

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

API 47-095-02204FH6A County Tyler District Centerville
Quad Shirley Pad Name SHR40HS Field/Pool Name SHR40HS
Farm Name NOBLE ENERGY, INC. Well Number SHR40BHS - Fracture
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 4,362,841.888m Easting 514,242.600m
Landing Point of Curve Northing 4,362,784.276m Easting 514,669.837m
Bottom Hole Northing 4,360,144.525m Easting 515,681.296m

Elevation (ft) 771" 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)
Synthetic Oil Based.

Date Permit Issued 08/01/2017 Date drilling commenced 04/06/2015 Date drilling ceased 06/11/2015
Date completion activities began 08/18/2017 Date completion activities ceased 09/06/2017
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 357 Open mine(s) (Y/N) depths N
Salt water depth(s) ft None Noted for Offsets Void(s) encountered (Y/N) depths N
Coal depth(s) ft N/A Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewed
JOB 3/14/2018

Reviewed by: AS

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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	36"	20"	40'				
Surface	17 1/2"	13 3/8"	500.6'	New	J-55 54.5# / 500.6'		Y
Coal							
Intermediate 1	13 3/8"	9 5/8"	2236.5'	New	HCK-55 36# / 2236.5'		Y
Intermediate 2							
Intermediate 3							
Production	8 3/4"	5 1/2"	16297.8'	New	P-110 20# / 16297.8'		Y
Tubing	5 1/2"	2 3/8"	6980'	New	P-110 4.7# / 6980'		
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	1 sks	20.0	1.57			
Surface	Class A	420 sks	15.60	1.20	92.0	0'	8
Coal							
Intermediate 1	Class A (Lead) / Class H (Tail)	830 sks / 337 sks	15.60 / 12.50	1.18 / 0.94	175.0 / 56.0	0'	8
Intermediate 2							
Intermediate 3							
Production	Class A	740 sks / 2660 sks	13.50 / 14.50	1.58 / 1.27	209.0 / 602.0	3188'	8
Tubing							

Drillers TD (ft) 6372' Loggers TD (ft) 6381'

Deepest formation penetrated: Marcellus Plug back to (ft) Not a Pilot Hole

Plug back procedure: Not a Pilot Hole

Kick Off Depth (ft) 5372'

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 / Surface - 6 centralizers used, one every third joint. Intermediate - 26 centralizers used. Bow spring centralizers on every joint to KOP, on every third joint from KOP to 100' from surface casing. Production - 315 centralizers used. Rigid Bow spring centralizer every third joint from KOP to TOC, rigid bow spring centralizer every joint to KOP.

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS Plug And Perforation Shot Hole *JCB 3/14/2018* RECEIVED Office of Oil & Gas

WAS WELL COMPLETED OPEN HOLE Yes No DETAILS _____ FEB 20 2017

WERE TRACERS USE Yes No TYPES OF TRACER(S) USED _____ WV Department of Environmental Protection

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number Of Perforations	Formation(s)
1	8/18/2017	15985	16107	40	Marcellus
2	8/18/2017	15785	15951	40	Marcellus
3	8/19/2017	15561	15744	40	Marcellus
4	8/19/2017	15335	15518	40	Marcellus
5	8/19/2017	15109	15292	40	Marcellus
6	8/19/2017	14883	15066	40	Marcellus
7	8/20/2017	14657	14840	40	Marcellus
8	8/20/2017	14431	14614	40	Marcellus
9	8/20/2017	14205	14388	40	Marcellus
10	8/20/2017	13979	14162	40	Marcellus
11	8/21/2017	13753	13936	40	Marcellus
12	8/21/2017	13527	13710	40	Marcellus
13	8/21/2017	13301	13484	40	Marcellus
14	8/21/2017	13075	13258	40	Marcellus
15	8/22/2017	12849	13032	40	Marcellus
16	8/22/2017	12453	12636	40	Marcellus
17	8/22/2017	12397	12580	40	Marcellus
18	8/22/2017	12171	12354	40	Marcellus
19	8/22/2017	11945	12128	40	Marcellus
20	8/23/2017	11719	11902	40	Marcellus
21	8/23/2017	11493	11676	40	Marcellus
22	8/23/2017	11267	11450	40	Marcellus
23	8/23/2017	11041	11224	40	Marcellus
24	8/24/2017	10815	10998	40	Marcellus
25	8/24/2017	10589	10772	40	Marcellus
26	8/24/2017	10363	10546	40	Marcellus
27	8/24/2017	10137	10320	40	Marcellus
28	8/25/2017	9911	10094	40	Marcellus
29	8/25/2017	9685	9868	40	Marcellus
30	8/25/2017	9459	9642	40	Marcellus
31	8/25/2017	9233	9437	40	Marcellus
32	8/25/2017	9007	9190	40	Marcellus
33	8/26/2017	8781	8964	40	Marcellus
34	8/26/2017	8555	8738	40	Marcellus
35	8/26/2017	8329	8512	40	Marcellus
36	8/26/2017	8103	8286	40	Marcellus
37	8/26/2017	7900	8062	40	Marcellus
38	8/27/2017	7700	7862	40	Marcellus
39	8/27/2017	7500	7662	40	Marcellus

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number Of Perforations	Formation(s)
40	9/6/2017	7199	7382	40	Marcellus
41	9/6/2017	6973	7156	40	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	8/18/2017	77	8010	N/A	3705	328920		9181
2	8/18/2017	78	7962	5770	3470	398440	8502	4497
3	8/19/2017	85	8033	5788	3835	399120	8504	3562
4	8/19/2017	86	7897	6337	3603	400800	8833	3517
5	8/19/2017	85	8285	6116	4039	400840	7683	3391
6	8/19/2017	80	8095	7535	4832	400020	7905	3346
7	8/20/2017	86	8132	6579	3806	400740	7223	3387
8	8/20/2017	84	8278	5990	4271	400340	7057	3291
9	8/20/2017	80	7917	6822	4050	407440	7644	3351
10	8/21/2017	83	8198	7447	4039	403280	7224	3421
11	8/21/2017	85	8147	6599	3719	397640	7112	3385
12	8/21/2017	85	7947	6703	4068	393600	6874	3288
13	8/21/2017	86	7947	7248	4678	402080	7024	3349
14	8/21/2017	79	8112	6251	3777	400840	6608	3256
15	8/22/2017	82	8261	6971	4823	361180	5982	3246
16	8/22/2017	86	8038	6879	4765	400020	6786	3303
17	8/22/2017	84	8066	7016	4213	398800	6715	3277
18	8/22/2017	84	8186	6917	4155	402740	6387	3210
19	8/23/2017	86	8080	6645	3702	400400	6448	3185
20	8/23/2017	88	8343	7211	3644	400220	6371	3310
21	8/23/2017	84	8001	6710	3987	400340	6303	3215
22	8/23/2017	85	7844	6648	3806	402380	6326	3284
23	8/23/2017	90	8117	6265	4656	400500	7118	3288
24	8/24/2017	93	8282	6284	4188	398420	6337	3211
25	8/24/2017	82	7955	6629	4504	374040	9611	3439
26	8/24/2017	85	7631	6394	4881	400840	6129	3191
27	8/24/2017	92	8106	6588	5095	400640	6482	3223
28	8/25/2017	89	7802	6608	4143	401800	6309	3180
29	8/25/2017	85	7675	7007	3987	398820	6447	3313
30	8/25/2017	84	7543	6918	5404	400520	6374	3210
31	8/25/2017	83	7096	6246	5346	400480	6270	3310
32	8/25/2017	95	7827	6140	5198	401520	5728	3277
33	8/26/2017	97	7782	5930	5088	401220	5838	3324
34	8/26/2017	84	7345	6070	4678	333880	5755	3172
35	8/26/2017	81	6895	6975	4184	400540	6270	3258
36	8/26/2017	89	7365	6390	5660	399920	7794	3375
37	8/27/2017	98	7635	6264	5380	400800	5677	3186
38	8/27/2017	96	7793	6105	4583	400840	5680	3246
39	8/27/2017	85	7285	6385	4242	400600	6727	3326

