

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

API 47-085-10196 County Ritchie District Clay
Quad Pullman 7.5' Pad Name Mackay Pad Field/Pool Name ---
Farm name Jack D. Mackay et al Well Number McNabb 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 4343238m Easting 508890m
Landing Point of Curve Northing 4343089.33m Easting 509007.88m
Bottom Hole Northing 4339798m Easting 510427m

Elevation (ft) 1100' 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

RECEIVED
Office of Oil and Gas

Date permit issued 2/26/2015 Date drilling commenced 6/4/2015 Date drilling ceased 10/11/2015
Date completion activities began 1/30/2016 Date completion activities ceased 9/5/2016
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by WV Dept. of Environmental Protection

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 434' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1966' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 301' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

APPROVED

NAME: Michael Gaff
DATE: 5-10-2017

Reviewed by:

05/26/2017

API 47-085 - 10196 Farm name Jack D. Mackay et al Well number McNabb 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#, H-40 | N/A | Y |
| Surface | 17- 1/2" | 13- 3/8" | 563' | New | 48#, H-40 | N/A | Y |
| Coal | | | | | | | |
| Intermediate 1 | 12-1/4" | 9-5/8" | 2536' | New | 36#, J-55 | N/A | Y |
| Intermediate 2 | | | | | | | |
| Intermediate 3 | | | | | | | |
| Production | 8-3/4" | 5-1/2" | 18759' | New | 23#, P-110 | N/A | Y |
| Tubing | | 2-3/8" | 6642' | | 5.95#, N-80 | | |
| 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 | 285 sx | 15.6 | 1.18 | 38 | 0 | 8 Hrs. |
| Surface | Class A | 677 sx | 15.6 | 1.18 | 391 | 0 | 8 Hrs. |
| Coal | | | | | | | |
| Intermediate 1 | Class A | 976 sx | 15.6 | 1.18 | 794 | 0 | 8 Hrs. |
| Intermediate 2 | | | | | | | |
| Intermediate 3 | | | | | | | |
| Production | Class H | 865 sx (Lead) 1902 sx (Tail) | 13.5 (Lead) 15.2 (Tail) | 1.44 (Lead) 1.83 (Tail) | 3831 | ~500' into Intermediate Casing | 8 Hrs. |
| Tubing | | | | | | | |

Drillers TD (ft) 18759' MD, 6576' TVD (BHL); 6587' TVD (Deepest point drilled) Loggers TD (ft) 18707' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5917'

