

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

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Office of Oil and Gas  
JUN 17 2021  
WV Department of  
Environmental Protection

API 47-095-02649 County TYLER District CENTERVILLE  
 Quad WEST UNION Pad Name SHR38 Field/Pool Name \_\_\_\_\_  
 Farm name ASH Well Number SHR38JHSM  
 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 4358034.06 Easting 514179.72  
 Landing Point of Curve Northing 4357980.20 Easting 513747.81  
 Bottom Hole Northing 4360666.41 Easting 512769.12

Elevation (ft) 1,011' 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 10.18.2019 Date drilling commenced 12.23.2019 Date drilling ceased 12.31.2019  
 Date completion activities began 2/15/2021 Date completion activities ceased 2/26/2021  
 Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 225' Open mine(s) (Y/N) depths N  
 Salt water depth(s) ft 1,920' Void(s) encountered (Y/N) depths N  
 Coal depth(s) ft 430, 580, 900 TRACES: 160, 260, 1380, 1400, 1480, 1500 Cavern(s) encountered (Y/N) depths N  
 Is coal being mined in area (Y/N) N

Reviewed by:  
DMH

08/27/2021

API 47-095 - 02649

Farm name ASH

Well number SHR38JHSM

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"	100'	NEW	94 lb/ft	N/A	GROUT TO SURFACE
Surface	17.5"	13.375"	600'	NEW	J-55 54.5 lb/ft	N/A	Y - CEMENT TO SURFACE
Coal							
Intermediate 1	12.25"	9.625"	2,560'	NEW	J-55 36 lb/ft	N/A	Y - CEMENT TO SURFACE
Intermediate 2							
Intermediate 3							
Production	8.75" & 8.5"	5.5"	16,610	NEW	P-110CY 20 lb/ft	N/A	
Tubing	5.5"	2.875	7,027	NEW	P-110CY 6.5 lb/ft	N/A	
Packer type and depth set							

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Comment Details ALL DEPTHS ARE REFERENCE TO GROUND LEVEL (-29' KB)

WV Department of Environmental Protection

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor							
Surface	HALCEM	510	15.8	1.169	596	0	8
Coal							
Intermediate 1	HALCEM	845	15.8	1.147	970	0	8
Intermediate 2							
Intermediate 3							
Production	EXP NEOCEM / NEOCEM	1,160(L) / 2,420 (T)	15	1.136 (L) / 1.132 (T)	1,318 (L) / 2,739 (T)	125'	8
Tubing							

Drillers TD (ft) 16,626'

Loggers TD (ft) 16,626'

Deepest formation penetrated MARCELLUS

Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 5,821' (GL)

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 = 6; Centralize every other joint from shoe to surface  
INTERMEDIATE = 31; Centralize every other joint from shoe to surface  
PRODUCTION = 343; 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

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**PERFORATION RECORD**

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

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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 Pro-pant (lbs)	Amount of Water bbls	Amount of Nitro-en/other (units)
		SEE	ATTACHMENT	2				

Please insert additional pages as applicable.

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Farm name ASH

Well number SHR38JHSM

PRODUCING FORMATION(S)                      DEPTHS  
 MARCELLUS                                      7099                      TVD                      6506                      MD

Please insert additional pages as applicable.

GAS TEST     Build up     Drawdown     Open Flow                      OIL TEST     Flow     Pump

SHUT-IN PRESSURE    Surface 1550                      psi                      Bottom Hole                      psi                      DURATION OF TEST 24                      hrs

OPEN FLOW                      Gas                      Oil                      NGL                      Water                      GAS MEASURED BY  
 6117.1                      mcfpd                      131                      bpd                      0                      bpd                      914                      bpd                       Estimated     Orifice     Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		Office of Oil and Gas JUN 17 2021 WV Department of FORMATION LOGGING & RECONSTRUCTION

Please insert additional pages as applicable.

Drilling Contractor PATTERSON UTI DRILLING  
 Address 207 Carlton Drive                      City Eighty Four                      State PA                      Zip 15330

Logging Company Workover Solutions  
 Address 13996 US-6                      City Mansfield                      State PA                      Zip 16933

Cementing Company HALLIBURTON  
 Address 121 Champion Way, Suite #210                      City Canonsburg                      State PA                      Zip 15317

Stimulating Company NexTier Oilfield Solutions Inc.  
 Address 3990 Rogerdale Rd                      City Houston                      State TX                      Zip 77042

Please insert additional pages as applicable.

