west virginia department of environmental protection

Office of Oil and Gas
601 57th 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

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

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 57th 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,

Natalie Komp
Permitting Agent
Antero Resources Corporation

47095-35? MOD

Enclosures

Received
Office of Oil & Gas
AUG 01 2016

PERMIT MODIFICATION API# 47-095-02353

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 X Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow X Deep _____
Horizontal X

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' NCD

9) Formation at Total Vertical Depth: Marcellus Shale

10) Proposed Total Measured Depth: 16,000' 4709502353

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 X

(a) If Yes, provide Mine Info: Name: _____
Depth: _____
Seam: _____
Owner: _____

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Office of Oil & Gas
AUG 01 2016

18) **CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
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							

47 095 02353 Mod

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
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 MOD

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 & Ga
AUG 01 2016

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.

*Note: Attach additional sheets as needed.

WW-6A1

Operator's Well Number Dillon Unit 3H
PERMIT MODIFICATION API# 47-095-02353

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
Ashford Broadwater Lease			
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	**Antero Resources Corporation**	**Assignment**	**0501/0434**
Terry L. Snider Lease			
Terry L. Snider	Antero Resources Appalachian Corporation	1/8+	0389/0217
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**
Hunters, Inc. Lease			
Hunters, Inc.	**Antero Resources Corporation**	**1/8+**	**0436/0304**
Theodore McCullough, et ux Lease			
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**
Matthew B. Harper, et ux Lease			
Matthew B. Harper, et ux	Antero Resources Appalachian Corporation	1/8+	0393/0028
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**
Jeanette McCullough Lease			
Jeanette McCullough	Antero Resources Appalachian Corporation	1/8+	0391/0071
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**
Ritchie Petroleum Corp., Inc. Lease			
Ritchie Petroleum Corporation, Inc.	Antero Resources Appalachian Corporation	1/8+	0402/0308
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**

4709502353 1004

Received
Office of Oil & Gas
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

Operator's Well Number Dillon Unit 3H
PERMIT MODIFICATION API# 47-095-02353

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 –

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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:

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
Blanche Stewart Lease			
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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Office of Oil & Gas
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****

PERMIT MODIFICATION API# 47-095-02353

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)

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:

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
Its: Vice President of Geology

Received
Office of Oil & Gas
AUG 01 2016

FORM WW-6A1
EXHIBIT 1

FILED

JUN 10 2013

IN THE OFFICE OF SECRETARY OF STATE

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.wvsos.com
E-mail: business@wvsos.com
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

APPLICATION FOR AMENDED CERTIFICATE OF AUTHORITY

**** 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: 6/25/2008

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:
(attach additional pages if necessary)

4705502335 - MOP

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) 357-7310
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: [signature] — Date: June 10, 2013

*Important Legal Notice Regarding Signature: Per West Virginia Code §31D-1-129, 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.

Received
Office of Oil & Gas
AUG 01 2013

FORM WW-6A1
EXHIBIT 2

State of West Virginia

Certificate

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

riginals 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

4709502353 MOV

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

Received
Office of Oil & Ga
AUG 01 2016

Secretary of State

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

4709502353 MOD

State of Colorado

County of Denver

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: _____

Received
Office of Oil & Gas
AUG 01 2016

Taken, subscribed and sworn to before me this 1 day of April, 20 16.

