

JA

WR-35
Rev. 8/23/13

Page ___ of ___

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

API 47-085-10033 County Ritche District Clay
Quad Pennsboro Pad Name PENS 1HS Field/Pool Name _____
Farm name CNX Gas Company LLC Well Number PENS 1HHS
Operator (as registered with the OOG) Noble Energy, Inc.
Address 333 Technology Drive Suite 110 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 4353959.46 Easting 500619.08
Landing Point of Curve Northing 4354125.63 Easting 500529.87
Bottom Hole Northing 4355960.47 Easting 498937.76

Elevation (ft) 1111 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 4/23/2013 Date drilling commenced 5/24/2013 Date drilling ceased 1/10/2014
Date completion activities began 6/9/2014 Date completion activities ceased 8/8/2014
Verbal plugging (Y/N) N Date permission granted 4/23/2013 Granted by _____

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

Freshwater depth(s) ft 130' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1525', 1805' Void(s) encountered (Y/N) depths N
Coal depth(s) ft _____ Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewed by:

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API 47-085-10033 Farm name CNX Gas Company LLC Well number PENS 1HHS

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	N			
Surface	17-1/2	13-3/8	674	N	J-55 54.5#		Y
Coal							
Intermediate 1	12-1/4	9-5/8	5378	N	HCK 36#		Y
Intermediate 2							
Intermediate 3							
Production	8-3/4	5-1/2	14654	N	HCP-110 20#		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	Type 1	563	15.6	1.19	119	0	8
Coal							
Intermediate 1	Class A	Lead- 965 Tail- 280	Lead- 12 Tail- 15.6	Lead- 1.83 Tail- 1.19	Lead- 314 Tail- 59	0	8
Intermediate 2							
Intermediate 3							
Production	Class A	Lead- 400 Tail- 1640	Lead- 13 Tail- 14.8	Lead- 1.61 Tail- 1.41	Lead- 115 Tail- 438	2300	8
Tubing							

Drillers TD (ft) 14670 Loggers TD (ft) _____

Deepest formation penetrated Marcellus Plug back to (ft) _____

Plug back procedure _____

Kick off depth (ft) 5395

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 _____

6 Centralizers on Surface (1 every 3rd joint) 60 Centralizers on Intermediate (1 every 3rd joint) 241 Centralizers on Production (1 every 3rd to Curve, then 1 every joint to TD)

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

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WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

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WERE TRACERS USED Yes No TYPE OF TRACER(S) USED Spectra Chem

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API 47- 085 - 10033

Farm name CNX Gas Company LLC

Well number PENS 1HHS

PERFORATION RECORD

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

Please See Attached

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

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Please insert additional pages as applicable.

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PERFORMANCE RECORD

API: 47-085-10033

Farm name: CNX Gas Company, LLC

Well Name: PEN 1H-HS

Stage No.	Perf Date	Top Perf	Bottom Perf	# of Perfs	Formation
Toe Sleeve	3/8/2014	14,571	14,573	NA	Marcellus
1	6/9/2014	14,325	14,517	48	Marcellus
2	6/10/2014	14,023	14,277	40	Marcellus
3	6/15/2014	13,723	13,977	40	Marcellus
4	6/16/2014	13,423	13,677	40	Marcellus
(CUDD RDMO/HES MIRU) 5	6/16/2014	13,175	13,377	40	Marcellus
6	6/23/2014	12,873	13,129	40	Marcellus
7	6/24/2014	12,573	12,827	40	Marcellus
8	6/25/2014	12,273	12,527	40	Marcellus
9	6/25/2014	11,973	12,227	40	Marcellus
10	6/25/2014	11,675	11,927	40	Marcellus
11	6/26/2014	11,373	11,627	40	Marcellus
12	6/26/2014	11,073	11,327	40	Marcellus
13	6/27/2014	10,773	11,027	40	Marcellus
14	6/27/2014	10,530	10,727	40	Marcellus
14B	6/27/2014	10,457	10,502	36	Marcellus
15	6/28/2014	10,173	10,427	40	Marcellus
16	6/28/2014	9,873	10,127	40	Marcellus
17	6/29/2014	9,571	9,827	40	Marcellus
18	6/29/2014	9,273	9,527	40	Marcellus
19	6/30/2014	8,973	9,227	40	Marcellus
20	6/30/2014	8,673	8,927	40	Marcellus
21	7/1/2014	8,373	8,627	40	Marcellus
22	7/2/2014	8,073	8,327	40	Marcellus
23	7/6/2014	7,773	8,027	40	Marcellus
24	7/6/2014	7,473	7,727	40	Marcellus
25	7/6/2014	7,175	7,427	40	Marcellus
26	7/7/2014	6,873	7,127	40	Marcellus
26B	7/8/2014	6,900	7,034	48	Marcellus
27	7/8/2014	6,569	6,827	40	Marcellus

