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WR-35  
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Page 1 of 4

WV GEOLOGICAL SURVEY  
MORGANTOWN, WV

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

API 47 - 061 - 01670 County Monongalia District Clay  
Quad Blacksville, WV Pad Name Yost Field/Pool Name Blacksville  
Farm name Yost Heritage Inc. Well Number 5H  
Operator (as registered with the OOG) Northeast Natural Energy LLC  
Address 707 Virginia St. Suite 1200 City Charleston State WV Zip 25301

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4388282.8 Easting 567095.1  
Landing Point of Curve Northing 4388421.4 Easting 567287.9  
Bottom Hole Northing 4390237.6 Easting 565987.8

Elevation (ft) 1,492' 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)

Synthetic Based Mud for horizontal section; BIO-BASE 365, CALCIUM CHLORIDE POWDER, G-SEAL PLUS, HRP, LIME, M-I WATE (BARITE), M-I-X II MEDIUM,  
MEGADRIL P SYSTEM, MEGADRIL P SYSTEM RENTAL, MEGAMUL, SAFE-CARB 250, VERSATHIN HF, VERSAWET, VG-PLUS, VINSEAL MEDIUM, WALNUT NUT PLUG MEDIUM

Date permit issued 5-16-2014 Date drilling commenced 9-18-2014 Date drilling ceased 12-10-2014  
Date completion activities began 3/7/2015 Date completion activities ceased 3-28-2015  
Verbal plugging (Y/N) \_\_\_\_\_ Date permission granted \_\_\_\_\_ Granted by \_\_\_\_\_

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

Freshwater depth(s) ft 1,378' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 2,410' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 320' ; 712' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by:

04/29/2016

API 47-061 - 01670

Farm name Yost Heritage Inc.

Well number 5H

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	24	52'	N	N/A	N/A	Y to surface
Surface	17.5	13 3/8	1,308'	N	54.5	N/A	Y 35 BBL return
Coal							
Intermediate 1	12.25	9 5/8	2,660'	N	40	N/A	Y 25 BBL return
Intermediate 2							
Intermediate 3							
Production	8.5	5.5	16,233'	N	20	N/A	Y 5 BBL return
Tubing	4.771	2.875	8,764'	N	6.5	N/A	
Packer type and depth set		No packer set					

Comment Details All casing and cement jobs went with out issue.

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	4,500 psi ready mix	36.4		.75	27.27	CTS	48
Surface	Class A	1004	15.2	1.27	1,271	CTS	8
Coal							
Intermediate 1	Class A	858	15.2	1.26	1,074	CTS	8
Intermediate 2							
Intermediate 3							
Production	50/50 Premium NE-1 3% R-3 3% MPA170	3192	14.5	1.17	2,661	CTS	48
Tubing							

Drillers TD (ft) 16,223'

Loggers TD (ft) 16,233'

Deepest formation penetrated Marcellus

Plug back to (ft) N/A

Plug back procedure

Kick off depth (ft) 8,972'

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

Surface: bow spring centralizers every 3rd joint or aprox 120'

Intermediate: bow spring centralizers every 3rd joint or aprox 120'

Production: Hard bodied spiral centralizers every other joint or aprox 80' from TD to KOP then bow spring from KOP to 9 5/8" every forth joint or aprox 140'

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS Completed in a multi-stage plug-and-perforate manner.  
(See Attached Details).

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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CEMENT JOB REPORT



<b>CUSTOMER</b> NORTHEAST NATURAL ENER	<b>DATE</b> 24-SEP-14	<b>F.R. #</b> 10011102091	<b>SERV. SUPV.</b> Ron Bland
<b>LEASE &amp; WELL NAME</b> YOST 5H - API 47061016700000	<b>LOCATION</b> DAYBROOK W.V		<b>COUNTY-PARISH-BLOCK</b> Monongalia West Virginia
<b>DISTRICT</b> Clarksburg	<b>DRILLING CONTRACTOR RIG #</b> PERFORMNACE		<b>TYPE OF JOB</b> Intermediate