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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)
40	9/6/2017	94	7103	6003	5019	399820	6099	3236
41	9/6/2017	95	7446	6792	5163	400000	5743	3185

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PRODUCING FORMATION(S)	DEPTHS	TVD	MD
<u>MARCELLUS</u>	<u>6372'</u>		<u>16311'</u>

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 570 psi Bottom Hole 3009 psi DURATION OF TEST 4.5 hrs

OPEN FLOW Gas 3537.61 mcfpd Oil 48 bpd NGL N/A bpd Water 288 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 Precision Drilling Company
Address 5400 D Big Tyler Road City Charleston State WV Zip 25313

Logging Company Baker Hughes
Address 400 Technology Drive City Canonsburg State PA Zip 15317

Cementing Company Allied Cementing Company, LLC
Address 100 Hope Street City Clarksburg State WV Zip 26301

Stimulating Company Keane
Address 14235 US Route 6 City Mansfield State PA Zip 16801

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Please insert additional pages as applicable.

Completed by CNX Gas/WV Operations Company, LLC - Drilling and Completions Telephone 304-884-2000
Signature [Signature] Title Adam Shuter- Completions Superintendent-Gas WV Date 1/12/18

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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	
SHALE	0	1020			
SHALE AND SANDSTONE	1020	1743			
BIG LIME	1743	1871			
BIG INJUN	1871	1978			
PRICE	1978	2129			
WEIR	2129	2233			
SHALE	2233	2320			
BEREA	2320	2328			
SHALE	2328	2509			
SANDSTONE	2509	2611			
SHALE	2611	2747			
SANDSTONE	2747	2765			
SHALE	2765	3239			
WARREN	3239	3285			
SHALE AND SANDSTONE	3285	3637			
LOWER HURON	3637	4395			
SANDSTONE	4395	4433			
SHALE	4433	4627			
SANDSTONE	4627	4683			
SHALE	4683	4807			
BENSON	4807	4851			
SHALE	4851	5051			
ALEXANDER	5051	5109			
SHALE	5109	6050			
CASHAQUA	6050	6161			
MIDDLESEX	6161	6195			
WEST RIVER	6195	6263			
BURKETT	6263	6297			
TULLY	6297	6300			
HAMILTON	6300	6317			
MARCELLUS	6317	6381			
ONONDAGA	6381				

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ACTUAL WELLPATH REPORT (CSV version)
 Prepared by Baker Hughes
 Software System: WellArchitect® 4.0.1

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REFERENCE WELLPATH IDENTIFICATION

Operator NOBLE ENERGY
 Area Tyler County, WV
 Field Tyler
 Facility SHR-40 Pad
 Slot Slot B
 Well SHR-40B-HS STD1
 Wellbore SHR-40B-HS STD1 AWB
 Wellpath SHR-40B-HS STD1 AWP Proj: 16311'
 Sidetrack SHR-40B-HS AWB at S452.00 MD

REPORT SETUP INFORMATION

Projection NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet
 North Refe Grid
 Scale 0.999947
 Convergen 0.85° West
 Software S WellArchitect® 4.0.1
 User Edsaryar
 Report Ger 11/Jun/2015 at 16:27
 DataBase:/ WellArchitectEasternDB/ev1718.xml

WELLPATH Local North	Local East	Easting	Northing	Latitude	Longitude
{ft}	{ft}	[US ft]	[US ft]		
Slot Locati	-16.71	-10.28	1622912	336025.8	39°24'53.6 80°50'04.998"W
Facility Ref			1622923	336042.5	39°24'53.8 80°50'04.870"W
Field Refer			609601.2	0	38°23'48.7 84°21'09.765"W

WELLPATH DATUM

Calculation Minimum curvature
 Horizontal Slot
 Vertical Re Precision 542 (RKB)
 MD Refere Precision 542 (RKB)
 Field Vertix Mean Sea Level
 Precision 5 788.90ft
 Precision 5 788.90ft
 Precision 5 19.40ft
 Section Ori N 0.00, E 0.00 ft
 Section Azi 160.00°

WELLPATH DATA † = interpolated/extrapolated station

	MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dis	Closure Dir	DLS	Build Rate	Turn Rate
	{ft}	[°]	[°]	{ft}	{ft}	{ft}	{ft}	[US ft]	[US ft]			{ft}	[°]	[°/100ft]	[°/100ft]	[°/100ft]
†	0	0	113.49	0	0	0	0	0	1622912	336025.8	39°24'53.6 80°50'04.9	0	0	0	0	0
SHL	19.4	0	113.49	19.4	0	0	0	0	1622912	336025.8	39°24'53.6 80°50'04.9	0	0	0	0	0
	104	0.17	113.49	104	0.09	-0.05	0.12	1622912	336025.7	39°24'53.6 80°50'04.9	0.13	113.49	0.2	0.2	0	0
	204	0.29	163.95	204	0.44	-0.35	0.32	1622913	336025.4	39°24'53.6 80°50'04.9	0.48	137.655	0.22	0.12	50.46	
	304	0.54	155.14	304	1.16	-1.02	0.59	1622913	336024.7	39°24'53.6 80°50'04.9	1.18	150.063	0.26	0.25	-8.81	
	404	0.47	153.08	403.99	2.04	-1.82	0.97	1622913	336023.9	39°24'53.6 80°50'04.9	2.06	151.823	0.07	-0.07	-2.06	
	504	0.46	154.2	503.99	2.85	-2.54	1.33	1622914	336023.2	39°24'53.6 80°50'04.9	2.87	152.335	0.01	-0.01	1.12	
	604	0.69	149.92	603.98	3.84	-3.43	1.81	1622914	336022.3	39°24'53.6 80°50'04.9	3.87	152.153	0.23	0.23	-4.28	

