



John Hupp BRK 210H  
 Brooke County, WV  
 Quail 9  
**Plan vs Actual**



Plan Data for John Hupp BRK 210H

Plan Point Information:

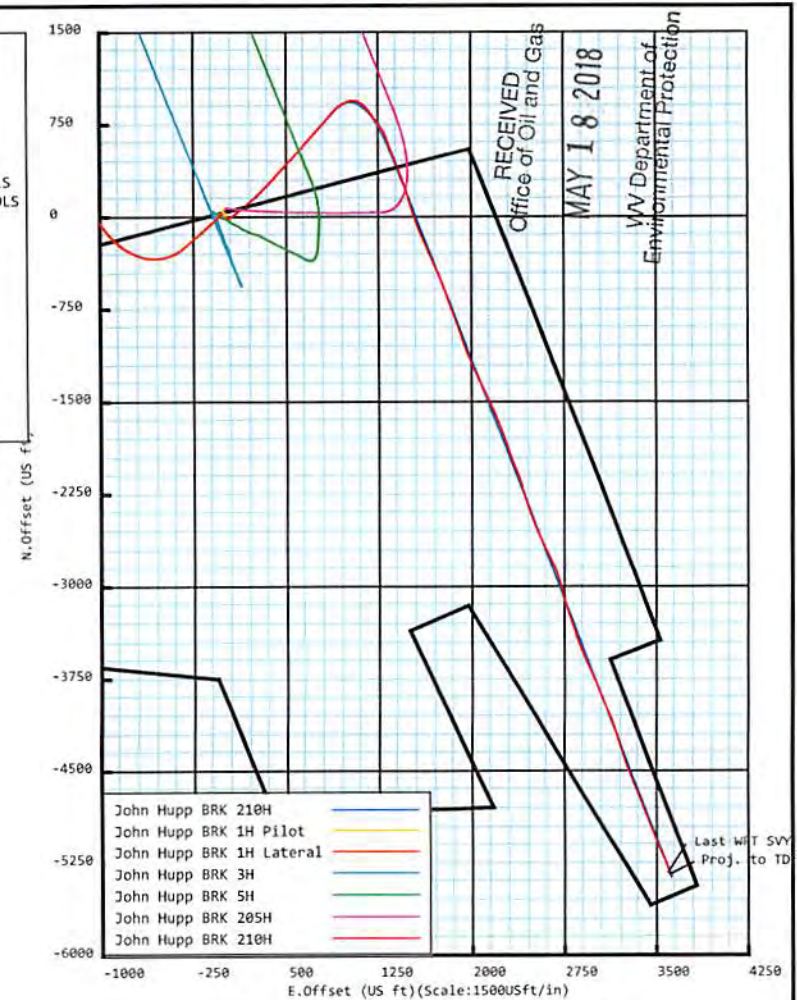
MD	Inc	Az	TVD	+N/-S	+E/-W	VSec	DLS	Toolface	Comments
(USft)	(°)	(°)	(USft)	(USft)	(USft)	(DLSU)	(°)	(°)	
5131.00	29.62	42.71	4888.68	724.78	769.47	-170.58	0.75	28.8	Last WFT SVY
5553.51	29.62	42.71	5255.98	878.22	911.12	-218.59	0.00	0.0	Curve KOP 7° DLS
6476.55	50.00	152.80	6038.61	713.54	1265.85	116.30	7.00	127.2	Build/Turn 7° DLS
6772.03	70.00	158.95	6185.70	480.78	1368.55	366.70	7.00	16.6	Build 9° DLS
6983.32	89.02	158.95	6224.00	287.77	1442.81	568.24	9.00	0.0	Landing Point
13036.42	89.02	158.95	6328.00	-5360.74	3616.19	6466.40	0.00	0.0	PBHL JH210H

Target Set Information:

Name: John Hupp BRK 210H

Position offsets from Slot centre

Name	TVD	+N/-S	+E/-W	Northing	Easting	Lat	Long
(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(°)	(°)
LP JH210H	6224.00	306.75	1435.52	14591566.40	1762298.47	40.177219	-80.563658
PBHL JH210H	6328.00	-5360.74	3616.19	14585898.91	1764479.14	40.161626	-80.555952