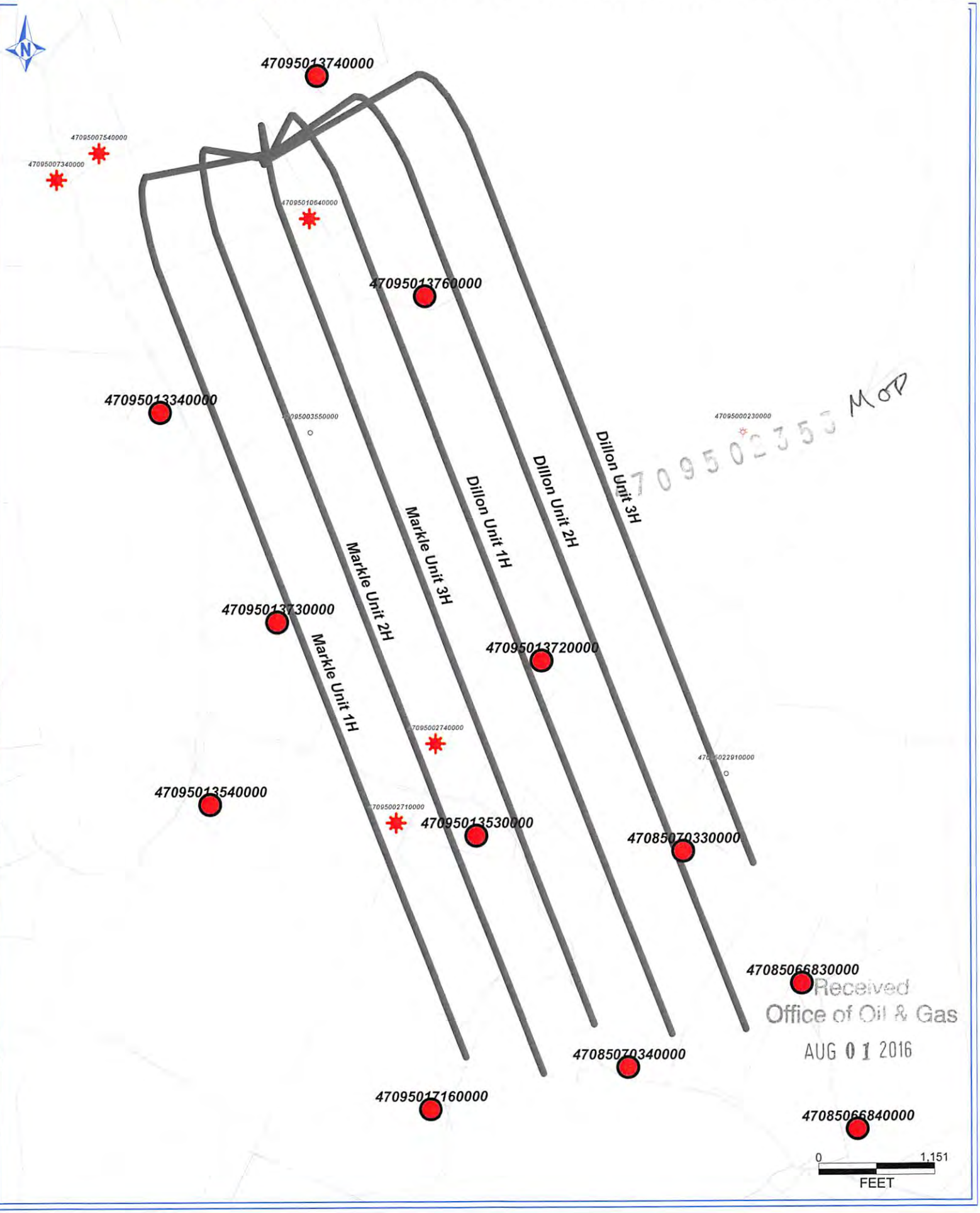
_____
Notary Public

My Commission expires: July 18, 2018

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

