



---

west virginia department of environmental protection

---

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

December 03, 2013

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

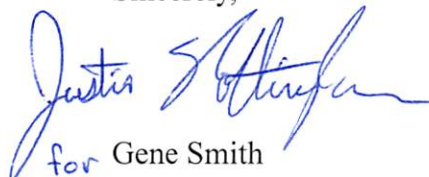
Re: Permit Modification Approval for API Number 8510060 , Well #: HENDERSHOT UNIT 1H  
**LOD & Toe Drain Additions**

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,



for Gene Smith

Regulatory/Compliance Manager  
Office of Oil and Gas

**Promoting a healthy environment.**



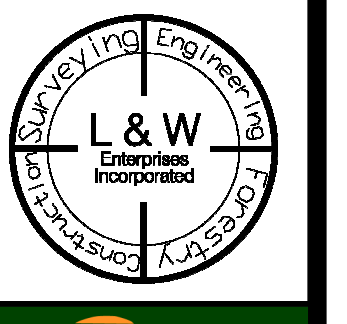
# SITE PLAN (2) ACCESS ROAD A STA: 16+00 - 18+66



Allegheny Surveys, Inc.  
172 Thompson Drive  
Bridgeport, WV 26330  
(304) 848-5035



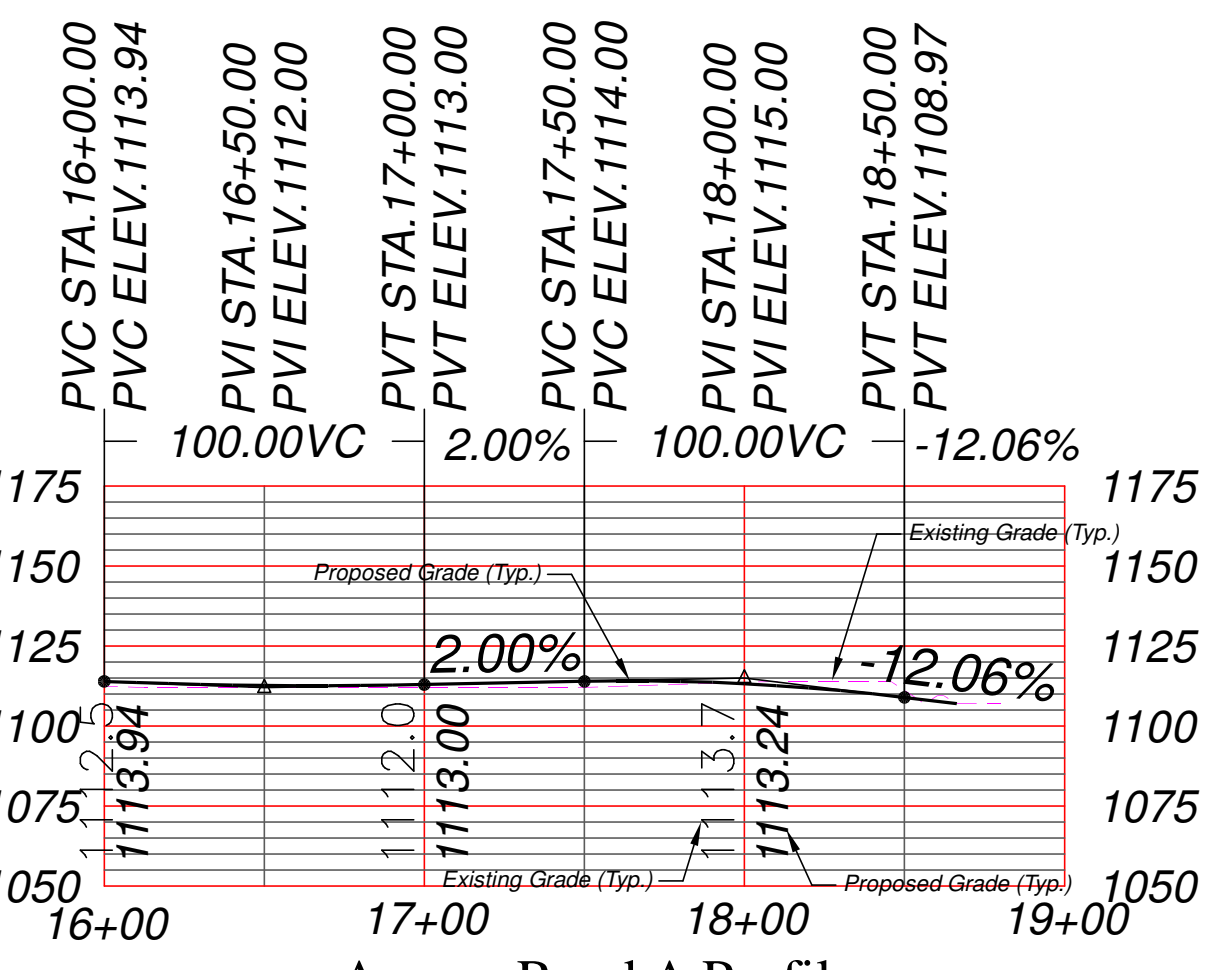
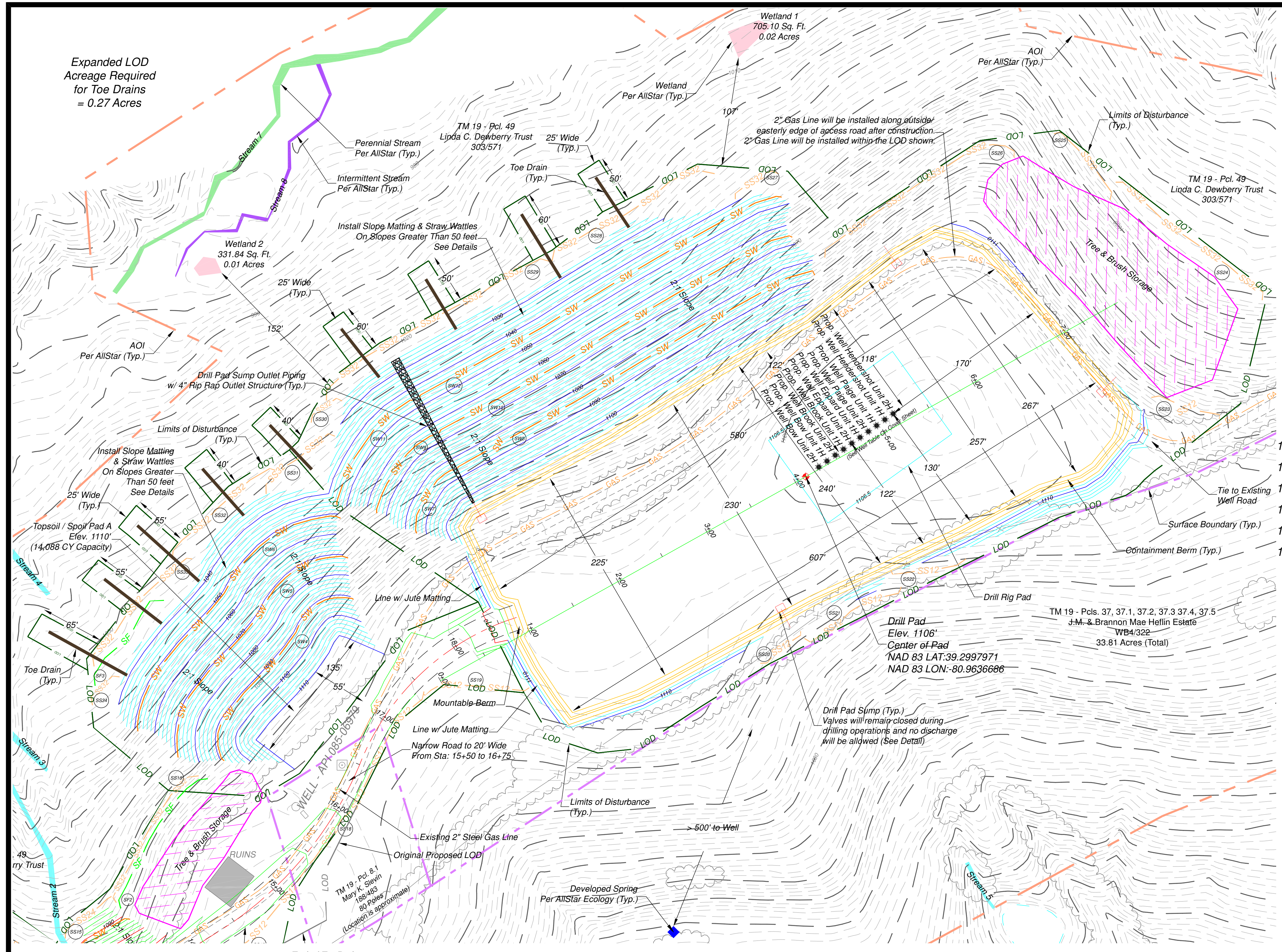
L&W ENTERPRISES, INC.  
PH: 304-257-4818  
FAX: 304-257-2324  
PO BOX 826  
14 SOUTH GROVE ST.  
PETERSBURG, WV 26647  
EMAIL: KIRK@CTLINK.NET



