

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

API 47-051-01671 County Marshall District Sandhill  
Quad Valley Grove Pad Name SHL25 (Pilot Hole) Field/Pool Name NA  
Farm name David Rutherford Well Number SHL25 AHS  
Operator (as registered with the OOG) Noble Energy, Inc.  
Address 333 Technology Drive, Suite 116 City Canonsburg State PA Zip 15317

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4427948.45 Easting 538180.92  
Landing Point of Curve Northing 4428122.61 Easting 538135.48  
Bottom Hole Northing 4429789.44 Easting 536929.56

Elevation (ft) 1343.98 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 Oil Based

Date permit issued 10/11/2013 Date drilling commenced 3/18/2014 Date drilling ceased 6/16/2014  
Date completion activities began 8/5/2014 Date completion activities ceased 9/26/2014  
Verbal plugging (Y/N) 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 213 Open mine(s) (Y/N) depths N  
Salt water depth(s) ft None noted for Offsets Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 810', 866' Pittsburgh Cavern(s) encountered (Y/N) depths N

Is coal being mined in area (Y/N) Y, Shoemaker Mine 866'

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Reviewed by: \_\_\_\_\_

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API 47-051 - 01671 Farm name David Rutherford Well number SHL25 AHS

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	36	30	40	N			
Surface	24	20	418.3	N	J-55 94#		Y
Coal							
Intermediate 1	17 1/2	13 3/8	1253.1	N	J-55 54.5#		Y
Intermediate 2	12 1/4	9 5/8	3264.0	N	K-55 36#		Y
Intermediate 3							
Production	8 3/4	5 1/2	13880.0	N	P-110 20#		Y
Tubing							
Packer type and depth set							

Comment Details Surface Casing 4 centralizer and 2 baskets, Intermediate 1 11 Centralizers, Intermediate 2 62 Centralizers, Production 216 Centrek Cent.

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							
Surface	Type I	604	15.60	1.20	126.0	0	8
Coal							
Intermediate 1	Class A	1175	16.20	1.09	228.0	0	8
Intermediate 2	Class Halcem	1190	12.50	1.09	234.0	0	8
Intermediate 3							
Production	Class A	2240	14.80	1.37	504.0	668	8
Tubing							

Drillers TD (ft) 13,890 Loggers TD (ft) 13,866

Deepest formation penetrated Marcellus Plug back to (ft) \_\_\_\_\_

Plug back procedure \_\_\_\_\_

Kick off depth (ft) 6003

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 \_\_\_\_\_

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)
	PLEASE SEE ATTACHED PERFORATION RECORD				

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 STIMULATION STAGE ATTACHMENT							

Please insert additional pages as applicable.

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Perforation Record

David & Joy Rutherford  
ET AL

API: 47-051-01671

Farm name: \_\_\_\_\_

Well Name: SHL-25A-HS

Stage No.	Stim Date	Top Perf	Bottom Perf	# of Perfs	Formation
Toe Sleeve	8/4/2014	13748	13752		
Toe Prep Inj Test	8/5/2014				Marcellus
1.1	8/6/2014	13453	13725	50	Marcellus
1.2	8/6/2014				Marcellus
2.1	8/8/2014	13157	13428	50	Marcellus
2.2	8/8/2014				Marcellus
3.1	8/9/2014	12861	13132	50	Marcellus
3.2	8/9/2014				Marcellus
4.1	8/10/2014	12565	12836	50	Marcellus
4.2	8/10/2014				Marcellus
5.1	8/11/2014	12269	12540	50	Marcellus
5.2	8/11/2014				Marcellus
6.1	8/12/2014	11973	12244	50	Marcellus
6.2	8/12/2014				Marcellus
7 Inj Test	8/26/2014	11677	11948		Marcellus
7	8/27/2014			50	Marcellus
8	8/27/2014	11381	11652	50	Marcellus
9	8/28/2014	11085	11356	50	Marcellus
10	8/28/2014	10789	11060	50	Marcellus
11	8/29/2014	10493	10764	50	Marcellus
12	8/29/2014	10197	10468	50	Marcellus
13	8/30/2014	9901	10172	50	Marcellus
14	8/31/2014	9605	9876	50	Marcellus
15	9/1/2014	9309	9580	50	Marcellus
16	9/2/2014	9013	9284	50	Marcellus
17	9/2/2014	8717	8988	50	Marcellus
18	9/4/2014	8421	8692	50	Marcellus
19	9/4/2014	8155	8396	45	Marcellus
20	9/5/2014	7829	8100	50	Marcellus
21	9/6/2014	7533	7804	50	Marcellus
21B (Reperf)	9/6/2014	7548	7610	48	Marcellus
22	9/7/2014	7237	7508	50	Marcellus
22B (Reperf)	9/7/2014	7227	7242	36	Marcellus
23	9/7/2014	6896	7206	50	Marcellus

