

JK

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

API 47 - 051 - 01684 County Marshall District Sandhill  
Quad Valley Grove Pad Name SHL25 Field/Pool Name NA  
Farm name David Rutherford Well Number SHL25 BHS  
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 4427949.71 Easting 538176.66  
Landing Point of Curve Northing 4428418.86 Easting 538486.73  
Bottom Hole Northing 4430433.09 Easting 537020.83

Elevation (ft) 1344.21 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 11/18/2013 Date drilling commenced 3/11/2014 Date drilling ceased 6/8/2014  
Date completion activities began 8/6/2014 Date completion activities ceased 10/6/2014  
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'

Received  
Office of Oil & Gas

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

DEC 15 2014

01/16/2015

API 47-051 - 01684 Farm name David Rutherford Well number SHL25 BHS

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	1252.9	N	J-55 54.5#		Y
Intermediate 2	12 1/4	9 5/8	3264.5	N	K-55 36#		Y
Intermediate 3							
Production	8 3/4	5 1/2	15799.7	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 42 Centralizers, Production 260 Centralizers

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	1.21	134.0	0	8
Coal							
Intermediate 1	Class A	1042	15.60	1.20	223.0	0	8
Intermediate 2	Class A	1058	15.60	1.21	226.1	0	8
Intermediate 3							
Production	Class A	663	14.20	1.54	242.0	0	8
Tubing							

Drillers TD (ft) 15,805 Loggers TD (ft) 15,780

Deepest formation penetrated Marcellus Plug back to (ft) Not a Pilot Hole

Plug back procedure Not a Pilot Hole

Kick off depth (ft) 6381

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  
4 Centralizers on Surface (1 every 3rd joint) and 2 baskets 11 Centralizers on Intermediate 1 (1 every 3rd joint) 42 Centralizers on Intermediate 2 (1 every 3rd Joint)  
 260 Centralizers on Production (1 every 3rd to Curve, then 1 every joint to TD)

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 \_\_\_\_\_

Received  
Office of Oil & Gas

DEC 15 2014



Perforation Record

API: 47-051-01684

Farm name: David & Joy  
Rutherford ET AL

Well Name: SHL-25B-HS

Stage No.	Stim Date	Top Perf	Bottom Perf	# of Perfs	Formation
Toe Sleeve	8/4/2014	15671	15674		
Toe Prep Inj Test	8/6/2014		-	-	Marcellus
1.1	8/6/2014	15373	15,647	50	Marcellus
1.2	8/6/2014				Marcellus
2.1	8/8/2014	15076	15,348	50	Marcellus
2.2	8/8/2014				Marcellus
3.1	8/9/2014	14775	15,049	50	Marcellus
3.2	8/9/2014				Marcellus
4.1	8/10/2014	14476	14,750	50	Marcellus
4.2	8/10/2014				Marcellus
5.1	8/11/2014	14177	14,451	50	Marcellus
5.2	8/11/2014				Marcellus
6.1	8/12/2014	13878	14,152	50	Marcellus
6.2	8/12/2014				Marcellus
7.1	8/13/2014	13579	13,853	50	Marcellus
7.2	8/13/2014				Marcellus
8.1	8/13/2014	13280	13,554	50	Marcellus
8.2	8/13/2014				Marcellus
9.1	8/14/2014	12981	13,255	50	Marcellus
9.2	8/14/2014				Marcellus
10	9/1/2014	12682	12,956	50	Marcellus
11	9/2/2014	12383	12,657	50	Marcellus
12	9/3/2014	12084	12,358	50	Marcellus
13	9/4/2014	11785	12,059	50	Marcellus
14	9/4/2014	11486	11,760	50	Marcellus
15	9/5/2014	11187	11,461	50	Marcellus
16	9/5/2014	10888	11,162	50	Marcellus
17.1(Acidize Formation)	9/6/2014	10589	10,863	50	Marcellus
17	9/6/2014	10589	10,863	50	Marcellus
18	9/7/2014	10290	10,564	50	Marcellus
19	9/8/2014	9991	10,265	50	Marcellus
19B (Reperf)	9/8/2014	9980	10,001	36	Marcellus
20	9/8/2014	9692	9,962	50	Marcellus
21	9/9/2014	9393	9,667	50	Marcellus
22	9/9/2014	9094	9,368	50	Marcellus
23	9/10/2014	8795	9,069	50	Marcellus
24	9/10/2014	8496	8,769	50	Marcellus
25	9/10/2014	8197	8,471	50	Marcellus
26	9/11/2014	7898	8,172	50	Marcellus
27	9/11/2014	7599	7,873	50	Marcellus