THIS DOCUMENT  
PREPARED FOR  
ANTERO RESOURCES  
CORPORATION

SITE PLAN (2) - ACCESS ROAD A STA: 16+00 - 18+66  
**CHARLENE PAD**  
CLAY DISTRICT  
RITCHIE COUNTY, WV

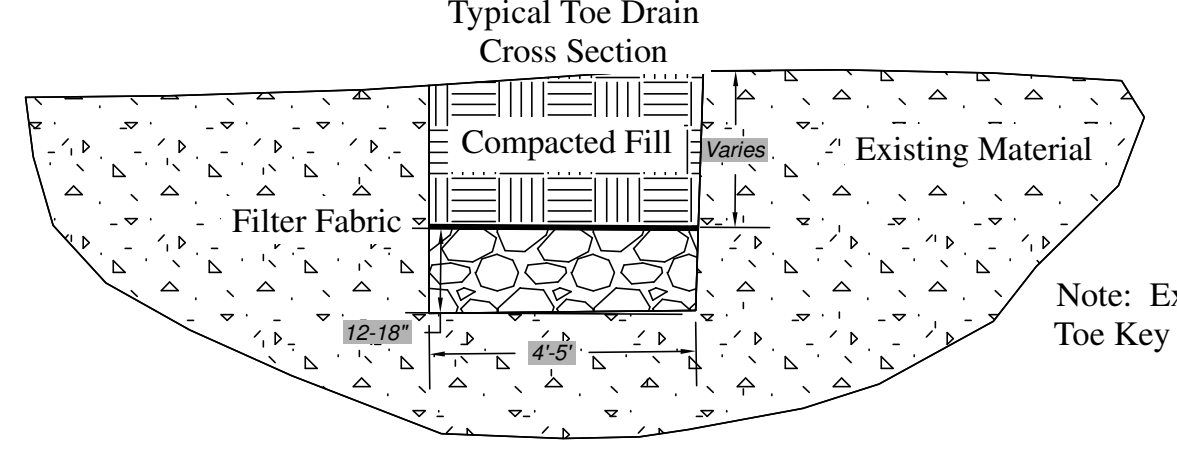
Expanded LOD  
Acreage Required  
for Toe Drains  
= 0.27 Acres



**Legend**

- Existing 2' Contour
- Existing 10' Contour
- Existing Tree Line
- Existing Utility Line / Pole
- Surface Owner Property Line
- Existing Gas Line CL
- Limits of Disturbance
- Proposed Diversion Ditch
- Proposed 2' Contour
- Proposed 10' Contour
- Proposed Super Silt Fence
- Proposed Check Dam
- Proposed Culvert W/ Inlet & Outlet Protection
- Proposed Straw Wattles
- Proposed Silt Soxx w/ Diameter
- Proposed 2' Contour
- Proposed 10' Contour
- Proposed Rip-Rap

\* Silt Soxx Diameter in Inches  
\* Super Silt Fence Can be Substituted for Silt Soxx of any Size