<b>SIZE &amp; TYPE OF PLUGS</b>	<b>LIST-CSG-HARDWARE</b>	<b>MECHANICAL BARRIERS</b>	<b>MD</b>	<b>TVD</b>	<b>HANGER TYPES</b>	<b>MD</b>	<b>TVD</b>
9-5/8" Top Cem Plug, Nitrile cvr, Ph	Float Shoe 9-5/8 - 8rd						

MATERIALS FURNISHED BY BJ	LAB REPORT NO.	PHYSICAL SLURRY PROPERTIES						
		SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER
PREM NE 1 +1.5%Cacl		858	15.2	1.26	5.76	02:30	190	116.12
500# GEL			8.34				25	
H2O			8.34				191.4	
200# SUGAR FOR PIT			8.34				20	
<b>Available Mix Water</b> 370 Bbl.		<b>Available Displ. Fluid</b> 370 Bbl.		<b>TOTAL</b>			426.4	116.12

HOLE			TBG-CSG-D.P.							COLLAR DEPTHS		
SIZE	% EXCESS	DEPTH	ID	OD	WGT.	TYPE	MD	TVD	GRADE	SHOE	FLOAT	STAGE
12.25	30	2670	8.835	9.625	40	CSG	2660	2660	J-55			

LAST CASING				PKR-CMT RET-BR PL-LINER				PERF. DEPTH			TOP CONN		WELL FLUID	
ID	OD	WGT.	TYPE	MD	TVD	BRAND & TYPE	DEPTH	TOP	BTM	SIZE	THREAD	TYPE	WGT.	
							9.625	8RD				OTHER	0	

DISPL VOLUME		DISPL FLUID		CAL. PSI	CAL. MAX PSI	OP. MAX	MAX TBG PSI		MAX CSG PSI		MIX WATER
VOLUME	UOM	TYPE	WGT.	BUMP PLUG	TO REV.	SQ. PSI	RATED	Operator	RATED	Operator	
191.4	BBSL	H2O	8.34	915	0	0	0	0	2600	2400	TANKS
		200# SUGAR FOR F	8.34								

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING:

PRESSURE/RATE DETAIL					EXPLANATION	
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>
	PIPE	ANNULUS				
02:30						TEST LINES 2577 PSI
08:30						CIRCULATING WELL - RIG <input type="checkbox"/> BJ <input type="checkbox"/>
09:29	2744					ON LOC
09:30	140		7	175	H2O	RIG IN SAFETY MEETING
09:57	130		6	25	GELL	PSI TEST
10:02	125		6	10	H2O	PREFLUSH
10:04	190		5.6	190	SLURRY	PREFLUSH
10:41	0					SPACER
10:42	100		6.5	191.4	H2O	15.2#
11:15	977					SHUT DOWN DROP PLUG
11:20	90		6	90	H2O	DISP
11:30						PLUG DOWN
						WASH OUT STACK
						SHUT DOWN RIG DOWN SAFETY MEETING

<b>BUMPED PLUG</b>	<b>PSI TO BUMP PLUG</b>	<b>TEST FLOAT EQUIP.</b>	<b>BBL.CMT RETURNS/ REVERSED</b>	<b>TOTAL BBL. PUMPED</b>	<b>PSI LEFT ON CSG</b>	<b>SPOT TOP OUT CEMENT</b>	<b>SERVICE SUPERVISOR SIGNATURE:</b>
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	977	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	10	681.4	977	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	R. Bland



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CUSTOMER NORTHEAST NATURAL ENER	DATE 11-DEC-14	F.R.# 1001124961	SERV. SUPV. Brian Lough
LEASE & WELL NAME YOST 5H - API 47061016700000	LOCATION CLAY	COUNTY-PARISH-BLOCK Monongalia West Virginia	
DISTRICT Clarksburg	DRILLING CONTRACTOR RIG # PIONEER 63	TYPE OF JOB Long String	

SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	MECHANICAL BARRIERS	MD	TVD	HANGER TYPES	MD	TVD
5-1/2" Top Cem Plug, Nitri cvr, Phen	Guide Shoe, Cement Nose, 5-1/2 i Float Collar, AI Flap, 5-1/2 - 8rd						