Received  
Office of Oil & Gas

DEC 15 2014

01/16/2015

Perforation Record

API: 47-051-01684

Farm name: David & Joy  
Rutherford ET AL

Well Name: SHL-25B-HS

Stage No.	Stim Date	Top Perf	Bottom Perf	# of Perfs	Formation
28	9/11/2014	7320	7,574	50	Marcellus

					Marcellus
					Marcellus
					Marcellus
					Marcellus
					Marcellus
					Marcellus
					Marcellus
					Marcellus
					Marcellus
					Marcellus

Received  
Office of Oil & Gas  
DEC 15 2014

01/16/2015

STIMULATION INFORMATION PER STAGE

API: 47-051-01684

Farm name:

David & Joy Rutherford ET

AL

Well Name: SHL-25B-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	8/6/2014	23	6,821	6,392	5,089	-	161.90	
1.1	8/6/2014	88.3	7,458	5,295	3,667	297,831	7,923.60	
1.2	8/6/2014	88.2	7,539	5,958	-	303,087	8,293.52	
2.1	8/8/2014	87.6	7,723	5,804	4,048	302,720	8,214.93	
2.2	8/8/2014	84.8	7,783	6,095	-	300,201	8,241.90	
3.1	8/9/2014	81.5	7,883	6,205	4,117	302,102	8,118.27	
3.2	8/9/2014	87.5	7,614	5,873	-	298,883	7,907.99	
4.1	8/10/2014	89.1	7,899	6,450	4,224	299,013	7,666.87	
4.2	8/10/2014	88.9	8,090	5,384	-	304,105	7,704.80	
5.1	8/11/2014	84.2	8,150	5,694	3,852	299,046	7,727.55	
5.2	8/11/2014	75.8	8,239	6,100	-	301,846	7,776.29	
6.1	8/12/2014	84.4	8,097	6,424	3,832	299,415	7,300.54	
6.2	8/12/2014	86.2	8,458	5,767	-	299,657	7,515.61	
7.1	8/13/2014	89.8	8,039	6,373	3,869	302,336	7,635.58	
7.2	8/13/2014	88.6	8,387	6,363	-	300,330	7,438.82	
8.1	8/13/2014	84.7	7,835	7,085	5,377	303,156	7,629.21	
8.2	8/13/2014	84.3	7,590	5,547	-	298,327	8,314.71	
9.1	8/14/2014	83	7,392	6,886	3,922	298,575	9,982.40	
9.2	8/14/2014	83.3	7,791	5,740	-	299,594	8,408.35	
10	9/1/2014	78	7,223	6,835	4,230	601,947	15,228.40	
11	9/2/2014	73.5	7,208	6,487	3,651	596,739	15,813.10	
12	9/3/2014	76.2	6,999	6,317	4,081	597,342	14,874.69	
13	9/4/2014	77.5	6,790	6,447	4,258	604,899	15,063.86	
14	9/4/2014	76.6	7,133	6,323	4,249	601,682	14,998.60	
15	9/5/2014	77.7	6,974	6,464	4,288	599,356	16,829.50	
16	9/5/2014	78.5	7,040	6,581	4,254	600,846	17,323.26	
17.1(Acidize Formation)	9/6/2014	26.4	6,446	6,362	-	-	467.95	
17	9/6/2014	78.4	7,236	6,362	4,461	601,603	15,465.74	
18	9/7/2014	80.8	7,059	6,479	4,534	600,040	19,619.79	
19	9/8/2014	56.6	7,395	5,713	7,125	301,847	10,844.36	
19B (Reperf)	9/8/2014	77.7	7,447	6,253	4,205	301,560	8,021.14	
20	9/8/2014	84.4	7,159	5,728	4,703	601,375	15,464.26	
21	9/9/2014	87.1	7,195	6,029	4,643	598,666	15,482.25	
22	9/9/2014	78.1	6,614	6,629	4,277	601,529	14,712.74	
23	9/10/2014	88.3	6,979	6,288	4,327	594,925	14,417.76	
24	9/10/2014	87.5	6,541	6,985	4,326	596,799	14,580.16	
25	9/10/2014	88.8	6,853	7,167	4,398	600,721	14,574.59	
26	9/11/2014	89.7	6,774	7,075	4,161	600,246	14,492.93	
27	9/11/2014	88.8	6,728	6,853	4,160	602,409	14,439.70	
28	9/11/2014	89.7	6,325	6,454	3,717	599,370	14,352.43	

