

APPROVED

WR-35
Rev. 8/23/13

Page ___ of ___

NAME: Del G...

DATE: 5/25/16

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

API 47-017-06495 County Doddridge District Grant
Quad West Union 7.5' Pad Name Melody Pad Field/Pool Name ----
Farm name Brown, Melody Well Number Weinhold Unit 1H
Operator (as registered with the OOG) Antero Resources Corporation
Address 1615 Wynkoop St. 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 4356597m Easting 520750m
Landing Point of Curve Northing 4356373.94m Easting 520591.11m
Bottom Hole Northing 4353886m Easting 521590m

Elevation (ft) 1135' 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 6/25/2014 Date drilling commenced 10/12/2014 Date drilling ceased 1/9/2015
Date completion activities began 11/10/2015 Date completion activities ceased 1/30/2016
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 46' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 865', 1509' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 1821' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

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Reviewed by:
AX 07/22/2016

API 47-017 - 06495 Farm name Brown, Melody Well number Weinhold Unit 1H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade w/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	30"	20"	40'	New	94# H-40	N/A	Y
Surface	17- 1/2"	13- 3/8"	522'	New	48# H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2591'	New	36# J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4" & 8-1/2"	5-1/2"	16363'	New	23# P-110	N/A	Y
Tubing		2-3/8"	7065'		4.7# N-80	N/A	
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	100 sx	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	668 sx	15.6	1.18	363	0'	8 Hrs.
Coal							
Intermediate 1	Class A	945 sx	15.6	1.18	812	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	996 sx (Lead) 1489 sx (Tail)	14.5 Lead 15.2 Tail	1.30 Lead 1.86 Tail	3270	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 16363' MD, 6952' TVD (BHL), 6968' (Deepest Point Drilled) Loggers TD (ft) 16363'
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6236'

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

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

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API 47- 017 - 06495 Farm name Brown, Melody Well number Weinhold Unit 1H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
*PLEASE SEE ATTACHED EXHIBIT 1					

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
*PLEASE SEE ATTACHED EXHIBIT 2								

Please insert additional pages as applicable.

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API 47- 017 - 06495 Farm name Brown, Melody Well number Weinhold Unit 1H

PRODUCING FORMATION(S)	DEPTHS		
Marcellus	6818' (TOP)	TVD	7257' (TOP) MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 3550 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 2742 mcfpd Oil 11 bpd NGL --- bpd Water 0 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		
*PLEASE SEE ATTACHED EXHIBIT 3					

Please insert additional pages as applicable.

Drilling Contractor Precision Drilling Company LP
Address 2640 Reach Rd. City Williamsport State PA Zip 17701

Logging Company Rush Well Site Servies
Address 600 Alpha Dr. City Canonsburg State PA Zip 15317

Cementing Company Nabors Completion & Production Services, Co.
Address 1650 Hackers Creek City Jane Lew State WV Zip 26378

Stimulating Company C & J Energy Services
Address 1650 Hackers Creek Rd. City Jane Lew State WV Zip 26378

Please insert additional pages as applicable.

Completed by Kara Quackenbush Telephone 303-357-7233
Signature *Kara Quackenbush* Title Permit Representative Date 4/12/2016

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

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API 47-017-06495 Farm Name Brown, Melody Well Number Weinhold Unit 1H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	10-Nov-15	16,106	16,275	60	Marcellus
2	13-Dec-15	15,906	16,075	60	Marcellus
3	14-Dec-15	15,706	15,875	60	Marcellus
4	14-Dec-15	15,505	15,674	60	Marcellus
5	14-Dec-15	15,305	15,474	60	Marcellus
6	14-Dec-15	15,105	15,274	60	Marcellus
7	14-Dec-15	14,905	15,074	60	Marcellus
8	15-Dec-15	14,705	14,873	60	Marcellus
9	15-Dec-15	14,504	14,673	60	Marcellus
10	15-Dec-15	14,304	14,473	60	Marcellus
11	15-Dec-15	14,104	14,273	60	Marcellus
12	15-Dec-15	13,904	14,073	60	Marcellus
13	16-Dec-15	13,704	13,872	60	Marcellus
14	16-Dec-15	13,503	13,672	60	Marcellus
15	16-Dec-15	13,303	13,472	60	Marcellus
16	16-Dec-15	13,103	13,272	60	Marcellus
17	16-Dec-15	12,903	13,071	60	Marcellus
18	17-Dec-15	12,702	12,871	60	Marcellus
19	17-Dec-15	12,502	12,671	60	Marcellus
20	17-Dec-15	12,302	12,471	60	Marcellus
21	17-Dec-15	12,102	12,271	60	Marcellus
22	18-Dec-15	11,902	12,070	60	Marcellus
23	18-Dec-15	11,701	11,870	60	Marcellus
24	18-Dec-15	11,501	11,670	60	Marcellus
25	18-Dec-15	11,301	11,470	60	Marcellus
26	18-Dec-15	11,101	11,269	60	Marcellus
27	19-Dec-15	10,900	11,069	60	Marcellus
28	19-Dec-15	10,700	10,869	60	Marcellus
29	19-Dec-15	10,500	10,669	60	Marcellus
30	19-Dec-15	10,300	10,469	60	Marcellus
31	21-Dec-15	10,100	10,268	60	Marcellus
32	21-Dec-15	9,899	10,068	60	Marcellus
33	21-Dec-15	9,699	9,868	60	Marcellus
34	21-Dec-15	9,499	9,668	60	Marcellus
35	21-Dec-15	9,299	9,468	60	Marcellus
36	22-Dec-15	9,098	9,267	60	Marcellus
37	7-Jan-16	8,898	9,067	60	Marcellus
38	7-Jan-16	8,698	8,867	60	Marcellus
39	7-Jan-16	8,498	8,667	60	Marcellus
40	7-Jan-16	8,298	8,466	60	Marcellus
41	8-Jan-16	8,097	8,266	60	Marcellus
42	8-Jan-16	7,897	8,066	60	Marcellus
43	8-Jan-16	7,697	7,866	60	Marcellus
44	8-Jan-16	7,497	7,666	60	Marcellus
45	8-Jan-16	7,296	7,465	60	Marcellus

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EXHIBIT 2

Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	13-Dec-15	64.1	7,129	6,372	5,436	175,800	6,631	N/A
2	13-Dec-15	66.1	7,024	6,239	4,869	248,200	6,596	N/A
3	14-Dec-15	67.7	6,819	5,934	5,367	249,400	6,548	N/A
4	14-Dec-15	68.1	6,857	5,845	5,670	251,700	6,600	N/A
5	14-Dec-15	71.2	6,920	5,955	5,597	247,500	6,528	N/A
6	14-Dec-15	72.0	6,714	5,280	5,214	249,100	6,437	N/A
7	14-Dec-15	66.7	6,913	6,379	4,937	182,600	6,567	N/A
8	15-Dec-15	68.7	7,088	5,579	5,464	247,900	6,545	N/A
9	15-Dec-15	69.1	6,979	5,716	5,500	245,000	6,431	N/A
10	15-Dec-15	70.6	6,981	5,444	4,988	254,800	6,517	N/A
11	15-Dec-15	67.9	6,942	5,894	4,966	207,000	5,981	N/A
12	15-Dec-15	67.1	7,094	5,896	5,326	236,600	6,337	N/A
13	16-Dec-15	69.0	6,700	5,610	5,142	249,800	6,479	N/A
14	16-Dec-15	69.0	6,797	5,679	4,865	255,900	6,539	N/A
15	16-Dec-15	69.2	6,912	5,632	5,286	249,500	6,420	N/A
16	16-Dec-15	68.8	6,715	5,709	5,282	249,100	6,422	N/A
17	16-Dec-15	67.4	7,478	5,588	4,609	212,300	6,156	N/A
18	17-Dec-15	68.2	6,835	5,390	5,384	230,100	6,210	N/A
19	17-Dec-15	72.5	6,833	5,472	5,223	249,800	6,301	N/A
20	17-Dec-15	72.1	6,941	5,727	5,334	253,000	6,374	N/A
21	17-Dec-15	69.2	6,680	5,591	5,173	249,500	6,353	N/A
22	18-Dec-15	69.6	6,748	5,803	5,139	240,700	6,194	N/A
23	18-Dec-15	68.5	6,777	5,741	5,407	180,100	6,827	N/A
24	18-Dec-15	76.8	6,822	5,371	5,095	250,600	6,319	N/A
25	18-Dec-15	66.8	6,771	5,616	4,841	249,200	6,308	N/A
26	18-Dec-15	69.0	6,600	6,658	5,053	250,100	6,225	N/A
27	19-Dec-15	69.4	6,739	5,635	5,333	248,400	6,296	N/A
28	19-Dec-15	74.2	6,842	5,288	5,084	250,100	6,387	N/A
29	19-Dec-15	71.9	6,642	5,823	5,193	250,000	6,250	N/A
30	19-Dec-15	70.9	6,449	5,501	5,227	250,100	6,241	N/A
31	21-Dec-15	70.8	6,610	5,944	5,034	239,400	6,060	N/A
32	21-Dec-15	72.0	6,702	5,330	5,463	251,000	6,192	N/A
33	21-Dec-15	70.5	6,597	5,744	5,054	251,400	6,184	N/A
34	21-Dec-15	71.2	6,673	5,633	4,554	209,100	6,422	N/A
35	21-Dec-15	73.0	6,604	5,881	5,098	247,600	6,087	N/A
36	22-Dec-15	73.2	6,556	5,685	5,036	244,200	6,100	N/A
37	7-Jan-16	69.3	6,536	5,723	5,307	250,800	6,150	N/A
38	7-Jan-16	69.1	6,871	6,393	4,447	212,900	6,633	N/A
39	7-Jan-16	76.7	6,569	5,544	5,193	252,100	6,099	N/A
40	7-Jan-16	77.6	6,761	5,758	5,317	202,400	6,324	N/A
41	8-Jan-16	74.6	6,684	5,657	4,651	254,700	6,239	N/A
42	8-Jan-16	69.9	6,248	5,771	5,080	253,700	6,151	N/A
43	8-Jan-16	71.9	6,318	5,480	5,149	245,700	6,077	N/A
44	8-Jan-16	72.5	6,458	5,669	5,087	249,600	6,035	N/A
45	8-Jan-16	74.3	6,391	5,267	4,415	258,200	6,220	N/A
AVG=		70.4	6,763	5,730	5,131	10,786,700	284,990	TOTAL