MATERIALS FURNISHED BY BJ	LAB REPORT NO.	PHYSICAL SLURRY PROPERTIES						
		SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER
H2O			8.34				5	
ULTRA FLUSH HV			13				101	
CLASS A (PREM NE-1) 50/50 POZ(FLY ASH)+R-3+MI		3,192	14.5	1.17	5.14	06:30	636	373.53
H2O WITH HALLIBURTON RETARDER			8.34				10	
FRESH H2O			8.34				349	
150 LBS OF SUGAR ON THE SIDE			8.34				20	
Available Mix Water	750 Bbl.	Available Displ. Fluid	750 Bbl.	TOTAL			1121	373.53

HOLE			TBG-CSG-D.P.					COLLAR DEPTHS				
SIZE	% EXCESS	DEPTH	ID	OD	WGT.	TYPE	MD	TVD	GRADE	SHOE	FLOAT	STAGE
8.75	10	16233	4.778	5.5	20	CSG	16207		P-110	16207	16193	

LAST CASING			PKR-CMT RET-BR PL-LINER		PERF. DEPTH		TOP CONN		WELL FLUID				
ID	OD	WGT	TYPE	MD	TVD	BRAND & TYPE	DEPTH	TOP	BTM	SIZE	THREAD	TYPE	WGT.
8.8	9.625	40	CSG	2609	2609					5.5	BUTT	SYNTHETIC MUD	12.5

DISPL. VOLUME		DISPL. FLUID		CAL. PSI	CAL. MAX PSI	OP. MAX	MAX TBG PSI		MAX CSG PSI		MIX WATER
VOLUME	UOM	TYPE	WGT.	BUMP PLUG	TO REV.	SQ. PSI	RATED	Operator	RATED	Operator	
360	BBLS	H2O WITH HALLIBU	8.34	3500	0	0	0	0	10112	5000	TANK
		FRESH H2O	8.34								

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING:

PRESSURE/RATE DETAIL						EXPLANATION	
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>	
	PIPE	ANNULUS				TEST LINES	6450 PSI
						CIRCULATING WELL - RIG <input checked="" type="checkbox"/> BJ <input checked="" type="checkbox"/>	
11:30						ARRIVE ON LOCATION. JOB TIME ASAP	
11:35						SPOT EQUIPMENT	
11:45						SAFETY MEETING WITH BHI CREW	
12:00						RIG INTO WELL & TANKS	
17:30						SAFETY MEETING WITH RIG CREW & CO.MAN	
18:00	1000		5		H2O	LINE FILL	
18:01						SHUT DOWN. THREADS ON SUB AND LANDING JOINT LEAKING	
19:40						LEAK REPAIRED. FILL LINE FOR PRESSURE TEST	
19:42	0		.2	.2	H2O	PRESSURE TEST TO 6500 PSI	
19:43	715		4.5	100	PRE-FLUS	ULTRA FLUSH HV	
20:06	976		5.6	636	CEMENT	CLASS A 50/50 POZ (FLY ASH)+R-3+MPA-170. TEMP 45 DEGREEF	
21:09	0					BULK HOSE PLUGGED. SHUT DOWN TO CLEAR HOSE	
21:38	175		3		CEMENT	HOSE CLEANED OUT. CONTINUE TO PUMP CEMENT	
22:46	0				H2O	SHUT DOWN/ FLUSH LINES / DROP PLUG	
22:48	120		5.5	10	H2O	FRESH H2O WITH HALLIBURTON RETARDER	
22:50	3600		6.5	349	H2O	FRESH WATER DISPLACEMENT-TOTAL DISPLACEMENT 360	
23:40	4100		3.5		H2O	LAND PLUG / SHUT DOWN	

CEMENT JOB REPORT



PRESSURE/RATE DETAIL						EXPLANATION		
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>		
	PIPE	ANNULUS				TEST LINES	6450 PSI	
23:42	0					CIRCULATING WELL - RIG <input checked="" type="checkbox"/> BJ <input checked="" type="checkbox"/>		
23:43						RELEASE PRESSURE / CHECK FLOATS		
						END JOB		
	BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERVICE SUPERVISOR SIGNATURE:
	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	3600	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	0	1116	0	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<i>BK Long</i>

