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west virginia department of environmental protection

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Office of Oil and Gas  
601 57th Street SE  
Charleston, WV 25304  
(304) 926-0450  
(304) 926-0452 fax

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

## PERMIT MODIFICATION APPROVAL

February 14, 2014

ANTERO RESOURCES APPALACHIAN CORPORATION  
1625 17TH STREET, SUITE 300  
DENVER, CO 80202

Re: Permit Modification Approval for API Number 1706182 , Well #: WHITE UNIT 1H  
**Changed Orientation of Lateral**

Oil and Gas Operator:

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

Please call James Martin at 304-926-0499, extension 1654 if you have any questions.

Sincerely,

Gene Smith  
Regulatory/Compliance Manager  
Office of Oil and Gas



November 7, 2013

West Virginia Department of Environmental Protection  
Office of Oil and Gas  
Attn: Ms. Laura Cooper  
601 57<sup>th</sup> Street  
Charleston, WV 25304

Antero Resources  
1625 17th Street  
Denver, Colorado 80202  
Office 303.357.7310  
Fax 303.357.7315

Ms. Laura Cooper:

Antero Resources Corporation (Antero) would like to submit the following permit modification for a recently submitted well on the Marsden Pad. We are requesting to change the orientation of the horizontal lateral which will change the bottom hole location of the White Unit 1H (API# 47-017-06182).

Attached you will find the following documents:

- REVISED Form WW-6A1, which shows the leases we will be drilling into
- REVISED Mylar Plat, which shows the new bottom hole location
- Please note that the Measured Depth and Casing/Cement Program will be the same as originally permitted.

If you have any questions please feel free to contact me at (303) 357-7323.

Thank you in advance for your consideration.