Completed by Michael Honce                      Telephone 304-406-8909  
 Signature *[Signature]*                      Title Completions Superintendent                      Date 6/11/2021

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

08/27/2021

**SHR38JHSM – PERFORATION RECORD – ATTACHMENT 1**

Stage No.	Perforation Date	Perforation from MD ft.	Perforation to MD ft.	Number of Perforations	Formation(s)
1	2/15/2021	16,475.7	16,580.7	24	Marcellus Shale
2	2/16/2021	16,234.0	16,414.4	40	Marcellus Shale
3	2/16/2021	16,011.0	16,191.4	40	Marcellus Shale
4	2/17/2021	15,788.0	15,968.4	40	Marcellus Shale
5	2/18/2021	15,565.0	15,745.4	40	Marcellus Shale
6	2/19/2021	15,342.0	15,522.4	40	Marcellus Shale
7	2/19/2021	15,119.0	15,299.4	40	Marcellus Shale
8	2/19/2021	14,896.0	15,076.4	40	Marcellus Shale
9	2/19/2021	14,673.0	14,853.4	40	Marcellus Shale
10	2/19/2021	14,450.0	14,630.4	40	Marcellus Shale
11	2/20/2021	14,227.0	14,407.4	40	Marcellus Shale
12	2/20/2021	14,004.0	14,184.4	40	Marcellus Shale
13	2/20/2021	13,781.0	13,961.4	40	Marcellus Shale
14	2/20/2021	13,558.0	13,738.4	40	Marcellus Shale
15	2/20/2021	13,335.0	13,515.4	40	Marcellus Shale
16	2/21/2021	13,157.0	13,292.4	40	Marcellus Shale
17	2/21/2021	12,889.0	13,069.4	40	Marcellus Shale
18	2/22/2021	12,666.0	12,846.4	40	Marcellus Shale
19	2/22/2021	12,443.0	12,623.4	40	Marcellus Shale
20	2/22/2021	12,220.0	12,400.4	40	Marcellus Shale
21	2/22/2021	11,997.0	12,177.4	40	Marcellus Shale
22	2/22/2021	11,774.0	11,954.4	80	Marcellus Shale
23	2/22/2021	11,551.0	11,731.4	40	Marcellus Shale
24	2/23/2021	11,328.0	11,508.4	40	Marcellus Shale
25	2/23/2021	11,105.0	11,285.4	40	Marcellus Shale
26	2/23/2021	10,882.0	11,062.4	40	Marcellus Shale
27	2/23/2021	10,659.0	10,839.4	40	Marcellus Shale
28	2/23/2021	10,436.0	10,616.4	40	Marcellus Shale
29	2/23/2021	10,213.0	10,393.4	40	Marcellus Shale
30	2/24/2021	9,990.0	10,170.4	40	Marcellus Shale
31	2/24/2021	9,767.0	9,947.4	40	Marcellus Shale
32	2/24/2021	9,544.0	9,724.4	40	Marcellus Shale
33	2/24/2021	9,321.0	9,501.4	40	Marcellus Shale
34	2/24/2021	9,098.0	9,278.4	40	Marcellus Shale
35	2/25/2021	8,875.9	9,055.5	40	Marcellus Shale
36	2/25/2021	8,653.9	8,833.5	40	Marcellus Shale
37	2/25/2021	8,431.9	8,611.5	40	Marcellus Shale
38	2/25/2021	8,209.9	8,389.5	40	Marcellus Shale
39	2/25/2021	7,987.9	8,167.5	40	Marcellus Shale
40	2/26/2021	7,765.9	7,945.5	40	Marcellus Shale
41	2/26/2021	7,543.9	7,723.5	40	Marcellus Shale
42	2/26/2021	7,321.9	7,501.5	40	Marcellus Shale
43	2/26/2021	7,099.9	7,279.5	40	Marcellus Shale

