02/15/2019

WR-35
Rev. 8/23/13

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

API 47 - 095 - 02491 County TYLER District McELROY
Quad SHIRLEY Pad Name SHR31 Field/Pool Name
Farm name SECKMAN Well Number SHR31DHSM
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 337894.41 (NAD 27) Easting 1626616.09 (NAD 27)
Landing Point of Curve Northing 336980.6 (NAD 27) Easting 1628736.99 (NAD 27)
Bottom Hole Northing 327896.31 (NAD 27) Easting 1631790.95 (NAD 27)

Elevation (ft) 1091 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: CARBO-TEC, SURF-COTE, CARBO-GEL II, NEXT-FLC, CALCIUM CHLORIDE, MIL-LIME

Date permit issued 4/9/2018 Date drilling commenced 4/7/2018 Date drilling ceased 7/9/2018
Date completion activities began 8/8/2018 Date completion activities ceased 8/16/2018
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 150' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1850' Void(s) encountered (Y/N) depths N
Coal depth(s) ft TRACE: 800', 870', 1240', & 1510' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed
1/3/2019

Reviewed by:
JCB

API 47- 095 - 02491 Farm name SECKMAN Well number SHR31DHSM

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"	112	NEW	94lb/ft	N/A	GROUT TO SURFACE
Surface	17.5"	13.375"	667	NEW	J-55 54.5lb/ft	N/A	Y - CEMENT TO SURFACE
Coal							
Intermediate 1	12.25"	9.625"	2695	NEW	J-55 36lb/ft	N/A	Y - CEMENT TO SURFACE
Intermediate 2							
Intermediate 3							
Production	8.75" & 8.5"	5.5"	17175	NEW	Q-125 20lb/ft	N/A	Y - TOC @ 2195
Tubing	5.5"	2.875	7,428.8	NEW	P-110 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	CLASS A	522	15.6	1.197	624	0	8
Coal							
Intermediate 1	CLASS A	824	15.6	1.186	977	0	8
Intermediate 2							
Intermediate 3							
Production	NEOCEM	3485	15	1.126	3931	2195	8
Tubing							

Drillers TD (ft) 17,216 Loggers TD (ft) 17,216

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

Plug back procedure N/A

Kick off depth (ft) 6608.75 MD

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

PRODUCTION: Centralize every joint from shoe to KOP - then every 3rd joint from KOP to TOC

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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- 095 - 02491 Farm name SECKMAN Well number SHR31DHSM

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	SEE	ATTACHMENT	1		

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
		SEE	ATTACHMENT	2				

Please insert additional pages as applicable.

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API 47- 095 - 02491 Farm name SECKMAN Well number SHR31DHSM

PRODUCING FORMATION(S)	DEPTHS		
Marcellus	6703' TVD	9673' MD	

Please insert additional pages as applicable.

GAS TEST ☐ Build up ■ Drawdown ☐ Open Flow OIL TEST ☐ Flow ☐ Pump

SHUT-IN PRESSURE Surface 1675 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW	Gas	Oil	NGL	Water	GAS MEASURED BY
	2448 mcfpd	144 bpd	_____ bpd	1008 bpd	☐ Estimated ■ Orifice ☐ Pilot

LITHOLOGY/ FORMATION NAME	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 AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H_2S, ETC)
UNDIFFERENTIATED LIME	0	150	0	150	LIMESTONE
UNDIFFERENTIATED SAND	150	170	150	170	SANDSTONE
UNDIFFERENTIATED SILT	170	520	170	520	SILTSTONE
UNDIFFERENTIATED SAND	520	650	520	650	SANDSTONE
UNDIFFERENTIATED SILT	650	960	650	960	SILTSTONE
UNDIFFERENTIATED LIME	960	1010	960	1010	LIMESTONE
UNDIFFERENTIATED SILT	1010	1100	1010	1100	SILTSTONE
UNDIFFERENTIATED LIME	1100	1160	1100	1160	LIMESTONE
UNDIFFERENTIATED SILT	1160	1340	1160	1340	SILTSTONE
UNDIFFER. SAND / LIME	1340	1700	1340	1700	SANDSTONE / LIMESTONE
UNDIFFERENTIATED SAND	1700	2060	1700	2060	SANDSTONE
BIG LIME	2060	2100	2060	2100	LIMESTOME
BIG INJUN	2100	2210	2100	2210	SANDSTONE
PIERCE	2210	2410	2210	2410	STILSTONE

Please insert additional pages as applicable.