Sincerely,

Ashlie Mihalcin  
Permit Representative  
Antero Resources Corporation

Enclosures

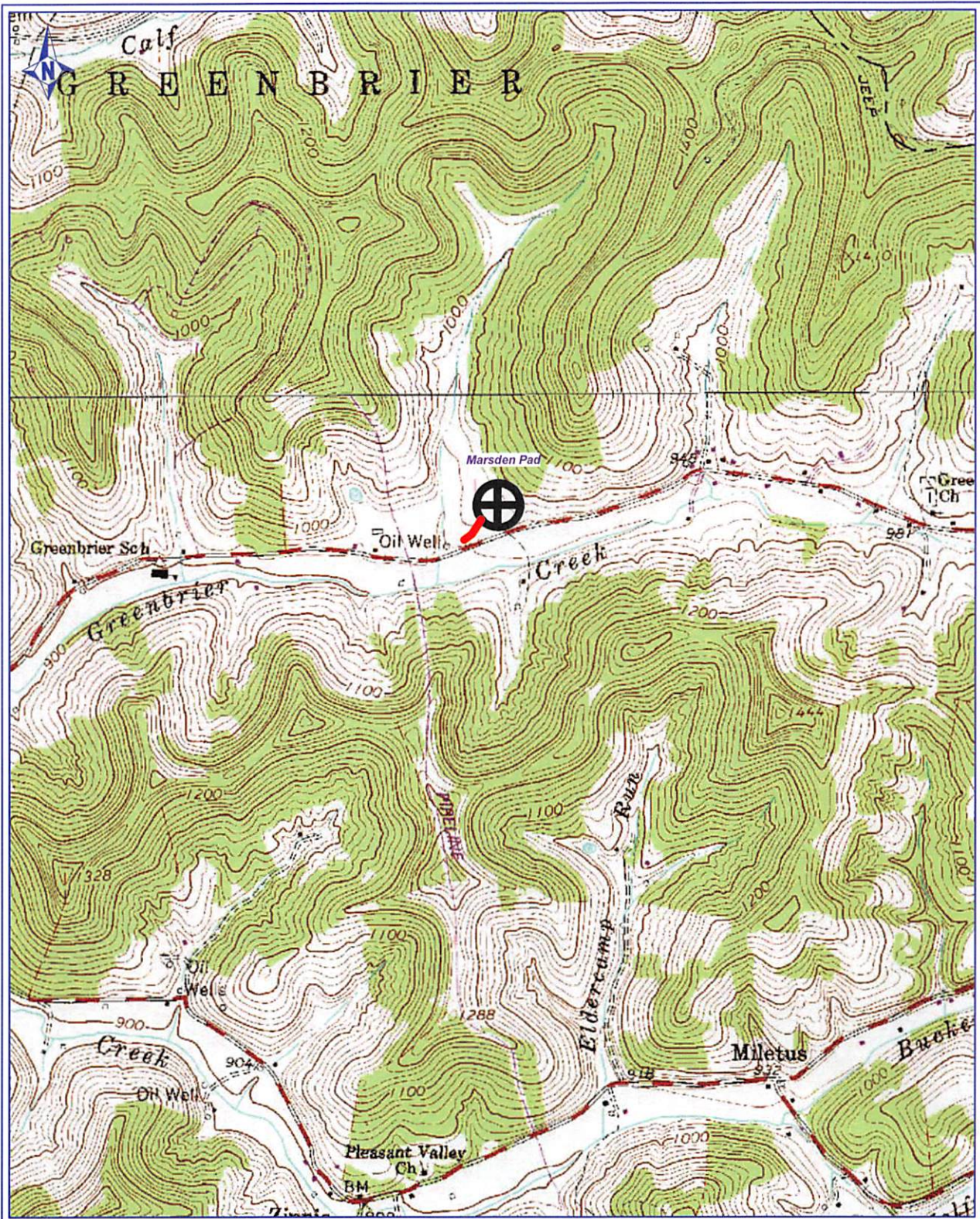
RECEIVED  
Office of Oil and Gas

NOV 08 2013

WV Department of  
Environmental Protection

02/21/2014





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17-06182 H6A      WHITE UNIT 1H  
 ANTERO RESOURCES