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**SHR38JDHSM – 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	2/15/2021	94	9,084.0	9,550.0	3,182.0	400,000.00	7,273.40	N/A
2	2/16/2021	97	9,081.0	9,483.0	3,179.0	450,000.00	7,596.90	N/A
3	2/16/2021	96	8,879.0	9,521.0	3,560.0	450,000.00	7,612.31	N/A
4	2/17/2021	96	8,874.0	9,371.0	4,679.0	442,000.00	7,891.52	N/A
5	2/18/2021	96	8,834.0	9,324.0	3,704.0	450,000.00	7,478.52	N/A
6	2/19/2021	99	8,696.0	9,400.0	3,159.0	450,000.00	7,333.76	N/A
7	2/19/2021	98	8,691.0	9,254.0	3,210.0	460,000.00	7,347.86	N/A
8	2/19/2021	99	8,544.0	9,274.0	3,331.0	454,000.00	7,144.52	N/A
9	2/19/2021	96	8,828.0	9,533.0	3,818.0	450,000.00	7,073.64	N/A
10	2/20/2021	96	8,875.0	9,625.0	4,210.0	433,720.00	6,791.57	N/A
11	2/20/2021	97	8,683.0	9,387.0	4,793.0	420,300.00	6,964.62	N/A
12	2/20/2021	100	8,524.0	9,113.0	4,084.0	450,000.00	7,116.00	N/A
13	2/20/2021	100	8,476.0	9,363.0	4,196.0	450,000.00	7,202.36	N/A
14	2/20/2021	98	8,286.0	9,182.0	3,598.0	450,000.00	7,131.50	N/A
15	2/21/2021	98	8,436.0	9,150.0	3,967.0	461,000.00	7,053.50	N/A
16	2/21/2021	99	8,514.0	9,003.0	3,728.0	455,460.00	7,179.64	N/A
17	2/21/2021	100	8,314.0	9,051.0	4,670.0	450,000.00	7,105.64	N/A
18	2/22/2021	100	8,360.0	9,119.0	3,848.0	458,000.00	7,104.43	N/A
19	2/22/2021	100	8,113.0	8,636.0	3,930.0	456,000.00	6,968.76	N/A
20	2/22/2021	100	8,128.0	8,834.0	3,815.0	450,000.00	7,026.50	N/A
21	2/22/2021	100	8,124.0	8,806.0	3,624.0	450,000.00	6,992.26	N/A
22	2/22/2021	100	8,221.0	9,109.0	3,337.0	458,000.00	7,158.43	N/A
23	2/22/2021	100	8,202.0	9,150.0	4,679.0	450,000.00	6,995.07	N/A
24	2/23/2021	101	8,396.0	9,216.0	3,369.0	450,000.00	6,986.24	N/A
25	2/23/2021	99	8,381.0	9,184.0	4,357.0	410,000.00	6,850.98	N/A
26	2/23/2021	100	7,999.0	8,653.0	3,693.0	450,000.00	6,936.69	N/A
27	2/23/2021	100	7,978.0	8,397.0	4,131.0	450,000.00	6,905.12	N/A
28	2/23/2021	100	7,870.0	9,014.0	3,707.0	450,000.00	7,038.12	N/A
29	2/23/2021	100	7,951.0	9,071.0	3,575.0	450,000.00	7,034.38	N/A
30	2/24/2021	100	7,825.0	9,173.0	4,262.0	425,000.00	6,795.36	N/A
31	2/24/2021	103	7,789.0	9,219.0	3,694.0	450,000.00	7,055.28	N/A
32	2/24/2021	102	7,496.0	8,600.0	3,462.0	450,000.00	6,968.64	N/A
33	2/24/2021	102	7,684.0	9,107.0	3,456.0	450,000.00	7,024.02	N/A
34	2/25/2021	102	7,793.0	9,383.0	4,060.0	450,000.00	6,980.29	N/A
35	2/25/2021	101	7,389.0	9,154.0	3,622.0	450,000.00	6,988.29	N/A
36	2/25/2021	103	7,557.0	8,560.0	3,701.0	450,000.00	6,940.64	N/A
37	2/25/2021	103	7,752.0	9,003.0	3,731.0	450,000.00	7,040.21	N/A
38	2/25/2021	103	7,619.0	9,269.0	3,820.0	449,200.00	6,925.40	N/A
39	2/26/2021	103	7,466.0	8,809.0	3,651.0	450,000.00	6,984.93	N/A
40	2/26/2021	101	7,327.0	9,519.0	3,995.0	450,000.00	6,914.14	N/A
40	2/26/2021	103	7,789.0	8,792.0	3,811.0	450,000.00	8,080.05	N/A
42	2/26/2021	99	7,856.0	9,680.0	4,961.0	450,000.00	7,991.45	N/A
43	2/26/2021	102	7,608.0	8,170.0	3,755.0	420,000.00	7,325.31	N/A

08/27/2021

API: 47-095-02649		FARM NAME: ASH			WELL NUMBER: SHR38JHSM	
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	DESCRIPTION OF ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H2S, ETC)	
Undifferentiated Sand	0	250	0	250	Sandstone / Traces Of Siltstone & Limestone & Coal	
Undifferentiated Silt	250	300	250	300	Siltstone / Traces Of Sandstone & Coal	
Undifferentiated Sand	300	400	300	400	Sandstone / Traces Of Siltstone & Limestone	
Undifferentiated Shale	400	430	400	430	Red Shale / Traces Of Siltstone	
Washington Coal	430	431	430	431	Sandstone / Red Shale / Coal	
Undifferentiated Sand	431	480	431	480	Sandstone / Red Shale	
Undifferentiated Shale	480	510	480	510	Red Shale / Traces Of Sandstone & Gray Shale	
Undifferentiated Quartz	510	580	510	580	Quartz / Traces Of Red Shale, Siltstone & Sandstone	
Waynesburg Coal	580	582	580	582	Quartz / Traces Of Gray Shale, Coal, Siltstone & Sandstone	
Undifferentiated Sand	582	610	582	610	Sandstone / Traces Of Gray Shale, Quartz & Siltstone	
Undifferentiated Silt	610	740	610	740	Siltstone / Traces Of Gray Shale, Quartz & Siltstone	
Undifferentiated Sand	740	760	740	760	Sandstone / Traces Of Red Shale	
Undifferentiated Shale	760	900	760	900	Red Shale / Traces Of Siltstone, Sandstone, Limestone	
Pittsburgh Coal	900	901	900	901	Sandstone / Coal	
Undifferentiated Sand	901	940	901	940	Sandstone / Traces Of Gray Shale, Limestone & Siltstone	
Undifferentiated Shale	940	980	940	980	Red Shale / Traces Of Limestone & Sandstone	
Undifferentiated Sand	980	1,000	980	1,000	Sandstone / Traces Of Red Shale	
Undifferentiated Shale	1,000	1,040	1,000	1,040	Gray Shale / Traces Of Limestone, Siltstone & Sandstone	
Undifferentiated Sand	1,040	1,060	1,040	1,060	Sandstone / Siltstone	
Undifferentiated Quartz	1,060	1,100	1,060	1,100	Quartz / Traces Of Sandstone & Siltstone	
Undifferentiated Lime	1,100	1,120	1,100	1,120	Limestone / Traces Of Sandstone & Siltstone	
Undifferentiated Sand	1,120	1,160	1,120	1,160	Sandstone / Siltstone	
Undifferentiated Silt	1,160	1,280	1,160	1,280	Siltstone / Traces Of Sandstone & Limestone	
Undifferentiated Quartz	1,280	1,320	1,280	1,320	Quartz	
Undifferentiated Silt	1,320	1,340	1,320	1,340	Siltstone / Traces Of Sandstone	
Undifferentiated Quartz	1,340	1,380	1,340	1,380	Quartz / Traces Of Siltstone & Sandstone	
Upper Kitanning	1,380	1,480	1,380	1,480	Quartz & Siltstone / Traces Of Sandstone & Coal	
Lower Kitanning	1,480	1,840	1,480	1,840	Sandstone & Siltstone / Traces Of Quartz & Coal	
Big Lime	1,840	1,920	1,840	1,920	Limestone / Traces Of Siltstone	
Big Injun	1,920	2,060	1,920	2,060	Sandstone & Limestone / Traces Of Siltstone	
Price	2,060	2,210	2,060	2,210	Siltstone / Traces Of Red Shale	
Weir	2,210	2,360	2,210	2,360	Sandstone & Siltstone / Traces Of Limestone	
Berea	2,360	2,540	2,360	2,540	Siltstone	
Gordon	2,540	3,350	2,540	3,350	Siltstone / Traces Of Sandstone & Pyrite	