Received  
Office of Oil & Gas

01/16/2015

01/15/2014



SHL25 BHS  
47-051-01684

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	

Received  
Office of Oil & Gas

DEC 15 2014

01/16/2015



# Hydraulic Fracturing Fluid Product Component Information Disclosure

Received  
Office of Oil & Gas  
DEC 15 2014



5-1-01684

Job Start Date:	8/6/2014
Job End Date:	9/11/2014
State:	West Virginia
County:	Marshall
API Number:	47-051-01684-00-00
Operator Name:	Noble Energy, Inc.
Well Name and Number:	SHL 25 B
Longitude:	-80.55295600
Latitude:	40.00079700
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	67,456,690
Total Base Water Volume (gal):	18,348,365
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
Fresh Water	Operator	Base Fluid	Fresh Water	7732-18-5	100.00000	89.39591	Density = 8.330
SAND - PREMIUM WHITE	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00000	7.85702	
SSA-2	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00000	1.96814	
HYDROCHLORIC ACID 5-10%	Halliburton	Solvent	Hydrochloric acid	7647-01-0	10.00000	0.06292	
FR-66	Halliburton	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02074	
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive	Acetic anhydride	108-24-7	100.00000	0.00334	
			Acetic acid	64-19-7	60.00000	0.00200	
BE-9	Halliburton	Biocide	Tributyl tetradecyl phosphonium chloride	81741-28-8	10.00000	0.00411	
LP-65	Halliburton	Scale Inhibitor	Ammonium chloride	12125-02-9	10.00000	0.00247	

HYDROCHLORIC ACID 10-30%	Halliburton	Solvent					
			Hydrochloric acid	7647-01-0	30.00000	0.00235	
Biovert NWB	Halliburton	Viscosifier					
			Poly lactide resin	Confidential	100.00000	0.00203	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	0.00067	
			Heavy aromatic petroleum naphtha	64742-94-5	30.00000	0.00034	
			Naphthalene	91-20-3	5.00000	0.00006	
			Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	5.00000	0.00006	
			1,2,4 Trimethylbenzene	95-63-6	1.00000	0.00001	
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
			Methanol	67-56-1	60.00000	0.00033	
			Propargyl alcohol	107-19-7	10.00000	0.00006	
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		0.73435	
		Other Ingredient(s)					
			Polyacrylamide copolymer	Confidential		0.02074	
		Other Ingredient(s)					
			Organic phosphonate	Confidential		0.01481	
		Other Ingredient(s)					
			Alcohols, C12-16, ethoxylated	68551-12-2		0.00346	
		Other Ingredient(s)					
			Sodium chloride	7647-14-5		0.00346	
		Other Ingredient(s)					
			Fatty acid tall oil amide	Confidential		0.00346	
		Other Ingredient(s)					
			Ammonium chloride	12125-02-9		0.00346	
		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		0.00034	
		Other Ingredient(s)					
			Formaldehyde	50-00-0		0.00025	
		Other Ingredient(s)					