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Perforation Record					
Stage Number	Report Date	Perforated from MD ft	Perforated to MD ft	Number of Perforations	Formation
1	3/11/2015	16,179	16,068	40	Marcellus Shale
2	3/14/2015	16,028	15,917	40	Marcellus Shale
3	3/14/2014	15,877	15,766	40	Marcellus Shale
4	3/14/2015	15,726	15,612	40	Marcellus Shale
5	3/15/2015	15,565	15,464	40	Marcellus Shale
6	3/15/2015	15,424	15,317	40	Marcellus Shale
7	3/15/2015	15,273	15,162	40	Marcellus Shale
8	3/16/2015	15,122	15,011	40	Marcellus Shale
9	3/16/2015	14,971	14,860	40	Marcellus Shale
10	3/16/2015	14,820	14,709	40	Marcellus Shale
11	3/17/2015	14,669	14,558	40	Marcellus Shale
12	3/17/2015	14,518	14,407	40	Marcellus Shale
13	3/17/2015	14,367	14,256	40	Marcellus Shale
14	3/17/2015	14,218	14,105	40	Marcellus Shale
15	3/18/2015	14,065	13,954	40	Marcellus Shale
16	3/18/2015	13,914	13,803	40	Marcellus Shale
17	3/19/2015	13,763	13,652	40	Marcellus Shale
18	3/19/2015	13,612	13,501	40	Marcellus Shale
19	3/19/2015	13,461	13,350	40	Marcellus Shale
20	3/19/2015	13,310	13,197	40	Marcellus Shale
21	3/19/2015	13,159	13,048	40	Marcellus Shale
22	3/20/2015	13,008	12,897	40	Marcellus Shale
23	3/20/2015	12,857	12,746	40	Marcellus Shale
24	3/20/2015	12,702	12,592	40	Marcellus Shale
25	3/20/2015	12,555	12,444	40	Marcellus Shale
26	3/21/2015	12,404	12,293	40	Marcellus Shale
27	3/20/2015	12,253	12,142	40	Marcellus Shale
28	3/21/2015	12,102	11,991	40	Marcellus Shale
29	3/22/2015	11,947	11,837	40	Marcellus Shale
30	3/22/2015	11,802	11,689	40	Marcellus Shale
31	3/22/2015	11,649	11,538	40	Marcellus Shale
32	3/22/2015	11,498	11,387	40	Marcellus Shale
33	3/23/2015	11,347	11,236	40	Marcellus Shale
34	3/23/2015	11,196	11,085	40	Marcellus Shale
35	3/23/2015	11,043	10,932	40	Marcellus Shale
36	3/23/2015	10,890	10,785	40	Marcellus Shale
37	3/24/2015	10,743	10,632	40	Marcellus Shale
38	3/24/2015	10,592	10,481	40	Marcellus Shale
39	3/24/2015	10,441	10,332	40	Marcellus Shale
40	3/24/2015	10,290	10,179	40	Marcellus Shale
41	3/25/2015	10,136	10,028	40	Marcellus Shale
42	3/25/2015	9,988	9,877	40	Marcellus Shale
43	3/25/2015	9,837	9,728	40	Marcellus Shale
44	3/25/2015	9,686	9,575	40	Marcellus Shale
45	3/28/2015	9,535	9,424	40	Marcellus Shale
46	3/28/2015	9,380	9,273	40	Marcellus Shale
47	3/28/2015	9,230	9,122	40	Marcellus Shale
48	3/28/2015	9,082	8,973	40	Marcellus Shale
49	3/28/2015	8,931	8,820	40	Marcellus Shale