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**STIMULATION INFORMATION PER STAGE**

API: 47-051-01671

Farm name:

David & Joy Rutherford ET  
AL

Well Name: SHL-25A-HS

Stage No.	Stim Date	Avg Rate (bpm)	ATP (psi)	Max BD Pressure	ISIP (psi)	Proppant (lbs)	Water (BBLS)	Amount of N <sup>2</sup> / other (units)
Toe Prep Inj Test	8/5/2014	9.9	8,780	8,739	5,837	-	381.05	
1.1	8/6/2014	85.2	7,553	5,341	3,766	303,283	8,375.75	
1.2	8/6/2014	82.8	7,673	7,206	-	298,356	9,063.84	
2.1	8/8/2014	87.5	7,558	5,732	3,941	304,431	7,992.81	
2.2	8/8/2014	79.4	7,500	7,383	-	295,569	8,069.40	
3.1	8/9/2014	87.9	7,853	5,785	5,162	301,075	7,220.06	
3.2	8/9/2014	83.2	8,436	6,307	-	300,325	7,782.94	
4.1	8/10/2014	83.8	7,835	5,621	4,213	299,580	7,207.68	
4.2	8/10/2014	85.3	7,875	5,482	-	302,557	7,479.78	
5.1	8/11/2014	76.8	8,035	5,736	4,363	301,809	7,756.37	
5.2	8/11/2014	76.5	8,074	6,307	-	299,353	7,835.53	
6.1	8/12/2014	80.7	7,946	5,496	4,161	300,164	7,425.23	
6.2	8/12/2014	81.8	8,217	6,219	-	301,092	7,671.90	
7 Inj Test	8/26/2014	26.5	5,254	-	4,695	-	597.48	
7	8/27/2014	74.7	7,316	5,786	4,238	600,952	15,370.22	
8	8/27/2014	77.3	7,139	5,820	4,422	599,737	17,854.45	
9	8/28/2014	77.6	7,167	5,822	4,216	599,649	15,078.45	
10	8/28/2014	78.8	7,014	5,535	4,453	601,218	15,158.90	
11	8/29/2014	73.9	7,401	5,675	4,411	600,822	14,593.60	
12	8/29/2014	75.7	7,123	5,670	4,552	600,758	14,928.17	
13	8/30/2014	75.1	7,387	5,910	4,376	599,690	15,064.45	
14	8/31/2014	80.9	6,676	6,408	4,359	598,816	16,790.86	
15	9/1/2014	77.9	6,942	6,910	4,533	590,419	14,680.80	
16	9/2/2014	80.3	6,848	6,750	4,986	608,218	14,899.01	
17	9/2/2014	80.6	6,522	6,435	4,122	600,078	15,814.81	
18	9/4/2014	69.4	7,422	7,566	4,378	601,910	17,413.12	
19	9/4/2014	80.6	6,528	6,548	4,485	592,212	14,653.71	
20	9/5/2014	79.6	6,428	5,734	4,097	609,588	14,732.31	
21	9/6/2014	66.2	7,293	5,743	5,320	301,635	12,728.05	
21B (Reperf)	9/6/2014	89.5	6,570	5,347	4,610	301,515	7,067.09	
22	9/7/2014	88.4	6,705	6,563	5,160	291,909	7,704.38	
22B (Reperf)	9/7/2014	89.2	6,856	5,702	4,600	306,225	7,341.14	
23	9/7/2014	88.6	6,297	5,644	4,253	601,808	14,737.11	

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API 47- 051 - 01671 Farm name David Rutherford Well number \_\_\_\_\_

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6,689</u> TVD	<u>13,890</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow  OIL TEST  Flow  Pump

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

OPEN FLOW Gas 5084 mcfpd Oil 41 bpd NGL 407 bpd Water 778 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 <sub>2</sub> S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		
	PLEASE SEE ATTACHED FORMATION SHEET				
					<b>Received</b> <b>Office of Oil &amp; Gas</b> <b>DEC 15 2014</b>

Please insert additional pages as applicable.

