

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

API 47-041-05686H6A County Lewis District Freemans Creek
Quad Camden 7.5' Pad Name CAM17HS Field/Pool Name Camden
Farm Name KIRBY, LINDA Well Number CAM17BHS
Operator (as registered with the OOG) CNX Gas Company LLC
Address P.O. Box 1248 City Jane Lew State WV Zip 26378

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top Hole Northing 4,325,660.47 m Easting 535,735.94 m
Landing Point of Curve Northing 4,325,352.34 m Easting 535,640.27 m
Bottom Hole Northing 4,323,760.56 m Easting 536,380.91 m

Elevation (ft) 1248' 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

Drilled 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)

Mineral Oil Based Mud, Bactericide, Polymers and Weighting Agents.

Date Permit Issued 01/16/2014 Date drilling commenced 04/25/2014 Date drilling ceased 09/21/2014
Date completion activities began 10/21/2014 Date completion activities ceased 10/29/2014
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 290', 350', 420' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1800', 2350' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 196' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewed by:
Gorr, Kevin
[Signature]
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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 to the right *
Conductor	26"	20"	100.0'	N	J-55# / 100.0'	N/A	N
Surface	17 1/2"	13 3/8"	584.8'	N	J-55# / 584.8'	N/A	Y
Coal	-	-	-	-	-	-	-
Intermediate 1	12 1/4"	9 5/8"	2713.0'	N	J-55# / 2713.0'	N/A	Y
Intermediate 2	-	-	-	-	-	-	-
Intermediate 3	-	-	-	-	-	-	-
Production	8 3/4"	5 1/2"	13319.3'	N	P-110# / 13319.3'	N/A	N
Tubing	5 1/2"	2 3/8"	7154'	N	P-110 4.7# / 7154'	N/A	N
Packer Type and Depth Set		None					

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	Class A	130 sks	15.2	1.18	153.4	Surface	24
Surface	Class A	434 sks	15.2	1.28	555.52	Surface	8
Coal	-	-	-	-	-	-	-
Intermediate 1	Class A (Lead) / Class A (Tail)	513 sks / 317 sks	14.6 / 15.2	1.38 / 1.25	707.94 / 396.25	Surface	8
Intermediate 2	-	-	-	-	-	-	-
Intermediate 3	-	-	-	-	-	-	-
Production	Class A (Lead) / Class A (Tail)	850 / 1464	14.2 / 14.8	1.26 / 1.25	1070 / 1830	1420'	8
Tubing	-	-	-	-	-	-	-

Drillers TD (ft) 6902' Loggers TD (ft) 6936'

Deepest formation penetrated: Marcellus Plug back to (ft) N/A

Plug back procedure: N/A

Kick Off Depth (ft) 5700'

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

Conductor - No centralizers used. Fresh Water - Bow spring centralizers on first joint then every fourth joint to 100 feet from surface. Coal - Bow spring centralizers on first joint then every fourth joint to 100 feet from surface. Intermediate - Bow spring centralizers one on the first two joints and every fourth joint until inside surface casing. Production - Rigid bow spring centralizer on first joint then every 2 casing joints (free floating) through the lateral and the curve. (Note: cementing the 5 1/2 casing completely in open hole lateral and curve.)

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS Plug And Perforation Shot Hole

WAS WELL COMPLETED OPEN HOLE Yes No DETAILS RECEIVED Office of Oil and Gas

WERE TRACERS USE Yes No TYPES 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)
					See Attached

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Avg Pump Rate (BPM)	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen / other (gals)
								See Attached

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Please insert additional pages as applicable.

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number Of Perforations	Formation(s)
1	10/21/2014	13165	12932	60	Marcellus
2	10/22/2014	12875	12634	60	Marcellus
3	10/22/2014	12577	12336	60	Marcellus
4	10/23/2014	12279	12039	60	Marcellus
5	10/23/2014	11982	11742	60	Marcellus
6	10/23/2014	11685	11445	60	Marcellus
7	10/24/2014	11388	11148	60	Marcellus
8	10/24/2014	11091	10851	60	Marcellus
9	10/24/2014	10794	10554	60	Marcellus
10	10/25/2014	10497	10257	60	Marcellus
11	10/26/2014	10200	9960	60	Marcellus
12	10/26/2014	9903	9663	60	Marcellus
13	10/26/2014	9606	9366	60	Marcellus
14	10/26/2014	9309	9069	60	Marcellus
15	10/27/2014	9012	8772	60	Marcellus
16	10/27/2014	8715	8475	60	Marcellus
17	10/28/2014	8418	8178	60	Marcellus
18	10/28/2014	8121	7881	60	Marcellus
19	10/28/2014	7824	7584	60	Marcellus
20	10/29/2014	7527	7287	60	Marcellus

