

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47 - 033 - 05709 County Harrison District Union
Quad Big Isaac 7.5' Pad Name Corder East Pad Field/Pool Name ----
Farm name Gerald & Louella Corder Well Number Hildred Unit 2H
Operator (as registered with the OOG) Antero Resources Appalachian Corporation
Address 1615 Wynkoop Street City Denver State CO Zip 80202

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4341558.879m Easting 538537.187m
Landing Point of Curve Northing 4341748.753m Easting 538461.884m
Bottom Hole Northing 4343399.498m Easting 536387.023m

Elevation (ft) 1405' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
Air - Foam & 4% KCL
Mud - Polymer

Date permit issued 1/29/2013 Date drilling commenced 2/21/2014 Date drilling ceased 6/18/2014
Date completion activities began N/A Date completion activities ceased N/A
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 100' Open mine(s) (Y/N) depths No
Salt water depth(s) ft None Identified Void(s) encountered (Y/N) depths No
Coal depth(s) ft 333', 625', 930' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

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Office of Oil and Gas

JUL 06 2020

WV Department of
Environmental Protection

Reviewed by:
11/12/2021

API 47-033 - 05709

Farm name Gerald & Louella Corder

Well number Hildred Unit 2H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24"	20"	40'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	361'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2537'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	16460'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	N/A		4.7#, N-80		
Packer type and depth set		N/A					

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Class A	196 sx	15.6	1.18	120	0'	8 Hrs.
Surface	Class A	N/A	15.6	1.18	826	0'	8 Hrs.
Coal							
Intermediate 1	Class A	N/A	15.6	1.18	1181	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	---	---	---	---	---	---	---
Tubing							

Drillers TD (ft) 16800' MD, 7700' TVD (BHL), 7701 (Deepest Point Drilled)

Loggers TD (ft) 16800' MD

Deepest formation penetrated Marcellus

Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 7000'

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

Conductor - 0

Surface - 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface

Intermediate - 1 above float joint, 1 above float collar, 1 every 4th joint to surface

Production - 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

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Office of Oil and Gas

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

JUL 06 2020

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WV Department of
Environmental Protection

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED N/A

11/12/2021

API 47- 033 - 05709 Farm name Gerald & Louella Corder Well number Hildred Unit 2H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>			
	<u>N/A (TOP)</u>	<u>TVD</u>	<u>N/A (TOP)</u>	<u>MD</u>
<u>Marcellus</u>				

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface --- psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas --- mcfpd Oil --- bpd NGL --- bpd Water --- bpd GAS MEASURED BY Estimated Orifice Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP</u>		<u>BOTTOM</u>		<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H₂S, ETC)</u>
	<u>DEPTH IN FT</u>	<u>DEPTH IN FT</u>	<u>DEPTH IN FT</u>	<u>DEPTH IN FT</u>	
	<u>NAME TVD</u>	<u>TVD</u>	<u>MD</u>	<u>MD</u>	

***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

Drilling Contractor Scientific Drilling
Address 11220 Northwest 10th Street City Yukon State OK Zip 73099

Logging Company Rush Wellsite Services
Address 1500 E. Dave Ward Drive City Conway State AR Zip 72032

Cementing Company Rush Wellsite Services
Address 1500 E. Dave Ward Drive City Conway State AR Zip 72032

Stimulating Company N/A
Address _____ City _____ State _____ Zip _____

Please insert additional pages as applicable.

Completed by Megan Griffith Telephone 303-357-7223
Signature _____ Title Permitting Agent Date _____

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JUL 06 2020
WV Department of Environmental Protection

10,491' to Bottom Hole

3,536' to Top Hole

LATITUDE 39 - 15 - 00

LONGITUDE 80 - 32 - 30

10,021' to Top Hole

3,864' to Bottom Hole

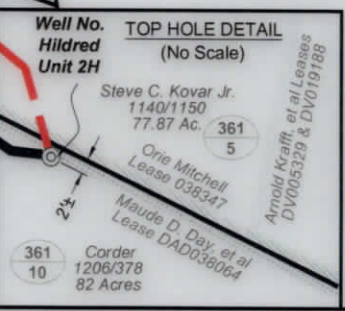
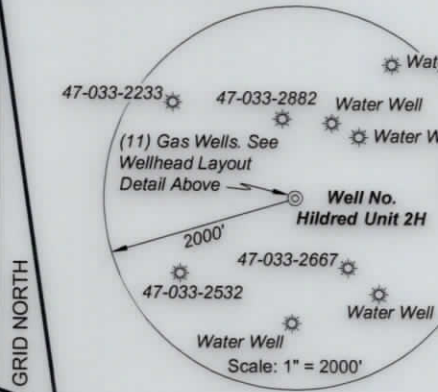
Antero Resources Well No. Hildred Unit 2H As-Drilled Plat Antero Resources Corporation

