

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

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API 47-061-01806 County MONONGALIA District BATTELLE
Quad WADESTOWN Pad Name WDTN5 Field/Pool Name _____
Farm name WISE Well Number WDTN5BHSU
Operator (as registered with the OOG) CNX GAS COMPANY, LLC
Address 1000 CONSOL 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 440530.83 (NAD 27) Easting 1764427.45 (NAD 27)
Landing Point of Curve Northing 441380.89 (NAD 27) Easting 1764083.09 (NAD 27)
Bottom Hole Northing 445481.67 (NAD 27) Easting 1759982.31 (NAD 27)

Elevation (ft) 1388 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 BASED FLUID

ADDITIVES: ABS MUL (EMULSIFIER), CALCIUM CHLORIDE, FLR PLUS (GILSONITE), CLAYTONE EM (SUSPENSION AGENT), AES WA II (WETTING AGENT), LIME

Date permit issued 11/28/2018 Date drilling commenced 1/3/2019 Date drilling ceased 5/30/2019
Date completion activities began 6/23/2019 Date completion activities ceased 8/27/2019
Verbal plugging (Y/N) SEE ATTACHMENT Date permission granted SEE ATTACHMENT Granted by SEE ATTACHMENT

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

Freshwater depth(s) ft 399 Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1730, 2479, 2509 Void(s) encountered (Y/N) depths N
Coal depth(s) ft 830, 1170 TRACE: 1810, 1820, 1912, 1918, 2100 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed

Reviewed by:
MOX 11/26/2018

API 47-061 - 01806 Farm name WISE Well number WDTN5BHSU

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		26"	129	NEW	94lb/ft	N/A	GROUT TO SURFACE
Surface	24"	18.625"	1338	NEW	J-55 87.5lb/ft	N/A	Y - GROUT TO SURFACE
Coal							
Intermediate 1	17.5"	13.375"	2940	NEW	NT-80LHE 68lb/ft	N/A	Y - CEMENT TO SURFACE
Intermediate 2	12.25"	9.625"	12417	NEW	P-110HP 47lb/ft	N/A	Y - TOC @ 800'
Intermediate 3							
Production	8.75" & 8.5"	5.5"	19905	NEW	See attachment	N/A	Y - TOC @ 3700'
Tubing	5.5	2.875	13,896	NEW	P110 6.5 lb/ft	N/A	N/A
Packer type and depth set		N/A					

Comment Details ALL DEPTHS ARE REFERENCED TO RKB = 29' GLE

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	HALCEM	1171	15.8	1.169	1370	0	8
Coal							
Intermediate 1	HALCEM	2090	15.8	1.176	2458	0	8
Intermediate 2	NEOCEM (LEAD) / HALCEM (TAIL)	2400 (LEAD) / 340 (TAIL)	13.5 (LEAD) / 15 (TAIL)	1.399 (LEAD) / 1.138 (TAIL)	3358 (LEAD) / 387 (TAIL)	800	8
Intermediate 3							
Production	GASSTOP (LEAD) / HALCEM (TAIL)	1615 (LEAD) / 1632 (TAIL)	17.5	1.173 (LEAD) / 1.17 (TAIL)	1894 (LEAD) / 1909 (TAIL)	3700	8
Tubing							

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Drillers TD (ft) 19934
Deepest formation penetrated POINT PLEASANT
Plug back procedure SEE ATTACHMENT

Loggers TD (ft) 19934
Plug back to (ft) SEE ATTACHMENT

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Kick off depth (ft) 12510

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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 _____

SURFACE: Centralize every other joint from shoe to surface

INTERMEDIATE: Centralize every 3rd joint from shoe to surface

INTERMEDIATE: Centralize every 3rd joint from shoe to 3,115'

PRODUCTION: Centralize every joint from shoe to TOC

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS Plug and Perforation

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

API 47- 061 - 01806 Farm name WISE Well number WDTN5BHSU

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>UTICA</u>	<u>13,690</u> TVD	<u>13,925</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 5951 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas 10635.60 mcfpd Oil 0 bpd NGL 0 bpd Water 912 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)
UNDIFFERENTIATED SAND	0	440	0	440	SANDSTONE / SILTSTONE/ TRACES OF LIMESTONE
UNDIFFERENTIATED LIME	440	470	440	470	LIME STONE / SANDSTONE
UNDIFFERENTIATED SAND	470	510	470	510	SANDSTONE / LIMESTONE
UNDIFFERENTIATED SILT	510	830	510	830	SILTSTONE / LIMESTONE/ TRACES OF SANDSTONE & RED SHALE
WAYNESBURG	830	832	830	832	COAL / SILTSTONE / SANDSTONE
UNDIFFERENTIATED SILT	832	850	832	850	SILTSTONE / SANDSTONE
UNDIFFERENTIATED SAND	850	950	850	950	SANDSTONE
UNDIFFERENTIATED SILT	950	1000	950	1000	SILTSTONE / LIMESTONE
UNDIFFER. LIME / SILT	1000	1170	1000	1170	LIMESTONE / SILTSTONE
PITTSBURGH COAL	1170	1180	1170	1180	COAL / LIMESTONE / SILTSTONE
UNDIFFERENTIATED LIME	1180	1230	1180	1230	LIMESTONE / SILTSTONE
UNDIFFERENTIATED SILT	1230	1400	1230	1400	SILTSTONE / LIMESTONE / RED SHALE
UNDIFFERENTIATED SILT	1400	1730	1400	1730	SILTSTONE / SANDSTONE
UPPER FREEPORT	1730	1740	1730	1740	SANDSTONE

Please insert additional pages as applicable.

Drilling Contractor PATTERSON-UTI DRILLING COMPANY
Address 207 CARLTON DRIVE City EIGHTY FOUR State PA Zip 15330

Logging Company SEE ATTACHMENT
Address _____ City _____ State _____ Zip _____

Cementing Company HALLIBURTON
Address 121 CHAMPION WAY SUITE #210 City CANONSBURG State PA Zip 15317

Stimulating Company KEANE
Address 5825 North Sam Houston Parkway West Suite 600 City Houston State TX Zip 77086

Please insert additional pages as applicable.

Completed by Michael Honce Telephone 304-884-2138
Signature  Title Superintendent Completions Date 10/22/2019

WDTN5BHSU
LITHOLOGIES CONTINUED

47-061-01806



LITHOLOGY / FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT NAME TVD	TOP DEPTH IN FT NAME MD	BOTTOM DEPTH IN FT NAME MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H2S, ETC)
UNDIFFERENTIATED SAND	1740	1810	1740	1810	SANDSTONE
LOWER FREEPORT	1810	1820	1810	1820	SANDSTONE/ SILTSTONE/ TRACES OF COAL
UNDIFFERENTIATED SAND	1820	1912	1820	1912	SANDSTONE/ SILTSTONE/ TRACES OF COAL
MIDDLE KITTANING	1912	1918	1912	1918	SANDSTONE/ SILTSTONE/ TRACES OF COAL
UNDIFFERENTIATED SAND	1918	2100	1918	2100	SANDSTONE/ SILTSTONE/ TRACES OF COAL
UNDIFFERENTIATED SILT	2100	2280	2100	2280	SILTSTONE/ TRACES OF COAL
UNDIFFERENTIATED SAND	2280	2300	2280	2300	SANDSTONE
UNDIFFERENTIATED SILT	2300	2340	2300	2340	SILTSTONE
UNDIFFERENTIATED SHALE	2340	2380	2340	2380	RED SHALE
UNDIFFERENTIATED SILT	2380	2420	2380	2420	SILTSTONE/ RED SHALE
BIG LIME	2420	2480	2420	2480	LIMESTONE/ SILTSTONE
KEENER	2480	2510	2480	2510	SANDSTONE/ SILTSTONE
BIG INJUN	2510	2690	2510	2690	SANDSTONE
BIG INJUN BASE	2690	3080	2690	3080	SILTSTONE
50 FOOT	3080	3140	3080	3140	SILTSTONE
GORDON	3140	3305	3140	3305	SANDSTONE/ SILTSTONE
FIFTH	3305	3352	3305	3352	SILTSTONE
BAYARD	3352	5290	3352	5290	SILTSTONE/ TRACES RED & GREY SHALES
ELK	5290	7428	5290	7440	SILTSTONE/ GREY SHALE
RHIESTREET	7428	7672	7440	7685	GREY SHALE
CASHAQUA	7672	7787	7685	7800	GREY SHALE
BURKET	7787	7811	7800	7824	GREY SHALE
TULLY	7811	7877	7824	7890	LIMESTONE/ GRAY SHALE
HAMILTON	7877	7967	7890	7980	GREY SHALE
MARCELLUS	7967	8043	7980	8056	BLACK SHALE
ONONDAGA	8043	8077	8056	8090	LIMESTONE/ BLACK SHALE
HUNTERSVILLE	8077	8293	8090	8306	LIMESTONE/ TRACES BLACK SHALE & CHERT
ORISKANY	8293	8379	8306	8392	LIMESTONE/ SANDSTONE
HELDERBERG	8379	8917	8392	8930	LIMESTONE/ TRACES GREY SHALE & DOLOMITE
SALINA	8917	9757	8930	9770	DOLOMITE/ SALT
LOCKPORT	9757	10376	9770	10390	DOLOMITE/ TRACE LIMESTONE
ROCHESTER	10376	10698	10390	10711	GREY SHALE/ TRACE RED SHALE & DOLOMITE
PACKER SHELL	10698	10809	10711	10822	GREY SHALE
TUSCARORA	10809	11148	10822	11162	SANDSTONE/ TRACES GREY SHALE
QUEENSTON	11148	11194	11162	11208	GREY SHALE/ TRACES SANDSTONE
RED QUEENSTON	11194	12283	11208	12297	RED SHALE/ TRACES GREY SHALE
REEDSVILLE	12283		12297	13418	GREY SHALE
UTICA			13418	13680	BLACK SHALE
POINT PLEASANT			13680	13760	BLACK SHALE
LEXINGTON			13760	13790	BLACK SHALE
TRENTON			13790	14000	LIMESTONE
TD (POINT PLEASANT)					

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PRODUCTION CASING

47-061-01806



P-110CY 23LB/FT: 0' – 14,113'
Q-125 23LB/FT: 14,113' – 19,905

LOGGING COMPANY

MUDLOG
DIVERSIFIED WELL LOGGING LLC
71 N. MAIN STREET
WASHINGTON, PA 15301

TRIPLE COMBO LOG
SCHLUMBERGER
300 SCHLUMBERGER DRIVE
SUGAR LAND, TX 77478

PLUGGING INFORMATION

INTERMEDIATE 2 SIDETRACK

VERBAL PLUGGING (Y/N): Y
DATE PERMISSION GRANTED: 2/9/2019
GRANTED BY: GAYNE J KNITOWSKI
PLUGBACK DEPTH: 5437'
PLUGBACK PROCEDURE: PUMP TWO CEMENT PLUGS AND BHKA PLUG. FIRST PLUG PUMPED 15 PPG HALCEM FROM 10,022'-9,272'. SECOND PLUG PUMPED 15 PPG HALCEM FROM 8,976'-8,226'. BHKA PLUG PUMPED 17.5 PPG HALCEM FROM 8053' – 5437'.

