 6,667                        | 5,525                        | 5,418      | 246,700                  | 6,341                  | N/A                               |
| 19        | 19-Dec-14         | 64.3          | 6,518                        | 5,446                        | 5,170      | 242,500                  | 6,206                  | N/A                               |
| 20        | 19-Dec-14         | 63.8          | 6,638                        | 5,222                        | 5,160      | 243,800                  | 6,234                  | N/A                               |
| 21        | 20-Dec-14         | 63.2          | 6,770                        | 5,354                        | 5,383      | 243,900                  | 6,255                  | N/A                               |
| 22        | 20-Dec-14         | 64.1          | 6,699                        | 5,338                        | 5,030      | 249,200                  | 6,290                  | N/A                               |
| 23        | 20-Dec-14         | 63.6          | 7,164                        | 5,303                        | 5,109      | 218,500                  | 6,732                  | N/A                               |
| 24        | 21-Dec-14         | 64.3          | 6,823                        | 5,640                        | 5,120      | 245,000                  | 6,185                  | N/A                               |
| 25        | 21-Dec-14         | 64.3          | 6,863                        | 5,731                        | 4,903      | 246,200                  | 6,178                  | N/A                               |
| 26        | 21-Dec-14         | 63.5          | 6,579                        | 5,554                        | 5,131      | 243,300                  | 5,723                  | N/A                               |
| 27        | 21-Dec-14         | 60.0          | 6,054                        | 5,471                        | 5,208      | 143,500                  | 6,547                  | N/A                               |
| 28        | 23-Dec-14         | 64.0          | 6,231                        | 5,618                        | 5,242      | 244,000                  | 6,086                  | N/A                               |
| 29        | 23-Dec-14         | 63.1          | 6,428                        | 5,750                        | 5,083      | 238,000                  | 6,094                  | N/A                               |
| 30        | 23-Dec-14         | 62.6          | 6,356                        | 5,425                        | 5,374      | 241,700                  | 6,230                  | N/A                               |
| 31        | 26-Dec-14         | 62.7          | 6,374                        | 5,872                        | 5,330      | 243,900                  | 5,770                  | N/A                               |
| 32        | 26-Dec-14         | 63.1          | 6,775                        | 5,780                        | 5,055      | 245,500                  | 6,069                  | N/A                               |
| 33        | 26-Dec-14         | 63.1          | 6,342                        | 5,413                        | 5,048      | 243,500                  | 6,004                  | N/A                               |
| 34        | 27-Dec-14         | 63.1          | 6,358                        | 5,838                        | 5,152      | 241,400                  | 5,980                  | N/A                               |
| 35        | 27-Dec-14         | 64.3          | 6,281                        | 5,567                        | 5,192      | 237,100                  | 5,955                  | N/A                               |
| 36        | 27-Dec-14         | 64.2          | 6,066                        | 5,386                        | 5,139      | 247,700                  | 5,952                  | N/A                               |
| 37        | 27-Dec-14         | 63.2          | 6,278                        | 5,717                        | 5,136      | 246,000                  | 5,943                  | N/A                               |
| 38        | 27-Dec-14         | 63.4          | 6,333                        | 5,623                        | 5,365      | 243,800                  | 5,945                  | N/A                               |
| 39        | 28-Dec-14         | 64.0          | 6,461                        | 5,529                        | 5,134      | 235,900                  | 5,820                  | N/A                               |
| 40        | 28-Dec-14         | 64.6          | 6,141                        | 6,246                        | 3,717      | 242,500                  | 5,825                  | N/A                               |
| AVG=      |                   | 63.2          | 6,757                        | 5,665                        | 5,117      | 9,113,700                | 249,962                | N/A                               |