Table with 4 columns: Par, Owner, DB/Pg, Acres. Lists parcels owned by Butterfly Evolution Trust, Barbara Ann Templeton, etc.

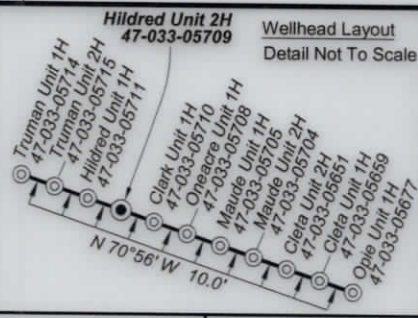
Table with 4 columns: Par, Owner, DB/Pg, Acres. Lists parcels owned by Lucille Devericks.



- Legend: Proposed gas well, Found corner, as noted, Creek or Drain, Existing Road, Surface boundary (approx.), Interior surface tracts (approx.)



Notes: It appears 5 water wells were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad.



Bottom Hole 7.5' Spot (+) Denotes Location of Well on United States Topographic Maps

Table with 4 columns: Par, Owner, DB/Pg, Acres. Lists parcels owned by Lucille Devericks.

Top Hole coordinates verified by survey grade GPS. As-drilled data and information was provided by Antero Resources Corporation. Allegheny Surveys, Inc. (ASI) is not certifying the data and information provided.

Plat orientation and corner and well references are based upon the grid north meridian. Well location references are based upon the magnetic meridian.

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 prescribed by the Department of Environmental Protection.

Bradley D. Miller, P.S. 2167

Table with 3 columns: Line, Bearing, Distance. Lists lines L1 through L4 with bearings and distances.



Notes: West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements. Well No. Hildred Unit 2H Top Hole coordinates are N: 264,853.94 Latitude: 39°13'20.54" E: 1,701,470.12 Longitude: 80°33'13.45" Bottom Hole coordinates are N: 271,011.69 Latitude: 39°14'20.58" E: 1,694,515.09 Longitude: 80°34'42.76" UTM Zone 17, NAD 1983 Top Hole Coordinates: N: 4,341,558.879m E: 538,537.187m Bottom Hole Coordinates: N: 4,343,399.498m E: 536,387.023m Point of Entry Coordinates: N: 4,341,748.753m E: 538,461.884m

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FILE NO: 232-30-G-12 DRAWING NO: As-Drilled Hildred 2H SCALE: 1" = 1200' MINIMUM DEGREE OF ACCURACY: Submeter PROVEN SOURCE OF ELEVATION: WVDOT, Bridgeport, WV

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

DATE: June 29 20 20 OPERATOR'S WELL NO. Hildred Unit 2H API WELL NO: 47 - 033 - 05709 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW LOCATION: ELEVATION: As-Built Grade - 1405' WATERSHED: Tenmile Creek QUADRANGLE: Big Isaac DISTRICT: Union SURFACE OWNER: Gerald & Louella Corder ROYALTY OWNER: Maude D. Day, et al; Orle L. & Lorene Mitchell; Denzil C. Freeman, et al; LEASE NO: DAD038064; 038347 PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System ADDRESS: 1615 Wynkoop Street Denver, CO 80202 ADDRESS: 5400 D Big Tyler Road Charleston, WV 25313