51.01684

Received  
Office of Oil & Gas  
DEC 15 2014

			Fatty acids, tall oil	Confidential		0.00017	
		Other Ingredient(s)					
			Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	58527-49-1		0.00017	
		Other Ingredient(s)					
			Alcohols, C14-C15, ethoxylated	58951-67-7		0.00017	
		Other Ingredient(s)					
			Oxyalkylated phenolic resin	Confidential		0.00011	
		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	

51-01684

\* 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)

Received  
Office of Oil & Gas

DEC 15 2014

Well is located on topo map 14,881' feet south of Latitude: 40° 02' 30"

Well is located on topo map 3,138' feet west of Longitude: 80° 32' 30"

# AS DRILLED PLAT

**PERMITTED APPROX. LANDING POINT**  
 UTM 17-NAD83  
 N:4428422.19  
 E:538482.50  
 NAD27, WV NORTH  
 N:549895.37  
 E:1706043.80

**AS DRILLED APPROX. LANDING POINT**  
 UTM 17-NAD83  
 N:4428418.86  
 E:538486.73  
 NAD27, WV NORTH  
 N:549884.24  
 E:1706057.51

**PERMITTED BOTTOM HOLE LOCATION (BHL)**  
 UTM 17-NAD83  
 N:4430434.61  
 E:537022.54  
 NAD27, WV NORTH  
 N:556579.38  
 E:1701363.60

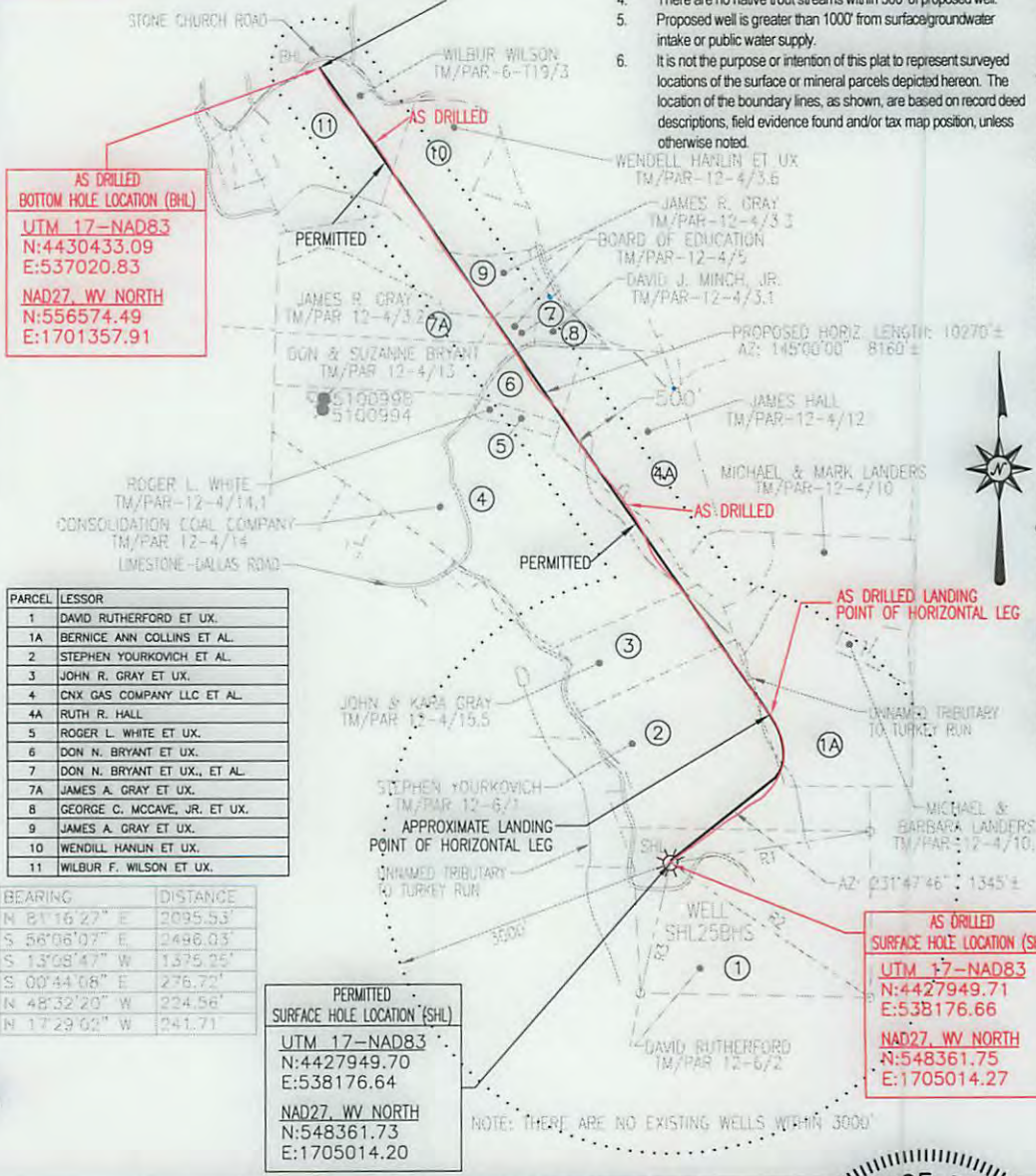
- NOTES:
1. There are no water wells or developed springs within 250' of proposed well.
  2. There are no existing buildings within 625' of proposed well.
  3. Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
  4. There are no native trout streams within 300' 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**

