

WR-35  
Rev (9-11)

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

DATE: 5/16/2012  
API #: 47-033-05541

Farm name: Salerno, Albert, ET AL Operator Well No.: Harbert East A 1H

LOCATION: Elevation: 1243' Quadrangle: Shinnston 7.5'

District: Eagle County: Harrison  
Latitude: 11.610 Feet South of 39 Deg. 25 Min. 00 Sec.  
Longitude 3.570 Feet West of 80 Deg. 20 Min. 00 Sec.

Company: XTO Energy, Inc.

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
PO Box 1008, Jane Lew, WV 26378	20"	117'	117'	CTS - 27 BBLs
Agent: Gary Beall	13 3/8"	529'	529'	CTS - 424 sks
Inspector: Tristan Jenkins	9 5/8"	2775'	2775'	957 sks
Date Permit Issued: 5/02/2011	5 1/2"	10727'	10727'	1260 sks
Date Well Work Commenced: 8/25/2011				
Date Well Work Completed: 4/26/2012				
Verbal Plugging:				
Date Permission granted on:				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input type="checkbox"/>				
Total Vertical Depth (ft): 7,192				
Total Measured Depth (ft): 10,730				
Fresh Water Depth (ft.): 175', 250'				
Salt Water Depth (ft.): None Noted				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): None Noted				
Void(s) encountered (N/Y) Depth(s) N				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation Marcellus Pay zone depth (ft) 7170 - 7192

Gas: Initial open flow Show MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow Show MCF/d Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ Hours  
Static rock Pressure \_\_\_\_\_ psig (surface pressure) after \_\_\_\_\_ Hours

Second producing formation \_\_\_\_\_ Pay zone depth (ft) \_\_\_\_\_

Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow \_\_\_\_\_ MCF/d Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ Hours  
Static rock Pressure \_\_\_\_\_ psig (surface pressure) after \_\_\_\_\_ Hours

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I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

  
Signature

6-14-12  
Date

Were core samples taken? Yes \_\_\_\_\_ No Were cuttings caught during drilling? Yes  No \_\_\_\_\_Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list \_\_\_\_\_  
GR, ROP, VS, TVD, MWD, Mudlogs

**NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.**

Perforated Intervals, Fracturing, or Stimulating:

Stg 1 Marcellus; 10,479'-10,657'; 72 shots; Slick water frac; Avg treating 7046 psi@82 bpm; 75,541#s 100 mesh; 247,645#s 30/50 mesh; 6,951 bbl water, 698 bbl treated water

Stg 2 Marcellus; 10,220'-10,398'; 72 shots; Slick water frac; Avg treating 7410 psi@85 bpm; 75,764#s 100 mesh; 265,669#s 30/50 mesh; 7,568 bbl water, 501 bbl treated water

Stg 3 Marcellus; 9,961'-10,139'; 72 shots; Slick water frac; Avg treating 7166 psi@84 bpm; 75,853#s 100 mesh; 265,376#s 30/50 mesh; 7,677 bbl water, 701 bbl treated water

Stg 4 Marcellus; 9,702'-9,880'; 72 shots; Slick water frac; Avg treating 6991 psi@85 bpm; 73,667#s 100 mesh; 272,962#s 30/50 mesh; 7,934 bbl water, 674 bbl treated water

Stg 5 Marcellus; 9,443'-9,621'; 72 shots; Slick water frac; Avg treating 6801 psi@85 bpm; 75,766#s 100 mesh; 270,656#s 30/50 mesh; 7,739 bbl water, 851 bbl treated water

Stg 6 Marcellus; 9,184'-9,362'; 72 shots; Slick water frac; Avg treating 6840 psi@83 bpm; 74,641#s 100 mesh; 267,067#s 30/50 mesh; 7,479 bbl water, 1001 bbl treated water

Plug Back Details Including Plug Type and Depth(s):

See additional pages

Formations Encountered:	Top Depth	/	Bottom Depth
Surface:			
Fill	0/127		
SS	127/164		
SH, SS	164/220	Hole Damp @ 175'	
SH	220/225		
SH, SS	225/268	2" Stream H2O @ 250'	
SS	268/395		
SH	395/410		
SS	410/420		
SH	420/470		
SS	470/540		
SH, SS	540/667		
SH	667/920		
SS, SH	920/1250		
SH	1250/1732		