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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)
Warren Sand	3,350	4,940	3,350	4,940	Siltstone & Sandstone
Benson	4,940	5,150	4,940	5,150	Siltstone & Sandstone
Alexander	5,150	6,287	5,150	6,573	Siltstone / Traces Of Gray Shale
Middlesex	6,287	6,329	6,573	6,642	Gray Shale / Traces Of Siltstone
West River	6,329	6,401	6,642	6,796	Gray Shale
Burket	6,401	6,435	6,796	6,894	Gray Shale
Tully	6,435	6,456	6,894	6,968	Gray Shale
Hamilton	6,456	6,468	6,986	7,019	Gray Shale & Limestone
Upper Marcellus	6,468	6,486	7,019	7,131	Gray Shale
Middle Marcellus	6,486		7,131		Gray Shale
TD - Marcellus					

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**DRILLING CONTRACTOR**

PATTERSON-UTI DRILLING COMPANY  
4000 TOWN CENTER BOULEVARD SUITE 240  
CANONSBURG, PA 15317

**CEMENTING COMPANY**

HALLIBURTON  
121 CHAMPION WAY SUITE #210  
CANONSBURG, PA 15317

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# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	2/15/2021
Job End Date:	2/26/2021
State:	West Virginia
County:	Tyler
API Number:	47-095-02649-00-00
Operator Name:	CNX Gas Company LLC
Well Name and Number:	SHR38 M2 JHSM
Latitude:	39.37165800
Longitude:	-80.83538200
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,540
Total Base Water Volume (gal):	13,264,628
Total Base Non Water Volume:	0



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## Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Operator	Carrier/Base Fluid	Water	7732-18-5	100.00000	84.73718	None
Proppant (Sand)	Nextier	Proppant	Crystalline silica: Quartz (SiO2)	14808-60-7	100.00000	14.69990	None
7.5% HCl	Chemstream	Acid	Water	7732-18-5	92.50000	0.45750	None
7.5% HCl	Chemstream	Acid	Hydrochloric Acid	7647-01-0	7.50000	0.03709	None
StimStream FR 9800	Chemstream	Friction Reducer	Water	7732-18-5	47.00000	0.01727	None
StimStream SC-398	Chemstream	Scale Inhibitor	Non-Hazardous substances	Proprietary	90.00000	0.01191	None
StimStream FR 9800	Chemstream	Friction Reducer	alkanes, C16-20-iso-	90622-59-6	25.00000	0.00918	None
StimStream FR 9800	Chemstream	Friction Reducer	butene, homopolymer	9003-29-6	25.00000	0.00918	None
Clearal 268	Chemstream	Biocide	Non-Hazardous substances	Proprietary	80.00000	0.00820	None