10,491' to Bottom Hole

3,536' to Top Hole

LATITUDE 39 - 15 - 00

LONGITUDE 80 - 35 - 30

3,684' to Bottom Hole

10,051' to Top Hole

LONGITUDE 80 - 35 - 30

3,684' to Bottom Hole

10,051' to Top Hole

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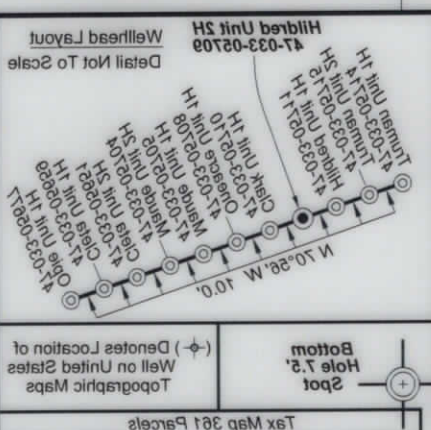
LONGITUDE 80 - 35 - 30

Antero Resources
Well No. Hildred Unit 2H
As-Drilled Plat

Antero Resources Corporation

Par	Owner	DBP#	Acres
1	Lucille Devericks	WB42159	23.0
2	Billy J. Devericks	267726	25.86
3	Clarence & Mary Mutschkunas	250468	0.41
4	Butterfly Evolution Trust	250468	18.05
5	Butterfly Evolution Trust	250468	0.76
6	Butterfly Evolution Trust	206275	12.67
7	Barbara Ann Templeton	262418	21.7
8	Jonel L. Carver	250468	10.66
9	Butterfly Evolution Trust	250468	27.8
10	Butterfly Evolution Trust	26340	13.89

Tax Map 8 Parcels



(+) Denotes Location of Well on United States Topographic Maps

Tax Map 381 Parcels

Par	Owner	DBP#	Acres
11	Lucille Devericks	WB16723	9.84
12	Lucille Devericks	WB16723	9.70

Top Hole coordinates verified by Antero Resources Corporation.

Top Hole coordinates verified by survey grade GPS. As-Drilled data and information is provided by Antero Resources Corporation.

AS2 is not responsible for certifying the data and information provided. AS2 is not responsible for any errors or inaccuracies with the data and information that has been provided.

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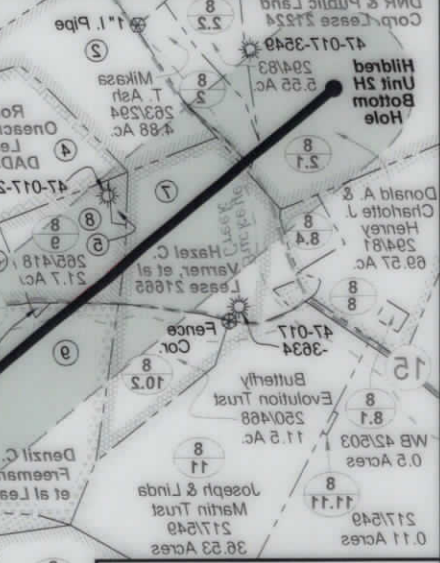
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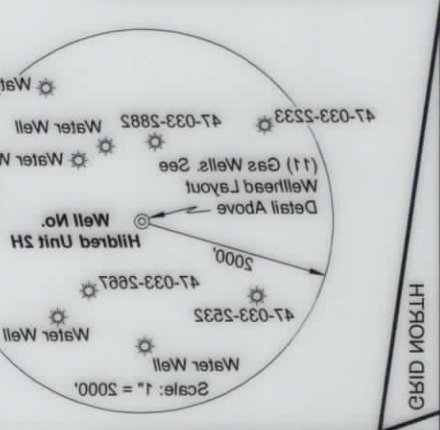
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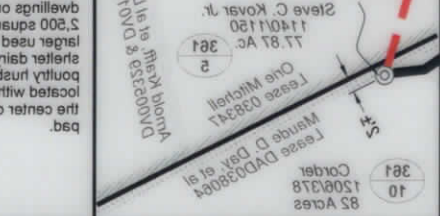


Legend

- Proposed gas well
- Found corner, as noted
- Creek or Drain
- Existing Road
- Subface boundary (approx.)
- Interior subface tracts (approx.)



Notes: It appears 2 water wells were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry industry are located within 625' of the center of the well pad.