Drilling Contractor SEE ATTACHMENT
Address _____ City _____ State _____ Zip _____

Logging Company _____
Address _____ City _____ State _____ Zip _____

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

Stimulating Company KEANE
Address 5825 North Sam Houston Parkway West Suite 600 City Houston State TX Zip 77086
Please insert additional pages as applicable.

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Completed by Michael Hance Telephone 304-884-2138
Signature 10/30/18 Title Superintendent Completions Date 10/30/2018

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

SHIRLEY31DHSM – PERF SUMMARY – ATTACHMENT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	8/8/2018	17,021.2	17,119.8	24	Marcellus Shale
2	8/9/2018	16,793.9	16,961.5	40	Marcellus Shale
3	8/9/2018	16,586.9	16,754.5	40	Marcellus Shale
4	8/9/2018	16,379.9	16,547.5	40	Marcellus Shale
5	8/9/2018	16,172.9	16,340.5	40	Marcellus Shale
6	8/9/2018	15,965.9	16,133.5	40	Marcellus Shale
7	8/9/2018	15,758.9	15,926.5	40	Marcellus Shale
8	8/10/2018	15,551.9	15,719.5	40	Marcellus Shale
9	8/10/2018	15,344.9	15,512.5	40	Marcellus Shale
10	8/10/2018	15,083.2	15,245.2	40	Marcellus Shale
11	8/10/2018	14,883.2	15,045.2	40	Marcellus Shale
12	8/10/2018	14,683.2	14,845.2	40	Marcellus Shale
13	8/10/2018	14,483.2	14,645.2	40	Marcellus Shale
14	8/11/2018	14,283.2	14,445.2	40	Marcellus Shale
15	8/11/2018	14,083.2	14,245.2	40	Marcellus Shale
16	8/11/2018	13,883.2	14,045.2	40	Marcellus Shale
17	8/11/2018	13,683.2	13,845.2	40	Marcellus Shale
18	8/11/2018	13,483.2	13,645.2	40	Marcellus Shale
19	8/12/2018	13,283.2	13,445.2	40	Marcellus Shale
20	8/12/2018	13,083.2	13,245.2	40	Marcellus Shale
21	8/12/2018	12,883.2	13,045.2	40	Marcellus Shale
22	8/12/2018	12,683.2	12,845.2	40	Marcellus Shale
23	8/12/2018	12,483.2	12,645.2	40	Marcellus Shale
24	8/12/2018	12,283.2	12,445.2	40	Marcellus Shale
25	8/13/2018	12,083.2	12,245.2	40	Marcellus Shale
26	8/13/2018	11,883.2	12,045.2	40	Marcellus Shale
27	8/13/2018	11,683.2	11,845.2	40	Marcellus Shale
28	8/13/2018	11,483.2	11,645.2	40	Marcellus Shale
29	8/13/2018	11,283.2	11,445.2	40	Marcellus Shale
30	8/13/2018	11,083.2	11,245.2	40	Marcellus Shale
31	8/13/2018	10,883.2	11,045.2	40	Marcellus Shale
32	8/14/2018	10,683.2	10,845.2	40	Marcellus Shale
33	8/14/2018	10,483.2	10,645.2	40	Marcellus Shale
34	8/14/2018	10,283.2	10,445.2	40	Marcellus Shale
35	8/14/2018	10,083.2	10,245.2	40	Marcellus Shale
36	8/14/2018	9,883.2	10,045.2	40	Marcellus Shale
37	8/15/2018	9,683.2	9,845.2	40	Marcellus Shale
38	8/15/2018	9,483.2	9,645.2	40	Marcellus Shale
39	8/15/2018	9,283.2	9,445.2	40	Marcellus Shale
40	8/15/2018	9,083.2	9,245.2	40	Marcellus Shale
41	8/15/2018	8,883.2	9,045.2	40	Marcellus Shale
42	8/15/2018	8,683.2	8,845.2	40	Marcellus Shale
43	8/16/2018	8,483.2	8,645.2	40	Marcellus Shale
44	8/16/2018	8,283.2	8,445.2	40	Marcellus Shale
45	8/16/2018	8,083.2	8,245.2	40	Marcellus Shale
46	8/16/2018	7,883.2	8,045.2	40	Marcellus Shale
47	8/16/2018	7,683.2	7,845.2	40	Marcellus Shale
48	8/16/2018	7,483.2	7,645.2	40	Marcellus Shale