	5545	29.52	76.63	5426.99	46.81	156.33	566.38	1623479	336182.1	39°24'55.2	80°49'57.8	587.56	74.569	3.42	-0.33	6.89				
	5589	30.14	79.92	5465.16	49.96	160.77	587.81	1623500	336186.5	39°24'55.3	80°49'57.5	609.4	74.703	3.98	1.41	7.48				
	5634	31.52	81.78	5503.8	54.31	164.43	610.58	1623523	336190.2	39°24'55.3	80°49'57.2	632.33	74.927	3.73	3.07	4.13				
	5679	32.95	81.68	5541.87	59.19	167.89	634.33	1623547	336193.6	39°24'55.3	80°49'56.9	656.17	75.175	3.18	3.18	-0.22				
	5724	35.13	80.45	5579.15	64.02	171.81	659.21	1623571	336197.6	39°24'55.4	80°49'56.6	681.23	75.392	5.08	4.84	-2.73				
	5769	35.16	78.81	5615.95	68.35	176.47	684.69	1623597	336202.2	39°24'55.4	80°49'56.3	707.06	75.547	2.1	0.07	-3.64				
	5813	35.13	78.64	5651.93	72.19	181.42	709.53	1623622	336207.2	39°24'55.5	80°49'55.9	732.35	75.657	0.23	-0.07	-0.39				
	5858	35.09	79.11	5688.74	76.19	186.41	734.92	1623647	336212.2	39°24'55.5	80°49'55.6	758.2	75.767	0.61	-0.09	1.04				
	5903	35.17	80.66	5725.54	80.63	190.96	760.41	1623673	336216.7	39°24'55.6	80°49'55.3	784.02	75.903	1.99	0.18	3.44				
	5948	35.21	81.02	5762.32	85.51	195.09	786.01	1623698	336220.8	39°24'55.6	80°49'55.0	809.86	76.061	0.47	0.09	0.8				
	5993	35.29	80.36	5799.07	90.33	199.29	811.64	1623724	336225	39°24'55.7	80°49'54.6	835.75	76.204	0.86	0.18	-1.47				
	6037	35.2	79.54	5835	94.71	203.72	836.64	1623749	336229.5	39°24'55.7	80°49'54.3	861.09	76.315	1.09	-0.2	-1.86				
	6082	35.21	79.18	5871.77	98.93	208.51	862.14	1623774	336234.3	39°24'55.8	80°49'54.0	887	76.404	0.46	0.02	-0.8				
KOP 2	6127	35.1	78.04	5908.57	102.81	213.63	887.54	1623800	336239.4	39°24'55.8	80°49'53.7	912.89	76.466	1.48	-0.24	-2.53				
	6171	35.65	81.5	5944.45	107.14	218.15	912.6	1623825	336243.9	39°24'55.9	80°49'53.4	938.31	76.556	4.72	1.25	7.86				
	6216	36.54	90.4	5980.83	114.43	219.99	938.98	1623851	336245.7	39°24'55.9	80°49'53.0	964.41	76.814	11.81	1.98	19.78				
	6261	38.61	100.12	6016.53	126.15	217.43	966.23	1623878	336243.2	39°24'55.9	80°49'52.7	990.39	77.318	13.94	4.6	21.6				
	6306	40.62	102.56	6051.19	141.08	211.78	994.35	1623907	336237.5	39°24'55.8	80°49'52.3	1016.66	77.977	5.65	4.47	5.42				
	6351	41.8	105.52	6085.05	157.68	204.58	1023.11	1623935	336230.3	39°24'55.8	80°49'52.0	1043.36	78.692	5.06	2.62	6.58				
	6395	43.29	111.04	6117.48	176.12	195.23	1051.33	1623964	336221	39°24'55.7	80°49'51.6	1069.3	79.48	9.13	3.39	12.55				
	6440	45.77	117.91	6149.57	198.23	182.14	1079.99	1623992	336207.9	39°24'55.5	80°49'51.2	1095.24	80.427	12.04	5.51	15.27				
	6485	49.68	123.74	6179.85	224.05	165.05	1108.53	1624021	336190.8	39°24'55.4	80°49'50.9	1120.75	81.531	12.93	8.69	12.96				
	6530	52.87	127.62	6208.01	253.04	144.56	1137.02	1624049	336170.3	39°24'55.2	80°49'50.5	1146.17	82.754	9.77	7.09	8.62				
	6575	53.67	129.29	6234.92	283.78	122.13	1165.26	1624078	336147.9	39°24'55.0	80°49'50.1	1171.64	84.017	3.47	1.78	3.71				
	6665	58.42	134.94	6285.2	349.75	72.04	1220.51	1624133	336097.8	39°24'54.5	80°49'49.4	1222.64	86.622	7.41	5.28	6.28				
	6754	65.3	140.94	6327.18	422.44	13.76	1272.92	1624185	336039.5	39°24'53.9	80°49'48.7	1273	89.381	9.75	7.73	6.74				
	6799	68.85	144.45	6344.71	462	-19.21	1298.02	1624210	336006.5	39°24'53.6	80°49'48.4	1298.16	90.848	10.67	7.89	7.8	Top perf	Bottom pe LL	# of Stgs	
	6844	73.02	147.63	6359.41	503.26	-54.48	1321.76	1624234	335971.3	39°24'53.2	80°49'48.1	1322.88	92.36	11.42	9.27	7.07	6912	16311	9399	46.995