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10/09/2015

**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                 | 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       | 1,984              | est. 1602      | 1,984             |
| Big Lime                    | 1,984           | 2,099              | 1,984          | 2,099             |
| Big Injun                   | 2,099           | 2,517              | 2,099          | 2,517             |
| Gantz Sand                  | 2,517           | 2,696              | 2,517          | 2,696             |
| Fifty Foot Sandstone        | 2,696           | 2,746              | 2,696          | 2,746             |
| Gordon                      | 2,746           | 3,095              | 2,746          | 3,095             |
| Fifth Sandstone             | 3,095           | 3,145              | 3,095          | 3,145             |
| Bayard                      | 3,145           | 3,455              | 3,145          | 3,455             |
| Warren                      | 3,455           | 3,873              | 3,455          | 3,873             |
| Speechley                   | 3,873           | 4,128              | 3,873          | 4,128             |
| Baltown                     | 4,128           | 4,608              | 4,128          | 4,619             |
| Bradford                    | 4,608           | 5,093              | 4,619          | 5,131             |
| Benson                      | 5,093           | 5,355              | 5,131          | 5,408             |
| Alexander                   | 5,355           | 5,555              | 5,408          | 5,616             |
| Elk                         | 5,555           | 6,075              | 5,616          | 6,155             |
| Rhinstreet                  | 6,075           | 6,337              | 6,155          | 6,450             |
| Sycamore                    | 6,337           | 6,513              | 6,450          | 6,692             |
| Middlesex                   | 6,513           | 6,647              | 6,692          | 6,892             |
| Burkett                     | 6,647           | 6,675              | 6,892          | 6,939             |
| Tully                       | 6,675           | 6,729              | 6,939          | 7,058             |
| Marcellus                   | 6,729           | NA                 | 7,058          | 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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10/09/2015



# Hydraulic Fracturing Fluid Product Component Information Disclosure

|                                |                              |
|--------------------------------|------------------------------|
| Job Start Date:                | 12/14/2014                   |
| Job End Date:                  | 12/28/2014                   |
| State:                         | West Virginia                |
| County:                        | Doddridge                    |
| API Number:                    | 47-017-06373-00-00           |
| Operator Name:                 | Antero Resources Corporation |
| Well Name and Number:          | Anne Unit 1H                 |
| Longitude:                     | -80.74885800                 |
| Latitude:                      | 39.36072500                  |
| Datum:                         | NAD83                        |
| Federal/Tribal Well:           | NO                           |
| True Vertical Depth:           | 6,846                        |
| Total Base Water Volume (gal): | 10,498,404                   |
| Total Base Non Water Volume:   | 0                            |



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## 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                       |                            |  |  |  |          |
|                             |   |                             | Water                      | 7732-18-5                                | 100.00000  | 90.20166   |          |
| WV Specific 40/70 mesh Sand | Nabors Completion and Production Services | Sand - Bulk - West Virginia |                            |  |  |  |          |
|                             |   |                             | Crystalline Silica, quartz | 14808-60-7                               | 99.90000   | 5.19951  |          |
|                             |   |                             | Aluminum Oxide             | 1344-28-1                                | 1.10000  | 0.05725  |          |
|                             |   |                             | Iron Oxide                 | 1309-37-1                                | 0.10000  | 0.00521  |          |
|                             |   |                             | Titanium Oxide             | 13463-67-7                               | 0.10000  | 0.00521  |          |
| WV Specific 20/40 mesh Sand | Nabors Completion and Production Services | Sand - Bulk - West Virginia |                            |  |  |  |          |
|                             |   |                             | Crystalline Silica, quartz | 14808-60-7                               | 99.90000   | 3.43385  |          |
|                             |   |                             | Aluminum Oxide             | 1344-28-1                                | 1.10000  | 0.03781  |          |
|                             |   |                             | Iron Oxide                 | 1309-37-1                                | 0.10000  | 0.00344  |          |
|                             |   |                             | Titanium Oxide             | 13463-67-7                               | 0.10000  | 0.00344  |          |
| WV Specific 100 mesh Sand   | Nabors Completion and Production Services | Sand - Bulk - West Virginia |                            |  |  |  |          |
|                             |   |                             | Crystalline Silica, quartz | 14808-60-7                               | 99.90000   | 0.74626  |          |
|                             |   |                             | Aluminum Oxide             | 1344-28-1                                | 1.10000  | 0.00822  |          |