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EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Silt	46'	N/A	46'	N/A
Sandstone	0	81	0	81
siltstone (trace coal)	est. 81	281	est. 81	281
Silty Sandstone	est. 281	401	est. 281	401
Sandy siltstone	est. 401	581	est. 401	581
Limestone	est. 581	761	est. 581	761
Sandy siltstone	est. 761	781	est. 761	781
Limey Siltstone	est. 781	861	est. 781	861
Sandy shale	est. 861	961	est. 861	961
Sandstone	est. 961	1281	est. 961	1281
Sandy shale	est. 1281	1401	est. 1281	1401
Silty Sandstone (trace coal)	est. 1401	1561	est. 1401	1561
Sandstone	est. 1561	1761	est. 1561	1761
Coal	est. 1761	1821	est. 1761	1821
Limey Siltstone	est. 1821	2001	est. 1821	2001
Big Lime	est. 2001	2068	est. 2001	2069
Big Injun	2068	2189	2069	2191
Gantz Sand	2189	2612	2191	2614
Fifty Foot Sandstone	2612	2753	2614	2754
Gordon	2753	2825	2754	2827
Fifth Sandstone	2825	3167	2827	3169
Bayard	3167	3207	3169	3209
Warren	3207	3558	3209	3560
Speechley	3558	3965	3560	3966
Baltown	3965	4205	3966	4206
Bradford	4205	4679	4206	4681
Benson	4679	5147	4681	5148
Alexander	5147	5399	5148	5401
Elk	5399	5594	5401	5596
Rhinestreet	5594	6102	5596	6104
Sycamore	6102	6434	6104	6455
Middlesex	6434	6608	6455	6731
Burkett	6608	6740	6731	7026
Tully	6740	6769	7026	7097
Marcellus	6769	6818	7097	7257
Marcellus	6818	NA	7257	NA

*Please note Antero determines shallow formation tops based on mud logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

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Antero

Doddridge County WV
Melody Pad
Weinhold Unit 1H
Original Wellpath

Design: As Drilled

Gyroscopic Survey Report

08 January, 2015



Scientific Drilling

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Gyroscopic Survey Report



Company: Antero	Local Co-ordinate Reference: Well Weinhold Unit 1H
Project: Doddridge County WV	TVD Reference: Precision 525: GL 1135' + KB 19' @ 1154.0usft
Site: Melody Pad	MD Reference: Precision 525: GL 1135' + KB 19' @ 1154.0usft
Well: Weinhold Unit 1H	North Reference: Grid
Wellbore: Original Wellpath	Survey Calculation Method: Minimum Curvature
Design: As Drilled	Database: Oklahoma District

Project	Doddridge County WV, McClellan District		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Zone 17N (84 W to 78 W)		

Site	Melody Pad		
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Site Position:	Northing: 14,292,537.54 usft	Latitude: 39° 21' 30.416 N
From: Map	Easting: 1,708,455.40 usft	Longitude: 80° 45' 33.453 W
Position Uncertainty: 0.0 usft	Slot Radius: 13-3/16"	Grid Convergence: 0.15 °

Well	Weinhold Unit 1H, Marcellus		
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Well Position	+N/-S 0.0 usft	Northing: 14,292,554.38 usft	Latitude: 39° 21' 30.583 N
	+E/-W 0.0 usft	Easting: 1,708,446.12 usft	Longitude: 80° 45' 33.571 W
Position Uncertainty	2.0 usft	Wellhead Elevation: 1,154.0 usft	Ground Level: 1,135.0 usft

Wellbore	Original Wellpath		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	10/22/2014	-8.51	66.89	52,245

Design	As Drilled		
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Audit Notes:

Version: 1.0	Phase: ACTUAL	Tie On Depth: 0.0
---------------------	----------------------	--------------------------

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	158.01

Survey Program	Date 1/8/2015		
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From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
106.0	6,052.0	Survey #7 Def Gyro to Tangent (Original V	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
6,102.0	16,363.0	Survey #2 SDI MWD (Original Wellpath)	SDI MWD	Scientific Drilling Intl. MWD - Standard ver 1.0.1

Survey									
---------------	--	--	--	--	--	--	--	--	--

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	CL (usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.0
106.0	0.18	141.18	106.0	-0.1	0.1	0.2	106.0
131.0	0.15	138.81	131.0	-0.2	0.2	0.2	25.0
156.0	0.12	213.03	156.0	-0.2	0.2	0.3	25.0
181.0	0.04	296.51	181.0	-0.2	0.1	0.3	25.0
206.0	0.03	90.18	206.0	-0.2	0.1	0.3	25.0
231.0	0.04	34.75	231.0	-0.2	0.1	0.3	25.0
256.0	0.09	20.70	256.0	-0.2	0.2	0.3	25.0
281.0	0.08	218.61	281.0	-0.2	0.2	0.3	25.0
306.0	0.09	321.58	306.0	-0.2	0.1	0.2	25.0
331.0	0.13	315.08	331.0	-0.2	0.1	0.2	25.0

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Gyroscopic Survey Report



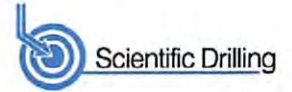
Company:	Antero	Local Co-ordinate Reference:	Well Weinhold Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 525: GL 1135' + KB 19' @ 1154.0usft
Site:	Melody Pad	MD Reference:	Precision 525: GL 1135' + KB 19' @ 1154.0usft
Well:	Weinhold Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	CL (usft)
356.0	0.18	349.00	356.0	-0.1	0.1	0.1	25.0
381.0	0.13	315.79	381.0	-0.1	0.0	0.1	25.0
406.0	0.02	339.22	406.0	0.0	0.0	0.0	25.0
431.0	0.06	276.68	431.0	0.0	0.0	0.0	25.0
456.0	0.18	275.96	456.0	0.0	0.0	0.0	25.0
481.0	0.25	262.34	481.0	0.0	-0.1	0.0	25.0
506.0	0.03	285.99	506.0	0.0	-0.2	0.0	25.0
531.0	0.17	301.44	531.0	0.0	-0.2	-0.1	25.0
556.0	0.30	306.71	556.0	0.1	-0.3	-0.2	25.0
581.0	0.68	345.06	581.0	0.2	-0.4	-0.4	25.0
606.0	1.09	343.09	606.0	0.6	-0.5	-0.8	25.0
631.0	1.51	341.72	631.0	1.1	-0.7	-1.3	25.0
656.0	1.90	343.52	656.0	1.9	-0.9	-2.1	25.0
681.0	2.51	348.90	681.0	2.8	-1.1	-3.0	25.0
706.0	3.29	349.34	705.9	4.0	-1.4	-4.3	25.0
731.0	3.93	350.55	730.9	5.6	-1.6	-5.8	25.0
756.0	4.34	351.06	755.8	7.4	-1.9	-7.6	25.0
781.0	4.50	352.46	780.7	9.3	-2.2	-9.4	25.0
806.0	4.87	350.12	805.7	11.3	-2.5	-11.4	25.0
831.0	5.01	349.92	830.6	13.4	-2.9	-13.5	25.0
856.0	5.03	349.25	855.5	15.6	-3.3	-15.7	25.0
881.0	5.04	349.58	880.4	17.7	-3.7	-17.8	25.0
906.0	5.14	348.64	905.3	19.9	-4.1	-20.0	25.0
931.0	5.16	349.33	930.2	22.1	-4.5	-22.2	25.0
956.0	5.06	348.75	955.1	24.3	-5.0	-24.4	25.0
981.0	4.96	347.06	980.0	26.4	-5.4	-26.5	25.0
1,006.0	4.45	342.05	1,004.9	28.4	-6.0	-28.6	25.0
1,031.0	4.32	342.74	1,029.8	30.2	-6.5	-30.5	25.0
1,056.0	4.28	341.17	1,054.7	32.0	-7.1	-32.3	25.0
1,081.0	3.71	336.99	1,079.7	33.6	-7.7	-34.1	25.0
1,106.0	3.47	336.47	1,104.6	35.1	-8.4	-35.6	25.0
1,131.0	3.27	335.79	1,129.6	36.4	-8.9	-37.1	25.0
1,156.0	3.16	336.65	1,154.6	37.7	-9.5	-38.5	25.0
1,181.0	2.76	336.80	1,179.5	38.9	-10.0	-39.8	25.0
1,206.0	2.43	333.49	1,204.5	39.9	-10.5	-40.9	25.0
1,231.0	2.34	331.64	1,229.5	40.8	-11.0	-42.0	25.0
1,256.0	2.17	331.86	1,254.5	41.7	-11.4	-42.9	25.0
1,281.0	1.94	329.22	1,279.4	42.5	-11.9	-43.8	25.0
1,306.0	1.78	329.69	1,304.4	43.2	-12.3	-44.6	25.0
1,331.0	1.61	326.48	1,329.4	43.8	-12.7	-45.4	25.0
1,356.0	1.47	322.46	1,354.4	44.3	-13.1	-46.0	25.0
1,381.0	1.23	326.99	1,379.4	44.8	-13.4	-46.6	25.0
1,406.0	1.26	322.77	1,404.4	45.3	-13.7	-47.1	25.0
1,431.0	0.99	312.94	1,429.4	45.6	-14.1	-47.6	25.0