CoilStream VB 625	Chemstream	Gelling Agent					
			Heavy Aliphatic Naphtha	64742-96-7		60.00000	0.00258 None
CoilStream VB 625	Chemstream	Gelling Agent					
			Guara Gum	9000-30-0		50.00000	0.00215 None
Clearal 268	Chemstream	Biocide					
			Glutaraldehyde	111-30-8		20.00000	0.00205 None
StimStream FR 9775	Chemstream	Friction Reducer					
			Water	7732-18-5		65.00000	0.00136 None
StimStream SC-398	Chemstream	Scale Inhibitor					
			Bis(HexaMethylene Triamone Penta(Methylene Phoshonic Acid) (BHMT))	34690-06-5		10.00000	0.00132 None
StimStream FR 9800	Chemstream	Friction Reducer					
			Alcohols, C12-18, ethoxylated	68213-23-0		3.00000	0.00110 None
StimStream FR 9775	Chemstream	Friction Reducer					
			Distillates (petroleum), hydrotreated light	64742-47-8		30.00000	0.00063 None
PVS Iron Control 1	Chemstream	Iron Control					
			Citric Acid	77-92-9		50.50000	0.00046 None
PVS Iron Control 1	Chemstream	Iron Control					
			Water	7732-18-5		49.50000	0.00045 None
Clearal 268	Chemstream	Biocide					
			Quaternary Ammonium Compounds	68424-85-1		3.00000	0.00031 None
Clearal 268	Chemstream	Biocide					
			Didecyl dimethyl ammonium chloride	7173-51-5		3.00000	0.00031 None
ACI-250	Chemstream	Acid Inhibitor					
			Methyl Alcohol	67-56-1		45.00000	0.00030 None
CoilStream VB 625	Chemstream	Gelling Agent					
			Trade Secret	Proprietary		5.00000	0.00021 None
Ammonium Persulfate	Chemstream	Breaker					
			Ammonium persulfate	7727-54-0		100.00000	0.00015 None
Clearal 268	Chemstream	Biocide					
			Ethanol	64-17-5		1.50000	0.00015 None
ACI-250	Chemstream	Acid Inhibitor					
			Ethylene Glycol	107-21-1		20.00000	0.00013 None
CoilStream VB 625	Chemstream	Gelling Agent					
			Trade Secret	Proprietary		3.00000	0.00013 None
CoilStream VB 625	Chemstream	Gelling Agent					
			Trade Secret	Proprietary		3.00000	0.00013 None
StimStream FR 9775	Chemstream	Friction Reducer					
			Alcohols C12-16 ethoxylated	68551-12-2		5.00000	0.00010 None
ACI-250	Chemstream	Acid Inhibitor					
			Trade Secret	Proprietary		15.00000	0.00010 None
ACI-250	Chemstream	Acid Inhibitor					

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			N, N-Dimethylformamide	68-12-2	10.00000	0.00007	None
ACI-250	Chemstream	Acid Inhibitor					
			Water	7732-18-5	10.00000	0.00007	None
ACI-250	Chemstream	Acid Inhibitor					
			2-Butoxyethanol	111-76-2	5.00000	0.00003	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.

- \* 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%

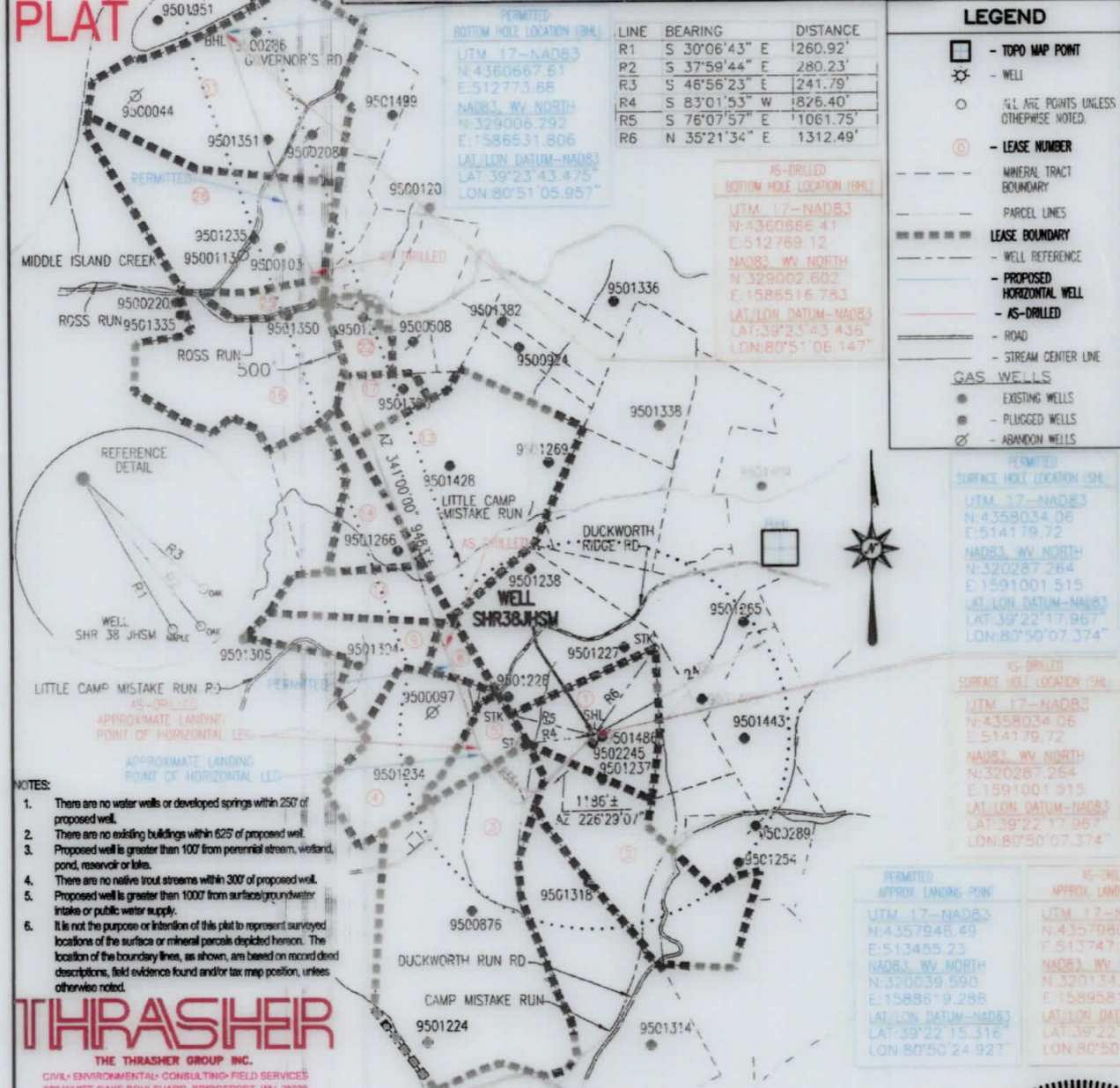
Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided. Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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JUN 17 2021