	6889	77.25	150.67	6370.96	545.97	-91.81	1344.04	1624256	335933.9	39°24'52.9	80°49'47.8	1347.18	93.908	11.44	9.4	6.76				
	6934	80.29	153.45	6379.72	589.67	-130.8	1364.72	1624277	335895	39°24'52.5	80°49'47.5	1370.97	95.475	9.07	6.76	6.18				
	6979	85.62	158.12	6385.24	634.18	-171.51	1383.01	1624295	335854.3	39°24'52.1	80°49'47.3	1393.61	97.069	15.69	11.84	10.38				
LP	7023	90.89	159.49	6386.58	678.14	-212.5	1398.91	1624311	335813.3	39°24'51.7	80°49'47.1	1414.95	98.637	12.37	11.98	3.11				
	7113	91.05	160.42	6385.06	768.12	-297.03	1429.75	1624342	335728.7	39°24'50.9	80°49'46.7	1460.28	101.736	1.05	0.18	1.03				
	7203	90.4	161.47	6383.92	858.1	-382.09	1459.13	1624371	335643.7	39°24'50.0	80°49'46.3	1508.33	104.674	1.37	-0.72	1.17				
	7292	90.34	160.21	6383.34	947.09	-466.16	1488.34	1624401	335559.6	39°24'49.2	80°49'45.9	1559.63	107.391	1.42	-0.07	-1.42				
	7382	90.22	159.3	6382.9	1037.09	-550.6	1519.48	1624432	335475.2	39°24'48.4	80°49'45.5	1616.16	109.919	1.02	-0.13	-1.01				
	7471	90.22	154.24	6382.56	1125.92	-632.36	1554.57	1624467	335393.4	39°24'47.6	80°49'45.0	1678.26	112.135	5.69	0	-5.69				
	7561	90.03	151.64	6382.36	1215.23	-712.5	1595.51	1624508	335313.3	39°24'46.8	80°49'44.5	1747.37	114.064	2.9	-0.21	-2.89				
	7650	89.66	157.06	6382.61	1303.76	-792.7	1634.02	1624546	335233.1	39°24'46.0	80°49'44.0	1816.15	115.879	6.1	-0.42	6.09				
	7740	89.54	162.87	6383.23	1393.72	-877.21	1664.84	1624577	335148.6	39°24'45.2	80°49'43.6	1881.81	117.785	6.46	-0.13	6.46				
	7830	89.72	163.35	6383.82	1483.58	-963.33	1690.99	1624603	335062.5	39°24'44.3	80°49'43.2	1946.14	119.669	0.57	0.2	0.53				
	7919	89.75	163.72	6384.23	1572.41	-1048.68	1716.22	1624628	334977.1	39°24'43.5	80°49'42.9	2011.25	121.427	0.42	0.03	0.42				
	8009	90.34	162.24	6384.16	1662.29	-1134.73	1742.56	1624655	334891.1	39°24'42.6	80°49'42.5	2079.45	123.072	1.77	0.66	-1.64				
	8098	90.18	162.01	6383.75	1751.23	-1219.44	1769.88	1624682	334806.4	39°24'41.8	80°49'42.2	2149.3	124.567	0.31	-0.18	-0.26				
	8188	90.34	163.54	6383.34	1841.12	-1305.4	1796.53	1624709	334720.4	39°24'40.9	80°49'41.8	2220.71	126.003	1.71	0.18	1.7				
	8278	90.34	164.08	6382.81	1930.92	-1391.82	1821.62	1624734	334634	39°24'40.1	80°49'41.5	2292.48	127.382	0.6	0	0.6				
	8367	90.12	163.28	6382.45	2019.73	-1477.24	1846.63	1624759	334548.6	39°24'39.3	80°49'41.1	2364.8	128.659	0.93	-0.25	-0.9				
	8457	90.15	160.98	6382.24	2109.66	-1562.89	1874.24	1624786	334463	39°24'38.4	80°49'40.8	2440.37	129.824	2.56	0.03	-2.56				
	8546	90.03	158.54	6382.1	2198.66	-1646.39	1905.03	1624817	334379.5	39°24'37.6	80°49'40.4	2517.88	130.835	2.74	-0.13	-2.74				
	8636	89.97	158.42	6382.1	2288.62	-1730.11	1938.04	1624850	334295.7	39°24'36.8	80°49'39.9	2597.94	131.756	0.15	-0.07	-0.13				
	8725	90.09	159.23	6382.05	2377.6	-1813.1	1970.19	1624882	334212.8	39°24'36.0	80°49'39.5	2677.5	132.622	0.92	0.13	0.91				
	8815	90.12	158.96	6381.89	2467.59	-1897.18	2002.31	1624915	334128.7	39°24'35.1	80°49'39.1	2758.35	133.456	0.3	0.03	-0.3				
	8904	90.15	159.19	6381.68	2556.58	-1980.31	2034.09	1624946	334045.6	39°24'34.3	80°49'38.7	2838.86	134.232	0.26	0.03	0.26				
	8994	90.18	162.13	6381.42	2646.57	-2065.22	2063.89	1624976	333960.6	39°24'33.5	80°49'38.3	2919.72	135.018	3.27	0.03	3.27				
	9084	90.18	162.34	6381.14	2736.5	-2150.93	2091.35	1625004	333874.9	39°24'32.6	80°49'37.9	3000.04	135.805	0.23	0	0.23				