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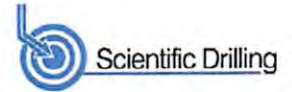
Company:	Antero	Local Co-ordinate Reference:	Well Weinhold Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 525: GL 1135' + KB 19' @ 1154.0usft
Site:	Melody Pad	MD Reference:	Precision 525: GL 1135' + KB 19' @ 1154.0usft
Well:	Weinhold Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	CL (usft)
1,456.0	0.89	318.77	1,454.4	45.9	-14.3	-48.0	25.0
1,481.0	0.81	313.18	1,479.4	46.2	-14.6	-48.3	25.0
1,506.0	0.70	312.96	1,504.4	46.4	-14.8	-48.6	25.0
1,531.0	0.57	316.56	1,529.4	46.6	-15.0	-48.9	25.0
1,556.0	0.67	313.16	1,554.4	46.8	-15.2	-49.1	25.0
1,581.0	0.63	312.31	1,579.4	47.0	-15.4	-49.4	25.0
1,606.0	0.52	314.25	1,604.4	47.2	-15.6	-49.6	25.0
1,631.0	0.34	315.46	1,629.4	47.3	-15.8	-49.8	25.0
1,656.0	0.37	313.66	1,654.4	47.4	-15.9	-49.9	25.0
1,681.0	0.34	313.84	1,679.4	47.5	-16.0	-50.0	25.0
1,706.0	0.31	315.45	1,704.4	47.6	-16.1	-50.2	25.0
1,731.0	0.27	320.18	1,729.4	47.7	-16.2	-50.3	25.0
1,756.0	0.17	329.84	1,754.4	47.8	-16.2	-50.4	25.0
1,781.0	0.09	345.80	1,779.4	47.8	-16.2	-50.4	25.0
1,806.0	0.07	29.65	1,804.4	47.9	-16.2	-50.5	25.0
1,831.0	0.18	60.02	1,829.4	47.9	-16.2	-50.5	25.0
1,856.0	0.20	80.11	1,854.4	47.9	-16.1	-50.5	25.0
1,881.0	0.20	79.01	1,879.4	47.9	-16.0	-50.5	25.0
1,906.0	0.12	65.41	1,904.4	48.0	-16.0	-50.5	25.0
1,931.0	0.12	42.15	1,929.4	48.0	-15.9	-50.5	25.0
1,956.0	0.16	58.26	1,954.4	48.0	-15.9	-50.5	25.0
1,981.0	0.13	50.22	1,979.4	48.1	-15.8	-50.5	25.0
2,006.0	0.25	69.26	2,004.4	48.1	-15.8	-50.5	25.0
2,031.0	0.17	42.97	2,029.4	48.2	-15.7	-50.5	25.0
2,056.0	0.16	49.67	2,054.4	48.2	-15.6	-50.5	25.0
2,081.0	0.14	59.80	2,079.4	48.2	-15.6	-50.6	25.0
2,106.0	0.14	43.00	2,104.4	48.3	-15.5	-50.6	25.0
2,131.0	0.12	42.92	2,129.4	48.3	-15.5	-50.6	25.0
2,156.0	0.19	38.17	2,154.4	48.4	-15.4	-50.6	25.0
2,181.0	0.06	49.58	2,179.4	48.4	-15.4	-50.7	25.0
2,206.0	0.10	32.42	2,204.4	48.4	-15.4	-50.7	25.0
2,231.0	0.10	48.66	2,229.4	48.5	-15.4	-50.7	25.0
2,256.0	0.10	338.59	2,254.4	48.5	-15.3	-50.7	25.0
2,281.0	0.14	313.65	2,279.4	48.6	-15.4	-50.8	25.0
2,306.0	0.10	335.88	2,304.4	48.6	-15.4	-50.8	25.0
2,331.0	0.09	302.25	2,329.4	48.6	-15.4	-50.9	25.0
2,356.0	0.15	312.41	2,354.4	48.7	-15.5	-50.9	25.0
2,381.0	0.10	319.41	2,379.4	48.7	-15.5	-51.0	25.0
2,406.0	0.10	286.56	2,404.4	48.7	-15.5	-51.0	25.0
2,431.0	0.15	343.51	2,429.4	48.8	-15.6	-51.0	25.0
2,456.0	0.15	328.43	2,454.4	48.8	-15.6	-51.1	25.0
2,481.0	0.07	264.06	2,479.4	48.8	-15.6	-51.1	25.0
2,506.0	0.16	261.69	2,504.4	48.8	-15.7	-51.2	25.0
2,531.0	0.15	310.62	2,529.4	48.8	-15.7	-51.2	25.0
2,556.0	0.27	250.22	2,554.4	48.9	-15.8	-51.2	25.0

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Gyroscopic Survey Report



Company:	Antero	Local Co-ordinate Reference:	Well Weinhold Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 525: GL 1135' + KB 19' @ 1154.0usft
Site:	Melody Pad	MD Reference:	Precision 525: GL 1135' + KB 19' @ 1154.0usft
Well:	Weinhold Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	CL (usft)
2,581.0	0.16	268.75	2,579.4	48.8	-15.9	-51.2	25.0
2,606.0	0.19	259.86	2,604.4	48.8	-16.0	-51.3	25.0
2,631.0	0.18	278.42	2,629.4	48.8	-16.1	-51.3	25.0
2,656.0	0.36	274.60	2,654.4	48.8	-16.2	-51.3	25.0
2,681.0	0.38	266.79	2,679.4	48.8	-16.4	-51.4	25.0
2,706.0	0.42	276.02	2,704.4	48.8	-16.5	-51.5	25.0
2,731.0	0.43	254.85	2,729.4	48.8	-16.7	-51.5	25.0
2,756.0	0.32	252.52	2,754.4	48.8	-16.9	-51.5	25.0
2,781.0	0.31	301.67	2,779.4	48.8	-17.0	-51.6	25.0
2,806.0	0.37	308.16	2,804.4	48.9	-17.1	-51.7	25.0
2,831.0	0.40	296.76	2,829.4	49.0	-17.3	-51.9	25.0
2,856.0	0.45	262.63	2,854.4	49.0	-17.4	-52.0	25.0
2,881.0	0.49	284.71	2,879.4	49.0	-17.6	-52.0	25.0
2,906.0	0.64	264.07	2,904.4	49.0	-17.9	-52.1	25.0
2,931.0	0.57	261.23	2,929.4	49.0	-18.1	-52.2	25.0
2,956.0	0.54	275.03	2,954.4	49.0	-18.4	-52.3	25.0
2,981.0	0.52	289.35	2,979.4	49.0	-18.6	-52.4	25.0
3,006.0	0.49	278.67	3,004.4	49.1	-18.8	-52.6	25.0
3,031.0	0.49	286.64	3,029.4	49.1	-19.0	-52.7	25.0
3,056.0	0.54	279.83	3,054.4	49.2	-19.2	-52.8	25.0
3,081.0	0.62	285.90	3,079.4	49.2	-19.5	-52.9	25.0
3,106.0	0.75	286.14	3,104.4	49.3	-19.8	-53.1	25.0
3,131.0	0.71	280.25	3,129.3	49.4	-20.1	-53.3	25.0
3,156.0	0.71	277.47	3,154.3	49.4	-20.4	-53.5	25.0
3,181.0	0.74	272.52	3,179.3	49.5	-20.7	-53.6	25.0
3,206.0	0.72	278.46	3,204.3	49.5	-21.0	-53.8	25.0
3,231.0	0.63	276.69	3,229.3	49.5	-21.3	-53.9	25.0
3,256.0	0.70	273.34	3,254.3	49.6	-21.6	-54.0	25.0
3,281.0	0.66	277.88	3,279.3	49.6	-21.9	-54.2	25.0
3,306.0	0.66	275.09	3,304.3	49.6	-22.2	-54.3	25.0
3,331.0	0.63	274.18	3,329.3	49.6	-22.5	-54.4	25.0
3,356.0	0.72	271.19	3,354.3	49.7	-22.8	-54.6	25.0
3,381.0	0.63	277.90	3,379.3	49.7	-23.0	-54.7	25.0
3,406.0	0.62	285.00	3,404.3	49.7	-23.3	-54.8	25.0
3,431.0	0.84	281.80	3,429.3	49.8	-23.6	-55.0	25.0
3,456.0	0.79	277.04	3,454.3	49.9	-24.0	-55.2	25.0
3,481.0	0.85	273.29	3,479.3	49.9	-24.3	-55.4	25.0
3,506.0	0.81	281.59	3,504.3	49.9	-24.7	-55.6	25.0
3,531.0	0.79	277.09	3,529.3	50.0	-25.0	-55.7	25.0
3,556.0	0.75	278.54	3,554.3	50.0	-25.4	-55.9	25.0
3,581.0	0.70	270.26	3,579.3	50.1	-25.7	-56.0	25.0
3,606.0	0.69	268.37	3,604.3	50.1	-26.0	-56.2	25.0
3,631.0	0.63	274.91	3,629.3	50.1	-26.3	-56.3	25.0
3,656.0	0.65	276.86	3,654.3	50.1	-26.5	-56.4	25.0

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Gyroscopic Survey Report



Company:	Antero	Local Co-ordinate Reference:	Well Weinhold Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 525: GL 1135' + KB 19' @ 1154.0usft
Site:	Melody Pad	MD Reference:	Precision 525: GL 1135' + KB 19' @ 1154.0usft
Well:	Weinhold Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