PAD NAME: Marsden

**Antero Resources Corporation**

Appalachia Basin

Marsden Pad

**White Unit 1H**

Doddridge County



DEC 27 2012

REMARKS  
 QUADRANGLE: BIG ISAAC  
 WATERSHED: UPPER MIDDLE ISL CR.  
 DISTRICT: GREENBRIER

02/21/2014

By: ECM

September 5, 2012

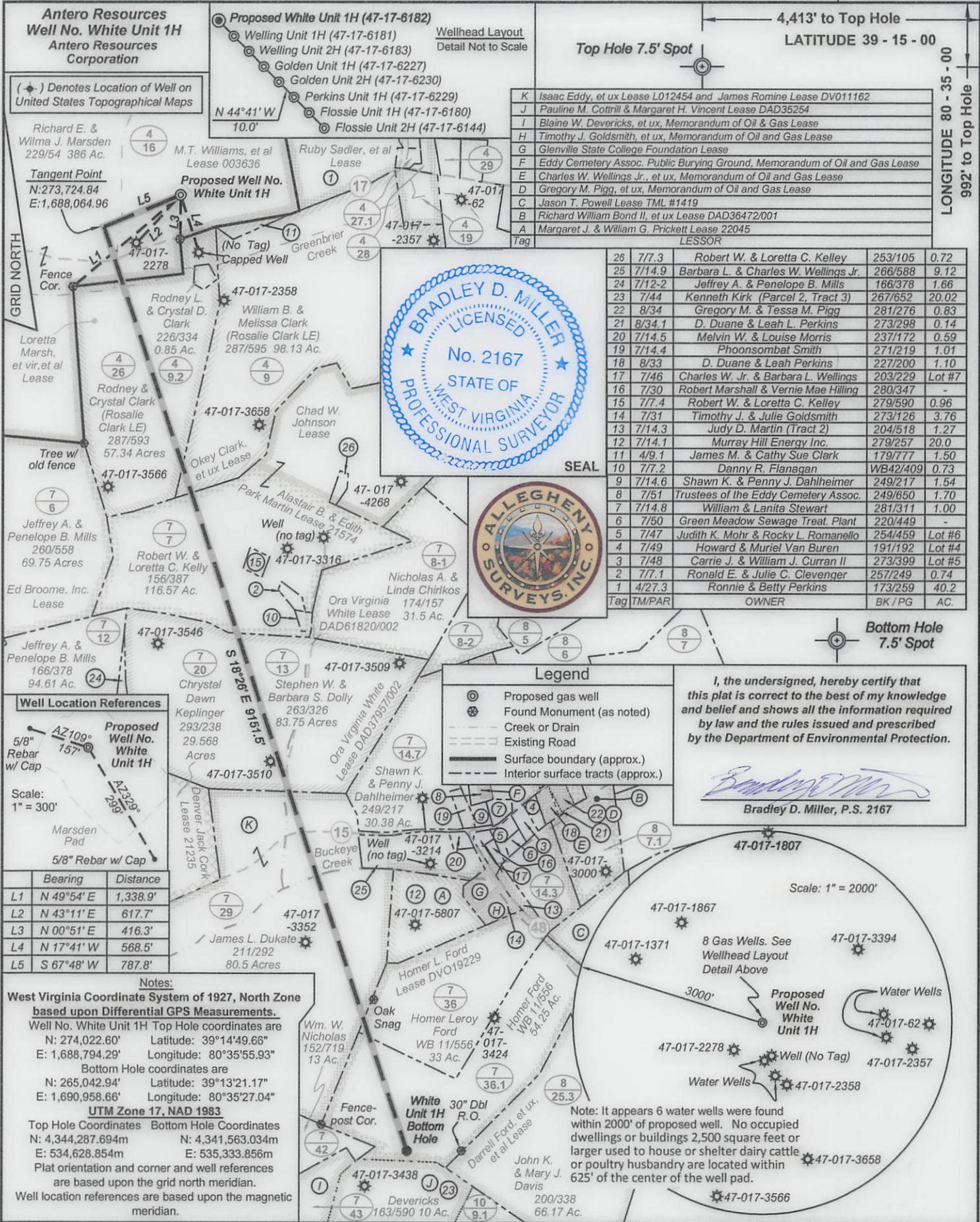


2,248' to Bottom Hole

4,413' to Top Hole  
LATITUDE 39 - 15 - 00

LONGITUDE 80 - 35 - 00

9,972' to Bottom Hole



K	Isaac Eddy, et ux Lease L012454 and James Romine Lease DV011162
J	Pauline M. Cottrill & Margaret H. Vincent Lease DAD35254
I	Blaine W. Devericks, et ux, Memorandum of Oil & Gas Lease
H	Timothy J. Goldsmith, et ux, Memorandum of Oil and Gas Lease
G	Glennville State College Foundation Lease
F	Eddy Cemetery Assoc. Public Burying Ground, Memorandum of Oil and Gas Lease
E	Charles W. Wellings Jr., et ux, Memorandum of Oil and Gas Lease
D	Gregory M. Pigg, et ux, Memorandum of Oil and Gas Lease
C	Jason T. Powell Lease TML #1419
B	Richard William Bond II, et ux Lease DAD36472/001
A	Marqaret J. & William G. Prickett Lease 22045
Tag	LESSOR

