

LATITUDE 39°22'30"

2,622'

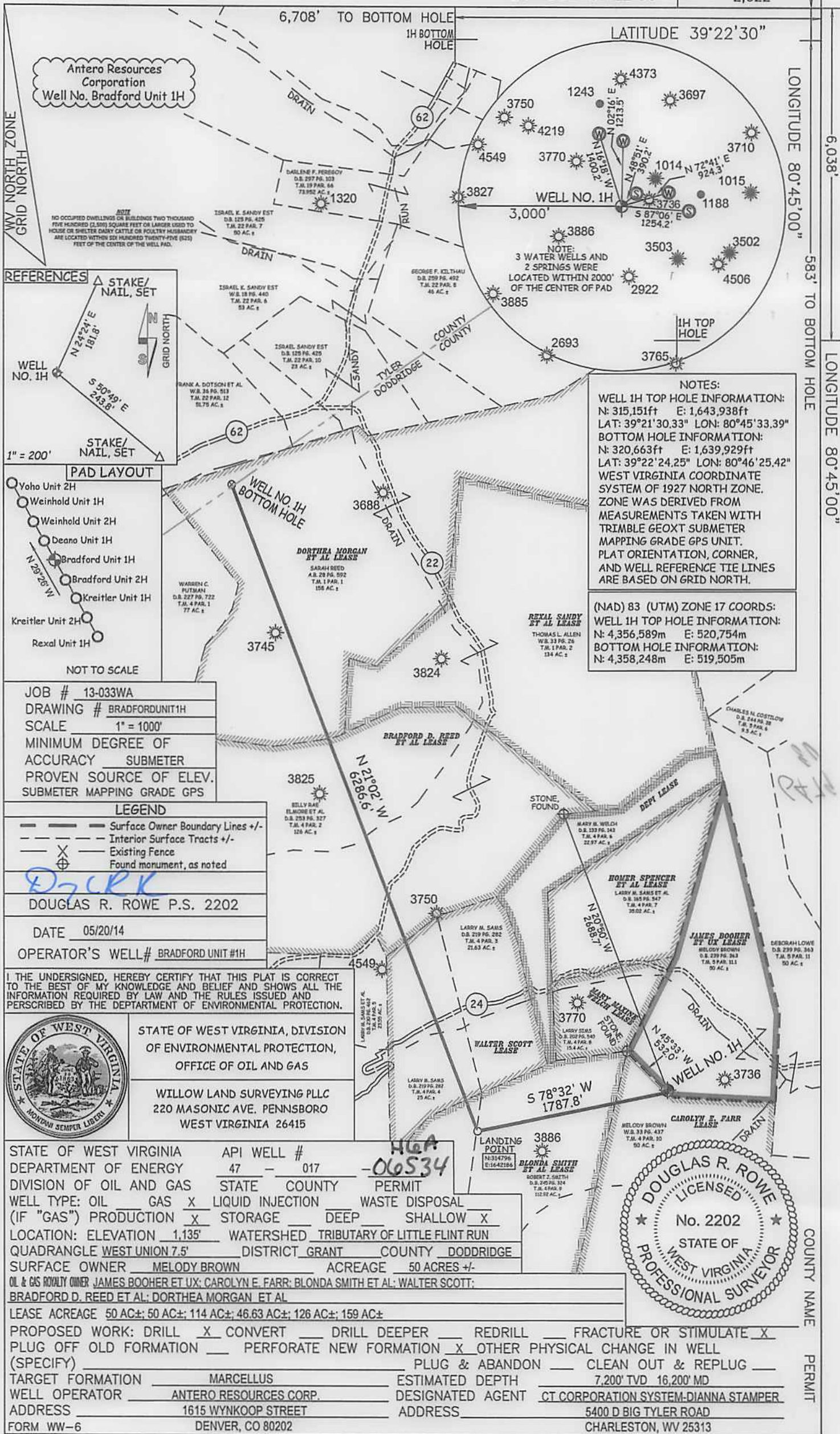
LATITUDE 39°22'30"

LONGITUDE 80°45'00"

6,038'

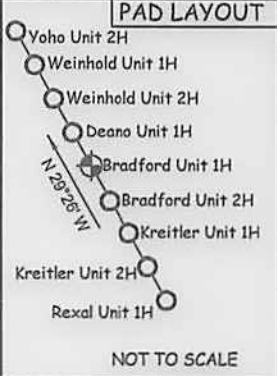
583' TO BOTTOM HOLE

LONGITUDE 80°45'00"



Antero Resources Corporation  
Well No. Bradford Unit 1H

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 SEVEN HUNDRED TWENTY-FIVE (725) FEET OF THE CENTER OF THE WELL PAD.