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 _____

EXHIBIT 1

| Stage No. | Perforation Date | Perforated from MD ft. | Perforated to MD ft. | Number of Perforations | Formations |
|-----------|------------------|------------------------|----------------------|------------------------|------------|
| 1 | 1/30/2016 | 18497 | 18664 | 60 | Marcellus |
| 2 | 2/19/2016 | 18298 | 18466 | 60 | Marcellus |
| 3 | 2/20/2016 | 18100 | 18267 | 60 | Marcellus |
| 4 | 2/20/2016 | 17901 | 18069 | 60 | Marcellus |
| 5 | 2/20/2016 | 17703 | 17870 | 60 | Marcellus |
| 6 | 2/20/2016 | 17505 | 17672 | 60 | Marcellus |
| 7 | 2/21/2016 | 17306 | 17474 | 60 | Marcellus |
| 8 | 2/21/2016 | 17108 | 17275 | 60 | Marcellus |
| 9 | 2/21/2016 | 16909 | 17077 | 60 | Marcellus |
| 10 | 2/22/2016 | 16711 | 16878 | 60 | Marcellus |
| 11 | 2/22/2016 | 16513 | 16680 | 60 | Marcellus |
| 12 | 2/22/2016 | 16314 | 16481 | 60 | Marcellus |
| 13 | 2/22/2016 | 16116 | 16283 | 60 | Marcellus |
| 14 | 2/23/2016 | 15917 | 16085 | 60 | Marcellus |
| 15 | 2/23/2016 | 15719 | 15886 | 60 | Marcellus |
| 16 | 2/23/2016 | 15520 | 15688 | 60 | Marcellus |
| 17 | 2/23/2016 | 15322 | 15489 | 60 | Marcellus |
| 18 | 2/24/2016 | 15124 | 15291 | 60 | Marcellus |
| 19 | 2/24/2016 | 14925 | 15093 | 60 | Marcellus |
| 20 | 2/24/2016 | 14727 | 14894 | 60 | Marcellus |
| 21 | 2/24/2016 | 14528 | 14696 | 60 | Marcellus |
| 22 | 2/25/2016 | 14330 | 14497 | 60 | Marcellus |
| 23 | 2/25/2016 | 14132 | 14299 | 60 | Marcellus |
| 24 | 2/25/2016 | 13933 | 14100 | 60 | Marcellus |
| 25 | 2/25/2016 | 13735 | 13902 | 60 | Marcellus |
| 26 | 2/26/2016 | 13536 | 13704 | 60 | Marcellus |
| 27 | 2/26/2016 | 13338 | 13505 | 60 | Marcellus |
| 28 | 2/26/2016 | 13139 | 13307 | 60 | Marcellus |
| 29 | 2/26/2016 | 12941 | 13108 | 60 | Marcellus |
| 30 | 2/27/2016 | 12743 | 12910 | 60 | Marcellus |
| 31 | 2/27/2016 | 12544 | 12712 | 60 | Marcellus |
| 32 | 2/27/2016 | 12346 | 12513 | 60 | Marcellus |
| 33 | 2/27/2016 | 12147 | 12315 | 60 | Marcellus |
| 34 | 2/28/2016 | 11949 | 12116 | 60 | Marcellus |
| 35 | 2/28/2016 | 11751 | 11918 | 60 | Marcellus |
| 36 | 2/28/2016 | 11552 | 11720 | 60 | Marcellus |
| 37 | 2/28/2016 | 11354 | 11521 | 60 | Marcellus |
| 38 | 2/29/2016 | 11155 | 11323 | 60 | Marcellus |
| 39 | 2/29/2016 | 10957 | 11124 | 60 | Marcellus |
| 40 | 2/29/2016 | 10759 | 10926 | 60 | Marcellus |
| 41 | 3/1/2016 | 10560 | 10727 | 60 | Marcellus |
| 42 | 3/1/2016 | 10362 | 10529 | 60 | Marcellus |
| 43 | 3/1/2016 | 10163 | 10331 | 60 | Marcellus |
| 44 | 3/2/2016 | 9965 | 10132 | 60 | Marcellus |
| 45 | 3/2/2016 | 9766 | 9934 | 60 | Marcellus |
| 46 | 3/2/2016 | 9568 | 9735 | 60 | Marcellus |
| 47 | 3/2/2016 | 9370 | 9537 | 60 | Marcellus |
| 48 | 3/2/2016 | 9171 | 9339 | 60 | Marcellus |
| 49 | 3/3/2016 | 8973 | 9140 | 60 | Marcellus |
| 50 | 3/3/2016 | 8774 | 8942 | 60 | Marcellus |
| 51 | 3/3/2016 | 8576 | 8743 | 60 | Marcellus |
| 52 | 3/3/2016 | 8378 | 8545 | 60 | Marcellus |
| 53 | 3/4/2016 | 8179 | 8346 | 60 | Marcellus |
| 54 | 3/4/2016 | 7981 | 8148 | 60 | Marcellus |
| 55 | 3/4/2016 | 7782 | 7950 | 60 | Marcellus |
| 56 | 3/4/2016 | 7584 | 7751 | 60 | Marcellus |
| 57 | 3/4/2016 | 7385 | 7553 | 60 | Marcellus |
| 58 | 3/5/2016 | 7187 | 7354 | 60 | Marcellus |
| 59 | 3/5/2016 | 6989 | 7156 | 60 | Marcellus |
| 60 | 3/5/2016 | 6790 | 6958 | 60 | Marcellus |