Drilling Contractor Nomac Drilling Company  
Address 171 Locust Avenue Ext. City Mt. Morris State PA Zip 15379

Logging Company Baker Hughes  
Address 400 Technology Drive City Canonsburg State PA Zip 15317

Cementing Company Schlumberger  
Address 4600 J Barry Court, Suite 200 City Canonsburg State PA Zip 15317

Stimulating Company Halliburton Energy SRCS  
Address 121 Champion Way, Suite 110 City Canonsburg State PA Zip 15317

Please insert additional pages as applicable.

Completed by Regina A. Logue Telephone 724-820-3559  
Signature *Regina A. Logue* Title Regulatory Analyst Date 12/10/14

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

SHL25 AHS  
47-051-01671

Formations	Top TVD	Base TVD	Top MD	Base MD	Fluid
Shale	0	812	0	812	
Pittsburgh Coal	812	822	812	822	
Shale and Sandstone	822	1420	822	1420	
Gas Sand	1420	1473	1420	1473	
Shale	1473	1517	1473	1517	
1st Salt Sand	1517	1595	1517	1595	
2nd Salt Sand	1595	1606	1595	2944	
3rd Salt Sand	1606	1665	1606	2977	
Shale	1665	1700	1665	3364	
Maxton Sand	1700	1838	1700	3388	
Shale	1838	1860	1838	4281	
Big Lime	1860	1946	1860	4295	
Big Injun	1946	2126	1946	5211	
Price	2126	2465	2126	5282	
Murrysville	2465	2488	2465	5326	
Shale and Sandstone	2488	2715	2488	5959	
50' Sand	2715	2728	2715	3388	
Shale	2728	2814	2728	4281	
Gordon Stray	2814	2821	2814	4295	
Shale	2821	2836	2821	5211	
Gordon	2836	2854	2836	5282	
Shale	2854	2944	2854	5326	
Fifth Sand	2944	2977	2944	2977	
Shale	2977	3363	2977	3364	
Speechley Sand	3363	3387	3364	3388	
Shale	3387	4271	3388	4281	
Warren Sand	4271	4285	4281	4295	
Shale	4285	5192	4295	5211	
Java Shale	5192	5262	5211	5282	
Pipe Creek Shale	5262	5306	5282	5326	
Angola Shale	5306	5932	5326	5959	
Rhinestreet	5932	6346	5959	6404	
Cashaqua	6346	6438	6404	6533	
Middlesex	6438	6475	6533	6597	
West River	6475	6516	6597	6684	
Burkett	6516	6549	6684	6774	Gas
Tully Limestone	6549	6577	6774	not encountered	
Hamilton	6577	6691	not encountered	not encountered	
Marcellus	6691		not encountered	not encountered	

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# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/5/2014
Job End Date:	9/7/2014
State:	West Virginia
County:	Marshall
API Number:	47-051-01671-00-00
Operator Name:	Noble Energy, Inc.
Well Name and Number:	SHL 25 A
Longitude:	-80.52906000
Latitude:	40.00078500
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,689
Total Base Water Volume (gal):	15,080,782
Total Base Non Water Volume:	0

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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
Fresh Water	Operator	Base Fluid	Fresh Water	7732-18-5	100.00000	89.28061	Density = 8.330
Premium White 40/70	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00000	7.10706	
SAND - PREMIUM - 100 MESH, 100 LB, SK (101213353)	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00000	1.96531	
Premium White 40/70	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00000	0.74581	
HYDROCHLORIC ACID 5-10%	Halliburton	Solvent	Hydrochloric acid	7647-01-0	10.00000	0.07296	
FR-66	Halliburton	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02057	
HYDROCHLORIC ACID 10-30%	Halliburton	Solvent	Hydrochloric acid	7647-01-0	30.00000	0.00892	
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive	Acetic anhydride	108-24-7	100.00000	0.00393	