FILE NO: 235-30-G-12
DRAWING NO: As-Drilled Hildred 2H
SCALE: 1" = 1200'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: WVDOT, Bridgeport, WV

Line	Bearing	Distance
L1	S 07°25' E	823.0'
L2	N 38°22' W	935.0'
L3	N 22°22' E	1297.5'
L4	N 37°39' E	1883.8'



West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements. Well No. Hildred Unit 2H Top Hole coordinates are: N: 264,823.94 Latitude: 39°13'20.54" E: 1,701,470.12 Longitude: 80°33'13.45" UTM Zone 17, NAD 1983

Top Hole Coordinates: N: 4,341,528.87m E: 238,537.187m
Bottom Hole Coordinates: N: 4,343,399.498m E: 238,461.884m

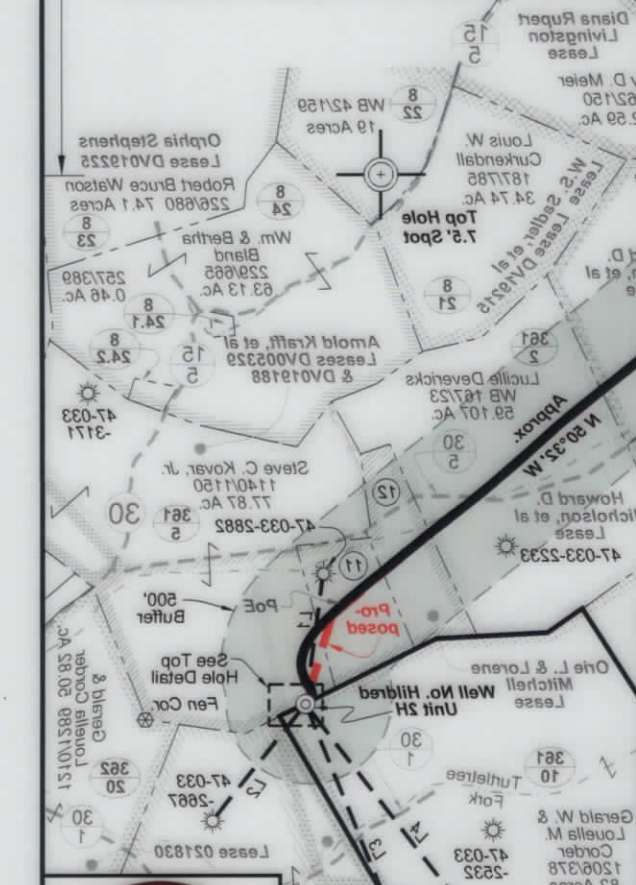
Point of Entry Coordinates: N: 4,341,748.753m E: 238,461.884m

Plat orientation and corner and well references are based upon the grid meridians.

Well location references are based upon the magnetic meridian.

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 prescribed by the Department of Environmental Protection.

Bradley D. Miller, P.S. 2187



DATE: June 29 2020
OPERATORS WELL NO. Hildred Unit 2H
API WELL NO: 47 - 033 - 05708
STATE COUNTY PERMIT

DESIGNATED AGENT: Dinna Stampler - CT Corporation System
ADDRESS: 5400 D Big Tyler Road
Chesteron, WV 26313

WELL OPERATOR: Antero Resources Corporation
ADDRESS: 1615 Wynkoop Street
Denver, CO 80202

