

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

API 47 - 017 - 06218 County Doddridge District Grant  
Quad Smithburg 7.5' Pad Name Revival Pad Field/Pool Name \_\_\_\_\_  
Farm name Williams, Larry et al Well Number Gains-Koch Unit 1H  
Operator (as registered with the OOG) Antero Resources 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 4,352,815m Easting 526,708m  
Landing Point of Curve Northing 4,352,489.75m Easting 526,347.57m  
Bottom Hole Northing 4,350,593m Easting 526,981m

Elevation (ft) 1,376' 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 06/12/2013 Date drilling commenced 09/26/2013 Date drilling ceased 11/04/2014  
Date completion activities began 11/11/2014 Date completion activities ceased 01/28/2015  
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 427' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft 1,687' Void(s) encountered (Y/N) depths None  
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths None  
Is coal being mined in area (Y/N) No

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Reviewed by:

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API 47-017 - 06218

Farm name Williams, Larry et al

Well number Gains-Koch Unit 1H

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	30"	20"	40'	New	51#; H-40	N/A	Yes
Surface	17 1/2"	13 3/8"	487'	New	48#; H-40	N/A	Yes
Coal							
Intermediate 1	12 1/4"	9 5/8"	2,619'	New	36#; J-55	N/A	Yes
Intermediate 2							
Intermediate 3							
Production	8 3/4" & 8 1/2"	5 1/2"	14,425'	New	20#; P-110	N/A	Yes
Tubing		2 3/8"	7,596'		5.95#; 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 <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Class A	105 sx	15.6	1.18	82	0'	8 Hrs.
Surface	Class A	586 sx	15.6	1.18	338	0'	8 Hrs.
Coal							
Intermediate 1	Class A	1,016 sx	15.6	1.18	820	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1,171 sx (Lead); 1,082 sx (Tail)	14.5 (Lead); 15.2 (Tail)	1.3 (Lead); 1.88 (Tail)	2,819	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 14,425' MD, 7,202' TVD (BHL); 7,235' TVD (Deepest Point Drilled)

Loggers TD (ft) 14,374'

Deepest formation penetrated Marcellus

Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 7.072'

**\*\*This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Mt. Salem Revival Unit 1H, API #47-017-06269). Please reference the wireline logs submitted with Form WR-35 for the Mt. Salem Revival Unit 1H. A Cement Bond Log has been included with this submittal.**

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 \_\_\_\_\_

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WAS WELL COMPLETED OPEN HOLE?  Yes  No    DETAILS \_\_\_\_\_

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WERE TRACERS USED  Yes  No    TYPE OF TRACER(S) USED \_\_\_\_\_

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API 47- 017 - 06218 Farm name Williams, Larry et al Well number Gains-Koch Unit 1H

PERFORATION RECORD

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

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)	
		<b>* PLEASE SEE ATTACHED EXHIBIT 2</b>							

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API 47- 017 - 06218 Farm name Williams, Larry et al Well number Gains-Koch Unit 1H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
Marcellus	7,169' (top) TVD	7,613' (top) MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 3,550 psi Bottom Hole 3,550 psi DURATION OF TEST \_\_\_\_\_ hrs

OPEN FLOW Gas 1,672 mcfpd Oil 1 bpd NGL \_\_\_\_\_ bpd Water \_\_\_\_\_ bpd GAS MEASURED BY  Estimated  Orifice  Pilot

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

Please insert additional pages as applicable.

Drilling Contractor Patterson - UTI Drilling Company LLC  
Address 207 Carlton Drive City Eighty Four State PA Zip 15330

Logging Company STRC  
Address 1560 Good Hope Pike City Clarksburg State WV Zip 26301

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

Stimulating Company Baker Hughes  
Address 837 Philippi Pike City Clarksburg State WV Zip 26301

Please insert additional pages as applicable.

Completed by Megan Darling Telephone 303-357-7230  
Signature *Megan C. Darling* Title Permitting Agent Date 07/24/2015  
WV Department of Environmental Protection

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

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API 47-017-06218 Farm Name Williams, Larry, et al Well Number Gains-Koch Unit 1H

