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west virginia department of environmental protection

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Office of Oil and Gas  
601 57<sup>th</sup> Street, S.E.  
Charleston, WV 25304  
(304) 926-0450  
fax: (304) 926-0452

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

PERMIT MODIFICATION APPROVAL  
Horizontal 6A / Horizontal 6A Well - 1

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for DILLON UNIT 3H  
47-095-02353-00-00

Extend Lateral

ANTERO RESOURCES CORPORATION

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.

If there are any questions, please feel free to contact me at (304) 926- 0450.



James A. Martin  
Chief

Operator's Well Number: DILLON UNIT 3H  
Farm Name: RITCHIE PETROLEUM INC.  
U.S. WELL NUMBER: 47-095-02353-00-00  
Horizontal 6A / Horizontal 6A Well - 1  
Date Issued: 10/18/2016

Promoting a healthy environment.

10/21/2016



July 27, 2016

Antero Resources  
1615 Wynkoop Street  
Denver, CO 80202  
Office 303.357.7310  
Fax 303.357.7315

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

Mr. Brewer:

Antero Resources Corporation (Antero) would like to submit the following permit modification for one approved well on the Terry Snider Pad. We are requesting to extend the horizontal lateral length which will change the bottom hole location of the Dillon Unit 3H (API# 47-095-02353).

Attached you will find the following documents:

- REVISED Form WW-6B, which shows the revised lateral length program, updated Measured Depth and Production Casing/Cement program
- REVISED Form WW-6A1, which shows the new leases we will be drilling into
- REVISED Mylar Plat, which shows the new bottom hole location

If you have any questions please feel free to contact me at (303) 357-6820.

Thank you in advance for your consideration.

Sincerely,

A handwritten signature in blue ink that reads "Natalie Komp".

Natalie Komp  
Permitting Agent  
Antero Resources Corporation

470950-353 MOD

Enclosures

Received  
Office of Oil & Gas  
AUG 01 2016

10/21/2016

WW-6B  
(04/15)

API NO. 47-095 - 02353

OPERATOR WELL NO. Dillon Unit 3H

Well Pad Name: Existing Terry Snider Pad

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
WELL WORK PERMIT APPLICATION

1) Well Operator: Antero Resources Corp. 494507062 095 - Tyler Meade Pennsboro 7.5'  
Operator ID County District Quadrangle

2) Operator's Well Number: Dillon Unit 3H Well Pad Name: Existing Terry Snider Pad

3) Farm Name/Surface Owner: Ritchie Petroleum, Inc. Public Road Access: CR 20

4) Elevation, current ground: 1147' Elevation, proposed post-construction: 1147'

5) Well Type (a) Gas  Oil  Underground Storage

Other \_\_\_\_\_

(b)If Gas Shallow  Deep

Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus Shale: 6700' TVD, Anticipated Thickness 75 feet, Associated Pressure 2800#

8) Proposed Total Vertical Depth: 6700'

9) Formation at Total Vertical Depth: Marcellus Shale

10) Proposed Total Measured Depth: 16,000'

11) Proposed Horizontal Leg Length: 8044'

12) Approximate Fresh Water Strata Depths: 124', 376'

13) Method to Determine Fresh Water Depths: Offset well records. Depths have been adjusted according to surface elevations.

14) Approximate Saltwater Depths: 1968'

15) Approximate Coal Seam Depths: None identified

16) Approximate Depth to Possible Void (coal mine, karst, other): None Anticipated

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes \_\_\_\_\_ No

(a) If Yes, provide Mine Info: Name: \_\_\_\_\_

Depth: \_\_\_\_\_

Seam: \_\_\_\_\_

Owner: \_\_\_\_\_

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WW-6B  
(04/15)

API NO. 47- 095 - 02353

OPERATOR WELL NO. Dillon Unit 3H

Well Pad Name: Existing Terry Snider Pad

18)

**CASING AND TUBING PROGRAM**

<b>TYPE</b>	<b>Size (in)</b>	<b>New or Used</b>	<b>Grade</b>	<b>Weight per ft. (lb/ft)</b>	<b>FOOTAGE: For Drilling (ft)</b>	<b>INTERVALS: Left in Well (ft)</b>	<b>CEMENT: Fill-up (Cu. Ft.)/CTS</b>
Conductor	20"	New	H-40	94#	40'	40'	CTS, 38 Cu. Ft.
Fresh Water	13-3/8"	New	J-55/H-40	54.5#/48#	430' *see #19	430'	CTS, 597 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2500'	2500'	CTS 1018 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	16000'	16000'	3992 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#		7100'	
Liners							

