

DATE: February 16th, 2018

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

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FEB 20 2018

API 47-095-02194FH6A County Tyler District Centerville WV Department of Environmental Protection
Quad Shirley 7.5' Pad Name SHR3HS Field/Pool Name SHR3HS
Farm Name NOBLE ENERGY, INC. Well Number SHR3CHS - 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 4,362,756.95 m Easting 514,373.51 m
Landing Point of Curve Northing 4,362,539.82 m Easting 514,404.82 m
Bottom Hole Northing 4,360,117.87 m Easting 515,337.22 m

Elevation (ft) 751" 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 09/01/2017 Date drilling commenced 09/22/2014 Date drilling ceased 04/12/2015
Date completion activities began 09/09/2017 Date completion activities ceased 09/19/2017
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 342' 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

Reviewed by: AS

Reviewed
gob 3/14/2018

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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	24"	20"	40'	New	H-40 / 40'		
Surface	17 1/2"	13 3/8"	463.4'	New	K-55 / 463.4'		Y
Coal							
Intermediate 1	13 3/8"	9 5/8"	2189.9'	New	HCK-55 / 2189.9'		Y
Intermediate 2							
Intermediate 3							
Production	8 3/4"	5 1/2"	15361.1'	New	P-110 / 15361.1'		
Tubing	5 1/2"	2 3/8"	6524.50'	New	P-110 4.7# / 6524.50'		

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Packer Type and Depth Set None

Comment Details _____

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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	431 sks	15.60	1.18	508.58		8
Coal							
Intermediate 1	Class A	860 sks	15.60	1.18	1014.8		8
Intermediate 2							
Intermediate 3							
Production	Class A	2240 sks	14.50	1.26	2822.4		8
Tubing							

Drillers TD (ft) 6339'

Loggers TD (ft) 6664'

Deepest formation penetrated: Marcellus

Plug back to (ft) _____

Plug back procedure: _____

Kick Off Depth (ft) 5731'

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. Surface - 4 centralizers used. Bow spring centralizers on the first two joints and then every third joint to 100' from surface. Intermediate - 27 centralizers used. Bow spring centralizers on the first two joints and then every third joint to 100' from surface. Production - 265 centralizers used. Rigid Bow spring centralizer every joint to KOP, rigid bow spring centralizer every third joint from KOP to top of cement.

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS Plug And Perforation Shot Hole *JEB 3/14/2018*

WAS WELL COMPLETED OPEN HOLE Yes No DETAILS _____

WERE TRACERS USE Yes No TYPES OF TRACER(S) USED _____

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number Of Perforations	Formation(s)
1	9/9/2017	15073	15230	40	Marcellus
2	9/9/2017	14856	15038	40	Marcellus
3	9/9/2017	14631	14813	40	Marcellus
4	9/10/2017	14406	14588	40	Marcellus
5	9/10/2017	14181	14363	40	Marcellus
6	9/10/2017	13956	14138	40	Marcellus
7	9/11/2017	13731	13913	40	Marcellus
8	9/11/2017	13506	13688	40	Marcellus
9	9/11/2017	13281	13463	40	Marcellus
10	9/12/2017	13056	13238	40	Marcellus
11	9/12/2017	12831	13013	40	Marcellus
12	9/12/2017	12606	12788	40	Marcellus
13	9/13/2017	12381	12563	40	Marcellus
14	9/13/2017	12156	12338	40	Marcellus
15	9/13/2017	11931	12113	40	Marcellus
16	9/13/2017	11706	11888	40	Marcellus
17	9/13/2017	11481	11663	40	Marcellus
18	9/14/2017	11256	11438	40	Marcellus
19	9/14/2017	11031	11213	40	Marcellus
20	9/14/2017	10806	10988	40	Marcellus
21	9/14/2017	10581	10763	40	Marcellus
22	9/15/2017	10356	10538	40	Marcellus
23	9/15/2017	10131	10313	40	Marcellus
24	9/15/2017	9906	10088	40	Marcellus
25	9/16/2017	9681	9863	40	Marcellus
26	9/16/2017	9456	9638	40	Marcellus
27	9/16/2017	9231	9413	40	Marcellus
28	9/16/2017	9006	9188	40	Marcellus
29	9/17/2017	8781	8963	40	Marcellus
30	9/17/2017	8556	8738	40	Marcellus
31	9/17/2017	8331	8513	40	Marcellus
32	9/17/2017	8106	8288	40	Marcellus
33	9/17/2017	7879	8063	40	Marcellus
34	9/18/2017	7652	7836	40	Marcellus
35	9/18/2017	7425	7609	40	Marcellus
36	9/18/2017	7204	7382	40	Marcellus
37	9/18/2017	6984	7162	40	Marcellus
38	9/18/2017	6782	6944	40	Marcellus
39	9/19/2017	6582	6744	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	9/9/2017	87	8001	6827	3370	402180	8759	3397
2	9/9/2017	89	8212	6108	3458	406700	8028	3322
3	9/9/2017	82	8258	6543	3777	400320	7050	3356
4	9/10/2017	80	8247	6806	4126	399400	6939	3301
5	9/10/2017	88	8063	6281	3661	399900	6834	3325
6	9/11/2017	78	8002	6831	4794	401480	1188	3645
7	9/11/2017	91	8292	6599	4155	404480	7066	3356
8	9/11/2017	93	8371	6444	3952	404640	7169	3360
9	9/11/2017	86	8119	7122	3806	400500	6611	3316
10	9/12/2017	87	8014	6731	3806	399000	7114	3335
11	9/12/2017	88	8096	6779	3923	403080	7028	3315
12	9/12/2017	90	7953	7061	3864	403500	8259	3464
13	9/13/2017	83	7808	6859	3810	399520	6803	3390
14	9/13/2017	85	7951	7707	4334	401260	6959	3230
15	9/13/2017	85	7710	7257	3959	393780	7114	3485
16	9/13/2017	87	7579	7101	4046	399720	7145	3276
17	9/13/2017	84	7601	6579	3867	400800	6933	3295
18	9/14/2017	83		7319	Unavail	400260	6816	3278
18	9/14/2017	83		7319	Unavail	400260	6816	3278
19	9/14/2017	86	7689	7118	4075	399840	7482	3427
20	9/14/2017	61	7932	6588	4100	400740	1154	3583
21	9/14/2017	86	7314	6453	3952	400320	6821	3223
22	9/15/2017	86	7470	6886	3751	399860	6683	3271
23	9/15/2017	84	7093	6963	3953	401220	7159	3291
24	9/15/2017	88	7206	6594	4011	400480	9169	3296
25	9/16/2017	86	7345	6250	4319	401480	9830	3579
26	9/16/2017	83	6824	5630	4277	401700	8065	3317
27	9/16/2017	82	6749	6259	5230	399460	8426	3405
28	9/16/2017	83	6953	7126	4649	399360	7676	3322
29	9/17/2017	87	6834	6864	4072	400100	7478	3245
30	9/17/2017	85	6772	5774	4175	403740	7783	3341
31	9/17/2017	82	6892	6293	4149	400740	7841	3302
32	9/17/2017	87	6922	6483	3952	399720	7780	3307
33	9/17/2017	87	6853	6856	3952	399900	7526	3247
34	9/18/2017	88	6858	6652	3981	400560	7555	3330
35	9/18/2017	86	6848	6417	4265	401420	7210	3120
36	9/18/2017	87	6871	5859	3899	399640	6774	3431
37	9/18/2017	87	6845	6904	4184	399240	7022	3414
38	9/18/2017	88	6868	6647	4072	400320	6708	3243

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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)
39	9/19/2017	87	6821	6759	3603	400680	6844	3359