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



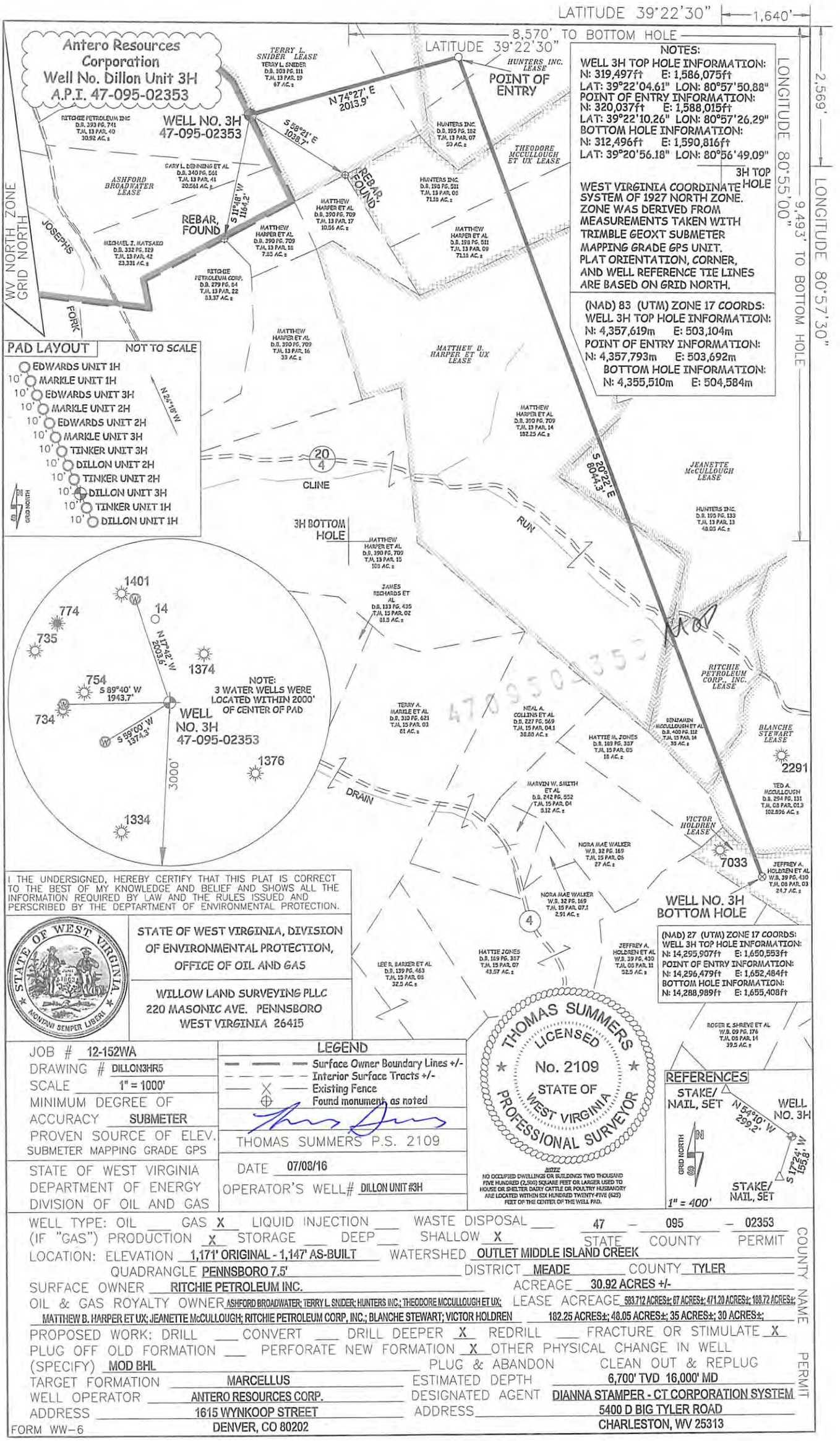
47095023533 MOP

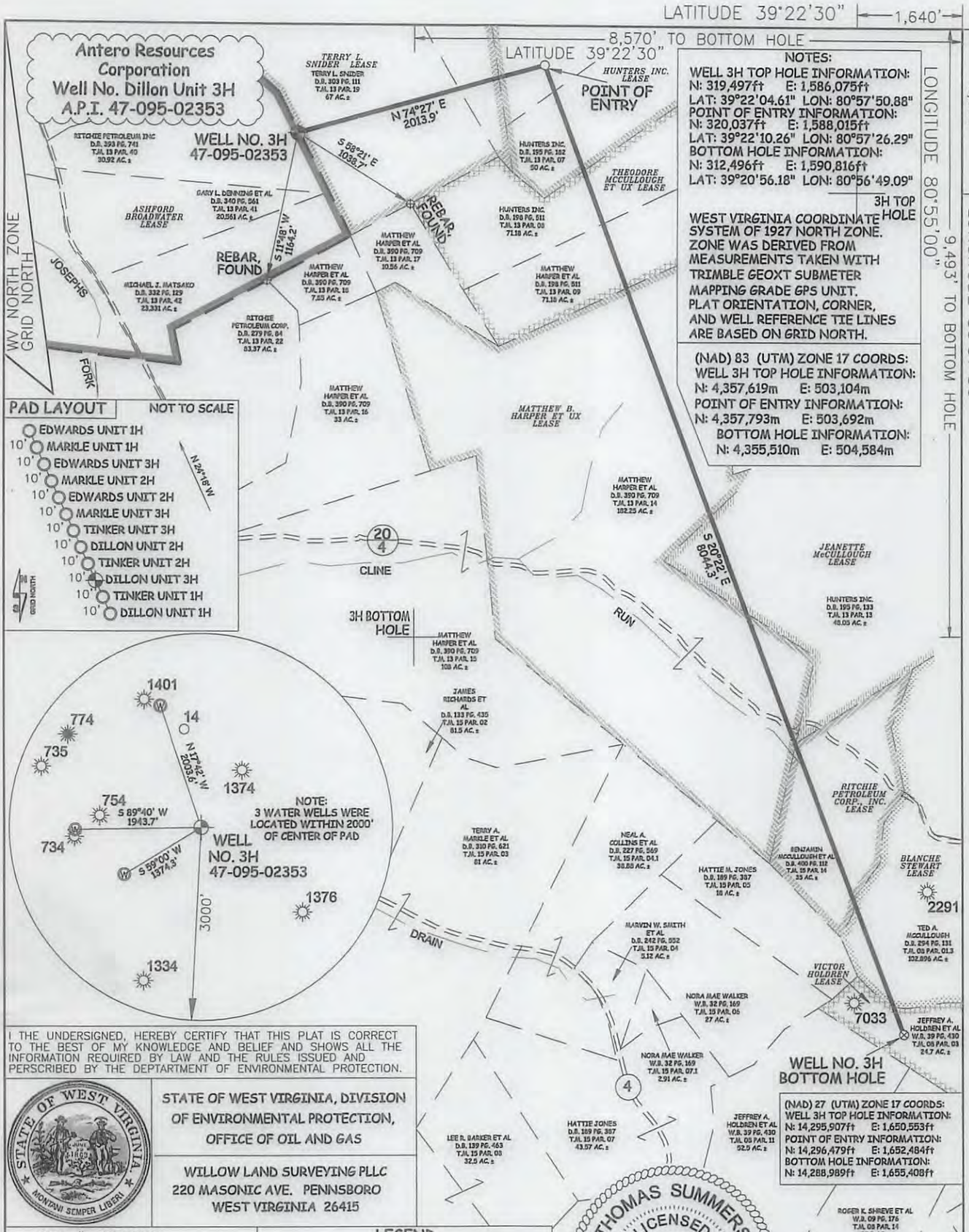
Received
Office of Oil & Gas
AUG 01 2016

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), Rhinstreet (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	