# AS DRILLED PLAT

BHL is located on topo map 7,743 feet south of Latitude: 39°25'00"  
 SHL is located on topo map 1,217 feet south of Latitude: 39°22'30"

SEE PAGE 2 FOR SURFACE OWNERS AND LESSORS



BHL is located on topo map 5,178 feet west of Longitude: 80°50'00"  
 SHL is located on topo map 579 feet west of Longitude: 80°50'00"

**LEGEND**

- - TOPO MAP POINT
- - WELL
- (with number) - LEASE NUMBER
- - - - - MINERAL TRACT BOUNDARY
- - - - - PARCEL LINES
- ▬▬▬▬▬▬▬▬▬ LEASE BOUNDARY
- - - - - WELL REFERENCE
- - - - - PROPOSED HORIZONTAL WELL
- - - - - AS-DRILLED
- - - - - ROAD
- - - - - STREAM CENTER LINE

**GAS WELLS**

- - EXISTING WELLS
- - PLUGGED WELLS
- ⊗ - ABANDON WELLS

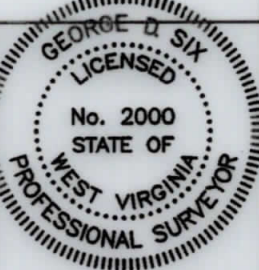
- NOTES:**
1. There are no water wells or developed springs within 250' of proposed well.
  2. There are no existing buildings within 625' of proposed well.
  3. Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
  4. There are no native trout streams within 300' of proposed well.
  5. Proposed well is greater than 1000' from surface/groundwater intake or public water supply.
  6. It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

**THRASHER**  
 THE THRASHER GROUP INC.  
 CIVIL • ENVIRONMENTAL • CONSULTING • FIELD SERVICES  
 600 WHITE OAKS BOULEVARD, BRIDGEPORT, WV 26330  
 PHONE: (206) 624-1128 • FAX: (206) 624-7271

FILE #: SHR 38 JHSM AS-DRILLED  
 DRAWING #: SHR 38 JHSM AS-DRILLED  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1/2500  
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: *George D. Six*  
 R.P.E.: L.L.S.: P.S. No. 2000



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



DATE: JANUARY 23, 2020  
 OPERATOR'S WELL #: SHR 38 JHSM AS-DRILLED  
 API WELL #: 47 95 02649  
 STATE COUNTY PERMIT

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

WATERSHED: HEADWATERS MIDDLE ISLAND CREEK ELEVATION: 1012±  
 COUNTY/DISTRICT: TYLER / CENTERVILLE QUADRANGLE: WEST UNION, WV 7.5'  
 SURFACE OWNER: JAMES E. ASH ET AL ACREAGE: 111±  
 OIL & GAS ROYALTY OWNER: JAMES E. ASH ET AL ACREAGE: 842.292±

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

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,480± TMD: 16,666±  
 WELL OPERATOR CNX GAS COMPANY LLC DESIGNATED AGENT ANTHONY KENDZIORA  
 Address 1000 CONSOL ENERGY DRIVE Address 1000 CONSOL ENERGY DRIVE  
 City CANONSBURG State PA Zip Code 15317 City CANONSBURG State PA Zip Code 15317