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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	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	
	TVD	TVD	MD	MD	
SHALE	0	766			
PITTSBURGH COAL	766	775			
SHALE/SANDSTONE	775	1222			
DUNKARD SAND	1222	1233			
SHALE	1233	1404			
GAS SAND	1404	1443			
SHALE	1443	1535			
1ST SALT SAND	1535	1559			
SHALE	1559	1568			
2ND SALT SAND	1568	1613			
SHALE	1613	1696			
MAXTON SAND	1696	1708			
SHALE	1708	1751			
BIG LIME	1751	1831			
BIG INJUN	1831	2025			
PRICE	2025	2383			
MURRYSVILLE	2383	2397			
SHALE	2397	2594			
50' SAND	2594	2596			
SHALE	2596	2649			
30' SAND	2649	2658			
SHALE	2658	2700			
GORDON STRAY	2700	2715			
SHALE	2715	2751			
GORDON	2751	2764			
SHALE	2764	2860			
FIFTH SAND	2860	2894			
SHALE	2894	3300			
SPEECHLEY SAND	3300	3328			
SHALE	3328	4336			
WARREN SAND	4336	4345			
SHALE	4345	5003			
JAVA SHALE	5003	5174			
PIPE CREEK SHALE	5174	5231			
ANGOLA SHALE	5231	5856			
RHINESTREET	5856	6272			
CASHAQUA	6272	6363			
MIDDLESEX	6363	6396			

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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	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	
	TVD	TVD	MD	MD	
WEST RIVER	6396	6440			
BURKETT	6440	6472			
TULLY LIMESTONE	6472	6503			
HAMILTON	6503	6614			
MARCELLUS	6614	6664			
ONONDAGA	6664	6667			

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Location: Tyler County, WV
 Field: Tyler
 Facility: SHR-3 Pad

Slot: Slot C
 Well: SHR-3C-HS
 Wellbore: SHR-3C-HS PWB

NOBLE ENERGY

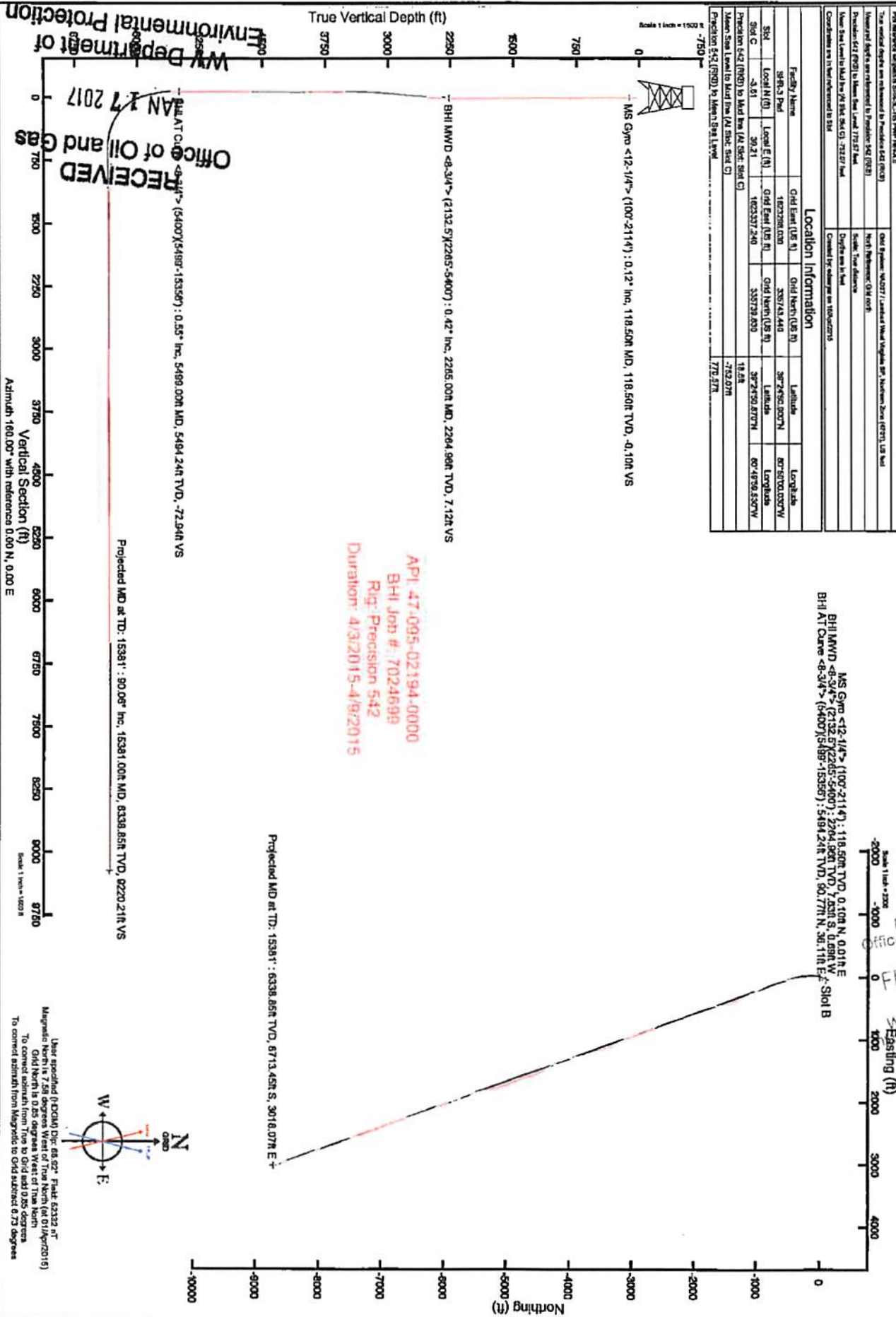
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Pre-reference well path: SHR-3C-118 Pad (PWB)		Grid System: NAD83 / Lambert West Virginia State Plane Zone 18N, US Feet	
True vertical depth was referenced to Provision S42 (R20)		North Reference: 0.04 feet	
Provision S42 (R20) is being used. Level: 770.07 feet		Depth was in feet	
User: Steve Lavelle to Mark from (A) Slot; Slot C		Created by: change on 10/02/2015	
Coordinates are in feet referenced to S42			
Location Information			
Facility Name	Grid East (US Ft)	Grid North (US Ft)	Longitude
SHR-3 Pad	1602296.000	335743.440	807.5070.007W
Spot	Local E (ft)	Grid East (US Ft)	Longitude
Spot C	-4.51	335738.930	807.4926.530W
Provision S42 (R20) to Mark from (A) Slot; Slot C	Local E (ft)	Grid East (US Ft)	Longitude
Mark from Level to Mark from (A) Slot; Slot C	18.58	335757.510	807.4741.007W
Provision S42 (R20) to Mark from (A) Slot; Slot C	Local E (ft)	Grid East (US Ft)	Longitude
Mark from Level to Mark from (A) Slot; Slot C	18.58	335757.510	807.4741.007W

MS Gym <12-11/4> (1007-2114) : 0.12° Inc, 118.50ft TVD, 0.10ft N, 0.01ft E
 BH/AT Curve <8-3/4> (1007-2114) : 0.22148° Inc, 118.50ft TVD, 0.03ft N, 0.03ft E
 BH/AT Curve <8-3/4> (1007-2114) : 0.22148° Inc, 118.50ft TVD, 0.03ft N, 0.03ft E



APL 47:095-02194-0000
 BH/ Job #: 7024699
 Rig: Precision 542
 Duration: 4/3/2015-4/9/2015

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When specified (R20) Dip: 88.02° Pluck: 6338.85 ft
 Magnetic North is 0.25 degrees West of True North
 To correct azimuth from True to Grid add 0.25 degrees
 To correct azimuth from Magnetic to Grid subtract 0.73 degrees

