



**John Hupp BRK 205H**  
 Brooke County, WV  
 Quail 9  
**Plan vs Actual**



Drawing By: GWR Date: 08/23/2017  
 Weatherford Drilling Services  
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**Plan Data for John Hupp BRK 205H**

Plan Point Information:									
DogLeg	Severity	Unit:	°/100.00ft		Position offsets from Slot centre		DLS Toolface Comments		
MD	Inc	Az	TVD	+N/-S	+E/-W	VSec	DLS	Toolface	Comments
(USft)	(°)	(°)	(USft)	(USft)	(USft)	(USft)	(DLSU)	(°)	(°)
4994.00	30.11	89.41	4785.46	6.30	957.92	-166.24	0.23	297.0	Last WFT SVY
5648.32	30.11	89.41	5351.49	9.68	1286.15	-222.00	0.00	0.0	Curve KOP 7° DLS
6782.02	70.00	345.76	6171.15	631.68	1469.87	356.78	7.00	248.3	Build/Turn 9° DLS
7027.43	90.76	338.07	6212.00	860.10	1394.76	594.99	9.00	339.1	Landing Point
14644.13	90.76	338.07	6111.00	7925.03	-1449.65	8056.53	0.00	0.0	PBHL JH205H

Target Set Information:							
Name: John Hupp BRK 205H							
Position offsets from Slot centre							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Lat	Long
	(USft)	(USft)	(USft)	(USft)	(USft)	(°)	(°)
LP JH205H	6212.00	859.70	1394.93	14592144.26	1762234.20	40.178806	-80.563878
PBHL JH205H	6111.00	7925.03	-1449.65	14599209.59	1759389.62	40.198246	-80.573940

**Plan Data for John Hupp BRK 205H**

Field: SOUTHWESTERN\_BROOKE CO, WV UTM NAD 83 (17N)  
 Map Unit: USFt Vertical Reference Datum (VRD):  
 Projected Coordinate System: NAD83 / UTM zone 17N

Site: John Hupp Pad  
 Unit: USFeet TVD Reference:  
 Company Name: SOUTHWESTERN ENERGY