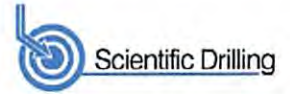
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	CL (usft)
3,681.0	0.62	272.51	3,679.3	50.1	-26.8	-56.5	25.0
3,706.0	0.71	273.42	3,704.3	50.1	-27.1	-56.6	25.0
3,731.0	0.63	273.90	3,729.3	50.2	-27.4	-56.8	25.0
3,756.0	0.61	272.32	3,754.3	50.2	-27.7	-56.9	25.0
3,781.0	0.61	275.40	3,779.3	50.2	-27.9	-57.0	25.0
3,806.0	0.68	283.55	3,804.3	50.2	-28.2	-57.1	25.0
3,831.0	0.78	280.42	3,829.3	50.3	-28.5	-57.3	25.0
3,856.0	0.79	278.81	3,854.3	50.4	-28.9	-57.5	25.0
3,881.0	0.75	269.98	3,879.3	50.4	-29.2	-57.7	25.0
3,906.0	0.67	269.23	3,904.3	50.4	-29.5	-57.8	25.0
3,931.0	0.69	279.59	3,929.3	50.4	-29.8	-57.9	25.0
3,956.0	0.56	280.38	3,954.3	50.5	-30.1	-58.0	25.0
3,981.0	0.67	285.96	3,979.3	50.5	-30.3	-58.2	25.0
4,006.0	0.77	276.65	4,004.3	50.6	-30.6	-58.4	25.0
4,031.0	0.69	276.76	4,029.3	50.6	-31.0	-58.5	25.0
4,056.0	0.71	272.62	4,054.3	50.6	-31.3	-58.7	25.0
4,081.0	0.64	275.37	4,079.3	50.7	-31.6	-58.8	25.0
4,106.0	0.67	263.85	4,104.3	50.7	-31.8	-58.9	25.0
4,131.0	0.59	268.03	4,129.3	50.6	-32.1	-59.0	25.0
4,156.0	0.65	283.52	4,154.3	50.7	-32.4	-59.1	25.0
4,181.0	0.72	278.61	4,179.3	50.7	-32.7	-59.3	25.0
4,206.0	0.57	271.18	4,204.3	50.7	-33.0	-59.4	25.0
4,231.0	0.65	284.34	4,229.3	50.8	-33.2	-59.5	25.0
4,256.0	0.61	282.52	4,254.3	50.9	-33.5	-59.7	25.0
4,281.0	0.63	299.55	4,279.3	50.9	-33.7	-59.9	25.0
4,306.0	0.64	284.78	4,304.3	51.1	-34.0	-60.1	25.0
4,331.0	0.68	284.16	4,329.3	51.1	-34.3	-60.2	25.0
4,356.0	0.60	288.53	4,354.3	51.2	-34.5	-60.4	25.0
4,381.0	0.61	296.68	4,379.3	51.3	-34.8	-60.6	25.0
4,406.0	0.72	297.94	4,404.3	51.4	-35.0	-60.8	25.0
4,431.0	0.78	300.83	4,429.3	51.6	-35.3	-61.1	25.0
4,456.0	0.75	302.44	4,454.3	51.8	-35.6	-61.3	25.0
4,481.0	0.81	298.09	4,479.3	51.9	-35.9	-61.6	25.0
4,506.0	0.82	291.85	4,504.2	52.1	-36.2	-61.9	25.0
4,531.0	0.81	281.39	4,529.2	52.2	-36.6	-62.1	25.0
4,556.0	0.81	283.19	4,554.2	52.3	-36.9	-62.3	25.0
4,581.0	0.65	292.29	4,579.2	52.4	-37.2	-62.5	25.0
4,606.0	0.60	282.08	4,604.2	52.4	-37.5	-62.7	25.0
4,631.0	0.56	279.61	4,629.2	52.5	-37.7	-62.8	25.0
4,656.0	0.47	284.20	4,654.2	52.5	-37.9	-62.9	25.0
4,681.0	0.64	284.73	4,679.2	52.6	-38.2	-63.1	25.0
4,706.0	0.67	280.46	4,704.2	52.7	-38.4	-63.2	25.0
4,731.0	0.69	268.88	4,729.2	52.7	-38.7	-63.3	25.0
4,756.0	0.49	291.09	4,754.2	52.7	-39.0	-63.5	25.0

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Gyroscopic Survey Report



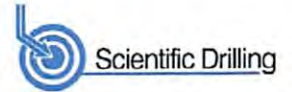
Company:	Antero	Local Co-ordinate Reference:	Well Weinhold Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 525: GL 1135' + KB 19' @ 1154.0usft
Site:	Melody Pad	MD Reference:	Precision 525: GL 1135' + KB 19' @ 1154.0usft
Well:	Weinhold Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	CL (usft)
4,781.0	0.58	284.68	4,779.2	52.8	-39.2	-63.6	25.0
4,806.0	0.67	271.95	4,804.2	52.8	-39.5	-63.8	25.0
4,831.0	0.49	274.80	4,829.2	52.8	-39.7	-63.9	25.0
4,856.0	0.51	276.73	4,854.2	52.9	-40.0	-64.0	25.0
4,881.0	0.62	276.13	4,879.2	52.9	-40.2	-64.1	25.0
4,906.0	0.67	260.17	4,904.2	52.9	-40.5	-64.2	25.0
4,931.0	0.59	260.77	4,929.2	52.8	-40.7	-64.2	25.0
4,956.0	0.47	255.39	4,954.2	52.8	-41.0	-64.3	25.0
4,981.0	0.51	252.94	4,979.2	52.7	-41.2	-64.3	25.0
5,006.0	0.54	242.20	5,004.2	52.6	-41.4	-64.3	25.0
5,031.0	0.34	240.10	5,029.2	52.5	-41.6	-64.3	25.0
5,056.0	0.33	262.79	5,054.2	52.5	-41.7	-64.3	25.0
5,081.0	0.49	249.99	5,079.2	52.5	-41.9	-64.3	25.0
5,106.0	0.55	239.20	5,104.2	52.4	-42.1	-64.3	25.0
5,131.0	0.52	236.81	5,129.2	52.2	-42.3	-64.3	25.0
5,156.0	0.50	243.59	5,154.2	52.1	-42.5	-64.2	25.0
5,181.0	0.46	233.98	5,179.2	52.0	-42.6	-64.2	25.0
5,206.0	0.45	232.17	5,204.2	51.9	-42.8	-64.1	25.0
5,231.0	0.44	236.08	5,229.2	51.8	-43.0	-64.1	25.0
5,256.0	0.41	234.03	5,254.2	51.7	-43.1	-64.1	25.0
5,281.0	0.43	233.46	5,279.2	51.6	-43.3	-64.0	25.0
5,306.0	0.43	230.16	5,304.2	51.5	-43.4	-64.0	25.0
5,331.0	0.38	244.09	5,329.2	51.4	-43.5	-63.9	25.0
5,356.0	0.27	273.86	5,354.2	51.3	-43.7	-63.9	25.0
5,381.0	0.40	264.48	5,379.2	51.3	-43.8	-64.0	25.0
5,406.0	0.45	253.11	5,404.2	51.3	-44.0	-64.0	25.0
5,431.0	0.48	254.88	5,429.2	51.2	-44.2	-64.1	25.0
5,456.0	0.42	245.59	5,454.2	51.2	-44.4	-64.1	25.0
5,481.0	0.41	235.19	5,479.2	51.1	-44.5	-64.0	25.0
5,506.0	0.32	233.62	5,504.2	51.0	-44.7	-64.0	25.0
5,531.0	0.27	256.60	5,529.2	50.9	-44.8	-64.0	25.0
5,556.0	0.29	251.12	5,554.2	50.9	-44.9	-64.0	25.0
5,581.0	0.44	259.02	5,579.2	50.9	-45.1	-64.0	25.0
5,606.0	0.38	271.77	5,604.2	50.8	-45.2	-64.1	25.0
5,631.0	0.45	256.34	5,629.2	50.8	-45.4	-64.1	25.0
5,656.0	0.40	258.60	5,654.2	50.8	-45.6	-64.2	25.0
5,681.0	0.60	259.15	5,679.2	50.7	-45.8	-64.2	25.0
5,706.0	0.55	241.83	5,704.2	50.7	-46.0	-64.2	25.0
5,731.0	0.54	240.30	5,729.2	50.5	-46.2	-64.2	25.0
5,756.0	0.50	231.23	5,754.2	50.4	-46.4	-64.1	25.0
5,781.0	0.43	239.95	5,779.2	50.3	-46.6	-64.1	25.0
5,806.0	0.37	231.33	5,804.2	50.2	-46.7	-64.1	25.0
5,831.0	0.43	253.40	5,829.2	50.1	-46.9	-64.0	25.0
5,856.0	0.42	240.45	5,854.2	50.1	-47.1	-64.0	25.0

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Gyroscopic Survey Report



Company:	Antero	Local Co-ordinate Reference:	Well Weinhold Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 525: GL 1135' + KB 19' @ 1154.0usft
Site:	Melody Pad	MD Reference:	Precision 525: GL 1135' + KB 19' @ 1154.0usft
Well:	Weinhold Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