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 | 2/19/2016 | 63.9 | 7735 | 6191 | 3580 | 273520 | 8697 | N/A |
| 2 | 2/19/2016 | 64.3 | 7728 | 6141 | 5301 | 290990 | 9114 | N/A |
| 3 | 2/20/2016 | 62.6 | 7294 | 5826 | 3966 | 306620 | 8015 | N/A |
| 4 | 2/20/2016 | 64.6 | 7279 | 5696 | 3749 | 304990 | 8219 | N/A |
| 5 | 2/20/2016 | 62.3 | 7130 | 5428 | 4379 | 307670 | 7978 | N/A |
| 6 | 2/20/2016 | 61.6 | 7023 | 5575 | 4884 | 308470 | 7923 | N/A |
| 7 | 2/21/2016 | 64.2 | 7278 | 5520 | 3779 | 276450 | 8542 | N/A |
| 8 | 2/21/2016 | 67.1 | 7295 | 5553 | 4271 | 306050 | 7993 | N/A |
| 9 | 2/21/2016 | 65.4 | 7132 | 5482 | 4128 | 308330 | 7909 | N/A |
| 10 | 2/22/2016 | 65.4 | 7079 | 5268 | 4464 | 308320 | 7872 | N/A |
| 11 | 2/22/2016 | 67 | 7407 | 5528 | 4610 | 299200 | 7812 | N/A |
| 12 | 2/22/2016 | 71 | 7317 | 5274 | 5186 | 307910 | 7976 | N/A |
| 13 | 2/22/2016 | 70.2 | 7518 | 5760 | 4136 | 307470 | 7876 | N/A |
| 14 | 2/23/2016 | 69.8 | 7543 | 5333 | 4975 | 301120 | 7892 | N/A |
| 15 | 2/23/2016 | 71 | 7200 | 5171 | 4531 | 308920 | 7826 | N/A |
| 16 | 2/23/2016 | 71.3 | 7138 | 5332 | 5033 | 307470 | 7772 | N/A |
| 17 | 2/23/2016 | 70 | 7005 | 5257 | 4808 | 309460 | 7801 | N/A |
| 18 | 2/24/2016 | 69.3 | 6899 | 5182 | 4605 | 308680 | 7866 | N/A |
| 19 | 2/24/2016 | 71 | 7077 | 5240 | 0 | 308520 | 7742 | N/A |
| 20 | 2/24/2016 | 72.4 | 7130 | 5205 | 4136 | 308550 | 8110 | N/A |
| 21 | 2/24/2016 | 70.4 | 7049 | 5222 | 3900 | 308710 | 7755 | N/A |
| 22 | 2/25/2016 | 71.4 | 7309 | 5469 | 3579 | 308980 | 7730 | N/A |
| 23 | 2/25/2016 | 72 | 7285 | 5353 | 4627 | 308840 | 7713 | N/A |
| 24 | 2/25/2016 | 71.4 | 7391 | 5355 | 4138 | 308270 | 8680 | N/A |
| 25 | 2/25/2016 | 69.9 | 7185 | 5656 | 4994 | 306730 | 7722 | N/A |
| 26 | 2/26/2016 | 72.7 | 7293 | 5503 | 4604 | 309085 | 7681 | N/A |
| 27 | 2/26/2016 | 72 | 6965 | 5462 | 4933 | 308770 | 7659 | N/A |
| 28 | 2/26/2016 | 71.4 | 7401 | 5418 | 4981 | 296090 | 7669 | N/A |
| 29 | 2/26/2016 | 69.5 | 6725 | 5344 | 4923 | 308420 | 7652 | N/A |
| 30 | 2/27/2016 | 72.6 | 6693 | 5144 | 4766 | 309450 | 7645 | N/A |
| 31 | 2/27/2016 | 72.1 | 6835 | 5559 | 4810 | 308960 | 7628 | N/A |
| 32 | 2/27/2016 | 71.2 | 6770 | 5140 | 3888 | 309160 | 7535 | N/A |
| 33 | 2/27/2016 | 70 | 6611 | 5198 | 3944 | 307970 | 7621 | N/A |
| 34 | 2/28/2016 | 72.5 | 6684 | 5040 | 4987 | 308860 | 7572 | N/A |
| 35 | 2/28/2016 | 69.6 | 7213 | 5352 | 4112 | 250398 | 8209 | N/A |
| 36 | 2/28/2016 | 70.7 | 6991 | 5460 | 3915 | 307060 | 8565 | N/A |
| 37 | 2/28/2016 | 71.5 | 7157 | 5311 | 4169 | 275780 | 7818 | N/A |
| 38 | 2/29/2016 | 70.37 | 6835 | 5145 | 4927 | 307850 | 7563 | N/A |
| 39 | 2/29/2016 | 71 | 6813 | 5102 | 5183 | 306870 | 7581 | N/A |
| 40 | 2/29/2016 | 72.7 | 6899 | 5645 | 3481 | 305500 | 7505 | N/A |
| 41 | 3/1/2016 | 73.1 | 7133 | 5528 | 3708 | 273450 | 7753 | N/A |
| 42 | 3/1/2016 | 71 | 7036 | 5393 | 5139 | 308360 | 7717 | N/A |
| 43 | 3/1/2016 | 70 | 6961 | 5190 | 4721 | 237880 | 7540 | N/A |
| 44 | 3/2/2016 | 71.9 | 6964 | 5055 | 4893 | 309370 | 7430 | N/A |
| 45 | 3/2/2016 | 73.4 | 6760 | 5461 | 4944 | 309370 | 7430 | N/A |
| 46 | 3/2/2016 | 71 | 6578 | 5288 | 4221 | 308630 | 7418 | N/A |
| 47 | 3/2/2016 | 71 | 6792 | 5209 | 4632 | 296330 | 7394 | N/A |
| 48 | 3/2/2016 | 72.5 | 6698 | 5246 | 3775 | 311020 | 7460 | N/A |
| 49 | 3/3/2016 | 37.5 | 8341 | 5310 | 4368 | 3600 | 7169 | N/A |
| 50 | 3/3/2016 | 70 | 6710 | 5388 | 3560 | 309110 | 7383 | N/A |
| 51 | 3/3/2016 | 72 | 6582 | 5210 | 4616 | 309500 | 7344 | N/A |
| 52 | 3/3/2016 | 72.9 | 6414 | 5402 | 5147 | 308800 | 7385 | N/A |
| 53 | 3/4/2016 | 72.9 | 6414 | 5402 | 5147 | 310000 | 7356 | N/A |
| 54 | 3/4/2016 | 71 | 6345 | 5202 | 5100 | 310810 | 7323 | N/A |
| 55 | 3/4/2016 | 72 | 6469 | 5221 | 4858 | 309700 | 7315 | N/A |
| 56 | 3/4/2016 | 73 | 6415 | 5327 | 5214 | 303040 | 7293 | N/A |
| 57 | 3/4/2016 | 72.9 | 6354 | 5484 | 5359 | 305800 | 7301 | N/A |
| 58 | 3/5/2016 | 72 | 6322 | 5577 | 4925 | 310820 | 8238 | N/A |
| 59 | 3/5/2016 | 72 | 6492 | 5162 | 4264 | 302680 | 7250 | N/A |
| 60 | 3/5/2016 | 72 | 6512 | 5499 | 4371 | 309430 | 7600 | N/A |
| | AVG= | 69.6 | 6,993 | 5,390 | 4,439 | 17,868,163 | 465,537 | TOTAL |