SHIRLEY31DHSM – FRAC SUMMARY – 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	8/8/2018	92	8,436.0	8,401.0	3,012.0	402,360.0	7,199.00	N/A
2	8/9/2018	90	8,814.0	4,996.0	4,613.0	399,750.0	6,792.00	N/A
3	8/9/2018	89	8,907.0	7,138.0	4,210.0	400,000.0	6,849.00	N/A
4	8/9/2018	89	8,937.0	6,828.0	4,462.0	400,000.0	6,621.00	N/A
5	8/9/2018	90	8,735.0	4,824.0	3,264.0	403,750.0	6,626.00	N/A
6	8/9/2018	91	8,754.0	4,591.0	3,601.0	399,740.0	6,547.98	N/A
7	8/10/2018	88	8,802.0	5,749.0	4,051.0	402,750.0	6,575.00	N/A
8	8/10/2018	91	8,798.0	5,696.0	4,097.0	399,610.0	6,562.98	N/A
9	8/10/2018	95	8,813.0	6,468.0	5,054.0	400,000.0	6,639.00	N/A
10	8/10/2018	95	8,968.0	7,690.0	4,433.0	400,000.0	6,607.00	N/A
11	8/10/2018	91	8,773.0	7,643.0	3,756.0	400,000.0	6,570.00	N/A
12	8/10/2018	91	8,664.0	4,491.0	3,724.0	401,500.0	6,493.00	N/A
13	8/11/2018	92	8,816.0	4,327.0	4,713.0	393,363.0	7,895.00	N/A
14	8/11/2018	94	8,805.0	5,828.0	5,221.0	400,000.0	6,493.00	N/A
15	8/11/2018	93	8,710.0	7,517.0	4,169.0	400,000.0	6,370.00	N/A
16	8/11/2018	95	8,782.0	7,001.0	4,532.0	400,000.0	6,408.00	N/A
17	8/11/2018	97	8,869.0	4,447.0	4,069.0	401,201.0	6,432.00	N/A
18	8/12/2018	96	8,854.0	5,294.0	3,966.0	400,430.0	6,369.00	N/A
19	8/12/2018	94	8,635.0	5,588.0	4,531.0	403,650.0	6,344.98	N/A
20	8/12/2018	95	8,868.0	6,720.0	4,620.0	400,000.0	6,132.00	N/A
21	8/12/2018	94	8,832.0	5,931.0	4,075.0	400,000.0	5,874.00	N/A
22	8/12/2018	96	8,862.0	5,655.0	4,620.0	400,000.0	5,859.00	N/A
23	8/12/2018	99	8,853.0	6,074.0	4,884.0	401,140.0	6,138.02	N/A
24	8/12/2018	100	8,698.0	5,492.0	4,836.0	402,800.0	6,140.98	N/A
25	8/13/2018	100	8,651.0	5,681.0	4,269.0	403,400.0	6,205.98	N/A
26	8/13/2018	97	8,579.0	6,379.0	4,298.0	400,000.0	6,017.00	N/A
27	8/13/2018	97	8,606.0	6,586.0	4,436.0	400,000.0	6,122.00	N/A
28	8/13/2018	96	8,730.0	6,345.0	4,539.0	401,000.0	5,994.00	N/A
29	8/13/2018	99	8,755.0	6,345.0	4,032.0	402,460.0	5,825.02	N/A
30	8/13/2018	100	8,467.0	5,705.0	3,944.0	402,030.0	5,851.00	N/A
31	8/14/2018	100	8,649.0	5,407.0	3,916.0	405,280.0	5,866.00	N/A
32	8/14/2018	99	8,711.0	4,617.0	4,426.0	400,000.0	5,758.98	N/A
33	8/14/2018	99	8,534.0	6,483.0	4,852.0	400,000.0	5,755.00	N/A
34	8/14/2018	99	8,767.0	6,414.0	4,098.0	400,000.0	5,672.00	N/A
35	8/14/2018	98	8,820.0	5,614.0	4,752.0	379,880.0	5,686.00	N/A
36	8/14/2018	99	8,697.0	5,771.0	4,550.0	403,640.0	5,800.02	N/A
37	8/15/2018	99	8,596.0	6,335.0	3,890.0	402,820.0	5,775.00	N/A
38	8/15/2018	95	8,579.0	5,703.0	4,761.0	401,060.0	5,868.02	N/A
39	8/15/2018	97	8,685.0	5,724.0	5,185.0	400,000.0	5,678.00	N/A
40	8/15/2018	93	8,547.0	6,138.0	5,087.0	280,000.0	4,619.00	N/A
41	8/15/2018	100	8,274.0	6,310.0	4,450.0	245,000.0	5,461.00	N/A
42	8/15/2018	98	8,271.0	5,922.0	3,828.0	401,420.0	6,454.05	N/A
43	8/16/2018	97	8,242.0	6,001.0	3,793.0	403,000.0	6,553.00	N/A
44	8/16/2018	97	8,167.0	5,451.0	4,728.0	400,000.0	6,216.00	N/A
45	8/16/2018	98	8,164.0	5,828.0	4,728.0	400,000.0	6,410.00	N/A
46	8/16/2018	97	8,434.0	5,759.0	4,696.0	400,000.0	6,263.00	N/A
47	8/16/2018	99	7,776.0	6,552.0	3,709.0	402,850.0	7,420.00	N/A
48	8/16/2018	99	7,846.0	6,790.0	3,867.0	409,288.0	6,855.02	N/A