<b>TYPE</b>	<b>Size (in)</b>	<b>Wellbore Diameter (in)</b>	<b>Wall Thickness (in)</b>	<b>Burst Pressure (psi)</b>	<b>Anticipated Max. Internal Pressure (psi)</b>	<b>Cement Type</b>	<b>Cement Yield (cu. ft./k)</b>
Conductor	20"	24"	0.438"	1530	50	Class A	1.18
Fresh Water	13-3/8"	17-1/2"	0.38"/0.33"	2730/1730	1000	Class A	1.18
Coal	9-5/8"	12-1/4"	0.352"	3520	1500	Class A	1.18
Intermediate							
Production	5-1/2"	8-3/4" & 8-1/2"	0.361"	12630	2500	Lead-H/POZ & Tail - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11200			
Liners							

**PACKERS**

Kind:	N/A			
Sizes:	N/A			
Depths Set:	N/A			

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Office of Oil & Gas  
AUG 01 2016

WW-6B  
(10/14)

API NO. 47- 095 - 02353

OPERATOR WELL NO. Dillon Unit 3H

Well Pad Name: Existing Terry Snider Pad

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill, perforate, fracture a new horizontal shallow well and complete Marcellus Shale.

\*Antero will be air drilling the fresh water string which makes it difficult to determine when freshwater is encountered, therefore we have built in a buffer for the casing setting depth which helps to ensure that all fresh water zones are covered.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Antero plans to pump Slickwater into the Marcellus Shale formation in order to ready the well for production. The fluid will be comprised of approximately 99 percent water and sand, with less than 1 percent special-purpose additives as shown in the attached "List of Anticipated Additives Used for Fracturing or Stimulating Well."

4709502353 NOV

Max Pressure - 9300 lbs

Max Rate - 80 bpm

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 38.07 acres with modification

22) Area to be disturbed for well pad only, less access road (acres): 6.64 existing acres

23) Describe centralizer placement for each casing string:

Conductor: no centralizers

Surface Casing: one centralizer 10' above the float shoe, one on the insert float collar and one every 4th joint spaced up the hole to surface.

Intermediate Casing: one centralizer above float joint, one centralizer 5' above float collar and one every 4th collar to surface.

Production Casing: one centralizer at shoe joint and one every 3 joints to top of cement in intermediate casing.

24) Describe all cement additives associated with each cement type:

Conductor: no additives, Class A cement.

Surface: Class A cement with 2-3% calcium chloride and 1/4 lb of flake.

Intermediate: Class A Cement with 1/4 lb of flake, 5 gallons of clay treat.

Production: Lead cement - 50/50 Class H/Poz + 1/5% salt + 1% C-45 + 0.5% C-16a + 0.2% C-12 + 0.45% C-20 + 0.5% C51.

Production: Tail cement - Class H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51 + 0.2% ACR-20.

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Office of Oil & Gas

25) Proposed borehole conditioning procedures:

Conductor: blowhole clean with air, run casing, 10 bbls fresh water.

Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate pipe capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.

Intermediate: blowhole clean with air, trip to surface casing shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate 40 bbls brine water followed by 10 bbls fresh water and 25 bbls bentonite mud, pump 10 bbls fresh water.

Production: circulate with 14 lb/gal NaCl mud, trip to middle of lateral, circulate, pump high viscosity sweep, trip to base of curve, pump high viscosity sweep, trip to top of curve, trip to bottom, circulate, pump high viscosity sweep, trip out, run casing, circulate 10 bbls fresh water, pump 48 bbls barite pill, pump 10 bbls fresh water followed by 48 bbls mud flush and 10 bbls water.

AUG 01 2016

\*Note: Attach additional sheets as needed.