Plan Data for John Hupp BRK 210H

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

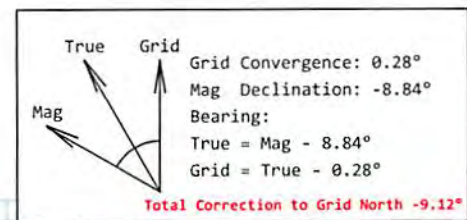
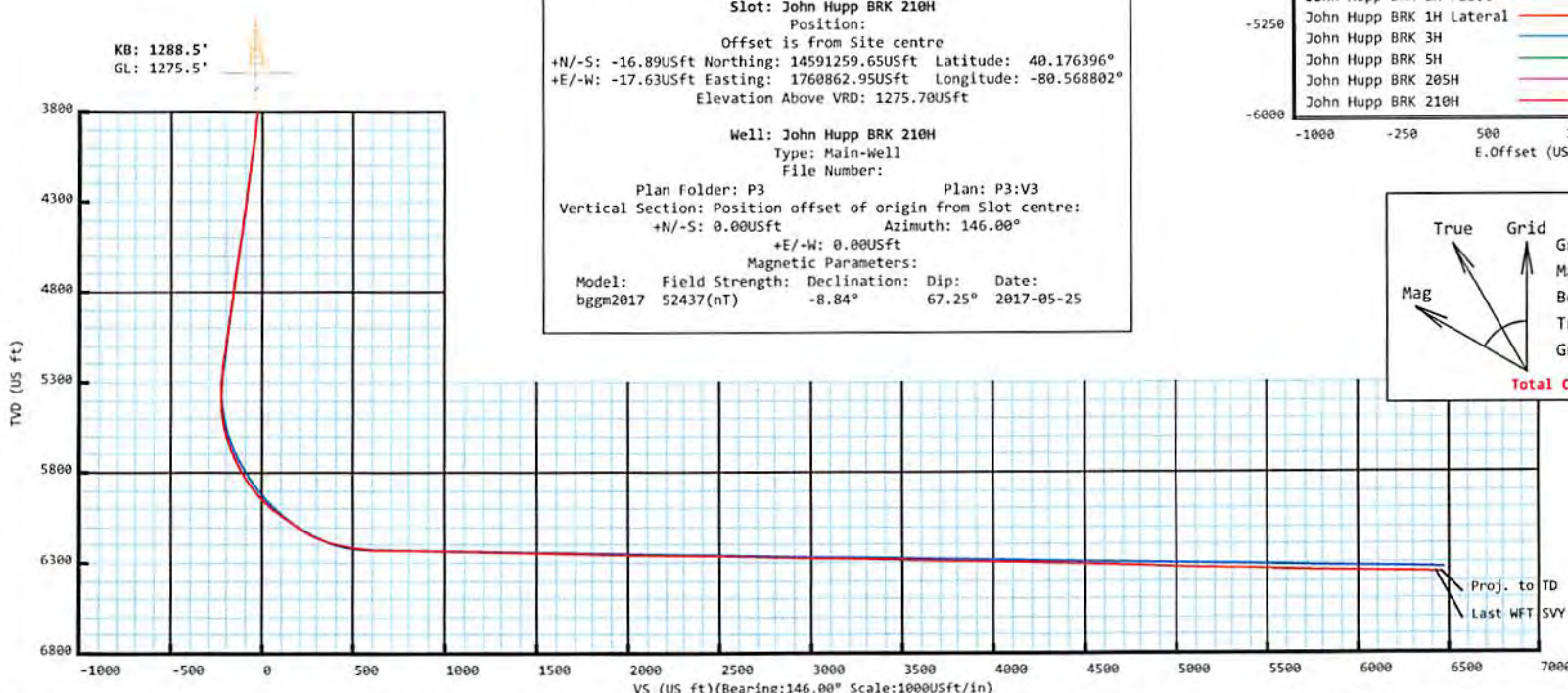
Position:  
 Northing: 14591276.54USft Latitude: 40.176442°  
 Easting: 1760880.58USft Longitude: -80.568739°  
 North Reference: Grid Grid Convergence: 0.28°  
 Elevation Above VRD: 1276.30USft

Slot: John Hupp BRK 210H  
 Position:  
 Offset is from Site centre  
 +N/-S: -16.89USft Northing: 14591259.65USft Latitude: 40.176396°  
 +E/-W: -17.63USft Easting: 1760862.95USft Longitude: -80.568802°  
 Elevation Above VRD: 1275.70USft