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9173	90.12	160.74	6380.9	2825.46	-2235.35	2119.53	1625032	333790.5	39*24*31.8	80*49*37.5	3080.45	136.523	1.8	-0.07	-1.8
9262	90.06	160.11	6380.77	2914.46	-2319.2	2149.33	1625062	333706.7	39*24*31.0	80*49*37.1	3162.03	137.177	0.71	-0.07	-0.71
9352	90.15	158.83	6380.6	3004.45	-2403.48	2180.92	1625093	333622.4	39*24*30.2	80*49*36.7	3245.48	137.779	1.43	0.1	-1.42
9441	90.09	159.36	6380.41	3093.44	-2486.62	2212.67	1625125	333539.3	39*24*29.3	80*49*36.3	3328.55	138.356	0.6	-0.07	0.6
9531	90.12	160.11	6380.25	3183.44	-2571.77	2243.84	1625156	333454.8	39*24*28.5	80*49*35.9	3412.5	138.888	0.83	0.03	0.83
9620	90.03	160.22	6380.13	3272.44	-2654.07	2274.04	1625186	333371.1	39*24*27.7	80*49*35.5	3495.58	139.417	0.16	-0.1	0.12
9710	89.94	160.71	6380.16	3362.44	-2739.59	2304.14	1625216	333286.3	39*24*26.8	80*49*35.1	3579.72	139.934	0.55	-0.1	0.54
9799	90.43	162.62	6379.87	3451.39	-2824.07	2332.13	1625244	333201.8	39*24*26.0	80*49*34.7	3662.54	140.45	2.22	0.55	2.15
9889	90.46	161.76	6379.17	3541.32	-2909.75	2359.66	1625272	333116.2	39*24*25.2	80*49*34.3	3746.28	140.96	0.96	0.03	-0.96
9978	90.28	158.43	6378.59	3630.31	-2993.62	2389.96	1625302	333032.5	39*24*24.4	80*49*33.9	3830.46	141.396	1.41	-0.2	-3.74
10068	90.09	156.51	6378.3	3720.22	-3076.55	2424.94	1625337	332949.4	39*24*23.5	80*49*33.5	3917.02	141.761	2.14	-0.21	-2.13
10157	89.94	154.95	6378.28	3808.97	-3157.68	2461.02	1625373	332868.2	39*24*22.7	80*49*33.0	4003.44	142.088	1.76	-0.17	-1.75
10247	89.91	157.49	6378.4	3898.76	-3240.03	2497.31	1625409	332785.9	39*24*21.9	80*49*32.5	4090.76	142.376	2.82	-0.03	2.82
10336	89.91	160.95	6378.54	3987.74	-3323.23	2528.88	1625441	332702.7	39*24*21.1	80*49*32.1	4176.01	142.73	3.89	0	3.89
10426	90.31	161.56	6378.37	4077.72	-3408.45	2557.8	1625470	332617.5	39*24*20.3	80*49*31.7	4261.44	143.114	0.81	0.44	0.68
10515	90.4	163.26	6377.81	4166.64	-3493.29	2584.69	1625497	332532.7	39*24*19.4	80*49*31.4	4345.54	143.502	1.91	0.1	1.91
10605	90.49	162.44	6377.11	4256.52	-3579.28	2611.23	1625523	332446.7	39*24*18.6	80*49*31.0	4430.55	143.888	0.92	0.1	-0.91
10695	90.06	158.97	6376.68	4346.5	-3664.21	2640.97	1625553	332361.7	39*24*17.8	80*49*30.6	4516.77	144.218	3.88	-0.48	-3.86
10784	90.03	156.02	6376.61	4435.4	-3749.43	2673.03	1625587	332279.5	39*24*17.0	80*49*30.2	4603.42	144.472	3.31	-0.03	-3.31
10874	89.66	156.18	6376.86	4525.19	-3828.71	2711.49	1625624	332197.3	39*24*16.1	80*49*29.7	4691.61	144.694	4.33	0.45	4.33
10963	89.69	160.03	6377.36	4614.13	-3911.27	2744.67	1625657	332114.7	39*24*15.3	80*49*29.2	4778.21	144.941	4.33	0.03	4.33
11053	89.66	162.69	6377.92	4704.06	-3996.54	2773.44	1625686	332029.4	39*24*14.5	80*49*28.5	4864.6	145.241	2.96	-0.1	2.96
11142	89.63	160.23	6377.58	4793.09	-4080.92	2801.73	1625714	331945.1	39*24*13.7	80*49*28.5	4950.11	145.529	2.76	0.03	-2.76
11232	90.18	160.43	6378.67	4883.05	-4165.66	2832.03	1625744	331860.3	39*24*12.8	80*49*28.1	5037.17	145.779	0.65	0.61	0.22
11321	90.34	160.74	6378.26	4972.05	-4249.6	2861.61	1625774	331776.4	39*24*12.0	80*49*27.7	5123.27	146.044	0.39	0.18	0.35
11411	90.25	161.33	6377.8	5062.03	-4334.04	2891.86	1625803	331691.3	39*24*11.2	80*49*27.3	5210.26	146.3	0.66	-0.1	0.66
11501	90.03	161.64	6377.58	5152	-4420.06	2919.44	1625832	331606.9	39*24*10.3	80*49*26.9	5297.17	146.555	0.42	-0.24	0.34
11680	90.03	156.99	6377.58	5241.99	-4505.09	2948.9	1625861	331520.9	39*24*9.5	80*49*26.5	5384.41	146.792	1.67	-0.07	-1.67
11770	90	153.49	6377.56	5330.95	-4587.93	2981.42	1625894	331438.1	39*24*8.7	80*49*26.1	5471.56	146.983	3.54	0.07	-3.54
11859	89.88	154.09	6377.65	5420.62	-4669.64	3019.11	1625921	331356.4	39*24*7.9	80*49*25.6	5560.03	147.116	3.89	-0.03	-3.89
11949	89.97	157.41	6377.77	5509.1	-4749.49	3058.42	1625951	331276.5	39*24*7.1	80*49*25.1	5649.03	147.221	0.69	-0.13	0.67
12038	89.57	161.36	6378.12	5598.84	-4831.54	3095.38	1626008	331194.5	39*24*6.3	80*49*24.6	5738.04	147.354	3.69	0.1	3.69
12128	89.54	160.71	6378.8	5687.82	-4914.82	3126.71	1626039	331111.2	39*24*5.5	80*49*24.2	5825.1	147.536	4.46	-0.45	4.44
12217	89.54	159.93	6379.49	5777.8	-4999.93	3155.95	1626068	331026.1	39*24*4.6	80*49*23.8	5912.65	147.74	0.72	0	-0.72
12307	89.94	164.24	6379.9	5866.79	-5083.73	3185.95	1626098	330942.3	39*24*3.8	80*49*23.4	5999.54	147.925	0.88	-0.03	-0.88
12397	89.94	165.19	6379.99	5956.71	-5169.35	3213.6	1626126	330856.7	39*24*3.0	80*49*23.0	6086.82	148.132	4.81	0.44	4.79
12486	89.85	164.18	6380.16	6046.41	-5256.16	3237.33	1626149	330769.9	39*24*2.1	80*49*22.7	6173.13	148.371	1.06	0	1.06
12576	89.75	161.24	6380.47	6135.11	-5342	3260.84	1626173	330684.9	39*24*1.3	80*49*22.4	6258.59	148.599	1.48	-0.1	-1.13
12666	90.25	160.92	6380.47	6225	-5427.92	3287.58	1626200	330598.1	39*24*0.4	80*49*22.0	6345.91	148.798	3.27	-0.11	-3.27
12755	90.12	161.24	6380.18	6314.98	-5513.06	3316.76	1626229	330513	39*23*59.6	80*49*21.7	6433.87	148.968	0.66	0.56	-0.36
12845	90.25	161.99	6379.89	6403.96	-5597.25	3345.62	1626258	330428.8	39*23*58.8	80*49*21.3	6520.92	149.132	0.39	-0.15	0.36
12934	90.12	156.97	6379.61	6493.93	-5682.66	3374.01	1626286	330343.4	39*23*57.9	80*49*20.9	6608.82	149.301	0.85	0.14	0.83
13024	90.15	155.23	6379.39	6582.9	-5765.96	3405.19	1626317	330260.1	39*23*57.1	80*49*20.5	6696.41	149.455	5.64	-0.15	-5.64
13114	89.78	153.24	6379.45	6672.68	-5848.26	3441.66	1626354	330177.8	39*23*56.3	80*49*20.1	6785.8	149.524	1.93	0.03	-1.93
13203	89.78	157.7	6379.79	6762.22	-5929.31	3480.77	1626393	330096.8	39*23*55.5	80*49*19.5	6875.5	149.585	2.25	-0.41	-2.21
13293	90.09	163.5	6379.89	6850.92	-6010.26	3517.72	1626430	330015.8	39*23*54.7	80*49*19.0	6964.01	149.66	5.01	0	5.01
13382	89.69	163.6	6380.06	6940.88	-6090.11	3557.6	1626465	329931.6	39*23*53.9	80*49*18.6	7052.34	149.799	6.45	0.34	6.44
13472	90.22	161.95	6380.13	7029.71	-6169.43	3599.45	1626515	329845.6	39*23*53.0	80*49*18.3	7138.84	149.969	0.46	-0.45	0.11
13562	90.28	159.41	6379.74	7119.6	-6266.43	3599.45	1626541	329759.7	39*23*52.2	80*49*17.9	7226.63	150.127	1.93	0.59	-1.83
13651	90.18	158.94	6379.38	7209.58	-6351.35	3629.22	1626574	329674.8	39*23*51.3	80*49*17.5	7315.11	150.256	2.82	0.07	-2.82
13740	90.37	158.94	6378.96	7298.56	-6434.27	3664.21	1626606	329591.8	39*23*50.5	80*49*17.1	7403.16	150.357	1.59	-0.11	-1.58
13830	90.46	162.45	6378.3	7387.55	-6517.06	3694.54	1626636	329509.1	39*23*49.7	80*49*16.7	7491.28	150.453	1.08	0.21	1.06
13919	90.43	163.01	6377.61	7477.5	-6601.98	3723.95	1626662	329424.1	39*23*48.9	80*49*16.3	7579.84	150.574	3.9	0.1	3.9
14009	90.18	160.6	6377.13	7566.4	-6686.97	3750.37	1626691	329339.2	39*23*48.0	80*49*15.9	7666.87	150.714	0.63	-0.03	0.63
				7656.34	-6772.46	3778.48		329253.7	39*23*47.2	80*49*15.5	7755.2	150.842	2.69	-0.28	-2.68