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 | 434' | N/A | 434' | N/A |
| Shale | 0 | 201 | 0 | 201 |
| Sandstone | 201 | 281 | 201 | 281 |
| Siltstone | 281 | 301 | 281 | 301 |
| Coal "Washington Coal" | 301 | 361 | 301 | 361 |
| Sandstone | 361 | 581 | 361 | 581 |
| Shale | 581 | 1,241 | 581 | 1,241 |
| Sandstone | 1,241 | 1,321 | 1,241 | 1,321 |
| Siltstone/ sandstone | 1,321 | 1,401 | 1,321 | 1,401 |
| Sandstone | 1,401 | 1,721 | 1,401 | 1,721 |
| Shale | 1,721 | 1,821 | 1,721 | 1,821 |
| Siltstone | 1,821 | 1,981 | 1,821 | 1,981 |
| Limestone | 1,981 | 2,099 | 1,981 | 2,100 |
| Big Lime | 2,099 | 2,750 | 2,100 | 2,751 |
| Fifty Foot Sandstone | 2,750 | 2,826 | 2,751 | 2,827 |
| Gordon | 2,826 | 2,984 | 2,827 | 2,985 |
| Fifth Sandstone | 2,984 | 3,095 | 2,985 | 3,096 |
| Bayard | 3,095 | 3,924 | 3,096 | 3,926 |
| Speechley | 3,924 | 4,192 | 3,926 | 4,194 |
| Baltown | 4,192 | 4,644 | 4,194 | 4,646 |
| Bradford | 4,644 | 5,037 | 4,646 | 5,039 |
| Benson | 5,037 | 5,293 | 5,039 | 5,295 |
| Alexander | 5,293 | 6,187 | 5,295 | 6,207 |
| Sycamore | 6,187 | 6,346 | 6,207 | 6,406 |
| Middlesex | 6,346 | 6,460 | 6,406 | 6,592 |
| Burkett | 6,460 | 6,494 | 6,592 | 6,672 |
| Tully | 6,494 | 6,521 | 6,672 | 6,770 |
| Marcellus | 6,521 | N/A | 6,770 | N/A |