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ACTUAL WELLPATH REPORT (CSV version)

Prepared by Baker Hughes
 Software System: WellArchitect® 4.0.1

REFERENCE WELLPATH IDENTIFICATION

Operator NOBLE ENERGY
 Area Tyler County, WV
 Field Tyler
 Facility SHR-3 Pad
 Slot Slot C
 Well SHR-3C-HS
 Wellbore SHR-3C-HS AWB
 Wellpath SHR-3C-HS AWP Proj: 15381'
 Sidetrack (none)

REPORT SETUP INFORMATION

Projection NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet
 North Refe Grid
 Scale 0.999948
 Convergen 0.85° West
 Software S WellArchitect® 4.0.1
 User Edsaryar
 Report Gei 16/Apr/2015 at 08:53
 DataBase/! WellArchitectEasternDB/ev89.xml

WELLPATH	Local North [ft]	Local East [ft]	Easting [US ft]	Northing [US ft]	Latitude	Longitude
Slot Locati	-3.61	39.21	1623337	335739.8	39°24'50.8	80°49'59.530°W
Facility Ref			1623298	335743.4	39°24'50.9	80°50'00.030°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 Vertir Mean Sea Level
 Precision S 770.57ft
 Precision S 770.57ft
 Precision S 18.50ft
 Section Ori N 0.00, E 0.00 ft
 Section Azi 160.00°

WELLPATH DATA † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dis [ft]	Closure Dir [°]	DLS ["/100ft]	Build Rate ["/100ft]	Turn Rate ["/100ft]
0	0	0	4.05	0	0	0	0 1623337	335739.8	39°24'50.8	80°49'59.5	0	0	0	0	0
18.5	0	0	4.05	18.5	0	0	0 1623337	335739.8	39°24'50.8	80°49'59.5	0	0	0	0	0
118.5	0.12	4.05	118.5	-0.1	0.1	0.01	1623337	335739.9	39°24'50.8	80°49'59.5	0.1	4.05	0.12	0.12	0
218.5	0.27	58.5	218.5	-0.24	0.33	0.22	1623337	335740.2	39°24'50.8	80°49'59.5	0.4	33.008	0.22	0.15	54.45
318.5	0.23	230.22	318.5	-0.22	0.33	0.26	1623338	335740.2	39°24'50.8	80°49'59.5	0.42	38.763	0.5	-0.04	171.72
418.5	0.35	212.2	418.5	0.04	-0.06	-0.05	1623337	335739.8	39°24'50.8	80°49'59.5	0.08	222.259	0.15	0.12	-18.02
518.5	0.43	191.52	518.5	0.54	-0.69	-0.29	1623337	335739.1	39°24'50.8	80°49'59.5	0.75	203.074	0.16	0.08	-20.68
618.5	0.4	183.26	618.49	1.19	-1.4	-0.39	1623337	335738.4	39°24'50.8	80°49'59.5	1.45	195.432	0.07	-0.03	-8.26