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STIMULATION INFORMATION PER STAGE

API: 47-085-10033

CNX Gas
Farm name: Company, LLC

Well Name: PEN 1H-HS

Stage No.	Stim Date	Avg Rate (bpm)	ATP (psi)	Max BD Pressure	ISIP (psi)	Proppant (lbs)	Water (BBLs)	Amount of N ² / other
1 inj test	6/9/2014	13.0	4777		4471	-	390	
1	6/10/2014	72.3	7,517	6388	3977	496,620	14,341	
2	6/15/2014	79.7	7,532	6,076	3359	497,640	11,533	
3	6/15/2014	83.6	7,369	6,383	3571	501,040	10,821	
4	6/16/2014	87.8	7,795	6,965	3856	496,860	11,250	
(CUDD RDMO) 5A	6/16/2014	85.9	7,943	6,747	3770	742,870	6,912	
(HES MIRU) 5B	6/23/2014	80.0	7,399		3513		7,198	
6	6/23/2014	73.6	7,666	6,021	3638	473,727	14,647	
7	6/24/2014	87.6	7,390	6,125	3607	499,668	12,051	
8	6/25/2014	86.5	7,326	6,796	3726	493,492	11,437	
9	6/25/2014	88.5	7,183	6,024	3728	498,618	10,857	
10	6/26/2014	88.0	7,085	6,276	3660	495,011	10,803	
11	6/26/2014	86.1	7,064	6,500	3475	494,016	10,862	
12	6/27/2014	88.8	7,071	6,811	3805	496,866	10,761	
13	6/27/2014	87.9	7,020	5,937	3452	496,548	11,264	
14	6/27/2014	6.7	8,662	6,438	7685	3,252	2,327	
14 Reperf	6/28/2014	63.0	7,480		3568	493,431	13,824	
15	6/28/2014	85.3	7,629	6,163	3376	495,815	11,871	
16	6/28/2014	85.8	7,283	5,942	3670	495,904	10,821	
17	6/29/2014	85.9	6,910	6,629	3591	492,760	10,545	
18	6/29/2014	71.4	7,405	5385	3548	493,280	13,966	
19	6/30/2014	89.4	6,862	5,871	3549	493,490	11,038	
20	7/1/2014	85.1	6,974	6,198	4811	495,157	12,176	
21	7/2/2014	86.2	6,751	6,467	3522	494,698	10,904	
22	7/6/2014	87.8	6,867	6,205	3453	496,614	11,492	
23	7/6/2014	90.0	6,495	6,055	3467	494,541	10,468	
24	7/6/2014	89.0	6,535	6,653	3443	501,915	10,333	
25	7/7/2014	90.0	6,649	6,662	3692	497,331	10,225	
26	7/7/2014	38.0	8,361	7,351	4779	5,708	3,599	
26 Reperf	7/7/2014	88.7	6,571		3791	498,311	10,469	
27	7/8/2014	86.3	6,132	5,552	3648	498,512	10,393	

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API 47- 085 - 10033 Farm name CNX Gas Company LLC Well number PEN 1HHS

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6,346.2'</u> TVD	<u>14,670'</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

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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 3142 mcfpd Oil 48 bpd NGL 204 bpd Water 770 bpd GAS MEASURED BY Estimated Orifice Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H₂S, ETC)</u>
	<u>DEPTH IN FT NAME TVD</u>	<u>DEPTH IN FT TVD</u>	<u>DEPTH IN FT MD</u>	<u>DEPTH IN FT MD</u>	
	<u>0</u>		<u>0</u>		

Please See Attached

Please insert additional pages as applicable.

Drilling Contractor Nomac 78
Address 40 Lamoka Road City Sayre State PA Zip 18840

Logging Company _____
Address _____ City _____ State _____ Zip _____

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

Stimulating Company CUDD Energy Services
Address 2897 Route 414 City Canton State PA Zip 17724

Please insert additional pages as applicable.