**EXHIBIT 1**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	11-Nov-14	14,167	14,333	60	Marcellus
2	21-Dec-14	13,970	14,136	60	Marcellus
3	21-Dec-14	13,772	13,939	60	Marcellus
4	21-Dec-14	13,575	13,741	60	Marcellus
5	22-Dec-14	13,378	13,544	60	Marcellus
6	22-Dec-14	13,180	13,347	60	Marcellus
7	22-Dec-14	12,983	13,149	60	Marcellus
8	23-Dec-14	12,786	12,952	60	Marcellus
9	23-Dec-14	12,588	12,755	60	Marcellus
10	24-Dec-14	12,391	12,558	60	Marcellus
11	24-Dec-14	12,194	12,360	60	Marcellus
12	26-Dec-14	11,996	12,163	60	Marcellus
13	27-Dec-14	11,799	11,966	60	Marcellus
14	27-Dec-14	11,602	11,768	60	Marcellus
15	27-Dec-14	11,405	11,571	60	Marcellus
16	27-Dec-14	11,207	11,374	60	Marcellus
17	28-Dec-14	11,010	11,176	60	Marcellus
18	28-Dec-14	10,813	10,979	60	Marcellus
19	28-Dec-14	10,615	10,782	60	Marcellus
20	28-Dec-14	10,418	10,584	60	Marcellus
21	28-Dec-14	10,221	10,387	60	Marcellus
22	29-Dec-14	10,023	10,190	60	Marcellus
23	29-Dec-14	9,826	9,992	60	Marcellus
24	29-Dec-14	9,629	9,795	60	Marcellus
25	29-Dec-14	9,431	9,598	60	Marcellus
26	30-Dec-14	9,234	9,401	60	Marcellus
27	30-Dec-14	9,037	9,203	60	Marcellus
28	30-Dec-14	8,840	9,006	60	Marcellus
29	30-Dec-14	8,642	8,809	60	Marcellus
30	31-Dec-14	8,445	8,611	60	Marcellus
31	31-Dec-14	8,248	8,414	60	Marcellus
32	31-Dec-14	8,050	8,217	60	Marcellus
33	1-Jan-15	7,853	8,019	60	Marcellus
34	1-Jan-15	7,656	7,822	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	21-Dec-14	63.9	6,887	N/A	5,010	241,857	6,627	N/A
2	21-Dec-14	64.1	7,020	5,882	5,380	236,614	6,412	N/A
3	22-Dec-14	63.4	6,914	5,628	5,536	243,393	6,511	N/A
4	22-Dec-14	64.2	6,732	5,809	5,265	241,109	6,443	N/A
5	22-Dec-14	64.2	6,794	5,809	5,265	241,109	6,443	N/A
6	22-Dec-14	67.4	6,859	5,618	5,306	239,058	6,425	N/A
7	23-Dec-14	65.5	6,603	5,468	5,279	243,584	6,551	N/A
8	23-Dec-14	79.0	7,350	5,451	5,141	243,661	6,524	N/A
9	23-Dec-14	67.0	6,563	5,431	5,368	244,141	6,398	N/A
10	24-Dec-14	66.0	6,483	5,451	5,102	241,328	6,375	N/A
11	26-Dec-14	66.8	6,714	5,906	5,276	242,746	6,424	N/A
12	26-Dec-14	65.0	6,583	5,429	4,976	219,911	6,836	N/A
13	27-Dec-14	65.0	6,685	5,597	5,291	244,151	6,334	N/A
14	27-Dec-14	0.0	0	5,620	5,344	243,442	6,334	N/A
15	27-Dec-14	71.0	6,701	5,400	5,170	243,417	6,345	N/A
16	27-Dec-14	66.0	6,561	5,853	5,924	241,539	6,334	N/A
17	28-Dec-14	66.0	6,561	5,424	4,914	242,209	6,214	N/A
18	28-Dec-14	71.0	6,682	5,472	5,182	233,319	6,425	N/A
19	28-Dec-14	72.0	6,899	5,732	5,084	241,908	6,377	N/A
20	28-Dec-14	66.0	6,537	5,768	5,214	238,044	6,168	N/A
21	29-Dec-14	66.0	6,124	5,753	5,215	243,186	6,188	N/A
22	29-Dec-14	73.0	6,401	5,860	5,301	241,294	6,198	N/A
23	29-Dec-14	74.0	6,417	5,713	5,576	238,999	6,076	N/A
24	29-Dec-14	67.0	6,447	5,729	5,214	242,504	6,099	N/A
25	30-Dec-14	66.0	6,223	5,558	5,475	240,420	6,133	N/A
26	30-Dec-14	66.0	6,110	5,858	4,710	241,421	6,059	N/A
27	30-Dec-14	71.9	6,276	5,522	4,883	242,314	6,194	N/A
28	30-Dec-14	66.0	6,123	5,376	4,952	242,876	6,261	N/A
29	31-Dec-14	65.0	6,004	5,670	5,232	239,258	6,201	N/A
30	31-Dec-14	71.6	6,292	5,808	4,194	242,384	6,359	N/A
31	31-Dec-14	72.1	6,325	6,976	4,586	244,801	6,059	N/A
32	1-Jan-15	66.0	6,280	5,265	5,046	180,514	6,460	N/A
33	1-Jan-15	65.0	6,264	5,631	4,550	241,036	6,213	N/A
34	1-Jan-15	71.2	6,309	6,190	4,594	247,154	6,101	N/A
	AVG=	65.7	6,345	5,687	5,134	8,134,701	215,101	TOTAL

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## EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD) From Surface	BOTTOM DEPTH (TVD) From Surface	TOP DEPTH (MD) From Surface	BOTTOM DEPTH (MD) From Surface
Fresh Water	427'	N/A	427'	N/A
Shale	0	337	0	337
Siltstone/ Sandstone	Est. 337	597	Est. 337	597
Shale	Est. 597	707	Est. 597	707
Sandstone	Est. 707	837	Est. 707	837
Siltstone/ Shale	Est. 837	917	Est. 837	917
Shale	Est. 917	1,727	Est. 917	1,727
Sandstone	Est. 1727	1,787	Est. 1727	1,787
Shale	Est. 1787	1,907	Est. 1787	1,907
Sandstone/ Trace Coal	Est. 1907	1,987	Est. 1907	1,987
Sandstone	Est. 1987	2,127	Est. 1987	2,127
Sandstone/ Trace Coal	Est. 2127	2,147	Est. 2127	2,147
Shale/ Sandstone	Est. 2147	2,223	Est. 2147	2,223
Big Lime	2,223	2,335	2,223	2,335
Big Injun	2,335	2,780	2,335	2,780
Gantz Sand	2,780	2,957	2,780	2,957
Fifty Foot Sandstone	2,957	3,011	2,957	3,011
Gordon	3,011	3,340	3,011	3,340
Fifth Sandstone	3,340	3,368	3,340	3,368
Bayard	3,368	3,749	3,368	3,749
Warren	3,749	4,090	3,749	4,095
Speechley	4,090	4,368	4,095	4,386
Baltown	4,368	4,823	4,386	4,883
Bradford	4,823	5,255	4,883	5,358
Benson	5,255	5,524	5,358	5,653
Alexander	5,524	5,628	5,653	5,767
Elk	5,628	6,201	5,767	6,402
Rhinestreet	6,201	6,686	6,402	6,934
Sycamore	6,686	6,921	6,934	7,203
Middlesex	6,921	7,062	7,203	7,403
Burkett	7,062	7,090	7,403	7,449
Tully	7,090	7,169	7,449	7,613
Marcellus	7,169	NA	7,613	NA

\*Please note Antero determines shallow formation tops based on mud and/or wireline logs that are only run on one well on a multi-well pad (Please reference Wireline Logs submitted for the Mt. Salem Revival Unit 1H API# 47-017-06269). The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