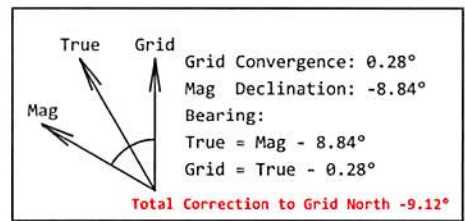
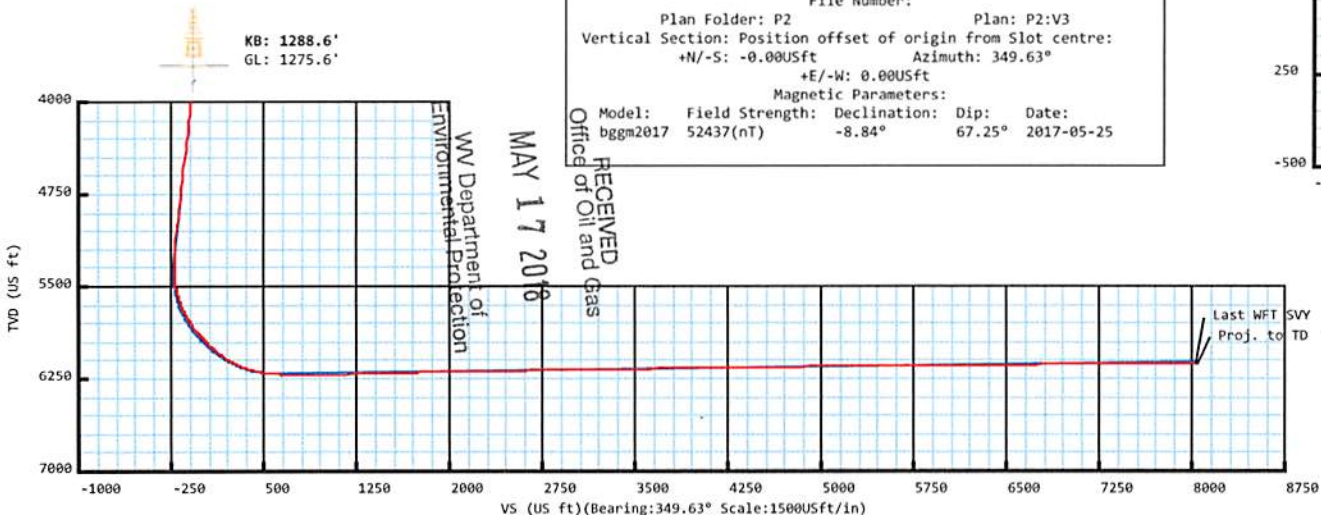
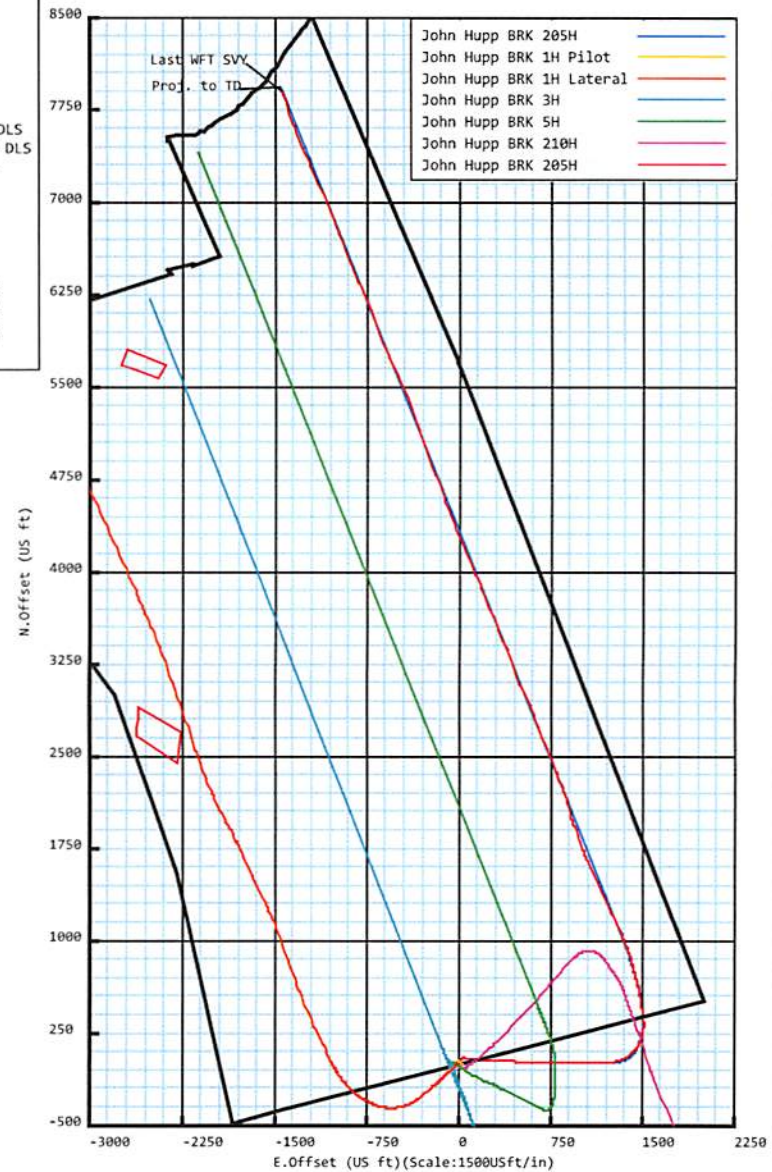
Position: Northing: 14591276.54USft Latitude: 40.176442°  
 Easting: 1760880.58USft Longitude: -80.568739°  
 North Reference: Grid Grid Convergence: 0.28°  
 Elevation Above VRD: 1276.30USft

Slot: John Hupp BRK 205H  
 Position:  
 Offset is from Site centre  
 +N/-S: 8.02USft Northing: 14591284.56USft Latitude: 40.176464°  
 +E/-W: -41.31USft Easting: 1760839.27USft Longitude: -80.568886°  
 Elevation Above VRD: 1275.60USft

Well: John Hupp BRK 205H  
 Type: Main-Well  
 File Number:

Plan Folder: P2 Plan: P2:V3  
 Vertical Section: Position offset of origin from Slot centre:  
 +N/-S: -0.00USft Azimuth: 349.63°  
 +E/-W: 0.00USft

Magnetic Parameters:  
 Model: Field Strength: Declination: Dip: Date:  
 bggm2017 52437(nT) -8.84° 67.25° 2017-05-25



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**5D Survey Report**

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**SOUTHWESTERN ENERGY**

**Field Name:** *SOUTHWESTERN\_BROOKE CO, WV UTM NAD 83  
(17N)*

**Site Name:** *John Hupp Pad*

**Well Name:** *John Hupp BRK 205H*

**Survey:** *Definitive survey*

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31 August 2017

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## John Hupp BRK 205H

<b>Field Name:</b>	<b>Map Units:</b> US ft	<b>Company Name:</b> SOUTHWESTERN ENERGY
<b>SOUTHWESTER N_BROOKE CO, WV UTM NAD 83 (17N)</b>	<b>Vertical Reference Datum (VRD):</b>	
	<b>Projected Coordinate System:</b> NAD83 / UTM zone 17N	
	<b>Comment:</b>	