LITHOLOGIES CONTINUED

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)
WEIR	2410	2590	2410	2590	SANDSTONE / SILTSTONE
BEREA	2590	2620	2590	2620	SHALE / TRACES SILTSTONE
DEVONIAN SHALE	2620	3010	2620	3010	GREY SHALE
GORDON	3010	3547	3010	3550	SANDSTONE / SILTSTONE
WARREN SAND	3547	3936	3550		SANDSTONE
L HURON	3936	5099			SHALE / SILTSTONE
BENSON	5099	5338			SILTSTONE
ALEXANDER	5338	6387			SILTSTONE / TRACES OF SHALE
CASHAQUA	6387	6531			SHALE
MIDDLE SEX	6531	6630		7211	SHALE
BURKETT	6630	6665	7211	7293	BLACK SHALE
TULLY	6665	6689	7293	7362	LIMESTONE
HAMILTON	6689	6706	7362	7423	BLACK SHALE
MARCELLUS	6706	6713	7423	7460	BLACK SHALE
TD				17,216	

SHR31DHSM 47-095-02491

Drilling Contractor

Tophole
Decker Drilling, Inc
11565 OH-676
Vincent, OH 45784

KOP to TD
Patterson-UTI Drilling Company
207 Carlton Drive
Eighty Four, PA 15330

Cementing Company

Tophole
BJ Services
11211 Farm to Market 2920
Tomball, TX 77375

Production
Halliburton
121 Champion Way Suite #210
Canonsburg, PA 15317

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/8/2018
Job End Date:	8/16/2018
State:	West Virginia
County:	Tyler
API Number:	47-095-02491-00-00
Operator Name:	CNX Gas Company LLC
Well Name and Number:	SHR31 DHSM
Latitude:	39.42025980
Longitude:	-80.82153680
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,732
Total Base Water Volume (gal):	13,151,124
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	Ascent	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	84.65511	None
Sand (Proppant)	Keane	Proppant					
			Crystalline silica: Quartz (SiO2)	14808-60-7	100.00000	14.62661	None
Hydrochloric Acid (7.5%)	Keane	Acid Inhibitor					
			Water	7732-18-5	92.50000	0.55106	None
			Hydrochloric Acid	7647-01-0	7.50000	0.04468	None
KFR-23	Keane	Friction Reducer					
			Water	7732-18-5	50.00000	0.04286	None
			Distillates (petroleum), hydrotreated light	64742-47-8	20.00000	0.01715	None
			copolymer of 2-propenamide	69418-26-4	20.00000	0.01715	None
			oleic acid diethanolamide	93-83-4	2.00000	0.00171	None
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00171	None
KSI-22	Keane	Scale Inhibitor					
			Methanol	67-56-1	50.00000	0.00634	None

			2-propenoic acid, polymer with 2-methyl-2-[(1-oxo-2- propenyl) amino]-1-propensulfonic acid monosodium salt and sodium phosphinite	110224-99-2	10.00000	0.00127	None
MBC-516	Keane	Biocide					
			glutaral	111-30-8	26.70000	0.00445	None
			didecyldimethylammonium chloride	7173-51-5	8.00000	0.00133	None
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00088	None
			Ethanol	64-17-5	2.80000	0.00047	None
KWG-111LS	Keane	Gel					
			Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.00293	None
			Guar gum	9000-30-0	55.00000	0.00293	None
KFEAC-30	Keane	Iron Control					
			acetic acid	64-19-7	60.00000	0.00116	None
			Citric acid	77-92-9	40.00000	0.00077	None
KWBO-2	Keane	Breaker					
			Sodium persulfate	7775-27-1	99.00000	0.00011	None
KAI-12	Keane	Acid Inhibitor					
			Methanol	67-56-1	90.00000	0.00008	None
			isoproyl alcohol	67-63-0	5.00000	0.00000	None
			xylene	1330-20-7	5.00000	0.00000	None
			Alcohols, C7-9-iso-, C8-rich	68526-83-0	5.00000	0.00000	None
			prop-2-yn-1-ol	107-19-7	5.00000	0.00000	None
			Fatty imidazoline	61790-69-0	5.00000	0.00000	None
			ethylbenzene	100-41-4	1.00000	0.00000	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	92.50000	0.55106	
			copolymer of 2-propenamide	69418-26-4	20.00000	0.01715	
			Distillates (petroleum), hydrotreated light	64742-47-8	20.00000	0.01715	
			Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.00293	
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00171	
			oleic acid diethanolamide	93-83-4	2.00000	0.00171	
			didecyldimethylammonium chloride	7173-51-5	8.00000	0.00133	
			2-propenoic acid, polymer with 2-methyl-2-[(1-oxo-2- propenyl) amino]-1-propensulfonic acid monosodium salt and sodium phosphinite	110224-99-2	10.00000	0.00127	
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00088	

			Citric acid	77-92-9	40.00000	0.00077	
			Ethanol	64-17-5	2.80000	0.00047	
			xylene	1330-20-7	5.00000	0.00000	
			prop-2-yn-1-ol	107-19-7	5.00000	0.00000	
			isoproyl alcohol	67-63-0	5.00000	0.00000	
			Alcohols, C7-9-iso-, C8-rich	68526-83-0	5.00000	0.00000	
			Fatty imidazoline	61790-69-0	5.00000	0.00000	
			ethylbenzene	100-41-4	1.00000	0.00000	
			Water	7732-18-5	85.00000		

* 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)