PLUGBACK FOR PILOT HOLE

VERBAL PLUGGING (Y/N): Y
DATE PERMISSION GRANTED: 3/22/2019
GRANTED BY: GAYNE J KNITOWSKI
PLUGBACK DEPTH:
PLUGBACK PROCEDURE: PLUG BACK WITH HALLIBURTON BHKA TOOL AND 17.5 PPG HALCEM FROM PILOT HOLE TD (14,000') TO INSIDE THE 9-5/8" SHOE (RUN 53 JOINTS OF 3-1/2" FIBERGLASS TUBING)

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WDTN5BHSU – PERFORATION RECORD – ATTACHMENT 1					
Stage No.	Perforation Date	Perforation from MD ft.	Perforation to MD ft.	Number of Perforations	Formation(s)
0*	6/10/2019	19,844.0	19,850.0	40	Utica Shale
1	6/10/2019	19,634.0	19,793.6	40	Utica Shale
2	7/5/2019	19,437.0	19,596.6	40	Utica Shale
3	7/9/2019	19,240.0	19,399.6	40	Utica Shale
4	7/9/2019	19,043.0	19,202.6	48	Utica Shale
5	7/10/2019	18,846.0	19,005.6	48	Utica Shale
6	7/10/2019	18,653.9	18,803.7	48	Utica Shale
7	7/10/2019	18,456.9	18,606.7	48	Utica Shale
8	7/11/2019	18,259.9	18,409.7	48	Utica Shale
9	7/11/2019	18,062.9	18,212.7	48	Utica Shale
10	7/11/2019	17,865.9	18,015.7	48	Utica Shale
11	7/12/2019	17,668.9	17,818.7	48	Utica Shale
12	7/12/2019	17,471.9	17,621.7	48	Utica Shale
13	7/12/2019	17,274.9	17,424.7	48	Utica Shale
14	7/13/2019	17,077.9	17,227.7	48	Utica Shale
15	7/13/2019	16,880.9	17,030.7	48	Utica Shale
16	7/13/2019	16,683.9	16,833.7	48	Utica Shale
17	7/13/2019	16,486.9	16,636.7	48	Utica Shale
18	7/14/2019	16,289.9	16,439.7	48	Utica Shale
19	7/14/2019	16,092.9	16,242.7	48	Utica Shale
20	7/15/2019	15,895.9	16,045.7	48	Utica Shale
21	7/15/2019	15,698.9	15,848.7	48	Utica Shale
22	7/15/2019	15,501.9	15,651.7	48	Utica Shale
23	7/16/2019	15,304.9	15,454.7	48	Utica Shale
24	7/16/2019	15,107.9	15,257.7	48	Utica Shale
25	7/16/2019	14,910.9	15,060.7	48	Utica Shale
26	7/16/2019	14,713.9	14,863.7	48	Utica Shale
27	7/17/2019	14,516.9	14,666.7	48	Utica Shale
28	7/17/2019	14,319.9	14,469.7	48	Utica Shale
29	7/18/2019	14,122.9	14,272.7	48	Utica Shale
30	7/18/2019	13,925.9	14,075.7	48	Utica Shale

* Performed DFIT

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WDTN5BHSU – STIMULATION INFORMATION PER STAGE – ATTACHMENT 2

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)
1	6/23/2019	64	11,982.0	9,906.0	8,049.0	607,695.0	19,981.00	N/A
2	7/8/2019	70	11,677.0	10,232.0	8,951.0	538,139.0	13,439.00	N/A
3	7/9/2019	64	11,371.0	11,004.0	9,409.0	592,155.0	13,088.00	N/A
4	7/9/2019	75	12,175.0	11,676.0	9,531.0	593,137.0	12,608.00	N/A
5	7/10/2019	73	11,908.0	11,622.0	9,624.0	580,608.0	11,770.02	N/A
6	7/10/2019	75	12,137.0	11,070.0	9,625.0	590,218.0	11,115.98	N/A
7	7/10/2019	75	12,167.0	11,018.0	9,570.0	587,127.0	10,572.00	N/A
8	7/11/2019	74	12,142.0	9,865.0	9,599.0	540,587.0	12,199.00	N/A
9	7/11/2019	75	12,167.0	11,221.0	9,814.0	558,260.0	10,454.02	N/A
10	7/11/2019	75	12,154.0	12,168.0	9,221.0	602,879.0	10,402.98	N/A
11	7/12/2019	71	12,128.0	10,068.0	9,461.0	595,520.0	10,489.02	N/A
12	7/12/2019	74	12,132.0	11,394.0	9,817.0	572,439.0	10,248.02	N/A
13	7/12/2019	74	12,090.0	11,019.0	9,471.0	596,919.0	10,377.00	N/A
14	7/13/2019	76	12,183.0	10,927.0	9,674.0	601,371.0	10,421.98	N/A
15	7/13/2019	79	12,128.0	11,823.0	9,721.0	594,903.0	10,594.00	N/A
16	7/13/2019	77	12,014.0	10,699.0	9,755.0	602,931.0	10,139.02	N/A
17	7/14/2019	78	12,117.0	10,891.0	9,972.0	607,188.0	10,257.00	N/A
18	7/14/2019	82	12,046.0	12,057.0	9,760.0	576,776.0	11,490.02	N/A
19	7/15/2019	78	12,008.0	11,190.0	9,585.0	594,420.0	10,917.00	N/A
20	7/15/2019	75	12,003.0	11,220.0	9,433.0	592,629.0	10,473.98	N/A
21	7/15/2019	77	11,830.0	11,741.0	9,815.0	597,212.0	10,448.98	N/A
22	7/15/2019	80	12,051.0	9,825.0	9,653.0	602,202.0	10,241.02	N/A
23	7/16/2019	78	11,871.0	11,416.0	9,653.0	581,149.0	10,163.02	N/A
24	7/16/2019	76	11,721.0	12,070.0	9,727.0	566,913.0	10,573.05	N/A
25	7/16/2019	81	11,880.0	10,358.0	9,522.0	597,828.0	10,402.98	N/A
26	7/17/2019	80	11,808.0	10,658.0	9,638.0	588,599.0	10,285.00	N/A
27	7/17/2019	78	11,696.0	10,516.0	9,884.0	584,642.0	12,285.21	N/A
28	7/17/2019	82	11,753.0	10,475.0	9,844.0	585,332.0	10,217.95	N/A
29	7/17/2019	82	11,718.0	9,910.0	9,802.0	583,412.0	10,344.00	N/A
30	7/18/2019	78	11,769.0	10,810.0	9,562.0	540,817.0	9,244.02	N/A

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/24/2019
Job End Date:	7/18/2019
State:	West Virginia
County:	Monongalia
API Number:	47-061-01806-00-00
Operator Name:	CNX Gas Company LLC
Well Name and Number:	WDTN5 BHSU
Latitude:	39.70657500
Longitude:	-80.33710400
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	13,725
Total Base Water Volume (gal):	12,893,496
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	CNX	Carrier/Base Fluid	Water	7732-18-5	100.00000	85.61688	None
Sand (Proppant)	Keane	Proppant	Crystalline silica: Quartz (SiO2)	14808-60-7	100.00000	13.31781	None
Hydrochloric Acid (15%)	Keane	Acidizing	Water	7732-18-5	85.00000	0.63563	None
			Hydrochloric Acid	7647-01-0	15.00000	0.11217	None
KWG-111LS	Keane	Gel	Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.07076	None
			Guar gum	9000-30-0	55.00000	0.07076	None
KFR-48	Keane	Friction Reducer	Water	7732-18-5	47.00000	0.05276	None
			alkanes, C-16-20-iso-	90622-59-6	25.00000	0.02806	None
			butene, homopolymer	9003-29-6	25.00000	0.02806	None
			Alcohols, C-12-18, ethoxylated	68213-23-0	3.00000	0.00337	None
Hydrochloric Acid (7.5%)	Keane	Acid Inhibitor					