JOB # 13-033WA  
DRAWING # BRADFORDUNIT1H  
SCALE 1" = 1000'  
MINIMUM DEGREE OF ACCURACY SUBMETER  
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

- LEGEND
- Surface Owner Boundary Lines +/-
  - Interior Surface Tracts +/-
  - Existing Fence
  - Found monument, as noted

DOUGLAS R. ROWE P.S. 2202  
DATE 05/20/14  
OPERATOR'S WELL# BRADFORD UNIT #1H

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



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 - **HGA 06534**

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

LOCATION: ELEVATION 1,135' WATERSHED TRIBUTARY OF LITTLE FLINT RUN  
QUADRANGLE WEST UNION 7.5' DISTRICT GRANT COUNTY DODDRIDGE

SURFACE OWNER MELODY BROWN ACREAGE 50 ACRES +/-

OIL & GAS ROYALTY OWNER JAMES BOOHER ET UX; CAROLYN E. FARR; BLONDA SMITH ET AL; WALTER SCOTT; BRADFORD D. REED ET AL; DORTHEA MORGAN ET AL

LEASE ACREAGE 50 AC±; 50 AC±; 114 AC±; 46.63 AC±; 126 AC±; 159 AC±

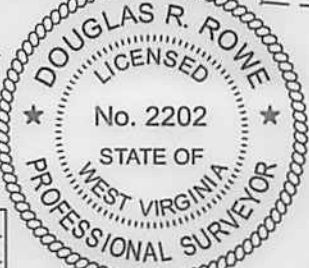
PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE   
PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY)  PLUG & ABANDON  CLEAN OUT & REPLUG

TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7,200' TVD 16,200' 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

NOTES:  
WELL 1H TOP HOLE INFORMATION:  
N: 315,151ft E: 1,643,938ft  
LAT: 39°21'30.33" LON: 80°45'33.39"  
BOTTOM HOLE INFORMATION:  
N: 320,663ft E: 1,639,929ft  
LAT: 39°22'24.25" LON: 80°46'25.42"  
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: 4,356,589m E: 520,754m  
BOTTOM HOLE INFORMATION:  
N: 4,358,248m E: 519,505m



COUNTY NAME

PERMIT



**APPROVED WVDEP OOG**  
SAY 6/23/2014

**NAVITUS**  
ENERGY ENGINEERING  
Telephone: (688) 662-1185 | www.NavitusEng.com

# MELODY WELL PAD

## SITE DESIGN & CONSTRUCTION PLAN, EROSION & SEDIMENT CONTROL PLANS

GRANT DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA  
WOLFFEN RUN & LITTLE FLINT RUN WATERSHEDS  
USGS 7.5 SMITHBURG AND WEST UNION QUAD MAPS

**LOCATION COORDINATES**  
ACCESS ROAD ENTRANCE  
LATITUDE: 39.359164 LONGITUDE: -80.755057 (NAD 83)  
N 4356663.66 E 521102.41 (UTM NAD83, ZONE 17 METERS)

**CENTROID OF WELL PAD**  
LATITUDE: 39.358448 LONGITUDE: -80.759177 (NAD 83)  
N 4356582.87 E 520747.70 (UTM NAD83, ZONE 17 METERS)

**GENERAL DESCRIPTION**  
THE WELL PAD AND ACCESS ROAD(S) ARE BEING CONSTRUCTED TO AID IN THE DEVELOPMENT OF INDIVIDUAL MARCELLUS SHALE GAS WELLS.