Received
Office of Oil & Gas
AUG 01 2016

4709502353 MOD


Antero Resources Corporation
Well No. Dillon Unit 3H
A.P.I. 47-095-02353
LATITUDE 39°22'30"
1,640'
8,570' TO BOTTOM HOLE
LONGITUDE 80°55'00"
2,569'
9,493' TO BOTTOM HOLE
LONGITUDE 80°57'30"
WV NORTH ZONE GRID NORTH
WELL NO. 3H
47-095-02353
POINT OF ENTRY
3H TOP HOLE
3H BOTTOM HOLE
WELL NO. 3H BOTTOM HOLE
N 74°27' E 2013.9'
S 58°21' E 1038.7'
S 11°48' W 1164.2'
S 20°22' E 8044.3'
REBAR FOUND
REBAR, FOUND
CLINE RUN
DRAIN
FORK
JOSEPHS
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:
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
(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
PAD LAYOUT
NOT TO SCALE
EDWARDS UNIT 1H
MARKLE UNIT 1H
EDWARDS UNIT 3H
MARKLE UNIT 2H
EDWARDS UNIT 2H
MARKLE UNIT 3H
TINKER UNIT 3H
DILLON UNIT 2H
TINKER UNIT 2H
DILLON UNIT 3H
TINKER UNIT 1H
DILLON UNIT 1H
N 24°18' W
10'
NOTE: 3 WATER WELLS WERE LOCATED WITHIN 2000' OF CENTER OF PAD
S 89°40' W 1943.7'
S 89°00' W 1374.3'
N 17°48' W 2003.5'
3000'
1401
774
735
14
1374
754
734
1376
1334
TERRY L. SNIDER LEASE
TERRY L. SNIDER D.B. 303 PG. 111 T.M. 13 PAR. 19 67 AC.±
HUNTERS INC. LEASE
THEODORE MCCULLOUGH ET UX LEASE
ASHFORD BROADWATER LEASE
MATTHEW B. HARPER ET UX LEASE
JEANETTE McCULLOUGH LEASE
RITCHIE PETROLEUM CORP., INC. LEASE
BENJAMIN MCCULLOUGH ET AL D.B. 400 PG. 112 T.M. 15 PAR. 14 35 AC.±
BLANCHE STEWART LEASE
VICTOR HOLDREN LEASE
RITCHIE PETROLEUM INC D.B. 393 PG. 741 T.M. 13 PAR. 40 30.92 AC.±
GARY L. DENNING ET AL D.B. 340 PG. 561 T.M. 13 PAR. 41 20.561 AC.±
MICHAEL T. MATSAKO D.B. 332 PG. 129 T.M. 13 PAR. 42 23.331 AC.±
RITCHIE PETROLEUM CORP. D.B. 279 PG. 64 T.M. 13 PAR. 22 83.37 AC.±
HUNTERS INC. D.B. 195 PG. 182 T.M. 13 PAR. 07 59 AC.±
HUNTERS INC. D.B. 198 PG. 511 T.M. 13 PAR. 08 71.18 AC.±
MATTHEW HARPER ET AL D.B. 390 PG. 709 T.M. 13 PAR. 17 10.56 AC.±
MATTHEW HARPER ET AL D.B. 390 PG. 709 T.M. 13 PAR. 16 7.83 AC.±
MATTHEW HARPER ET AL D.B. 198 PG. 511 T.M. 13 PAR. 09 71.18 AC.±
MATTHEW HARPER ET AL D.B. 390 PG. 709 T.M. 13 PAR. 16 33 AC.±
MATTHEW HARPER ET AL D.B. 390 PG. 709 T.M. 13 PAR. 14 182.25 AC.±
HUNTERS INC. D.B. 195 PG. 133 T.M. 13 PAR. 13 48.05 AC.±
MATTHEW HARPER ET AL D.B. 390 PG. 709 T.M. 13 PAR. 15 103 AC.±
JAMES RICHARDS ET AL D.B. 133 PG. 435 T.M. 15 PAR. 02 81.5 AC.±
TERRY A. MARKLE ET AL D.B. 310 PG. 621 T.M. 15 PAR. 03 61 AC.±
NEAL A. COLLINS ET AL D.B. 227 PG. 569 T.M. 15 PAR. 04.1 38.88 AC.±
HATTIE M. JONES D.B. 189 PG. 337 T.M. 15 PAR. 05 18 AC.±
MARVIN W. SMITH ET AL D.B. 242 PG. 552 T.M. 15 PAR. 04 8.12 AC.±
TED A. MCCULLOUGH D.B. 294 PG. 131 T.M. 03 PAR. 01.3 102.836 AC.±
NORA MAE WALKER W.B. 32 PG. 169 T.M. 15 PAR. 05 27 AC.±
NORA MAE WALKER W.B. 32 PG. 169 T.M. 15 PAR. 07.1 2.91 AC.±
JEFFREY A. HOLDREN ET AL W.B. 39 PG. 430 T.M. 05 PAR. 03 24.7 AC.±
JEFFREY A. HOLDREN ET AL W.B. 39 PG. 430 T.M. 05 PAR. 11 52.5 AC.±
HATTIE JONES D.B. 169 PG. 337 T.M. 15 PAR. 07 43.57 AC.±
LEE R. BARKER ET AL D.B. 139 PG. 463 T.M. 15 PAR. 06 32.5 AC.±
ROGER K. SHREVE ET AL W.B. 09 PG. 176 T.M. 05 PAR. 14 39.5 AC.±
7033
2291
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 DEPTARTMENT 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
THOMAS SUMMERS LICENSED No. 2109 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR
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.
REFERENCES
STAKE/ NAIL, SET
WELL NO. 3H
N 54°10' W 299.2'
S 17°24' W 155.8'
STAKE/ NAIL, SET
GRID NORTH
1" = 400'
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 TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
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; MATTHEW B. HARPER ET UX; JEANETTE McCULLOUGH; RITCHIE PETROLEUM CORP., INC.; BLANCHE STEWART; VICTOR HOLDREN LEASE ACREAGE 583.712 ACRES±; 67 ACRES±; 471.20 ACRES±; 168.72 ACRES±; 182.25 ACRES±; 48.05 ACRES±; 35 ACRES±; 30 ACRES±;
PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER X REDRILL ___ FRACTURE OR STIMULATE X
PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) MOD BHL PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,700' TVD 16,000' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
DENVER, CO 80202 CHARLESTON, WV 25313
47 095 02353
STATE COUNTY PERMIT
COUNTY NAME PERMIT
FORM WW-6



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

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
47 – 095 – 02353
STATE COUNTY PERMIT
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