08/27/2021

# SHR 38 JHSM

## PAGE 2 OF 2

# AS DRILLED PLAT

	SURFACE OWNER	LESSOR	DIST-TM/PAR
1	JAMES E. ASH ET AL	VERNA O. ASH, JAMES E. ASH AND THELMA B. ASH, BESSIE HAUGHT AND HAROLD WARNER ERNEST G. SECKMAN AND O. JOANNE SECKMAN RALPH E. PHILLIPS AND VELINDA PHILLIPS H/W	P/O 1-16/19
2	JOHN R. ANDERS, II	JOHN MICHAEL LEONIAN JOSEPH ROBERT LEONIAN MARGO L. KIEHL AND CHARLES F. KIEHL, W/H BERDINA ROSE AND NORMAN W. ROSE, W/H PHILLIP LEONIAN, AKA PHILLIP MARSHALL LEONIAN MARION RAY BACHELOR, AKA MARION R. BACHELOR AND GLORIA JEAN BACHELOR, H/W RITA G. JARVIS MIKE ROSS, INC. I. L. MORRIS JO ELLEN HARPER DAY MARY LEE LILLY ARMEN LEONIAN, AKA ARMEN LANHAM LEONIAN JOHN FULTON LEONIAN NLA ASH SAYLOR REVOCABLE TRUST, BY JOSEPH F. SILEX, JR BAILEY ANN MILLS WILLIAM PAUL HARPER DAVID PAUL LOCOCO MARY LYNNE SLATTERY, FKA MARY LYNNE LOCOCO DONALD VINCENT LOCOCO ROSE MARIE VANHEUVELN THERESA LEE ROBERTSON MARTHA SUE MUZIO, FKA MARTHA SUE LOCOCO MICHELLE LOCOCO BUSHMIRE, FKA MICHELLE LUCRETTA BUSHMIRE ELIZABETH FLORENCE LOCOCO RALPH E. PHILLIPS AND VELINDA PHILLIPS, H/W BRC APPALACHIAN MINERALS I, LLC BRC APPALACHIAN MINERALS I, LLC	1-16-21
3	RONALD R. AND REVA D. ROWLAND	JACOB L. DILLON AND EDNA DILLON, H/W	1-16-20
4	JAMES E. ASH	GALE V. DAVISSON ROSEMARY EAGLE ELEANOR L. ROTH, ATTORNEY-IN-FACT FOR THE J. D. AND RUTH FOLEY HEIRS	1-16-19.1
5	JAMES E. ASH	GALE V. DAVISSON ROSEMARY EAGLE ELEANOR L. ROTH, ATTORNEY-IN-FACT FOR THE J. D. AND RUTH FOLEY HEIRS RICHARD ALAN GLOVER	1-16-19.1 1-16-19.2
8	DIANA L. BOGER	EDNA DILLON SAMUEL DAVID DILLON AND DONNA L. DILLON, H/W HOWARD D. SPURLOCK AND MARIAN E. SPURLOCK, H/W EDITH M. DOAK PEARL G. MCINTYRE PAUL MCINTYRE KERMIT MCINTYRE AND RUTH MCINTYRE, H/W SHEILA L. GUY EDITH W. MCINTYRE	1-16/18
9	DUANE CLARK ET AL, C/O DUANE & SUE CLARK	CLARENCE DUANE CLARK AND SANDRA SUE CLARK, H/W JEFFREY C. CLARK, SINGLE KEVIN S. CLARK, SINGLE JOHN BAKER, INDIVIDUALLY AND ATTORNEY-IN-FACT FOR THE "GORRELL DOAK HEIRS"	1-15/6
11	DUANE CLARK ET AL, C/O DUANE & SUE CLARK	ORA NELSON MOORE AND MARY EDNA MOORE, HUSBAND AND WIFE, AND OLETHA MOORE, WIDOW ROSEMARY EAGLE	1-15/6.1
13	KENNETH G. WRIGHT TRUST, KENNETH G. WRIGHT-TRUSTEE	FRANKLIN L. MERCER AND RUTH L. MERCER, H/W AND FRANKLIN L. MERCER, ATTORNEY-IN-FACT FOR ROGER N. MERCER AND GLORIA MERCER, H/W DELORES ROSSI LUTHER ROGERS AND ANITA ROGERS, H/W MARIE MERCER HARLEY EDWIN SPENCER AND ALICE RUTH SPENCER, H/W THE KENNETH G. WRIGHT TRUST, DATED 12/21/2010, BY KENNETH G. WRIGHT, TRUSTEE	1-16/1
14	DAVID AND MARY ANN PRESTON (LIFE ESTATE)	JAMES R. ASH AND FRANCES M. ASH, H/W	1-15/4
16	RYAN J. AND SUSAN J. LIND	ORA NELSON MOORE AND MARY EDNA MOORE, HUSBAND AND WIFE, AND OLETHA MOORE, WIDOW ROSEMARY EAGLE	1-12/23
17	KENNETH G. WRIGHT TRUST, KENNETH G. WRIGHT-TRUSTEE	FRANKLIN L. MERCER AND RUTH MERCER, H/W AND FRANKLIN L. MERCER, ATTORNEY-IN-FACT FOR ROGER N. MERCER AND GLORIA MERCER, H/W DELORES ROSSI ANITA ROGERS AND LUTHER ROGERS, W/H MARIE MERCER THE KENNETH G. WRIGHT TRUST, DATED 12/21/2010, BY KENNETH G. WRIGHT, TRUSTEE CONRAD E. COSTILOW SHELBY ROGERS GEORGE, A/K/A SHELBY R. GEORGE PATRICIA LEMLEY AND MELVIN LEMLEY, W/H PATRICIA CIAFARDO AND JOSEPH J. CIAFARDO, W/H BRADLEY ESMINGER AND SHIRLEY ESMINGER, F/K/A SHIRLEY GEORGE GARY W. GEORGE, SR. (INDIVIDUALLY), AND GARY W. GEORGE, SR. (REMAINDER INTEREST OF FRANCES M. GEORGE) BETH ANN MADDEN (INDIVIDUALLY) AND BETH ANN MADDEN (REMAINDER INTEREST OF FRANCES M. GEORGE) FRANCES M. GEORGE, A/K/A FRANCES MOORE GEORGE VIRGINIA H. LEMSTERS FAMILY TRUST, BY D. LARRY LEMSTERS, TRUSTEE LINDA SUE GEORGE COEN, F/K/A LINDA SUE GEORGE DONALD ROBERT GEORGE DONALD EDWARD GEORGE, JR. AND DARLYN J. GEORGE, H/W LULA WEE JOHNSON, BY HER ATTORNEY-IN-FACT, SANDRA LEE HARMAN GREGORY C. NICHOLSON KIMBERLY ANN SHAMBLIN, A/K/A KIMBERLY A. ROUSH AND GREGORY S. ROUSH, W/H WILLIAM E. NICHOLSON CYNTHIA ANN ZONTIS AND ROBERT FRANCIS ZONTIS, W/H DEBORAH A. WATCHOFF, F/K/A DEBORAH ANN COLE BRENDA COLE JAMES HENRY COLE MIKUEL ANN PARRISH DONNA PARRISH A/K/A DONNA RAHALL WILLIAM MICHAEL PARRISH AND CYNTHIA PARRISH, H/W CHRISTINA R. LORENCE, F/K/A CHRISTINA R. COLE	1-12/22.2 1-12/22.3
22	VERONICA SMITH	JAMES PAUL UNDERWOOD AND NAOMI JEAN UNDERWOOD, H/W	1-12/22.1 1-12/22.3
25	GENEVA (DENNISON) FOUTS - LIFE	ORA NELSON MOORE AND MARY EDNA MOORE, HUSBAND AND WIFE, AND OLETHA MOORE, WIDOW ROSEMARY EAGLE	1-12/10.1
26	GENEVA (DENNISON) FOUTS - LIFE ESTATE	BILLY KENNETH FOUTS AND MARIANNE B. FOUTS, H/W ERWIN LAWRENCE FOUTS SHEILA KAY FORRESTER AND ROBERT FORRESTER, W/H	1-12/10
31	JEFFREY J. AND KAY A. HEIKENFELD JAMES F. AND PATRICIA A. WOODS	ROBERT H. TENNANT, A SINGLE MAN AND OPAL V. TENNANT, A WIDOW	1-12/11 1-12/11.1

