

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 - 10013 County Ritche District Clay
Quad Pennsboro Pad Name PENS 1HS Field/Pool Name _____
Farm name CNX Gas Company LLC Well Number PENS 1EHS
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 4352235.67 Easting 501586.04
Landing Point of Curve Northing 4353517.11 Easting 500477.99
Bottom Hole Northing 4353946.21 Easting 5006917.64

Elevation (ft) 1111.75' 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 1/31/2013 Date drilling commenced 5/19/2013 Date drilling ceased 12/8/2013
Date completion activities began 4/12/2014 Date completion activities ceased 8/20/2014
Verbal plugging (Y/N) N Date permission granted 1/31/2013 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:

12/05/2014

API 47-085-10013 Farm name CNX Gas Company LLC Well number PENS 1EHS

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-55 106.5#		Y
Surface	17-1/2	13-3/8	637	N	J-55 54.5#		Y
Coal							
Intermediate 1	12-1/4	9-5/8	5472	N	HCK 36#		Y
Intermediate 2							
Intermediate 3							
Production	8-3/4	5-1/2	12570	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	Class A	663	15.6	1.19	119	9	8
Coal							
Intermediate 1	Class A	Lead- 965 Tail- 279	Lead- 12 Tail-15.6	Lead- 1.83 Tail- 1.19	Lead- 314 Tail- 65	0	8
Intermediate 2							
Intermediate 3							
Production	Class A	Lead- 430 Tail- 1290	Lead- 13 Tail- 14.8	Lead- 1.62 Tail- 1.41	Lead- 124 Tail- 324	2250	8
Tubing							

Drillers TD (ft) 12590 Loggers TD (ft) _____

Deepest formation penetrated Marcellus Plug back to (ft) _____

Plug back procedure _____

Kick off depth (ft) 6238 _____

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) 103 Centralizers on Intermediate (1 every 3rd joint) 190 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 - 10013 Farm name CNX Gas Company LLC Well number PEN 1EHS

<u>PRODUCING FORMATION(S)</u>	<u>DEPTH(S)</u>	
<u>Marcellus</u>	<u>6370.1'</u> TVD	<u>12,590'</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 1585 mcfpd Oil 19 bpd NGL 287 bpd Water 681 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 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 1E
47-085-10013

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	1999	
Big Lime	1999	2054	1999	2054	
Big Injun	2054	2189	2054	2189	
Price	2189	2461	2189	2461	
Weir	2461	2500	2461	2977	
Shale	2500	2780	2500	2780	
Gordon	2780	2797	2780	2797	
Shale and Sandstone	2797	2977	2797	2977	
5th Sand	2977	2989	2977	2989	
Shale	2989	3132	2989	3132	
Sandstone	3132	3146	3132	3146	
Shale	3146	3554	3146	3554	
Warren	3554	3616	3554	3616	
Shale	3616	3950	3616	3951	
Sandstone	3950	3987	3951	3988	
Shale and Sandstone	3987	4981	3988	5036	
Benson	4981	5043	5036	5107	
Shale	5043	5203	5107	5296	
Alexander	5203	5271	5296	5377	
Shale	5271	5781	5377	6000	
Rheinstreet	5781	6107	6000	6415	
Cashaqua	6107	6199	6415	6552	
Middlesex	6199	6228	6552	6600	
West River	6228	6272	6600	6682	
Burkett	6272	6315	6682	6783	
Tully Limestone	6315	6316	6783	6786	
Hamilton	6316	6317	6786	6789	
Marcellus	6317	6376	6789	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:	4/12/2014
Job End Date:	5/17/2014
State:	West Virginia
County:	Ritchie
API Number:	47-085-10013-00-00
Operator Name:	Noble Energy, Inc.
Well Name and Number:	PEN 1E
Longitude:	-80.99300300
Latitude:	39.33486100
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,370
Total Base Water Volume (gal):	11,371,878
Total Base Non Water Volume:	516,311

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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
Water	Operator	Base Carrier Fluid	Water	7732-18-5	100.00000	91.36321	
Sand	Operator	Proppants	Silicon Dioxide	14808-60-7	100.00000	8.23524	
28% Hydrochloric Acid	Reagent	Scale Dissolver	Water	7732-18-5	64.79000	0.12991	
			Hydrogen Chloride	7647-01-0	36.93000	0.07405	
FR900	Nalco	Friction Reducers	Proprietary	Proprietary	100.00000	0.10063	
Plexgel 907L-EB	Chemplex, L.C.	Gelling Agents	Distillate, petroleum, hydrotreated light	64742-47-8	60.00000	0.02898	
			Propylene Pentamer	15220-87-8	60.00000	0.02898	
			C13 n-alkanes, mixed	629-50-5	20.00000	0.00966	
			C11 n-alkanes, mixed	1120-21-4	20.00000	0.00966	
			C14 n-alkanes, mixed	629-59-4	20.00000	0.00966	
			C12 n-alkanes, mixed	112-40-3	20.00000	0.00966	
BIO-CLEAR 2000	Clearwater International, LLC	Iron Controller / Reducers	Polyethylene Glycol Mixture	25322-68-3	60.00000	0.02160	