17-06373



17-06373

|                                    |   |                               |   |             |           |         |
|------------------------------------|---|-------------------------------|---|-------------|-----------|---------|
|                                    |   |                               | Iron Oxide  | 1309-37-1   | 0.10000   | 0.00075 |
|                                    |   |                               | Titanium Oxide  | 13463-67-7  | 0.10000   | 0.00075 |
| HCl Acid (12.5-18.0%),<br>22 Baume | Nabors Completion<br>and Production<br>Services | Bulk Acid                     |   |             |           |         |
|                                    |   |                               | Water   | 7732-18-5   | 87.50000  | 0.18551 |
|                                    |   |                               | Hydrochloric Acid   | 7647-01-0   | 18.00000  | 0.03816 |
| WFR-6W                             | Nabors Completion<br>and Production<br>Services | Friction Reducer              |   |             |           |         |
|                                    |   |                               | Anionic Water-Soluble Polymer<br>Emulsion                   | Proprietary | 100.00000 | 0.07186 |
| LSG-100L                           | Nabors Completion<br>and Production<br>Services | Gelling Agents                |   |             |           |         |
|                                    |   |                               | Petroleum Distillates                                       | 64742-47-8  | 70.00000  | 0.06393 |
| Super TSC-LT                       | Nabors Completion<br>and Production<br>Services | Paraffin & Scale<br>Additives |   |             |           |         |
|                                    |   |                               | 100% Non-Hazardous Mixture                                  | Proprietary | 100.00000 | 0.01295 |
| AQUCAR DB 20                       | Nabors Completion<br>and Production<br>Services | Biocides                      |   |             |           |         |
|                                    |   |                               | Polyethylene glycol   | 25322-68-3  | 54.50000  | 0.00835 |
|                                    |   |                               | 2,2-Dibromo-3-nitrilo-<br>propionamide (DBNPA)              | 10222-01-2  | 20.00000  | 0.00307 |
|                                    |   |                               | Sodium bromide  | 7647-15-6   | 4.00000   | 0.00061 |
|                                    |   |                               | Dibromoacetonitrile   | 3252-43-5   | 3.00000   | 0.00046 |
| Super GREEN SOLV-<br>M             | Nabors Completion<br>and Production<br>Services | Paraffin & Scale<br>Additives |   |             |           |         |
|                                    |   |                               | Aliphatic Hydrocarbons                                      | Proprietary | 95.00000  | 0.00314 |
|                                    |   |                               | Dodecane  | Proprietary | 14.00000  | 0.00046 |
|                                    |   |                               | tetradecane   | Proprietary | 11.00000  | 0.00036 |
|                                    |   |                               | Tridecane   | Proprietary | 9.00000   | 0.00030 |
|                                    |   |                               | Undecane  | Proprietary | 8.00000   | 0.00027 |
| OB-2 LT                            | Nabors Completion<br>and Production<br>Services | Gel Breakers                  |   |             |           |         |
|                                    |   |                               | Ammonium Persulfate   | 7727-54-0   | 85.00000  | 0.00109 |
|                                    |   |                               | Crystalline Silica (in the form of<br>quartz)               | 14808-60-7  | 10.00000  | 0.00013 |
| Acid Inhibitor 2 (AI-2)            | Nabors Completion<br>and Production<br>Services | Acid Corrosion<br>Inhibitors  |   |             |           |         |
|                                    |   |                               | Propargyl Alcohol   | 107-19-7    | 40.00000  | 0.00016 |
|                                    |   |                               | Isopropyl Alcohol   | 67-63-0     | 40.00000  | 0.00016 |
|                                    |   |                               | Glycol Ethers   | 111-46-6    | 40.00000  | 0.00016 |
|                                    |   |                               | Tar bases, quinoline derivs,<br>benzyl chloride-quaternized | 72480-70-7  | 10.00000  | 0.00004 |
| Calcium Chloride<br>(CaCl2)        | Nabors Completion<br>and Production<br>Services | Cement Accelerators           |   |             |           |         |