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6A, Section 5(a)(5)  
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b>Ashford Broadwater Lease</b>			
Ashford Broadwater	South Penn Oil Company	Flate Rate	0030/0139
South Penn Oil Company	Carter Oil Company	Assignment	0030/0357
Carter Oil Company	Hope Construction and Refining Company	Assignment	0097/0332
Hope Construction and Refining Company	Hope Natural Gas Company	Confirmatory Deed	0119/0576
Hope Natural Gas Company	Consolidation Gas Supply Corporation	Confirmatory Deed	0169/0026
Consolidation Gas Supply Corporation	Consolidation Gas Transmission Corporation	Assignment	0249/0287
Consolidation Gas Transmission Corporation	CNG Development Company	Assignment	0253/0057
CNG Development Company	CNG Producing Company	Merger	Harrison County 1131/1015
CNG Producing Company	Dominion Exploration & Production, Inc.	Name Change	Exhibit 2
Dominion Exploration & Production, Inc.	CNX Gas Company, LLC	Affidavit of Name Changes and Mergers	0384/0191
CNX Gas Company, LLC	<b>Antero Resources Corporation</b>	<b>Assignment</b>	<b>0501/0434</b>
<b>Terry L. Snider Lease</b>			
Terry L. Snider	Antero Resources Appalachian Corporation	1/8+	0389/0217
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<b>Hunters, Inc. Lease</b>			
Hunters, Inc.	Antero Resources Corporation	1/8+	0436/0304
<b>Theodore McCullough, et ux Lease</b>			
Theodore H. McCullough, et ux	Chesapeake Appalachia, LLC	1/8	0375/0720
Chesapeake Appalachia, LLC	SWN Production Co. LLC	Assignment	0465/0463
SWN Production Co. LLC	Antero Resources Corporation	Agreement	0537/0735
<b>Matthew B. Harper, et ux Lease</b>			
Matthew B. Harper, et ux	Antero Resources Appalachian Corporation	1/8+	0393/0028
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<b>Jeanette McCullough Lease</b>			
Jeanette McCullough	Antero Resources Appalachian Corporation	1/8+	0391/0071
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<b>Ritchie Petroleum Corp., Inc. Lease</b>			
Ritchie Petroleum Corporation, Inc.	Antero Resources Appalachian Corporation	1/8+	0402/0308
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1

47-095-02353

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Office of Oil & Gas

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\*Partial Assignments to Antero Resources Corporation include 100% rights to extract, produce and market the oil and gas from the Marcellus and any other formations completed with this well.



INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
 Chapter 22, Article 6A, Section 5(a)(5)  
 IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

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- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b>Blanche Stewart Lease</b>			
Blanche Stewart	Herman Dillon	1/8	0121/0183
Herman Dillon	Consolidation Gas Supply Corporation	Assignment	0121/0664
Consolidation Gas Supply Corporation	Consolidation Gas Transmission Corporation	Assignment	0249/0287
Consolidation Gas Transmission Corporation	CNG Development Company	Assignment	0253/0057
CNG Development Company	CNG Producing Company	Merger	1131/1015
CNG Producing Company	Dominion Exploration & Production, Inc.	Name Change	Exhibit 2
Dominion Exploration & Production, Inc.	CNX Gas Company, LLC	Affidavit of Name Changes & Mergers	0384/0191
CNX Gas Company, LLC	Antero Resources Corporation	Assignment	0501/0434

4709502353 MOD

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 AUG 01 2016

\*Partial Assignments to Antero Resources Corporation include 100% rights to extract, produce and market the oil and gas from the Marcellus and any other formations completed with this well.

**\*\*CONTINUED ON NEXT PAGE\*\***

WW-6A1  
(5/13)

Operator's Well No. Dillon Unit 3H

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6A, Section 5(a)(5)  
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

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- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
Victor Holdren Lease	Victor Scott Holdren & Jeffrey Alan Holdren Antero Resources Appalachian Corp.	Antero Resources Appalachian Corp., Antero Resources Corporation	1/8+ Name Change	0257/0718 Exhibit 1

\*Partial Assignments to Antero Resources Corporation include 100% rights to extract, produce and market the oil and gas from the Marcellus and any other formations completed with this well.

4709502353 MOD

**Acknowledgement of Possible Permitting/Approval  
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Antero Resources Corporation  
 By: Robert S. Tucker *[Signature]*  
 Its: Vice President of Geology

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Office of Oil & Gas  
AUG 01 2016



FILED

JUN 10 2013

Natalie E. Tennant  
Secretary of State  
1900 Kanawha Blvd E  
Bldg 1, Suite 157-K  
Charleston, WV 25305



Penney Barker, Manager  
Corporations Division  
Tel: (304)558-8000  
Fax: (304)558-8381  
Website: [www.wvsof.com](http://www.wvsof.com)  
E-mail: [business@wvsof.com](mailto:business@wvsof.com)

APPLICATION FOR  
AMENDED CERTIFICATE  
OF AUTHORITY

Office Hours: Monday - Friday  
8:30 a.m. - 5:00 p.m. ET

FILE ONE ORIGINAL  
(Two if you want a filed  
stamped copy returned to you)  
FEE: \$25.00

\*\*\*\* In accordance with the provisions of the West Virginia Code, the undersigned corporation hereby \*\*\*\*  
applies for an Amended Certificate of Authority and submits the following statement:

- 1. Name under which the corporation was authorized to transact business in WV: Antero Resources Appalachian Corporation
- 2. Date Certificate of Authority was issued in West Virginia: 6/26/2008
- 3. Corporate name has been changed to: Antero Resources Corporation  
(Attach one Certified Copy of Name Change as filed in home State of Incorporation.)
- 4. Name the corporation elects to use in WV: Antero Resources Corporation  
(due to home state name not being available)
- 5. Other amendments: 4705502355 MOD  
(attach additional pages if necessary)

6. Name and phone number of contact person. (This is optional, however, if there is a problem with the filing, listing a contact person and phone number may avoid having to return or reject the document.)