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			Acetic acid	54-19-7	60.00000	0.00236	
BE-9	Halliburton	Biocide					
			Tributyl tetradecyl phosphonium chloride	81741-28-8	10.00000	0.00409	
LP-65	Halliburton	Scale Inhibitor					
			Ammonium chloride	12125-02-9	10.00000	0.00246	
Biovert NWB	Halliburton	Viscosifier					
			Poly lactide resin	Confidential	100.00000	0.00189	Denise Tuck, Halliburton 3000 N. Sam Houston Pkwy E., Houston, TX 77032 281-871-6226
LoSurf-300D	Halliburton	Non-ionic Surfactant					
			Ethanol	64-17-5	60.00000	0.00079	
			Heavy aromatic petroleum naphtha	64742-94-5	30.00000	0.00040	
			Naphthalene	91-20-3	5.00000	0.00007	
			Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	5.00000	0.00007	
			1,2,4 Trimethylbenzene	95-63-6	1.00000	0.00001	
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
			Methanol	67-56-1	60.00000	0.00039	
			Propargyl alcohol	107-19-7	10.00000	0.00007	
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 Ingredient(s)					
			Water	7732-18-5		0.85612	
		Other Ingredient(s)					
			Polyacrylamide copolymer	Confidential		0.02057	
		Other Ingredient(s)					
			Organic phosphonate	Confidential		0.01478	
		Other Ingredient(s)					
			Fatty acid tall oil amide	Confidential		0.00343	
		Other Ingredient(s)					
			Ammonium chloride	12125-02-9		0.00343	
		Other Ingredient(s)					
			Alcohols, C12-16, ethoxylated	68551-12-2		0.00343	
		Other Ingredient(s)					
			Sodium chloride	7647-14-5		0.00343	
		Other Ingredient(s)					
			Sorbitan monooleate polyoxyethylene derivative	9005-65-6		0.00069	
		Other Ingredient(s)					
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8		0.00069	
		Other Ingredient(s)					
			Oxyalkylated phenolic resin	Confidential		0.00040	

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	Other Ingredient(s)				
		Formaldehyde	50-00-0		0.00025
	Other Ingredient(s)				
		Fatty acids, tall oil	Confidential		0.00020
	Other Ingredient(s)				
		Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1		0.00020
	Other Ingredient(s)				
		Alcohols, C14-C15, ethoxylated	68951-67-7		0.00020
	Other Ingredient(s)				
		Oxyalkylated phenolic resin	Confidential		0.00013
	Other Ingredient(s)				
		Olefins	Confidential		0.00003
	Other Ingredient(s)				
		Olefins	Confidential		0.00003
	Other Ingredient(s)				
		Olefins	Confidential		0.00001
	Other Ingredient(s)				
		Olefins	Confidential		0.00001

51.01671

\* 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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Well is located on topo map 14,885' feet south of Latitude: 40° 02' 30"

Well is located on topo map 3,123' feet west of Longitude: 80° 32' 30"

# AS DRILLED PLAT

**PERMITTED APPROX. LANDING POINT**  
 UTM 17-NAD83  
 N:4428121.65  
 E:538135.55  
 NAD27, WV NORTH  
 N:548928.23  
 E:1704888.81

**AS DRILLED APPROX. LANDING POINT**  
 UTM 17-NAD83  
 N:4428122.61  
 E:538135.48  
 NAD27, WV NORTH  
 N:548931.39  
 E:1704888.64

PARCEL	LESSOR
1	DAVID RUTHERFORD ET UX.
2	STEPHEN YOURKOVICH ET AL.
3	JOHN R. GRAY ET UX.
4	DELBERT L. NELSON ET UX.
5	CNX GAS COMPANY LLC ET AL.
6	DON N. BRYANT ET UX.
7	JAMES A. GRAY ET UX.

- NOTES:
1. There are no water wells or developed springs within 250' of proposed well.
  2. There are no existing buildings within 625' of proposed well.
  3. Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
  4. There are no native trout streams within 300' of proposed well.
  5. Proposed well is greater than 1000' from surface/groundwater intake or public water supply.
  6. It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

**LEGEND**

- TOPOG MAP POINT
- WELL
- ALL AGE POINTS UNLESS OTHERWISE NOTED
- LEASE NUMBER
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE
- AS DRILLED

**EXISTING WELLS**

- EXISTING WELLS
- PLUGGED WELLS

**PERMITTED BOTTOM HOLE LOCATION (BHL)**  
 UTM 17-NAD83  
 N:4429785.11  
 E:536928.76  
 NAD27, WV NORTH  
 N:554453.19  
 E:1701020.19