- TOPG MAP POINT
- WELL
- ALL ARE 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



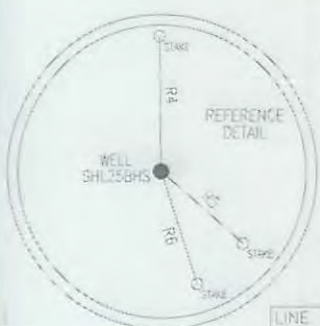
**AS DRILLED BOTTOM HOLE LOCATION (BHL)**  
 UTM 17-NAD83  
 N:4430433.09  
 E:537020.83  
 NAD27, WV NORTH  
 N:556574.49  
 E:1701357.91

PARCEL	LESSOR
1	DAVID RUTHERFORD ET UX.
1A	BERNICE ANN COLLINS ET AL.
2	STEPHEN YOURKOVICH ET AL.
3	JOHN R. GRAY ET UX.
4	CNX GAS COMPANY LLC ET AL.
4A	RUTH R. HALL
5	ROGER L. WHITE ET UX.
6	DON N. BRYANT ET UX.
7	DON N. BRYANT ET UX., ET AL.
7A	JAMES A. GRAY ET UX.
8	GEORGE C. MCCAVE, JR. ET UX.
9	JAMES A. GRAY ET UX.
10	WENDELL HANLIN ET UX.
11	WILBUR F. WILSON ET UX.