**FLOODPLAIN NOTE**  
THE PROPOSED SITE IS LOCATED IN FLOODZONE "X" PER FEMA FLOOD MAP #54017C0110C.

**MISS UTILITY STATEMENT**  
ANTERO RESOURCES CORPORATION WILL NOTIFY MISS UTILITY OF WEST VIRGINIA FOR THE LOCATING OF UTILITIES PRIOR TO THIS PROJECT DESIGN TICKET #1310523787. IN ADDITION, MISS UTILITY WILL BE CONTACTED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION FOR THIS PROJECT.

**ENTRANCE PERMIT**  
ANTERO RESOURCES CORPORATION WILL OBTAIN AN ENCROACHMENT PERMIT (FORM MM-100) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

**GEOTECHNICAL NOTE**  
A SUBSURFACE INVESTIGATION OF THE PROPOSED SITE WAS PERFORMED BY TERRA TESTING, INC. UNDER THE TECHNICAL SUPERVISION OF KLEINFELDER ON JULY 31, 2013-AUGUST 7, 2013 AND JANUARY 17, 2014-FEBRUARY 01, 2014. THIS REPORT PREPARED BY KLEINFELDER DATED FEBRUARY 28, 2014, REFLECTS THE RESULTS OF THE SUBSURFACE INVESTIGATION. THE INFORMATION AND RECOMMENDATIONS CONTAINED IN THEIR REPORT WAS USED IN THE PREPARATION OF THESE PLANS. HOWEVER, ADDITIONAL IS NECESSARY TO CONFIRM THE ESTIMATED TOE KEY DEPTHS. PLEASE REFER TO THE SUBSURFACE INVESTIGATION REPORT BY KLEINFELDER FOR ADDITIONAL INFORMATION, AS NEEDED.

**ENVIRONMENTAL NOTES**  
WETLAND DELINEATIONS WERE PERFORMED FEBRUARY & JUNE, 2013 BY ALLSTAR ECOLOGY, LLC TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY PURVIEW OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE JUNE 29, 2013 STREAM AND WETLAND DELINEATION INDEX MAP WAS PREPARED BY ALLSTAR ECOLOGY, LLC AND SUMMARIZES THE RESULTS OF THE FIELD DELINEATION. THE MAP DOES NOT, IN ANY WAY, REPRESENT A JURISDICTIONAL DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WVDEP. IT IS STRONGLY RECOMMENDED THAT THE AFORESAID AGENCIES BE CONSULTED IN AN EFFORT TO GAIN WRITTEN CONFIRMATION OF THE DELINEATION SHOWN ON THIS EXHIBIT PRIOR TO ENGAGING CONSTRUCTION ON THE PROPERTY DESCRIBED HEREIN. THE DEVELOPER SHALL OBTAIN THE APPROPRIATE PERMITS FROM THE FEDERAL AND/OR STATE REGULATORY AGENCIES PRIOR TO ANY PROPOSED IMPACTS TO WATERS OF THE U.S., INCLUDING WETLAND FILLS AND STREAM CROSSINGS.

MELODY PERENNIAL STREAM IMPACT (LINEAR FEET)			
Stream and Impact Cause	Culvert (LF)	Inlets/Outlets Structures (LF)	Total Impact (LF)
RPW/Perennial Stream 3 (Access Rd. "A")	46	0	46

**PROJECT CONTACTS**

**OPERATOR:**  
ANTERO RESOURCES CORPORATION  
505 WHITE OAKS BLVD  
BRIDGEPORT, WV 26330  
PHONE (304) 842-4100  
FAX (304) 842-4112