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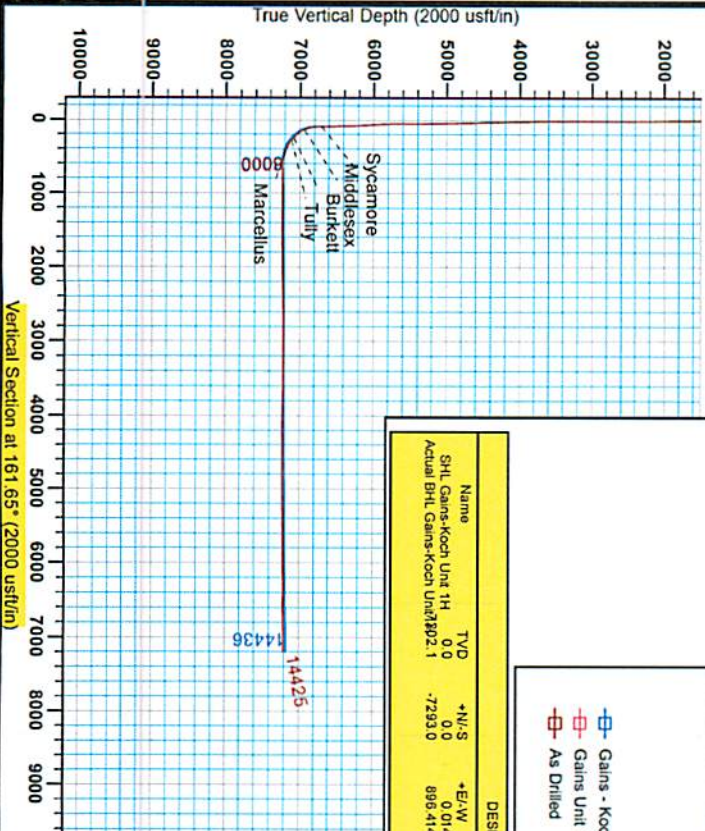
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10/23/2015



Antero Resources  
 Gains - Koch Unit 1H  
 Doddridge County WV  
 Northing: 14280147.06  
 Easting: 1727993.07  
 As Drilled

17-06218



**WELL DETAILS:** Gains - Koch Unit 1H

-N/S	+E/W	Northing	Ground Level	1377.0	Longitude	584
0.0	0.0	14280147.06	1727993.0739° 19' 27.317" N	41° 25' 16.4" W		

**PROJECT DETAILS:** Doddridge County WV  
 Geoscient System: Upstream Transpore Master (US Survey Feet)  
 Datum: NAD 1983 (NAD83 CONUS)  
 Elevation: Contour 1566  
 Zone: Zone 17N (84 W to 78 W)  
 System Datum: Mean Sea Level

**REFERENCE INFORMATION**  
 Contour Interval: 100 Feet  
 Vertical Axis: 2000 usft/in  
 Horizontal Axis: 1000 ft  
 Vertical Datum: Mean Sea Level  
 Horizontal Datum: NAD 1983 (NAD83 CONUS)  
 Contour Interval: 100 Feet  
 Vertical Axis: 2000 usft/in  
 Horizontal Axis: 1000 ft  
 Vertical Datum: Mean Sea Level  
 Horizontal Datum: NAD 1983 (NAD83 CONUS)

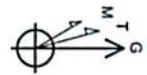
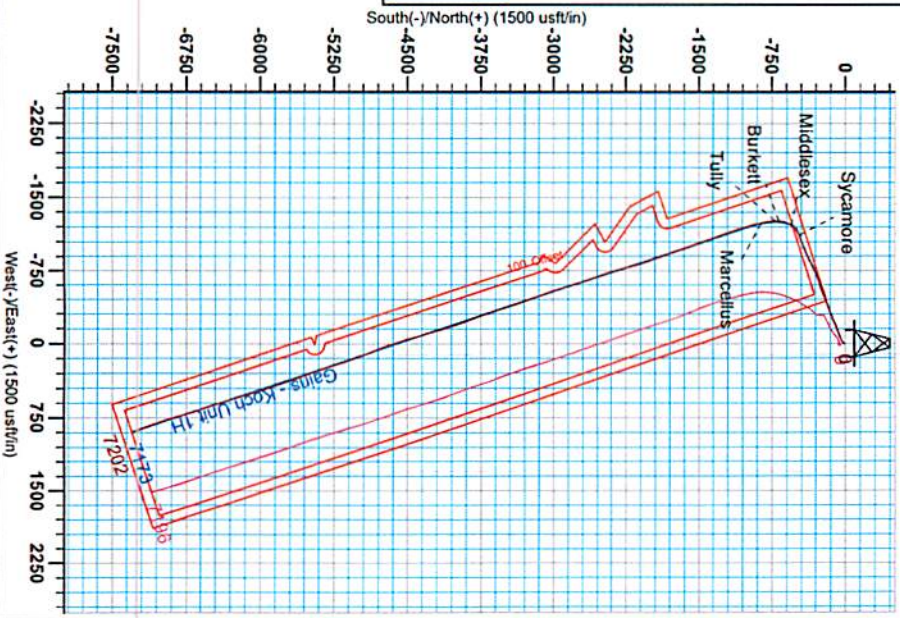
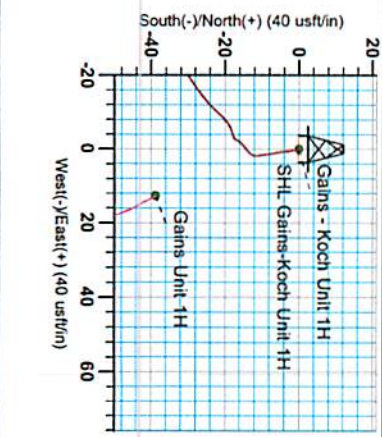
**LEGEND**

- Gains - Koch Unit 1H, Original Wellpath, Plan 2 Rev V0
- Gains Unit 1H, ST 1, As Drilled ST 1 V0
- As Drilled

**DESIGN TARGET DETAILS**

Name	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude
SHL Gains-Koch Unit 1H	0.0	0.0	0.0	14280147.06	1727993.0739	41° 25' 16.4" N	78° 41' 25.164" W
Actual BHL Gains-Koch Unit 1H	14436	0.0	0.0	896.414272854	1728889.439	41° 15' 17.780" N	78° 41' 14.075" W

Genie Lightfoot  
 11:29, November 25 2014  
 Scientific Drilling  
 11220 N.W. 10th Street  
 Yukon, OK 73099



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## **Antero Resources**

**Doddridge County WV  
Koch/Gains/McCue/Mt Salem Revival/Milo  
Gains - Koch Unit 1H  
Original Wellpath**

**Design: As Drilled**

## **EOW Completion Report**

**25 November, 2014**



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**10/23/2015**

17-06218



EOW Completion Report



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Gains - Koch Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	P317 Koch 1H 1377 GL + 23 KB @ 1400.0usft
<b>Site:</b>	Koch/Gains/McCue/Mt Salem Revival/Milo	<b>MD Reference:</b>	P317 Koch 1H 1377 GL + 23 KB @ 1400.0usft
<b>Well:</b>	Gains - Koch Unit 1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