Hydraulic Fracturing Fluid Product Component Information Disclosure

| | |
|--------------------------------|------------------------------|
| Job Start Date: | 2/19/2016 |
| Job End Date: | 3/5/2016 |
| State: | West Virginia |
| County: | Ritchie |
| API Number: | 47-085-10196-00-00 |
| Operator Name: | Antero Resources Corporation |
| Well Name and Number: | McNabb 1H |
| Latitude: | 39.23840300 |
| Longitude: | -80.89698900 |
| Datum: | NAD27 |
| Federal Well: | NO |
| Indian Well: | NO |
| True Vertical Depth: | 6,598 |
| Total Base Water Volume (gal): | 20,461,706 |
| 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 | Base Fluid | Water | 7732-18-5 | 100.00000 | 90.13885 | |
| Sand | J.S. Well Services, LLC | Proppant | | | | | |
| LGC-15 | J.S. Well Services | Gelling Agents | Crystalline Silica, quartz | 14808-60-7 | 100.00000 | 9.43779 | |
| | | | Guar Gum | 9000-30-0 | 50.00000 | 0.07844 | |
| | | | Petroleum Distillates | 64742-47-8 | 60.00000 | 0.07429 | |
| | | | Suspending agent (solid) | 14808-60-7 | 3.00000 | 0.01200 | |
| | | | Surfactant | 38439-51-0 | 3.00000 | 0.00471 | |
| HCL Acid (12.6%-18.0%) | J.S. Well Services, LLC | Bulk Acid | | | | | |
| | | | Water | 7732-18-5 | 87.50000 | 0.13093 | |
| | | | Hydrogen Chloride | 7647-01-0 | 18.00000 | 0.03127 | |
| WFRA-405 | J.S. Well Services | Friction Reducer | Water | 7732-18-5 | 60.00000 | 0.03278 | |
| | | | 2-Propanoic acid, polymer with propenamide | 29003-06-9 | 30.00000 | 0.01639 | |
| | | | Hydrated light distillate (petroleum) | 64742-47-8 | 30.00000 | 0.01319 | |

| Product | U.S. Well Services | Scale Inhibitor | Ethoxylated alcohol blend | 68002-97-1 | 4.00000 | 0.00219 |
|------------|--------------------|---------------------------|---|------------|-----------|---------|
| SI-1100 | U.S. Well Services | Scale Inhibitor | | | | |
| | | | Water | 7732-18-5 | 80.00000 | 0.01004 |
| | | | Ethylene Glycol | 107-21-1 | 25.00000 | 0.00355 |
| | | | Copolymer of Maleic and Acrylic acid | 52255-49-9 | 10.00000 | 0.00148 |
| | | | Potassium salt of diethylene triamine penta (methylene phosphonic acid) | 15827-60-8 | 7.50000 | 0.00127 |
| | | | Phosphino carboxylic acid polymer | 71050-62-9 | 5.00000 | 0.00082 |
| | | | Hexamethylene tramine penta (methylene phosphonic acid) | 34690-00-1 | 5.00000 | 0.00082 |
| | | | Hexamethylene diamine penta (methylene phosphonic acid) | 23605-74-5 | 2.00000 | 0.00033 |
| K-BAC 1020 | U.S. Well Services | Anti-Bacterial Agent | | | | |
| | | | 2,2-dibromo-3-nitropropionamide | 10222-01-2 | 20.00000 | 0.00412 |
| | | | Deionized Water | 7732-18-5 | 28.00000 | 0.00235 |
| AP One | U.S. Well Services | Gel Breakers | | | | |
| | | | Ammonium Persulfate | 7727-54-0 | 100.00000 | 0.00207 |
| AI-302 | U.S. Well Services | Acid Corrosion Inhibitors | | | | |
| | | | Water | 7732-18-5 | 95.00000 | 0.00028 |
| | | | 2-Propyn-1-olcompound with methylcixirane | 38172-91-7 | 15.00000 | 0.00004 |

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)

LATITUDE 39°15'00"

6,277'

LATITUDE 39°12'30"

1,248' TO BOTTOM HOLE

375' TO BOTTOM HOLE
LONGITUDE 80°52'30"

4,256'

LONGITUDE 80°52'30"

Antero Resources Corporation
Well No. McNabb Unit 1H
API #47-085-10196

1H BOTTOM HOLE
AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
N: 271,988ft E: 1,604,274ft
LAT: 39°14'17.94" LON: 80°53'49.77"
BOTTOM HOLE INFORMATION:
N: 260,615ft E: 1,609,129ft
LAT: 39°12'26.29" LON: 80°52'45.85"
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: 4,343,238m E: 508,890m
BOTTOM HOLE INFORMATION:
N: 4,339,798m E: 510,427m