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

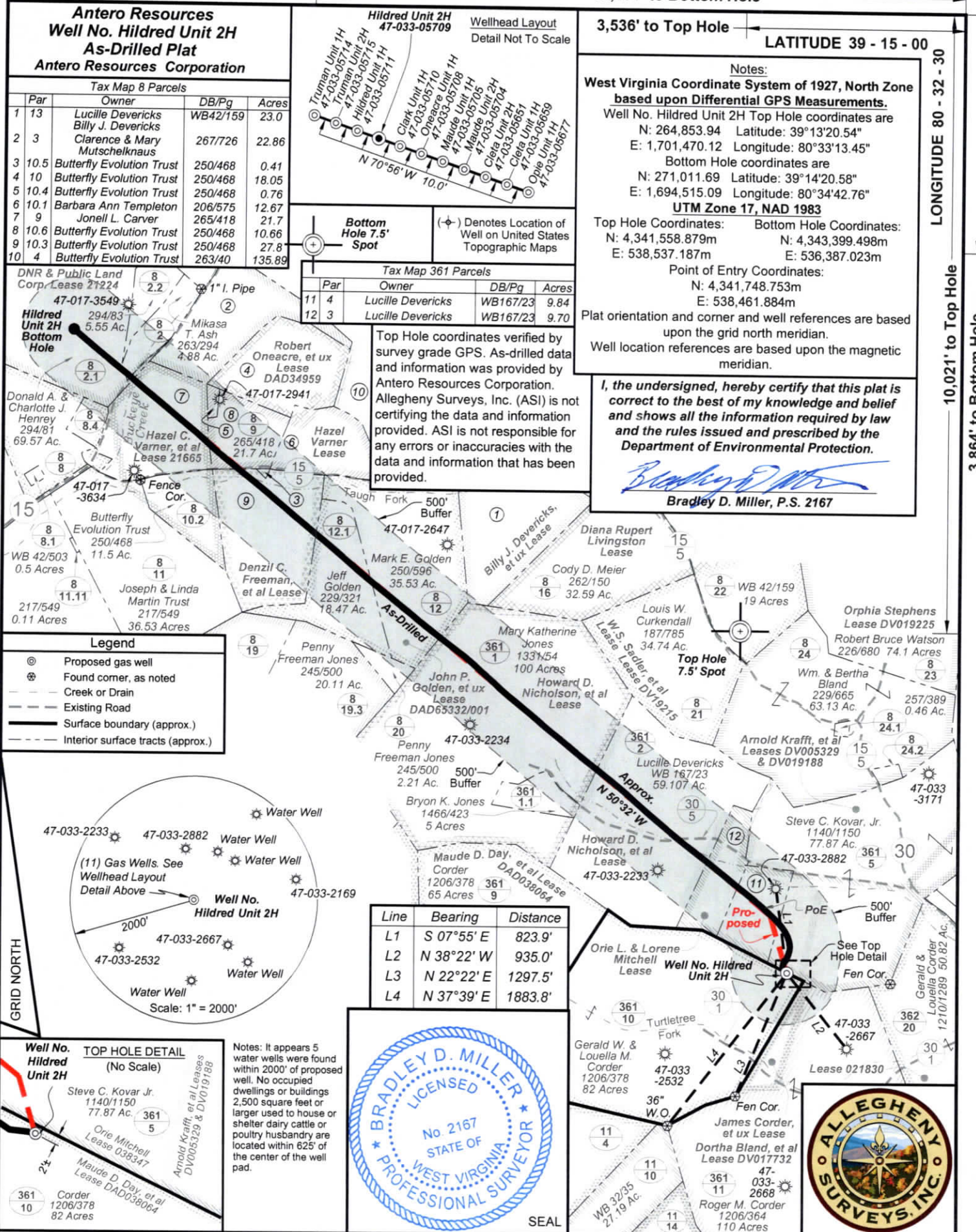
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION

PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled

TARGET FORMATION: Marcellus Shale
DEPTH: MD 16,460' LVD 7,460'

ROYALTY OWNER: Mande D. Day, et al; Ore L. & Lorene Mitchell, Denzil C. Freeman, et al;
SURFACE OWNER: Gerald & Louella Corber, Hazel Vamer DNR & Public Land Corp.; Hazel C. Vamer, et al; John P. Golden, et al;
DISTRICT: Union

LOCATION, ELEVATION: As-Built Grade - 1405'
WATERSHED: Tenmile Creek
QUADRANGLE: Big Isaac



Antero Resources
Well No. Hildred Unit 2H
As-Drilled Plat
Antero Resources Corporation

Tax Map 8 Parcels			
Par	Owner	DB/Pg	Acres
1	13	Lucille Devericks	WB42/159 23.0
2	3	Billy J. Devericks	
		Clarence & Mary Mutschelknaus	267/726 22.86
3	10.5	Butterfly Evolution Trust	250/468 0.41
4	10	Butterfly Evolution Trust	250/468 18.05
5	10.4	Butterfly Evolution Trust	250/468 0.76
6	10.1	Barbara Ann Templeton	206/575 12.67
7	9	Jonell L. Carver	265/418 21.7
8	10.6	Butterfly Evolution Trust	250/468 10.66
9	10.3	Butterfly Evolution Trust	250/468 27.8
10	4	Butterfly Evolution Trust	263/40 135.89