<b>Site:</b>	<b>Units:</b> US ft	<b>North Reference:</b> Grid	<b>Convergence Angle:</b> 0.28
<b>John Hupp Pad</b>	<b>Position:</b>	<b>Northing:</b> 14591276.54 US ft	<b>Latitude:</b> 40.176442
		<b>Easting:</b> 1760880.58 US ft	<b>Longitude:</b> -80.568739
	<b>Elevation above Field Reference:</b> 1276.30 US ft		
	<b>Comment:</b>		

<b>Slot:</b>	<b>Position (Relative to Site Centre)</b>		
<b>John Hupp BRK 205H</b>	<b>+N/-S:</b> 8.02 US ft	<b>Northing:</b> 14591284.56 US ft	<b>Latitude:</b> 40.176464
	<b>+E/-W:</b> -41.31 US ft	<b>Easting:</b> 1760839.27 US ft	<b>Longitude:</b> -80.568886
	<b>Elevation above Field Reference:</b> 1275.60 US ft		
	<b>Comment:</b>		

<b>Well:</b>	<b>Type:</b> Main well	<b>UWI:</b>	
<b>John Hupp BRK 205H</b>	<b>File Number:</b>	<b>Comment:</b>	
	<b>Closure Distance:</b> 8055.21 US ft	<b>Closure Azimuth:</b> 349.58°	
	<b>Vertical Section: Position of Origin (Relative to Slot centre)</b>		
	<b>+N/-S:</b> -0.00 US ft	<b>+E/-W:</b> 0.00 US ft	<b>Az:</b> 349.63°

<b>Drill floor: Survey Name: Definitive Survey</b>			
<b>Rig Height (Well TVD Reference):</b> 26.00 US ft	<b>Elevation above Field Reference:</b> 1301.60 US ft	<b>Inclination:</b> 0.00°	<b>Azimuth:</b> 0.00°

<b>Survey Name: Definitive Survey</b>			
<b>Date:</b> 17/May/2017	<b>Survey Tool:</b> See Survey Tool Ranges below.	<b>Comment:</b>	<b>Company:</b>

<b>Magnetic Model:</b>				
<b>Model Name:</b> bggm2017	<b>Date:</b> 25/May/2017	<b>Field Strength:</b> 52437.7nT	<b>Declination:</b> -8.84°	<b>Dip:</b> 67.25°

<b>Tie Point:</b>					
<b>MD:</b> 0.00 US ft	<b>Inclination:</b> 0.00°	<b>Azimuth:</b> 0.00°	<b>TVD:</b> 0.00 US ft	<b>North Offset:</b> -0.00 US ft	<b>East Offset:</b> 0.00 US ft

Survey Tool Ranges:			
Name	Start MD(USft)	End MD(USft)	Source Survey
MWD	0.00	505.00	WFT MWD_01
MWD	505.00	1766.00	WFT MWD_02
MWD	1766.00	4907.00	MWD_03
MWD	4907.00	4994.00	WFT MWD_03
MWD	4994.00	5582.00	WFT MWD_04
MWD	5582.00	14638.00	WFT MWD_05

Wellpath created using minimum curvature.