LEGEND

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

DATE 01/27/16

OPERATOR'S WELL# MCNABB UNIT #1H

| | | | |
|------------|--------|--------|-------|
| API WELL # | 47 | 085 | 10196 |
| STATE | COUNTY | PERMIT | |

JOB # 14-094WA

DRAWING # MCNABB1HAD

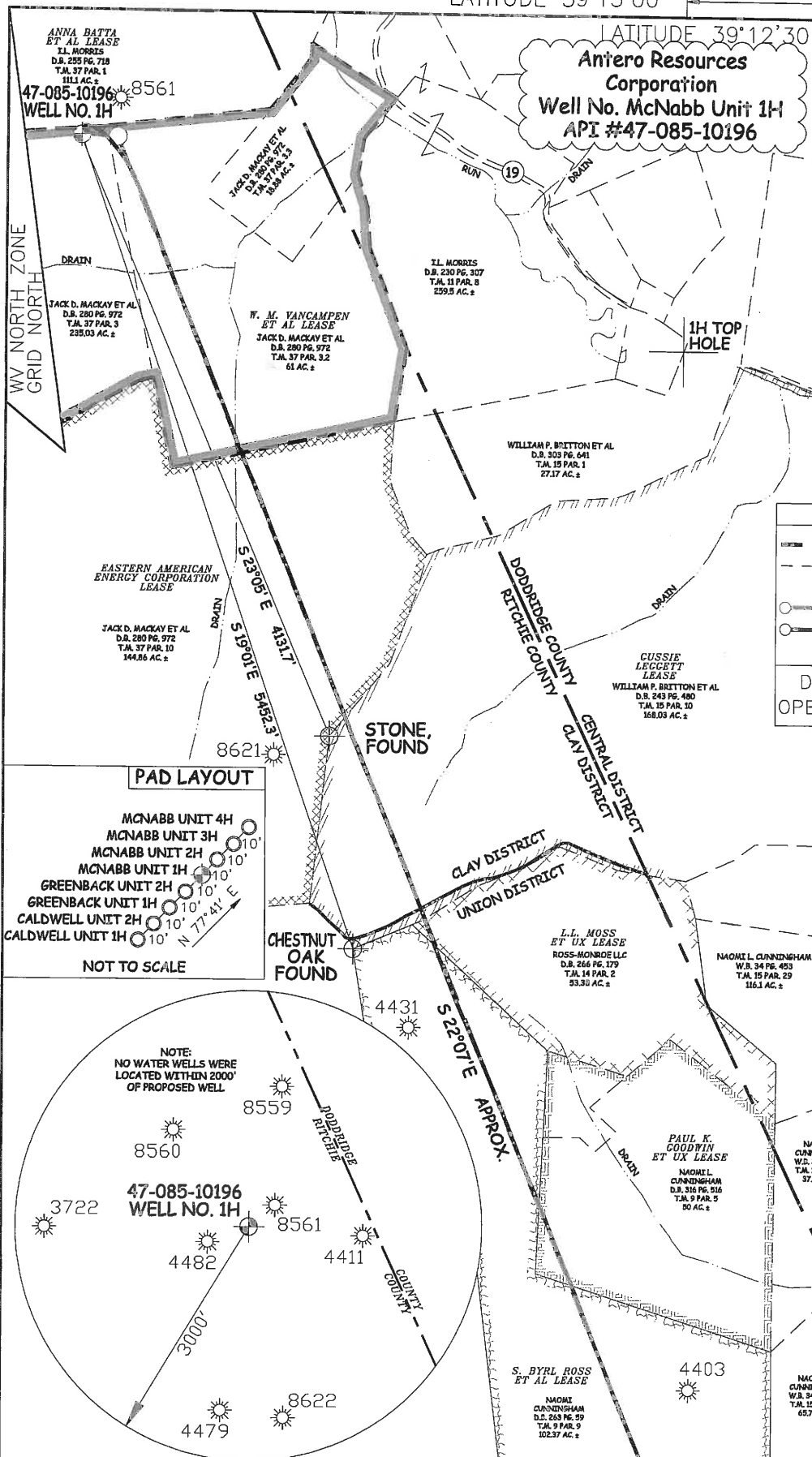
SCALE 1" = 1000'

MINIMUM DEGREE OF ACCURACY SUBMETER

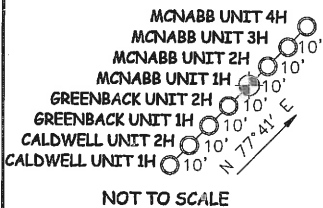
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY
DIVISION OF OIL AND GAS

- 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.

