

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

API 47-103-02996 County Wetzel District Grant  
Quad Pine Grove Pad Name WVDNR Pad 6 Field/Pool Name Jacksonburg  
Farm name WV Conservation Commission Well Number WVDNR # 1411  
Operator (as registered with the OOG) Triad Hunter, LLC  
Address 777 Post Oak Blvd. Suite 910 City Houston State Texas Zip 77056

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4372896 Easting 529445  
Landing Point of Curve Northing 4372640 Easting 529545  
Bottom Hole Northing 4371513 Easting 530347

Elevation (ft) 1460' 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 Base Mud System

Date permit issued 6/9/14 Date drilling commenced 8/15/14 Date drilling ceased 9/27/14  
Date completion activities began 11/19/14 Date completion activities ceased 12/27/14  
Verbal plugging (Y/N) N 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 Surface - 300' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 1400' - 2400' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft Unknown Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

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Reviewed by:  
JC 6/25/15  
WS 7/1/15

API 47-103 - 02996 Farm name WV Conservation Commission Well number WVDNR # 1411

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	26"	20"	100'	new	A53B 90 lb.	none	yes
Surface	17 1/2"	13 3/8"	1310'	new	J-55 54.5 lb.	none	yes - 55 bbls. cement returns
Coal							
Intermediate 1	12 1/4"	9 5/8"	3444'	new	J-55 36 lb.	none	yes - 56 bbls. cement returns
Intermediate 2							
Intermediate 3							
Production	8 3/4"	5 1/2"	12,554'	new	P-110 20lb.	none	yes - 73 bbls. cement returns
Tubing							
Packer type and depth set							

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	190	15.6	1.18	224	surface	12+
Surface	Class A	1176	15.6	1.19	1399	surface	8 - 12
Coal							
Intermediate 1	Class A	1152	15.6	1.21	1394	surface	8 - 12
Intermediate 2							
Intermediate 3							
Production	Varicem / Fraccem	1240 / 1330	13.6 / 15.2	1.53 / 1.28	3599	surface'	12+
Tubing							

Drillers TD (ft) 12,574' TMD 7612' TVD Loggers TD (ft) No open hole logs run in well  
 Deepest formation penetrated Marcellus Shale Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) @ 6650'

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 \_\_\_\_\_

13 3/8" - 1310' 4 centralizers

9 5/8" - 3444' 9 centralizers

5 1/2" - 12,554' 53 turbo centralizers in lateral & curve, and 12 bow centralizers in vertical section

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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**PERFORATION RECORD**

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	See Enclosed	Spread Sheet			

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)
	See	Enclosed	Spread Sheet					

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PRODUCING FORMATION(S)	DEPTHS		
Marcellus Shale	7,612'	TVD	12,574' MD

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 3,000 psi Bottom Hole 6,296 psi DURATION OF TEST 672 hrs

OPEN FLOW Gas 5,500 mcfpd Oil 5 bpd NGL \_\_\_\_\_ bpd Water 200 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)
WVDNR # 1411 H	0		0		** The pilot hole for the WVDNR # 1411 H is the Mills Wetzel # 31 H-1, permit # 47-103-02339. A copy of the stratigraphic record for the
Warren Sand	3310'	3359'			pilot hole is enclosed with this filing. Formation identification in the WVDNR
Alexander Slst.	5596'	5630'			# 1411 H well was based on a correlation between the cased hole log in
Geneseo	7400'	7425'	7500'	7548'	# 1411 well and the open hole log from the Mills Wetzel # 31 H-1 well.
Tully	7425'	NL	7548'	NL	
Marcellus	NL	NL	NL	NL	
					WVDNR # 1411 H
			Cased Hole Log	T.D. = 7727' MD	KOP = 6650' VD
					LP = 8,000' MD
					BHL = 12,574' TMD

Please insert additional pages as applicable.

Drilling Contractor Nabors Drilling USA, LP  
Address 515 West Greens Road, Suite 1000 City Houston State Texas Zip 77067

Logging Company Blue Dot Energy Services (KLX)  
Address P.O. Box 784 City Brigdeport State W.V. Zip 26330

Cementing Company Halliburton Energy Services  
Address 4999 East Point Drive City Zanesville State Ohio Zip 43702

Stimulating Company Producer Services Corp.  
Address 109 S. Graham Street City Zanesville State Ohio Zip 43701

Please insert additional pages as applicable.