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## 5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Latitude (° ' ")	Longitude (° ' ")	DLS (%/100US ft)	Comment
0.00	0.00	0.00	0.00	0.00	-0.00	0.00	40.176464	-80.568886	0.00	
26.00	0.00	0.00	26.00	0.00	-0.00	0.00	40.176464	-80.568886	0.00	
153.00	1.04	91.21	152.99	-0.23	-0.02	1.15	40.176464	-80.568882	0.82	
241.00	1.00	132.68	240.98	-1.01	-0.56	2.52	40.176463	-80.568877	0.82	
329.00	1.05	177.78	328.97	-2.42	-1.89	3.11	40.176459	-80.568875	0.89	
416.00	1.50	197.78	415.95	-4.21	-3.77	2.79	40.176454	-80.568876	0.72	
467.07	1.48	202.86	467.00	-5.35	-5.01	2.33	40.176451	-80.568878	0.26	Base of Fresh Water :
504.08	1.48	206.60	504.00	-6.14	-5.88	1.93	40.176448	-80.568880	0.26	Pittsburgh Coal :
505.00	1.48	206.69	504.92	-6.15	-5.91	1.92	40.176448	-80.568880	0.26	
628.00	1.16	200.53	627.88	-8.49	-8.49	0.77	40.176441	-80.568884	0.28	
716.00	0.84	218.71	715.87	-9.68	-9.83	0.06	40.176437	-80.568886	0.51	
803.00	0.74	325.67	802.87	-9.58	-9.86	-0.66	40.176437	-80.568889	1.46	
892.00	2.20	353.36	891.83	-7.35	-7.69	-1.18	40.176443	-80.568891	1.78	
977.28	3.63	1.19	977.00	-3.07	-3.37	-1.31	40.176455	-80.568891	1.73	Top of Salt Water :
978.00	3.64	1.23	977.72	-3.03	-3.32	-1.31	40.176455	-80.568891	1.73	
1066.00	4.00	15.94	1065.53	2.46	2.42	-0.41	40.176471	-80.568888	1.18	
1154.00	4.12	30.80	1153.31	7.59	8.09	2.05	40.176486	-80.568879	1.20	
1243.00	4.13	41.72	1242.08	11.96	13.23	5.82	40.176501	-80.568865	0.88	
1329.11	3.55	45.32	1328.00	15.37	17.42	9.78	40.176512	-80.568851	0.73	Maxton :
1330.00	3.54	45.36	1328.88	15.40	17.45	9.82	40.176512	-80.568851	0.73	
1416.00	3.88	46.20	1414.70	18.50	21.33	13.81	40.176523	-80.568837	0.40	
1497.50	4.27	45.10	1496.00	21.74	25.39	17.95	40.176534	-80.568822	0.49	Big Lime :
1503.00	4.30	45.03	1501.48	21.97	25.68	18.24	40.176535	-80.568821	0.49	
1590.00	4.28	46.62	1588.24	25.59	30.21	22.91	40.176547	-80.568804	0.14	
1678.00	4.31	47.25	1675.99	29.15	34.71	27.72	40.176559	-80.568787	0.06	
1697.06	4.19	48.06	1695.00	29.90	35.66	28.76	40.176562	-80.568783	0.72	Big Injun :
1766.00	3.75	51.44	1763.77	32.28	38.75	32.40	40.176570	-80.568770	0.72	
1832.36	3.41	51.11	1830.00	34.25	41.34	35.63	40.176577	-80.568758	0.51	Base Big Injun :
1845.00	3.35	51.04	1842.62	34.61	41.81	36.21	40.176579	-80.568756	0.51	
1916.00	3.29	46.04	1913.50	36.73	44.53	39.29	40.176586	-80.568745	0.42	
2005.00	3.05	54.58	2002.37	39.14	47.67	43.06	40.176595	-80.568731	0.59	
2093.00	2.36	98.32	2090.28	39.56	48.77	46.76	40.176598	-80.568718	2.40	
2181.00	3.09	126.18	2178.18	37.25	47.11	50.47	40.176593	-80.568705	1.69	
2182.82	3.06	126.17	2180.00	37.18	47.05	50.55	40.176593	-80.568705	1.42	Berea :
2269.00	1.84	125.17	2266.10	34.52	44.89	53.54	40.176587	-80.568694	1.42	
2358.00	0.19	37.67	2355.08	33.60	44.19	54.80	40.176585	-80.568689	2.07	
2446.00	0.46	64.06	2443.08	33.79	44.46	55.20	40.176586	-80.568688	0.34	
2533.00	2.76	100.96	2530.04	33.13	44.21	57.58	40.176585	-80.568680	2.77	
2621.00	5.34	102.97	2617.82	30.73	42.89	63.65	40.176581	-80.568658	2.94	
2710.00	6.17	99.88	2706.37	27.44	41.14	72.39	40.176576	-80.568627	1.00	
2798.00	7.78	93.83	2793.71	24.34	39.93	83.00	40.176573	-80.568589	2.01	
2886.00	8.43	95.04	2880.83	21.16	38.97	95.37	40.176570	-80.568544	0.76	
2974.00	9.83	95.88	2967.72	17.35	37.63	109.26	40.176566	-80.568495	1.60	
3062.00	11.56	95.58	3054.18	12.82	36.00	125.51	40.176561	-80.568436	1.97	
3150.00	13.49	95.52	3140.09	7.59	34.16	144.51	40.176556	-80.568368	2.19	
3239.00	15.24	94.63	3226.30	1.72	32.21	166.50	40.176551	-80.568290	1.98	
3327.00	16.38	92.68	3310.97	-4.08	30.70	190.43	40.176546	-80.568204	1.43	
3415.00	18.05	93.92	3395.03	-10.25	29.19	216.42	40.176542	-80.568111	1.94	
3502.00	20.06	94.39	3477.25	-17.37	27.12	244.75	40.176536	-80.568010	2.32	
3590.00	22.35	94.27	3559.29	-25.45	24.72	276.49	40.176529	-80.567896	2.60	
3678.00	24.31	92.70	3640.09	-33.78	22.62	311.27	40.176522	-80.567772	2.34	
3765.00	25.70	91.94	3718.94	-41.85	21.14	348.01	40.176518	-80.567640	1.64	
3852.00	27.17	92.35	3796.84	-50.24	19.69	386.71	40.176513	-80.567502	1.70	
3941.00	29.34	93.15	3875.23	-59.82	17.66	428.79	40.176507	-80.567351	2.48	
4028.00	30.72	92.72	3950.55	-69.83	15.43	472.28	40.176500	-80.567195	1.61	
4115.00	31.29	92.20	4025.12	-79.78	13.51	517.05	40.176494	-80.567035	0.72	