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			Water	7732-18-5	92.50000	0.02556	None	
			Hydrochloric Acid	7647-01-0	7.50000	0.00207	None	
KSI-22	Keane	Scale Inhibitor						
			Methanol	67-56-1	50.00000	0.01145	None	
			2-propenoic acid, polymer with 2-[[1-oxo-2-(propenyl)amino]-1-propensulfonic acid monosodium salt and sodium phosphinite	110224-99-2	10.00000	0.00229	None	
MBC-516	Keane	Biocide						
			glutaral	111-30-8	26.70000	0.00459	None	
			didecyldimethylammonium chloride	7173-51-5	8.00000	0.00137	None	
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00091	None	
			Ethanol	64-17-5	2.80000	0.00048	None	
KFEAC-20	Keane	Iron Control						
			acetic acid	64-19-7	50.00000	0.00227	None	
			Citric acid	77-92-9	30.00000	0.00136	None	
KAL-18	Keane	Acid Inhibitor						
			methanol	67-56-1	65.00000	0.00146	None	
			alkyl pyridine quaternary ammonium chloride	68909-18-2	20.00000	0.00045	None	
			formic acid	64-18-6	20.00000	0.00045	None	
			surfactant	Proprietary	10.00000	0.00022	None	
			propargyl alcohol	107-19-7	5.00000	0.00011	None	
KWBO-2	Keane	Breaker						
			Sodium persulfate	7775-27-1	99.00000	0.00130	None	
Chemiliquid 250	Keane	pH Buffer						
			water	7732-18-5	75.00000	0.00058	None	
			sodium hydroxide	1310-73-2	25.00000	0.00019	None	
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.								
Other Chemical(s)	Listed Above	See Trade Name(s) List						
			Water	7732-18-5	85.00000	0.63563		
			Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.07076		
			alkanes, C16-20-iso-	90622-59-6	25.00000	0.02806		
			butene, homopolymer	9003-29-6	25.00000	0.02806		
			Water	7732-18-5	92.50000	0.02556		
			Alcohols, C12-18, ethoxylated	68213-23-0	3.00000	0.00337		
			2-propenoic acid, polymer with 2-[[1-oxo-2-(propenyl)amino]-1-propensulfonic acid monosodium salt and sodium phosphinite	110224-99-2	10.00000	0.00229		
			didecyldimethylammonium chloride	7173-51-5	8.00000	0.00137		
			Citric acid	77-92-9	30.00000	0.00136		

	quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00091
	water	7732-18-5	75.00000	0.00058
	Ethanol	64-17-5	2.80000	0.00048
	alkyl pyridine quaternary ammonium chloride	68909-18-2	20.00000	0.00045
	formic acid	64-18-6	20.00000	0.00045
	surfactant	Proprietary	10.00000	0.00022
	propargyl alcohol	107-19-7	5.00000	0.00011

* 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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WV Department of
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CNX GAS COMPANY, LLC



Location: Monongalia County, WV
 Field: Monongalia
 Facility: WTN-5 Pad

Slot: Slot B
 Well: WDTN-5B-HSU ST02
 Wellbore: WDTN-5B-HSU ST02 PWB

For reference, wellbore is WDTN-5B-HSU ST02 PWB

True vertical depth as referenced to reference 801 (RKB)	Grid System: NAD83 / Lambert Vertical Footing 801 - Monongalia County, WV, US, US
Horizontal depth as referenced to reference 801 (RKB)	Scale: True distance
Production Slot (RKB) to Mean Seal Level (ASL) (ft)	Depth as RKB
Mean Seal Level to Mud line (ASL) Slot (ft)	Created by: reference to 2019-05-26
Coordinates are in feet referenced to 801	Drawn by: VJA, MFL, EXTREMS, PWB

VES Gyro <17-1/2> (100-2700) : 0.64° Inc. 100.00ft MD, 100.00ft TVD, -0.05ft VS

Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
WTN-5 Pad	1794427.450	440530.830	39°42'23.982"N	80°20'14.303"W
Slot	Local N (ft)	Grid East (US ft)	Local E (ft)	Grid North (US ft)
Slot B	0.00	1794427.450	440530.830	440530.830
Patterson 801 (RKB) to Mud line (ASL) Slot (ft)				
29ft				
Mean Seal Level to Mud line (ASL) Slot (ft)				
-1387.94ft				
Patterson 801 (RKB) to Mean Seal Level				
1416.94ft				

Well Data

Slot	Well	Wellbore	Wellpath
Slot B	WDTN-5B-HSU PWB	WDTN-5B-HSU PWB AMF	WDTN-5B-HSU PWB AMF Prog. 10007
Slot B	WDTN-5B-HSU PWB ST01	WDTN-5B-HSU PWB ST01 AMB	WDTN-5B-HSU PWB ST01 AMB Prog. 14000
Slot B	WDTN-5B-HSU ST02	WDTN-5B-HSU ST02 AMB	WDTN-5B-HSU ST02 AMB Prog. 18004
Slot B	WDTN-5B-HSU ST02	WDTN-5B-HSU ST02 PWB	WDTN-5B-HSU ST02 PWB Prog. 18040

APS EM [ST01] <12-1/4> (5397)(5428-12435) : 2.08° Inc. 5428.00ft MD, 5426.99ft TVD, 18.11ft VS

API: 47-061-01806-0000
 BH Job #: 109707008
 Rig: Patterson 801
 Duration: 5/20/2019-5/26/2019

Well Profile Data

Design Comment	MD (ft)	Inc (°)	As (°)	TVD (ft)	Local N (ft)	Local E (ft)	D.S (ft/100ft)	VS (ft)
The On	12415.00	0.410	300.540	12401.51	194.32	-81.92	0.26	195.33
Next Svy	12435.00	0.370	292.020	12421.51	194.30	-82.04	0.63	195.40
Sidetrack Pt	12487.00	0.303	280.546	12463.50	194.46	-82.21	0.21	195.64
End of 3D Arc	12675.88	6.124	45.001	12661.80	202.52	-74.85	3.00	196.13
Curve KOP	13066.92	6.124	45.001	13070.60	233.54	-49.83	0.00	196.13
Build / Avoid NGZ	13375.90	30.000	0.000	13344.10	318.12	-32.74	0.00	248.10
Landing Pt	14146.27	90.100	315.000	13225.00	850.11	-344.38	0.00	844.83
BHL	19946.52	90.100	315.000	13714.88	4951.14	-446.41	0.00	6644.36

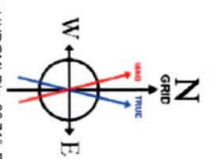
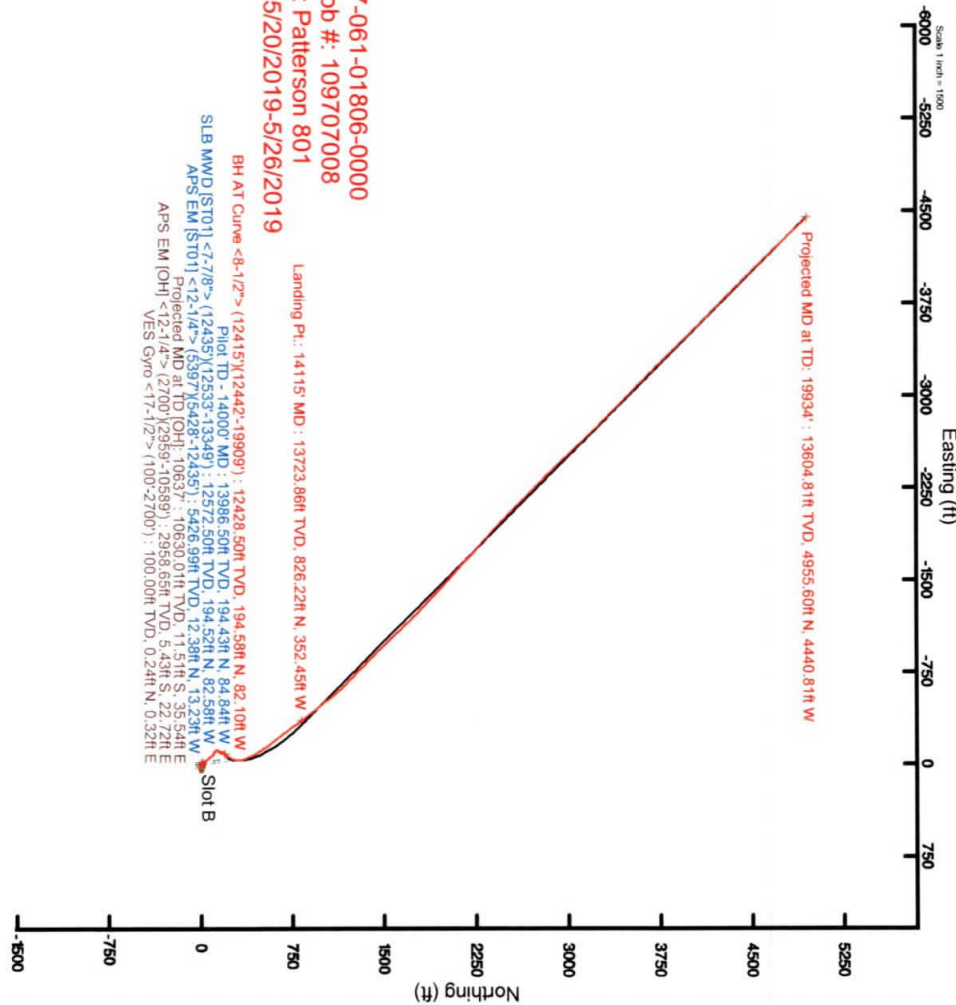
Projected MD at TD [OH]: 10637.1, 1.14° Inc. 10637.00ft MD, 10630.01ft TVD, -33.27ft VS

BH AT Curve <8-1/2> (12415)(12442-19909) : 12428.50ft MD, 12428.50ft TVD, 195.65ft VS
 SLB MWD [ST01] <7-7/8> (12435)(12533-13349) : 0.08° Inc. 12586.00ft MD, 12572.50ft TVD, 195.94ft VS