Tax Map 361 Parcels			
Par	Owner	DB/Pg	Acres
11	4	Lucille Devericks	WB167/23 9.84
12	3	Lucille Devericks	WB167/23 9.70

Hildred Unit 2H Bottom Hole
 294/83 5.55 Ac.
 Mikasa T. Ash 263/294 4.88 Ac.
 Robert Oneacre, et ux Lease DAD34959
 Donald A. & Charlotte J. Henrey 294/81 69.57 Ac.
 Hazel C. Varner, et al Lease 21665
 Butterfly Evolution Trust 250/468 11.5 Ac.
 Joseph & Linda Martin Trust 217/549 36.53 Acres
 Penny Freeman Jones 245/500 20.11 Ac.
 John P. Golden, et ux Lease DAD65332/001
 Penny Freeman Jones 245/500 2.21 Ac.
 Bryon K. Jones 1466/423 5 Acres
 Maude D. Day, et al Lease DAD038064
 Ori L. & Lorene Mitchell Lease
 Gerald W. & Louella M. Corder 1206/378 82 Acres
 James Corder, et ux Lease
 Dortha Bland, et al Lease DV017732
 Roger M. Corder 1206/364 110 Acres

Top Hole coordinates verified by survey grade GPS. As-drilled data and information was provided by Antero Resources Corporation. Allegheny Surveys, Inc. (ASI) is not certifying the data and information provided. ASI is not responsible for any errors or inaccuracies with the data and information that has been provided.

10,491' to Bottom Hole
 3,536' to Top Hole
 LATITUDE 39 - 15 - 00
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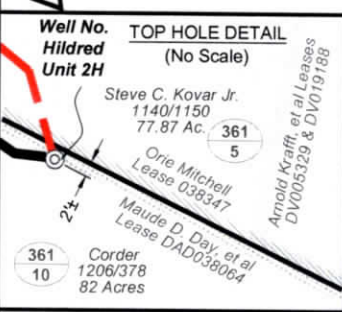
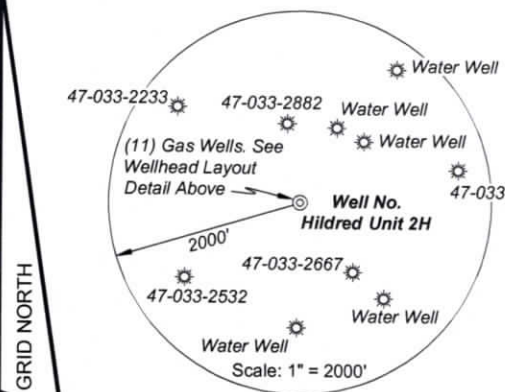
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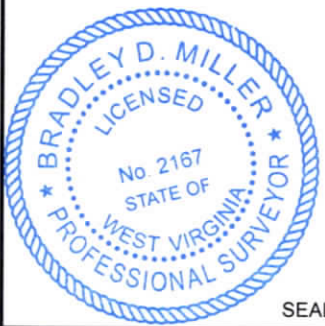
Bradley D. Miller
Bradley D. Miller, P.S. 2167

Legend

- ⊙ Proposed gas well
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STATE OF WEST VIRGINIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

DATE: June 29 20 20
 OPERATOR'S WELL NO. Hildred Unit 2H
 API WELL NO:
 47 - 033 - 05709
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built Grade - 1405' WATERSHED: Tenmile Creek QUADRANGLE: Big Isaac
 DISTRICT: Union COUNTY: Harrison

SURFACE OWNER: Gerald & Louella Corder HOWARD D. NICHOLSON, ET AL (2) 21224
 HAZEL VARNER, DNR & PUBLIC LAND CORP.; 20-361-2; 21665
 HAZEL C. VARNER, ET AL, JOHN P. GOLDEN, ET UX; DAD65332/011-12 ACREAGE: 82 31.5; 127
 MAUDE D. DAY, ET AL; ORIE L. & LORENE MITCHELL; DENZIL C. FREEMAN, ET AL; LEASE NO: 20-361-1.1; DAD65332/001 ACREAGE: 54; 23; 27.95
 DAD038064; 038347 ACREAGE: 147; 48.69; 59; 165

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale TVD 7,469'
 DEPTH: MD 16,460'

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System
 ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road
 Denver, CO 80202 Charleston, WV 25313