Alvyn A. Schopp	(303) 367-7310
Contact Name	Phone Number

7. Signature information (See below *\*Important Legal Notice Regarding Signature\**):

Print Name of Signer: Alvyn A. Schopp Title/Capacity: Authorized Person

Signature: *Alvyn A. Schopp* Date: June 10, 2013

*\*Important Legal Notice Regarding Signature:* Per West Virginia Code §31D-1-122, Penalty for signing false document. Any person who signs a document he or she knows is false in any material respect and knows that the document is to be delivered to the secretary of state for filing is guilty of a misdemeanor and, upon conviction thereof, shall be fined not more than one thousand dollars or confined in the county or regional jail not more than one year, or both.

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Office of Oil & Gas  
AUG 01 2016

# State of West Virginia



## Certificate

*I, Ken Hechler, Secretary of State of the State of West Virginia, hereby certify that*

originals of an application by

**CNG PRODUCING COMPANY**

for an amended certificate of authority to transact business in West Virginia are filed in my office, as required by the provisions of Chapter 31, Article 1, Sections 57 and 59 of the West Virginia Code and conform to law. Therefore, I issue this

**AMENDED CERTIFICATE OF AUTHORITY**

to transact business in West Virginia under the name of

**DOMINION EXPLORATION & PRODUCTION, INC.**

and I attach to this certificate a duplicate original of the application.



*Given under my hand and the Great Seal of the State of West Virginia on*

May 10, 2000

*Ken Hechler*

Received  
Office of Oil & Gas  
AUG 01 2016

*Secretary of State*  
10/21/2016



WW-60  
(7-01)

DATE: March 4th, 20 16  
OPERATOR'S  
WELL NO. Dillon Unit 3H

API NO: 47- 095  
State County Permit No.

STATE OF WEST VIRGINIA  
OFFICE OF OIL AND GAS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

A F F I D A V I T

State of Colorado

County of Denver

4709502353 MOP

I, Thomas Kuhn (the designated owner or operator, or authorized representative thereof), after being duly sworn, do declare that the undersigned is authorized by the owner of the working interest in the well permit application to which this affidavit is attached to state that (he, she, or it) shall tender to the owner of the oil and gas in place not less than one-eighth of the total amount paid to or received by or allowed to the owner of the working interest at the wellhead for the oil or gas so extracted, produced, or marketed before deducting the amount to be paid or set aside for the owner of the oil or gas in place, or all such oil or gas to be extracted, produced, or marketed from the well. West Virginia Code 22-6-8(e).

Signed: [Signature]

Taken, subscribed and sworn to before me this 7 day of April, 20 14.

[Signature]  
Notary Public

My Commission expires: July 18, 2018

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AUG 01 2016

RECEIVED  
Office of Oil and Gas  
APR 04 2016

WV Department of  
Environmental Protection

NATALIE KOMP  
NOTARY PUBLIC  
STATE OF COLORADO  
NOTARY ID # 20144028170  
MY COMMISSION EXPIRES JULY 18, 2018

10/21/2016



# DILLON UNIT 2H & 3H (TERRY SNIDER PAD) - DATA COLLECTED ON OFFSET WELLS



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Office of Oil & Gas  
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10/21/2016