**AS DRILLED BOTTOM HOLE LOCATION (BHL)**  
 UTM 17-NAD83  
 N:4429789.44  
 E:536929.56  
 NAD27, WV NORTH  
 N:554467.37  
 E:1701023.08

**PERMITTED SURFACE HOLE LOCATION (SHL)**  
 UTM 17-NAD83  
 N:4427948.41  
 E:538181.04  
 NAD27, WV NORTH  
 N:548357.23  
 E:1705028.51

**AS DRILLED SURFACE HOLE LOCATION (SHL)**  
 UTM 17-NAD83  
 N:4427948.45  
 E:538180.92  
 NAD27, WV NORTH  
 N:548357.37  
 E:1705028.19

LINE	BEARING	DISTANCE
R1	N 81°05'31" E	2082.02'
R2	S 58°00'11" E	2481.60'
R3	S 13°46'20" W	1374.22'
R4	S 63°38'46" E	281.78'
R5	N 46°52'10" W	210.91'
R6	N 14°27'03" W	233.44'



**Blue Mountain Inc.**  
 10125 MASON DIXON HIGHWAY  
 BURTON, WV 26562  
 PHONE: (304) 662-6486

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: *George D. Six*  
 R.P.E.: \_\_\_\_\_ L.L.S.: P.S. No. 2000



FILE #: SHL25AHS-AS DRILLED  
 DRAWING #: SHL25AHS-AS DRILLED  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1/2500  
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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



DATE: DECEMBER 8, 2014  
 OPERATOR'S WELL #: SHL25AHS-AS DRILLED  
 API WELL #:

47	51	01671
STATE	COUNTY	PERMIT

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

WATERSHED: WHEELING CREEK ELEVATION: 1343.98'  
 COUNTY/DISTRICT: MARSHALL / SAND HILL QUADRANGLE: VALLEY GROVE, WV 7.5'  
 SURFACE OWNER: DAVID RUTHERFORD ACREAGE: 95.912±  
 OIL & GAS ROYALTY OWNER: DAVID RUTHERFORD ET UX. ACREAGE: 520.779±

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

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,823'± TMD: 13,925'±  
 WELL OPERATOR NOBLE ENERGY, INC. DESIGNATED AGENT STEVEN M. GREEN  
 Address 333 TECHNOLOGY DRIVE, SUITE 116 Address 500 VIRGINIA STREET EAST, UNITED CENTER SUITE 590  
 City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301

01/16/2015

Well is located on topo map 14,885' feet south of Latitude: 40° 02' 30"

# AS DRILLED PLAT

Well is located on topo map 3,123' feet west of Longitude: 80° 32' 30"

PERMITTED APPROX. LANDING POINT	
UTM 17-NAD83	N:4428121.65
	E:538135.55
NAD27, WV NORTH	N:548928.23
	E:1704888.81

AS DRILLED APPROX. LANDING POINT	
UTM 17-NAD83	N:4428122.61
	E:538135.48
NAD27, WV NORTH	N:548931.39
	E:1704888.64

PARCEL	LESSOR
1	DAVID RUTHERFORD ET UX.
2	STEPHEN YOURKOVICK ET AL.
3	JOHN R. GRAY ET UX.
4	DELBERT L. NELSON ET UX.
5	CNX GAS COMPANY LLC ET AL.
6	DON N. BRYANT ET UX.
7	JAMES A. GRAY ET UX.

- NOTES:
- There are no water wells or developed springs within 250' of proposed well.
  - There are no existing buildings within 625' of proposed well.
  - Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
  - There are no native trout streams within 300' of proposed well.
  - Proposed well is greater than 1000' from surface/groundwater intake or public water supply.
  - It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

### LEGEND

- TOPO. MAP POINT
- WELL
- ALL ARC POINTS UNLESS OTHERWISE NOTED
- LEASE NUMBER
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE
- AS DRILLED
- EXISTING WELLS
- EXISTING WELLS
- PLUGGED WELLS