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

<b>Site</b>	Koch/Gains/McCue/Mt Salem Revival/Milo				
<b>Site Position:</b>		<b>Northing:</b>	14,280,147.06 usft	<b>Latitude:</b>	39° 19' 27.317 N
<b>From:</b>	Map	<b>Easting:</b>	1,727,993.07 usft	<b>Longitude:</b>	80° 41' 25.164 W
<b>Position Uncertainty:</b>	2.0 usft	<b>Slot Radius:</b>	13-3/16"	<b>Grid Convergence:</b>	0.20 °

<b>Well</b>	Gains - Koch Unit 1H, Marcellus					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	14,280,147.06 usft	<b>Latitude:</b>	39° 19' 27.317 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,727,993.07 usft	<b>Longitude:</b>	80° 41' 25.164 W
<b>Position Uncertainty</b>		2.0 usft	<b>Wellhead Elevation:</b>	1,400.0 usft	<b>Ground Level:</b>	1,377.0 usft

<b>Wellbore</b>	Original Wellpath				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	10/9/2013	-8.52	66.89	52,383

<b>Design</b>	As Drilled				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	161.65	

<b>Survey Program</b>	<b>Date</b>	11/10/2014			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
112.0	6,736.9	Survey #3 Final Gyro (Original Wellpath)	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper	
6,789.0	14,425.0	Survey #3 MWD (Original Wellpath)	MWD SDI	MWD - Standard ver 1.0.1	

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00
112.0	0.11	349.65	112.0	0.1	0.0	0.0	0.10
212.0	0.04	291.05	212.0	0.2	-0.1	-0.2	0.10
312.0	0.04	319.25	312.0	0.3	-0.1	-0.3	0.02
412.0	0.07	344.10	412.0	0.3	-0.2	-0.4	0.04
512.0	0.17	167.58	512.0	0.3	-0.1	-0.3	0.24
612.0	0.14	167.52	612.0	0.0	-0.1	0.0	0.03
712.0	0.19	156.32	712.0	-0.3	0.0	0.3	0.06
812.0	0.19	147.32	812.0	-0.6	0.2	0.6	0.03
912.0	0.21	166.13	912.0	-0.9	0.3	0.9	0.07
1,012.0	0.25	173.11	1,012.0	-1.3	0.4	1.3	0.05

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EOW Completion Report



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Gains - Koch Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	P317 Koch 1H 1377 GL + 23 KB @ 1400.0usft
<b>Site:</b>	Koch/Gains/McCue/Mt Salem Revival/Milo	<b>MD Reference:</b>	P317 Koch 1H 1377 GL + 23 KB @ 1400.0usft
<b>Well:</b>	Gains - Koch Unit 1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
1,112.0	0.21	167.52	1,112.0	-1.7	0.4	1.7	0.05
1,212.0	0.24	167.28	1,212.0	-2.1	0.5	2.1	0.03
1,312.0	0.24	176.80	1,312.0	-2.5	0.6	2.5	0.04
1,412.0	0.26	174.22	1,412.0	-2.9	0.6	3.0	0.02
1,512.0	0.34	173.25	1,512.0	-3.4	0.7	3.5	0.08
1,612.0	0.36	176.26	1,612.0	-4.0	0.7	4.1	0.03
1,712.0	0.43	170.57	1,712.0	-4.7	0.8	4.7	0.08
1,812.0	0.43	173.83	1,812.0	-5.5	0.9	5.5	0.02
1,912.0	0.44	166.78	1,912.0	-6.2	1.0	6.2	0.05
2,012.0	0.43	169.25	2,012.0	-7.0	1.2	7.0	0.02
2,112.0	0.40	173.99	2,112.0	-7.7	1.3	7.7	0.05
2,212.0	0.46	170.15	2,212.0	-8.4	1.4	8.4	0.07
2,312.0	0.46	174.89	2,312.0	-9.2	1.5	9.2	0.04
2,412.0	0.47	168.74	2,412.0	-10.0	1.6	10.0	0.05
2,512.0	0.50	168.25	2,512.0	-10.8	1.8	10.9	0.03
2,612.0	0.47	185.84	2,612.0	-11.7	1.8	11.7	0.15
2,712.0	0.44	209.50	2,712.0	-12.4	1.6	12.3	0.19
2,812.0	0.49	217.98	2,812.0	-13.1	1.2	12.8	0.08
2,912.0	0.48	230.76	2,912.0	-13.7	0.6	13.2	0.11
3,012.0	0.44	231.71	3,011.9	-14.2	-0.1	13.5	0.04
3,112.0	0.43	229.76	3,111.9	-14.7	-0.6	13.7	0.02
3,212.0	0.42	226.10	3,211.9	-15.2	-1.2	14.0	0.03
3,312.0	0.46	226.94	3,311.9	-15.7	-1.8	14.4	0.04
3,412.0	0.41	208.49	3,411.9	-16.3	-2.2	14.8	0.15
3,512.0	0.29	208.92	3,511.9	-16.8	-2.5	15.2	0.12
3,612.0	0.39	214.02	3,611.9	-17.3	-2.8	15.6	0.10
3,712.0	2.39	255.56	3,711.9	-18.1	-5.0	15.6	2.11
3,812.0	4.79	221.45	3,811.7	-21.8	-9.8	17.6	3.11
3,912.0	7.30	235.51	3,911.1	-28.5	-17.8	21.5	2.90
4,012.0	11.21	247.30	4,009.8	-35.9	-32.0	24.0	4.33
4,112.0	14.42	246.75	4,107.3	-44.5	-52.4	25.8	3.21
4,212.0	17.15	245.69	4,203.6	-55.5	-77.3	28.4	2.75
4,312.0	18.96	252.06	4,298.6	-66.6	-106.2	29.8	2.68
4,412.0	21.44	251.00	4,392.5	-77.6	-139.0	29.9	2.51
4,512.0	23.22	246.88	4,485.0	-91.2	-174.4	31.7	2.37
4,612.0	23.91	242.57	4,576.6	-108.3	-210.5	36.5	1.86
4,712.0	24.42	249.56	4,667.9	-124.9	-247.9	40.5	2.90
4,812.0	23.39	249.69	4,759.3	-139.0	-285.9	41.9	1.03
4,912.0	25.49	247.07	4,850.4	-154.3	-324.3	44.3	2.36
5,012.0	24.69	251.04	4,940.9	-169.4	-363.9	46.3	1.86
5,112.0	23.66	250.80	5,032.2	-182.8	-402.6	48.8	1.03
5,212.0	24.29	251.76	5,123.5	-195.9	-441.0	47.0	0.74
5,312.0	25.32	248.76	5,214.3	-210.0	-480.5	48.1	1.63
5,412.0	24.12	246.29	5,305.1	-226.0	-519.2	51.1	1.58