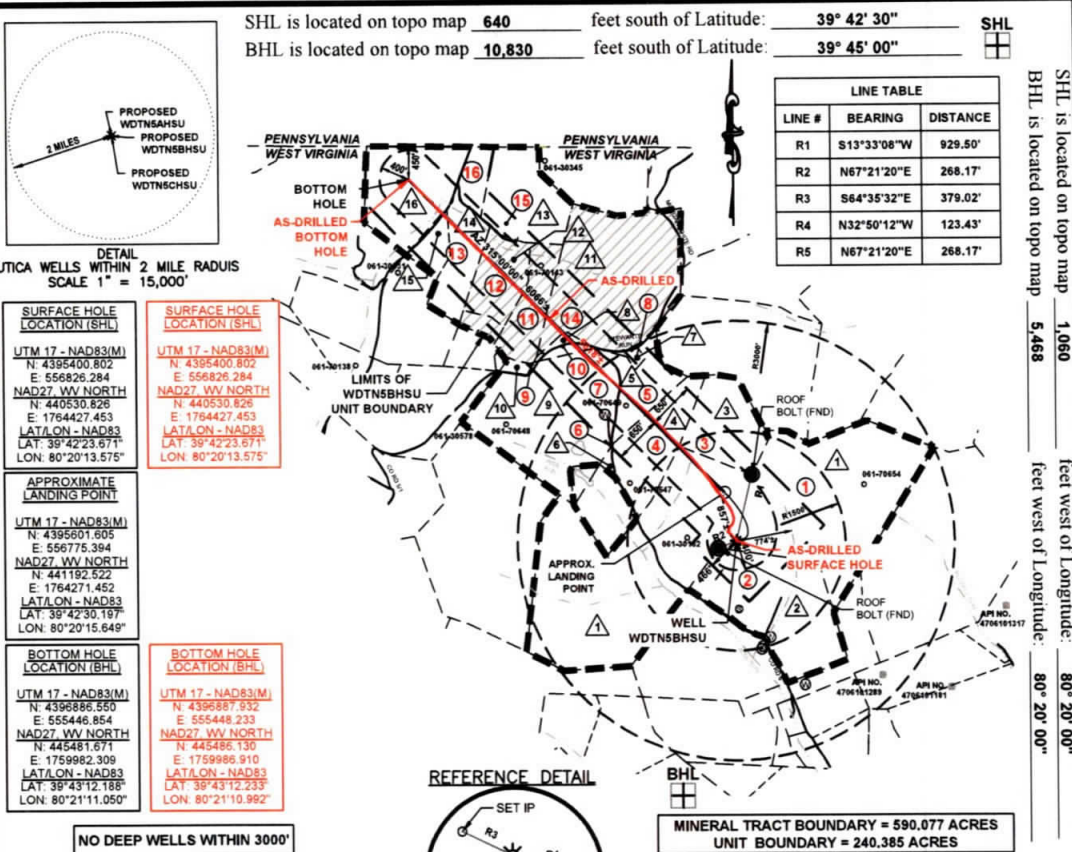
Landing Pt.: 14115 MD : 88.52° Inc. 14115.00ft MD, 13723.86ft TVD, 833.44ft VS

Pilot TD - 14000' MD : 0.13° Inc. 14000.00ft MD, 13986.50ft TVD, 197.48ft VS
 Projected MD at TD: 19934' : 96.66° Inc. 19934.00ft MD, 13604.81ft TVD, 6644.26ft VS

Azimuth 315.00° with reference 0.00 N, 0.00 E



User specified (HDGM) Dip: 66.71° Field: 52173.MT
 Magnetic North is 9.05 degrees West of True North (at Tenny/2019)
 To correct azimuth from True North to Grid North, add 0.53 degrees
 To correct azimuth from Magnetic to Grid subtract 8.52 degrees



LEGEND

- TOPO MAP POINT
- PROPOSED WELL
- WATER SOURCE
- SPRING
- SURFACE TRACT
- LEASED NUMBER BASED ON ATTACHED WDN5B
- WELLS WITHIN 3000'
- RECORD GAS WELL
- UNKNOWN WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED
- LEASE BOUNDARY
- UNIT BOUNDARY
- PROPOSED HORIZONTAL WELL
- SURFACE, OIL & GAS LINES
- SURFACE TRACT LINES ONLY
- GAS LEASE LINES ONLY
- WELL REFERENCE
- STREAM WATERWAY
- ROAD
- AS-DRILLED WELL
- FORCED POOLING AREAS

REFERENCE DETAIL

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, and based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

FILE #: WDTN5HSM

DRAWING #: 3601 - WDTN5B - AD.DWG

SCALE: 1"=2000'

MINIMUM DEGREE OF ACCURACY: 1/2500

PROVEN SOURCE: USGS MONUMENT
OF ELEVATION: JX1864: 1,496.32'

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. _____



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

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

WELL TYPE: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow

WATERSHED: DUNKARD CREEK ELEVATION: 1412'

COUNTY/DISTRICT: MONONGALIA / BATTELLE QUADRANGLE: WADESTOWN, WV

SURFACE OWNER: JOHN M. WISE, ET UX., ET AL. ACREAGE: 207.36

OIL & GAS ROYALTY OWNER: RICHARD W. WISE, ET AL. ACREAGE: 207.36

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON
CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY)

TARGET FORMATION: POINT PLEASANT ESTIMATED DEPTH: PILOT TVD 13,565' ±, TVD: 13,335' ±, TMD: 19,825' ±

WELL OPERATOR: CNX GAS COMPANY, LLC DESIGNATED AGENT: CHRIS TURNER

Address: 1000 CONSOL ENERGY DRIVE Address: 1 DOMINION DRIVE

City CANONSBURG State PA Zip Code 15317 City JANE LEW State WV Zip Code 26378

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WDTN5BHSU UNIT = 240.385 ACRES TOTAL		
BATTELLE DISTRICT		
#	TAX MAP & PARCEL	UNIT ACRES
1	1-8, P/O PARCEL 2	48.599 Ac.
2	1-8, P/O PARCEL 3.1	9.690 Ac.
3	1-8, P/O PARCEL 1.3	11.442 Ac.
4	1-8, P/O PARCEL 1.2	18.345 Ac.
5	1-3, P/O PARCEL 3.1	14.395 Ac.
6	1-8, P/O PARCEL 1.5	0.004 Ac.
7	1-8, P/O PARCEL 1.1	19.419 Ac.
8	1-3, PARCEL 3	0.923 Ac.
9	1-2, P/O PARCEL 22	0.061 Ac.
10	1-2, PARCEL 24	3.287 Ac.
11	1-3, P/O PARCEL 2	15.564 Ac.
12	1-2, P/O PARCEL 21	17.163 Ac.
13	1-2, P/O PARCELS 18 & 18.1	18.298 Ac.
14	1-3, P/O PARCEL 2	19.113 Ac.
15	1-2, P/O PARCEL 2D	5.369 Ac.
16	1-2, P/O PARCEL 19	38.713 Ac.

- SURFACE TRACT OWNERS & TAX PARCEL**
- DINA M WISE ET AL TMM 1-8-2
 - BARBARA J WAGNER TMM 1-8-3.1
 - EDWARD L THOMAS, DAVID WAYNE & DOROTHY L STEWART TMM 1-8-1.3
 - DAVID W & ELIZABETH K DEATON TMM 1-8-1.2
 - STEVEN M MACYDA TMM 1-3-3.1
 - GARY L & ARLENE ANN NEELY TMM 1-8-1.5
 - STEVEN M MACYDA TMM 1-3-3
 - MT TABOR M E CHURCH TMM 1-2-24
 - GARY L & ARLENE ANN NEELY TMM 1-8-1.1
 - MT TABOR CEMETERY TMM 1-2-22
 - CONSOL MINING COMPANY LLC TMM 1-3-2
 - ROY LEE JR & ERICA E HALL TMM 1-2-21
 - ROY L HALL TMM 1-2-20
 - LEONARD EDWARD HALL JR TMM 1-2-18.1
 - JASON BRIAN & LINDSEY R HALL TMM 1-2-18

Tract ID	Tax Map & Parcel	Grantor, Lessor, etc	Surface Owner
1	1-8-2	Richard W. Wise Donald Wise Thomas E. McCauley Richard L. McCauley Judy A. Eckman Robert Stewart Opal Jane Wise, Life Estate Holder and John Matthew Wise and Dina M. Wise, Remaindermen Clifford J. Wise Regina Wise Myers AKA Violet Regina Myers Eleanor J. Wise Walter C. Ord James Freeman Stewart Victor E. Wise Zelda Ruth Brummage Evalée A. Everly Shaheen Dexter Murle Stewart Justin P. Stewart Annette E. Stewart Debora Goff Walter R. Currence Maureen S. Currence Michelle L. Currence Phyllis J. Pastrosky Jesse D. Jones Harold M. Jones, Jr. Fred C. Wise and Alice F. Wise Linda Stapp Richard A. Nunley and Diana K. Nunley Patricia J. Mumaw and Richard L. Mumaw Donald E. Nunley Mary Nunley Stepelton and Donald Stepelton Jane Irons Melissa Bookout Eileen Ann Lyle Robert Eugene Michael, Sr. and Darlene Ann Michael Frank Dennis Michael, Jr. and Mary Frances Michael Evelyn June Michael Tanya Chersin a/k/a Tonya Chersin a/k/a Tonya L. Chersin Boyd Hawkins and Kari J. Hawkins Becky Bortnick Hawkins	DINA M WISE ET AL
2	1-8-3.1	Barbara J. Wagner Donald L. White, individually and as agent for Helen J. Shriver, Larry L. Shriver, David B. Shriver, Robert A. Shriver, Shannon R. Shriver, George H. Shriver, Anne D. Coon, Harriet E. Rodriguez, Jack L. Shriver, Wilma S. Shriver, Linda L. White, Barbara Sue Shriver, individually and as Trustee of the Shriver Family Trust, and Gregory L. Shriver, Trustee of the Shriver Family Trust Arnold D. Anderson, individually, and as Trustee of the Arnold D. Anderson and Barbara J. Anderson Living Trust UTD May 14th, 2008	BARBARA J WAGNER
3	1-8-1.3	CBC Holdings, LLC Edward L. Thomas and Diana Lee Thomas David Wayne Thomas Dorothy L. Stewart and Harold L. Stewart Jr. Earl W. Kennedy	EDWARD L THOMAS, DAVID WAYNE & DOROTHY L STEWART
4	1-8-1.2	CBC Holdings, LLC David W. Deaton and Elizabeth K. Deaton Earl W. Kennedy	DAVID W & ELIZABETH K DEATON
5	1-3-3.1	CBC Holdings, LLC Steven M. Macyda Earl W. Kennedy	STEVEN M MACYDA
6	1-8-1.5	CBC Holdings, LLC Gary L. Neely and Arlene Neely Earl W. Kennedy	GARY L & ARLENE ANN NEELY
7	1-8-1.1	CBC Holdings, LLC Gary L. Neely and Arlene Neely Earl W. Kennedy	GARY L & ARLENE ANN NEELY
8	1-3-3	Steven M. Macyda Earl W. Kennedy	STEVEN M MACYDA
9	1-2-22	Mt. Tabor Methodist Episcopal Church Earl W. Kennedy	MT TABOR CEMETERY
10	1-2-24	Mt. Tabor Methodist Episcopal Church Earl W. Kennedy	MT TABOR M E CHURCH
11	1-3-2	David Charles White and Regina Sue White Lucy Mae Stickley Marian R. Stone Garrett Patricia K. W. Hoekstra Richard H. Benson, II Alvy S. White Anita Talbott Karen I. Meyers Carol S. White Davis Edwin R. White II Robert Tate Jr. Frederick Tate Timothy Tate Jr.	CONSOL MINING COMPANY LLC

