

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

Received
Office of Oil & Gas
NOV 21 2014

API 47 - 085 - 10032 County Ritche District Clay
Quad Pennsboro Pad Name PENS 1HS Field/Pool Name _____
Farm name CNX Gas Company LLC Well Number PENS 1GHS
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 4353954.22 Easting 500615.72
Landing Point of Curve Northing 4353962.91 Easting 500366.28
Bottom Hole Northing 4355818.75 Easting 498757.29

Elevation (ft) 1111.67 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 4/22/2013 Date drilling commenced 5/23/2013 Date drilling ceased 12/31/2013
Date completion activities began 5/20/2014 Date completion activities ceased 9/8/2014
Verbal plugging (Y/N) N Date permission granted 4/22/2013 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

Reviewed by: _____

12/12/2014

API 47-085-10032 Farm name CNX Gas Company LLC Well number PENS 1GHS

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	J-55 106.50#		
Surface	17-1/2	13-3/8	656.0	N	J-55 54.50#		Y
Coal							
Intermediate 1	12-1/4	9-5/8	5362.0	N	J-55 36#		Y
Intermediate 2							
Intermediate 3							
Production	8-3/4	5-1/2	14941.8	N	P-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 I	563	15.6	1.19	119	0	8
Coal							
Intermediate 1	Class A	Lead-965 Tail-280	Lead-12.0 Tail-15.6	Lead-1.83 Tail 1.19	Lead-314 Tail-59	0	8
Intermediate 2							
Intermediate 3							
Production	Class A	Lead-388 Tail-1750	Lead-112 Tail-440	Lead-1.16 Tail-1.41	Lead-112 Tail-440	0	8
Tubing							

Drillers TD (ft) 14955 Loggers TD (ft) _____
 Deepest formation penetrated Marcellus Plug back to (ft) _____
 Plug back procedure _____

Kick off depth (ft) 5375

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 _____
7 Centralizers on Surface (1 every 3rd joint) 43 Centralizers on Intermediate (1 every 3rd joint) 253 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

API 47- 085 - 10032 Farm name CNX Gas Company LLC Well number PENS 1GHS

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6,342.9'</u> TVD	<u>14,955'</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 8062 mcfpd Oil 150 bpd NGL 207 bpd Water 1762 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 Canonsburg 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

12/12/2014

PERFORATION RECORD

API: ~~47-085-10015~~ ^{10032 RY}

Farm name: CNX Gas Company, LLC

Well Name: PEN 1 ~~10015~~ ^{GHS RY}

Stage No.	Perf Date	Top Perf	Bottom Perf	# of Perfs	Formation
Toe Sleeve	3/8/2014	13,071	13,073	NA	Marcellus
1	5/21/2014	12,824	13,034	48	Marcellus
2	5/21/2014	12,575	12,777	40	Marcellus
3	5/22/2014	12,273	12,527	40	Marcellus
4	5/22/2014	11,973	12,227	40	Marcellus
5	5/22/2014	11,673	11,927	40	Marcellus
6	5/23/2014	11,373	11,627	40	Marcellus
7	5/23/2014	11,073	11,327	40	Marcellus
8	5/25/2014	10,773	11,027	40	Marcellus
9	5/25/2014	10,525	10,727	40	Marcellus
10	5/26/2014	10,275	10,477	40	Marcellus
11	5/28/2014	10,025	10,227	40	Marcellus
12	5/29/2014	9,723	9,977	40	Marcellus
13	5/29/2014	9,423	9,677	40	Marcellus
14	5/29/2014	9,120	9,372	40	Marcellus
15	5/30/2014	8,823	9,077	40	Marcellus
15B	NA	NA	NA	NA	Marcellus
15C	6/1/2014	8,578	8,777	40	Marcellus
16	6/2/2014	8,273	8,527	40	Marcellus
17	6/2/2014	7,973	8,227	40	Marcellus
18	6/4/2014	7,673	7,927	40	Marcellus
19	6/5/2014	7,425	7,627	40	Marcellus
20	6/6/2014	7,123	7,377	40	Marcellus
21	6/7/2014	6,823	7,077	40	Marcellus
22	6/8/2014	6,523	6,777	40	Marcellus