Completed by Regina A. Logue Telephone 724-820-3559
Signature Regina A. Logue Title Regulatory Analyst Date 11/18/2014

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

12/05/2014

PEN 1H

47-085-10033

Formations	Top TVD	Base TVD	Top MD	Base MD	Fluid
Shale and Sandstone	0	1365	0	1365	
Sandstone	1365	1489	1365	1480	
Shale and Sandstone	1479	1649	1480	1650	
Sandstone	1649	1691	1650	1692	
Shale and Sandstone	1691	1793	1692	1794	
Maxton Sand	1793	1876	1794	1877	
Shale and Sandstone	1876	1999	1877	2000	
Big Lime	1999	2054	2000	2055	
Big Injun	2054	2189	2055	2190	
Price	2189	2461	2190	2462	
Weir	2461	2500	2462	2978	
Shale	2500	2780	2501	2781	
Gordon	2780	2797	2781	2798	
Shale and Sandstone	2797	2977	2798	2978	
5th Sand	2977	2989	2978	2990	
Shale	2989	3132	2990	3133	
Sandstone	3132	3146	3133	3147	
Shale	3146	3554	3147	3555	
Warren	3554	3616	3555	3617	
Shale	3616	3950	3617	3951	
Sandstone	3950	3987	3951	3988	
Shale and Sandstone	3987	4981	3988	4982	
Benson	4981	5043	4982	5044	
Shale	5043	5203	5044	5204	
Alexander	5203	5271	5204	5272	
Shale	5271	5781	5272	5785	
Rheinstreet	5781	6107	5785	6140	
Cashaqua	6107	6199	6140	6261	
Middlesex	6199	6228	6261	6304	
West River	6228	6272	6304	6377	
Burkett	6272	6315	6377	6465	
Tully Limestone	6315	6316	6465	6468	
Hamilton	6316	6317	6468	6470	
Marcellus	6317	6376	6470	not encountered	Gas
Onondaga	6376	6393	not encountered	not encountered	
Huntersville	6393	not encountered	not encountered	not encountered	

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/9/2014
Job End Date:	6/16/2014
State:	West Virginia
County:	Ritchie
API Number:	47-085-10033-00-00
Operator Name:	Noble Energy, Inc.
Well Name and Number:	PENS1H
Longitude:	-80.99298600
Latitude:	39.33498100
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,346
Total Base Water Volume (gal):	2,320,326
Total Base Non Water Volume:	114,582

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85-10033

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
Sand	Operator	Proppants	Silicon Dioxide	14808-60-7	100.00000	52.96287	
Water	Operator	Base Carrier Fluid	Water	7732-18-5	100.00000	46.85590	
28% Hydrochloric Acid	Reagent	Scale Dissolver	Water	7732-18-5	64.79000	0.05831	
			Hydrogen Chloride	7647-01-0	36.93000	0.03323	
FR900	Nalco	Friction Reducers	Proprietary	Proprietary	100.00000	0.05588	
Plexgel 907L-EB	Chemplex, L.C.	Gelling Agents	Propylene Pentamer	15220-87-8	60.00000	0.00703	
			Distillate, petroleum, hydrotreated light	64742-47-8	60.00000	0.00703	
			C14 n-alkanes, mixed	629-59-4	20.00000	0.00234	
			C11 n-alkanes, mixed	1120-21-4	20.00000	0.00234	
			C13 n-alkanes, mixed	629-50-5	20.00000	0.00234	
			C12 n-alkanes, mixed	112-40-3	20.00000	0.00234	
BIO-CLEAR 2000	Clearwater International, LLC	Iron Controller / Reducers	Polyethylene Glycol Mixture	25322-68-3	60.00000	0.00986	

			2,2-Dibromo-3-Nitrilopropionamide	10222-01-2	20.00000	0.00329
MSI-7	National Petrochem	Scale Inhibitors				
			Hydrogen Chloride	7647-01-0	100.00000	0.00457
FE-4	Chemplex, L.C.	Iron Controller / Reducers				
			Water	7732-18-5	55.00000	0.00059
			Citric Acid Anhydrous	77-92-9	55.00000	0.00059
Plexgel Breaker 10L	Chemplex, L.C.	Gel Breakers/Delayed Breakers				
			No Hazardous Ingredients	Proprietary	100.00000	0.00096
I-22	Nalco	Acid Corrosion Inhibitors				
			Formic Acid	64-18-6	60.00000	0.00020
			Quaternary ammonium compound	Proprietary	30.00000	0.00010
			Oxyalkylated Fatty Acid Derivative	Proprietary	30.00000	0.00010
			Aromatic aldehyde	Proprietary	30.00000	0.00010
			Isopropanol	67-63-0	10.00000	0.00003
			2-Mercaptoethyl Alcohol	60-24-2	5.00000	0.00002
			Cyclic alkanes	Proprietary	5.00000	0.00002
			Methanol	67-56-1	5.00000	0.00002
			Quaternary ammonium compound	Proprietary	5.00000	0.00002
MNE-N34	CESI	Emulsifiers / Viscosifiers				
			Petroleum Distillates	64741-68-0	75.00000	0.00021
			Isopropanol	67-63-0	25.00000	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.						