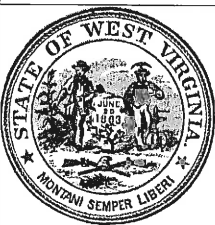
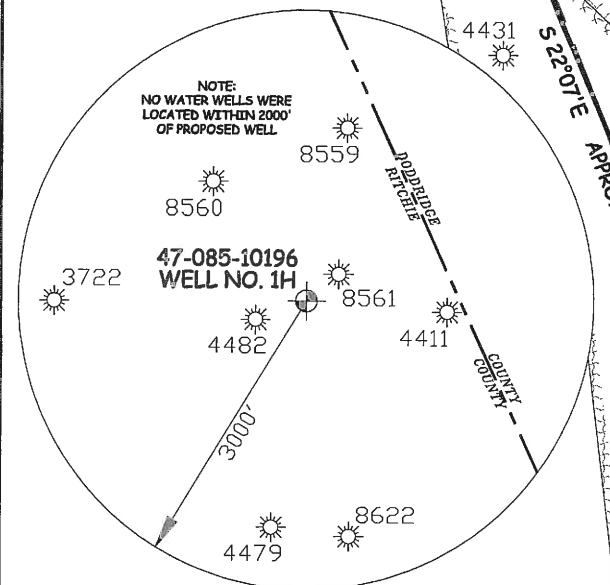


PAD LAYOUT



NOT TO SCALE

NOTE:
NO WATER WELLS WERE
LOCATED WITHIN 2000'
OF PROPOSED WELL



STATE OF WEST VIRGINIA, DIVISION
OF ENVIRONMENTAL PROTECTION,
OFFICE OF OIL AND GAS

WILLOW LAND SURVEYING PLLC
220 MASONIC AVE. PENNSBORO
WEST VIRGINIA 26415

WELL TYPE: OIL ___ GAS **X** LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS") PRODUCTION **X** STORAGE ___ DEEP ___ SHALLOW **X**
 LOCATION: ELEVATION **1,100'** - AS DRILLED **1,125'** - ORIGINAL ___ WATERSHED **NORTH FORK HUGHES RIVER**
 QUADRANGLE **PULLMAN 7.5'** DISTRICT **CLAY** COUNTY **RITCHIE**
 SURFACE OWNER **JACK D. MACKAY ET AL** ACREAGE **253.03 ACRES +/-**
 OIL & GAS ROYALTY OWNER **W.M. VANCAMPEN ET AL;** LEASE ACREAGE **312 AC±;**
EASTERN AMERICAN ENERGY CORP.; GUSSIE LEGGETT; LL MOSS 145 AC±; 169 AC±; 54 AC;
ET UX; S. BYRL ROSS ET AL; PAUL K GOODWIN ET UX; B.P. MINERAL 103 AC±; 50 AC±; 55 AC±;
HOLDINGS, III LLC; LARRY G BROADWATER 98.75 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 **6,576' TVD 18,759' 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**

05/26/2017

COUNTY NAME PERMIT

LATITUDE 39°15'00"

6,277'

LATITUDE 39°12'30"