			2,2-Dibromo-3-Nitropropionamide	10222-01-2	20.00000	0.00720
MSI-7	National Petrochem	Scale Inhibitors				
			Hydrogen Chloride	7647-01-0	100.00000	0.00942
Plexgel Breaker 10L	Chemplex, L.C.	Gel Breakers/Delayed Breakers				
			No Hazardous Ingredients	Proprietary	100.00000	0.00293
FE-4	Chemplex, L.C.	Iron Controller / Reducers				
			Citric Acid Anhydrous	77-92-9	55.00000	0.00127
			Water	7732-18-5	55.00000	0.00127
I-22	Nalco	Acid Corrosion Inhibitors				
			Formic Acid	64-18-6	60.00000	0.00054
			Aromatic aldehyde	Proprietary	30.00000	0.00027
			Oxyalkylated Fatty Acid Derivative	Proprietary	30.00000	0.00027
			Quaternary ammonium compound	Proprietary	30.00000	0.00027
			Isopropanol	67-63-0	10.00000	0.00009
			2-Mercaptoethyl Alcohol	60-24-2	5.00000	0.00005
			Quaternary ammonium compound	Proprietary	5.00000	0.00005
			Cyclic alkanes	Proprietary	5.00000	0.00005
			Methanol	67-56-1	5.00000	0.00005
MNE-N34	CESI	Emulsifiers / Viscosifiers				
			Petroleum Distillates	64741-68-0	75.00000	0.00041
			Isopropanol	67-63-0	25.00000	0.00014

85-10013

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.

* 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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Latitude: 39°22'30"

Longitude: 80°57'30"

LEGEND

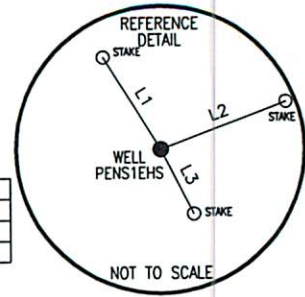
- TOP MAP POINT
 - PROPOSED GAS WELL
 - ALL ARE POINTS UNLESS OTHERWISE NOTED.
 - WATER SOURCE
 - LEASE NUMBER
 - SURFACE BOUNDARY
 - LEASE BOUNDARY
 - PARCEL LINES
 - WELL REFERENCE
 - PROPOSED HORIZONTAL WELL
 - ROAD
 - STREAM CENTER LINE
 - AS DRILLED
- WELLS WITHIN 3000'**
- EXISTING WELLS
 - PLUGGED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

APPROX. LANDING POINT

UTM 17 -NAD83
N:4353517.114
E:500477.989
NAD27 - WY NORTH
N:307581.305
E:1577715.186
F:1577232.437
LAT/LOG DATUM-WGS84
LAT:39°19'51.86"
LON:80°59'40.03"

TRACT	LESSORS
1	JOSEPH F. & JOYCE A. SCHMIDLE
2	ELIZABETH SMITH BARBER ET AL
3	JOSEPH F. & JOYCE A. SCHMIDLE
4	DAVID L. MAPLE ET AL
5	JOSEPH F. & JOYCE A. SCHMIDLE
6	DAVID L. MAPLE ET AL

LINE	BEARING	DISTANCE
L1	N 31°30'48" W	226.83'
L2	N 69°19'20" E	279.55'
L3	S 26°54'37" E	151.33'