**ELI WAGNER - ENVIRONMENTAL ENGINEER**  
OFFICE: (304) 842-4068 CELL: (304) 478-9770

**JOHN KAWCAK - OPERATIONS SUPERINTENDENT**  
CELL: (617) 368-1053

**AARON KUNZLER - CONSTRUCTION SUPERVISOR**  
CELL: (405) 227-8344

**ANTHONY SMITH - FIELD ENGINEER**  
OFFICE: (304) 842-4208 CELL: (304) 673-6196

**RIGER DUNLAP - SURVEYING COORDINATOR**  
CELL: (304) 651-5088

**RANDAL RANDOLPH - LAND AGENT**  
CELL: (405) 816-5956

API#1706477  
API#1706479  
API#1706480

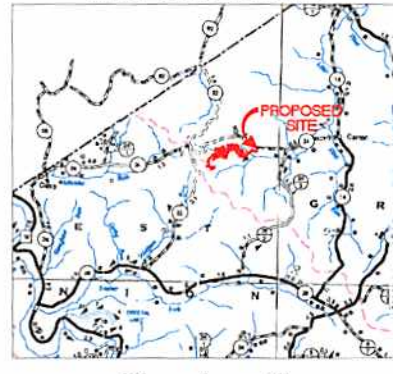
**ENGINEER/SURVEYOR**  
NAVITUS ENGINEERING, INC.  
CYRUS S. KUMP, PE - PROJECT MANAGER/ENGINEER  
OFFICE: (888) 662-4185 CELL: (540) 686-6747

**ENVIRONMENTAL:**  
ALLSTAR ECOLOGY, LLC  
RYAN L. WARD - ENVIRONMENTAL SCIENTIST  
OFFICE: (866) 213-2666 CELL: (304) 692-7477

- RESTRICTIONS NOTES:**
- THERE ARE NO WETLANDS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE WELL PAD AND LOD. THERE IS A PERENNIAL STREAM IMPACT THAT WILL NEED TO BE PERMITTED BY THE APPROPRIATE AGENCIES.
  - THERE ARE NO NATURALLY PRODUCING TROUT STREAMS WITHIN 300 FEET OF THE WELL PAD AND LOD.
  - THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1000 FEET OF THE WELL PAD AND LOD.
  - THERE ARE NO APPARENT EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF THE WELL(S) BEING DRILLED.
  - THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 625 FEET OF THE CENTER OF THE WELL PAD.
  - THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 625 FEET OF THE CENTER OF THE WELL PAD.



Electronic Version of These Plans May Be Viewed at: Q:\OIL GAS\SAY FILES\REVIEWS  
WEST VIRGINIA COUNTY MAP WVDOP COUNTY ROAD MAP



**DESIGN CERTIFICATION**  
THE DRAWINGS, CONSTRUCTION NOTES, AND REFERENCE DIAGRAMS ATTACHED HERETO HAVE BEEN PREPARED IN ACCORDANCE WITH THE WEST VIRGINIA CODE OF STATE RULES, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS CRS 35-8.

**SITE PLAN/CONSTRUCTION STAGING NOTE**  
THE MELODY WELL PAD AS SHOWN IN THIS SITE PLAN IS ALSO SHOWN AS STAGING AREA "B" IN THE MELODY CENTRALIZED FRESHWATER IMPROVEMENT SITE PLAN. REFER TO THE MELODY CENTRALIZED FRESHWATER IMPROVEMENT SITE PLAN (STAGING AREA "B") FOR ALL CONSTRUCTION QUANTITIES ASSOCIATED WITH THE CONSTRUCTION OF THE MELODY WELL PAD SITE. THE PROPOSED LIMITS OF DISTURBANCE ACREAGE, AS SHOWN IN THIS PLAN IS REPETITIVE TO THE ACREAGE PREVIOUSLY SHOWN IN THE MELODY CENTRALIZED FRESHWATER IMPROVEMENT SITE PLAN.

MISS Utility of West Virginia  
1-800-245-1848  
West Virginia State Law  
(Section XIV: Chapter 24-C)  
Requires that you call two business days before you dig in the state of West Virginia.  
IT'S THE LAW!!

WEST VIRGINIA STATE PLANE COORDINATE SYSTEM  
ELEVATION BASED ON NAVD83  
ESTABLISHED BY SURVEY GRADE GPS & OPUS  
POST-PROCESSING

**SHEET INDEX**

- 01 - COVER SHEET
- 02 - CONSTRUCTION AND E&S CONTROL NOTES
- 03 - EXISTING CONDITIONS
- 04 - OVERALL PLAN SHEET INDEX & VOLUMES
- 05 - ACCESS ROAD, STAGING AREA & WELL PAD PLAN
- 06 - ACCESS ROAD PROFILES
- 07 - ACCESS ROAD SECTIONS
- 08 - WELL PAD SECTIONS
- 09 - STREAM CROSSING DETAILS
- 10-14 - CONSTRUCTION DETAILS
- 15 ACCESS ROAD, STAGING AREA, & WELL PAD RECLAMATION PLAN
- 16 FIRM EXHIBIT
- GES01-GES04 GEOTECHNICAL DETAILS