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See additional pages

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**Harbert East A 1H 47-033-05541****Additional Stages**

Stg 7 Marcellus; 8,925'-9,103'; 72 shots; Slick water frac; Avg treating 6798 psi@85 bpm; 76,248#s 100 mesh; 268,813#s 30/50 mesh; 7,987 bbl water, 539 bbl treated water
Stg 8 Marcellus; 8,666'-8,844'; 72 shots; Slick water frac; Avg treating 6522 psi@84 bpm; 75,157#s 100 mesh; 270,671#s 30/50 mesh; 8,530 bbl water
Stg 9 Marcellus; 8,407'-8,585'; 72 shots; Slick water frac; Avg treating 6286 psi@84 bpm; 76,032#s 100 mesh; 266,625#s 30/50 mesh; 8,573 bbl water
Stg 10 Marcellus; 8,148'-8,326'; 72 shots; Slick water frac; Avg treating 6518 psi@85 bpm; 75,254#s 100 mesh; 268,900#s 30/50 mesh; 8,729 bbl water
Stg 11 Marcellus; 7,889'-8,067'; 72 shots; Slick water frac; Avg treating 6518 psi@85 bpm; 74,907#s 100 mesh; 267,598#s 30/50 mesh; 8,548 bbl water
Stg 12 Marcellus; 7,630'-7,808'; 72 shots; Slick water frac; Avg treating 6605 psi@85 bpm; 76,069#s 100 mesh; 266,198#s 30/50 mesh; 8,416 bbl water

**Additional Formation Log**

SS,SH	1732	2030
SH	2030	2485
SS,SH	2485	2674
SH	2674	2775
SLTST,SH	2775	2800
SLTST,SH,SS	2800	2860
SH, SLTST	2860	2980
SS,SLTST	2980	3010
SH,SLTST	3010	3070
SLTST,SH,SS	3070	3100
SH,SLTST	3100	3190
SH	3190	3220
SH,SLTST	3220	3280
SH	3280	3310
SLTST,SS,SH	3310	3370
SH	3370	3400
SH, SLTST,SS	3400	3430
SH,SLTST	3430	3490
SH,SS,SLTST	3490	3610
SH,SLTST	3610	3640
SLTST,SH,SS	3640	3790
SH,SLTST	3790	4060
SH,SS,SLTST	4060	4150
SH	4150	4180
SS,SLTST,SH	4180	4240
SH,SLTST,SS	4240	4360
SH	4360	4510
SH,SLTST	4510	4540
SS,SLTST,SH	4540	4570
SH,SLTST	4570	4810

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Additional Formation Log

SH	4810	4900
SH & SLTST	4900	4960
SH	4960	5020
SH & SLTST	5020	5050
SH	5050	5770
SH & SLTST	5770	5800
SH	5800	7100
LS, SH	7100	7190
SH & LS	7190	7200
SH	7200	7450
SH & LS	7450	7530
SH	7530	9980
SH, MRST	9980	10370
SH	10370	10730

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Formation	Tops
BIG INJUN*	1533
SQUAW SAND*	1623
GANTZ SAND*	2003
50FT SAND*	2054
30FT SAND*	2146
GORDON SAND*	2219
LWR GORDON *	2330
4TH SAND*	2422
5TH SAND*	2490
UPPER BALLTOWN*	3323
BALLTOWN*	3409
LOWER BALLTOWN*	3500
GENESEO SHALE	6904
TULLY LIMESTONE	6943
HAMILTON SHALE	6997
MARCELLUS SHALE	7061
PURCELL LIMESTONE	7160

\* Tops projected from offset log due to air drilling and therefore not logging this section

Tully	7108 MD
	6943 TVD
Hamilton	7180 MD
	6997 TVD
Marcellus	7277 MD
	7061 TVD

# Hydraulic Fracturing Fluid Product Component Information Disclosure

033-05541

Fracture Date:	3/27/2012
State:	West Virginia
County:	Harrison
API Number:	47-033-05541
Operator Name:	XTO Energy
Well Name and Number:	Harbert 1H
Longitude:	-80.346064
Latitude:	39.384795
Long/Lat Projection:	NAD27
Production Type:	Gas
True Vertical Depth (TVD):	7,168
Total Water Volume (gal)*:	4,246,032