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STIMULATION INFORMATION PER STAGE

Stage No.	Stimulations Date	Avg Pump Rate (BPM)	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen / other (gals)
1	10/21/2014	91.7	7935	6379	3842	405050	9161	6588
2	10/22/2014	91.5	7973	6775	4326	400700	9094	3525
3	10/22/2014	88.3	8052	6969	4256	398600	9525	3623
4	10/23/2014	88.2	7979	6375	3823	402550	8826	3519
5	10/23/2014	88	8186	7228	4062	400600	9675	3560
6	10/23/2014	92.8	8018	6182	4258	377250	8531	3517
7	10/24/2014	93.6	8094	6551	4073	425100	9329	3634
8	10/24/2014	89.1	7911	6303	4884	403750	8613	3500
9	10/24/2014	86.8	7889	6051	4129	401500	8763	3490
10	10/25/2014	83.8	7972	6242	4365	400550	8553	3605
11	10/26/2014	78.8	7906	5916	4188	400600	8390	3504
12	10/26/2014	90.6	8170	5609	4255	404250	10367	3698
13	10/26/2014	93	8138	6186	3693	411300	9891	3669
14	10/26/2014	81.7	7646	5893	4194	368100	8147	3481
15	10/27/2014	92	7925	5539	4412	434500	9145	3578
16	10/27/2014	88	7848	5876	4329	402500	9670	3622
17	10/28/2014	91.9	7983	6393	4312	400800	8931	3586
18	10/28/2014	94	7708	5956	4994	405800	8705	3504
19	10/28/2014	90.8	7732	5730	4948	397700	9706	3565
20	10/29/2014	98	7779	6077	4262	407250	8231	3450

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PRODUCING FORMATION(S)	DEPTHS	TVD	MD
MARCELLUS	6885'- 6936'		

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump
 SHUT-IN PRESSURE Surface 1775 psi Bottom Hole 3010 psi DURATION OF TEST 102 hrs
 OPEN FLOW Gas 9456 mcfpd Oil 0 bpd NGL 0 bpd Water 96 bpd GAS MEASURED BY
 Estimated Orifice Pilot

LITHOLOGY / FORMATION	TOP DEPTH IN FT TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY TYPE OF FLUID (FRESHWATER,BRINE,GAS,H2S, ETC)
					SEE ATTACHED

Please insert additional pages as applicable.

Drilling Contractor Patterson UTI
 Address 450 Gears Road Suite 500 City Houston State TX Zip 77067
 Logging Company Horizon
 Address 7136 South Yale, Suite 414 City Tulsa State OK Zip 74136-6378
 Cementing Company CalFrac
 Address 2001 Summit View Rd City Smithfield State PA Zip 15478
 Stimulating Company CalFrac
 Address 2001 Summit View Rd City Smithfield State PA Zip 15478

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Completed by CNX Gas WV Operations Company, LLC - Drilling and Completions Telephone 304-884-2000
 Signature Steve Spittle Title Steve Spittle - Completions Manager-Gas, WV Date 7/29/15

Submittal of Hydraulic Fracturing Chemical Disclosure Information

WV Department of Environmental Protection
 Attach copy of FRACFOCUS Registry

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LITHOLOGY / FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY TYPE OF FLUID (FRESHWATER,BRINE,GAS,H2S, ETC)
	DEPTH IN FT TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
FILL	0	120			
SANDSTONE	120	196			Gray
COAL	196	209			Black
SANDSTONE/SHALE	209	300			White/Light Brown
REDROCK/SHALE	300	350			Red
SANDSTONE/SHALE	350	580			Med Gray
SANDSTONE/SILTSTONE	580	626			Med Gray
SANDSTONE/SHALE	626	1440			Light Gray
SANDSTONE	1440	1645			Light Gray
LITTLE LIME	1645	1713			Light Gray
Big Lime	1713	1816			Light Gray/Brown
Big Injun	1816	1878			Light Gray
Siltstone/Sandstone/Shale	1878	2225			Gray
50/30 Foot Sands	2225	2375			Varicolored
Gordon Sand	2375	2450			Med Gray
Shale	2450	2600			Dark Gray
Fifth Sand	2600	2625			Med Gray
Shale	2625	2670			Dark Gray
Bayard Sand	2670	2680			Med Gray
Siltstone/Shale	2680	3170			Med/Dark Gray
Speechley Sand	3170	3460			Med Gray
Balltown Sand	3460	3635			Med Gray
Siltstone/Sandstone/Shale	3635	4640			Med/Dark Gray
Benson Sand	4640	4940			Med/Dark Gray
Alexander Sand	4940	5070			Med/Dark Gray
Siltstone/Shale	5070	5646			Med/Dark Gray
Rhinestreet Shale	5646	6338	5651	6350	Dark Gray
Cashaqua Shale	6342	6542	6350	6661	Med Gray
Middlesex Shale	6546	6616	6661	6766	Dark Gray
West River Shale	6622	6720	6766	6905	Med Gray
Burket Shale	6725	6747	6905	6947	Black
Tully Limestone	6752	6784	6947	7003	Light Gray
Hamilton Shale	6790	6890	7003	7259	Light/Med Gray
Marcellus Shale	6885	6936	7259		Black