718.5	0.22	180.07	718.49	1.69	-1.94	-0.41	1623337	335737.9	39*24*50.8	80*49*59.5	1.99	191.838	0.18	-0.18
718.5	0.33	167.63	818.49	2.15	-2.42	-0.35	1623337	335737.4	39*24*50.8	80*49*59.5	2.44	188.144	0.12	-0.11
918.5	0.61	154.38	918.49	2.97	-3.18	-0.05	1623337	335736.7	39*24*50.8	80*49*59.5	3.18	180.972	0.3	0.28
1018.5	0.53	156.65	1018.48	3.96	-4.08	0.36	1623338	335735.8	39*24*50.8	80*49*59.5	4.1	174.966	0.08	-0.08
1118.5	0.46	176.97	1118.48	4.8	-4.91	0.56	1623338	335734.9	39*24*50.8	80*49*59.5	4.94	173.443	0.19	-0.07
1218.5	0.62	189.33	1218.47	5.66	-5.84	0.5	1623338	335734	39*24*50.8	80*49*59.5	5.86	175.132	0.2	0.16
1318.5	0.42	187.17	1318.47	6.46	-6.74	0.36	1623338	335733.1	39*24*50.8	80*49*59.5	6.75	176.907	0.2	-0.2
1418.5	0.31	200.06	1418.47	6.99	-7.36	0.23	1623337	335732.5	39*24*50.7	80*49*59.5	7.36	178.244	0.14	-0.11
1518.5	0.25	183.57	1518.47	7.4	-7.83	0.12	1623337	335732	39*24*50.7	80*49*59.5	7.83	179.128	0.1	-0.06
1618.5	0.17	199.37	1618.47	7.71	-8.19	0.06	1623337	335731.6	39*24*50.7	80*49*59.5	8.19	179.605	0.1	-0.08
1718.5	0.16	241.98	1718.47	7.85	-8.39	-0.12	1623337	335731.4	39*24*50.7	80*49*59.5	8.39	180.792	0.12	-0.01
1818.5	0.02	95.85	1818.47	7.87	-8.46	-0.22	1623337	335731.3	39*24*50.7	80*49*59.5	8.46	181.503	0.18	-0.14
1918.5	0.14	181.05	1918.47	8	-8.58	-0.21	1623337	335731.3	39*24*50.7	80*49*59.5	8.59	181.38	0.14	0.12
2018.5	0.41	19.01	2018.46	7.83	-8.37	-0.09	1623337	335731.9	39*24*50.7	80*49*59.5	8.37	180.633	0.54	0.27
2118.5	0.14	7.08	2118.46	7.44	-7.91	0.04	1623337	335731.9	39*24*50.7	80*49*59.5	7.91	179.717	0.27	-0.27
2132.5	0.25	305.24	2132.46	7.4	-7.87	0.02	1623337	335732	39*24*50.7	80*49*59.5	7.87	179.882	1.58	0.79
2265	0.42	255.5	2264.96	7.12	-7.83	-0.69	1623337	335732	39*24*50.7	80*49*59.5	7.86	185.037	0.24	-0.24
2354	1.35	11.16	2353.95	6.19	-6.88	-0.8	1623336	335733	39*24*50.8	80*49*59.5	6.93	186.655	1.77	1.04
2444	2.98	19.81	2443.89	3.49	-3.64	0.2	1623337	335736.2	39*24*50.8	80*49*59.5	3.65	176.93	1.84	1.81
2534	4.69	26.96	2533.68	-0.82	1.84	2.66	1623340	335741.7	39*24*50.8	80*49*59.4	3.23	55.281	1.97	1.9
2623	5.89	27.04	2622.3	-6.42	9.15	6.38	1623344	335749	39*24*50.9	80*49*59.4	11.16	34.892	1.35	1.35
2713	6.75	25.15	2711.75	-13.29	18.05	10.73	1623348	335757.9	39*24*51.0	80*49*59.3	21	30.725	0.98	-2.1
2802	7.54	19.2	2800.06	-21.51	28.3	14.87	1623352	335768.1	39*24*51.1	80*49*59.3	31.97	27.722	1.22	0.89
2892	7.54	22.12	2889.28	-30.46	39.35	19.04	1623356	335779.2	39*24*51.2	80*49*59.2	43.71	25.819	0.43	0
2982	5.71	23.65	2978.88	-38.08	48.92	23.06	1623360	335788.8	39*24*51.3	80*49*59.2	54.08	25.236	2.04	-2.03
3071	5.56	27.96	3067.25	-44.17	56.78	26.86	1623364	335796.6	39*24*51.4	80*49*59.1	62.81	25.311	2.04	1.7
3161	4.2	21.94	3156.92	-49.55	63.69	30.13	1623367	335803.5	39*24*51.5	80*49*59.1	70.46	25.317	1.61	-1.51
3251	3.08	18.63	3246.74	-53.89	69.04	32.14	1623369	335808.9	39*24*51.5	80*49*59.1	76.15	24.959	1.27	-1.24
3341	2.29	13.73	3336.64	-57.27	73.08	33.33	1623371	335812.9	39*24*51.5	80*49*59.1	80.32	24.52	0.91	-0.88
3430	3.05	15.18	3425.54	-60.69	77.09	34.38	1623372	335816.9	39*24*51.6	80*49*59.1	84.41	24.033	0.86	0.85
3520	2.59	21.73	3515.43	-64.16	81.29	35.76	1623373	335824.4	39*24*51.6	80*49*59.0	92.25	23.616	0.84	-0.83
3609	1.85	18.42	3604.37	-66.79	84.52	36.95	1623374	335828.9	39*24*51.7	80*49*59.0	94.99	23.426	0.23	-0.21
3699	1.66	15.56	3694.32	-68.98	87.16	37.76	1623375	335827	39*24*51.7	80*49*59.0	94.99	23.426	0.23	-0.21
3788	1.34	18.48	3783.29	-70.85	89.39	38.44	1623376	335829.2	39*24*51.7	80*49*59.0	97.3	23.269	0.37	-0.36
3878	0.83	20.15	3873.28	-72.17	91	39	1623376	335830.8	39*24*51.7	80*49*59.0	99	23.198	0.57	-0.57
3967	0.89	19.87	3962.27	-73.19	92.25	39.45	1623377	335832.1	39*24*51.7	80*49*59.0	100.33	23.156	0.07	-0.31
4057	0.54	37.53	4052.26	-73.96	93.24	39.95	1623377	335833.1	39*24*51.7	80*49*59.0	101.44	23.192	0.46	-0.39
4146	0.25	33.77	4141.26	-74.3	93.74	40.31	1623378	335833.6	39*24*51.8	80*49*59.0	102.04	23.271	0.33	-0.33
4236	0.31	97.21	4231.26	-74.3	93.87	40.66	1623378	335833.7	39*24*51.8	80*49*59.0	102.3	23.422	0.33	0.07
4326	0.13	216.17	4321.26	-74.13	93.76	40.85	1623378	335833.6	39*24*51.8	80*49*59.0	102.27	23.54	0.43	-0.2
4415	0.25	215.99	4410.26	-73.97	93.52	40.67	1623378	335833.3	39*24*51.8	80*49*59.0	101.98	23.504	0.13	0.13
4505	0.23	216.43	4500.26	-73.76	93.22	40.45	1623378	335833.6	39*24*51.7	80*49*59.0	101.61	23.458	0.02	-0.02
4594	0.33	224.98	4589.25	-73.55	92.89	40.16	1623377	335832.4	39*24*51.7	80*49*59.0	100.71	23.282	0.12	0.11
4684	0.35	229.38	4679.25	-73.35	92.53	39.77	1623377	335832.4	39*24*51.7	80*49*59.0	100.14	23.182	0.04	0.08
4773	0.42	205.89	4768.25	-73.02	92.06	39.42	1623377	335831.9	39*24*51.7	80*49*59.0	99.42	22.949	0.39	0.37
4863	0.13	230.65	4858.25	-72.76	91.7	39.2	1623376	335831.5	39*24*51.7	80*49*59.0	99.72	23.146	0.34	-0.32
4953	0.46	257.67	4948.25	-72.72	91.55	38.77	1623376	335831.4	39*24*51.7	80*49*59.0	99.42	22.949	0.16	0.16
5042	0.43	239.47	5037.25	-72.76	91.31	38.13	1623375	335831.1	39*24*51.7	80*49*59.0	98.95	22.665	0.14	-0.03
5132	0.55	244.45	5127.24	-72.66	90.95	37.45	1623375	335830.8	39*24*51.7	80*49*59.0	98.36	22.38	0.13	0.13
5221	0.43	225.96	5216.24	-72.48	90.53	36.82	1623374	335830.4	39*24*51.7	80*49*59.0	97.74	22.133	0.22	-0.13
5311	0.34	355.58	5306.24	-72.6	90.57	36.56	1623374	335830.4	39*24*51.7	80*49*59.0	97.67	21.983	0.78	-0.1
5400	0.3	322.81	5395.24	-73.08	91.01	36.4	1623374	335830.8	39*24*51.7	80*49*59.0	98.02	21.798	0.21	-0.04
5499	0.55	196.6	5494.24	-72.94	90.77	36.11	1623373	335830.6	39*24*51.7	80*49*59.0	97.68	21.693	0.77	0.25
5589	7.43	198.16	5583.96	-68.01	84.82	34.17	1623371	335824.6	39*24*51.7	80*49*59.1	91.44	21.942	7.64	-127.48
5678	10.97	200.66	5671.81	-57.06	71.42	29.38	1623367	335811.3	39*24*51.5	80*49*59.1	77.23	22.364	4	3.98