26	7/7.3	Robert W. & Loretta C. Kelley	253/105	0.72
25	7/14.9	Barbara L. & Charles W. Wellings Jr.	266/588	9.12
24	7/12-2	Jeffrey A. & Penelope B. Mills	166/378	1.66
23	7/44	Kenneth Kirk (Parcel 2, Tract 3)	267/652	20.02
22	8/34	Gregory M. & Tessa M. Pigg	281/276	0.83
21	8/34.1	D. Duane & Leah L. Perkins	273/298	0.14
20	7/14.5	Melvin W. & Louise Morris	237/172	0.59
19	7/14.4	Phoonsombat Smith	271/219	1.01
18	8/33	D. Duane & Leah Perkins	227/200	1.10
17	7/46	Charles W. Jr. & Barbara L. Wellings	203/229	Lot #7
16	7/30	Robert Marshall & Vernie Mae Hilling	280/347	-
15	7/7.4	Robert W. & Loretta C. Kelley	279/590	0.96
14	7/31	Timothy J. & Julie Goldsmith	273/126	3.76
13	7/14.3	Judy D. Martin (Tract 2)	204/518	1.27
12	7/14.1	Murray Hill Energy Inc.	279/257	20.0
11	4/9.1	James M. & Cathy Sue Clark	179/777	1.50
10	7/7.2	Danny R. Flanagan	WB42/409	0.73
9	7/14.6	Shawn K. & Penny J. Dahlheimer	249/217	1.54
8	7/51	Trustees of the Eddy Cemetery Assoc.	249/650	1.70
7	7/14.8	William & Lanita Stewart	281/311	1.00
6	7/50	Green Meadow Sewage Treat. Plant	220/449	-
5	7/47	Judith K. Mohr & Rocky L. Romanello	254/459	Lot #6
4	7/49	Howard & Muriel Van Buren	191/192	Lot #4
3	7/48	Carrie J. & William J. Curran II	273/399	Lot #5
2	7/7.1	Ronald E. & Julie C. Clevenger	257/249	0.74
1	4/27.3	Ronnie & Betty Perkins	173/259	40.2
Tag	TM/PAR	OWNER	BK / PG	AC.

**Well Location References**

Scale: 1" = 300'

5/8" Rebar w/ Cap

AZ 109° 157'

AZ 329° 299'

Bearing	Distance
L1 N 49°54' E	1,338.9'
L2 N 43°11' E	617.7'
L3 N 00°51' E	416.3'
L4 N 17°41' W	568.5'
L5 S 67°48' W	787.8'

**Notes:**  
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.  
Well No. White Unit 1H Top Hole coordinates are  
N: 274,022.60' Latitude: 39°14'49.66"  
E: 1,688,794.29' Longitude: 80°35'55.93"  
Bottom Hole coordinates are  
N: 265,042.94' Latitude: 39°13'21.17"  
E: 1,690,958.66' Longitude: 80°35'27.04"  
**UTM Zone 17, NAD 1983**  
Top Hole Coordinates Bottom Hole Coordinates  
N: 4,344,287.694m N: 4,341,563.034m  
E: 534,628.854m E: 535,333.856m  
Plat orientation and corner and well references are based upon the grid north meridian.  
Well location references are based upon the magnetic meridian.

FILE NO: 236-30-G-12  
DRAWING NO: 236-12 White 1H Well  
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: September 24 2013  
OPERATOR'S WELL NO. White Unit 1H  
API WELL NO MOD  
47 - 017 - 06182  
STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
(IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
LOCATION: ELEVATION: 971' WATERSHED: Greenbrier Creek QUADRANGLE: Big Isaac  
DISTRICT: Greenbrier COUNTY: Boone  
SURFACE OWNER: Richard E. & Wilma J. Marsden Isaac Eddy, et ux and James Romine L012454 and DV011162 ACREAGE: 386  
ROYALTY OWNER: M.T. Williams, et al; Okey Clark, et ux; Homer L. Ford; Ora Virginia White LEASE NO: 003636; DAD37957/002 ACREAGE: 350; 57; 100; 221  
PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) Modification - BHL  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 7,200' TVD 17,400' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System  
ADDRESS: 1625 17th Street ADDRESS: 5400 D Big Tyler Road  
Denver, CO 80202 Charleston, WV 25313