SURFACE HOLE LOCATION (SHL)	APPROXIMATE LANDING POINT
UTM 17 - NAD83 N: 4363430.140(m) E: 515361.612(m) NAD27, WV NORTH N: 337894.717(ft) E: 1626616.583(ft) LAT/LON - NAD83 LAT: N39.4202598 LON: W80.8215368	UTM 17 - NAD83 N: 4363162.449(m) E: 516012.246(m) NAD27, WV NORTH N: 336980.600(ft) E: 1628736.990(ft) LAT/LON - NAD83 LAT: N39.4178359 LON: W80.8139845
BOTTOM HOLE LOCATION (BHL)	**SURFACE HOLE LOCATION (SHL)**
UTM 17 - NAD83 N: 4360411.158(m) E: 516990.676(m) NAD27, WV NORTH N: 327898.570(ft) E: 1631797.060(ft) LAT/LON - NAD83 LAT: N39.3930261 LON: W80.8026880	UTM 17 - NAD83 N: 4363430.046(m) E: 515361.463(m) NAD27, WV NORTH N: 337894.410(ft) E: 1626616.090(ft LAT/LON - NAD83 LAT: N39.4202589 LON: W80.8215385
APPROXIMATE LANDING POINT	**BOTTOM HOLE LOCATION (BHL)**
UTM 17 - NAD83 N: 4363161.763(m) E: 516012.913(m) NAD27, WV NORTH N: 336978.307(ft) E: 1628739.141(ft) LAT/LON - NAD83 LAT: N39.4178297 LON: W80.8139768	UTM 17 - NAD83 N: 4360410.440(m) E: 516988.826(m) NAD27, WV NORTH N: 327896.310(ft) E: 1631790.950(ft) LAT/LON - NAD83 LAT: N39.3930197 LON: W80.8027095

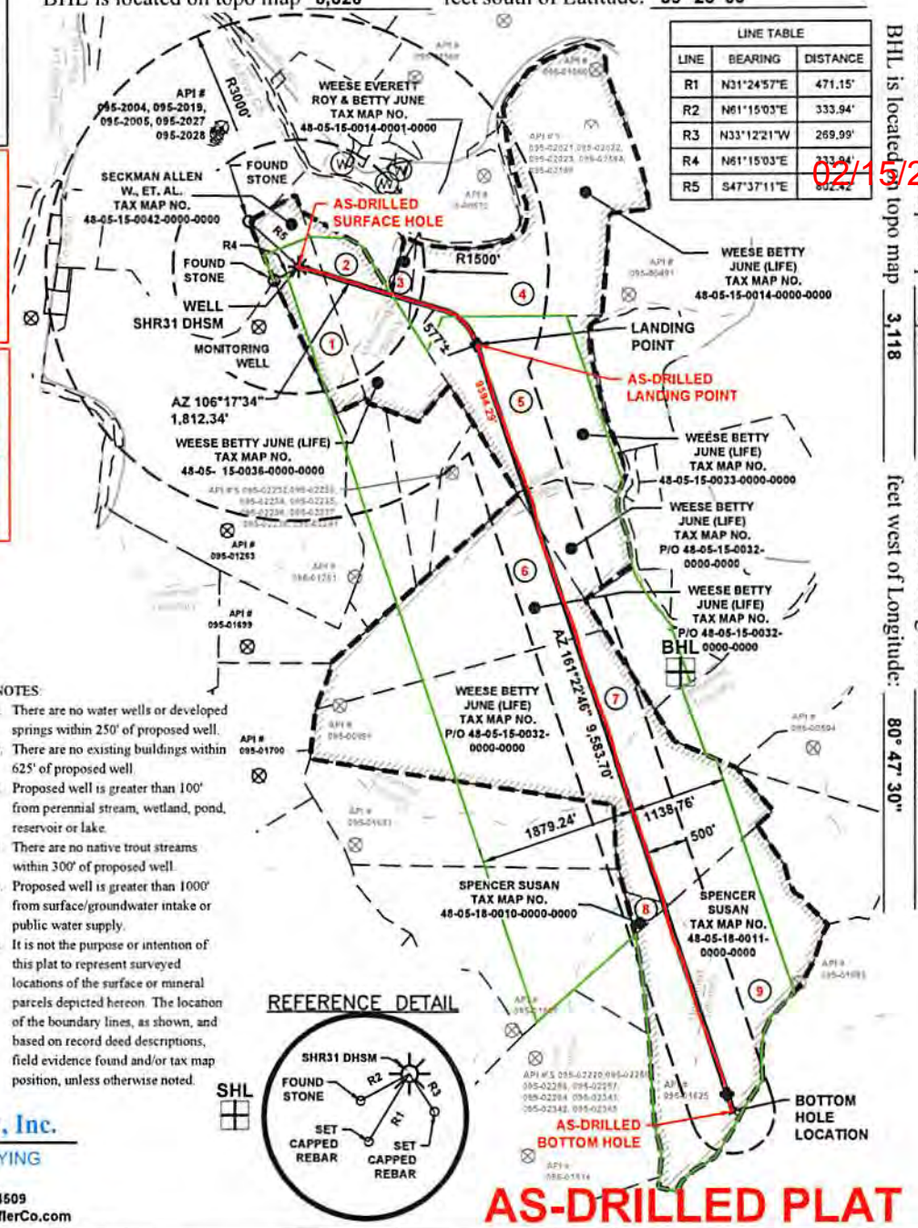
SHL is located on topo map 13,868 feet south of Latitude: 39° 27' 30"