04/29/2016



Stimulation Record							
Stage Number	Report Date	Avg Treating Rate (BPM)	Avg Treating Pressure (psi)	Breakdown Pressure (psi)	ISIP (psi)	Total Proppant Amount (lbs)	Total Clean Fluid (Bbls)
1	3/11/2015	67	9,251	7,017	4,873	401,840	10,002
2	3/14/2015	61	9,338	6,184	5,736	280,027	6,789
3	3/14/2015	73	9,020	6,830	6,013	396,700	6,484
4	3/14/2015	79	8,870	6,558	6,149	428,837	7,701
5	3/15/2015	80	8,992	7,257	6,321	403,829	7,488
6	3/15/2015	78	8,999	6,198	5,596	399,660	7,553
7	3/15/2015	79	9,197	8,146	6,426	404,320	7,308
8	3/16/2015	78	9,001	7,436	6,032	400,060	7,649
9	3/16/2015	81	9,036	6,306	5,701	395,620	7,567
10	3/16/2015	80	9,097	6,352	6,010	401,860	7,510
11	3/17/2015	74	9,004	8,598	5,846	400,880	8,766
12	3/17/2015	76	8,849	8,126	6,371	403,464	7,252
13	3/17/2015	80	9,262	7,428	5,959	399,960	8,773
14	3/17/2015	77	8,790	8,822	5,642	396,180	7,302
15	3/18/2015	75	8,985	8,509	5,546	399,900	7,121
16	3/18/2015	74	9,048	8,580	5,833	398,280	7,455
17	3/19/2015	72	8,792	7,922	N/A	326,655	6,667
18	3/19/2015	80	8,783	8,586	6,303	399,780	7,298
19	3/19/2015	78	9,009	8,653	6,468	401,400	7,789
20	3/19/2015	78	8,843	6,872	6,023	400,620	7,285
21	3/19/2015	78	8,843	7,197	6,023	400,620	7,285
22	3/20/2015	75	8,754	8,645	5,865	399,800	7,201
23	3/20/2015	76	8,704	9,029	6,278	401,080	7,269
24	3/20/2015	79	8,786	7,935	6,468	401,380	7,387
25	3/20/2015	70	8,780	8,837	6,117	400,700	8,273
26	3/21/2015	83	8,740	9,135	5,769	399,220	7,393
27	3/20/2015	81	8,850	8,371	5,546	400,900	7,093
28	3/21/2015	85	8,765	9,218	6,404	405,360	7,467
29	3/22/2015	77	8,926	9,353	5,610	402,320	8,438
30	3/22/2015	87	8,857	9,062	6,530	374,060	6,932
31	3/22/2015	84	8,463	8,865	5,895	401,680	7,537
32	3/22/2015	84	8,524	7,515	5,546	398,880	7,448
33	3/23/2015	89	8,527	8,057	5,704	399,400	7,076
34	3/23/2015	87	8,746	8,245	6,149	358,355	6,791
35	3/23/2015	87	8,376	7,420	6,085	403,120	7,086
36	3/23/2015	87	8,712	7,315	5,890	405,940	7,200
37	3/24/2015	86	8,861	8,039	5,991	400,020	7,126
38	3/24/2015	91	8,824	8,258	6,544	400,100	7,017
39	3/24/2015	91	8,774	8,803	6,594	398,300	7,375
40	3/24/2015	90	8,964	8,493	N/A	327,484	6,517
41	3/25/2015	91	8,717	7,889	6,530	399,440	7,250
42	3/25/2015	90	8,790	8,326	6,182	402,320	7,082
43	3/25/2015	93	8,619	7,294	6,691	399,920	7,039
44	3/25/2015	84	8,697	8,781	6,149	399,500	7,068
45	3/28/2015	95	8,757	7,387	6,213	403,680	7,168
46	3/28/2015	93	8,659	9,145	6,062	400,800	6,894
47	3/28/2015	88	8,667	8,174	6,561	401,520	7,046
48	3/28/2015	90	8,953	9,012	6,216	398,380	7,849
49	3/28/2015	92	8,813	8,701	5,704	262,280	5,798