MELODY LIMITS OF DISTURBANCE AREA (AC)	
Total Site	
Well Pad	3.09
<b>Total Affected Area</b>	<b>3.09</b>
Total Wooded Acres Disturbed	2.93
<b>Impacts to Melody Brown &amp; Deborah Lowe TM 5-11.1</b>	
Well Pad	1.62
<b>Total Affected Area</b>	<b>1.62</b>
Total Wooded Acres Disturbed	1.62
<b>Impacts to Melody Brown &amp; Deborah Lowe TM 4-10</b>	
Well Pad	1.47
<b>Total Affected Area</b>	<b>1.47</b>
Total Wooded Acres Disturbed	1.31

Proposed Well Name	WV North NAD 27	WV North NAD 83	UTM (METERS) Zone 17	NAD 83 Lat. & Long
Yoho	N 215185.86	N 215221.20	N 4356599.84	LAT 39-21-30.9650
Unit 2H	E 1643816.58	E 1612477.35	E 520748.14	LONG -80-45-33.0160
Wellhold	N 315176.95	N 315212.50	N 4356597.22	LAT 39-21-30.8796
Unit 1H	E 1643823.49	E 1612482.26	E 520749.68	LONG -80-45-32.9517
Wellhold	N 315168.24	N 315203.79	N 4356594.59	LAT 39-21-30.7942
Unit 2H	E 1643828.41	E 1612487.18	E 520751.22	LONG -80-45-32.8878
Dawno	N 315159.53	N 315193.08	N 4356591.88	LAT 39-21-30.7089
Unit 1H	E 1643833.33	E 1612482.10	E 520752.76	LONG -80-45-32.8235
Bradford	N 315150.83	N 315186.37	N 4356589.33	LAT 39-21-30.6234
Unit 1H	E 1643838.24	E 1612487.01	E 520754.30	LONG -80-45-32.7394
Bradford	N 315142.12	N 315177.66	N 4356588.70	LAT 39-21-30.5380
Unit 2H	E 1643843.18	E 1612501.93	E 520755.85	LONG -80-45-32.6932
Kreidler	N 315133.41	N 315168.95	N 4356584.08	LAT 39-21-30.4527
Unit 1H	E 1643848.07	E 1612506.84	E 520757.39	LONG -80-45-32.6111
Kreidler	N 315124.70	N 315160.25	N 4356581.45	LAT 39-21-30.3673
Unit 2H	E 1643852.99	E 1612511.76	E 520758.93	LONG -80-45-32.5670
Royal	N 315115.99	N 315151.54	N 4356578.82	LAT 39-21-30.2819
Unit 1H	E 1643857.90	E 1612516.67	E 520760.47	LONG -80-45-32.5028
Well Pad Elevation	1,135.0			