BHL is located on topo map 8,626 feet south of Latitude: 39° 25' 00"

SHL is located on topo map 8,437 feet west of Longitude: 80° 47' 30"

BHL is located on topo map 3,118 feet west of Longitude: 80° 47' 30"

LINE TABLE		
LINE	BEARING	DISTANCE
R1	N31°24'57"E	471.15'
R2	N61°15'03"E	333.94'
R3	N33°12'21"W	269.99'
R4	N61°15'03"E	333.94'
R5	S47°37'11"E	652.42'



LEGEND

- TOPO MAP POINT
- PROPOSED WELL
- WATER SOURCE
- LEASED NUMBER BASED ON ATTACHED WW6A1
- ALL ARE POINTS UNLESS OTHERWISE NOTED
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- PROPOSED HORIZONTAL WELL
- WELL REFERENCE
- STREAM/ WATERWAY
- ROAD
- AS-DRILLED HORIZONTAL WELL
- UNIT BOUDARY

WELLS WITHIN 3000'

- EXISTING GAS WELL
- RECORD GAS WELL

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

REFERENCE DETAIL

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

AS-DRILLED PLAT

FILE #: SHR 31 DHSM

DRAWING #: 3601 - SHR31D WELL - AD-.DWG

SCALE: 1"=2000'

MINIMUM DEGREE OF ACCURACY: 1/2500

PROVEN SOURCE OF ELEVATION: USGS MONUMENT A 142: 724.61'

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.: 21452 L.L.S.: P.S. NO. _____

GARY A. SHEFFLER JR. REGISTERED 21452 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

PLACE SEAL HERE

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

DATE: November 6, 2018

OPERATOR'S WELL #: SHR 31 DHSM

API WELL # 47 (STATE) 095 (COUNTY) _____ (PERMIT)

RECEIVED
Office of Oil and Gas
NOV 9 2018
WV Department of Environmental Protection

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

WATERSHED: McELROY CREEK ELEVATION: 1,111.0'

COUNTY/DISTRICT: TYLER / MCELROY QUADRANGLE: SHIRLEY, WV

SURFACE OWNER: ALLEN W. SECKMAN, ET AL. ACREAGE: 30.48

OIL & GAS ROYALTY OWNER: ALLEN W. SECKMAN, ET AL. ACREAGE: 30.48 (652.92 UNIT ACREAGE)

DRILL [X] 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: MARCELLUS ESTIMATED DEPTH: TVD: 6,725' ± TMD: 17,430' ±

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