Well: John Hupp BRK 210H  
 Type: Main-Well  
 File Number:

Plan Folder: P3 Plan: P3:V3  
 Vertical Section: Position offset of origin from Slot centre:  
 +N/-S: 0.00USft Azimuth: 146.00°  
 +E/-W: 0.00USft

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



Drawing By: GWR Date: 08/07/2017  
 Weatherford Drilling Services  
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 +1.405.773.1100 Main  
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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 210H*

**Survey:** *Definitive survey*

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24 August 2017

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## John Hupp BRK 210H

<b>Map Units:</b> US ft	<b>Company Name:</b> SOUTHWESTERN ENERGY		
<b>Field Name:</b>	<b>Vertical Reference Datum (VRD):</b>		
SOUTHWESTER N_BROOKE CO, WV UTM NAD 83 (17N)	<b>Projected Coordinate System:</b> NAD83 / UTM zone 17N		
	<b>Comment:</b>		
<b>Site:</b>  John Hupp Pad	<b>Units:</b> US ft	<b>North Reference:</b> Grid	<b>Convergence Angle:</b> 0.28
	<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>  John Hupp BRK 210H	<b>Position (Relative to Site Centre)</b>		
	<b>+N/-S:</b> -16.89 US ft	<b>Northing:</b> 14591259.65 US ft	<b>Latitude:</b> 40.176396
	<b>+E/-W:</b> -17.63 US ft	<b>Easting:</b> 1760862.95 US ft	<b>Longitude:</b> -80.568802
	<b>Elevation above Field Reference:</b> 1275.70 US ft		
	<b>Comment:</b>		
<b>Well:</b>  John Hupp BRK 210H	<b>Type:</b> Main well	<b>UWI:</b>	
	<b>File Number:</b>	<b>Comment:</b>	
	<b>Closure Distance:</b> 6459.02 US ft	<b>Closure Azimuth:</b> 145.94°	
	<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> 146.00°

### Drill floor: Survey Name: Definitive Survey

<b>Rig Height (Drill Floor):</b> 26.00 us ft	<b>Elevation above Field Reference:</b> 1301.70 us ft	<b>Inclination:</b> 0.00°	<b>Azimuth:</b> 0.00°
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### Survey Name: Definitive Survey

<b>Date:</b> 17/May/2017	<b>Survey Tool:</b> See Survey Tool Ranges below.	<b>Comment:</b>	<b>Company:</b>
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### Magnetic Model:

<b>Model Name:</b> bggm2017	<b>Date:</b> 25/May/2017	<b>Field Strength:</b> 52437.6nT	<b>Declination:</b> -8.84°	<b>Dip:</b> 67.25°
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### Tie Point:

<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
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### Survey Tool Ranges:

Name	Start MD(usft)	End MD(usft)	Source Survey
GYRO-MWD_FLOW	0.00	528.00	Gyro_01
MWD	528.00	1856.00	WFT MWD_01
MWD	1856.00	5131.00	WFT MWD_02
MWD	5131.00	13049.00	WFT MWD_03

Wellpath created using minimum curvature.