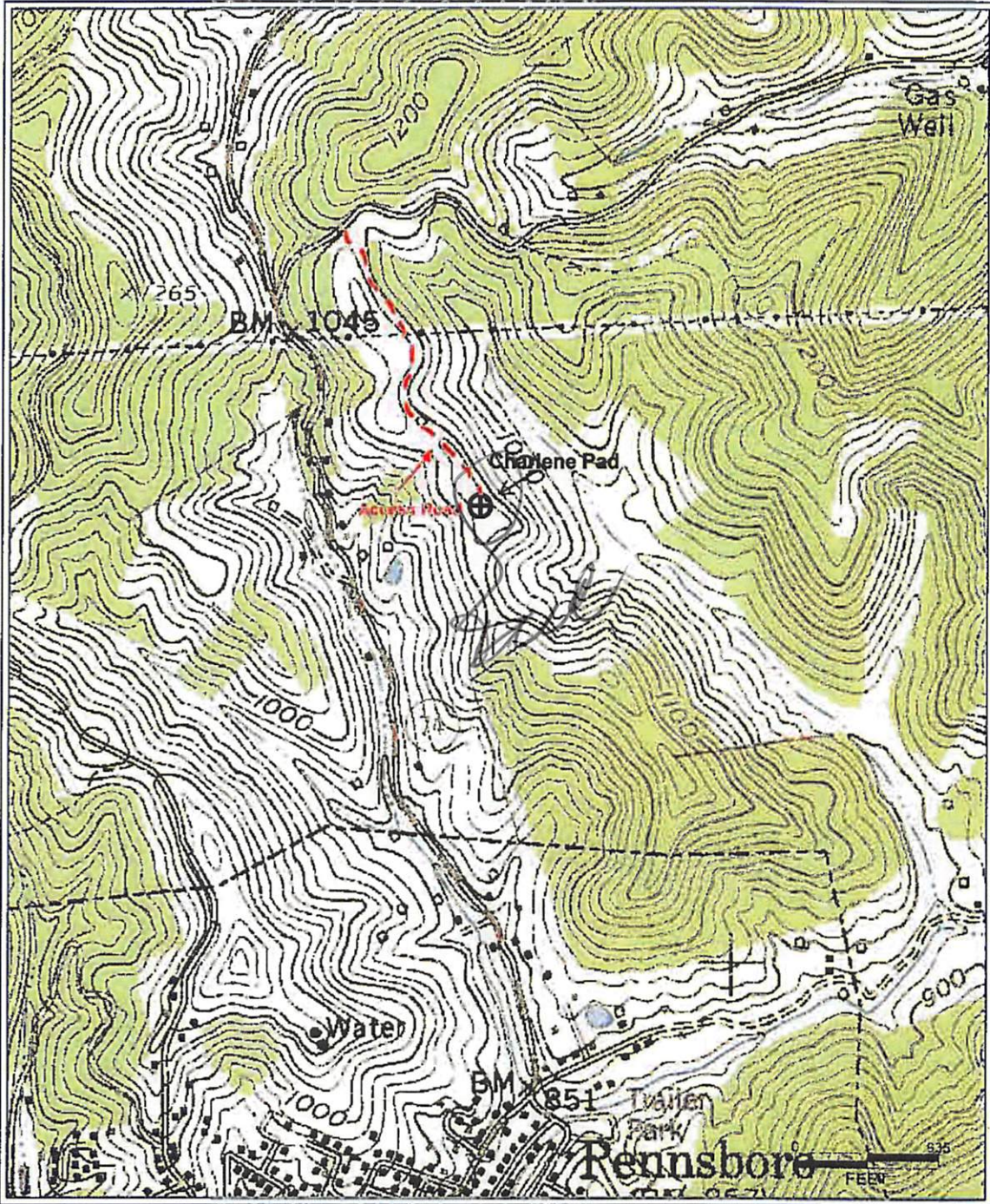
API#8510060

**APPROVED  
WVDEP OOG**  
SAY 12/3/2013

DATE	REVISIONS	Date: 7/12/13
8-27-13	Revised LOD	Scale: 1" = 50'
9-11-13	Utilities Reroute Per Antero Resources	Designed By: CKW/CKM
11-20-13	LOD Expansions for Toe Drains (Sheets: 1 and 7)	File No. Antero 140-13
11-29-13	Added Toe Drain Detail	Page 7 of 11