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5768	15.05	202.15	5759.48	-41.9	52.58	21.95	1623359	335792.4	39°24'51.3	80°49'59.2	56.98	22.664	4.55	4.53	1.66				
5858	18.4	200.48	5845.66	-22.42	28.44	12.58	1623350	335768.3	39°24'51.1	80°49'59.3	31.1	23.855	3.76	3.72	-1.86				
5947	22.23	199.06	5929.11	1.34	-0.64	2.16	1623339	335739.2	39°24'50.8	80°49'59.5	2.25	106.546	4.34	4.3	-1.6				
6037	28.92	190.19	6010.27	33.42	-38.21	-7.26	1623330	335701.6	39°24'50.4	80°49'59.6	38.89	190.764	8.55	7.43	-9.86				
6127	35.83	180.88	6086.28	76.92	-86.05	-11.53	1623326	335653.8	39°24'50.0	80°49'59.6	86.82	187.629	9.45	7.68	-10.34				
6217	44.6	177.26	6154.95	131.82	-144.07	-10.42	1623327	335595.8	39°24'49.4	80°49'59.6	144.45	184.136	10.08	9.74	-4.02				
6306	54.13	175.66	6212.85	196.53	-211.4	-6.19	1623331	335528.4	39°24'48.7	80°49'59.5	211.49	181.676	10.79	10.71	-1.8				
6396	64.72	173.87	6258.57	271.37	-288.44	0.94	1623338	335451.4	39°24'48.0	80°49'59.4	288.44	179.813	11.89	11.77	-1.99	Top perf	Bottom pe LL		
6485	73.87	171.51	6290	352.5	-370.92	11.57	1623349	335368.9	39°24'47.2	80°49'59.3	371.1	178.213	10.57	10.28	-2.65	6709	15381	8672	43.36
6575	74.86	168.87	6314.26	437.8	-456.31	26.34	1623364	335283.6	39°24'46.3	80°49'59.1	457.07	176.696	3.03	1.1	-2.93				
6664	79.26	167.69	6334.19	523.61	-541.21	43.96	1623381	335198.6	39°24'45.5	80°49'58.8	543	175.356	5.11	4.94	-1.33				
6754	88.43	165.24	6343.83	612.42	-628.11	64.9	1623402	335111.8	39°24'44.6	80°49'58.5	631.45	174.101	10.54	10.19	-2.72				
6844	91.6	161.23	6343.81	702.25	-714.25	90.85	1623428	335025.6	39°24'43.8	80°49'58.2	720.01	172.751	5.68	3.52	-4.46				
6933	90.52	157.17	6342.16	791.21	-797.42	122.44	1623460	334942.5	39°24'43.0	80°49'57.8	806.77	171.27	4.72	-1.21	-4.56				
7023	91.26	155.6	6340.76	881.01	-879.87	158.49	1623496	334860	39°24'42.1	80°49'57.3	894.03	169.789	1.93	0.82	-1.74				
7112	91.23	154.07	6338.83	969.63	-960.4	196.33	1623534	334779.5	39°24'41.4	80°49'56.8	980.26	168.447	1.72	-0.03	-1.72				
7202	91.63	155.24	6336.58	1059.21	-1041.71	234.84	1623572	334698.2	39°24'40.6	80°49'56.3	1067.85	167.296	1.37	0.44	1.3				
7291	91.23	155.56	6334.36	1147.89	-1122.61	271.88	1623609	334617.3	39°24'39.8	80°49'55.8	1155.06	166.386	0.58	-0.45	0.36				
7381	90.83	155.24	6332.74	1237.59	-1204.43	309.34	1623647	334535.5	39°24'39.0	80°49'55.3	1243.52	165.596	0.57	-0.44	-0.36				
7471	90.15	155.05	6331.97	1327.26	-1286.09	347.16	1623684	334453.8	39°24'38.2	80°49'54.8	1332.12	164.894	0.78	-0.76	-0.21				
7560	89.45	157.78	6332.28	1416.08	-1367.64	382.77	1623720	334372.3	39°24'37.4	80°49'54.3	1420.2	164.364	3.17	-0.79	3.07				
7650	89.26	164.74	6333.3	1506	-1452.81	411.66	1623749	334287.1	39°24'36.5	80°49'54.0	1510.01	164.18	7.74	-0.21	7.73				
7740	89.66	168.77	6334.15	1595.35	-1540.4	432.28	1623770	334199.5	39°24'35.7	80°49'53.7	1599.9	164.324	4.5	0.44	4.48				
7829	89.32	169.94	6334.94	1683.16	-1627.86	448.72	1623786	334112.1	39°24'34.8	80°49'53.5	1688.57	164.589	1.37	-0.38	1.31				
7919	89.78	167.43	6335.64	1772.12	-1716.1	466.37	1623804	334023.8	39°24'33.9	80°49'53.2	1778.34	164.796	2.84	0.51	-2.79				
8008	90.28	163.52	6335.6	1860.69	-1802.24	488.69	1623826	333937.7	39°24'33.1	80°49'52.9	1867.32	164.829	4.43	0.56	-4.39				
8098	89.23	161.07	6335.98	1950.61	-1887.97	516.06	1623853	333852	39°24'32.2	80°49'52.5	1957.23	164.712	2.96	-1.17	-2.72				
8187	89.45	158.55	6337.01	2039.6	-1971.49	546.77	1623884	333768.5	39°24'31.4	80°49'52.1	2045.9	164.499	2.84	0.25	-2.83				
8277	89.11	157.3	6338.14	2129.53	-2054.88	580.59	1623918	333685.1	39°24'30.6	80°49'51.7	2135.33	164.223	1.44	-0.38	-1.39				
8366	89.02	157.66	6339.59	2218.43	-2137.08	614.67	1623952	333602.9	39°24'29.8	80°49'51.2	2223.72	163.954	0.42	-0.1	0.4				
8456	89.14	160.94	6341.04	2308.4	-2221.25	646.48	1623984	333518.7	39°24'29.0	80°49'50.8	2313.42	163.773	3.65	0.13	3.64				
8545	89.94	164.03	6341.75	2397.3	-2306.11	673.26	1624010	333433.8	39°24'28.1	80°49'50.5	2402.38	163.725	3.59	0.9	3.47				
8634	90.43	160.98	6341.46	2486.21	-2390.98	700.01	1624037	333349	39°24'27.3	80°49'50.1	2491.35	163.681	3.47	0.55	-3.43				
8724	90.65	157.99	6340.62	2576.19	-2475.26	731.55	1624069	333264.7	39°24'26.5	80°49'49.7	2581.1	163.535	3.33	0.24	-3.32				
8813	90.37	154.78	6339.82	2665	-2556.8	767.19	1624104	333183.2	39°24'25.7	80°49'49.2	2669.42	163.298	3.62	-0.31	-3.61				
8903	89.57	155.09	6339.87	2754.65	-2638.32	805.32	1624143	333101.7	39°24'24.9	80°49'48.7	2758.49	163.026	0.95	-0.89	0.34				
8993	89.17	157.28	6340.86	2844.44	-2720.65	841.66	1624179	333019.3	39°24'24.1	80°49'48.2	2847.86	162.81	2.47	-0.44	2.43				
9082	89.35	159.12	6342.01	2933.38	-2803.27	874.71	1624212	332936.7	39°24'23.2	80°49'47.8	2936.57	162.67	2.08	0.2	2.07				
9171	89.35	161.34	6343.02	3022.37	-2887.01	904.81	1624242	332853	39°24'22.4	80°49'47.4	3025.48	162.599	2.49	0	2.49				
9261	89.08	161.4	6344.25	3112.33	-2972.29	933.55	1624271	332767.7	39°24'21.6	80°49'47.0	3115.45	162.563	0.31	-0.3	0.07				
9350	89.75	157.98	6345.16	3201.31	-3055.74	964.44	1624302	332684.3	39°24'20.8	80°49'46.6	3204.32	162.483	3.92	0.75	-3.84				
9440	90.89	155.81	6344.66	3291.17	-3138.51	999.75	1624337	332601.5	39°24'20.0	80°49'46.2	3293.9	162.331	2.72	1.27	-2.41				
9529	89.69	153.08	6344.21	3379.74	-3218.8	1038.14	1624375	332521.2	39°24'19.2	80°49'45.6	3382.07	162.124	3.35	-1.35	-3.07				
9619	88.71	156.03	6345.46	3469.32	-3300.05	1076.8	1624414	332440	39°24'18.4	80°49'45.1	3471.28	161.929	3.45	-1.09	3.28				
9708	88.95	158.91	6347.28	3558.2	-3382.23	1110.89	1624448	332357.8	39°24'17.6	80°49'44.7	3559.99	161.817	3.25	0.27	3.24				
9798	89.23	160.47	6348.71	3648.19	-3466.62	1142.13	1624479	332273.4	39°24'16.7	80°49'44.3	3649.92	161.765	1.76	0.31	1.73				
9888	90.03	162.51	6349.29	3738.15	-3551.96	1170.7	1624508	332188.1	39°24'15.9	80°49'43.9	3739.91	161.758	2.43	0.89	2.27				
9977	90.31	163.14	6349.03	3827.04	-3636.99	1196.98	1624534	332103	39°24'15.1	80°49'43.5	3828.9	161.783	0.77	0.31	0.71				
10067	90.52	163.07	6348.38	3916.91	-3723.1	1223.13	1624560	332016.9	39°24'14.2	80°49'43.2	3918.87	161.813	0.25	0.23	-0.08				
10157	90.65	164.22	6347.46	4006.72	-3809.45	1248.47	1624586	331930.6	39°24'13.4	80°49'42.9	4008.82	161.854	1.29	0.14	1.28				
10246	90.68	164.5	6346.43	4095.46	-3895.15	1272.46	1624610	331844.9	39°24'12.5	80°49'42.5	4097.73	161.909	0.32	0.03	0.31				
10335	90.46	164.7	6345.54	4184.16	-3980.95	1296.1	1624633	331759.1	39°24'11.7	80°49'42.2	4186.63	161.966	0.33	-0.25	0.22				
10425	90.52	161	6344.77	4274.03	-4066.93	1322.63	1624660	331673.1	39°24'10.8	80°49'41.9	4276.6	161.985	4.11	0.07	-4.11				
10515	90.03	158.14	6344.34	4364.02	-4151.26	1354.04	1624691	331588.8	39°24'10.0	80°49'41.4	4366.51	161.935	3.22	-0.54	-3.18				
10604	90.15	156.04	6344.2	4452.9	-4233.24	1388.69	1624726	331506.8	39°24'09.2	80°49'41.0	4455.19	161.838	2.36	0.13	-2.36				