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EOW Completion Report



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Gains - Koch Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	P317 Koch 1H 1377 GL + 23 KB @ 1400.0usft
<b>Site:</b>	Koch/Gains/McCue/Mt Salem Revival/Milo	<b>MD Reference:</b>	P317 Koch 1H 1377 GL + 23 KB @ 1400.0usft
<b>Well:</b>	Gains - Koch Unit 1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
5,512.0	23.19	253.26	5,396.8	-239.9	-556.7	52.4	2.95	
5,612.0	23.76	253.30	5,488.5	-251.4	-594.9	51.3	0.57	
5,712.0	25.45	252.43	5,579.4	-263.6	-634.7	50.4	1.73	
5,812.0	25.77	250.75	5,669.6	-277.3	-675.7	50.5	0.79	
5,912.0	26.30	245.94	5,759.4	-293.5	-716.4	53.0	2.18	
6,012.0	24.76	244.19	5,849.7	-311.6	-755.5	57.9	1.71	
6,112.0	25.66	244.81	5,940.1	-330.0	-794.0	63.2	0.94	
6,212.0	25.41	244.27	6,030.4	-348.5	-832.9	68.6	0.34	
6,312.0	24.38	243.66	6,121.1	-367.0	-870.7	74.2	1.06	
6,412.0	25.56	244.67	6,211.7	-385.4	-908.7	79.7	1.25	
6,512.0	23.34	247.70	6,302.8	-402.1	-946.5	83.7	2.55	
6,612.0	24.46	249.07	6,394.2	-417.0	-984.2	86.0	1.25	
6,712.0	24.37	249.69	6,485.2	-431.6	-1,022.9	87.6	0.27	
6,736.9	24.58	249.08	6,507.9	-435.2	-1,032.5	88.0	1.32	
6,789.0	24.36	247.92	6,555.3	-443.1	-1,052.6	89.2	1.01	
6,820.0	24.34	247.82	6,583.6	-447.9	-1,064.5	90.0	0.15	
6,914.0	23.92	246.69	6,669.4	-462.8	-1,099.9	93.0	0.66	
6,957.0	23.55	248.66	6,708.7	-469.4	-1,115.9	94.2	2.03	
<b>Sycamore</b>								
6,977.0	23.39	249.59	6,727.1	-472.2	-1,123.3	94.5	2.03	
7,009.0	23.21	246.95	6,756.5	-476.9	-1,135.1	95.3	3.31	
7,040.0	23.30	240.19	6,784.9	-482.3	-1,146.0	97.0	8.61	
7,072.0	24.97	232.63	6,814.2	-489.6	-1,156.9	100.5	10.97	
7,104.0	27.52	228.94	6,842.9	-498.5	-1,167.8	105.5	9.46	
7,135.0	30.78	225.42	6,869.9	-508.8	-1,178.9	111.8	11.88	
7,167.0	34.03	222.61	6,896.9	-521.1	-1,190.8	119.8	11.19	
7,198.0	37.37	219.97	6,922.1	-534.7	-1,202.7	128.9	11.86	
7,226.0	40.37	217.49	6,943.9	-548.5	-1,213.7	138.5	12.06	
<b>Middlesex</b>								
7,230.0	40.80	217.16	6,947.0	-550.5	-1,215.3	139.9	12.06	
7,262.0	43.26	212.06	6,970.7	-568.2	-1,227.4	152.9	13.15	
7,293.0	44.49	206.52	6,993.1	-586.9	-1,237.9	167.3	13.00	
7,325.0	45.02	199.32	7,015.8	-607.6	-1,246.7	184.2	15.92	
7,357.0	45.73	193.08	7,038.3	-629.5	-1,253.0	203.0	14.05	
7,388.0	47.31	187.72	7,059.6	-651.6	-1,257.1	222.7	13.54	
7,420.0	49.51	183.76	7,080.9	-675.4	-1,259.4	244.5	11.53	
7,426.0	50.01	182.92	7,084.8	-680.0	-1,259.7	248.8	13.48	
<b>Burkett</b>								
7,452.0	52.23	179.44	7,101.1	-700.2	-1,260.1	267.9	13.48	
7,472.0	54.15	177.26	7,113.1	-716.2	-1,259.6	283.2	12.96	
<b>Tully</b>								
7,483.0	55.22	176.11	7,119.4	-725.1	-1,259.1	291.9	12.96	
7,515.0	57.86	173.13	7,137.1	-751.7	-1,256.6	317.9	11.33	
7,547.0	60.67	171.98	7,153.4	-779.0	-1,253.0	344.9	9.31	
7,578.0	63.14	170.31	7,168.0	-806.0	-1,248.8	371.9	9.28	