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



Sheffler & Company, Inc.
ENGINEERING • SURVEYING

1712 Mount Nebo Road
Sewickley, PA 15143
Phone: 412-219-4509
Email: info@shefflerCo.com

DATE: April 3, 2018, Rev. July 10, 2019

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

OPERATOR'S WELL #: WDTN5BHSU
 API WELL # 47 STATE 061 COUNTY PERMIT

WATERSHED: DUNKARD CREEK ELEVATION: 1412'
 COUNTY/DISTRICT: MONONGALIA / BATTELLE QUADRANGLE: WADESTOWN, WV
 SURFACE OWNER: JOHN M. WISE, ET UX., ET AL. ACREAGE: 207.36
 OIL & GAS ROYALTY OWNER: RICHARD W. WISE, ET AL. ACREAGE: 207.36

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY)

TARGET FORMATION: POINT PLEASANT ESTIMATED DEPTH: PILOT TVD 13,565' ±, TVD: 13,335' ±, TMD: 19,825' ±
 WELL OPERATOR: CNX GAS COMPANY, LLC DESIGNATED AGENT: CHRIS TURNER
 Address: 1000 CONSOL ENERGY DRIVE Address: 1 DOMINION DRIVE
 City CANONSBURG State PA Zip Code 15317 City JANE LEW State WV Zip Code 26378

Tract ID	Tax Map & Parcel	Grantor, Lessor, etc	Surface Owner
11 (CONT.)	1-3-2	Alex Tate Jennifer Marie Carrington Robert S. Elliot Jane E. McIntyre and Glenn C. McIntyre Jan W. Ellison and Thomas A. Ellison Marianne Ann Borkowski and Marc Borkowski Edith B. White Nancy Emerick Betty Ann Reed David Ray Stone Donald E. Stone Doris Jean White Sandra Pixler Victor A. White (4/147) Melinda Reid Hatton (2/147) Dennis F. Hatton Jr. (1/147) Amanda Hatton (1/147)	CONSOL MINING COMPANY LLC
12	1-2-21	Cheryl Lynn Bennett Frankenfield Connie Lee Norwood Beth Ellen Younciak, a/k/a Beth Ellen Bennett Ewing Albert Bennett Cheryl Lynn Bennett Frankenfield Emily B. Vallin Jennifer Sue Carpenter Shirley Dotterer Wadsworth Kathryn Dotterer Vahl Thelma R. Dotterer Chowing Marc D. Prochazka Richard Leslie Puchstein Carl Eric Puchstein Victor Jean Puchstein, a/k/a Jean Steen Puchstein, individually and as Trustee of the Jean Steen Puchstein Trust U/A dated October 8, 2014 John William Bennett Jeffery Carpenter Kent P. Prochazka (1/18)	ROY LEE JR & ERICA E HALL
13	1-2-18 & 1-2-18.1	John Samuel Stewart Samuel William Stewart and Barbara C. Stewart Merrion Oil and Gas Corporation Hu's Land and Minerals LLC	JASON BRIAN & LINDSEY R HALL, LEONARD EDWARD HALL JR
14	1-3-2	David Charles White and Regina Sue White Lucy Mae Stickley Marian R. Stone Garrett Patricia K. W. Hoekstra Richard H. Benson, II Alvy S. White Anita Talbott Karen I. Meyers Carol S. White Davis Edwin R. White II Robert Tate Jr. Frederick Tate Timothy Tate Jr. Alex Tate Jennifer Marie Carrington Robert S. Elliot Jane E. McIntyre and Glenn C. McIntyre Jan W. Ellison and Thomas A. Ellison Marianne Ann Borkowski and Marc Borkowski Edith B. White Nancy Emerick Betty Ann Reed David Ray Stone Donald E. Stone Doris Jean White Victor A. White (2/147) Melinda Reid Hatton (2/294) Dennis F. Hatton Jr. (2/588) Amanda Hatton (2/588)	CONSOL MINING COMPANY LLC
15	1-2-20	Merrion Oil and Gas Corporation Hu's Land and Minerals LLC	ROY L HALL
16	1-2-19	Merrion Oil and Gas Corporation Hu's Land and Minerals LLC	ROY L HALL

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Office of Oil and Gas

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Department of
Environmental Protection

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Sheffler & Company, Inc.
ENGINEERING • SURVEYING

1712 Mount Nebo Road Sewickley, PA 15143 Phone: 412-219-4509 Email: info@shefflerCo.com

DATE: April 3, 2018, Rev. July 10, 2019

Well Type: Oil Waste Disposal Production Deep

OPERATOR'S WELL #: WDTN5BHSU

Gas Liquid Injection Storage Shallow

API WELL # 47 061
STATE COUNTY PERMIT

WATERSHED DUNKARD CREEK

ELEVATION: 1412'

COUNTY/DISTRICT: MONONGALIA / BATTELLE

QUADRANGLE: WADESTOWN, WV

SURFACE OWNER: JOHN M. WISE, ET UX., ET AL.

ACREAGE: 207.36

OIL & GAS ROYALTY OWNER: RICHARD W. WISE, ET AL.

ACREAGE: 207.36

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PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON

CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY)

TARGET FORMATION: POINT PLEASANT

ESTIMATED DEPTH: PILOT TVD 13,565' ±, TVD: 13,335' ±, TMD: 19,825' ±

WELL OPERATOR: CNX GAS COMPANY, LLC

DESIGNATED AGENT: CHRIS TURNER

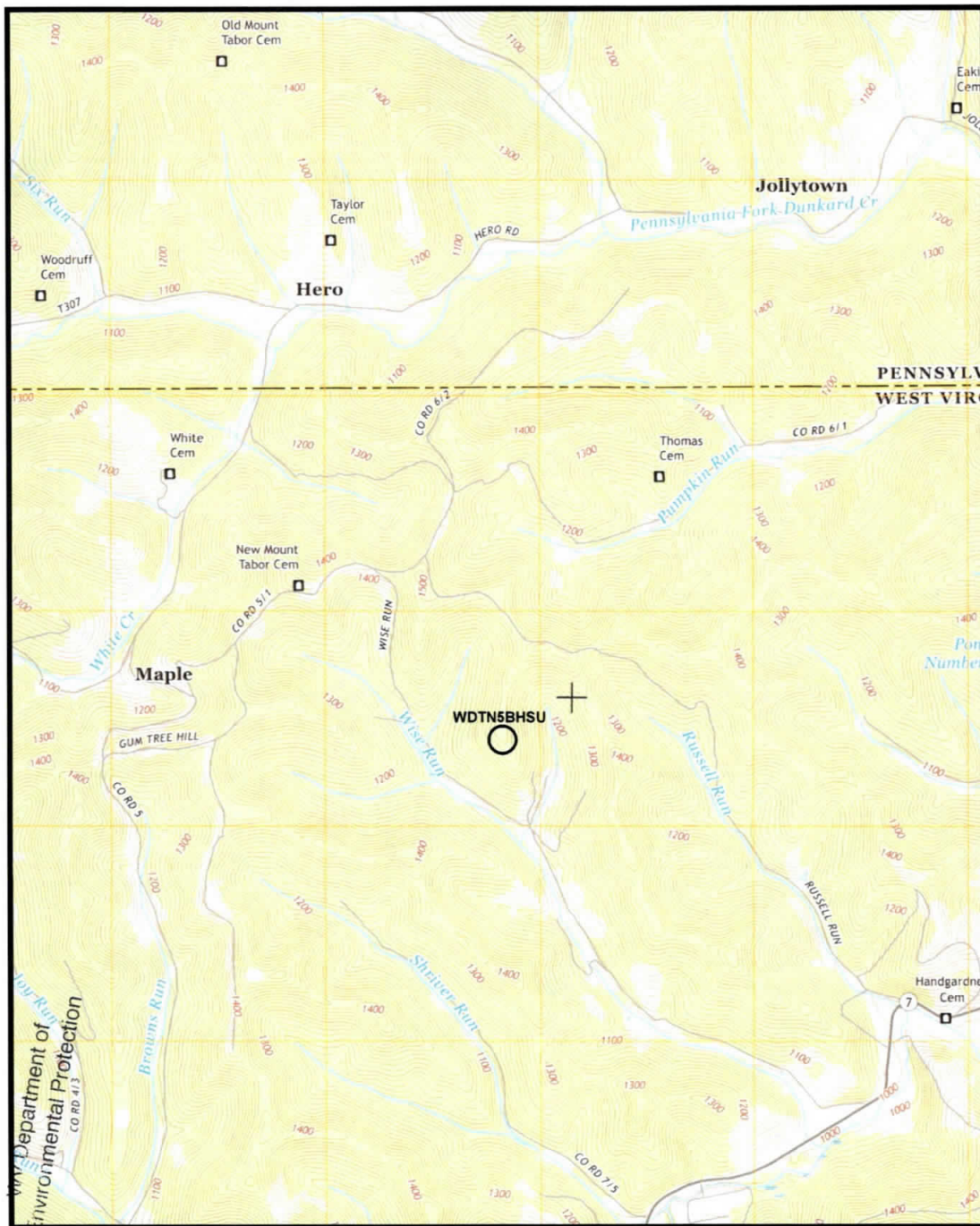
Address: 1000 CONSOL ENERGY DRIVE

Address: 1 DOMINION DRIVE

City CANONSBURG State PA Zip Code 15317

City JANE LEW State WV Zip Code 26378

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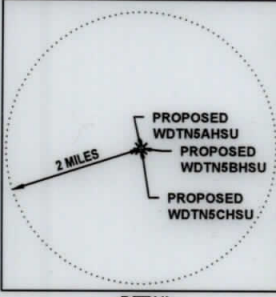
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WELL OPERATOR: CNX GAS COMPANY, LLC DESIGNATED AGENT: CHRIS TURNER
Address: 1000 CONSOL ENERGY DRIVE Address: 1 DOMINION DRIVE
City CANONSBURG State PA Zip Code 15317 City JANE LEW State WV Zip Code 26378