AS-DRILLED

SURFACE HOLE LOCATION (SH)

UTM 17-NAD83  
N:4358034.06  
E:514179.72  
NAD83, WV NORTH  
N:320287.264  
E:1591001.515  
LAT/LON DATUM-NAD83  
LAT:39°22'17.967"  
LON:80°50'07.374"

AS-DRILLED

APPROX. LANDING POINT

UTM 17-NAD83  
N:4357980.20  
E:513747.81  
NAD83, WV NORTH  
N:320134.117  
E:1589581.24  
LAT/LON DATUM-NAD83  
LAT:39°22'16.245"  
LON:80°50'25.429"

AS-DRILLED

BOTTOM HOLE LOCATION (BH)

UTM 17-NAD83  
N:4360566.41  
E:512769.12  
NAD83, WV NORTH  
N:329002.602  
E:1588516.783  
LAT/LON DATUM-NAD83  
LAT:39°23'43.436"  
LON:80°51'06.147"

PERMITTED

SURFACE HOLE LOCATION (SH)

UTM 17-NAD83  
N:4358034.06  
E:514179.72  
NAD83, WV NORTH  
N:320287.264  
E:1591001.515  
LAT/LON DATUM-NAD83  
LAT:39°22'17.967"  
LON:80°50'07.374"

PERMITTED

APPROX. LANDING POINT

UTM 17-NAD83  
N:4357945.49  
E:513455.23  
NAD83, WV NORTH  
N:320039.590  
E:1588619.286  
LAT/LON DATUM-NAD83  
LAT:39°22'15.316"  
LON:80°50'24.927"

PERMITTED

BOTTOM HOLE LOCATION (BH)

UTM 17-NAD83  
N:4360567.51  
E:512773.68  
NAD83, WV NORTH  
N:329006.292  
E:1588531.806  
LAT/LON DATUM-NAD83  
LAT:39°23'43.475"  
LON:80°51'05.957"

08/27/2021



API WELL #: 47 95 02649  
STATE COUNTY PERMIT

JANUARY 23, 2020