Completed by Ben Smeltzer Telephone (740) 760-0570  
Signature *Ben Smeltzer* Title Geologist Date June 12, 2015

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

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**MILLS WETZEL # 31 H-1 ( Pilot Hole for WVDNR # 1410, # 1411, # 1412, & # 1413 )**  
**Permit # 47-103-02339**

<b>Lithology / Formation</b>	<b>Depth</b>	<b>Shows / Comments</b>
<b>Gordon Sandstone</b>	2952' - N/A	<b>No open hole logs above 3062'</b>
9 5/8" Casing Point	3062'	
shale & siltstone	3062' - 3586'	
<b>First Warren Sand</b>	3586' -3628'	
shale	3628' - 3643'	
<b>Second Warren Sand</b>	3643' - 3654'	
shale & siltstone	3654' - 4799'	
<b>Riley</b>	4799' - 4818'	
shale & siltstone	4818' - 5207'	
<b>Benson Sandstone</b>	5207' - 5240'	
shale	5240' - 5574'	Base Huron Shale @ 5293'
<b>Alexander Siltstone</b>	5574' - 5616'	
shale	5616' - 6275'	
<b>Rhinstreet Shale</b>	6275' - 6790'	Slight Show Gas
<b>Mahantango Formation</b>	6790' - 7048'	
<b>Geneseo Formation</b>	7048' - 7086'	
<b>Tully Limestone</b>	7086' - 7152'	
<b>Marcellus Shale</b>	7152' - 7208'	Show Gas
<b>Onondaga Limestone</b>	7208' -7238'	

**Driller's T.D = N/A**  
**Logger's T.D. = 7238'**

**Note: Revised from original WR-35 filing.**

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WVDNR 1411H

API	Total Depth (ft) (P8TD)	Landing Point MD (ft)	Landing Point Angle (Degrees)	Effective Lateral Length (ft)	TVD (ft)	Tubing Depth (ft)	Tubing Size (OD)	Tubing Angle (Degrees)		Casing Depth (ft)	Casing Size (OD)
47-103-02996	12,574	8,351	89	4,223	7,613					12,575	5 1/2