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14099	90.18	161.3	6376.85	7746.33	-6857.53	3807.85	1626720	329168.6	39°23'46.4	80°49'15.2	7843.81	150.957	0.78	0	0.78	
14189	90.22	162.4	6376.54	7836.28	-6943.05	3835.89	1626748	329083.1	39°23'45.5	80°49'14.8	7932.21	151.08	1.22	0.04	1.22	
14278	90.25	159.92	6376.17	7925.26	-7027.27	3864.62	1626777	328998.9	39°23'44.7	80°49'14.4	8019.84	151.192	2.79	0.03	-2.79	
14367	90.31	157.22	6375.74	8014.22	-7110.11	3897.14	1626809	328916	39°23'43.9	80°49'14.0	8108.11	151.272	3.03	0.07	-3.03	
14457	90.18	158.85	6375.35	8104.16	-7193.58	3930.8	1626843	328832.6	39°23'43.1	80°49'13.5	8197.48	151.346	1.82	-0.14	1.81	
14547	90.18	159.49	6375.07	8194.15	-7277.69	3962.8	1626875	328748.5	39°23'42.2	80°49'13.1	8286.65	151.431	0.71	0	0.71	
14636	90.34	159.45	6374.67	8283.15	-7361.04	3994.01	1626906	328665.1	39°23'41.4	80°49'12.7	8374.79	151.516	0.19	0.18	-0.04	
14726	90.31	159.59	6374.16	8373.14	-7445.35	4025.5	1626938	328580.8	39°23'40.6	80°49'12.3	8463.92	151.601	0.16	-0.03	0.16	
14816	90.28	160.36	6373.69	8463.14	-7529.91	4056.32	1626968	328496.3	39°23'39.8	80°49'11.9	8552.97	151.689	0.86	-0.03	0.86	
14905	90.22	160.11	6373.3	8552.14	-7613.66	4086.42	1626999	328412.5	39°23'38.9	80°49'11.5	8640.99	151.777	0.29	-0.07	-0.28	
14995	89.97	157.51	6373.15	8642.11	-7697.57	4118.95	1627031	328328.6	39°23'38.1	80°49'11.0	8730.31	151.849	2.9	-0.28	-2.89	
15085	90.06	155.86	6373.13	8731.96	-7780.22	4154.57	1627067	328246	39°23'37.3	80°49'10.6	8819.99	151.898	1.84	0.1	-1.83	
15174	89.85	153.02	6373.2	8820.53	-7860.5	4192.96	1627105	328165.7	39°23'36.5	80°49'10.1	8908.89	151.924	3.2	-0.24	-3.19	
15264	89.85	158.47	6373.44	8910.25	-7942.52	4229.92	1627142	328083.7	39°23'35.7	80°49'09.6	8998.66	151.962	6.06	0	6.06	
15353	89.91	161.66	6373.62	8999.24	-8026.18	4260.26	1627172	328000	39°23'34.9	80°49'09.2	9086.77	152.041	3.58	0.07	3.58	
15443	89.91	163.46	6373.76	9089.14	-8112.04	4287.23	1627199	327914.2	39°23'34.0	80°49'08.8	9175.27	152.143	2	0	2	
15533	90.09	160.79	6373.76	9179.07	-8197.69	4314.85	1627227	327828.5	39°23'33.2	80°49'08.4	9263.91	152.24	2.97	0.2	-2.97	
15622	90.28	156.23	6373.48	9268.02	-8280.48	4347.45	1627260	327745.7	39°23'32.4	80°49'08.0	9352.36	152.299	5.13	0.21	-5.12	
15712	90.28	161.02	6373.04	9357.97	-8364.26	4380.24	1627292	327661.9	39°23'31.6	80°49'07.6	9441.79	152.36	5.32	0	5.32	
15801	90.31	165.04	6372.58	9446.82	-8449.37	4406.21	1627318	327576.8	39°23'30.7	80°49'07.2	9529.25	152.459	4.52	0.03	4.52	
15891	90.34	163.74	6372.07	9536.55	-8536.04	4430.43	1627343	327490.2	39°23'29.9	80°49'06.9	9617.32	152.57	1.44	0.03	-1.44	
15980	90.03	159.12	6371.78	9625.5	-8620.39	4458.77	1627371	327405.8	39°23'29.0	80°49'06.5	9705.24	152.65	5.2	-0.35	-5.19	
16070	89.88	159.67	6371.85	9715.5	-8704.63	4490.44	1627403	327321.6	39°23'28.2	80°49'06.1	9794.62	152.712	0.63	-0.17	0.61	
16160	90.03	159.41	6371.92	9805.49	-8788.95	4521.9	1627434	327237.3	39°23'27.4	80°49'05.7	9883.99	152.774	0.33	0.17	-0.29	
16249	90.06	159.86	6371.85	9894.49	-8872.39	4552.87	1627465	327153.9	39°23'26.6	80°49'05.3	9972.36	152.835	0.51	0.03	0.51	
16286	89.88	160.67	6371.87	9931.49	-8907.21	4565.36	1627477	327119	39°23'26.2	80°49'05.1	10009.05	152.863	2.24	-0.49	2.19	
BHL	16311	89.88	160.67	6371.92	9956.49	-8930.81	4573.64	1627486	327095.4	39°23'26.0	80°49'05.0	10033.82	152.882	0	0	0