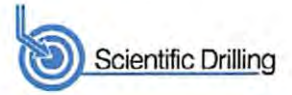
Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	CL (usft)
5,881.0	0.36	218.94	5,879.2	49.9	-47.2	-64.0	25.0
5,906.0	0.46	235.52	5,904.2	49.8	-47.3	-63.9	25.0
5,931.0	0.40	212.69	5,929.2	49.7	-47.5	-63.9	25.0
5,956.0	0.52	239.78	5,954.2	49.6	-47.6	-63.8	25.0
5,981.0	0.31	226.72	5,979.2	49.5	-47.8	-63.7	25.0
6,006.0	0.44	248.97	6,004.2	49.4	-47.9	-63.7	25.0
6,031.0	0.47	244.93	6,029.2	49.3	-48.1	-63.7	25.0
6,052.0	0.43	214.86	6,050.2	49.2	-48.2	-63.7	21.0
6,102.0	0.44	229.96	6,100.2	48.9	-48.5	-63.5	50.0
6,146.0	0.34	260.70	6,144.2	48.8	-48.7	-63.5	44.0
6,191.0	1.81	255.94	6,189.2	48.6	-49.5	-63.6	45.0
6,236.0	7.67	254.19	6,234.0	47.6	-53.1	-64.0	45.0
6,281.0	13.08	256.59	6,278.3	45.6	-61.0	-65.1	45.0
6,326.0	18.27	255.82	6,321.6	42.7	-72.8	-66.8	45.0
6,371.0	23.31	251.29	6,363.6	38.1	-88.0	-68.3	45.0
6,416.0	28.41	249.48	6,404.1	31.5	-106.5	-69.1	45.0
6,460.0	33.54	249.45	6,441.8	23.6	-127.7	-69.7	44.0
6,474.0	35.32	249.85	6,453.4	20.8	-135.1	-69.9	14.0
Sycamore							
6,505.0	39.27	250.63	6,478.0	14.5	-152.8	-70.6	31.0
6,550.0	44.64	250.52	6,511.5	4.5	-181.2	-72.0	45.0
6,595.0	49.94	250.33	6,542.0	-6.6	-212.3	-73.4	45.0
6,640.0	53.12	249.86	6,570.0	-18.6	-245.4	-74.6	45.0
6,685.0	57.81	249.36	6,595.5	-31.5	-280.2	-75.7	45.0
6,730.0	62.26	245.73	6,618.0	-46.4	-316.2	-75.3	45.0
6,750.0	62.34	242.37	6,627.3	-54.2	-332.1	-74.1	20.0
Middlesex							
6,774.0	62.55	238.35	6,638.4	-64.7	-350.6	-71.3	24.0
6,819.0	62.27	230.90	6,659.2	-87.8	-383.1	-62.1	45.0
6,864.0	62.88	223.36	6,680.0	-114.9	-412.3	-47.8	45.0
6,909.0	63.45	218.36	6,700.3	-145.3	-438.6	-29.5	45.0
6,954.0	63.94	213.52	6,720.3	-177.9	-462.2	-8.1	45.0
6,999.0	64.38	209.83	6,739.9	-212.4	-483.5	15.9	45.0
7,044.0	65.36	206.90	6,759.0	-248.2	-502.8	41.9	45.0
7,088.0	66.70	202.04	6,776.9	-284.8	-519.5	69.6	44.0
7,116.0	67.96	199.31	6,787.7	-309.0	-528.6	88.6	28.0
Tully							
7,133.0	68.75	197.67	6,793.9	-324.0	-533.6	100.6	17.0
7,178.0	71.01	193.95	6,809.4	-364.6	-545.1	134.0	45.0
7,223.0	73.37	189.76	6,823.2	-406.5	-553.9	169.6	45.0
7,268.0	75.81	186.50	6,835.1	-449.5	-560.0	207.1	45.0
7,276.0	76.08	185.86	6,837.1	-457.2	-560.9	213.9	8.0
Marcellus							
7,313.0	77.35	182.94	6,845.6	-493.1	-563.6	246.2	37.0
7,358.0	79.08	178.11	6,854.8	-537.1	-564.0	286.8	45.0

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Well:	Weinhold Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

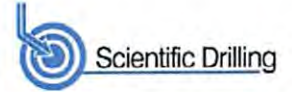
Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	CL (usft)
7,402.0	80.94	173.25	6,862.4	-580.3	-560.7	328.1	44.0
7,447.0	81.98	169.26	6,869.1	-624.3	-554.0	371.4	45.0
7,492.0	83.51	164.30	6,874.8	-667.7	-543.8	415.5	45.0
7,537.0	87.85	158.90	6,878.2	-710.3	-529.6	460.3	45.0
7,561.0	90.31	157.63	6,878.6	-732.6	-520.7	484.3	24.0
7,606.0	90.31	156.31	6,878.3	-774.0	-503.1	529.3	45.0
7,696.0	88.90	159.04	6,878.9	-857.2	-468.9	619.3	90.0
7,786.0	88.90	157.54	6,880.7	-940.8	-435.6	709.2	90.0
7,875.0	89.60	159.65	6,881.8	-1,023.7	-403.2	798.2	89.0
7,965.0	89.69	160.79	6,882.4	-1,108.4	-372.7	888.2	90.0
8,055.0	89.87	157.98	6,882.7	-1,192.6	-341.0	978.1	90.0
8,144.0	89.52	157.98	6,883.2	-1,275.1	-307.7	1,067.1	89.0
8,234.0	89.25	157.72	6,884.2	-1,358.4	-273.7	1,157.1	90.0
8,324.0	88.99	158.95	6,885.6	-1,442.1	-240.5	1,247.1	90.0
8,414.0	88.99	156.22	6,887.2	-1,525.3	-206.2	1,337.1	90.0
8,503.0	90.13	154.20	6,887.8	-1,606.0	-168.9	1,426.0	89.0
8,593.0	90.04	158.60	6,887.7	-1,688.5	-132.9	1,515.9	90.0
8,683.0	89.78	160.62	6,887.8	-1,772.9	-101.5	1,605.9	90.0
8,772.0	88.90	159.21	6,888.9	-1,856.4	-71.0	1,694.8	89.0
8,862.0	88.99	154.90	6,890.5	-1,939.3	-35.9	1,784.8	90.0
8,952.0	89.78	158.16	6,891.5	-2,021.8	0.0	1,874.7	90.0
9,042.0	90.31	159.12	6,891.4	-2,105.6	32.7	1,964.7	90.0
9,131.0	90.04	155.61	6,891.1	-2,187.8	67.0	2,053.7	89.0
9,221.0	90.13	158.77	6,891.0	-2,270.7	101.9	2,143.7	90.0
9,311.0	89.87	156.84	6,891.0	-2,354.0	135.9	2,233.7	90.0
9,401.0	90.04	159.74	6,891.1	-2,437.7	169.2	2,323.6	90.0
9,490.0	89.60	162.11	6,891.4	-2,521.8	198.2	2,412.5	89.0
9,580.0	89.96	160.62	6,891.7	-2,607.0	227.0	2,502.4	90.0
9,670.0	89.78	158.16	6,891.9	-2,691.3	258.7	2,592.3	90.0
9,760.0	89.69	156.31	6,892.3	-2,774.3	293.5	2,682.3	90.0
9,849.0	90.22	156.75	6,892.4	-2,855.9	328.9	2,771.3	89.0
9,939.0	90.13	155.70	6,892.1	-2,938.3	365.2	2,861.2	90.0
10,029.0	90.04	155.96	6,892.0	-3,020.4	402.1	2,951.2	90.0
10,118.0	90.13	157.19	6,891.9	-3,102.0	437.5	3,040.2	89.0
10,212.0	89.78	157.37	6,891.9	-3,188.7	473.8	3,134.1	94.0
10,306.0	89.60	156.84	6,892.4	-3,275.3	510.3	3,228.1	94.0
10,400.0	89.52	157.28	6,893.2	-3,361.9	547.0	3,322.1	94.0
10,494.0	88.72	156.49	6,894.6	-3,448.3	583.9	3,416.1	94.0
10,587.0	88.99	157.45	6,896.5	-3,533.9	620.2	3,509.0	93.0
10,681.0	89.78	156.49	6,897.5	-3,620.4	657.0	3,603.0	94.0
10,775.0	88.81	157.98	6,898.6	-3,707.1	693.4	3,697.0	94.0
10,869.0	88.90	157.54	6,900.5	-3,794.1	729.0	3,791.0	94.0
10,963.0	89.08	157.89	6,902.2	-3,881.0	764.6	3,885.0	94.0
11,056.0	89.08	158.77	6,903.7	-3,967.4	798.9	3,978.0	93.0