LINE	BEARING	DISTANCE
R1	N 81°16'27" E	2095.53'
R2	S 58°06'07" E	2496.03'
P3	S 13°08'47" W	1375.25'
R4	S 00°44'08" E	276.72'
R5	N 48°32'20" W	224.56'
R6	N 17°29'02" W	241.71'

**PERMITTED SURFACE HOLE LOCATION (SHL)**  
 UTM 17-NAD83  
 N:4427949.70  
 E:538176.64  
 NAD27, WV NORTH  
 N:548361.73  
 E:1705014.20

**AS DRILLED SURFACE HOLE LOCATION (SHL)**  
 UTM 17-NAD83  
 N:4427949.71  
 E:538176.66  
 NAD27, WV NORTH  
 N:548361.75  
 E:1705014.27



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

FILE #: SHL25BHS-AS DRILLED  
 DRAWING #: SHL25BHS-AS DRILLED  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1/2500  
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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: *[Signature]*  
 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  
 OPERATOR'S WELL #: SHL25BHS-AS DRILLED  
 API WELL #: 47 51 01684  
 STATE COUNTY PERMIT

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

WATERSHED: WHEELING CREEK ELEVATION: 1344.21'  
 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: 671.677±

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: 15,901±  
 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 14,881' feet south of Latitude: 40° 02' 30"

# AS DRILLED PLAT

Well is located on topo map 3,138' feet west of Longitude: 80° 32' 30"

**PERMITTED APPROX. LANDING POINT**  
 UTM 17-NAD83  
 N:4428422.19  
 E:538482.50  
 NAD27\_WV NORTH  
 N:549895.37  
 E:1706043.80

**AS DRILLED APPROX. LANDING POINT**  
 UTM 17-NAD83  
 N:4428418.86  
 E:538486.73  
 NAD27\_WV NORTH  
 N:549884.24  
 E:1706057.51

**PERMITTED BOTTOM HOLE LOCATION (BHL)**  
 UTM 17-NAD83  
 N:4430434.61  
 E:537022.54  
 NAD27\_WV NORTH  
 N:556579.38  
 E:1701363.60

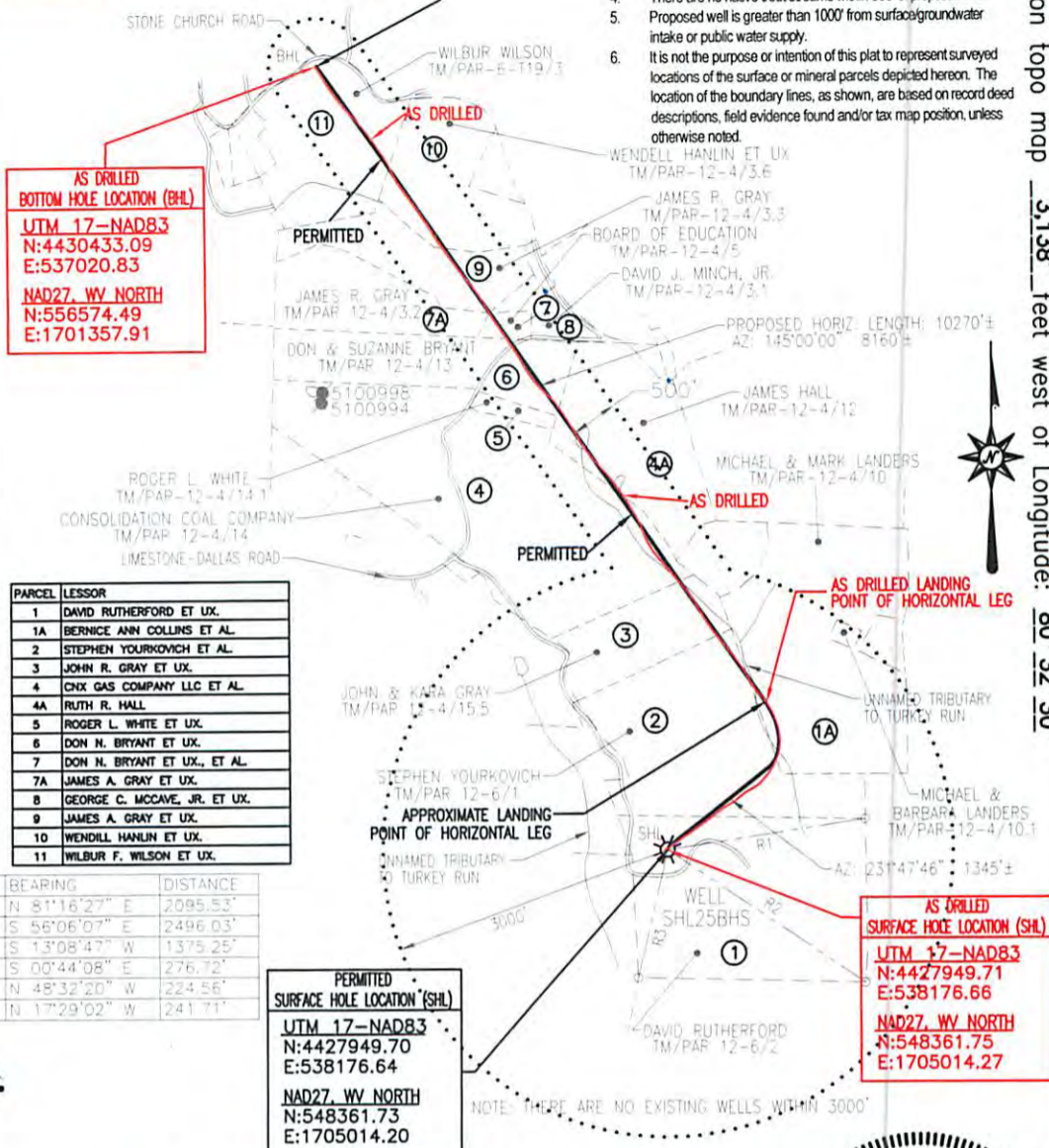
- NOTES:
1. There are no water wells or developed springs within 250' of proposed well.
  2. There are no existing buildings within 625' of proposed well.
  3. Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
  4. There are no native trout streams within 300' 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**