SHL is located on topo map 640 feet south of Latitude: 39° 42' 30"
 BHL is located on topo map 10,830 feet south of Latitude: 39° 45' 00"



LINE TABLE		
LINE #	BEARING	DISTANCE
R1	S13°33'08"W	929.50'
R2	N67°21'20"E	268.17'
R3	S64°35'32"E	379.02'
R4	N32°50'12"W	123.43'
R5	N67°21'20"E	268.17'



DETAIL
 UTICA WELLS WITHIN 2 MILE RADIUS
 SCALE 1" = 15,000'

SURFACE HOLE LOCATION (SHL)
 UTM 17 - NAD83(M)
 N: 4395400.802
 E: 556826.284
 NAD27, WV NORTH
 N: 440530.826
 E: 1764427.453
 LAT/LON - NAD83
 LAT: 39°42'23.671"
 LON: 80°20'13.575"

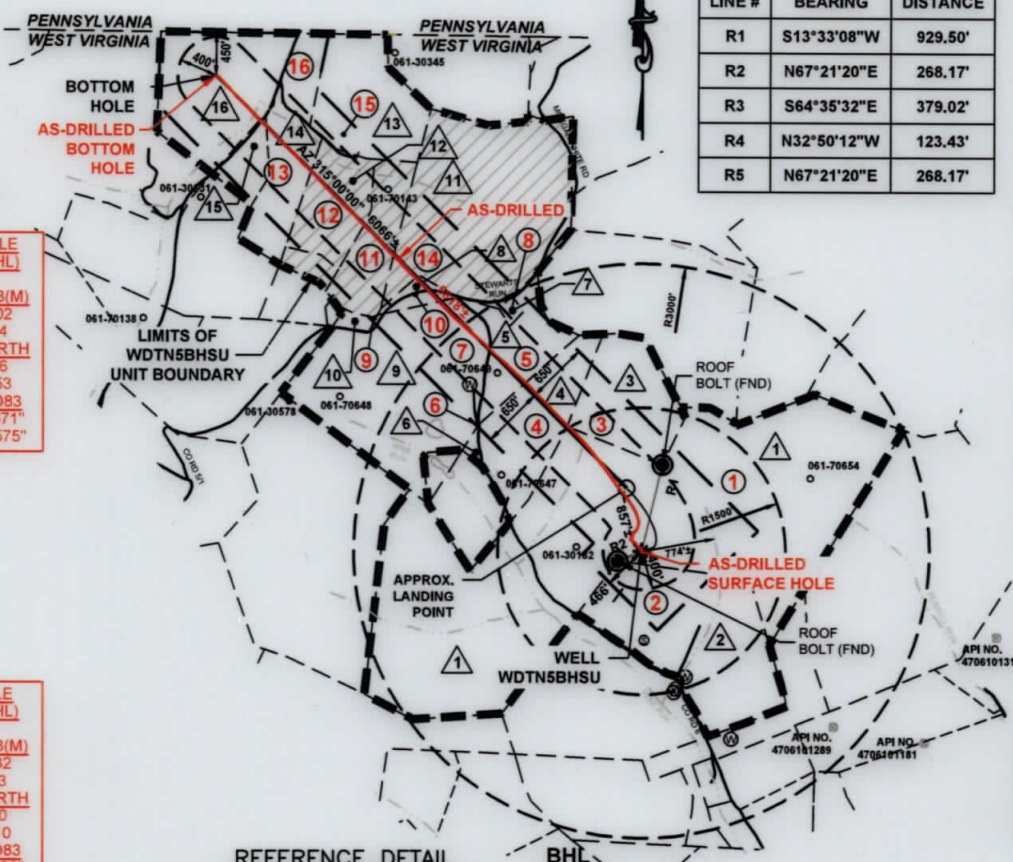
SURFACE HOLE LOCATION (SHL)
 UTM 17 - NAD83(M)
 N: 4395400.802
 E: 556826.284
 NAD27, WV NORTH
 N: 440530.826
 E: 1764427.453
 LAT/LON - NAD83
 LAT: 39°42'23.671"
 LON: 80°20'13.575"

APPROXIMATE LANDING POINT
 UTM 17 - NAD83(M)
 N: 4395601.605
 E: 556775.394
 NAD27, WV NORTH
 N: 441192.522
 E: 1764271.452
 LAT/LON - NAD83
 LAT: 39°42'30.197"
 LON: 80°20'15.649"

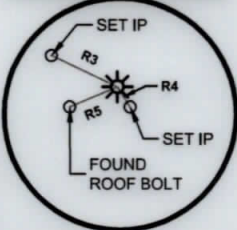
BOTTOM HOLE LOCATION (BHL)
 UTM 17 - NAD83(M)
 N: 4396886.550
 E: 555446.854
 NAD27, WV NORTH
 N: 445481.671
 E: 1759982.309
 LAT/LON - NAD83
 LAT: 39°43'12.188"
 LON: 80°21'11.050"

BOTTOM HOLE LOCATION (BHL)
 UTM 17 - NAD83(M)
 N: 4396887.932
 E: 555448.233
 NAD27, WV NORTH
 N: 445486.130
 E: 1759986.910
 LAT/LON - NAD83
 LAT: 39°43'12.233"
 LON: 80°21'10.992"

NO DEEP WELLS WITHIN 3000'



REFERENCE DETAIL



MINERAL TRACT BOUNDARY = 590.077 ACRES
 UNIT BOUNDARY = 240.385 ACRES

LEGEND	
	TOPO MAP POINT
	PROPOSED WELL
	WATER SOURCE
	SPRING
	SURFACE TRACT
	LEASED NUMBER BASED ON ATTACHED WDTN5B
	WELLS WITHIN 3000'
	RECORD GAS WELL
	UNKNOWN WELL
	FORCED POOLING AREAS
	ALL ARE POINTS UNLESS OTHERWISE NOTED
	LEASE BOUNDARY
	UNIT BOUNDARY
	PROPOSED HORIZONTAL WELL
	SURFACE, OIL & GAS LINES
	SURFACE TRACT LINES ONLY
	GAS LEASE LINES ONLY
	WELL REFERENCE
	STREAM/WATERWAY
	ROAD
	AS-DRILLED HORIZONTAL WELL

AS-DRILLED PLAT
 Sheffler & Company, Inc.
 ENGINEERING • SURVEYING

1712 Mount Nebo Road
 Sewickley, PA 15143
 Phone: 412-219-4509
 Email: info@shefflerCo.com

- 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, and based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

FILE #: WDTN5IHSM
 DRAWING #: 3601 - WDTN5B - AD.DWG
 SCALE: 1"=2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: USGS MONUMENT JX1864: 1,496.32'

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. _____



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



DATE: April 3, 2018, Rev. July 10, 2019
 OPERATOR'S WELL #: WDTN5BHSU
 API WELL # 47 061 01806
 STATE COUNTY PERMIT

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

WATERSHED: DUNKARD CREEK ELEVATION: 1412'
 COUNTY/DISTRICT: MONONGALIA / BATTELLE QUADRANGLE: WADESTOWN, WV
 SURFACE OWNER: JOHN M. WISE, ET UX., ET AL. ACREAGE: 207.36
 OIL & GAS ROYALTY OWNER: RICHARD W. WISE, ET AL. ACREAGE: 207.36

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY) _____
 TARGET FORMATION: POINT PLEASANT ESTIMATED DEPTH: PILOT TVD 13,565' ±, TVD: 13,335' ±, TMD: 19,825' ±
 WELL OPERATOR: CNX GAS COMPANY, LLC DESIGNATED AGENT: CHRIS TURNER
 Address: 1000 CONSOL ENERGY DRIVE Address: 1 DOMINION DRIVE
 City CANONSBURG State PA Zip Code 15317 City JANE LEW State WV Zip Code 26378

SHL is located on topo map 1,060 feet west of Longitude: 80° 20' 00"
 BHL is located on topo map 5,468 feet west of Longitude: 80° 20' 00"

WDTNSBHSU UNIT = 240.385 ACRES TOTAL		
BATTELLE DISTRICT		
#	TAX MAP & PARCEL	UNIT ACRES
1	1-8, P/O PARCEL 2	48,599 Ac.
2	1-8, P/O PARCEL 3.1	9,690 Ac.
3	1-8, P/O PARCEL 1.3	11,442 Ac.
4	1-8, P/O PARCEL 1.2	18,345 Ac.
5	1-3, P/O PARCEL 3.1	14,395 Ac.
6	1-8, P/O PARCEL 1.5	0,004 Ac.
7	1-8, P/O PARCEL 1.1	19,419 Ac.
8	1-3, PARCEL 3	0,923 Ac.
9	1-2, P/O PARCEL 22	0,061 Ac.
10	1-2, PARCEL 24	3,287 Ac.
11	1-3, P/O PARCEL 2	15,564 Ac.
12	1-2, P/O PARCEL 21	17,163 Ac.
13	1-2, P/O PARCELS 18 & 18.1	18,298 Ac.
14	1-3, P/O PARCEL 2	19,113 Ac.
15	1-2, P/O PARCEL 20	5,369 Ac.
16	1-2, P/O PARCEL 19	38,713 Ac.