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Gyroscopic Survey Report



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Site:	Melody Pad	MD Reference:	Precision 525: GL 1135' + KB 19' @ 1154.0usft
Well:	Weinhold Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	CL (usft)
11,150.0	88.90	158.33	6,905.3	-4,054.9	833.3	4,071.9	94.0
11,243.0	88.72	156.66	6,907.3	-4,140.8	868.9	4,164.9	93.0
11,333.0	89.34	160.09	6,908.8	-4,224.4	902.0	4,254.9	90.0
11,423.0	89.34	158.68	6,909.8	-4,308.7	933.7	4,344.8	90.0
11,512.0	89.34	156.57	6,910.8	-4,391.0	967.6	4,433.8	89.0
11,602.0	89.34	157.45	6,911.9	-4,473.8	1,002.8	4,523.8	90.0
11,692.0	88.81	158.24	6,913.3	-4,557.2	1,036.7	4,613.8	90.0
11,781.0	88.46	154.90	6,915.4	-4,638.8	1,072.1	4,702.7	89.0
11,871.0	88.81	156.13	6,917.6	-4,720.7	1,109.4	4,792.6	90.0
11,960.0	89.08	159.04	6,919.2	-4,802.9	1,143.3	4,881.6	89.0
12,050.0	89.25	157.19	6,920.5	-4,886.4	1,176.8	4,971.6	90.0
12,140.0	88.37	154.99	6,922.4	-4,968.7	1,213.3	5,061.5	90.0
12,230.0	89.25	157.80	6,924.3	-5,051.1	1,249.3	5,151.4	90.0
12,319.0	89.60	160.62	6,925.2	-5,134.3	1,280.9	5,240.4	89.0
12,409.0	88.90	159.74	6,926.4	-5,219.0	1,311.4	5,330.3	90.0
12,499.0	89.08	157.98	6,927.9	-5,302.9	1,343.9	5,420.3	90.0
12,589.0	88.64	159.56	6,929.7	-5,386.8	1,376.4	5,510.3	90.0
12,678.0	88.81	157.89	6,931.7	-5,469.7	1,408.7	5,599.2	89.0
12,768.0	88.11	160.00	6,934.1	-5,553.6	1,441.1	5,689.2	90.0
12,858.0	88.02	160.97	6,937.2	-5,638.4	1,471.1	5,779.1	90.0
12,947.0	88.99	158.51	6,939.5	-5,721.9	1,501.9	5,868.0	89.0
13,037.0	89.34	156.75	6,940.8	-5,805.1	1,536.2	5,958.0	90.0
13,127.0	88.99	157.10	6,942.1	-5,887.9	1,571.4	6,047.9	90.0
13,217.0	89.34	157.80	6,943.4	-5,971.0	1,605.9	6,137.9	90.0
13,306.0	89.34	156.31	6,944.5	-6,052.9	1,640.6	6,226.9	89.0
13,396.0	89.52	162.55	6,945.3	-6,137.2	1,672.2	6,316.8	90.0
13,486.0	89.60	162.38	6,946.0	-6,223.0	1,699.3	6,406.6	90.0
13,575.0	88.72	159.56	6,947.3	-6,307.1	1,728.4	6,495.4	89.0
13,665.0	89.08	158.86	6,949.1	-6,391.2	1,760.3	6,585.4	90.0
13,755.0	89.16	156.66	6,950.5	-6,474.5	1,794.4	6,675.4	90.0
13,845.0	88.90	156.84	6,952.0	-6,557.2	1,829.9	6,765.3	90.0
13,934.0	89.34	157.28	6,953.3	-6,639.1	1,864.6	6,854.3	89.0
14,024.0	89.69	155.78	6,954.1	-6,721.7	1,900.4	6,944.3	90.0
14,114.0	89.34	157.63	6,954.9	-6,804.3	1,936.0	7,034.2	90.0
14,204.0	88.99	157.80	6,956.2	-6,887.6	1,970.1	7,124.2	90.0
14,293.0	89.08	153.94	6,957.7	-6,968.8	2,006.5	7,213.1	89.0
14,383.0	89.08	156.93	6,959.1	-7,050.6	2,043.9	7,303.0	90.0
14,473.0	88.64	159.21	6,960.9	-7,134.1	2,077.5	7,393.0	90.0
14,562.0	88.29	160.00	6,963.3	-7,217.5	2,108.5	7,481.9	89.0
14,652.0	88.99	160.00	6,965.4	-7,302.0	2,139.3	7,571.8	90.0
14,742.0	88.64	158.42	6,967.3	-7,386.2	2,171.2	7,661.8	90.0
14,831.0	90.13	157.54	6,968.3	-7,468.7	2,204.6	7,750.8	89.0
14,921.0	90.31	158.07	6,967.9	-7,552.0	2,238.6	7,840.8	90.0
15,011.0	90.13	158.24	6,967.6	-7,635.5	2,272.1	7,930.8	90.0

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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	CL (usft)
15,101.0	89.78	158.60	6,967.6	-7,719.2	2,305.2	8,020.8	90.0
15,190.0	90.13	160.88	6,967.7	-7,802.7	2,336.0	8,109.7	89.0
15,280.0	90.84	161.23	6,966.9	-7,887.8	2,365.2	8,199.6	90.0
15,370.0	90.57	159.30	6,965.8	-7,972.5	2,395.6	8,289.5	90.0
15,460.0	91.36	157.72	6,964.3	-8,056.3	2,428.6	8,379.5	90.0
15,549.0	91.10	153.94	6,962.4	-8,137.4	2,465.0	8,468.4	89.0
15,639.0	91.80	156.93	6,960.1	-8,219.2	2,502.4	8,558.3	90.0
15,729.0	90.57	157.89	6,958.3	-8,302.3	2,536.9	8,648.3	90.0
15,819.0	90.04	156.40	6,957.8	-8,385.2	2,571.9	8,738.2	90.0
15,908.0	91.10	159.74	6,956.9	-8,467.8	2,605.1	8,827.2	89.0
15,998.0	91.80	158.33	6,954.6	-8,551.8	2,637.3	8,917.2	90.0
16,088.0	90.57	160.27	6,952.8	-8,636.0	2,669.1	9,007.1	90.0
16,178.0	90.48	162.46	6,951.9	-8,721.2	2,697.9	9,097.0	90.0
16,268.0	90.13	161.58	6,951.5	-8,806.8	2,725.7	9,186.7	90.0
16,305.0	89.87	161.14	6,951.5	-8,841.9	2,737.5	9,223.7	37.0
16,363.0	89.87	161.14	6,951.6	-8,896.8	2,756.2	9,281.6	58.0

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,474.0	6,453.4	20.8	-135.1	Sycamore
6,750.0	6,627.3	-54.2	-332.1	Middlesex
7,116.0	6,787.7	-309.0	-528.6	Tully
7,276.0	6,837.1	-457.2	-560.9	Marcellus

Checked By: _____ Approved By: _____ Date: _____

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Antero
Weinhold Unit 1H
Doddridge County WV
Northing: 14292554.38
Easting: 1708446.12
As Drilled

WELL DETAILS: Weinhold Unit 1H

+N/-S	+E/-W	Northing	Ground Level	1135.0	Longitude	Slot
0.0	0.0	14292554.38	1708446.12	39° 21' 30.583 N	80° 45' 33.571 W	

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Weinhold Unit 1H, Grid North
 Vertical (V/S) Reference: Precision 525; GL 1135 + KB 19 @ 1154 Oust
 Section (V/S) Reference: Slot - (3 DN, 0 DE)
 Measured Depth Reference: Precision 525; GL 1135 + KB 19 @ 1154 Oust
 Calculation Method: Minimum Curvature

PROJECT DETAILS: Doddridge County WV

Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: Zone 17N (84 W to 78 W)
 System Datum: Mean Sea Level

- LEGEND**
- Weinhold Unit 2H, Original Wellpath, As Drilled V0
 - △ Deano Unit 1H, Original Wellpath, As Drilled V0
 - Weinhold Unit 1H, Original Wellpath, Plan 6 V0
 - ✕ As Drilled

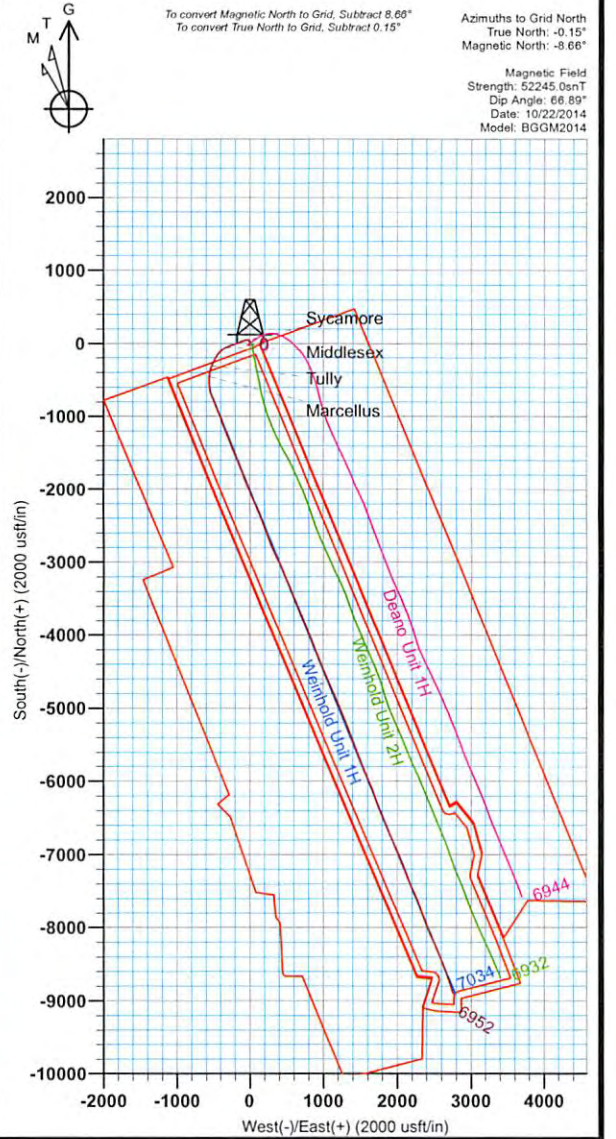
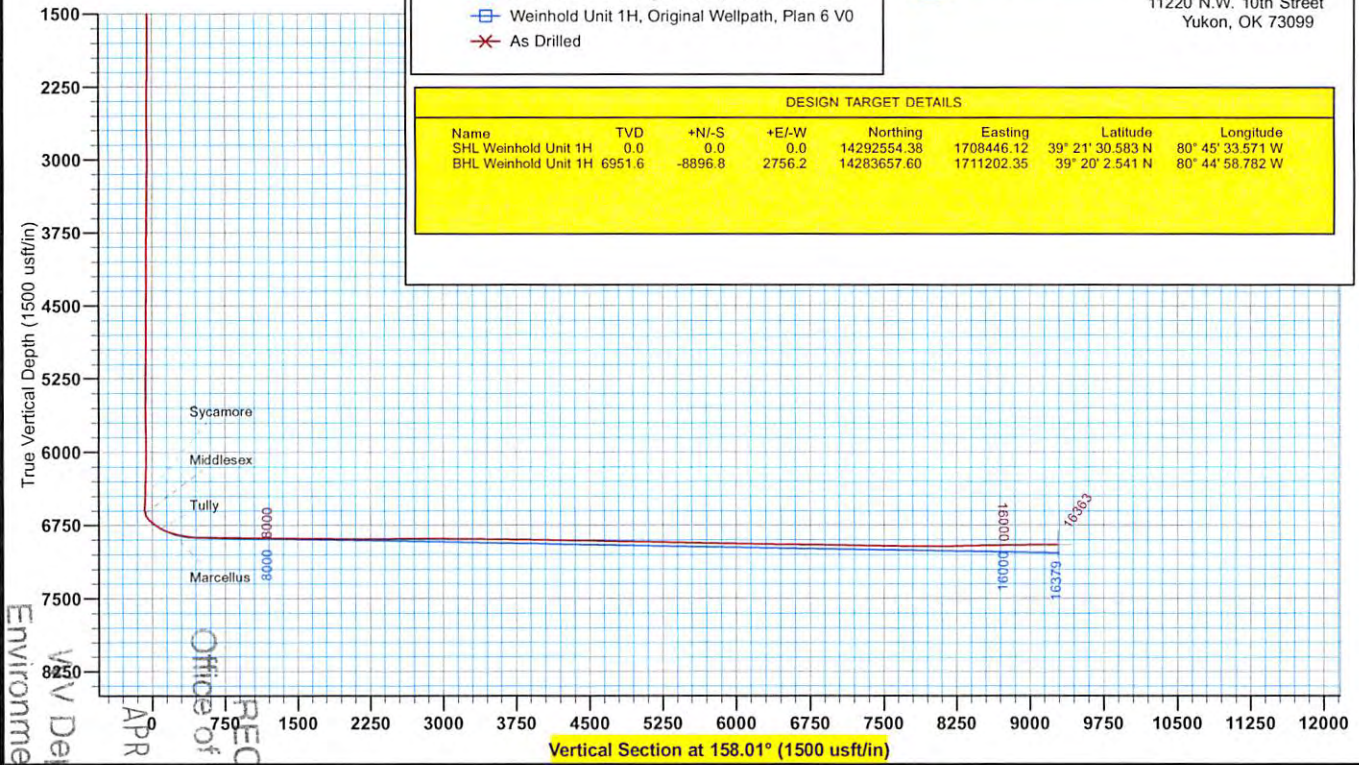