**DILLON UNIT 2H & 3H (TERRY SNIDER PAD) - DATA COLLECTED ON OFFSET WELLS**

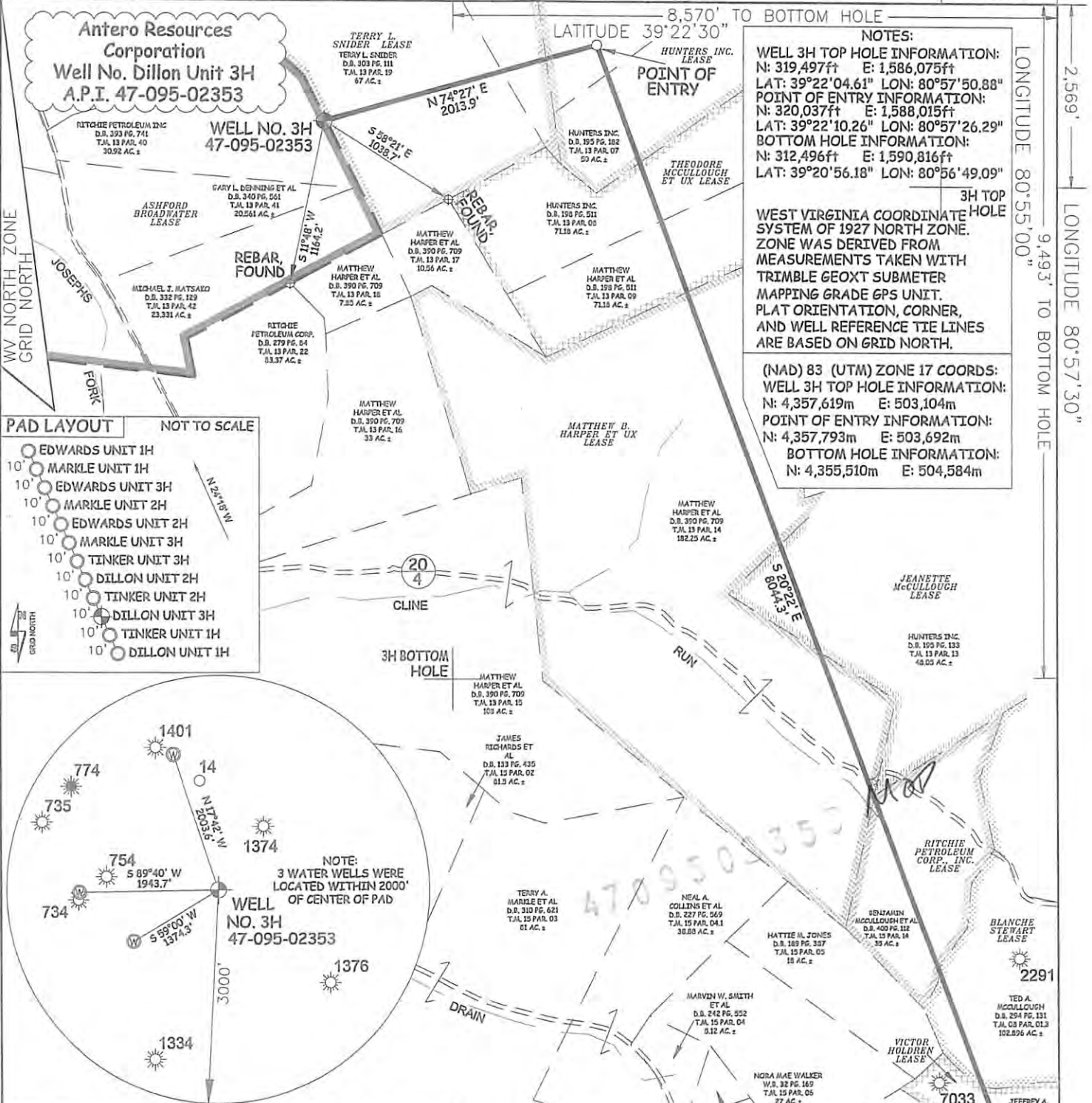
UWI (APINum)	Well Name	Well Num	Operator	Hist Oper	TD	ELEV_GR	TD (SSTVD)	Perfs (shallowest, deepest)
47085066840000	DOTY CONRAD P ET AL	J-801	ALLIANCE PETR CORP	J & J ENTERPRISES	5999	944	-5055	Riley (4443-4454), Rhinestreet (5684-5785)
47085070330000	EDWARDS B THOMAS	WK-349	ALLIANCE PETR CORP	KEPCO INCORPORATED	5998	1192	-4806	Big Injun (2216), Rhinestreet (5937-5984)
47085066830000	DOTY CONRAD P ET AL	J-802	ALLIANCE PETR CORP	J & J ENTERPRISES	5979	1026	-4953	Big Injun (2033-2037), Rhinestreet (5855-5857)
47085070340000	EDWARDS B THOMAS	WK-348	ALLIANCE PETR CORP	KEPCO INCORPORATED	5955	991	-4964	Riley (4521-4526), Rhinestreet (5747-5799)
47095013760000	MCCULLOUGH HAROLD & WILMA	1	CONSOL GAS COMPANY	CHESTERFIELD EN CORP	5214	1121	-4093	Benson (5010-5018)
47095017160000	COX BILLY J & MARGARET K	1	ALLIANCE PETR CORP	OHIO L & M	5194	1166	-4028	Big Lime (2064-2070), Benson (5020-5030)
47095013720000	COLLINS NEAL	2	CONSOL GAS COMPANY	CHESTERFIELD EN CORP	5161	1166	-3995	Big Injun (2182-2188), Benson (5040-5050)
47095013530000	COLLINS NEAL	1	CONSOL GAS COMPANY	CHESTERFIELD EN CORP	5132	942	-4190	Benson (4808-4818)
47095013730000	RICHARDS SYLVIA	2	CONSOL GAS COMPANY	CHESTERFIELD EN CORP	5062	1010	-4052	Benson (4874-4881)
47095013340000	AYRES VICTOR	3845	CONSOL GAS COMPANY	CNG DEVELOPMENT CO	5045	826	-4219	Benson (4712-4718)
47095013740000	HILL PALMER	1	CONSOL GAS COMPANY	CHESTERFIELD EN CORP	5035	895	-4140	Benson (4790-4800)
47095013540000	RICHARDS SYLVIA	1	CONSOL GAS COMPANY	CHESTERFIELD EN CORP	4987	950	-4037	Benson (4812-4820)
47095007540000	DILLON CLINTON & VIRGINIA	5	DUPKE ROGER C OIL CO	SECURITY G&O INC	3491	905	-2586	
47095007340000	DILLON CLINTON S & VIRGINIA H	1	DUPKE ROGER C OIL CO	SECURITY G&O INC	3359	805	-2554	
47085022910000	BLANCE STEWART	1	SULLIE OIL COMPANY	SULLIE OIL COMPANY	2400	1148	-1252	
47095000230000	E A HILL	1	UNKNOWN	UNKNOWN	2289	1150	-1139	
47095002740000	FLOYD C MARKLE	2	MCCULLOUGH WELL SRVC	SULLIE OIL COMPANY	2130	1038	-1092	
47095003550000	DONSEL (SP DONZEL) ANKROM	1	UNKNOWN	UNKNOWN	1992	916	-1076	
47095002710000	FLOYD C MARKLE	1	MCCULLOUGH WELL SRVC	SULLIE OIL COMPANY	1977	888	-1089	