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10694	90.22	151.2	6343.91	4542.32	-4313.84	1428.66	1624766	331426.2	39°24'08.4	80°49'40.5	4544.26	161.676	5.38	0.08	-5.38
10783	90.22	147.62	6343.57	4629.79	-4390.44	1473.95	1624811	331349.6	39°24'07.6	80°49'39.9	4631.25	161.442	4.02	0	-4.02
10873	89.82	153.89	6343.53	4718.57	-4468.93	1517.9	1624855	331271.1	39°24'06.9	80°49'39.3	4719.68	161.24	6.98	-0.44	6.97
10963	89.63	160.55	6343.97	4808.41	-4551.86	1552.72	1624890	331188.2	39°24'06.1	80°49'38.8	4809.41	161.165	7.4	-0.21	7.4
11052	90.49	162.78	6343.87	4897.37	-4636.34	1580.72	1624918	331103.7	39°24'05.2	80°49'38.5	4898.4	161.174	2.69	0.97	2.51
11142	91.26	159.55	6342.5	4987.33	-4721.5	1609.77	1624947	331018.6	39°24'04.4	80°49'38.1	4988.37	161.174	3.69	0.86	-3.59
11232	91.85	157.67	6340.06	5077.26	-4805.26	1642.58	1624980	330934.8	39°24'03.6	80°49'37.7	5078.25	161.128	2.19	0.66	-2.09
11321	89.66	157.19	6338.88	5166.16	-4887.43	1676.73	1625014	330852.7	39°24'02.8	80°49'37.2	5167.05	161.064	2.52	-2.46	-0.54
11411	89.72	158.48	6339.37	5256.09	-4970.78	1710.68	1625048	330769.3	39°24'01.9	80°49'36.8	5256.91	161.009	1.43	0.07	1.43
11500	89.45	161.49	6340.02	5345.08	-5054.39	1741.14	1625078	330685.7	39°24'01.1	80°49'36.3	5345.88	160.992	3.4	-0.3	3.38
11590	89.6	166	6340.76	5434.86	-5140.77	1766.33	1625103	330599.3	39°24'00.3	80°49'36.0	5435.75	161.038	5.01	0.17	5.01
11680	90	167.78	6341.08	5524.21	-5228.42	1786.74	1625124	330511.7	39°23'59.4	80°49'35.7	5525.29	161.133	2.03	0.44	1.98
11769	90.22	168.84	6340.91	5612.27	-5315.57	1804.77	1625142	330424.6	39°23'58.6	80°49'35.5	5613.6	161.246	1.22	0.25	1.19
11859	90.18	166.22	6340.59	5701.49	-5403.44	1824.2	1625161	330336.7	39°23'57.7	80°49'35.2	5703.06	161.345	2.91	-0.04	-2.91
11948	91.42	164.7	6339.35	5790.07	-5489.58	1846.54	1625184	330250.6	39°23'56.8	80°49'34.9	5791.82	161.408	2.2	1.39	-1.71
12038	90	159.95	6338.23	5879.96	-5575.3	1873.86	1625211	330164.8	39°23'56.0	80°49'34.6	5881.78	161.422	5.51	-1.58	-5.28
12127	89.45	158.72	6338.66	5968.95	-5658.57	1905.27	1625242	330081.6	39°23'55.2	80°49'34.1	5970.71	161.391	1.51	-0.62	-1.38
12217	89.23	160.36	6339.7	6058.94	-5742.88	1936.72	1625274	329997.3	39°23'54.4	80°49'33.7	6060.66	161.364	1.84	-0.24	1.82
12307	89.23	160.26	6340.91	6148.93	-5827.61	1967.04	1625304	329912.5	39°23'53.5	80°49'33.3	6150.64	161.348	0.11	0	-0.11
12397	89.69	160.64	6341.75	6238.92	-5912.42	1997.16	1625334	329827.7	39°23'52.7	80°49'32.9	6240.62	161.336	0.66	0.51	0.42
12486	91.02	158.85	6341.2	6327.92	-5995.91	2027.97	1625365	329744.3	39°23'51.9	80°49'32.5	6329.58	161.313	2.51	1.49	-2.01
12576	89.29	155.61	6340.96	6417.8	-6078.88	2062.8	1625400	329661.3	39°23'51.0	80°49'32.1	6419.34	161.256	4.08	-1.92	-3.6
12665	89.48	156.57	6341.91	6506.58	-6160.24	2098.86	1625436	329579.9	39°23'50.2	80°49'31.6	6507.98	161.185	1.1	0.21	1.08
12755	89.42	159.8	6342.78	6596.52	-6243.78	2132.3	1625469	329496.4	39°23'49.4	80°49'31.1	6597.84	161.145	3.59	-0.07	3.59
12844	89.42	161.46	6343.68	6685.51	-6327.73	2161.82	1625499	329412.4	39°23'48.6	80°49'30.8	6686.83	161.138	1.87	0	1.87
12934	89.94	161.34	6344.18	6775.48	-6413.03	2190.53	1625528	329327.2	39°23'47.8	80°49'30.4	6776.82	161.141	0.59	0.58	-0.13
13023	90.46	161.54	6343.87	6864.45	-6497.4	2218.85	1625556	329242.8	39°23'46.9	80°49'30.0	6865.82	161.145	0.63	0.58	0.22
13113	90.52	161.48	6343.1	6954.42	-6582.75	2247.39	1625585	329157.4	39°23'46.1	80°49'29.6	6955.82	161.15	0.09	0.07	-0.07
13202	90.65	161.61	6342.19	7043.38	-6667.17	2275.57	1625613	329073	39°23'45.3	80°49'29.2	7044.81	161.155	0.21	0.15	0.15
13292	90.77	160.87	6341.08	7133.35	-6752.38	2304.51	1625642	328987.8	39°23'44.4	80°49'28.9	7134.8	161.156	0.83	0.13	-0.82
13382	90.25	160.04	6340.28	7223.34	-6837.19	2334.62	1625672	328903	39°23'43.6	80°49'28.5	7224.79	161.147	1.09	-0.58	-0.92
13471	90.12	159.41	6339.99	7312.34	-6920.67	2365.46	1625703	328819.5	39°23'42.8	80°49'28.0	7313.76	161.13	0.72	-0.15	-0.71
13561	90.18	158.49	6339.75	7402.32	-7004.67	2397.78	1625735	328735.5	39°23'41.9	80°49'27.6	7403.7	161.103	1.02	0.07	-1.02
13650	89.51	158.38	6339.99	7491.29	-7087.44	2430.5	1625768	328652.8	39°23'41.1	80°49'27.2	7492.6	161.072	0.76	-0.75	-0.12
13740	89.54	158.92	6340.74	7581.26	-7171.26	2463.26	1625800	328569	39°23'40.3	80°49'26.8	7582.52	161.043	0.6	0.03	0.6
13830	89.85	160.53	6341.22	7671.26	-7255.68	2494.45	1625832	328484.6	39°23'39.5	80°49'26.3	7672.49	161.027	1.82	0.34	1.79
13919	89.94	161.7	6341.38	7760.24	-7339.88	2523.25	1625860	328400.4	39°23'38.7	80°49'26.0	7761.49	161.028	1.32	0.1	1.31
14009	90.15	163.88	6341.31	7850.13	-7425.85	2549.88	1625887	328314.4	39°23'37.8	80°49'25.6	7851.44	161.049	2.43	0.23	2.42
14098	90.37	164.25	6340.91	7938.9	-7511.43	2574.31	1625911	328228.8	39°23'37.0	80°49'25.3	7940.32	161.082	0.48	0.25	0.42
14188	90.25	163.49	6340.42	8028.69	-7597.88	2599.32	1625936	328142.4	39°23'36.1	80°49'24.9	8030.21	161.114	0.85	-0.13	-0.84
14278	90.37	161.71	6339.93	8118.6	-7683.76	2626.23	1625963	328056.5	39°23'35.3	80°49'24.6	8120.18	161.13	1.98	0.13	-1.98
14367	90.09	158.53	6339.58	8207.58	-7767.45	2656.49	1625994	327972.8	39°23'34.4	80°49'24.2	8209.15	161.119	3.59	-0.31	-3.57
14457	90.06	155.86	6339.46	8297.47	-7850.4	2691.37	1626028	327889.9	39°23'33.6	80°49'23.7	8298.93	161.077	2.97	-0.03	-2.97
14546	90.03	154.69	6339.39	8386.16	-7931.24	2728.59	1626066	327809	39°23'32.8	80°49'23.2	8387.48	161.015	1.32	-0.03	-1.31
14636	90.03	156.45	6339.34	8475.89	-8013.18	2765.82	1626103	327727.1	39°23'32.0	80°49'22.7	8477.07	160.957	1.96	0	1.96
14726	90.09	156.57	6339.25	8565.72	-8095.72	2801.69	1626139	327644.6	39°23'31.2	80°49'22.3	8566.81	160.911	0.15	0.07	0.13
14815	89.82	157.78	6339.32	8654.61	-8177.75	2836.21	1626173	327562.5	39°23'30.4	80°49'21.8	8655.62	160.872	1.39	-0.3	1.36
14905	90	158.95	6339.46	8744.58	-8261.41	2869.39	1626206	327478.9	39°23'29.6	80°49'21.4	8745.53	160.847	1.32	0.2	1.3
14994	89.97	161.49	6339.48	8833.57	-8345.15	2899.51	1626237	327395.1	39°23'28.8	80°49'21.0	8834.52	160.84	2.85	-0.03	2.85
15084	90.12	163.3	6339.41	8923.49	-8430.93	2926.73	1626264	327309.4	39°23'27.9	80°49'20.6	8924.48	160.856	2.02	0.17	2.01
15173	90.03	163.38	6339.3	9012.33	-8516.2	2952.25	1626289	327224.1	39°23'27.1	80°49'20.3	9013.4	160.88	0.14	-0.1	0.09
15263	90.22	162.18	6339.1	9102.23	-8602.16	2978.89	1626316	327138.1	39°23'26.2	80°49'19.9	9103.35	160.899	1.35	0.21	-1.33
15356	90.06	159.58	6338.87	9195.21	-8690.02	3009.35	1626346	327050.3	39°23'25.4	80°49'19.5	9196.34	160.899	2.8	-0.17	-2.8
15381	90.06	159.58	6338.85	9220.21	-8713.45	3018.07	1626355	327026.9	39°23'25.2	80°49'19.4	9221.33	160.895	0	0	0