- TOPO MAP POINT
- WELL
- ALL ARE 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



PARCEL	LESSOR
1	DAVID RUTHERFORD ET UX.
1A	BERNICE ANN COLLINS ET AL.
2	STEPHEN YOURKOVICH ET AL.
3	JOHN R. GRAY ET UX.
4	CHX GAS COMPANY LLC ET AL.
4A	RUTH R. HALL
5	ROGER L. WHITE ET UX.
6	DON N. BRYANT ET UX.
7	DON N. BRYANT ET UX., ET AL.
7A	JAMES A. GRAY ET UX.
8	GEORGE C. MCCAIVE, JR. ET UX.
9	JAMES A. GRAY ET UX.
10	WENDILL HANLIN ET UX.
11	WILBUR F. WILSON ET UX.

LINE	BEARING	DISTANCE
R1	N 81°16'27" E	2095.53'
R2	S 56°06'07" E	2496.03'
R3	S 13°08'47" W	1375.25'
R4	S 00°44'08" E	276.72'
R5	N 48°32'20" W	224.56'
R6	N 17°29'02" W	241.71'

**PERMITTED SURFACE HOLE LOCATION (SHL)**  
 UTM 17-NAD83  
 N:4427949.70  
 E:538176.64  
 NAD27\_WV NORTH  
 N:548361.73  
 E:1705014.20

**AS DRILLED SURFACE HOLE LOCATION (SHL)**  
 UTM 17-NAD83  
 N:4427949.71  
 E:538176.66  
 NAD27\_WV NORTH  
 N:548361.75  
 E:1705014.27

Received  
 Office of Oil & Gas  
 DEC 15 2014

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

FILE #: SHL25BHS-AS DRILLED  
 DRAWING #: SHL25BHS-AS DRILLED  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1/2500  
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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: \_\_\_\_\_  
 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  
 OPERATOR'S WELL #: SHL25BHS-AS DRILLED  
 API WELL #: 47 51 01684  
 STATE COUNTY PERMIT

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

WATERSHED: WHEELING CREEK ELEVATION: 1344.21'

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: 671.677±

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: 15,901'±

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