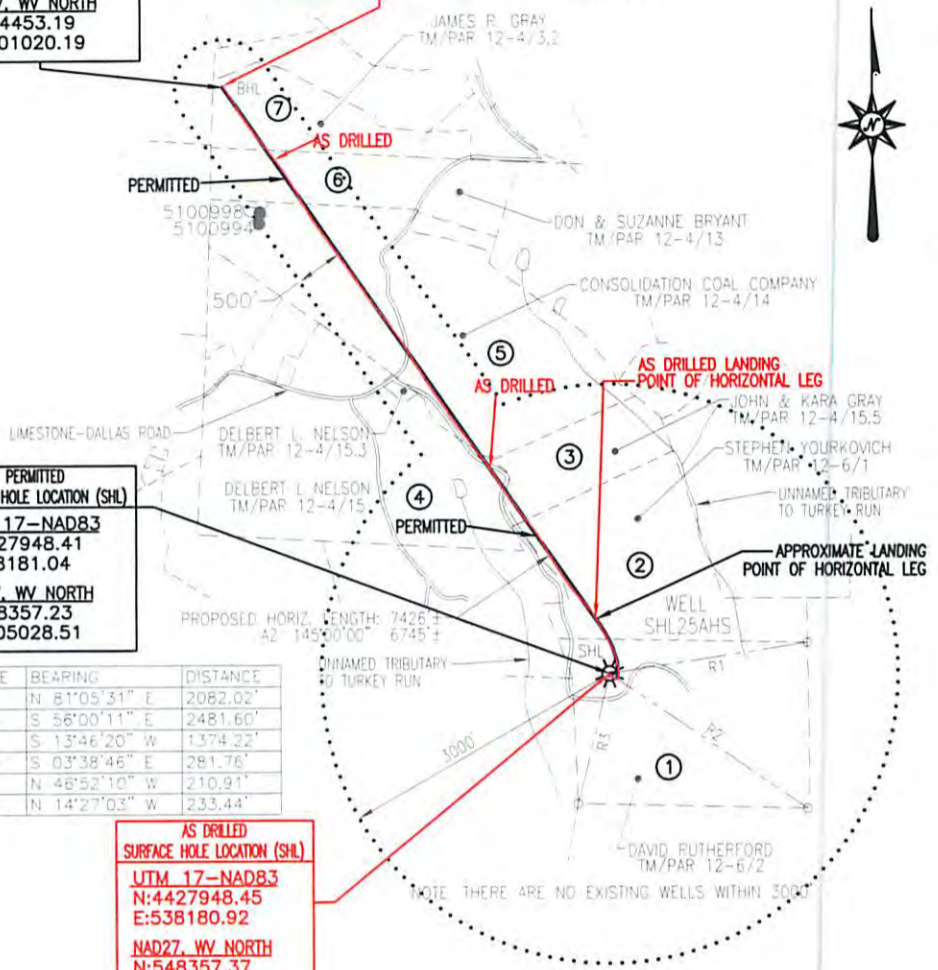
PERMITTED BOTTOM HOLE LOCATION (BHL)	
UTM 17-NAD83	N:4429785.11
	E:536928.76
NAD27, WV NORTH	N:554453.19
	E:1701020.19

AS DRILLED BOTTOM HOLE LOCATION (BHL)	
UTM 17-NAD83	N:4429789.44
	E:536929.56
NAD27, WV NORTH	N:554467.37
	E:1701023.08

PERMITTED SURFACE HOLE LOCATION (SHL)	
UTM 17-NAD83	N:4427948.41
	E:538181.04
NAD27, WV NORTH	N:548357.23
	E:1705028.51

AS DRILLED SURFACE HOLE LOCATION (SHL)	
UTM 17-NAD83	N:4427948.45
	E:538180.92
NAD27, WV NORTH	N:548357.37
	E:1705028.19

LINE	BEARING	DISTANCE
R1	N 81°05'31" E	2082.02'
R2	S 56°00'11" E	2481.60'
R3	S 13°46'20" W	1374.22'
R4	S 03°38'46" E	281.76'
R5	N 48°52'10" W	210.91'
R6	N 14°27'03" W	233.44'



Received  
Office of Oil & Gas  
DEC 15 2014

**Blue Mountain Inc.**  
10125 MASON DIXON HIGHWAY  
BURTON, WV 26562  
PHONE: (304) 662-6486

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R.P.E.: \_\_\_\_\_ L.L.S.: P.S. No. 2000

**GEORGE D. SIX**  
LICENSED  
No. 2000  
STATE OF WEST VIRGINIA  
PROFESSIONAL SURVEYOR

PLACE SEAL HERE

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



DATE: DECEMBER 8, 2014  
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API WELL #: 47 51 01671  
STATE COUNTY PERMIT

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