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TARGETS

Name	MD	TVD	North	East	Grid East	Grid North	Latitude	Longitude	Shape	Comment
SHR-3C-HS BHL Rev-1	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)				
SHR-3C-HS LP Plat										
SHR-3C-HS LP Rev-1										

WELLPATH COMPOSITION Ref Wellbore: SHR-3C-HS AWB Ref Wellpath: SHR-3C-HS AWP Proj: 15381'

Log Name/	Start MD	End MD	Pos	Unc	Model
01_MS Gyro	18.5	2132.5	Generic gyro	-	northseeking (Standard)
02_BHI MW	2132.5	5400	NavTrak	(MagCorr)	
03_BHI AT	5400	6127	NavTrak	(MagCorr)	
04_BHI AT	6127	15356	NavTrak	(AT Curve Short Spaced)	
Projection	15356	15381	Blind Drilling	(std)	

COMMENTS

Wellpath general comments
 API: 47-095-02194-0000
 BHI Job #: 7024699
 Rig: Precision 542
 Duration: 4/3/2015-4/9/2015
 MS Gyro <12-1/4> (100'-2114')"
 BHI MWD <8-3/4> (2132.5')(2265'-5400')"
 BHI AT Curve (MagCorr) <8-3/4> (5400')(5499'-6127')"
 BHI AT Curve (SS) <8-3/4> (6127')(6217'-15356')"
 Projected MD at TD: 15381'

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Hydraulic Fracturing Fluid Product Component Information Disclosure

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Job Start Date:	9/9/2017
Job End Date:	9/19/2017
State:	West Virginia
County:	Tyler
API Number:	47-095-02194-00-00
Operator Name:	CONSOL Energy Inc.
Well Name and Number:	SHRL3CHS
Latitude:	39.41421100
Longitude:	-80.83303100
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,339
Total Base Water Volume (gal):	12,927,432
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

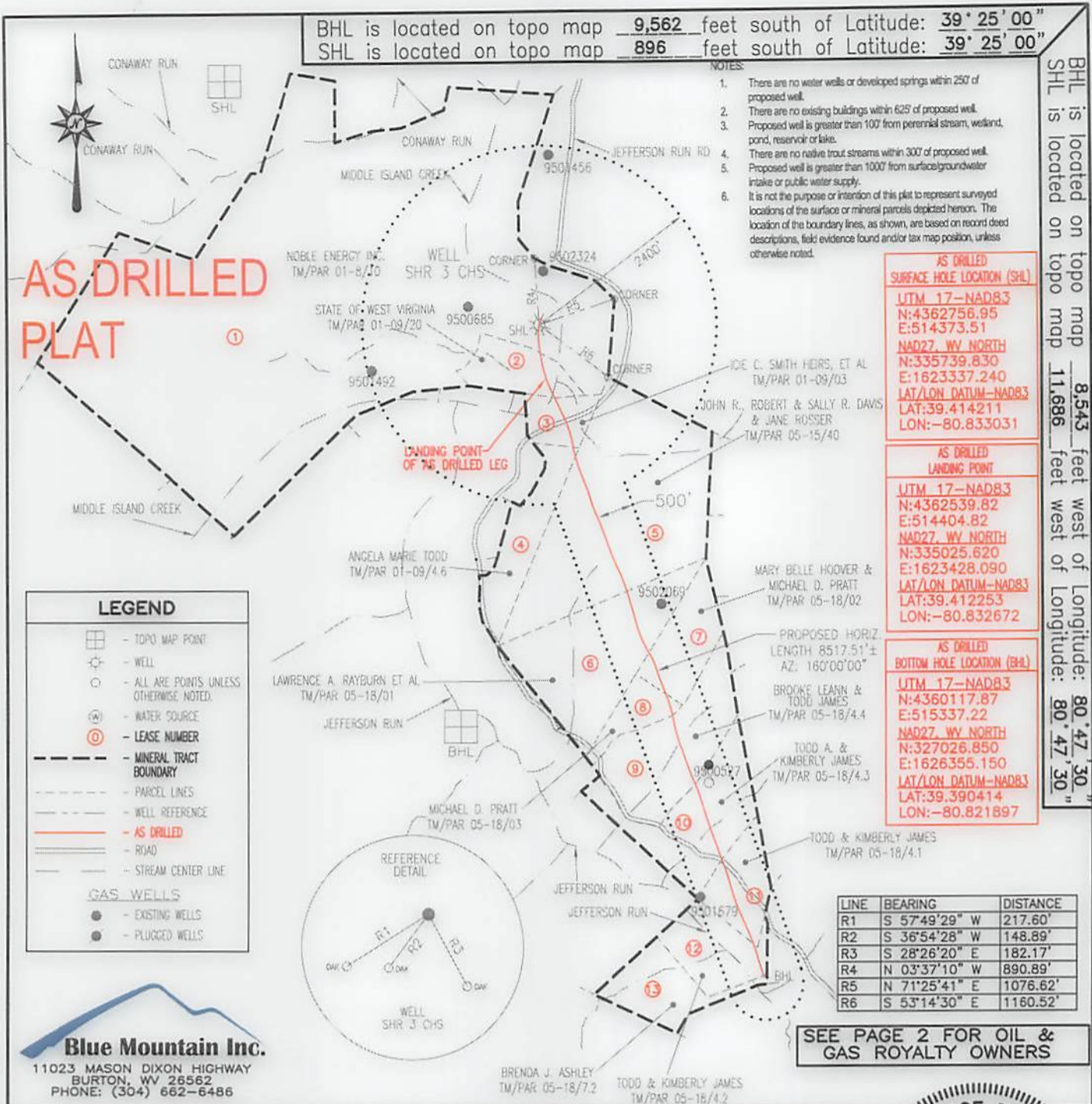
Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Ascent	Carrier/Base Fluid	Water	7732-18-5	100.00000	86.51630	None
Sand (Proppant)	Keane	Proppant	Crystalline silica: Quartz (SiO2)	14808-60-7	100.00000	12.52772	None
Hydrochloric Acid (7.5%)	Keane	Acid Inhibitor	Water	7732-18-5	92.50000	0.69262	None
			Hydrochloric Acid	7647-01-0	7.50000	0.05616	None
Hydrochloric Acid (15%)	Keane	Acidizing	Water	7732-18-5	85.00000	0.09135	None
			Hydrochloric Acid	7647-01-0	15.00000	0.01612	None
KFR-23	Keane	Friction Reducer	Distillates (petroleum), hydrotreated light	64742-47-8	45.00000	0.03403	None
			copolymer of 2-propenamide	Proprietary	10.00000	0.00756	None
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00151	None
			oleic acid diethanolamide	93-83-4	2.00000	0.00151	None
KFEAC-30	Keane	Iron Control					