Received  
Office of Oil & Gas  
AUG 17 2015



17-06373

|  |   |                   |  |             |           |         |
|--|---|-------------------|--|-------------|-----------|---------|
|  |   |                   | Calcium Chloride                           | 10043-52-4  | 100.00000 | 0.00046 |
| 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 | 0.07186 |
|  |   |                   | guar gum                                   | 9000-30-0   | 50.00000  | 0.04566 |
|  |   |                   | Water                                      | 7732-18-5   | 40.00000  | 0.02874 |
|  |   |                   | Isoparaffinic Solvent                      | 64742-47-8  | 26.00000  | 0.01868 |
|  |   |                   | Water                                      | 7732-18-5   | 60.00000  | 0.00777 |
|  |   |                   | Proprietary                                | Proprietary | 50.00000  | 0.00648 |
|  |   |                   | Water                                      | 7732-18-5   | 32.00000  | 0.00490 |
|  |   |                   | Ethoxylated alcohols                       | Proprietary | 4.00000   | 0.00287 |
|  |   |                   | Ethylene Glycol                            | 107-21-1    | 4.00000   | 0.00287 |
|  |   |                   | Surfactant Blend                           | Proprietary | 3.00000   | 0.00216 |
|  |   |                   | Proprietary                                | Proprietary | 15.00000  | 0.00194 |
|  |   |                   | Proprietary                                | Proprietary | 15.00000  | 0.00194 |
|  |   |                   | Proprietary                                | Proprietary | 15.00000  | 0.00194 |
|  |   |                   | Surfactant                                 | 68439-51-0  | 2.00000   | 0.00183 |
|  |   |                   | Crystalline Silica (in the form of quartz) | 14808-60-7  | 2.00000   | 0.00183 |
|  |   |                   | Sugar                                      | 57-50-1     | 100.00000 | 0.00042 |
|  |   |                   | Proprietary                                | Proprietary | 100.00000 | 0.00042 |
|  |   |                   | Water                                      | 7732-18-5   | 100.00000 | 0.00021 |
|  |   |                   | Water                                      | 7732-18-5   | 48.00000  | 0.00019 |
|  |   |                   | Alkali Chloride salt                       | Proprietary | 15.00000  | 0.00019 |
|  |   |                   | Monobromo-3-nitrilopropionamide            | 1113-55-9   | 1.00000   | 0.00015 |
|  |   |                   | 2,2-Dibromomalonamide                      | 73003-80-2  | 1.00000   | 0.00015 |
|  |   |                   | 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 |
|  |   |                   | Sodium Chloride                            | 7647-14-5   | 5.00000   | 0.00002 |
|  |   |                   | Potassium Chloride                         | 7447-40-7   | 5.00000   | 0.00002 |
|  |   |                   | Water                                      | 7732-18-5   | 1.00000   | 0.00001 |
|  |   |                   | Proprietary                                | Proprietary | 1.00000   | 0.00000 |
|  |   |                   | 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 | 0.02000   |         |
|  |   |                   | Organophylic Clay                          | 68953-58-2  |           |         |