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## 5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Latitude (° ' ")	Longitude (° ' ")	DLS (%/100US ft)	Comment
4203.00	30.46	92.26	4100.65	-89.63	11.75	562.17	40.176489	-80.566874	0.94	
4291.00	31.16	90.23	4176.23	-98.70	10.78	607.23	40.176486	-80.566712	1.42	
4380.00	30.30	90.21	4252.73	-107.06	10.61	652.71	40.176485	-80.566550	0.97	
4468.00	29.71	90.61	4328.94	-115.29	10.29	696.71	40.176483	-80.566392	0.71	
4556.00	29.98	91.23	4405.27	-123.86	9.59	740.50	40.176481	-80.566235	0.47	
4645.00	29.46	91.96	4482.56	-133.01	8.36	784.60	40.176477	-80.566077	0.71	
4730.00	30.18	91.41	4556.30	-141.83	7.12	826.85	40.176473	-80.565926	0.91	
4819.00	29.15	90.91	4633.64	-150.64	6.23	870.89	40.176470	-80.565769	1.19	
4907.00	30.02	89.76	4710.17	-158.70	5.98	914.34	40.176468	-80.565613	1.18	
4994.00	30.11	89.41	4785.46	-166.24	6.30	957.92	40.176469	-80.565457	0.23	
5100.00	29.82	88.96	4877.29	-175.03	7.05	1010.86	40.176470	-80.565267	0.35	
5196.00	28.76	91.00	4961.02	-183.45	7.08	1057.82	40.176470	-80.565099	1.52	
5293.00	29.00	94.72	5045.96	-194.17	4.74	1104.59	40.176463	-80.564932	1.87	
5389.00	29.35	93.13	5129.78	-205.72	1.54	1151.27	40.176453	-80.564765	0.89	
5485.00	29.17	82.88	5213.59	-212.55	3.15	1198.01	40.176457	-80.564598	5.22	
5582.00	29.12	82.34	5298.31	-215.00	9.23	1244.86	40.176473	-80.564430	0.28	
5678.00	29.03	79.09	5382.22	-215.89	16.75	1290.88	40.176493	-80.564265	1.65	
5726.00	28.20	71.23	5424.37	-214.12	22.61	1313.06	40.176509	-80.564185	8.03	
5774.00	27.69	66.30	5466.78	-209.89	30.74	1334.02	40.176531	-80.564110	4.93	
5822.00	28.48	60.97	5509.13	-203.66	40.78	1354.24	40.176558	-80.564038	5.48	
5870.00	30.16	55.46	5550.99	-195.06	53.17	1374.18	40.176592	-80.563966	6.62	
5919.00	31.93	50.09	5592.98	-183.62	68.47	1394.27	40.176634	-80.563894	6.70	
5953.44	33.22	48.63	5622.00	-174.27	80.55	1408.33	40.176667	-80.563843	4.40	Upper Rhinstreet :
5966.00	33.70	48.12	5632.48	-170.68	85.15	1413.51	40.176679	-80.563825	4.40	
6014.00	35.77	46.10	5671.92	-155.97	103.77	1433.54	40.176730	-80.563753	4.93	
6063.00	37.81	42.09	5711.17	-138.90	124.85	1453.93	40.176788	-80.563679	6.43	
6104.60	38.02	35.17	5744.00	-122.15	144.79	1469.86	40.176842	-80.563622	10.24	Lower Rhinstreet :
6111.00	38.09	34.11	5749.04	-119.36	148.04	1472.10	40.176851	-80.563614	10.24	
6159.00	37.87	25.55	5786.90	-96.85	173.61	1486.77	40.176921	-80.563561	10.98	
6184.50	38.14	21.18	5807.00	-83.80	188.02	1492.99	40.176961	-80.563538	10.60	Basal Rhinstreet :
6207.00	38.51	17.38	5824.65	-71.68	201.18	1497.60	40.176997	-80.563522	10.60	
6256.00	40.13	13.32	5862.56	-43.71	231.11	1505.79	40.177079	-80.563492	6.20	
6282.96	41.29	10.76	5883.00	-27.46	248.31	1509.46	40.177126	-80.563478	7.54	Cashaqua :
6303.00	42.19	8.94	5897.95	-14.94	261.45	1511.74	40.177162	-80.563470	7.54	
6351.00	44.23	3.79	5932.95	16.52	294.09	1515.35	40.177252	-80.563456	8.48	
6356.66	44.45	3.17	5937.00	20.36	298.04	1515.59	40.177262	-80.563455	8.56	Middlesex :
6399.00	46.17	358.68	5966.78	49.86	328.12	1516.06	40.177345	-80.563453	8.56	
6400.76	46.24	358.51	5968.00	51.12	329.39	1516.03	40.177348	-80.563453	7.75	Lower Middlesex :
6447.00	48.05	354.30	5999.46	84.76	363.20	1513.89	40.177441	-80.563460	7.75	
6462.89	48.85	353.32	6010.00	96.63	375.03	1512.60	40.177474	-80.563465	6.85	Burket :
6473.59	49.40	352.67	6017.00	104.70	383.06	1511.62	40.177496	-80.563468	6.85	Tully :
6495.00	50.50	351.41	6030.77	121.07	399.28	1509.35	40.177541	-80.563476	6.85	
6543.00	53.58	350.09	6060.30	158.91	436.63	1503.26	40.177643	-80.563497	6.77	
6552.69	54.32	350.05	6066.00	166.74	444.35	1501.90	40.177664	-80.563502	7.63	Mahantango
6564.83	55.24	350.00	6073.00	176.65	454.11	1500.19	40.177691	-80.563508	7.63	RECEIVED Office of Oil and Gas
6591.00	57.24	349.89	6087.54	198.41	475.54	1496.39	40.177750	-80.563521	7.63	
6639.00	60.97	348.97	6112.18	239.59	516.02	1488.83	40.177861	-80.563547	7.94	
6687.00	64.84	348.58	6134.04	282.31	557.92	1480.51	40.177977	-80.563577	8.09	MAY 17 2018
6735.00	67.89	348.15	6153.28	326.27	600.99	1471.64	40.178095	-80.563608	6.41	
6783.00	71.41	347.77	6169.97	371.25	645.00	1462.25	40.178216	-80.563640	7.37	WV Department of Environmental Protection
6792.66	72.06	347.69	6173.00	380.42	653.96	1460.30	40.178241	-80.563647	6.79	Levanna :
6830.00	74.58	347.39	6183.72	416.16	688.88	1452.58	40.178337	-80.563674	6.79	
6858.33	75.63	347.22	6191.00	443.52	715.60	1446.57	40.178410	-80.563695	3.75	Upper Marcellus :
6878.00	76.36	347.10	6195.76	462.58	734.20	1442.32	40.178461	-80.563710	3.75	
6926.00	79.96	345.84	6205.61	509.48	779.87	1431.33	40.178587	-80.563749	7.93	