plat spotted  
85-010060 ✓



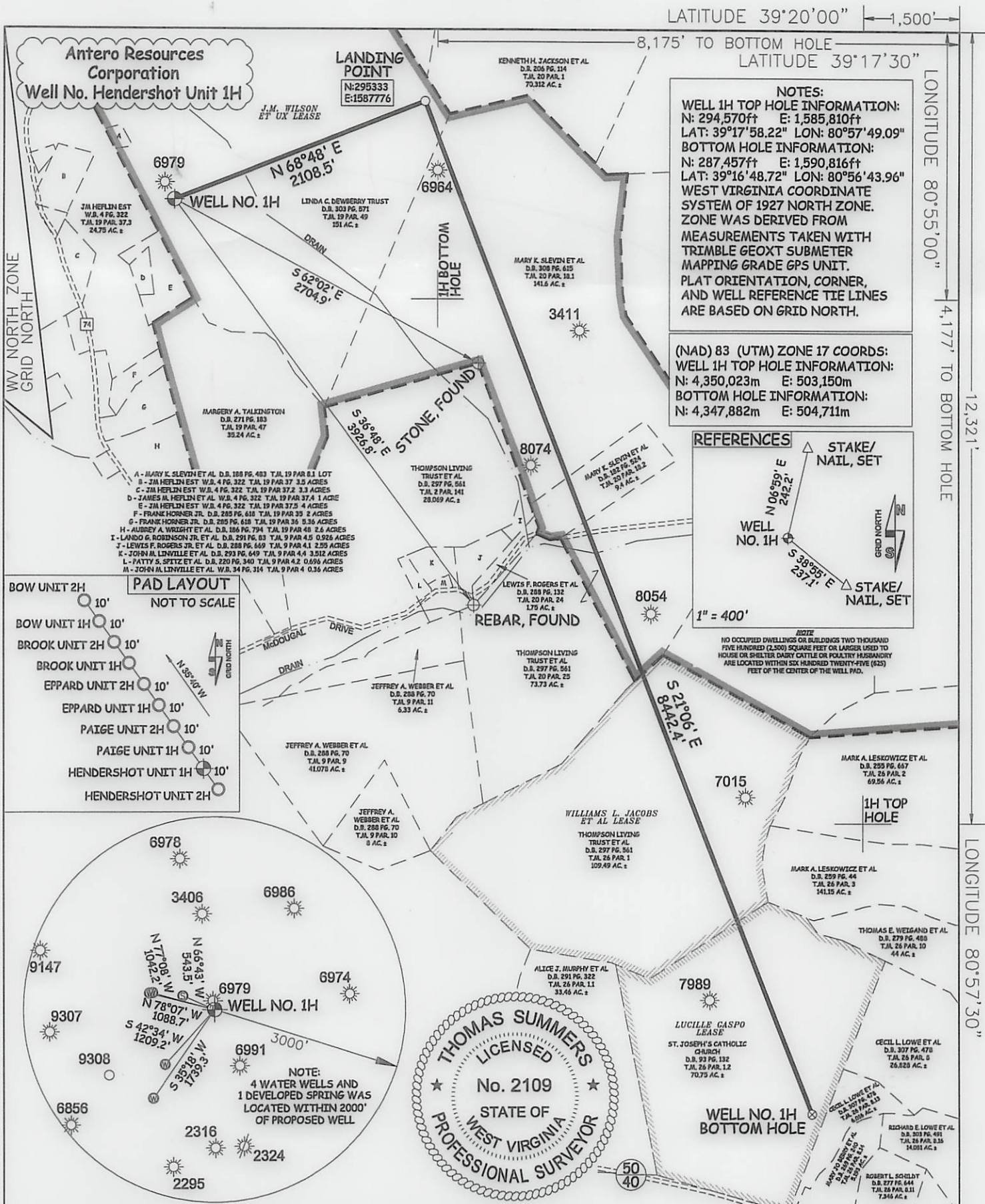
PCTR4 AR0815 10-20-01 AU

**Antero Resources Corporation**  
Appalachian Basin  
Hendershot Unit 1H  
Ritchie County  
Office of Oil and Gas

Quadrangle: Pennsboro  
Watershed: North Fork Hughes River  
District: Clay  
Date: 8-6-2013

RECEIVED  
SEP 20 2013  
WV Department of  
Environmental Protection





LATITUDE 39°20'00" 1,500'

