

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

API 47-095-02197 County Tyler District Centerville
Quad Shirley Pad Name SHR Field/Pool Name N/A
Farm name Noble Energy, Inc. Well Number SHR 3 JHS
Operator (as registered with the OOG) Noble Energy, Inc.
Address 1000 Noble Energy Drive 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 4362750.72 Easting 514373.13
Landing Point of Curve Northing 4362592.73 Easting 514488.58
Bottom Hole Northing 4360129.85 Easting 515431.83

Elevation (ft) 751 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 8/26/2014 Date drilling commenced 10/4/2014 Date drilling ceased 2/24/2015
Date completion activities began Not completed Date completion activities ceased na
Verbal plugging (Y/N) N Date permission granted NA Granted by NA

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

Freshwater depth(s) ft 342 Open mine(s) (Y/N) depths RECEIVED
Salt water depth(s) ft none noted for offsets Void(s) encountered (Y/N) depths Office of Oil and Gas
Coal depth(s) ft NA Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) No JAN 17 2017

APPROVED
NAME: [Signature]
DATE: 1/26/17

Reviewed by:
WV Department of Environmental Protection
01/27/2017

API 47-095 02197

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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	24"	20"	40				
Surface	17 1/2"	13 3/8"	466.8	New	K-55		Y
Coal							
Intermediate 1	13 3/8"	9 5/8"	2196.9	New	HCK-55		Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5 1/2"	15,233.6	New	P-110		Y
Tubing							
Packer type and depth set							

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor							
Surface	Class A	436	15.6	1.18	514.5		8
Coal							
Intermediate 1	Class A	860	15.6	1.18	1014.8		8
Intermediate 2							
Intermediate 3							
Production	Class A	Lead 826 Tail 2205	Lead 14.2 Tail 14.8	Lead 1.32 Tail 1.29	Lead 1090.3 Tail 2844.4	3859.0	8
Tubing							

Drillers TD (ft) 15,263

Loggers TD (ft) 15,174

Deepest formation penetrated Marcellus

Plug back to (ft) _____

Plug back procedure _____

Kick off depth (ft) 5204

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 No centralizers used on conductor.

4 Centralizers used on the Surface String 26 Centralizers on Intermediate String (Bow string centralizers on first two joints then every third joint to 100' from surface).

260 Centralizers on Production String (rigid bow string every joint to KOP, rigid bow spring every third joint from KOP to top of cement).

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)
	well not complete				Well not complete No data available

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)
								Well not complete no data available

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Please insert additional pages as applicable.

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API 47- 095 02197 Farm name Noble Energy, Inc. Well number SHR 3 JHS

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
Marcellus	4366	TVD	15263 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 _____ mcfpd Oil _____ bpd NGL _____ bpd Water _____ 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 ₂ S, ETC)
	0		0		

Please insert additional pages as applicable.

Drilling Contractor Precision Drilling Company
Address 5400 D big Tyler road City Charleston State WV Zip 25313

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

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

Stimulating Company _____
Address _____ City _____ State _____

Please insert additional pages as applicable.

Completed by Regina Logue Telephone 724-820-3559
Signature Regina Logue Title Regulatory Analyst Date JAN 17 2017

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Register
WV Department of Environmental Protection
JAN 27 2017

SHR 3 HHS Formations	Top	Base
Shale	0	766
Pittsburgh Coal	766	775
Shale and Sandstone	775	1222
Dunkard Sand	1222	1233
Shale	1233	1404
Gas Sand	1404	1443
Shale	1443	1535
1st Salt Sand	1535	1559
Shale	1559	1568
2nd Salt Sand	1568	1613
Shale	1613	1696
Maxton Sand	1696	1708
Shale	1708	1751
Big Lime	1751	1831
Big Injun	1831	2025
Price	2025	2383
Murrysville	2383	2397
Shale	2397	2594
50' Sand	2594	2596
Shale	2596	2649
30' Sand	2649	2658
Shale	2658	2700
Gordon Stray	2700	2715
Shale	2715	2751
Gordon	2751	2764
Shale	2764	2860
Fifth Sand	2860	2894
Shale	2894	3300
Speechley Sand	3300	3328
Shale	3328	4336
Warren Sand	4336	4345
Shale	4345	5003
Java Shale	5003	5174
Pipe Creek Shale	5174	5231
Angola Shale	5231	5856
Rhinestreet	5856	6272
Cashaqua	6272	6363
Middlesex	6363	6396
West River	6396	6440
Burkett	6440	6472
Tully Limestone	6472	6503
Hamilton	6503	6614
Marcellus	6614	6664
Onondaga	6664	6667

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Well is located on topo map 915 feet south of Latitude: 39° 25' 00"

Well is located on topo map 11,688 feet west of Longitude: 80° 47' 30"

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.