Genie Lightfoot
 9:03, January 08 2015

Scientific Drilling
 11220 N.W. 10th Street
 Yukon, OK 73099

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL Weinhold Unit 1H	0.0	0.0	0.0	14292554.38	1708446.12	39° 21' 30.583 N	80° 45' 33.571 W
BHL Weinhold Unit 1H	6951.6	-8896.8	2756.2	14283657.60	1711202.35	39° 20' 2.541 N	80° 44' 58.782 W



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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/13/2015
Job End Date:	1/8/2016
State:	West Virginia
County:	Doddridge
API Number:	47-017-06495-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Weinhold Unit 1H
Longitude:	-80.75932800
Latitude:	39.35849400
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,920
Total Base Water Volume (gal):	11,969,580
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	ANTERO RESOURCES	Water					
			Water	7732-18-5	100.00000	89.88856	
WV Specific 40/70 mesh Sand	C&J Well Services	Sand - Bulk - West Virginia					
			Crystalline Silica, quartz	14808-60-7	99.90000	5.20839	
			Aluminum Oxide	1344-28-1	1.10000	0.05735	
			Iron Oxide	1309-37-1	0.10000	0.00521	
			Titanium Oxide	13463-67-7	0.10000	0.00521	
WV Specific 20/40 mesh Sand	C&J Well Services	Sand - Bulk - West Virginia					
			Crystalline Silica, quartz	14808-60-7	99.90000	3.62410	
			Aluminum Oxide	1344-28-1	1.10000	0.03991	
			Iron Oxide	1309-37-1	0.10000	0.00363	
			Titanium Oxide	13463-67-7	0.10000	0.00363	
WV Specific 100 mesh Sand	C&J Well Services	Sand - Bulk - West Virginia					
			Crystalline Silica, quartz	14808-60-7	99.90000	0.87067	
			Aluminum Oxide	1344-28-1	1.10000	0.00959	
			Iron Oxide	1309-37-1	0.10000	0.00087	
			Titanium Oxide	13463-67-7	0.10000	0.00087	

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GA-6A	C&J Well Services	Gelling Agents				
			Guar Gum	9000-30-0	60.00000	0.04490
			Petroleum Distillates	64742-47-8	60.00000	0.04490
			Surfactants	Proprietary	10.00000	0.00748
HC-15	C&J Well Services	Bulk Acid				
			Hydrochloric Acid	7647-01-0	15.00000	0.03368
FR-16	C&J Well Services	Friction Reducer				
			Distillates (Petroleum), Hydrotreated Light	64742-47-8	45.00000	0.03024
			Ethylene Glycol	107-21-1	5.00000	0.00336
SI-6	C&J Well Services	Paraffin & Scale Additives				
			Methanol	67-56-1	100.00000	0.01475
			Phosphonic Acid Salt	Proprietary	6.00000	0.00089
			Monoethanolamine hydrochloride	2002-24-6	2.00000	0.00030
			Ammonium Chloride	12125-02-9		
AQUCAR DB 20	C&J Well Services	Biocides				
			Polyethylene glycol	25322-68-3	54.50000	0.00668
			2,2-Dibromo-3-nitrilo-propionamide (DBNPA)	10222-01-2	20.00000	0.00245
			Sodium bromide	7647-15-6	4.00000	0.00049
			Dibromoacetoneitrile	3252-43-5	3.00000	0.00037
SV-1	C&J Well Services	Paraffin & Scale Additives				
			Alkanes, C10-24 branched and linear	848301-67-7	90.00000	0.00235
			Dodecane	112-40-3	40.00000	0.00104
			Tridecane	Proprietary	30.00000	0.00078
			Undecane	1120-21-4	30.00000	0.00078
			Tetradecane	629-59-4	30.00000	0.00078
			Hydrocarbons	Proprietary	25.00000	0.00065
BR-11	C&J Well Services	Gel Breakers				
			Ammonium Persulfate	7727-54-0	92.00000	0.00167
			Silica, Crystalline-Quartz	14808-60-7	1.00000	0.00002
CI-3	C&J Well Services	Acid Corrosion Inhibitors				
			Ethylene Glycol	107-21-1	40.00000	0.00022
			Dimethylformamide	68-12-2	20.00000	0.00011
			2-Butoxyethanol	111-76-2	15.00000	0.00008
			Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7	15.00000	0.00008
			Cinnamaldehyde	104-55-2	15.00000	0.00008
			1-DECANOL	112-30-1	5.00000	0.00003
			Nonyphenol (branched), ethoxylated	127087-87-0	5.00000	0.00003
			Triethyl Phosphate	78-40-0	2.50000	0.00001
			Isopropyl Alcohol	67-63-0	2.50000	0.00001

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			1-OCTANOL	111-87-5	2.50000	0.00001
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.						
Other Ingredients	C&J Well Services	Other Ingredients				
			Water	7732-18-5	85.00000	0.19086
			Copolymer	Proprietary	35.00000	0.02352
			Water	7732-18-5	31.00000	0.02083
			Water	7732-18-5	96.00000	0.01416
			Water	7732-18-5	32.00000	0.00392
			Surfactant	Proprietary	5.00000	0.00374
			Organo Clay	Proprietary	5.00000	0.00374
			Surfactant Blend	Proprietary	3.00000	0.00202
			Poly(oxy-1,2-ethanediyl), a-hydro-w-hydroxy-, mono-C10-14-alkyl esthers, phosphates	68585-36-4	3.00000	0.00202
			Alcohols, C12-18, ethoxylated propoxylated	69227-21-0	2.00000	0.00134
			Surfactant Blend	Proprietary	1.00000	0.00067
			Proprietary	Proprietary	12.80000	0.00023
			Monobromo-3-nitrilopropionamide	1113-55-9	1.00000	0.00012
			2,2-Dibromomalonamide	73003-80-2	1.00000	0.00012
			2-Propenamide as residual	79-06-1	0.10000	0.00007
			Proprietary	Proprietary	1.00000	0.00002
			Proprietary	Proprietary	0.70000	0.00001

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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LATITUDE 39°22'30" 2,637'