85-10033

* 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 14,578' feet south of Latitude: 39° 22' 30"

Well is located on topo map 9,809' feet west of Longitude: 80° 57' 30"

LEGEND

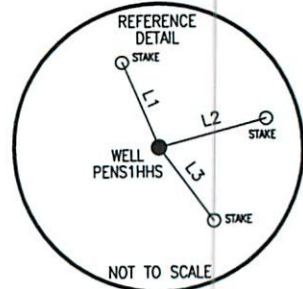
- TOPO MAP POINT
- PROPOSED GAS WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED.
- WATER SOURCE
- LEASE NUMBER
- SURFACE BOUNDARY
- PARCEL LINES
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE
- AS DRILLED
- EXISTING WELLS
- PLUGGED WELLS

WELLS WITHIN 3000'

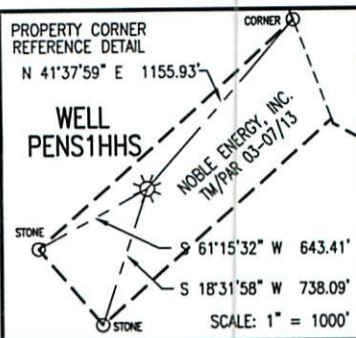
- EXISTING WELLS
- PLUGGED WELLS

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.



LINE	BEARING	DISTANCE
L1	N 22°50'23" W	191.86'
L2	N 75°26'47" E	231.27'
L3	S 36°36'58" E	188.76'



BOTTOM HOLE LOCATION (BHL)

UTM 17-NAD83
N:4355959.64
E:498937.84

NAD27, WV NORTH
N:314281.28
E:1572312.20

BOTTOM HOLE LOCATION (BHL)

UTM 17-NAD83
N:4355960.47
E:498937.76

NAD27, WV NORTH
N:314284.011
E:1572311.971

APPROX. LANDING POINT

UTM 17-NAD83
N:4354123.65
E:500631.59

NAD27, WV NORTH
N:308169.01
E:1577441.57

SURFACE HOLE LOCATION (SHL)

UTM 17-NAD83
N:4353959.524
E:500618.883

NAD27, WV NORTH
N:307625.63
E:1577719.03

SURFACE HOLE LOCATION (SHL)

UTM 17-NAD83
N:4353959.46
E:500619.08

NAD27, WV NORTH
N:307625.415
E:1577719.664

TRACT	LESSORS
1	JOSEPH F. & JOYCE A. SCHMIDLE
2	JOSEPH F. & JOYCE A. SCHMIDLE
3	JOSEPH F. & JOYCE A. SCHMIDLE
4	JOSEPH F. & JOYCE A. SCHMIDLE
5	CLARENCE W. & MARY FRANCES MUTSCHELKNAUS
6	DAVID T. MIHLBAUER ET AL
7	CINDA L. & DAVID M. FLEMING ET AL
8	CINDA L. & DAVID M. FLEMING ET AL
9	JOHN & EDITH SMITH ET AL

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

FILE #: PENS1HHS-AS DRILLED

DRAWING #: PENS1HHS-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: *George D. Six*

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

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP

OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304



DATE: AUGUST 26, 2014

OPERATOR'S WELL #: PENS1HHS-AS DRILLED

API WELL #: 47 85 MOD10033H6A

STATE COUNTY PERMIT

Well Type: Oil Waste Disposal Production Deep

Gas Liquid Injection Storage Shallow

WATERSHED: BONDS CREEK ELEVATION: 1117.78'

COUNTY/DISTRICT: RITCHIE / CLAY QUADRANGLE: PENNSBORO, WV 7.5'

SURFACE OWNER: NOBLE ENERGY, INC. ACREAGE: 19.759±

OIL & GAS ROYALTY OWNER: SEE TABLE ABOVE ACREAGE: 610.971±

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: 6,359± TMD: 14,581±

WELL OPERATOR NOBLE ENERGY, INC. DESIGNATED AGENT STEVEN M. GREEN

Address 333 TECHNOLOGY DRIVE, SUITE 110 Address 500 VIRGINIA STREET EAST, UNITED CENTER SUITE 1001

City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301

12/05/2014