Stages	Perforation Intervals		Stage Intervals		Total Volume (bbil)	Max Rate (bpm)	Formation Break (PSI)	Average Pressure (PSI)	80/100 Mesh Pumped (Lb)	30/50 Mesh /CRC Pumped (Lb)	20/40 Mesh /CRC Pumped (Lb)	Total Sand Pumped (Lb)	ISIP (PSI)	Completed per design	Notes on Frac
	Actual Length	Footage	Actual Length	Footage											
Stage 1	12,272'-12,434'	162	12449'-12267'	182	5,116	70	7,019	7,383	49,000	68,100	0	117,100	5,381	NO	
Stage 1b	N/A-12255'	NA	12267'-12214'	53	8,122	74	6,213	7,016	49,000	319,900	19,400	388,300	5,380	Yes	
Stage 2	12069'-12202'	133	12214'-NA	NA	8,686	74	5,966	7,016	49,000	319,900	49,400	418,300	5,080	Yes	
Stage 3	-	-	NA-11850	NA	9,426	72	5,826	7,050	49,000	315,600	0	364,600	5,812	Yes	
Stage 4	11,661'-11,823	162	11850'-11,640'	210	9,422	74	5,973	7,269	45,200	298,900	44,400	388,500	3,766	Yes	
Stage 5	11,460'-11,622	162	11,640'-11,444'	196	11,080	70	8,338	7,093	49,000	320,000	26,100	395,100	5,265	Yes	
Stage 6	11257'-11419'	162	11,444'-11241'	203	9,671	70	6,964	6,596	49,000	319,900	54,900	423,800	5,146	Yes	
Stage 7	11054'-11216'	162	11241'-11034'	207	9,714	73	6,656	6,852	49,000	315,500	7,000	371,500	4,706	Yes	
Stage 8	10851'-11013'	162	11034'-10835'	199	7,550	75	6,675	7,076	49,000	185,700	0	234,700	4,815	Yes	
Stage 9	10648'-10810'	162	10835'-10632'	203	10,764	77	N/A	7,500	49,000	268,300	41,100	358,400	5,216	Yes	
Stage 10	10445'-10607'	162	10632'-10,429'	203	10,860	71	6,183	7,208	49,000	320,400	87,200	456,600	5,410	Yes	
Stage 11	10,240'-10,402'	162	10,429'-10226'	203	9,814	72	6,183	7,208	49,000	317,000	90,300	456,300	5,775	Yes	
Stage 12	10037'-10199'	162	10226'-10023'	203	11,926	71	6,968	6,965	49,000	309,400	72,500	430,900	5,627	Yes	
Stage 13	9834'-9996'	162	10023'-9820'	203	9,738	75	6,896	6,803	49,000	320,300	90,900	460,200	5,046	Yes	
Stage 14	9631'-9793'	162	9820'-9617'	203	3,018	67	7,024	8,013	2,000	N/A	N/A	2,000	4,913	Yes	
Stage 15	9430'-9592'	162	9617'-9414'	203	11,193	79	7,033	6,498	49,000	320,400	42,000	411,400	N/A	Yes	
Stage 16	9228'-9389'	161	9414'-9010'	404	8,649	73	6,507	6,768	49,000	230,900 / 67,500	N/A	347,400	5,518	Yes	
Stage 17	NA	NA	9,186'-9,024'	162	NA	NA	NA	NA	NA	NA	NA	NA	NA	NO	
Stage 18	8819'-8981'	162	9010'-8805'	205	8,161	78	7,630	7,018	49,000	189,700/73100	0	303,700	5,221	Yes	
Stage 19	8614'-8778'	164	8805'-8602'	203	7,955	78	6,321	7,196	49,000	137,700/79,800	31,600	298,100	5,635	Yes	
Stage 20	8415'-8580'	165	8602'-8394'	208	8,583	78	6,321	6,751	45,200	204,000	61,700	310,900	5,635	Yes	
Stage 21	8211'-8374'	163	8394'-	-											
Total															
Average	21	3,054	3,853	179,448					925,400	5,302,000	718,500	6,937,800			
		161	203	8,972		74	6,668	7,064	46,270	282,706	39,917	346,890	5,228		

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WVDNR                      Well Number                      Permit Number                      District / County  
    1411 H                                      47-103-02996                                      Grant / Wetzel

**CHEMICAL SUMMARY**

STAGE #	SURFACTANT (gals.)	BIOCIDE (gals.)	SCALE INHIBITOR (gals.)	FRICTION REDUCER (gal.)	LINEAR GEL (gal.)	SP BREAKER (gal.)	7.5 HCL ACID (gals.)	15% HCL ACID (gals.)
1	f	50	62	262	136	0.3	0	3,000
2	270	70	40	362	250	1.1	0	3,000
3	270	70	40	362	250	1	0	3,000
4	215	100	32	565	576	2	0	3,000
5	290	100	62	417	426	2	0	3,000
6	323	128	48	472	708	3	0	3,000
7	372	120	30	400	701	2.9	0	3,000
8	280	130	87	460	603	2.7	0	3,000
9	270	50	40	350	197	1	0	3,000
10	280	120	40	375	501	2	0	1,500
11	212	123	75	567	792	2.6	0	1,500
12	165	140	60	540	596	2.6	0	1500
13	255	108	40	317	527	2	0	1500
14	256	154	62	434	660	2.4	0	1500
15	115	20	26	110	34	0.2	3,000	1500
16	200	123	58	578	559	1.9	3,000	1500
17	230	85	30	312	660	2.5	0	3000
18	200	98	39	301	357	1.3	0	3000
19	200	96	25	312	349	1.4	0	3000
20	255	150	45	395	577	2.3	0	3000
<b>TOTALS:</b>								
20	4,658	2,035	941	7,891	9,459	37	6,000	49,500
<i>Stages</i>	<i>Gals</i>	<i>Gals</i>	<i>Gals</i>	<i>Gals</i>	<i>Gals</i>	<i>Gals</i>	<i>Gals</i>	<i>Gals</i>

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