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	10/21/2014
Job End Date:	10/29/2014
State:	West Virginia
County:	Lewis
API Number:	47-041-05686-00-00
Operator Name:	CONSOL Energy Inc.
Well Name and Number:	CAM-17B
Longitude:	-80.58702700
Latitude:	39.07923200
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,902
Total Base Water Volume (gal):	7,549,647
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
Water	Customer & CWS	Base Fluid & Mix Water					
Sand (Proppant), DAP-903, DWP-614, BioClear 2000, DWP-NE1	CWS	Propping Agent, Scale Inhibitor, Viscosifier, Biocide, Non-Emulsifier		7732-18-5	100.00000	88.33801	
			Crystalline silica (Quartz)	14808-60-7	100.00000	11.24002	
			Hydrochloric acid	7647-01-0	35.00000	0.26160	
			2-Propenoic acid, polymer with 2-propenamido, sodium salt	25987-30-8	40.00000	0.03887	
			Distillates (petroleum), hydrotreated middle	64742-46-7	30.00000	0.02915	
			Calcite	471-34-1	1.00000	0.01893	
			Polyethylene glycol mixture	25322-68-3	70.00000	0.01286	
			2,2-Dibromo-3-Nitropropionamide	10222-01-2	20.00000	0.01286	
			2-Propenoic acid, polymer with sodium phosphonate	71050-62-9	60.00000	0.00679	
			Illite	12173-60-3	1.00000	0.00613	
			Goethite	1310-14-1	0.10000	0.00497	
			Sorbitan monooleate	1338-43-8	5.00000	0.00486	
			Poly(oxyethylene)nonylphenol ether	9016-45-9	5.00000	0.00486	