## 5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Latitude (° ' ")	Longitude (° ' ")	DLS (°/100US ft)	Comment
6974.00	83.70	343.84	6212.43	556.82	825.71	1418.91	40.178713	-80.563792	8.82	
7022.00	86.24	341.64	6216.64	604.28	871.37	1404.72	40.178838	-80.563842	6.99	
7070.00	86.86	338.82	6219.53	651.54	916.45	1388.51	40.178962	-80.563900	6.00	
7119.00	87.04	335.97	6222.13	699.36	961.62	1369.71	40.179087	-80.563966	5.82	
7215.00	90.49	334.43	6224.20	792.29	1048.73	1329.46	40.179326	-80.564109	3.94	
7311.00	90.49	334.76	6223.38	885.00	1135.44	1288.27	40.179565	-80.564255	0.34	
7406.00	90.25	336.89	6222.77	977.25	1222.10	1249.37	40.179804	-80.564392	2.26	
7503.00	90.86	335.07	6221.83	1071.50	1310.70	1209.89	40.180047	-80.564532	1.98	
7598.00	91.23	334.25	6220.09	1163.26	1396.54	1169.24	40.180284	-80.564676	0.95	
7694.00	91.11	333.35	6218.13	1255.60	1482.66	1126.86	40.180521	-80.564826	0.95	
7791.00	91.17	334.23	6216.20	1348.90	1569.67	1084.03	40.180760	-80.564978	0.91	
7887.00	91.05	336.54	6214.34	1441.92	1656.92	1044.06	40.181000	-80.565120	2.41	
7984.00	92.90	341.64	6211.00	1537.19	1747.44	1009.47	40.181249	-80.565242	5.59	
8080.00	91.97	339.73	6206.92	1631.93	1837.95	977.74	40.181498	-80.565354	2.21	
8176.00	91.66	338.18	6203.88	1726.22	1927.50	943.29	40.181745	-80.565476	1.65	
8272.00	91.73	343.30	6201.04	1821.00	2018.06	911.65	40.181994	-80.565587	5.33	
8368.00	91.48	344.71	6198.35	1916.49	2110.30	885.21	40.182247	-80.565680	1.49	
8465.00	90.68	341.87	6196.52	2012.87	2203.18	857.32	40.182503	-80.565779	3.04	
8560.00	90.80	339.49	6195.29	2106.70	2292.82	825.90	40.182749	-80.565890	2.51	
8656.00	90.80	337.04	6193.95	2200.80	2381.98	790.35	40.182995	-80.566015	2.55	
8752.00	90.74	337.63	6192.66	2294.59	2470.55	753.36	40.183238	-80.566146	0.62	
8848.00	90.80	340.13	6191.37	2388.89	2560.09	718.78	40.183485	-80.566268	2.60	
8944.00	90.92	340.97	6189.93	2483.68	2650.60	686.82	40.183734	-80.566381	0.88	
9040.00	90.80	338.96	6188.49	2578.30	2740.78	653.93	40.183982	-80.566497	2.10	
9136.00	90.68	336.72	6187.25	2672.26	2829.67	617.73	40.184226	-80.566626	2.34	
9232.00	90.62	335.39	6186.16	2765.57	2917.40	578.77	40.184468	-80.566764	1.39	
9329.00	90.55	335.46	6185.17	2859.60	3005.61	538.43	40.184711	-80.566906	0.10	
9425.00	90.68	336.68	6184.14	2952.91	3093.35	499.49	40.184952	-80.567044	1.28	
9520.00	91.05	337.64	6182.71	3045.66	3180.89	462.62	40.185193	-80.567175	1.08	
9617.00	90.99	337.91	6180.98	3140.58	3270.67	425.94	40.185440	-80.567305	0.29	
9713.00	91.05	338.96	6179.27	3234.73	3359.94	390.66	40.185686	-80.567429	1.10	
9809.00	91.05	338.86	6177.51	3329.04	3449.49	356.12	40.185932	-80.567551	0.10	
9906.00	91.17	337.74	6175.63	3424.13	3539.60	320.26	40.186180	-80.567678	1.16	
10002.00	91.11	337.36	6173.72	3517.99	3628.31	283.61	40.186424	-80.567808	0.40	
10099.00	90.92	338.13	6172.00	3612.89	3718.06	246.88	40.186671	-80.567938	0.82	
10195.00	90.99	338.09	6170.40	3706.95	3807.13	211.09	40.186916	-80.568064	0.08	
10291.00	90.92	336.76	6168.80	3800.76	3895.76	174.25	40.187160	-80.568195	1.39	
10387.00	90.93	335.38	6167.25	3894.07	3983.50	135.31	40.187401	-80.568333	1.44	
10483.00	90.56	336.12	6166.01	3987.26	4071.02	95.89	40.187642	-80.568472	0.86	
10579.00	90.56	335.94	6165.07	4080.56	4158.73	56.89	40.187884	-80.568610	0.19	
10675.00	90.68	337.61	6164.03	4174.15	4246.95	19.03	40.188126	-80.568744	1.74	
10771.00	90.62	339.08	6162.94	4268.28	4336.16	-16.39	40.188372	-80.568870	1.53	
10868.00	90.74	337.68	6161.79	4363.41	4426.33	-52.12	40.188620	-80.568996	1.45	
10963.00	90.86	337.88	6160.46	4456.38	4514.27	-88.05	40.188862	-80.569123	0.25	
11059.00	90.80	339.46	6159.07	4550.61	4603.68	-122.96	40.189108	-80.569247	1.65	
11155.00	90.80	340.16	6157.73	4645.20	4693.77	-156.09	40.189356	-80.569364	0.73	
11251.00	90.12	339.32	6156.96	4739.77	4783.83	-189.33	40.189603	-80.569481	1.13	
11346.00	90.31	338.43	6156.60	4833.10	4872.44	-223.57	40.189847	-80.569602	0.96	
11442.00	90.25	338.57	6156.13	4927.29	4961.76	-258.75	40.190093	-80.569727	0.16	
11539.00	90.37	339.62	6155.61	5022.65	5052.37	-293.36	40.190342	-80.569849	1.09	
11635.00	90.37	340.72	6154.99	5117.34	5142.67	-325.93	40.190591	-80.569964	1.15	
11730.00	90.31	341.89	6154.43	5211.34	5232.66	-356.38	40.190838	-80.570072	1.23	
11826.00	90.31	339.90	6153.91	5306.22	5323.37	-387.80	40.191088	-80.570182	2.07	
11921.00	90.43	339.99	6153.29	5399.86	5412.60	-420.37	40.191333	-80.570298	0.16	
12016.00	90.25	337.34	6152.73	5493.12	5501.08	-454.93	40.191576	-80.570420	2.80	
12111.00	90.43	335.28	6152.17	5585.56	5588.07	-493.10	40.191816	-80.570555	2.18	
12206.00	90.37	334.96	6151.50	5677.52	5674.25	-533.07	40.192053	-80.570697	0.34	
12302.00	90.56	336.27	6150.72	5770.66	5761.68	-572.70	40.192294	-80.570837	1.38	
12398.00	90.68	337.78	6149.68	5864.34	5850.06	-610.17	40.192537	-80.570970	1.58	