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EOW Completion Report



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<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	P317 Koch 1H 1377 GL + 23 KB @ 1400.0usft
<b>Site:</b>	Koch/Gains/McCue/Mt Salem Revival/Milo	<b>MD Reference:</b>	P317 Koch 1H 1377 GL + 23 KB @ 1400.0usft
<b>Well:</b>	Gains - Koch Unit 1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)	
7,610.0	65.77	169.26	7,181.8	-834.4	-1,243.7	400.4	8.74	
7,636.0	68.63	168.11	7,191.9	-857.9	-1,239.0	424.2	11.73	
<b>Marcellus</b>								
7,642.0	69.29	167.85	7,194.1	-863.4	-1,237.8	429.8	11.73	
7,673.0	73.51	166.89	7,203.9	-892.1	-1,231.4	459.0	13.93	
7,705.0	76.24	166.18	7,212.3	-922.1	-1,224.2	489.8	8.80	
7,737.0	76.77	165.39	7,219.8	-952.3	-1,216.6	520.8	2.92	
7,768.0	79.93	163.55	7,226.0	-981.5	-1,208.4	551.2	11.73	
7,800.0	83.01	163.46	7,230.8	-1,011.8	-1,199.5	582.8	9.63	
7,860.0	90.00	162.39	7,234.4	-1,069.1	-1,181.9	642.6	11.79	
7,888.0	90.22	162.14	7,234.4	-1,095.7	-1,173.4	670.6	1.19	
7,983.0	90.84	160.73	7,233.5	-1,185.8	-1,143.1	765.6	1.62	
8,073.0	89.34	160.73	7,233.3	-1,270.7	-1,113.4	855.6	1.67	
8,164.0	89.25	159.85	7,234.5	-1,356.4	-1,082.7	946.6	0.97	
8,255.0	90.22	160.91	7,234.9	-1,442.1	-1,052.2	1,037.5	1.58	
8,347.0	91.10	161.08	7,233.8	-1,529.1	-1,022.2	1,129.5	0.97	
8,437.0	90.30	160.32	7,232.7	-1,614.0	-992.5	1,219.5	1.23	
8,528.0	89.25	161.00	7,233.1	-1,699.9	-962.3	1,310.5	1.37	
8,619.0	90.13	161.26	7,233.6	-1,786.0	-932.9	1,401.5	1.01	
8,710.0	89.78	160.38	7,233.7	-1,871.9	-903.0	1,492.5	1.04	
8,801.0	90.04	159.41	7,233.8	-1,957.4	-871.7	1,583.4	1.10	
8,892.0	90.13	160.56	7,233.7	-2,042.9	-840.6	1,674.4	1.27	
8,984.0	90.84	164.42	7,232.9	-2,130.6	-812.9	1,766.3	4.27	
9,074.0	91.45	167.06	7,231.1	-2,217.8	-790.7	1,856.1	3.01	
9,167.0	91.54	164.16	7,228.7	-2,307.8	-767.6	1,948.8	3.12	
9,263.0	90.75	161.61	7,226.7	-2,399.6	-739.4	2,044.8	2.78	
9,358.0	90.92	161.10	7,225.4	-2,489.6	-709.0	2,139.8	0.57	
9,452.0	91.10	160.50	7,223.7	-2,578.3	-678.1	2,233.7	0.67	
9,547.0	91.80	160.56	7,221.3	-2,667.9	-646.5	2,328.7	0.74	
9,642.0	91.10	162.05	7,218.9	-2,757.8	-616.0	2,423.7	1.73	
9,737.0	90.20	163.11	7,217.8	-2,848.5	-587.6	2,518.6	1.46	
9,832.0	90.04	161.26	7,217.6	-2,938.9	-558.5	2,613.6	1.95	
9,927.0	90.04	160.91	7,217.5	-3,028.8	-527.7	2,708.6	0.37	
10,021.0	90.04	160.03	7,217.5	-3,117.4	-496.3	2,802.6	0.94	
10,116.0	89.96	158.54	7,217.5	-3,206.2	-462.7	2,897.5	1.57	
10,211.0	89.60	159.50	7,217.8	-3,294.9	-428.7	2,992.4	1.08	
10,306.0	90.84	163.46	7,217.5	-3,385.0	-398.5	3,087.4	4.37	
10,400.0	89.43	161.52	7,217.3	-3,474.6	-370.2	3,181.4	2.55	
10,495.0	90.22	161.79	7,217.5	-3,564.8	-340.3	3,276.4	0.88	
10,590.0	90.92	161.70	7,216.6	-3,655.0	-310.6	3,371.4	0.75	
10,685.0	89.43	161.00	7,216.3	-3,745.0	-280.2	3,466.4	1.73	
10,780.0	89.34	158.10	7,217.3	-3,834.0	-247.0	3,561.3	2.05	
10,875.0	90.31	159.77	7,217.6	-3,922.7	-212.9	3,656.2	2.03	
10,969.0	89.16	162.23	7,218.1	-4,011.5	-182.3	3,750.2	2.89	
11,064.0	89.34	162.84	7,219.3	-4,102.1	-153.8	3,845.1	0.67	

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<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	P317 Koch 1H 1377 GL + 23 KB @ 1400.0usft
<b>Site:</b>	Koch/Gains/McCue/Mt Salem Revival/Milo	<b>MD Reference:</b>	P317 Koch 1H 1377 GL + 23 KB @ 1400.0usft
<b>Well:</b>	Gains - Koch Unit 1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

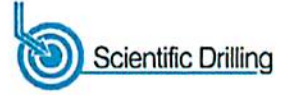
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
11,159.0	88.64	165.39	7,221.0	-4,193.5	-127.8	3,940.0	2.78
11,254.0	88.81	164.69	7,223.1	-4,285.2	-103.3	4,034.8	0.76
11,349.0	89.69	163.28	7,224.3	-4,376.5	-77.0	4,129.7	1.75
11,443.0	90.66	164.42	7,224.0	-4,466.8	-50.9	4,223.7	1.59
11,538.0	90.17	162.51	7,223.4	-4,557.9	-23.9	4,318.6	2.08
11,633.0	91.01	163.02	7,222.4	-4,648.6	4.3	4,413.6	1.03
11,727.0	90.66	159.50	7,221.0	-4,737.6	34.5	4,507.6	3.76
11,822.0	88.81	157.31	7,221.4	-4,825.9	69.4	4,602.4	3.02
11,916.0	89.34	159.33	7,223.0	-4,913.3	104.2	4,696.2	2.22
12,011.0	90.22	160.29	7,223.3	-5,002.4	136.9	4,791.2	1.37
12,106.0	90.31	159.94	7,222.9	-5,091.8	169.3	4,886.1	0.38
12,201.0	91.28	164.07	7,221.6	-5,182.1	198.6	4,981.1	4.47
12,296.0	90.66	161.70	7,220.0	-5,272.9	226.5	5,076.1	2.58
12,391.0	91.19	160.38	7,218.4	-5,362.7	257.4	5,171.0	1.50
12,486.0	90.48	161.17	7,217.0	-5,452.4	288.7	5,266.0	1.12
12,581.0	90.13	159.68	7,216.5	-5,541.9	320.5	5,361.0	1.61
12,676.0	90.84	161.17	7,215.7	-5,631.4	352.3	5,456.0	1.74
12,770.0	90.22	161.79	7,214.9	-5,720.5	382.2	5,550.0	0.93
12,865.0	90.66	161.35	7,214.1	-5,810.6	412.2	5,645.0	0.65
12,960.0	90.84	160.73	7,212.9	-5,900.5	443.1	5,739.9	0.68
13,055.0	90.48	163.55	7,211.8	-5,990.9	472.2	5,834.9	2.99
13,150.0	90.40	162.23	7,211.1	-6,081.7	500.2	5,929.9	1.39
13,244.0	90.31	163.55	7,210.5	-6,171.5	527.8	6,023.9	1.41
13,339.0	90.84	163.81	7,209.5	-6,262.7	554.5	6,118.8	0.62
13,434.0	91.45	161.96	7,207.6	-6,353.5	582.5	6,213.8	2.05
13,529.0	90.66	162.05	7,205.9	-6,443.8	611.8	6,308.7	0.84
13,624.0	89.08	160.82	7,206.1	-6,533.8	642.1	6,403.7	2.11
13,719.0	88.64	161.96	7,208.0	-6,623.9	672.4	6,498.7	1.29
13,813.0	90.13	161.61	7,209.0	-6,713.1	701.7	6,592.7	1.63
13,908.0	91.19	164.42	7,207.9	-6,804.0	729.5	6,687.7	3.16
14,003.0	91.24	163.54	7,205.9	-6,895.3	755.7	6,782.6	0.93
14,098.0	90.40	161.17	7,204.5	-6,985.8	784.5	6,877.5	2.65
14,193.0	91.28	160.73	7,203.1	-7,075.6	815.5	6,972.5	1.04
14,288.0	89.69	159.50	7,202.3	-7,164.9	847.8	7,067.5	2.12
14,383.0	90.17	158.77	7,202.4	-7,254.8	875.2	7,162.4	1.13
14,478.0	90.50	160.00	7,202.1	-7,344.7	896.4	7,257.4	2.12