STIMULATION INFORMATION PER STAGE

API: 47-085-10011 ^{10032R2}

Farm name: CNX Gas Company, LLC

Well Name: PEN 1 ^{GHS R2} ~~16H5~~

Stage No.	Stim Date	Avg Rate (bpm)	ATP (psi)	Max BD Pressure	ISIP (psi)	Proppant (lbs)	Water (BBLs)	Amount of N ² / other
1	5/21/2014	88.2	7669	6292	2776	497,900	11,666	
2	5/21/2014	69.8	8,357	5842	4071	407,360	14,085	
3	5/22/2014	88.4	8,321	5,928	4735	497,720	16,673	
4	5/22/2014	64.7	7,996	6,120	3555	495,139	17,728	
5	5/23/2014	89.1	7,788	5,619	3103	493,460	11,142	
6	5/23/2014	86.8	7,686	6,390	3137	502,880	12,710	
7	5/25/2014	89.1	7,353	5,750	3888	492,744	11,003	
8	5/25/2014	89.3	7,517	6,639	3067	495,480	10,987	
9	5/26/2014	89.0	7,316	6,417	3111	437,700	9,697	
10	5/28/2014	89.0	7,163	6,672	3353	415,700	9,520	
11	5/28/2014	88.1	7,274	6,391	3334	413,240	12,296	
12	5/29/2014	83.6	7,749	5,767	3876	505,040	14,834	
13	5/29/2014	88.3	8,035	5,861	3635	478,880	13,611	
14	5/30/2014	77.8	7,232	5,846	3317	497,480	13,353	
15A	5/31/2014	86.9	7,806	5,963	5337	363,380	9,477	
15B	6/1/2014	20.5	7,311		4974	3,500	5,445	
15C	6/2/2014	87.8	7,842	5,658	4508	499,440	12,937	
16	6/2/2014	88.4	7,682	6,215	4487	500,100	12,806	
17	6/3/2014	87.0	7,492	6,006	4561	458,160	10,666	
18	6/5/2014	89.5	7,633	5,883	5140	503,620	12,780	
19	6/6/2014	86.5	7,286	6607	4453	412,620	11,011	
20	6/7/2014	80.5	7,047	5,826	5365	498,420	17,575	
21	6/8/2014	89.9	6,860	5,868	4820	425,180	11,870	
22	6/8/2014	89.2	7,073	5,655	3321	566,720	11,823	

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PEN 1C 10032 R2
 47-085-10011

Formations	Top TVD	Base TVD	Top MD	Base MD	Fluid
Shale and Sandstone	0	1365	0	1365	
Sandstone	1365	1489	1365	1479	
Shale and Sandstone	1479	1649	1479	1649	
Sandstone	1649	1691	1649	1691	
Shale and Sandstone	1691	1793	1691	1793	
Maxton Sand	1793	1876	1793	1876	
Shale and Sandstone	1876	1999	1876	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	5786	
Rheinstreet	5781	6107	5786	6141	
Cashaqua	6107	6199	6141	6263	
Middlesex	6199	6228	6263	6307	
West River	6228	6272	6307	6381	
Burkett	6272	6315	6381	6471	
Tully Limestone	6315	6316	6471	6474	
Hamilton	6316	6317	6474	6476	
Marcellus	6317	6376	6476	6720	Gas
Onondaga	6376	6393	6720	not encountered	
Huntersville	6393	not encountered	not encountered	not encountered	

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/21/2014
Job End Date:	6/8/2014
State:	West Virginia
County:	Ritchie
API Number:	47-085-10011-00-00
Operator Name:	Noble Energy, Inc.
Well Name and Number:	PENS1C
Longitude:	-80.99293100
Latitude:	39.33495600
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,337
Total Base Water Volume (gal):	12,418,846
Total Base Non Water Volume:	374,480



85-10032

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
Water	Operator	Base Carrier Fluid	Water	7732-18-5	100.00000	90.13288	
Sand	Operator	Proppants	Silicon Dioxide	14808-60-7	100.00000	9.45236	
28% Hydrochloric Acid	Reagent	Scale Dissolver	Water	7732-18-5	64.79000	0.16346	
			Hydrogen Chloride	7647-01-0	36.93000	0.09317	
FR900	Nalco	Friction Reducers	Proprietary	Proprietary	100.00000	0.09141	
Plexgel 907L-EB	Chemplex, L.C.	Gelling Agents	Distillate, petroleum, hydrotreated light	64742-47-8	60.00000	0.01345	
			Propylene Pentamer	15220-87-8	60.00000	0.01345	
			C14 n-alkanes, mixed	629-59-4	20.00000	0.00448	
			C12 n-alkanes, mixed	112-40-3	20.00000	0.00448	
			C11 n-alkanes, mixed	1120-21-4	20.00000	0.00448	
			C13 n-alkanes, mixed	629-50-5	20.00000	0.00448	
BIO-CLEAR 2000	Clearwater International, LLC	Iron Controller / Reducers	Polyethylene Glycol Mixture	25322-68-3	60.00000	0.01986	