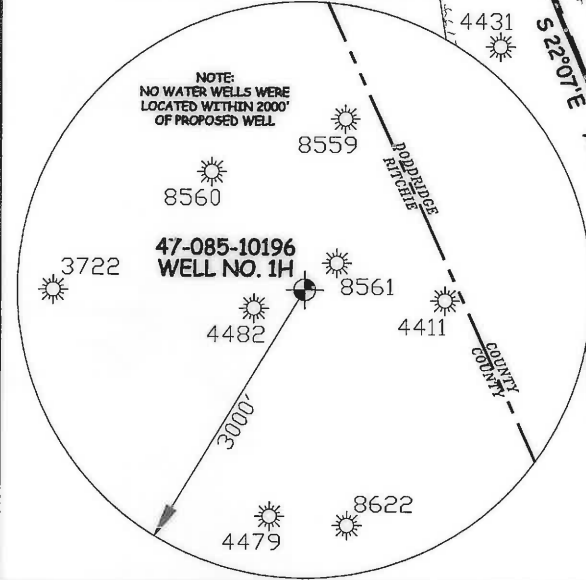
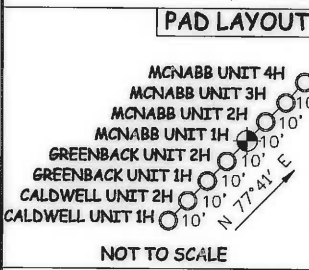
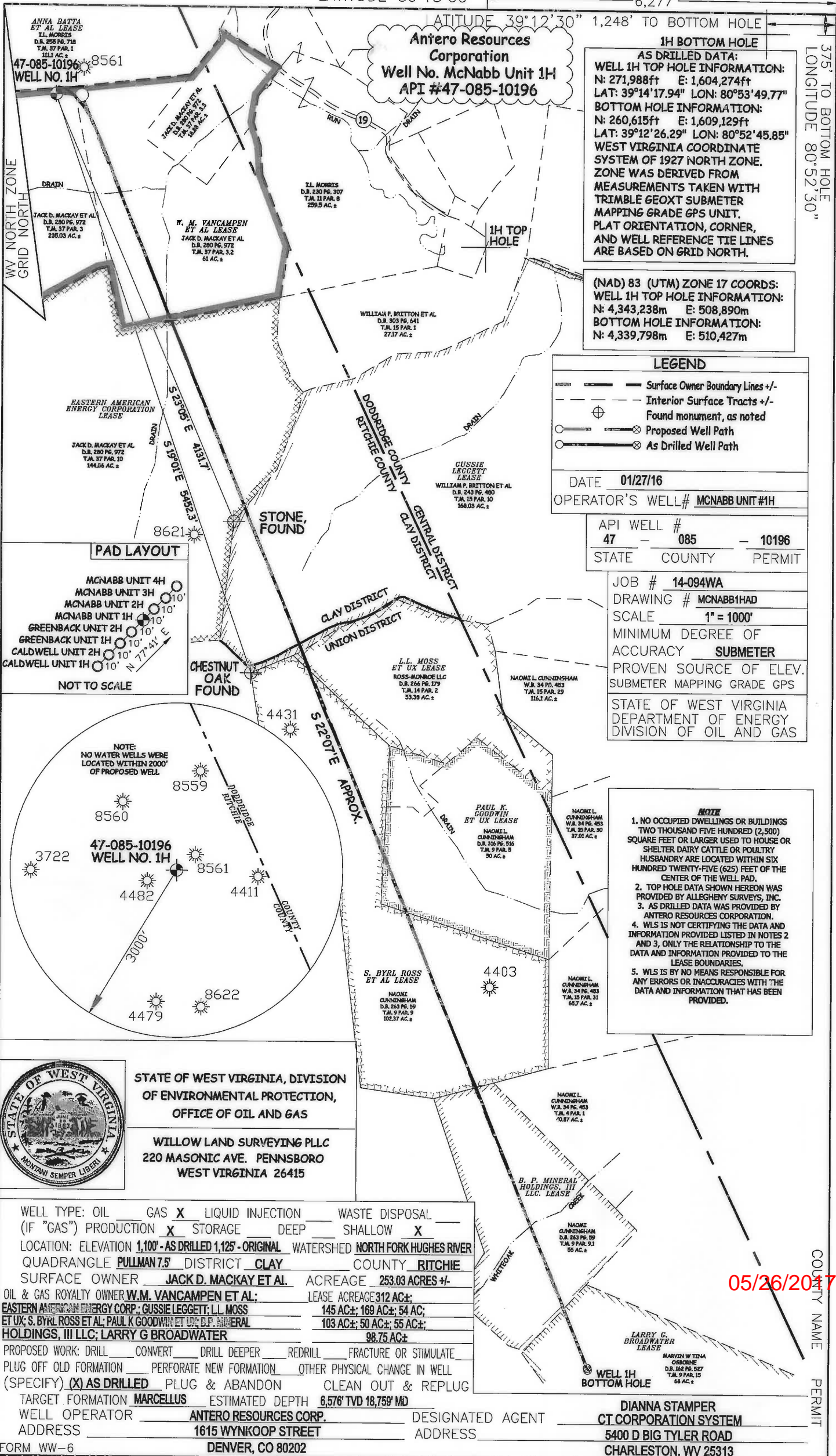
1,248' TO BOTTOM HOLE

375' TO BOTTOM HOLE
LONGITUDE 80°52'30"

4,256'

LONGITUDE 80°52'30"

COUNTY NAME 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

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

LOCATION: ELEVATION 1,100' - AS DRILLED 1,125' - ORIGINAL ___ WATERSHED NORTH FORK HUGHES RIVER
 QUADRANGLE PULLMAN 7.5 DISTRICT CLAY COUNTY RITCHIE

SURFACE OWNER JACK D. MACKAY ET AL. ACREAGE 253.03 ACRES +/-

OIL & GAS ROYALTY OWNER W.M. VANCAMPEN ET AL.; LEASE ACREAGE 312 AC +/-
 EASTERN AMERICAN ENERGY CORP.; GUSSIE LEGGETT; L.L. MOSS 145 AC +/-; 169 AC +/-; 54 AC +/-
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TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,576' TVD 18,759' MD

WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER
 ADDRESS 1615 WYNKOOP STREET ADDRESS CT CORPORATION SYSTEM
 FORM WW-6 DENVER, CO 80202 ADDRESS 5400 D BIG TYLER ROAD
 CHARLESTON, WV 25313

NOTE

- 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.
- TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
- AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
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