SURFACE TRACT OWNERS & TAX PARCEL

- | | |
|---|--------------|
| 1. DINA M WISE ET AL | TM# 1-8-2 |
| 2. BARBARA J WAGNER | TM# 1-8-3.1 |
| 3. EDWARD L THOMAS, DAVID WAYNE & DOROTHY L STEWART | TM# 1-8-1.3 |
| 4. DAVID W & ELIZABETH K DEATON | TM# 1-8-1.2 |
| 5. STEVEN M MACYDA | TM# 1-3-3.1 |
| 6. GARY L & ARLENE ANN NEELY | TM# 1-8-1.5 |
| 7. STEVEN M MACYDA | TM# 1-3-3 |
| 8. MT TABOR M E CHURCH | TM# 1-2-24 |
| 9. GARY L & ARLENE ANN NEELY | TM# 1-8-1.1 |
| 10. MT TABOR CEMETERY | TM# 1-2-22 |
| 11. CONSOL MINING COMPANY LLC | TM# 1-3-2 |
| 12. ROY LEE JR & ERICA E HALL | TM# 1-2-21 |
| 13. ROY L HALL | TM# 1-2-20 |
| 14. LEONARD EDWARD HALL JR | TM# 1-2-18.1 |
| 15. JASON BRIAN & LINDSEY R HALL | TM# 1-2-18 |

Tract ID	Tax Map & Parcel	Grantor, Lessor, etc	Surface Owner
1	1-8-2	Richard W. Wise Donald Wise Thomas E. McCauley Richard L. McCauley Judy A. Eckman Robert Stewart Opal Jane Wise, Life Estate Holder and John Matthew Wise and Dina M. Wise, Remaindermen Clifford J. Wise Regina Wise Myers AKA Violet Regina Myers Eleanor J. Wise Walter C. Ord James Freeman Stewart Victor E. Wise Zelda Ruth Brummage EvaLee A. Everly Shaheen Dexter Murle Stewart Justin P. Stewart Annette E. Stewart Debora Goff Walter R. Currence Maureen S. Currence Michelle L. Currence Phyllis J. Petrosky Jesse D. Jones Harold M. Jones, Jr. Fred C. Wise and Alice F. Wise Linda Stapp Richard A. Nunley and Diana K. Nunley Patricia J. Mumaw and Richard L. Mumaw Donald E. Nunley Mary Nunley Stepelton and Donald Stepelton Jane Irons Melissa Bookout Eileen Ann Lyle Robert Eugene Michael, Sr. and Darlene Ann Michael Frank Dennis Michael, Jr. and Mary Frances Michael Evelyn June Michael Tanya Chersin a/k/a Tonya Chersin a/k/a Tonya L. Chersin Boyd Hawkins and Kari J. Hawkins Becky Bortnick Hawkins	DINA M WISE ET AL
2	1-8-3.1	Barbara J. Wagner Donald L. White, individually and as agent for Helen J. Shriver, Larry L. Shriver, David B. Shriver, Robert A. Shriver, Shannon R. Shriver, George H. Shriver, Anne D. Coon, Harriet E. Rodriguez, Jack L. Shriver, Wilma S. Shriver, Linda L. White, Barbara Sue Shriver, individually and as Trustee of the Shriver Family Trust, and Gregory L. Shriver, Trustee of the Shriver Family Trust Arnold D. Anderson, individually, and as Trustee of the Arnold D. Anderson and Barbara J. Anderson Living Trust UTD May 14th, 2008	BARBARA J WAGNER
3	1-8-1.3	CBC Holdings, LLC Edward L. Thomas and Diana Lee Thomas David Wayne Thomas Dorothy L. Stewart and Harold L. Stewart Jr. Earl W. Kennedy	EDWARD L THOMAS, DAVID WAYNE & DOROTHY L STEWART
4	1-8-1.2	CBC Holdings, LLC David W. Deaton and Elizabeth K. Deaton Earl W. Kennedy	DAVID W & ELIZABETH K DEATON
5	1-3-3.1	CBC Holdings, LLC Steven M. Macyda Earl W. Kennedy	STEVEN M MACYDA
6	1-8-1.5	CBC Holdings, LLC Gary L. Neely and Arlene Neely Earl W. Kennedy	GARY L & ARLENE ANN NEELY
7	1-8-1.1	CBC Holdings, LLC Gary L. Neely and Arlene Neely Earl W. Kennedy	GARY L & ARLENE ANN NEELY
8	1-3-3	Steven M. Macyda Earl W. Kennedy	STEVEN M MACYDA
9	1-2-22	MT. Tabor Methodist Episcopal Church Earl W. Kennedy	MT TABOR CEMETERY
10	1-2-24	MT. Tabor Methodist Episcopal Church Earl W. Kennedy	MT TABOR M E CHURCH
11	1-3-2	David Charles White and Regina Sue White Lucy Mae Stickley Marian R. Stone Garrett Patricia K. W. Hoekstra Richard H. Benson, II Alvy S. White Anita Talbott Karen I. Meyers Carol S. White Davis Edwin R. White II Robert Tate Jr. Frederick Tate Timothy Tate Jr.	CONSOL MINING COMPANY LLC

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



Sheffler & Company, Inc.
ENGINEERING • SURVEYING
1712 Mount Nebo Road Sewickley, PA 15143 Phone: 412-219-4509 Email: info@shefflerCo.com

DATE: April 3, 2018, Rev. July 10, 2019

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

OPERATOR'S WELL #: WDTNSBHSU
API WELL # 47 STATE 061 COUNTY PERMIT 01806

WATERSHED: DUNKARD CREEK ELEVATION: 1412'
COUNTY/DISTRICT: MONONGALIA / BATTELLE QUADRANGLE: WADESTOWN, WV
SURFACE OWNER: JOHN M. WISE, ET UX., ET AL. ACREAGE: 207.36
OIL & GAS ROYALTY OWNER: RICHARD W. WISE, ET AL. ACREAGE: 207.36

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON
CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY)

TARGET FORMATION: POINT PLEASANT ESTIMATED DEPTH: PILOT TVD 13,565' ±, TVD: 13,335' ±, TMD: 19,825' ±
WELL OPERATOR: CNX GAS COMPANY, LLC DESIGNATED AGENT: CHRIS TURNER
Address: 1000 CONSOL ENERGY DRIVE Address: 1 DOMINION DRIVE
City CANONSBURG State PA Zip Code 15317 City JANE LEW State WV Zip Code 26378

Tract ID	Tax Map & Parcel	Grantor, Lessor, etc	Surface Owner
11 (CONT.)	1-3-2	Alex Tate Jennifer Marie Carrington Robert S. Elliot Jane E. McIntyre and Glenn C. McIntyre Jan W. Ellison and Thomas A. Ellison Marianne Ann Borkowski and Marc Borkowski Edith B. White Nancy Emerick Betty Ann Reed David Ray Stone Donald E. Stone Doris Jean White Sandra Pixler Victor A. White (4/147) Melinda Reid Hatton (2/147) Dennis F. Hatton Jr. (1/147) Amanda Hatton (1/147)	CONSOL MINING COMPANY LLC
12	1-2-21	Cheryl Lynn Bennett Frankenfield Connie Lee Norwood Beth Ellen Younciak, a/k/a Beth Ellen Bennett Ewing Albert Bennett Cheryl Lynn Bennett Frankenfield Emily B. Vallin Jennifer Sue Carpenter Shirley Dotterer Wadsworth Kathryn Dotterer Vahl Thelma R. Dotterer Chowning Marc D. Prochazka Richard Leslie Puchstein Carl Eric Puchstein Violet Jean Puchstein, a/k/a Jean Steen Puchstein, individually and as Trustee of the Jean Steen Puchstein Trust U/A dated October 8, 2014 John William Bennett Jeffery Carpenter Kent P. Prochazka (1/18)	ROY LEE JR & ERICA E HALL
13	1-2-18 & 1-2-18.1	John Samuel Stewart Samuel William Stewart and Barbara C. Stewart Merrion Oil and Gas Corporation Hu's Land and Minerals LLC	JASON BRIAN & LINDSEY R HALL, LEONARD EDWARD HALL JR
14	1-3-2	David Charles White and Regina Sue White Lucy Mae Stickle Marian R. Stone Garrett Patricia K. W. Hoekstra Richard H. Benson, II Alvy S. White Anita Talbott Karen I. Meyers Carol S. White Davis Edwin R. White II Robert Tate Jr. Frederick Tate Timothy Tate Jr. Alex Tate Jennifer Marie Carrington Robert S. Elliot Jane E. McIntyre and Glenn C. McIntyre Jan W. Ellison and Thomas A. Ellison Marianne Ann Borkowski and Marc Borkowski Edith B. White Nancy Emerick Betty Ann Reed David Ray Stone Donald E. Stone Doris Jean White Victor A. White (2/147) Melinda Reid Hatton (2/294) Dennis F. Hatton Jr. (2/588) Amanda Hatton (2/588)	CONSOL MINING COMPANY LLC
15	1-2-20	Merrion Oil and Gas Corporation Hu's Land and Minerals LLC	ROY L HALL
16	1-2-19	Merrion Oil and Gas Corporation Hu's Land and Minerals LLC	ROY L HALL

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Sheffler & Company, Inc.
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1712 Mount Nebo Road Phone: 412-219-4509
Sewickley, PA 15143 Email: info@shefflerCo.com

DATE: April 3, 2018, Rev. July 10, 2019

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

OPERATOR'S WELL #: WDTN5BHSU
API WELL # 47 061 01806
STATE COUNTY PERMIT

WATERSHED: DUNKARD CREEK ELEVATION: 1412'
COUNTY/DISTRICT: MONONGALIA / BATTELLE QUADRANGLE: WADESTOWN, WV
SURFACE OWNER: JOHN M. WISE, ET UX., ET AL. ACREAGE: 207.36
OIL & GAS ROYALTY OWNER: RICHARD W. WISE, ET AL. ACREAGE: 207.36

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PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON
CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY)

TARGET FORMATION: POINT PLEASANT ESTIMATED DEPTH: PILOT TVD 13,565' ±, TVD: 13,335' ±, TMD: 19,825' ±
WELL OPERATOR: CNX GAS COMPANY, LLC DESIGNATED AGENT: CHRIS TURNER
Address: 1000 CONSOL ENERGY DRIVE Address: 1 DOMINION DRIVE
City CANONSBURG State PA Zip Code 15317 City JANE LEW State WV Zip Code 26378



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



DATE: April 3, 2018, Rev. July 10, 2019

OPERATOR'S WELL #: WDTN5BHSU

API WELL # 47 061 01906
STATE COUNTY PERMIT

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

WATERSHED: DUNKARD CREEK

ELEVATION: 1412'

COUNTY/DISTRICT: MONONGALIA / BATTELLE

QUADRANGLE: WADESTOWN, WV

SURFACE OWNER: JOHN M. WISE, ET UX., ET AL.