			2,2-Dibromo-3-Nitrilopropionamide	10222-01-2	20.00000	0.00662
MSI-7	National Petrochem	Scale Inhibitors				
			Hydrogen Chloride	7647-01-0	100.00000	0.00914
Plexgel Breaker 10L	Chemplex, L.C.	Gel Breakers/Delayed Breakers				
			No Hazardous Ingredients	Proprietary	100.00000	0.00277
FE-4	Chemplex, L.C.	Iron Controller / Reducers				
			Citric Acid Anhydrous	77-92-9	55.00000	0.00128
			Water	7732-18-5	55.00000	0.00128
I-22	Nalco	Acid Corrosion Inhibitors				
			Formic Acid	64-18-6	60.00000	0.00043
			Quaternary ammonium compound	Proprietary	30.00000	0.00021
			Aromatic aldehyde	Proprietary	30.00000	0.00021
			Oxyalkylated Fatty Acid Derivative	Proprietary	30.00000	0.00021
			Isopropanol	67-63-0	10.00000	0.00007
			Cyclic alkanes	Proprietary	5.00000	0.00004
			Methanol	67-56-1	5.00000	0.00004
			Quaternary ammonium compound	Proprietary	5.00000	0.00004
			2-Mercaptoethyl Alcohol	60-24-2	5.00000	0.00004
MNE-N34	CESI	Emulsifiers / Viscosifiers				
			Petroleum Distillates	64741-68-0	75.00000	0.00044
			Isopropanol	67-63-0	25.00000	0.00015
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.						

85-10032

* 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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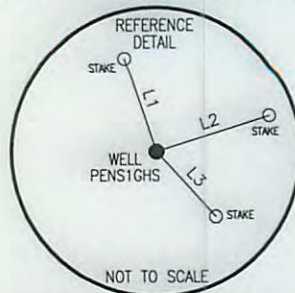
Well is located on topo map 14,595' feet south of Latitude: 39° 22' 30"

Well is located on topo map 9,819' feet west of Longitude: 80° 57' 30"

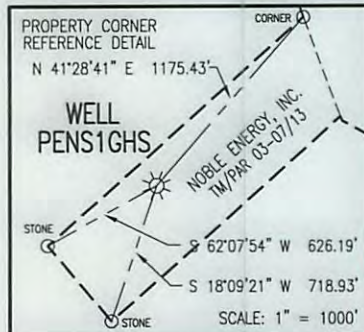
LEGEND	
	- TOPO MAP POINT
	- PROPOSED GAS WELL
	- ALL ARE POINTS UNLESS OTHERWISE NOTED.
	- WATER SOURCE
	- LEASE NUMBER
	- SURFACE BOUNDARY
	- PARCEL LINES
	- WELL REFERENCE
	- PROPOSED HORIZONTAL WELL
	- ROAD
	- STREAM CENTER LINE
	- AS DRILLED
WELLS WITHIN 3000'	
	- EXISTING WELLS
	- PLUGGED WELLS

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 18°16'25" W	203.77'
L2	N 72°18'16" E	246.06'
L3	S 42°24'40" E	182.61'



BOTTOM HOLE LOCATION (BHL)
 UTM 17-NAD83
 N:4355813.07
 E:498760.39
 NAD27, WV NORTH
 N:313810.07
 E:1571721.86

APPROX. LANDING POINT
 UTM 17-NAD83
 N:4353962.91
 E:500615.28
 NAD27, WV NORTH
 N:307650.61
 E:1576890.27

TRACT	LESSORS
1	JOSEPH F. & JOYCE A. SCHMIDLE
2	JOSEPH F. & JOYCE A. SCHMIDLE
3	JOSEPH F. & JOYCE A. SCHMIDLE
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6	DAVID T. MIHLBAUER ET AL
7	CINDA L. & DAVID M. FLEMING ET AL
8	JOHN & EDITH SMITH ET AL

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 UTM 17-NAD83
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 E:500615.796
 NAD27, WV NORTH
 N:307609.06
 E:1577708.62

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

FILE #: PENS1GHS-AS DRILLED
 DRAWING #: PENS1GHS-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

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 #: PENS1GHS-AS DRILLED
 API WELL #: 47 85 MOD10032H6A
 STATE COUNTY PERMIT

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

WATERSHED: BONDS CREEK ELEVATION: 1117.47'

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: 572.102±

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: 14,824'±

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

12/12/2014

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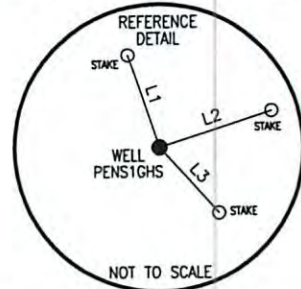
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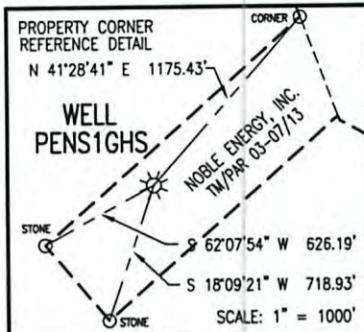
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 N:307608.408
 E:1577708.365

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



FILE #: PENS1GHS-AS DRILLED
 DRAWING #: PENS1GHS-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: AUGUST 26, 2014
 OPERATOR'S WELL #: PENS1GHS-AS DRILLED
 API WELL #: 47 85 MOD10032H6A
 STATE COUNTY PERMIT

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

WATERSHED: BONDS CREEK ELEVATION: 1117.47'
 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: 572.102±

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: 14,824±
 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

12/12/2014