SURFACE HOLE LOCATION (SHL)

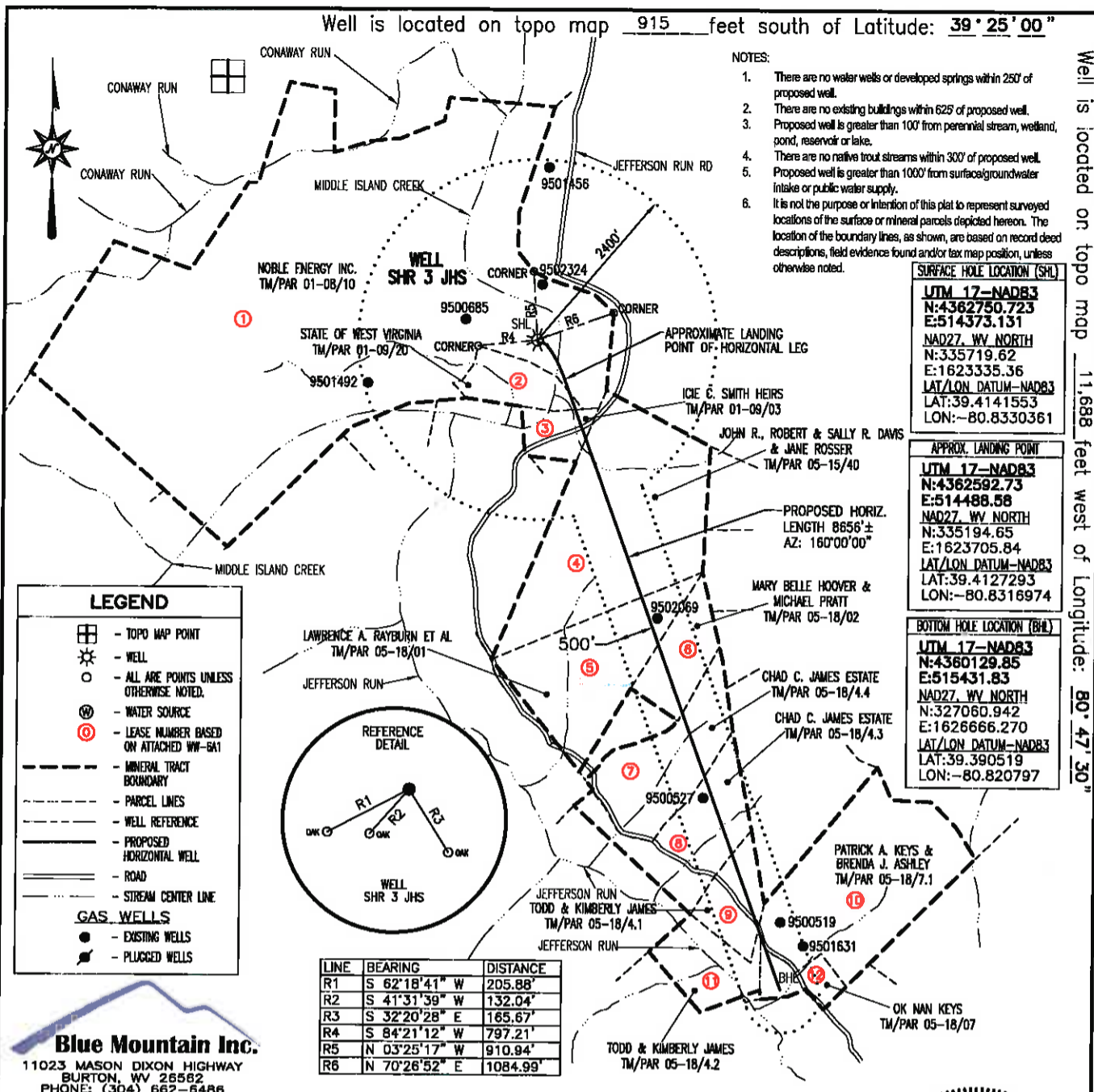
UTM 17-NAD83
N:4362750.723
E:514373.131
NAD27, WV NORTH
N:335719.62
E:1623335.36
LAT/LON DATUM-NAD83
LAT:39.4141553
LON:-80.8330361

APPROX. LANDING POINT

UTM 17-NAD83
N:4362592.73
E:514488.58
NAD27, WV NORTH
N:335194.65
E:1623705.84
LAT/LON DATUM-NAD83
LAT:39.4127293
LON:-80.8316974

BOTTOM HOLE LOCATION (BHL)

UTM 17-NAD83
N:4360129.85
E:515431.83
NAD27, WV NORTH
N:327060.942
E:1626666.270
LAT/LON DATUM-NAD83
LAT:39.390519
LON:-80.820797



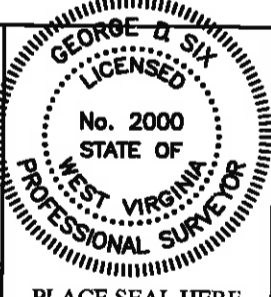
Blue Mountain Inc.
11023 MASON DIXON HIGHWAY
BURTON, WV 26562
PHONE: (304) 662-6486

FILE #: SHR 3 JHS
DRAWING #: SHR 3 JHS
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: *George D. Six*

R.P.E.: _____ L.L.S.: P.S. No. 2000



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



DATE: JUNE 10, 2014
OPERATOR'S WELL #: SHR 3 JHS
API WELL #: 47
STATE COUNTY PERMIT
JAN 17 2017

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

WATERSHED: HEADWATERS MIDDLE ISLAND CREEK ELEVATION: 751'
COUNTY/DISTRICT: TYLER / CENTERVILLE QUADRANGLE: SHIRLEY, WV 7.5

SURFACE OWNER: NOBLE ENERGY INC. ACREAGE: 542.81±
OIL & GAS ROYALTY OWNER: SEE ATTACHED WW-6A1 ACREAGE: 1057.941±

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: BURKETT ESTIMATED DEPTH: TVD: 6,275± TMD: 15,331±
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

01/27/2017