REVISION	DATE

**Antero**  
THIS DOCUMENT WAS PREPARED FOR ANTERO RESOURCES CORPORATION

COVER SHEET  
**MELODY WELL PAD**  
GRANT DISTRICT, WEST VIRGINIA  
DODDRIDGE COUNTY, WEST VIRGINIA

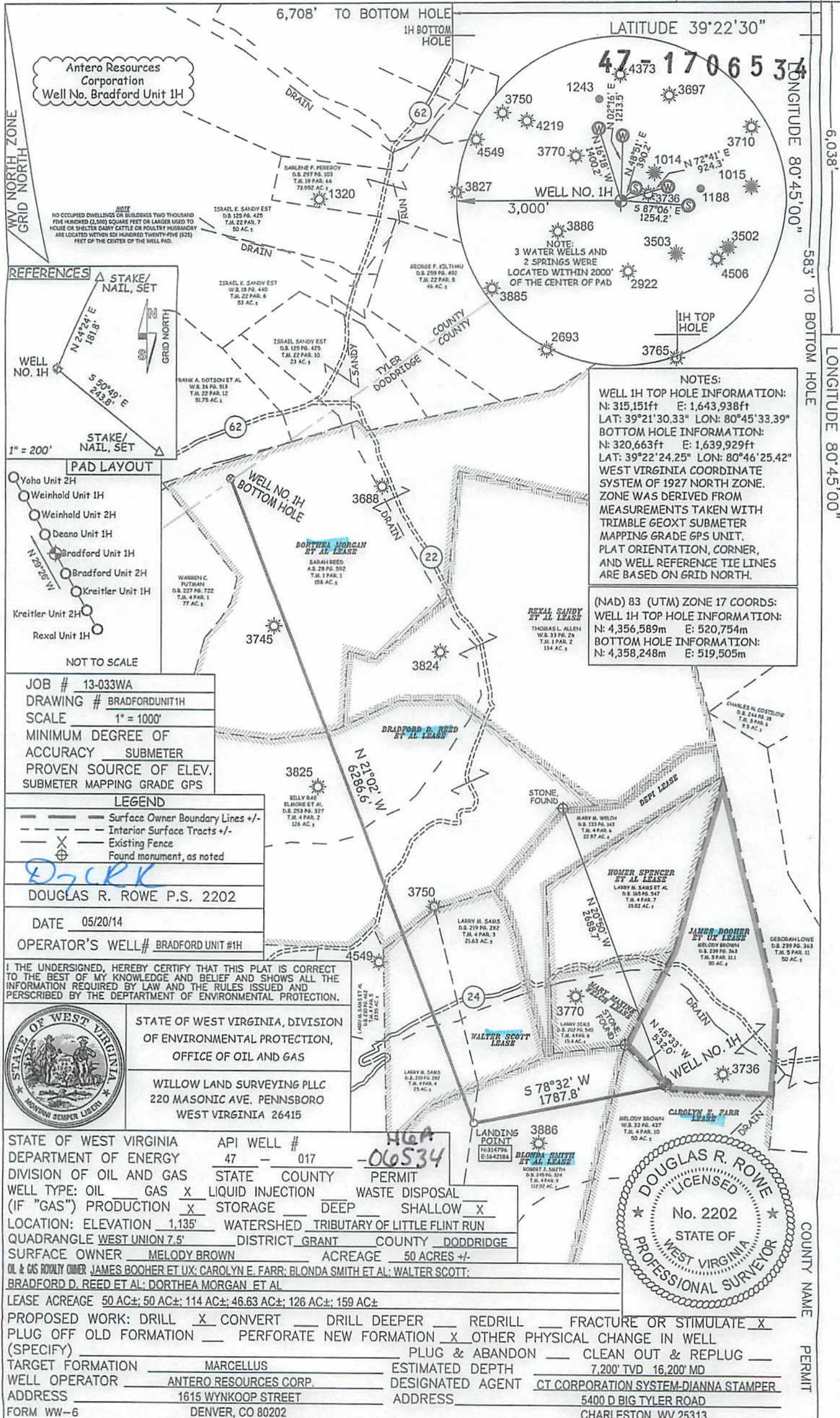


DATE: 03/04/2014  
SCALE: AS SHOWN  
SHEET 1 OF 16



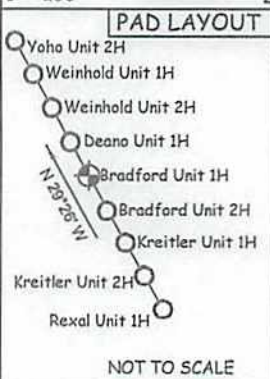
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Antero Resources Corporation  
Well No. Bradford Unit 1H