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04/29/2016



# Hydraulic Fracturing Fluid Product Component Information Disclosure

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 MORGANTOWN, WV

Job Start Date:	3/11/2015
Job End Date:	3/28/2015
State:	West Virginia
County:	Monongalia
API Number:	47-061-01670-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	Yost 5H
Longitude:	-80.21804700
Latitude:	39.64169800
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	8,350
Total Base Water Volume (gal):	15,992,004
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
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.							
Proppant Transport	Schlumberger	Corrosion Inhibitor, Bactericide (Myacide GA25), Scale Inhibitor, AntiFoam Agent, Acid, Breaker, Gelling Agent, Friction Reducer, Iron Control Agent,					
			Water (Including Mix Water Supplied by Client)*	NA		86.73556	
			Quartz, Crystalline silica	14808-60-7	98.71479	13.09396	
			Hydrochloric acid	7647-01-0	0.61321	0.08134	
			Guar gum	9000-30-0	0.29775	0.03949	
			Ammonium sulfate	7783-20-2	0.14799	0.01963	
			Acrylamide, 2-acrylamido-2-methylpropanesulfonic acid, sodium salt polymer	38193-60-1	0.10923	0.01449	
			Glutaraldehyde	111-30-8	0.04507	0.00598	
			Diammonium peroxidisulphate	7727-54-0	0.01744	0.00231	
			Ethanol, 2,2',2"-nitrilotris-, 1,1',1"-tris(dihydrogen phosphate), sodium salt	68171-29-9	0.01178	0.00156	



		Polymer of 2-acrylamido-2-methylpropanesulfonic acid sodium salt and methyl acrylate	136793-29-8	0.01170	0.00155
		Urea	57-13-6	0.00718	0.00095
		Trisodium ortho phosphate	7601-54-9	0.00518	0.00069
		Sodium erythorbate	6381-77-7	0.00379	0.00050
		Non-crystalline silica (impurity)	7631-86-9	0.00224	0.00030
		Vinylidene chloride/methylacrylate copolymer	25038-72-6	0.00216	0.00029
		Methanol	67-56-1	0.00204	0.00027
		Sodium sulfate	7757-82-6	0.00168	0.00022
		Ethylene Glycol	107-21-1	0.00147	0.00020
		Fatty acids, tall-oil	61790-12-3	0.00142	0.00019
		Thiourea, polymer with formaldehyde and 1-phenylethanol	68527-49-1	0.00118	0.00016
		Alcohols, C14-15, ethoxylated (7EO)	68951-67-7	0.00056	0.00007
		2-propenamid	79-06-1	0.00036	0.00005
		Propargyl alcohol	107-19-7	0.00037	0.00005
		Polypropylene glycol	25322-69-4	0.00021	0.00003
		Hexadec-1-ene	629-73-2	0.00012	0.00002
		Tetrasodium ethylenediaminetetraacetate	64-02-8	0.00019	0.00002
		Magnesium silicate hydrate (talc)	14807-96-6	0.00007	0.00001
		1-Octadecene (C18)	112-88-9	0.00006	0.00001
		Dimethyl siloxanes and silicones	63148-62-9	0.00010	0.00001
		Octamethylcyclotetrasiloxane	556-67-2	0.00001	
		Formaldehyde	50-00-0	0.00001	
		poly(tetrafluoroethylene)	9002-84-0	0.00003	
		Dodecamethylcyclohexasiloxane	540-97-6		
		Copper(II) sulfate	7758-98-7		
		Siloxanes and silicones, dimethyl, reaction products with silica	67762-90-7	0.00001	
		Decamethyl cyclopentasiloxane	541-02-6	0.00001	