ACREAGE: 207.36

OIL & GAS ROYALTY OWNER: RICHARD W. WISE, ET AL.

ACREAGE: 207.36

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CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY)

TARGET FORMATION: POINT PLEASANT

ESTIMATED DEPTH: PILOT TVD 13,565' ±, TVD: 13,335' ±, TMD: 19,825' ±

WELL OPERATOR: CNX GAS COMPANY, LLC

DESIGNATED AGENT: CHRIS TURNER

Address: 1000 CONSOL ENERGY DRIVE

Address: 1 DOMINION DRIVE

City CANONSBURG State PA Zip Code 15317

City JANE LEW State WV Zip Code 26378



CNX GAS COMPANY, LLC

Location: Monongalia County, WV
Field: Monongalia
Facility: WTN-5 Pad

Slot: Slot B
Well: WDTN-5B-HSU ST02
Wellbore: WDTN-5B-HSU ST02 PWB



Grid System: NAD83 / Lambert Vertical, Virginia SR, Northern Zone (G201), US feet	
True vertical depths are referenced to Patterson 801 (RKB)	
North Reference: Grid north	
Scale: True distance	
Patterson 801 (RKB) to Mean Sea Level: 1415.84 feet	
Depth: as in field	
Mean Sea Level to Mud line (At Slot: Slot B): -1397.84 feet	
Created by: shayane on 2019-05-29	
Coordinates are in feet, referenced to Slot	
Database: VA_MPA_EASTERNUS_Dam	



VES Gyro <17-1/2"> (100'-2700') : 0.64° Inc, 100.00ft MD, 100.00ft TVD, -0.05ft VS

Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
WTN-5 Pad	1764427.450	440530.830	80°20'14.303"W
Local N (ft)	Grid East (US ft)	Grid North (US ft)	Longitude
0.00	1764427.450	440530.830	80°20'14.303"W
Slot B	0.00	29ft	
Patterson 801 (RKB) to Mud line (At Slot: Slot B)			
Mean Sea Level to Mud line (At Slot: Slot B)			-1397.84ft
Patterson 801 (RKB) to Mean Sea Level			1416.94ft

APS EM [OH] <12-1/4"> (2700)/(2959-10589) : 0.33° Inc, 2959.00ft MD, 2958.65ft TVD, -19.91ft VS

Well Data			
Slot	Well	Wellbore	Wellpath
Slot B	WDTN-5B-HSU PWB	WDTN-5B-HSU PWB	WDTN-5B-HSU PWB
Slot B	WDTN-5B-HSU PWB	WDTN-5B-HSU PWB	WDTN-5B-HSU PWB
Slot B	WDTN-5B-HSU PWB	WDTN-5B-HSU PWB	WDTN-5B-HSU PWB
Slot B	WDTN-5B-HSU PWB	WDTN-5B-HSU PWB	WDTN-5B-HSU PWB
Slot B	WDTN-5B-HSU PWB	WDTN-5B-HSU PWB	WDTN-5B-HSU PWB
Slot B	WDTN-5B-HSU PWB	WDTN-5B-HSU PWB	WDTN-5B-HSU PWB

APS EM [ST01] <12-1/4"> (5397)/(5428-12435) : 2.08° Inc, 5428.00ft MD, 5426.99ft TVD, 18.11ft VS

API: 47-061-01806-0000
BH Job #: 109707008
Rig: Patterson 801
Duration: 5/20/2019-5/26/2019

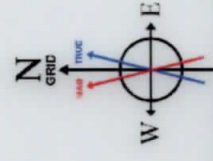
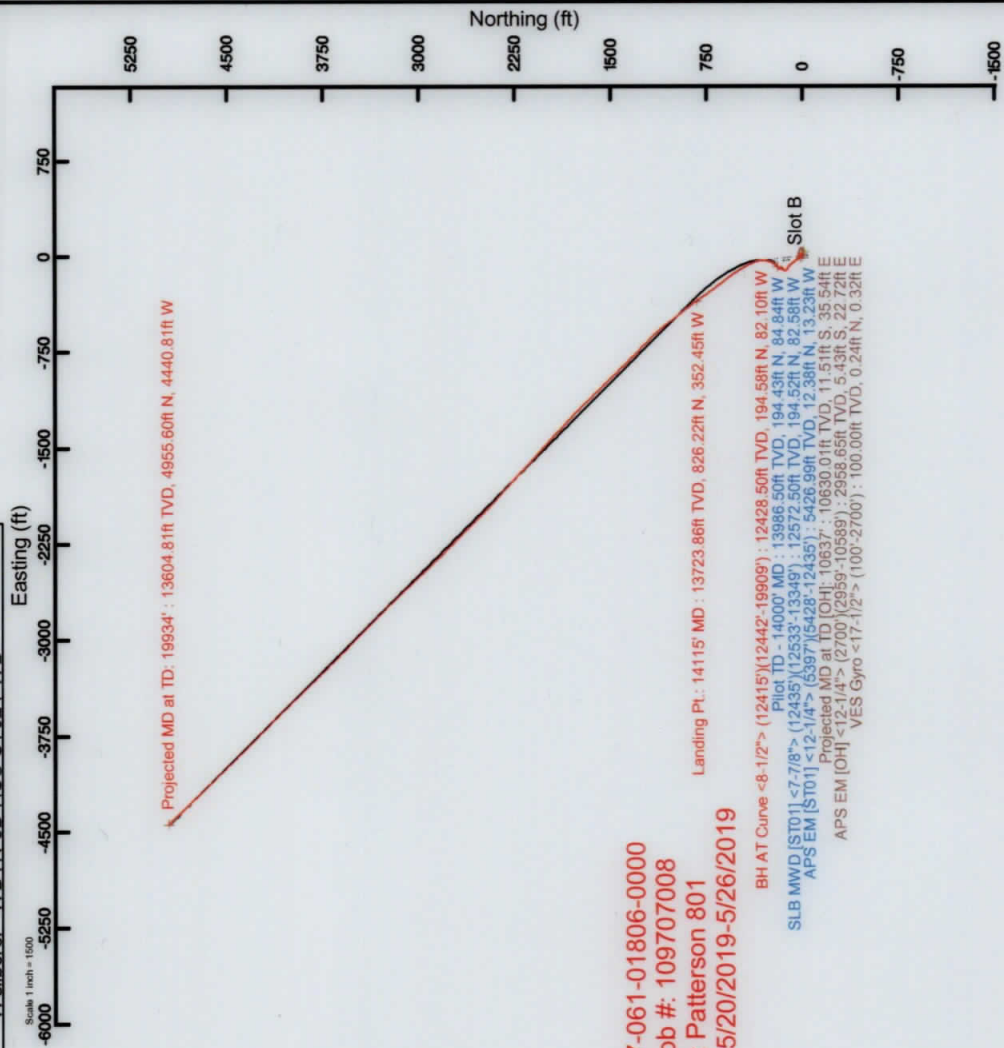
Well Profile Data						
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)
Tie On	12415.00	0.410	309.540	12401.51	194.32	-81.92
Next Sky	12435.00	0.370	292.020	12421.51	194.39	-82.04
Sidetrack PL	12467.00	0.303	289.546	12453.50	194.46	-82.21
End of 3D Arc	13086.92	6.124	45.001	12661.80	202.52	-74.85
Curve KOP	13086.92	6.124	45.001	13070.69	233.54	-43.83
Build / Avoid NSZ	13375.80	30.000	0.000	13944.10	318.12	-32.74
Landing Pl	14146.77	90.100	315.000	13725.00	860.11	-344.38
BHL	19646.52	90.100	315.000	13714.86	4951.14	-4445.41

Projected MD at TD [OH]: 10637 : 1.14° Inc, 10637.00ft MD, 10630.01ft TVD, -33.27ft VS

BH AT Curve <8-1/2"> (12415)/(12442-19909) : 0.96° Inc, 12442.00ft MD, 12428.50ft TVD, 195.65ft VS
SLB MWD [ST01] <7-7/8"> (12435)/(12533-13349) : 0.08° Inc, 12586.00ft MD, 12572.50ft TVD, 195.94ft VS

Landing Pl: 14115 MD : 88.52° Inc, 14115.00ft MD, 13723.86ft TVD, 833.44ft VS

Pilot TD - 14000' MD : 0.13° Inc, 14000.00ft MD, 13986.50ft TVD, 197.48ft VS
Projected MD at TD : 19934 : 96.66° Inc, 19934.00ft MD, 13604.81ft TVD, 6644.26ft VS



User specified (HDM) Dip: 66.71° Field: 52173 nT
Magnetic North is 9.05 degrees West of True North (at 16May2019)
Grid North is 0.53 degrees West of True North
To correct azimuth from True to Grid add 0.53 degrees
To correct azimuth from Magnetic to Grid subtract 8.52 degrees

Scale 1 inch = 2500

Scale 1 inch = 2500

Vertical Section (ft)
Azimuth 315.00° with reference 0.00 N, 0.00 E