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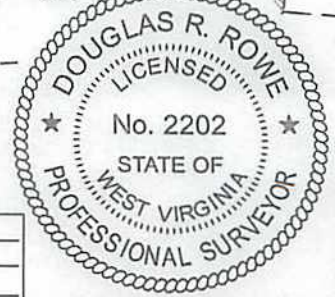
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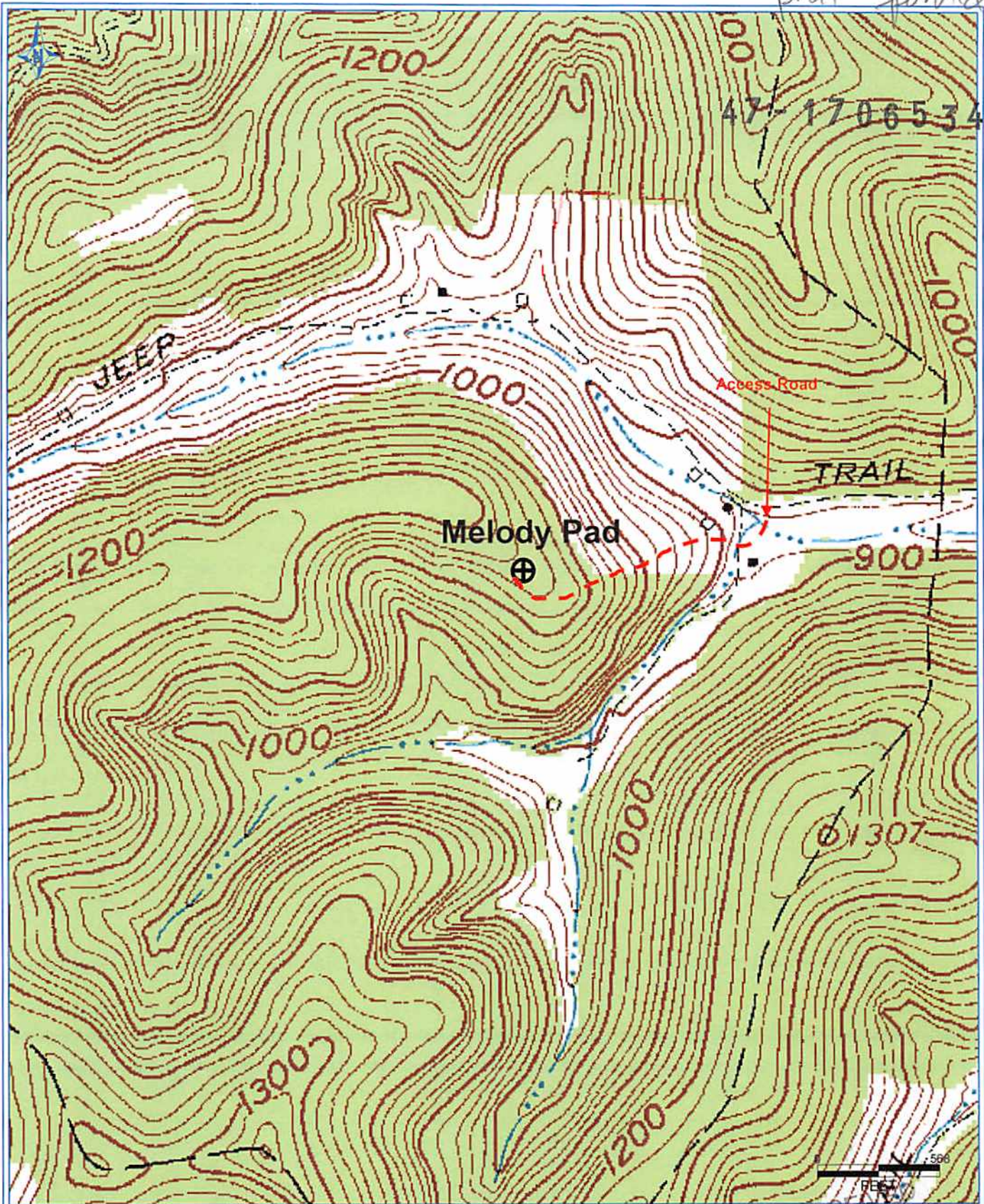
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COUNTY NAME PERMIT



Print Spotted ✓



DETRA 3/19/2014 1:30:24 PM

**Antero Resources Corporation**  
Appalachian Basin  
Bradford Unit 1H  
Doddridge County  
Quadrangle: Smithburg & West Union  
Watershed: Wolfpen Run & Little Flint Run  
District: Grant  
Date: 3-19-2014

Office of Oil and Gas  
JUN 03 2014  
West Virginia Department of Environmental Protection