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Biotite	1302-27-8						0.10000		0.00317			
Apatite	64476-38-6						0.10000		0.00317			
Methanol	67-56-1						15.00000		0.00288			
Timenite	98072-94-7						0.10000		0.00227			
Isopropanol	67-63-0						40.00000		0.00170			
Dimethylcocoamine, bis (chloroethyl) ether, diquatmary ammonium salt	68607-28-3						40.00000		0.00170			
Alcohols, C14-15, ethoxylated	68951-67-7						0.10000		0.00112			
Fatty acids, tall-oil	61790-12-3						0.10000		0.00112			
Modified thiourea polymer	68527-49-1						0.10000		0.00112			
Alkenes, C>10 a-	64743-02-8						0.10000		0.00112			
Propargyl Alcohol	107-19-7						0.10000		0.00037			
Diallyldimethylammonium chloride	7398-69-8						5.00000		0.00021			
Formaldehyde	50-00-0						0.10000		0.00007			
Sodium chloride	7647-14-5						0.10000		0.00004			
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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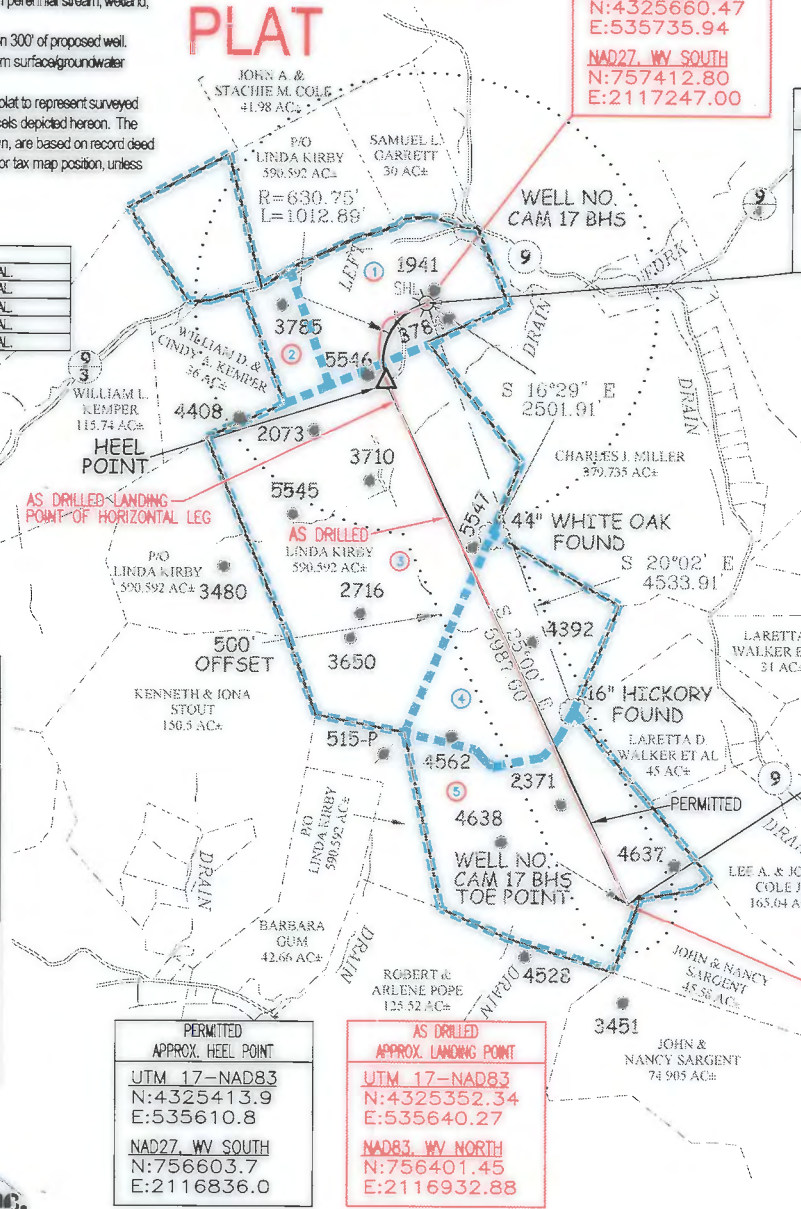
Well is located on topo map 1,494 feet south of Latitude: 39° 05' 00"

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.

AS DRILLED PLAT

PARCEL	LESSOR
1	JOHN D. ROHRBOUGH ET AL.
2	JOHN D. ROHRBOUGH ET AL.
3	JOHN D. ROHRBOUGH ET AL.
4	JOHN D. ROHRBOUGH ET AL.
5	JOHN D. ROHRBOUGH ET AL.



Well is located on topo map 1,049 feet west of Longitude: 80° 35' 00"

LEGEND

- TOPO MAP POINT
- WELL
- LESSORS
- MINERAL TRACT BOUNDARY
- LEASE BOUNDARY
- PARCEL LINES
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- AS DRILLED
- ROAD
- STREAM CENTER LINE

GAS WELLS

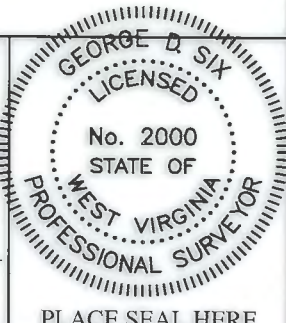
- EXISTING WELLS
- PLUGGED WELLS

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

FILE #: CAM 17 BHS-AS DRILLED
 DRAWING #: CAM 17 BHS-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: MAY 21, 2015

OPERATOR'S WELL #: CAM 17 BHS-AS DRILLED

API WELL #: 47 41 05686
 STATE COUNTY PERMIT

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

WATERSHED: LEFT FORK OF FREEMANS CREEK ELEVATION: 1,248'

COUNTY/DISTRICT: LEWIS / FREEMANS CREEK QUADRANGLE: CAMDEN, WV 7.5'

SURFACE OWNER: LINDA KIRBY ACREAGE: 590.592±

OIL & GAS ROYALTY OWNER: JOHN D. ROHRBOUGH ET AL. ACREAGE: 476±

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: 6,903'± TMD: 13,362'±

WELL OPERATOR CNX GAS COMPANY, LLC. DESIGNATED AGENT JOE BERRY JR.
 Address P.O. BOX 1248 Address P.O. BOX 1248
 City JANE LEW State WV Zip Code 26378 City JANE LEW State WV Zip Code 26378

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