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SD Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
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	40.176396	-80.568802	0.00	
13.00	0.00	0.00	13.00	-0.00	0.00	-0.00	40.176396	-80.568802	0.00	
26.00	0.00	0.00	26.00	-0.00	0.00	-0.00	40.176396	-80.568802	0.00	
113.00	0.19	302.14	113.00	-0.13	0.08	-0.12	40.176396	-80.568802	0.22	
213.00	0.25	246.17	213.00	-0.32	0.08	-0.46	40.176396	-80.568804	0.21	
313.00	1.11	221.82	312.99	-0.12	-0.73	-1.31	40.176394	-80.568807	0.89	
413.00	1.72	228.95	412.96	0.30	-2.44	-3.09	40.176389	-80.568813	0.63	
513.00	1.54	236.56	512.92	0.47	-4.17	-5.34	40.176384	-80.568821	0.28	
528.00	1.55	241.03	527.91	0.45	-4.38	-5.68	40.176384	-80.568822	0.81	
627.00	0.33	227.10	626.90	0.38	-5.22	-7.06	40.176381	-80.568827	1.24	
715.00	0.22	160.61	714.90	0.58	-5.55	-7.19	40.176380	-80.568828	0.36	
801.00	0.58	243.28	800.90	0.68	-5.90	-7.53	40.176379	-80.568829	0.69	
888.00	0.78	257.20	887.89	0.41	-6.23	-8.50	40.176379	-80.568833	0.30	
976.00	0.84	255.77	975.88	-0.02	-6.52	-9.71	40.176378	-80.568837	0.07	
1063.00	0.68	240.29	1062.87	-0.28	-6.94	-10.77	40.176377	-80.568841	0.30	
1151.00	0.50	232.29	1150.87	-0.29	-7.43	-11.53	40.176375	-80.568843	0.22	
1237.00	0.48	240.96	1236.87	-0.30	-7.83	-12.14	40.176374	-80.568846	0.09	
1323.00	0.44	282.44	1322.86	-0.57	-7.94	-12.78	40.176374	-80.568848	0.38	
1411.00	0.44	332.21	1410.86	-1.15	-7.57	-13.27	40.176375	-80.568850	0.42	
1499.00	0.45	9.88	1498.86	-1.73	-6.93	-13.37	40.176377	-80.568850	0.33	
1586.00	0.36	46.73	1585.86	-2.02	-6.40	-13.11	40.176378	-80.568849	0.31	
1674.00	0.40	102.85	1673.86	-1.84	-6.28	-12.61	40.176379	-80.568847	0.41	
1760.00	0.65	118.80	1759.85	-1.19	-6.58	-11.89	40.176378	-80.568845	0.33	
1856.00	0.57	110.21	1855.85	-0.32	-7.01	-10.96	40.176376	-80.568841	0.13	Last WFT SVY
1948.00	0.46	23.30	1947.84	-0.15	-6.83	-10.39	40.176377	-80.568839	0.77	
2035.00	0.93	54.33	2034.84	-0.36	-6.10	-9.68	40.176379	-80.568837	0.67	
2123.00	2.77	88.63	2122.79	0.77	-5.63	-6.97	40.176380	-80.568827	2.35	
2211.00	5.31	101.39	2210.57	4.82	-6.38	-0.85	40.176378	-80.568805	3.04	
2255.00	5.65	105.11	2254.36	7.90	-7.35	3.24	40.176375	-80.568791	1.12	
2298.00	5.89	109.80	2297.15	11.28	-8.65	7.36	40.176372	-80.568776	1.23	
2342.00	6.36	109.46	2340.90	15.06	-10.22	11.78	40.176367	-80.568760	1.07	
2386.00	6.43	103.24	2384.62	18.83	-11.60	16.47	40.176364	-80.568743	1.58	
2430.00	6.30	97.52	2428.35	22.24	-12.48	21.27	40.176361	-80.568726	1.47	
2474.00	6.54	85.19	2472.08	25.06	-12.59	26.16	40.176361	-80.568709	3.17	
2517.00	7.25	72.58	2514.77	27.03	-11.57	31.19	40.176363	-80.568691	3.88	
2561.00	8.15	64.29	2558.37	28.27	-9.39	36.64	40.176369	-80.568671	3.24	
2604.00	8.84	60.64	2600.90	28.98	-6.44	42.27	40.176377	-80.568651	2.04	
2648.00	9.78	60.41	2644.32	29.54	-2.94	48.47	40.176387	-80.568629	2.14	
2692.00	10.10	59.66	2687.66	30.07	0.85	55.05	40.176397	-80.568605	0.78	
2736.00	10.79	57.16	2730.93	30.40	5.04	61.84	40.176409	-80.568581	1.88	
2824.00	12.70	53.16	2817.09	30.09	15.30	76.50	40.176437	-80.568528	2.36	
2911.00	13.90	51.08	2901.75	28.72	27.60	92.29	40.176470	-80.568471	1.48	
2954.00	13.97	50.31	2943.49	27.76	34.16	100.30	40.176488	-80.568442	0.46	
2998.00	14.48	50.90	2986.14	26.75	41.03	108.65	40.176507	-80.568412	1.21	
3042.00	15.37	52.15	3028.65	25.87	48.07	117.53	40.176526	-80.568380	2.15	
3086.00	16.39	53.05	3070.97	25.16	55.38	127.09	40.176546	-80.568346	2.38	
3175.00	19.20	50.20	3155.71	23.03	72.30	148.38	40.176592	-80.568270	3.30	
3263.00	20.97	48.10	3238.35	19.40	92.08	171.22	40.176646	-80.568188	2.17	
3350.00	22.05	48.50	3319.29	15.13	113.30	195.03	40.176704	-80.568102	1.25	
3437.00	23.07	48.17	3399.64	10.68	135.49	219.97	40.176765	-80.568012	1.18	
3523.00	24.26	46.51	3478.40	5.47	158.89	245.34	40.176829	-80.567921	1.59	
3611.00	25.53	45.83	3558.22	-0.86	184.55	272.06	40.176899	-80.567825	1.48	
3699.00	26.94	44.76	3637.16	-8.09	211.91	299.70	40.176974	-80.567725	1.69	
3784.00	27.93	43.97	3712.60	-16.00	239.91	327.08	40.177050	-80.567627	1.24	
3872.00	28.44	42.99	3790.16	-25.01	270.08	355.68	40.177132	-80.567524	0.78	
3959.00	29.21	42.87	3866.38	-34.50	300.79	384.25	40.177216	-80.567421	0.89	
4046.00	29.85	43.25	3942.08	-44.10	332.12	413.52	40.177302	-80.567316	0.77	
4133.00	29.04	42.41	4017.84	-53.84	363.48	442.60	40.177388	-80.567211	1.05	