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**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			water	7732-18-5	100.00000%	0.8915	
Sand		Proppant	sand	14808-60-7	100.00000%	0.1033	
Biocide - MC 8520	Multi-Chem	Biocide	Whole Product				
			4,4 -Dimethyloxazolidine	51200-87-4	95.00000%	0.0001	
			3,4,4-Trimethyloxazolidine	75673-43-7	4.50000%	0.0000	
			2-Amino-2-Methyl-1-Propanol	124-68-5	0.50000%	0.0000	
Biocide - MC 8650	Multi-Chem	Biocide	Whole Product				
			Glutaraldehyde	111-30-8	60.00000%	0.0000	
			Other -(non hazardous)		40.00000%	0.0000	
Friction Reducer - M	Multi-Chem	Friction Reducer	Whole Product				
			Hydrotreated light distillates (10-30%)	64742-47-8	30.00000%	0.0002	
			Other -(non hazardous)		70.00000%	0.0004	
Scale Inhibitor - MC-	Multi-Chem	Scale Inhibitor	Whole Product				
			Other -(non hazardous)		100.00000%	0.0001	
Acid - 7.5% HCl Acid	Universal	Acid	Whole Product				
			Hydrochloric Acid (15-40%) blended de	7647-01-0	7.50000%	0.0003	
			Other -(non hazardous)		92.50000%	0.0041	

\* 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%

All component information listed was obtained from the supplier's Material Safety Data Sheets (MSDS). As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of the MSDS should be directed to the supplier who provided it. The Occupational Safety and Health Administration's (OSHA) regulations govern the criteria for the disclosure of this information. Please note that Federal Law protects "proprietary", "trade secret", and "confidential business information" and the criteria for how this information is reported on an MSDS is subject to 29 CFR 1910.1200(i) and Appendix D.

**47-033-05541**

<b>Harbert East A 1H</b>	<b>Units</b>	<b>Stage 1</b>	<b>Stage 2</b>	<b>Stage 3</b>	<b>Stage 4</b>	<b>Stage 5</b>	<b>Stage 6</b>	<b>Stage 7</b>	<b>Stage 8</b>
Iron Control	gal								
Acid	gal	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00
Biocide	gal	78.00	83.00	88.00	88.00	90.00	71.00	72.00	71.00
Fresh Water	gal	6,951.00	7,568.00	7,677.00	7,934.00	7,739.00	7,479.00	7,987.00	8,530.00
Friction Reducer	gal	190.00	249.00	194.00	206.00	204.00	202.00	198.00	200.00
Sand	bbl	75,541.00	265,669.00	75,853.00	73,667.00	75,766.00	74,641.00	268,813.00	75,157.00
Sand	gal	247,645.00	75,764.00	265,376.00	272,962.00	270,656.00	267,067.00	76,248.00	270,671.00
Scale Inhibitor	lb	31.00	33.00	35.00	36.00	36.00	35.00	36.00	35.00
Water - Recycled	lb	698.00	501.00	701.00	674.00	851.00	1,001.00	539.00	0.00

<b>Harbert East A 1H</b>	<b>Units</b>	<b>Stage 9</b>	<b>Stage 10</b>	<b>Stage 11</b>	<b>Stage 12</b>
Iron Control	gal				
Acid	gal	1,500.00	1,500.00	1,500.00	1,500.00
Biocide	gal	72.00	74.00	70.00	70.00
Fresh Water	gal	8,573.00	8,729.00	8,548.00	8,416.00
Friction Reducer	gal	200.00	207.00	200.00	174.00
Sand	bbl	266,625.00	268,900.00	267,598.00	266,198.00
Sand	gal	76,032.00	75,254.00	74,907.00	76,069.00
Scale Inhibitor	lb	36.00	36.00	35.00	34.00
Water - Recycled	lb		0.00	0.00	0.00

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