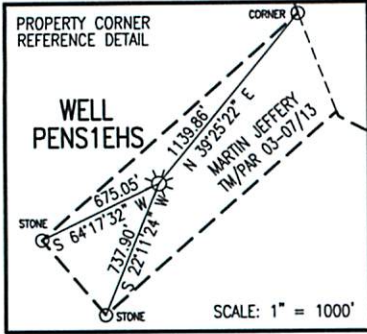
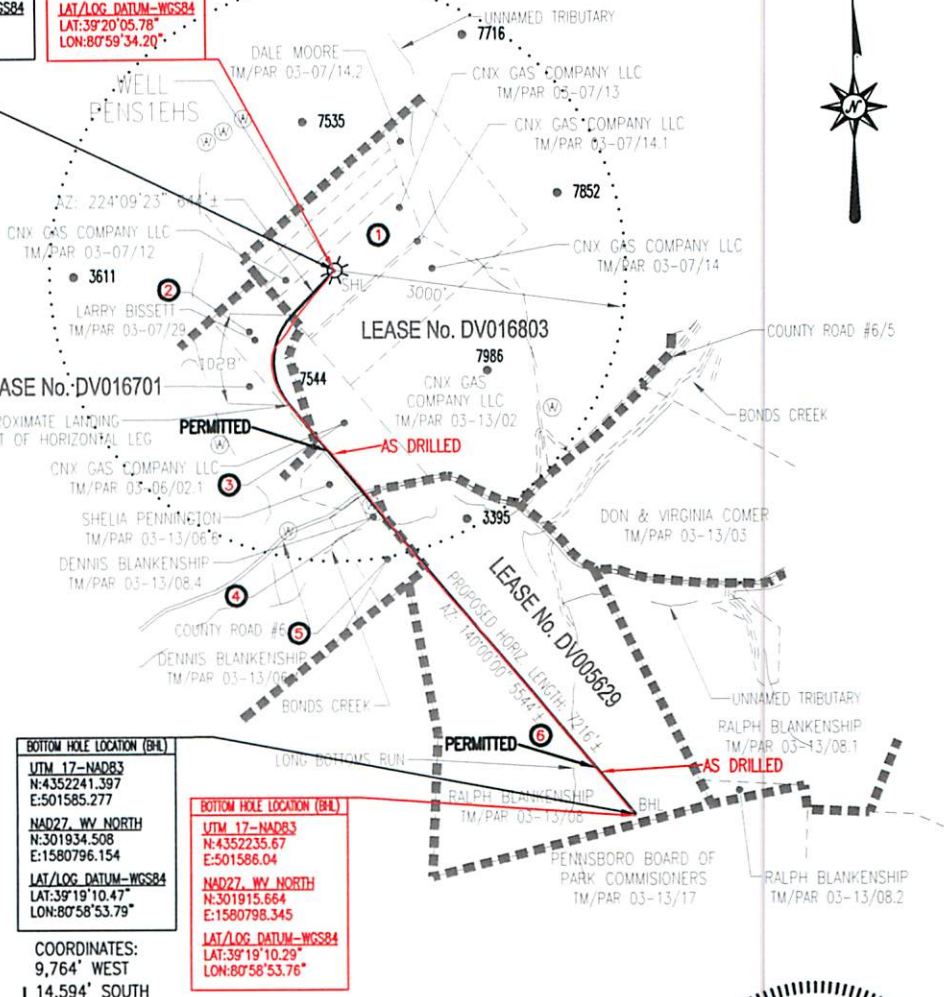


SURFACE HOLE LOCATION (SHL)

UTM 17
N:4353946.001
E:500617.938
NAD27 - WY NORTH
N:307581.305
E:1577715.186
LAT/LOG DATUM-WGS84
LAT:39°20'05.77"
LON:80°59'34.19"

SURFACE HOLE LOCATION (SHL)

UTM 17
N:4353946.21
E:500617.64
NAD27 - WY NORTH
N:307581.996
E:1577714.227
LAT/LOG DATUM-WGS84
LAT:39°20'05.78"
LON:80°59'34.20"



- 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.

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

BOTTOM HOLE LOCATION (BHL)

UTM 17-NAD83
N:4352241.397
E:501585.277
NAD27 - WY NORTH
N:301934.508
E:1580796.154
LAT/LOG DATUM-WGS84
LAT:39°19'10.47"
LON:80°58'53.79"

BOTTOM HOLE LOCATION (BHL)

UTM 17-NAD83
N:4352235.67
E:501586.04
NAD27 - WY NORTH
N:301915.664
E:1580798.345
LAT/LOG DATUM-WGS84
LAT:39°19'10.29"
LON:80°58'53.76"

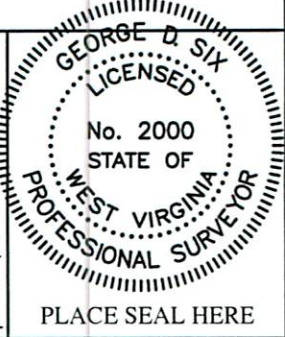
COORDINATES:
 9,764' WEST
 14,594' SOUTH

FILE #: PENS1EHS-AS DRILLED
 DRAWING #: PENS1EHS-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



(+) 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 #: PENS1EHS-AS DRILLED
 API WELL #: 47 85 10013H6A
 STATE COUNTY PERMIT

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

WATERSHED: UNNAMED TRIBUTARY TO BONDS CREEK ELEVATION: 1119.64'
 COUNTY/DISTRICT: RITCHIE / CLAY QUADRANGLE: PENNSBORO, WV 7.5'
 SURFACE OWNER: CNX GAS COMPANY LLC ACREAGE: 19.759±
 OIL & GAS ROYALTY OWNER: SEE TABLE ABOVE ACREAGE: 257.597±

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: 6,400'± TMD: 15,000'±
 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