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## S1? Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
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
4220.00	28.82	41.95	4093.99	-63.89	394.66	470.86	40.177473	-80.567110	0.36	
4308.00	30.77	44.03	4170.35	-73.71	426.63	500.69	40.177560	-80.567002	2.51	
4396.00	30.58	43.69	4246.04	-83.15	459.00	531.80	40.177649	-80.566890	0.29	
4484.00	29.89	42.59	4322.07	-93.01	491.33	562.10	40.177737	-80.566781	1.01	
4572.00	29.15	41.51	4398.64	-103.46	523.52	591.14	40.177825	-80.566677	1.04	
4657.00	28.98	41.57	4472.94	-113.77	554.43	618.52	40.177910	-80.566578	0.20	
4744.00	29.04	41.58	4549.02	-124.28	585.99	646.52	40.177996	-80.566477	0.07	
4831.00	27.99	40.35	4625.47	-135.04	617.35	673.76	40.178082	-80.566379	1.38	
4918.00	27.78	40.75	4702.37	-145.88	648.26	700.21	40.178166	-80.566284	0.32	
5004.00	29.17	42.50	4777.96	-156.05	678.90	727.45	40.178250	-80.566186	1.88	
5090.00	29.35	42.41	4852.99	-165.89	709.91	755.83	40.178335	-80.566084	0.22	
5131.00	29.62	42.71	4888.68	-170.58	724.78	769.47	40.178376	-80.566035	0.75	
5241.00	28.67	40.57	4984.76	-183.85	764.80	805.08	40.178485	-80.565907	1.28	
5327.00	27.50	40.77	5060.63	-194.56	795.51	831.46	40.178569	-80.565812	1.36	
5414.00	27.74	41.51	5137.71	-204.90	825.88	858.00	40.178652	-80.565716	0.48	
5501.00	27.30	42.23	5214.87	-214.72	855.82	884.82	40.178734	-80.565619	0.63	
5588.00	23.09	49.88	5293.60	-221.29	881.60	911.30	40.178804	-80.565524	6.11	
5631.00	22.20	51.90	5333.28	-222.77	892.05	924.14	40.178833	-80.565478	2.75	
5674.00	24.75	53.82	5372.72	-223.69	902.37	937.80	40.178861	-80.565429	6.19	
5718.00	27.72	58.70	5412.19	-223.56	913.13	953.98	40.178890	-80.565371	8.34	
5761.00	29.00	63.56	5450.03	-221.72	922.97	971.87	40.178917	-80.565307	6.14	
5804.00	29.71	67.83	5487.51	-218.16	931.63	991.07	40.178941	-80.565238	5.14	
5847.00	28.24	74.92	5525.14	-212.68	938.30	1010.77	40.178959	-80.565167	8.68	
5891.00	26.12	81.89	5564.29	-205.07	942.38	1030.41	40.178970	-80.565097	8.69	
5934.00	26.09	91.66	5602.92	-195.42	943.44	1049.24	40.178972	-80.565029	9.99	
5978.00	26.56	101.60	5642.38	-182.74	941.18	1068.56	40.178966	-80.564960	10.06	
6021.00	27.07	110.44	5680.77	-167.91	935.83	1087.15	40.178951	-80.564894	9.34	
6064.00	27.12	119.38	5719.07	-151.18	927.60	1104.87	40.178928	-80.564830	9.46	
6108.00	28.11	127.22	5758.07	-132.39	916.41	1121.87	40.178897	-80.564770	8.55	
6154.00	30.28	133.89	5798.23	-110.79	901.81	1138.86	40.178857	-80.564709	8.50	