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EOW Completion Report



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Gains - Koch Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	P317 Koch 1H 1377 GL + 23 KB @ 1400.0usft
<b>Site:</b>	Koch/Gains/McCue/Mt Salem Revival/Milo	<b>MD Reference:</b>	P317 Koch 1H 1377 GL + 23 KB @ 1400.0usft
<b>Well:</b>	Gains - Koch Unit 1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,957.0	6,708.7	-469.4	-1,115.9	Sycamore
7,226.0	6,943.9	-548.5	-1,213.7	Middlesex
7,426.0	7,084.8	-680.0	-1,259.7	Burkett
7,472.0	7,113.1	-716.2	-1,259.6	Tully
7,636.0	7,191.9	-857.9	-1,239.0	Marcellus

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

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# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/21/2014
Job End Date:	1/1/2015
State:	West Virginia
County:	Doddridge
API Number:	47-017-06218-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Gains-Koch Unit 1H
Longitude:	-80.69011000
Latitude:	39.32434200
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	7,234
Total Base Water Volume (gal):	6,803,244
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	Operator	Carrier	Water	7732-18-5	100.00000	84.42272	
Sand, White, 40/70	Baker Hughes	Proppant	MSDS and Non-MSDS Ingredients Listed Below	N/A		8.43166	
Sand, White, 20/40	Baker Hughes	Proppant	MSDS and Non-MSDS Ingredients Listed Below	N/A		5.44372	
Sand, White, 100 mesh	Baker Hughes	Proppant	MSDS and Non-MSDS Ingredients Listed Below	N/A		1.10876	
HCl, 10.1 - 15%	Baker Hughes	Acidizing	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.33445	SmartCare Product
FRW-18	Baker Hughes	Friction Reducer	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.08835	SmartCare Product
GW-3	Baker Hughes	Gelling Agent	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.07785	
Enzyme G-NE	Baker Hughes	Breaker	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.02624	SmartCare Product

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			Sorbitan Monooleate	1338-43-8	0.50000	0.00044	
			Oxyalkylated Fatty Acid	61791-002	40.00000	0.00027	
			Potassium Chloride	7447-40-7	1.00000	0.00025	
			Isotridecanol, ethoxylated	9043-30-5	5.00000	0.00022	
			Crystalline Silica: Quartz	14808-60-7	5.00000	0.00022	
			1-butxy-2-propanol	5131-66-8	5.00000	0.00022	
			Tar Bases, Quinoline Derivs., Benzyl Chloride-Quaternized	72480-70-7	30.00000	0.00020	
			Aldehyde	104-55-2	30.00000	0.00020	
			Formic Acid	64-18-6	30.00000	0.00020	
			Sulfurized polyolefin	98037-13-8	5.00000	0.00003	
			Isopropanol	67-63-0	5.00000	0.00003	
			Potassium Iodide	7681-11-0	2.00000	0.00001	
			Methanol	67-56-1	100.00000	0.00001	
			Polyakylene	7756-94-7	1.00000	0.00001	
			2-butoxy-1-propanol	15821-63-7	0.10000	0.00000	
			Potassium Acetate	127-08-2	0.50000	0.00000	
			Polyoxyalkylenes	68951-67-7	30.00000	0.00000	
			Fatty Acids	61790-12-3	10.00000	0.00000	
			Modified Thiourea Polymer	68527-49-1	7.00000	0.00000	
			Propargyl Alcohol	107-19-7	5.00000	0.00000	
			Olefin	64743-02-8	5.00000	0.00000	
			Formaldehyde	50-00-0	1.00000	0.00000	

\* 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°20'00"

6,692'

5,822' TO BOTTOM HOLE  
LATITUDE 39°20'00"