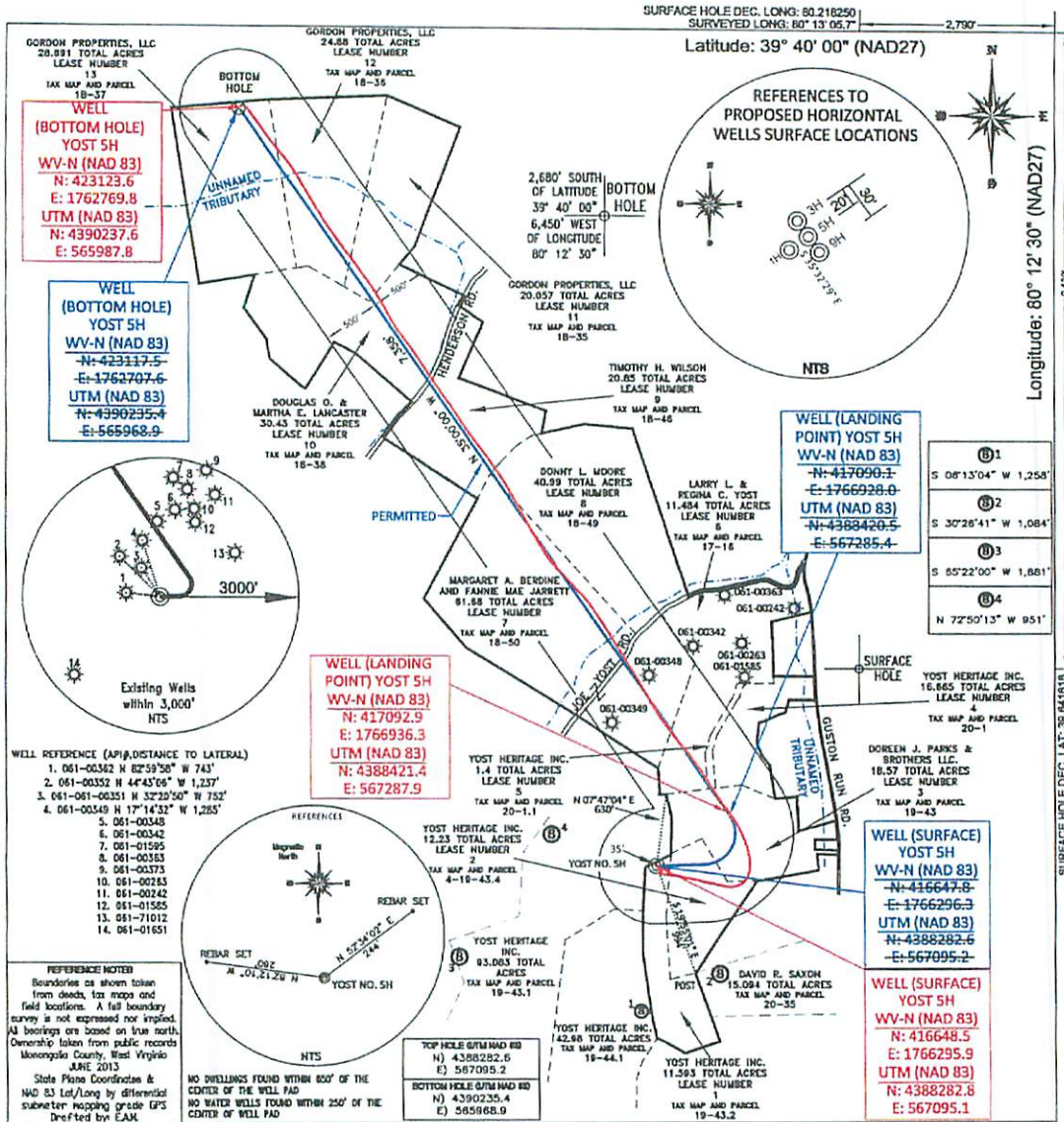
\* Total Water Volume sources may include fresh water, produced water, and/or recycled water

\*\* 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)





**(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP**  
**OFFICE OF OIL & GAS**  
601 57TH STREET  
CHARLESTON, WV 25304

Well Type:  Oil  Waste Diposal  Production  Deep  
 Gas  Liquid Injection  Storage  Shallow

WATERSHED: DUNKARD CREEK  
COUNTY/DISTRICT: MONONGALIA / CLAY  
SURFACE OWNER: YOST HERITAGE INC.  
OIL & GAS ROYALTY OWNER: JOE POGUE ET AL  
LEASE NUMBERS:

DATE: AUGUST 4, 2015  
OPERATOR'S WELL #: YOST NO. 5H AS-DRILLED  
API WELL #: 47 61 STATE COUNTY 01670  
AS-BUILT ELEVATION: 1,492'  
QUADRANGLE: BLACKSVILLE, WV  
ACREAGE: 11.593 +/-  
ACREAGE: 282.86 +/-

DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE   
PLUG OFF FORMATION  PERFORATE NEW FORMATION  PLUG & ABANDON   
CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY):

TARGET FORMATION: MARCELLUS  
WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC  
ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200  
CITY: CHARLESTON STATE: WV ZIP CODE: 25301

ESTIMATED DEPTH: TVD: 8,231' TMD: 16,073'  
DESIGNATED AGENT: JOHN ADAMS  
ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200  
CITY: CHARLESTON STATE: WV ZIP CODE: 25301

04/29/2016