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4709502291  
NR



LATITUDE 39°22'30" 1,640'



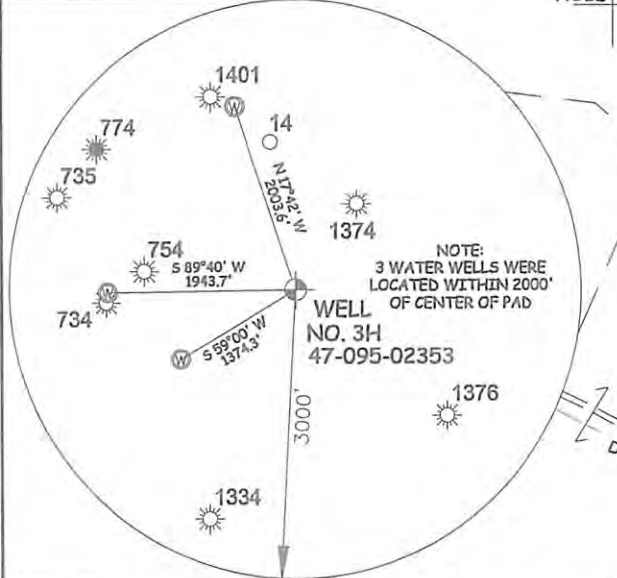
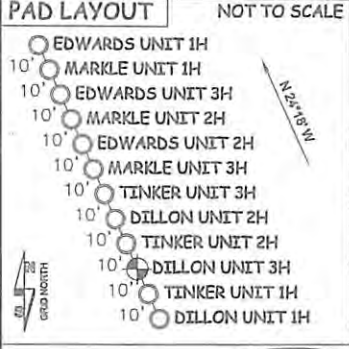
**NOTES:**

**WELL 3H TOP HOLE INFORMATION:**  
 N: 319,497ft E: 1,586,075ft  
 LAT: 39°22'04.61" LON: 80°57'50.88"  
**POINT OF ENTRY INFORMATION:**  
 N: 320,037ft E: 1,588,015ft  
 LAT: 39°22'10.26" LON: 80°57'26.29"  
**BOTTOM HOLE INFORMATION:**  
 N: 312,496ft E: 1,590,816ft  
 LAT: 39°20'56.18" LON: 80°56'49.09"

**3H TOP HOLE**

**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 3H TOP HOLE INFORMATION:**  
 N: 4,357,619m E: 503,104m  
**POINT OF ENTRY INFORMATION:**  
 N: 4,357,793m E: 503,692m  
**BOTTOM HOLE INFORMATION:**  
 N: 4,355,510m E: 504,584m



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

JOB # 12-152WA  
 DRAWING # DILLON3HR5  
 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