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape	Comment
SHR-40B-HS BHL Rev-3		6373.86	-8931.97	4569.64	1627482	327094.3	39°23'26.0	80°49'05.1	point	
SHR-40B-HS LP Plat		6376.9	-232.3	1403.23	1624315	335793.5	39°24'51.5	80°49'47.0	point	
SHR-40B-HS LP Rev-3		6390	-239.81	1405.96	1624318	335786	39°24'51.4	80°49'47.0	point	
SHR-40 Pad LL		6599.4	16.71	10.28	1622923	336042.5	39°24'53.8	80°50'04.8	polygon	

WELLPATH COMPOSITION Ref Wellbore: SHR-40B-HS ST01 AWB Ref Wellpath: SHR-40B-HS ST01 AWP Proj: 16311'

Log Name/	Start MD [ft]	End MD [ft]	Pos Unc	Model
O1_MS Gyr	19.4	3629		Generic gyro - northseeking (Standard)
O2_SDI MV	3629	5364		ISCWSA MWD, Rev. 2 (Standard)
O3_BHI AT	5364	16286		NaviTrak (AT Curve Short Spaced)
Projection	16286	16311		Blind Drilling (std)

COMMENTS

Wellpath general comments

API: 47-095-02204-0100

BHI Job #: 7278210

Rig: Precision 542

Duration: 6/3/2015-6/8/2015

MS Gyro <8-3/4> (100'-3625')"

SDI MWD <8-3/4> (3625')(3680'-5980')"

BHI AT Curve <8-3/4> (5364')(5372'-16286')"

Projected MD at TD: 16311'

Hydraulic Fracturing Fluid Product Component Information Disclosure

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Job Start Date:	8/18/2017
Job End Date:	9/6/2017
State:	West Virginia
County:	Tyler
API Number:	47-095-02204-00-00
Operator Name:	CONSOL Energy Inc.
Well Name and Number:	SHRL40BHS
Latitude:	39.41497840
Longitude:	-80.83454940
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,387
Total Base Water Volume (gal):	12,283,530
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	85.48382	None
Sand (Proppant)	Keane	Proppant	Crystalline silica: Quartz (SiO2)	14808-60-7	100.00000	13.52264	None
Hydrochloric Acid (7.5%)	Keane	Acid Inhibitor	Water	7732-18-5	92.50000	0.78326	None
			Hydrochloric Acid	7647-01-0	7.50000	0.06351	None
Hydrochloric Acid (15%)	Keane	Acidizing	Water	7732-18-5	85.00000	0.04448	None
			Hydrochloric Acid	7647-01-0	15.00000	0.00785	None
KFR-23	Keane	Friction Reducer	Distillates (petroleum), hydrotreated light	64742-47-8	45.00000	0.03224	None
			copolymer of 2-propenamide	Proprietary	10.00000	0.00717	None
			oleic acid diethanolamide	93-83-4	2.00000	0.00143	None
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00143	None
KFEAC-30	Keane	Iron Control					

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			acetic acid	64-19-7	60.00000	0.00296	None
			Citric acid	77-92-9	40.00000	0.00197	None
MBC-516	Keane	Biocide					
			glutaral	111-30-8	26.70000	0.00224	None
			didecyldimethylammonium chloride	7173-51-5	8.00000	0.00067	None
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00044	None
KSI-19	Keane	Scale Inhibitor					
			Methanol	67-56-1	30.00000	0.00247	None
KAI-12	Keane	Acid Inhibitor					
			Methanol	67-56-1	90.00000	0.00088	None
			prop-2-yn-1-ol	107-19-7	5.00000	0.00005	None
			Fatty imidazoline	61790-69-0	5.00000	0.00005	None
			isoproyl alcohol	67-63-0	5.00000	0.00005	None
			Alcohols, C7-9-iso-, C8-rich	68526-83-0	5.00000	0.00005	None
			xylene	1330-20-7	5.00000	0.00005	None
			ethylbenzene	100-41-4	1.00000	0.00001	None
KWG-111LS	Keane	Gel					
			Guar gum	9000-30-0	55.00000	0.00015	None
			Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.00015	None
KWBO-2	Keane	Breaker					
			Sodium persulfate	7775-27-1	99.00000	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	0.78326	
			Water	7732-18-5	85.00000	0.04448	
			copolymer of 2-propenamide	Proprietary	10.00000	0.00717	
			Citric acid	77-92-9	40.00000	0.00197	
			oleic acid diethanolamide	93-83-4	2.00000	0.00143	
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00143	
			didecyldimethylammonium chloride	7173-51-5	8.00000	0.00067	
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00044	
			Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.00015	
			Fatty imidazoline	61790-69-0	5.00000	0.00005	
			xylene	1330-20-7	5.00000	0.00005	
			Alcohols, C7-9-iso-, C8-rich	68526-83-0	5.00000	0.00005	
			isoproyl alcohol	67-63-0	5.00000	0.00005	
			prop-2-yn-1-ol	107-19-7	5.00000	0.00005	
			ethylbenzene	100-41-4	1.00000	0.00001	

* 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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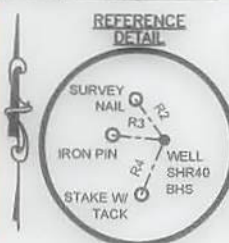
WV Department of
Environmental Protection

Well is located on topo map 618 feet south of Latitude: 39° 25' 00"

SURFACE HOLE LOCATION (SHL)
 UTM 17 - NAD83
 N: 4362841.886
 E: 514242.600
 NAD27 WV NORTH
 N: 336025.750
 E: 1622912.310
 LAT/LON - NAD83
 LAT: N39.4149784
 LON: W80.8345494

APPROX. LANDING POINT
 UTM 17 - NAD83
 N: 4362784.276
 E: 514069.837
 NAD27 WV NORTH
 N: 335813.290
 E: 1624311.140
 LAT/LON - NAD83
 LAT: N39.4144822
 LON: W80.8295878

BOTTOM HOLE LOCATION
 UTM 17 - NAD83
 N: 4360144.525
 E: 515681.296
 NAD27 WV NORTH
 N: 327085.430
 E: 1627485.700
 LAT/LON - NAD83
 LAT: N39.3906484
 LON: W80.8178999