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## 5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Latitude (° ' ")	Longitude (° ' ")	DLS (%/100US ft)	Comment
12492.00	90.55	338.38	6148.68	5956.43	5937.26	-645.26	40.192777	-80.571094	0.65	
12587.00	90.62	339.45	6147.71	6049.77	6025.89	-679.43	40.193021	-80.571215	1.13	
12682.00	90.62	339.92	6146.68	6143.33	6114.98	-712.41	40.193266	-80.571331	0.49	
12769.00	90.43	337.79	6145.88	6228.79	6196.11	-743.79	40.193489	-80.571442	2.46	
12856.00	90.56	335.46	6145.13	6313.55	6275.96	-778.31	40.193709	-80.571564	2.68	
12942.00	90.55	334.22	6144.30	6396.70	6353.80	-814.87	40.193923	-80.571694	1.44	
13029.00	90.55	335.88	6143.46	6480.89	6432.67	-851.56	40.194140	-80.571824	1.91	
13116.00	90.62	337.72	6142.57	6565.71	6512.63	-885.83	40.194360	-80.571945	2.12	
13203.00	90.62	338.66	6141.63	6650.97	6593.40	-918.15	40.194582	-80.572060	1.08	
13290.00	90.55	340.51	6140.74	6736.63	6674.93	-948.50	40.194806	-80.572167	2.13	
13376.00	90.56	341.83	6139.91	6821.69	6756.32	-976.25	40.195030	-80.572265	1.53	
13463.00	90.43	339.62	6139.16	6907.63	6838.43	-1004.97	40.195256	-80.572366	2.54	
13549.00	90.49	337.72	6138.47	6992.06	6918.54	-1036.25	40.195477	-80.572477	2.21	
13636.00	90.43	335.93	6137.77	7076.89	6998.51	-1070.48	40.195697	-80.572598	2.06	
13723.00	90.37	333.95	6137.16	7161.04	7077.31	-1107.33	40.195914	-80.572729	2.28	
13810.00	90.55	333.84	6136.46	7244.77	7155.44	-1145.61	40.196129	-80.572864	0.24	
13897.00	90.43	334.66	6135.72	7328.65	7233.79	-1183.41	40.196344	-80.572998	0.95	
13984.00	90.80	337.55	6134.78	7413.23	7313.32	-1218.64	40.196563	-80.573123	3.35	
14071.00	90.68	338.39	6133.66	7498.42	7393.96	-1251.27	40.196785	-80.573239	0.98	
14158.00	90.43	338.79	6132.82	7583.81	7474.96	-1283.03	40.197008	-80.573351	0.54	
14244.00	90.37	338.25	6132.22	7668.20	7554.98	-1314.52	40.197228	-80.573462	0.63	
14331.00	90.62	339.68	6131.47	7753.69	7636.18	-1345.74	40.197451	-80.573573	1.67	
14418.00	90.49	340.19	6130.62	7839.44	7717.89	-1375.59	40.197676	-80.573678	0.60	
14504.00	90.56	339.44	6129.84	7924.18	7798.61	-1405.26	40.197898	-80.573783	0.88	
14590.00	90.49	336.85	6129.05	8008.44	7878.42	-1437.27	40.198118	-80.573896	3.01	
14615.00	90.49	336.51	6128.83	8032.81	7901.37	-1447.17	40.198181	-80.573931	1.36	Last WFT SVY
14638.00	90.49	336.51	6128.64	8055.21	7922.47	-1456.34	40.198239	-80.573964	0.00	Proj. to TD

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