11,691' TO BOTTOM HOLE

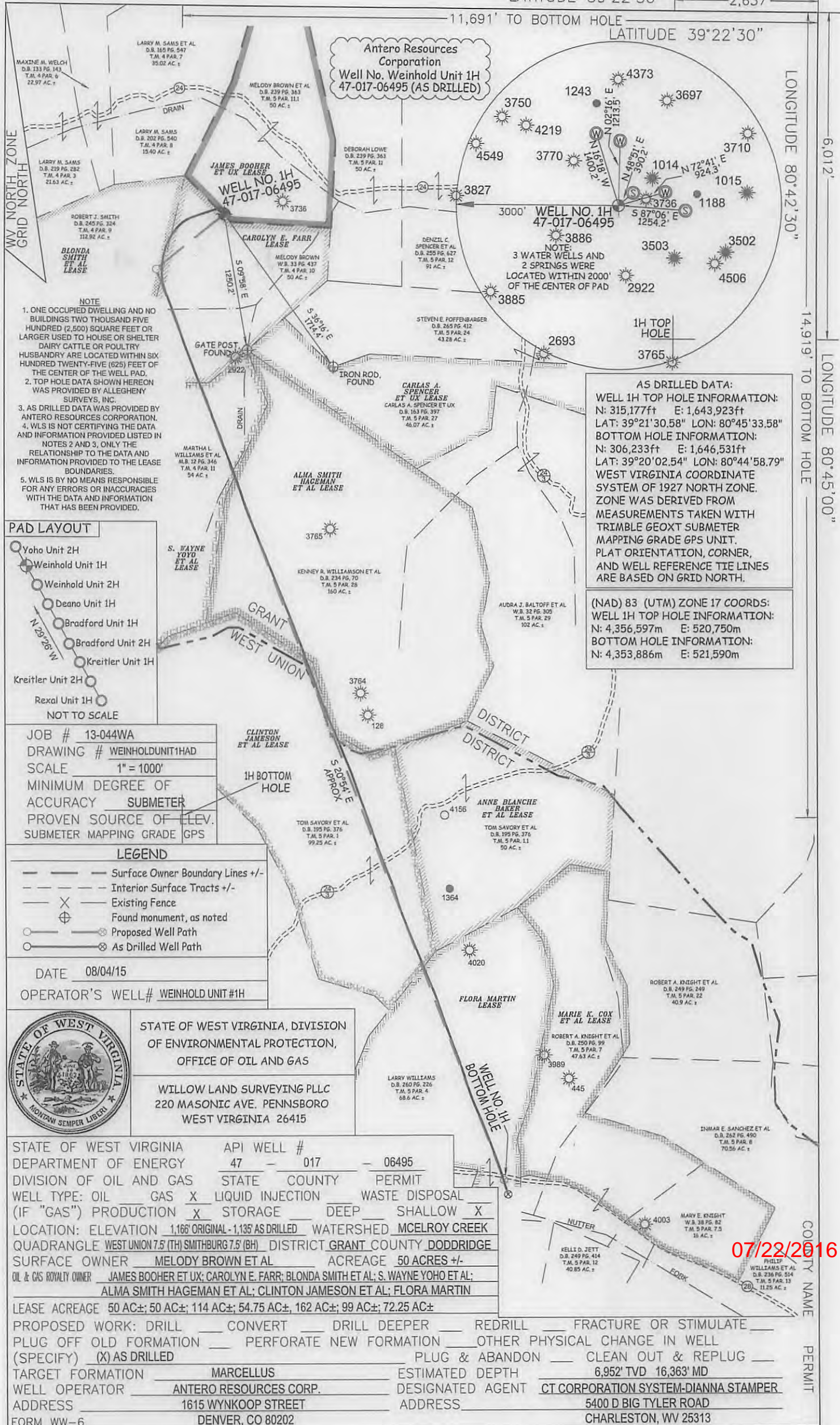
LATITUDE 39°22'30"

LONGITUDE 80°42'30"

6,012'

LONGITUDE 80°45'00"

14,919' TO BOTTOM HOLE



Antero Resources Corporation
Well No. Weinhold Unit 1H
47-017-06495 (AS DRILLED)

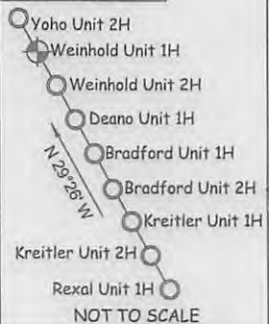
WELL NO. 1H
47-017-06495
NOTE:
3 WATER WELLS AND
2 SPRINGS WERE
LOCATED WITHIN 2000'
OF THE CENTER OF PAD

AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
N: 315,177ft E: 1,643,923ft
LAT: 39°21'30.58" LON: 80°45'33.58"
BOTTOM HOLE INFORMATION:
N: 306,233ft E: 1,646,531ft
LAT: 39°20'02.54" LON: 80°44'58.79"
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: 4,356,597m E: 520,750m
BOTTOM HOLE INFORMATION:
N: 4,353,886m E: 521,590m

- NOTE
- ONE OCCUPIED DWELLING AND NO 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.
 - TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
 - AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
 - WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3, ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.
 - WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

PAD LAYOUT



JOB # 13-044WA
DRAWING # WEINHOLDUNIT1HAD
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
 - Proposed Well Path
 - As Drilled Well Path

DATE 08/04/15
OPERATOR'S WELL# WEINHOLD UNIT #1H



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 - 06495

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL

(IF "GAS") PRODUCTION STORAGE DEEP SHALLOW

LOCATION: ELEVATION 1,166' ORIGINAL - 1,135' AS DRILLED WATERSHED MCELROY CREEK

QUADRANGLE WEST UNION 7.5 (TH) SMITHBURG 7.5 (BH) DISTRICT GRANT COUNTY DODDRIDGE

SURFACE OWNER MELODY BROWN ET AL ACREAGE 50 ACRES +/-

OIL & GAS ROYALTY OWNER JAMES BOOHER ET UX; CAROLYN E. FARR; BLONDA SMITH ET AL; S. WAYNE YOHU ET AL; ALMA SMITH HAGEMAN ET AL; CLINTON JAMESON ET AL; FLORA MARTIN

LEASE ACREAGE 50 AC±; 50 AC±; 114 AC±; 54.75 AC±; 162 AC±; 99 AC±; 72.25 AC±

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE

PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) (X) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG

TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,952' TVD 16,363' 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

07/22/2016

COUNTY NAME

PERMIT

LATITUDE 39°22'30"

2,637'

11,691' TO BOTTOM HOLE

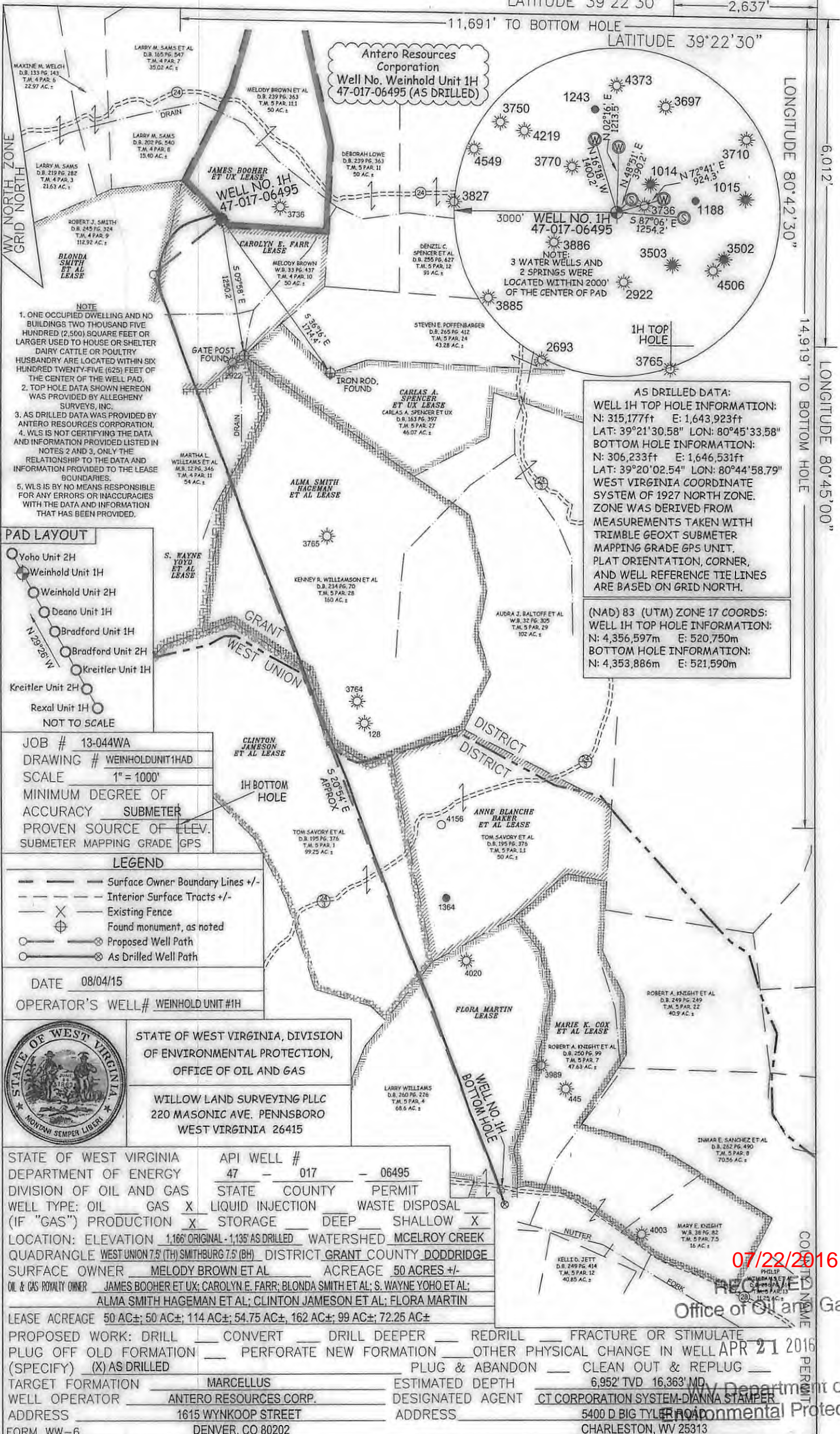
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 LAT: 39°20'02.54" LON: 80°44'58.79"

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(NAD) 83 (UTM) ZONE 17 COORDS:

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 N: 4,356,597m E: 520,750m

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 N: 4,353,886m E: 521,590m



JOB # 13-044WA
 DRAWING # WEINHOLDUNIT1HAD
 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
 - Proposed Well Path
 - As Drilled Well Path

DATE 08/04/15
 OPERATOR'S WELL# WEINHOLD UNIT #1H



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

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LEASE ACREAGE 50 AC±; 50 AC±; 114 AC±; 54.75 AC±; 162 AC±; 99 AC±; 72.25 AC±

API WELL # 47 - 017 - 06495

STATE COUNTY PERMIT

WELL OPERATOR ANTERO RESOURCES CORP.

DESIGNATED AGENT CT CORPORATION SYSTEM-DIANNA STAMPER

ADDRESS 1615 WYNKOOP STREET DENVER, CO 80202

ADDRESS 5400 D BIG TYLE ROAD CHARLESTON, WV 25313

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE

PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL APR 21 2016

(SPECIFY) (X) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG

TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,952' TVD 16,363' MD

FORM WW-6

07/22/2016

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Department of Environmental Protection