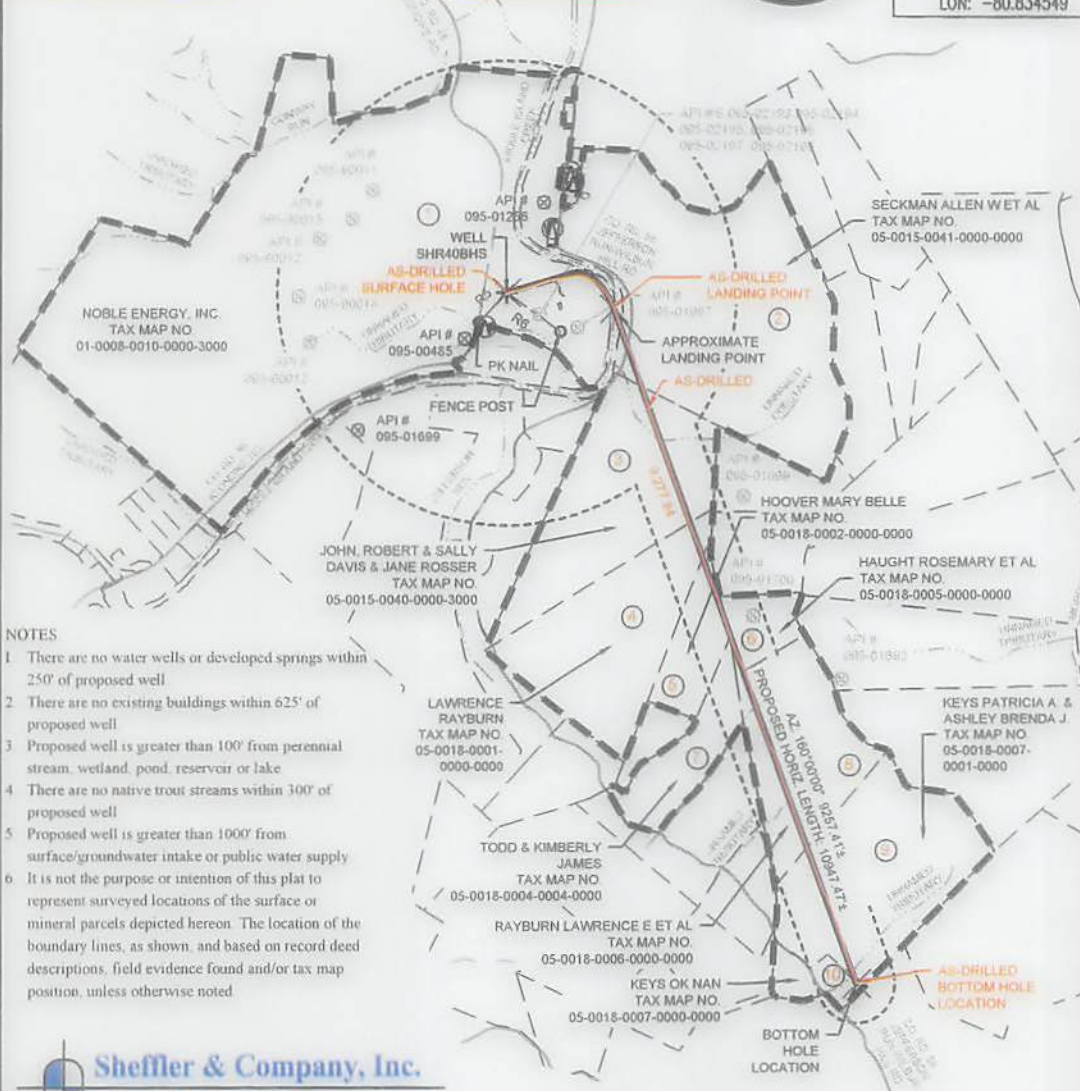
SURFACE HOLE LOCATION (SHL)
 UTM 17 - NAD83
 N: 4362841.890
 E: 514242.601
 NAD27 WV NORTH
 N: 336025.757
 E: 1622912.312
 LAT/LON DATUM-NAD83
 LAT: 39.414978
 LON: -80.834549

APPROX. LANDING POINT
 UTM 17 - NAD83
 N: 4362778.266
 E: 514671.254
 NAD27 WV NORTH
 N: 335793.460
 E: 1624315.460
 LAT/LON DATUM-NAD83
 LAT: 39.414398
 LON: -80.829571

BOTTOM HOLE LOCATION
 UTM 17 - NAD83
 N: 4360144.151
 E: 515680.084
 NAD27 WV NORTH
 N: 327094.270
 E: 1627481.700
 LAT/LON DATUM-NAD83
 LAT: 39.390645
 LON: -80.817914

LINE TABLE

LINE	BEARING	DISTANCE
R2	S35°20'S2'E	258.29'
R3	S85°12'03"E	273.70'
R4	N22°54'55"E	304.80'
R5	N43°54'26"E	534.12'
R6	N54°28'S2"W	860.46'



- 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.

LEGEND

- TOPO MAP POINT
- TOPO MAP BOTTOM HOLE
- PROPOSED WELL
- WATER SOURCE
- LEASED NUMBER BASED ON ATTACHED WMSA1
- ALL ARE POINTS UNLESS OTHERWISE NOTED
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- PROPOSED
- HORIZONTAL WELL
- WELL REFERENCE
- STREAM WATERWAY
- ROAD
- AS-DRILLED HORIZONTAL WELL

WELLS WITHIN 3000'

- EXISTING GAS WELL
- RECORD GAS WELL

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

AS-DRILLED PLAT

FILE #: SHR 40 BHS
 DRAWING #: SHR 40 BHS
 SCALE: 1"=2500'
 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: *[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: SEPTEMBER 4, 2014, OCTOBER 27, 2017

OPERATOR'S WELL #: SHR 40 BHS

API WELL # 47 095 2204
 STATE COUNTY PERMIT



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

WATERSHED: MIDDLE ISLAND CREEK ELEVATION: 771'
 COUNTY/DISTRICT: CENTERVILLE / TYLER QUADRANGLE: SHIRLEY, W. VA
 SURFACE OWNER: NOBLE ENERGY, INC ACREAGE: 543.35
 OIL & GAS ROYALTY OWNER: DAVID L. MAPLE, ET AL. ACREAGE: 351.16

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: MARCELLUS ESTIMATED DEPTH: TVD: 6,372' ± TMD: 16,311' ±
 WELL OPERATOR: CNX GAS COMPANY, LLC DESIGNATED AGENT: CHRIS TURNER
 Address: 1000 CONSOL ENERGY DRIVE, CANNONSBURG, PA 15317 Address: 1 DOMINION DRIVE
 City: CANNONSBURG State: PA Zip Code: 15317 City: JANE LEW State: WV Zip Code: 26378

Well is located on topo map 618 feet west of Longitude: 80° 50' 00"

Well is located on topo map 9,484 feet south of Latitude: 39° 25' 00"

Well is located on topo map 7,418 feet west of Longitude: 80° 47' 30"



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

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