**LEGEND**

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

THOMAS SUMMERS P.S. 2109

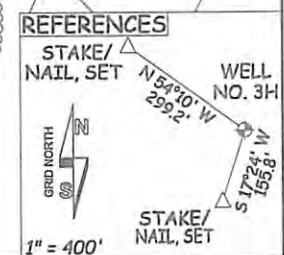
DATE 07/08/16

OPERATOR'S WELL# DILLON UNIT #3H



**WELL NO. 3H BOTTOM HOLE**

**(NAD) 27 (UTM) ZONE 17 COORDS:**  
 WELL 3H TOP HOLE INFORMATION:  
 N: 14,295,907ft E: 1,650,553ft  
**POINT OF ENTRY INFORMATION:**  
 N: 14,296,479ft E: 1,652,484ft  
**BOTTOM HOLE INFORMATION:**  
 N: 14,288,989ft E: 1,655,408ft



WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  47 - 095 - 02353

(IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW  STATE COUNTY PERMIT

LOCATION: ELEVATION 1,171' ORIGINAL - 1,147' AS-BUILT WATERSHED OUTLET MIDDLE ISLAND CREEK

QUADRANGLE PENNSBORO 7.5' DISTRICT MEADE COUNTY TYLER

SURFACE OWNER RITCHEE PETROLEUM INC. ACREAGE 30.92 ACRES +/-

OIL & GAS ROYALTY OWNER ASHFORD BROADWATER; TERRY L. SNIDER; HUNTERS INC.; THEODORE MCCULLOUGH ET UX; LEASE ACREAGE 583.712 ACRES +/-; 67 ACRES +/-; 471.20 ACRES +/-; 188.72 ACRES +/-; MATTHEW B. HARPER ET UX; JEANNETTE MCCULLOUGH; RITCHEE PETROLEUM CORP., INC.; BLANCHE STEWART; VICTOR HOLDREN 182.25 ACRES +/-; 48.05 ACRES +/-; 35 ACRES +/-; 30 ACRES +/-

PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) MOD BHL

TARGET FORMATION MARCELLUS PLUG & ABANDON CLEAN OUT & REPLUG

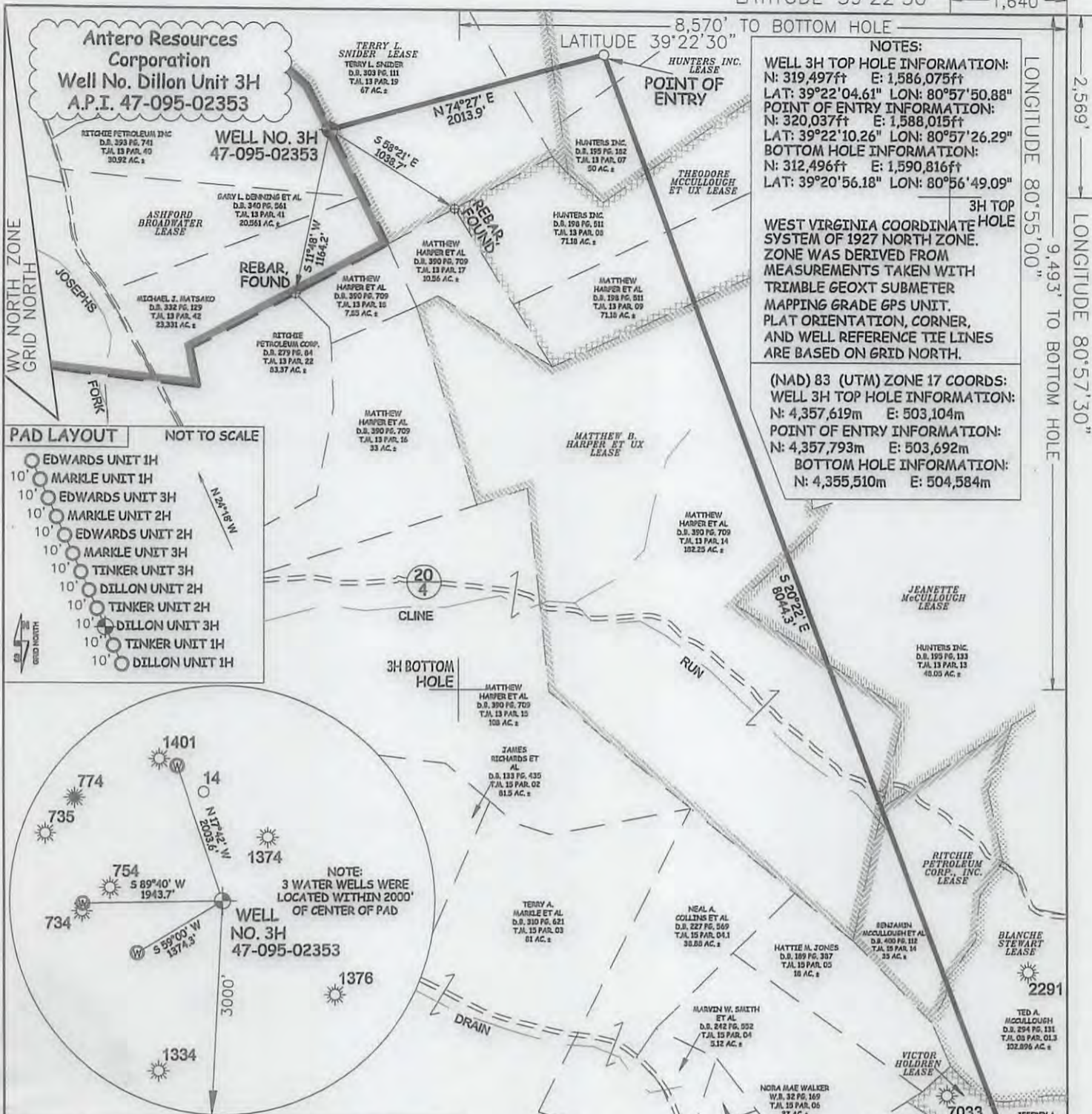
WELL OPERATOR ANTERO RESOURCES CORP. ESTIMATED DEPTH 6,700' TVD 16,000' MD

DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

10/21/2016



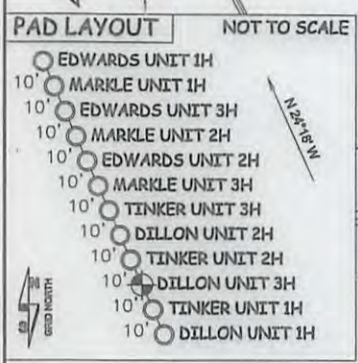
LATITUDE 39°22'30" 1,640'



**NOTES:**  
**WELL 3H TOP HOLE INFORMATION:**  
 N: 319,497ft E: 1,586,075ft  
 LAT: 39°22'04.61" LON: 80°57'50.88"  
**POINT OF ENTRY INFORMATION:**  
 N: 320,037ft E: 1,588,015ft  
 LAT: 39°22'10.26" LON: 80°57'26.29"  
**BOTTOM HOLE INFORMATION:**  
 N: 312,496ft E: 1,590,816ft  
 LAT: 39°20'56.18" LON: 80°56'49.09"

**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 3H TOP HOLE INFORMATION:**  
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 N: 4,357,793m E: 503,692m  
**BOTTOM HOLE INFORMATION:**  
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STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

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

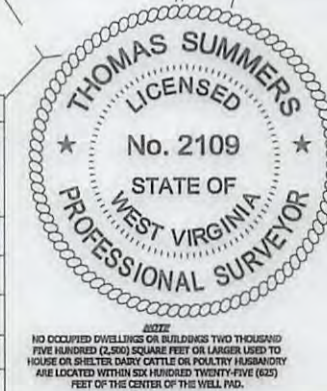
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STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

**LEGEND**

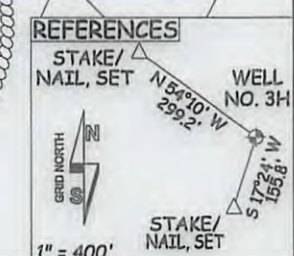
- Surface Owner Boundary Lines +/-
- Interior Surface Tracts +/-
- Existing Fence
- Found monument, as noted

THOMAS SUMMERS P.S. 2109  
 DATE 07/08/16  
 OPERATOR'S WELL# DILLON UNIT #3H



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 LOCATION: ELEVATION 1,171' ORIGINAL - 1,147' AS-BUILT WATERSHED OUTLET MIDDLE ISLAND CREEK  
 QUADRANGLE PENNSBORO 7.5' DISTRICT MEADE COUNTY TYLER  
 SURFACE OWNER RITCHIE PETROLEUM INC. ACREAGE 30.92 ACRES +/-  
 OIL & GAS ROYALTY OWNER ASHFORD BROADWATER; TERRY L. SNIDER; HUNTERS INC.; THEODORE MCCULLOUGH ET UX; LEASE ACREAGE 503.712 ACRES +/-; 67 ACRES +/-; 471.20 ACRES +/-; 108.72 ACRES +/-  
 MATTHEW B. HARPER ET UX; JEANETTE MCCULLOUGH; RITCHIE PETROLEUM CORP., INC.; BLANCHE STEWART; VICTOR HOLDREN 182.25 ACRES +/-; 48.05 ACRES +/-; 35 ACRES +/-; 30 ACRES +/-  
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 DENVER, CO 80202 CHARLESTON, WV 25313

10/21/2016