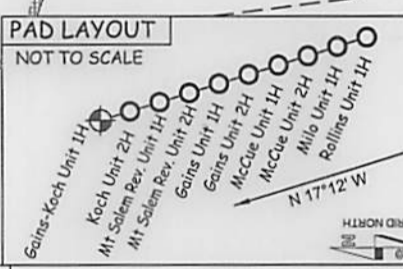
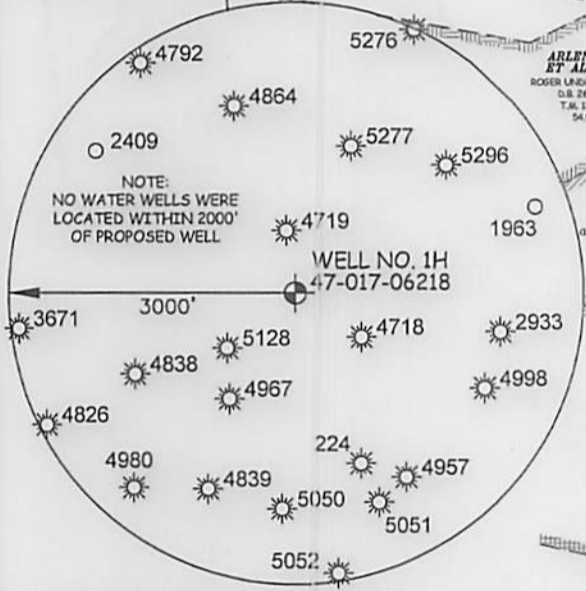
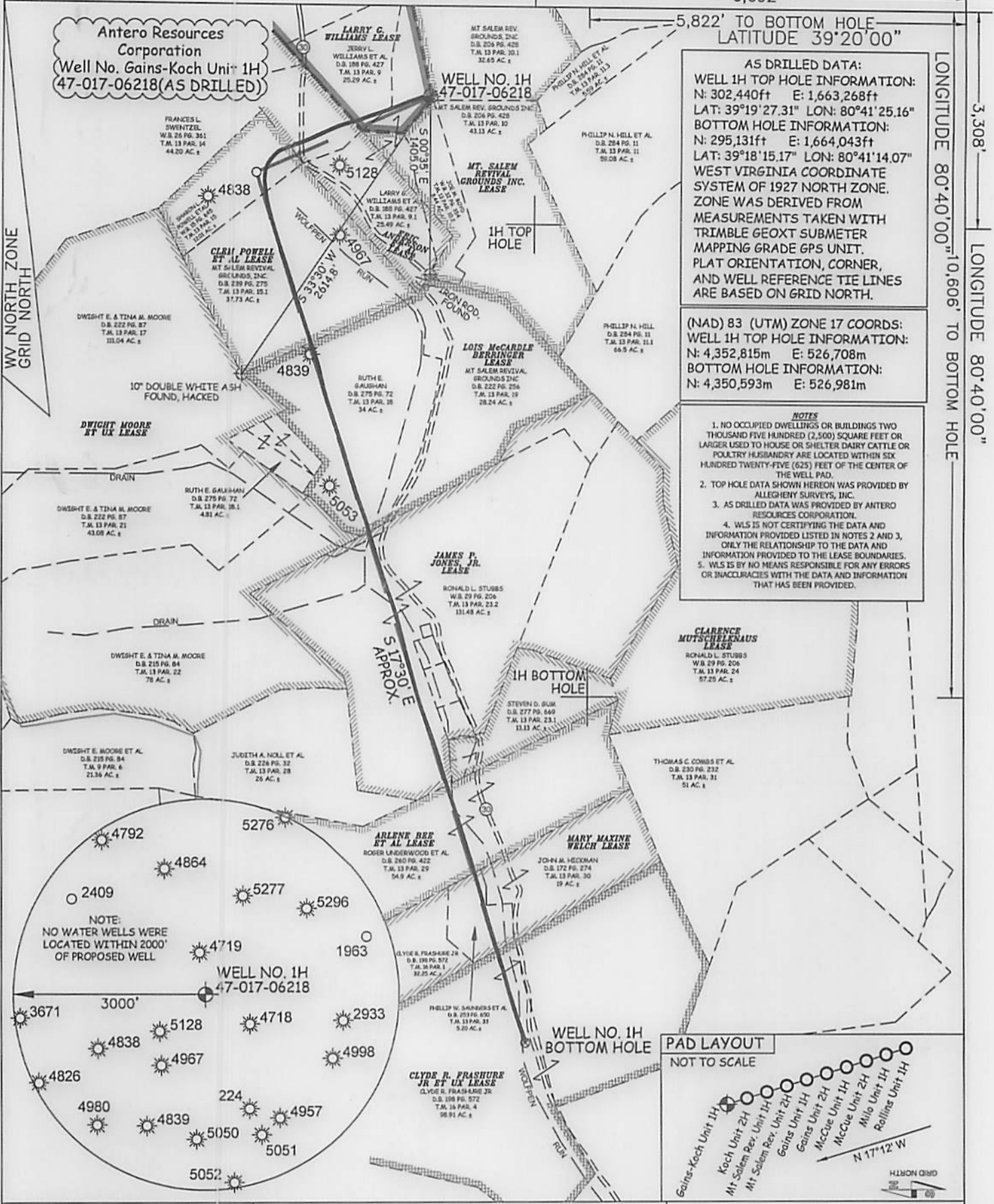
LONGITUDE 80°40'00" TO BOTTOM HOLE  
3,308'  
LONGITUDE 80°40'00"

Antero Resources Corporation  
Well No. Gains-Koch Unit 1H  
47-017-06218 (AS DRILLED)

AS DRILLED DATA:  
WELL 1H TOP HOLE INFORMATION:  
N: 302,440ft E: 1,663,268ft  
LAT: 39°19'27.31" LON: 80°41'25.16"  
BOTTOM HOLE INFORMATION:  
N: 295,131ft E: 1,664,043ft  
LAT: 39°18'15.17" LON: 80°41'14.07"  
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: 4,352,815m E: 526,708m  
BOTTOM HOLE INFORMATION:  
N: 4,350,593m E: 526,981m

- NOTES
1. 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.
  2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
  3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
  4. WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3, OR THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.
  5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.



JOB # 13-077WA  
DRAWING # GAINS-KOCHUNIT1HAD  
SCALE 1" = 1000'  
MINIMUM DEGREE OF ACCURACY SUBMETER  
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
WILLOW LAND SURVEYING PLLC  
220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

LEGEND  
 - - - Surface Owner Boundary Lines +/-  
 - - - Interior Surface Tracts +/-  
 - - - Existing Fence  
 ⊕ Found monument, as noted  
 ⊙ Proposed Well Path  
 ⊗ As Drilled Well Path

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

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL   
 (IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW   
 LOCATION: ELEVATION 1,402' ORIGINAL - 1,376' AS-DRILLED WATERSHED HEADWATERS MIDDLE ISLAND CREEK  
 QUADRANGLE SMITHBURG 7.5' DISTRICT GRANT COUNTY DODDRIDGE

SURFACE OWNER LARRY WILLIAMS ET AL ACREAGE 25.49 ACRES +/-  
 OIL & GAS ROYALTY OWNER LARRY G. WILLIAMS; ERIC ANDERSON ET AL; CLEM POWELL ET AL; LOIS MCCARDLE BERRINGER; JAMES P. JONES, JR.; ARLENE BEE ET AL; MARY MAXINE WELCH; CLYDE RYLAN FRASHURE JR ET UX 67.5 ACRES+; 141 ACRES+; 55 ACRES+; 63.434 ACRES+; 131 ACRES+  
 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 7,202' TVD 14,425' MD

WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER  
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD  
 DENVER, CO 80202 CHARLESTON, WV 25313

DATE 04/20/15  
 OPERATOR'S WELL # GAINS-KOCH UNIT #1H  
 API WELL # 47 - 017 - 06218  
 STATE COUNTY PERMIT 10/23/2015