8,175' TO BOTTOM HOLE

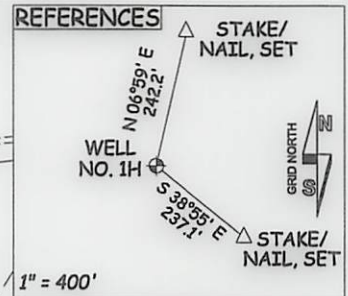
LATITUDE 39°17'30"

LONGITUDE 80°55'00" 4,177' TO BOTTOM HOLE

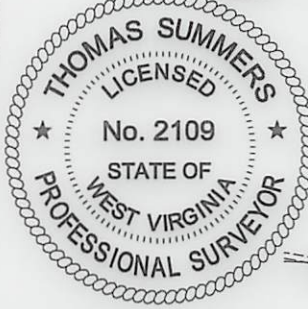
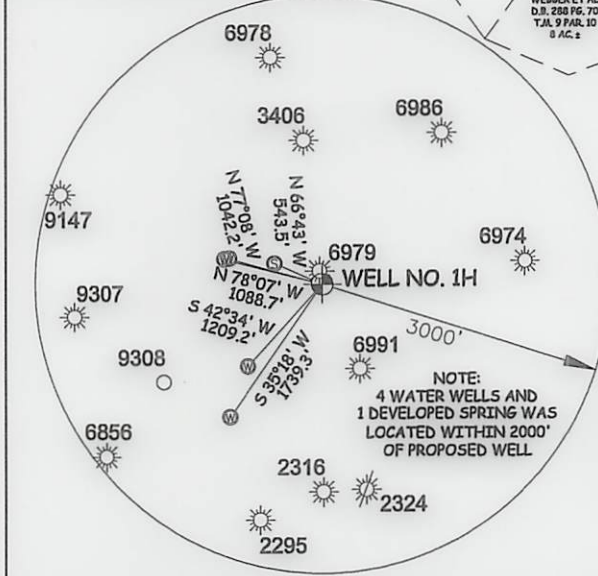
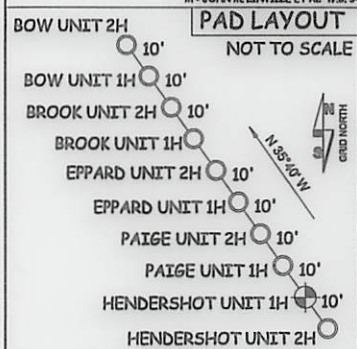
LONGITUDE 80°57'30" 12,321'

**NOTES:**  
 WELL 1H TOP HOLE INFORMATION:  
 N: 294,570ft E: 1,585,810ft  
 LAT: 39°17'58.22" LON: 80°57'49.09"  
 BOTTOM HOLE INFORMATION:  
 N: 287,457ft E: 1,590,816ft  
 LAT: 39°16'48.72" LON: 80°56'43.96"  
 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: 4,350,023m E: 503,150m  
 BOTTOM HOLE INFORMATION:  
 N: 4,347,882m E: 504,711m



**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.



JOB # 13-043WA  
 DRAWING # HENDERSHOT1H  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY SUBMETER  
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

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  
 266 HUSHERS RUN RD PENNSBORO WEST VIRGINIA 26415

**LEGEND**

- Surface Owner Boundary Lines +/-
- Interior Surface Tracts +/-
- Existing Fence
- Rebar, Found

THOMAS SUMMERS P.S. 2109

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

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

LOCATION: ELEVATION 1,106' WATERSHED BUNNELL RUN

QUADRANGLE PENNSBORO 7.5' DISTRICT CLAY COUNTY RITCHIE

SURFACE OWNER LINDA C. DEWBERRY TRUST ACREAGE 151 ACRES +/-

OIL & GAS ROYALTY OWNER J.M. WILSON ET UX; WILLIAMS L. JACOBS ET AL; LEASE ACREAGE 503.3 ACRES±; 85 ACRES±; LUCILLE GASPO 71 ACRES±

DATE 08/01/13

OPERATOR'S WELL# HENDERSHOT UNIT #1H

API WELL # HGA 47 - 085 - 10060

STATE COUNTY PERMIT

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

TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,500' TVD 15,000' MD

WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER

ADDRESS 1625 17TH STREET ADDRESS CT CORPORATION SYSTEM

DENVER, CO 80202 CHARLESTON, WV 25313

FORM WW-6

COUNTY NAME PERMIT