			acetic acid	64-19-7	60.00000	0.00295	None
			Citric acid	77-92-9	40.00000	0.00197	None
MBC-516	Keane	Biocide					
			glutaral	111-30-8	26.70000	0.00231	None
			didecyltrimethylammonium chloride	7173-51-5	8.00000	0.00069	None
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00046	None
KSI-19	Keane	Scale Inhibitor					
			Methanol	67-56-1	30.00000	0.00255	None
KAI-12	Keane	Acid Inhibitor					
			Methanol	67-56-1	90.00000	0.00098	None
			Alcohols, C7-9-iso-, C8-rich	68526-83-0	5.00000	0.00005	None
			xylene	1330-20-7	5.00000	0.00005	None
			Fatty imidazoline	61790-69-0	5.00000	0.00005	None
			isopropyl alcohol	67-63-0	5.00000	0.00005	None
			prop-2-yn-1-ol	107-19-7	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	0.00050	None
			Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.00050	None
KWBO-2	Keane	Breaker					
			Sodium persulfate	7775-27-1	99.00000	0.00001	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	0.69262	
			Water	7732-18-5	85.00000	0.09135	
			copolymer of 2-propenamide	Proprietary	10.00000	0.00756	
			Citric acid	77-92-9	40.00000	0.00197	
			oleic acid diethanolamide	93-83-4	2.00000	0.00151	
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00151	
			didecyltrimethylammonium chloride	7173-51-5	8.00000	0.00069	
			Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.00050	
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00046	
			isopropyl alcohol	67-63-0	5.00000	0.00005	
			Alcohols, C7-9-iso-, C8-rich	68526-83-0	5.00000	0.00005	
			Fatty imidazoline	61790-69-0	5.00000	0.00005	
			prop-2-yn-1-ol	107-19-7	5.00000	0.00005	
			xylene	1330-20-7	5.00000	0.00005	
			ethylbenzene	100-41-4	1.00000	0.00001	

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* 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(f) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)



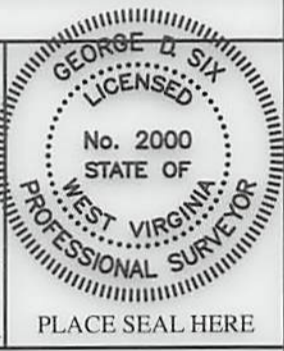
BHL is located on topo map 8,543 feet west of Longitude: 80° 47' 30"
 SHL is located on topo map 11,686 feet west of Longitude: 80° 47' 30"

SEE PAGE 2 FOR OIL & GAS ROYALTY OWNERS

FILE #: SHR 3 CHS-AS DRILLED
 DRAWING #: SHR 3 CHS-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: NOVEMBER 2, 2017
 OPERATOR'S WELL #: SHR 3 CHS-AS DRILLED
 API WELL #: 47 95 02194
 STATE COUNTY PERMIT

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

WATERSHED: HEADWATERS MIDDLE ISLAND CREEK ELEVATION: 751±
 COUNTY/DISTRICT: TYLER / CENTERVILLE QUADRANGLE: SHIRLEY, WV 7.5'
 SURFACE OWNER: NOBLE ENERGY INC. ACREAGE: 542.81±
 OIL & GAS ROYALTY OWNER: DAVID H. WEEKLEY & LINDA C. WEEKLEY, DANIEL A. WEEKLEY & SUZANNE L. WEEKLEY, AMP FUND III, LP ACREAGE: 1009.744±

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

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,339± TMD: 15,381±
 WELL OPERATOR CNX GAS COMPANY LLC DESIGNATED AGENT CHRIS TURNER
 Address 1000 CONSOL ENERGY DRIVE Address 1 DOMINION DR.
 City CANONSBURG State PA Zip Code 15317 City JANE LEW State WV Zip Code 26378

SHR 3 CHS
PAGE 2 OF 2

AS DRILLED PLAT

TRACT	PARCEL #	OIL & GAS ROYALTY OWNER
1	1-8-10	DAVID H. WEEKLEY & LINDA C. WEEKLEY DANIEL A. WEEKLEY & SUZANNE L. WEEKLEY AMP FUND III, LP
2	1-9-20	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION - DIVISION OF HIGHWAYS
3	1-9-3	ROSEMARY HAUGHT, ET AL
4	1-9-4.6	WALTON SMITH & KAY SMITH ET AL
5	5-15-40	JOSEPH CLIFFORD STRATON, ET AL
6	5-18-1	DONALD SECKMAN
7	5-18-2	MICHAEL PRATT, ET AL
8	5-18-3	MICHAEL PRATT, ET AL
9	5-18-4.4	TODD A. JAMES, ET AL
10	5-18-4.3	TODD A. JAMES, ET AL
11	5-18-4.1	TODD A. JAMES, ET AL
12	5-18-4.2	TODD A. JAMES, ET AL
13	5-18-7.2	OK NAN KEYS, ET AL

NOVEMBER 2, 2017

AS DRILLED
SURFACE HOLE LOCATION (SHL)

UTM 17-NAD83
 N:4362756.95
 E:514373.51
NAD27, WV NORTH
 N:335739.830
 E:1623337.240
LAT/LON DATUM-NAD83
 LAT:39.414211
 LON:-80.833031

AS DRILLED
LANDING POINT

UTM 17-NAD83
 N:4362539.82
 E:514404.82
NAD27, WV NORTH
 N:335025.620
 E:1623428.090
LAT/LON DATUM-NAD83
 LAT:39.412253
 LON:-80.832672

AS DRILLED
BOTTOM HOLE LOCATION (BHL)

UTM 17-NAD83
 N:4360117.87
 E:515337.22
NAD27, WV NORTH
 N:327026.850
 E:1626355.150
LAT/LON DATUM-NAD83
 LAT:39.390414
 LON:-80.821897