Received  
 Office of Oil & Gas  
 AUG 17 2015

17-06373

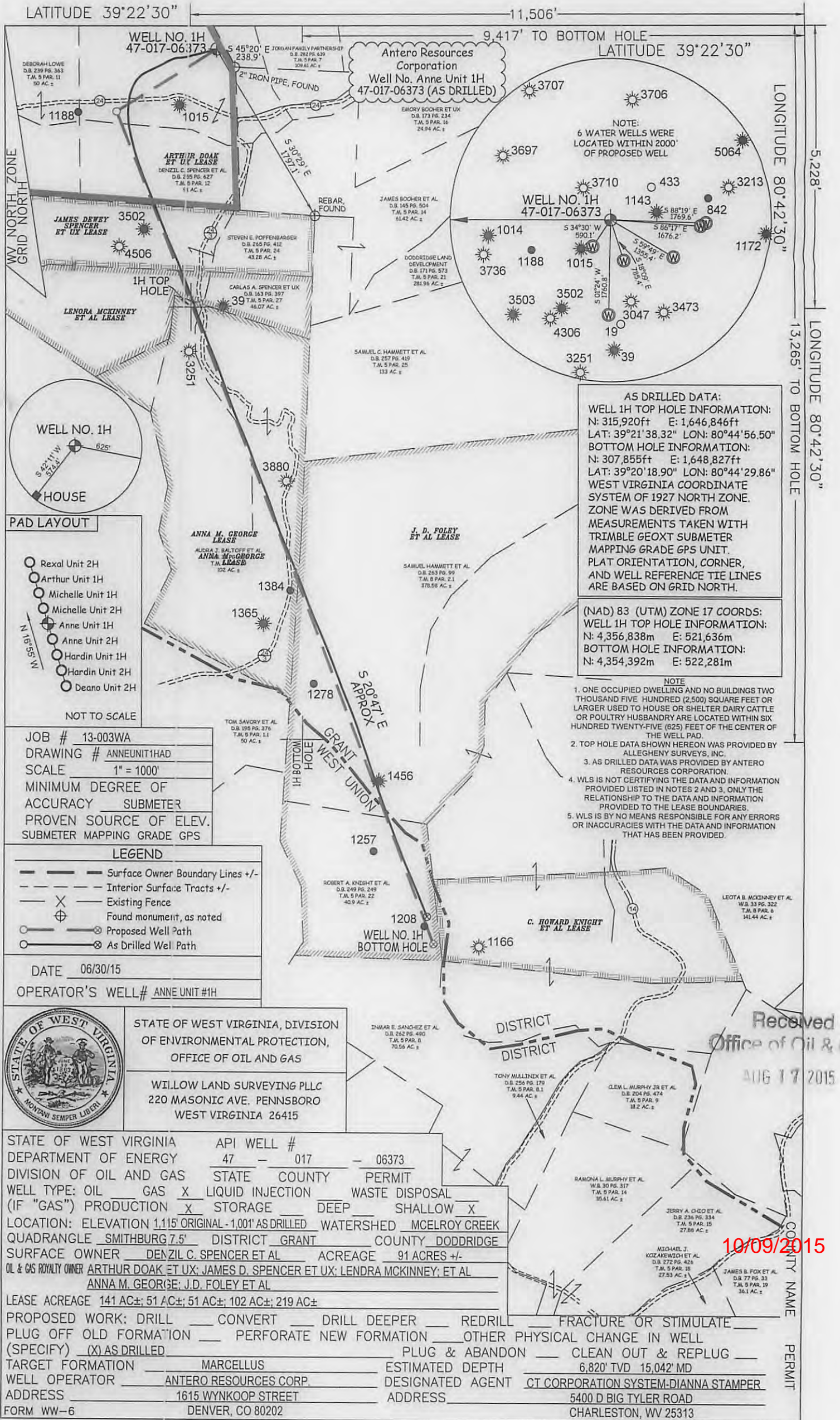
\* Total Water Volume sources may include fresh water, produced water, and/or recycled water  
\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

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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AUG 17 2015

10/09/2015





LATITUDE 39°22'30"

11,506'

9,417' TO BOTTOM HOLE

LATITUDE 39°22'30"

WV NORTH ZONE GRID NORTH

LONGITUDE 80°42'30"

5,228'

LONGITUDE 80°42'30"

13,265' TO BOTTOM HOLE

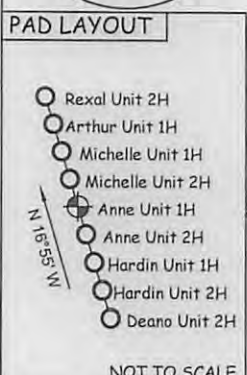
NOTE:  
6 WATER WELLS WERE LOCATED WITHIN 2000' OF PROPOSED WELL

WELL NO. 1H  
47-017-06373

AS DRILLED DATA:  
WELL 1H TOP HOLE INFORMATION:  
N: 315,920ft E: 1,646,846ft  
LAT: 39°21'38.32" LON: 80°44'56.50"  
BOTTOM HOLE INFORMATION:  
N: 307,855ft E: 1,648,827ft  
LAT: 39°20'18.90" LON: 80°44'29.86"  
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 1H TOP HOLE INFORMATION:  
N: 4,356,838m E: 521,636m  
BOTTOM HOLE INFORMATION:  
N: 4,354,392m E: 522,281m

- 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.



JOB # 13-003WA  
DRAWING # ANNEUNIT1HAD  
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# ANNE UNIT #1H



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 - 06373

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 D. SPENCER ET UX; LENDRA MCKINNEY; ET AL  
ANNA M. GEORGE; J.D. FOLEY ET AL

LEASE ACREAGE 141 AC±; 51 AC±; 51 AC±; 102 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) (X) AS DRILLED  PLUG & ABANDON  CLEAN OUT & REPLUG

TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,820' TVD 15,042' 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

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COUNTY NAME PERMIT