6198.00	32.85	138.97	5835.73	-88.09	885.11	1154.70	40.178811	-80.564653	8.40	
6241.00	36.19	142.58	5871.15	-63.83	866.22	1170.07	40.178759	-80.564598	9.11	
6285.00	40.02	144.87	5905.77	-36.71	844.32	1186.11	40.178698	-80.564541	9.28	
6328.00	43.35	144.95	5937.88	-8.12	820.93	1202.55	40.178634	-80.564483	7.75	
6371.00	45.83	143.92	5968.50	22.05	796.38	1220.11	40.178566	-80.564420	6.01	
6414.00	49.27	143.13	5997.52	53.74	770.87	1238.97	40.178496	-80.564353	8.11	
6458.00	52.85	144.39	6025.17	87.93	743.27	1259.19	40.178420	-80.564281	8.44	
6501.00	55.45	147.60	6050.36	122.78	714.38	1278.67	40.178340	-80.564212	8.55	
6546.00	55.22	152.48	6075.96	159.68	682.33	1297.14	40.178252	-80.564146	8.93	
6590.00	55.99	158.34	6100.83	195.47	649.33	1312.23	40.178161	-80.564093	11.13	
6633.00	58.92	161.14	6123.96	230.67	615.33	1324.77	40.178068	-80.564049	8.75	
6676.00	63.32	161.04	6144.73	267.01	579.72	1336.97	40.177970	-80.564006	10.23	
6720.00	67.97	159.23	6162.87	305.87	542.04	1350.60	40.177866	-80.563958	11.21	
6763.00	71.82	158.50	6177.65	345.23	504.38	1365.16	40.177762	-80.563906	9.09	
6806.00	74.83	158.47	6189.98	385.45	466.07	1380.26	40.177657	-80.563853	7.00	
6850.00	77.50	158.87	6200.50	427.13	426.27	1395.80	40.177547	-80.563798	6.13	
6893.00	80.02	159.25	6208.89	468.21	386.89	1410.87	40.177439	-80.563744	5.92	
6937.00	82.21	159.87	6215.68	510.46	346.15	1426.05	40.177327	-80.563691	5.17	
6980.00	82.71	159.85	6221.32	551.85	306.13	1440.73	40.177217	-80.563639	1.16	
7066.00	89.44	161.44	6227.21	634.81	225.23	1469.14	40.176994	-80.563539	8.04	
7153.00	88.83	163.27	6228.52	718.28	142.34	1495.51	40.176766	-80.563446	2.22	
7240.00	88.89	162.83	6230.25	801.44	59.13	1520.87	40.176538	-80.563356	0.51	
7327.00	88.52	161.82	6232.22	884.90	-23.74	1547.27	40.176310	-80.563263	1.24	
7413.00	88.70	158.15	6234.30	968.32	-104.51	1576.70	40.176087	-80.563159	4.27	
7500.00	89.20	156.24	6235.90	1053.64	-184.69	1610.41	40.175867	-80.563040	2.27	
7587.00	89.14	156.48	6237.16	1139.22	-264.38	1645.29	40.175648	-80.562917	0.28	
7674.00	89.14	155.63	6238.46	1224.87	-343.88	1680.60	40.175429	-80.562792	0.98	
7760.00	89.26	156.48	6239.67	1309.54	-422.47	1715.50	40.175212	-80.562668	1.00	
7847.00	88.58	158.12	6241.31	1394.83	-502.72	1749.06	40.174992	-80.562549	2.04	

SD Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)

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
7934.00	88.52	160.71	6243.51	1479.43	-584.13	1779.64	40.174768	-80.562441	2.98	
8021.00	88.46	160.83	6245.80	1563.52	-666.24	1808.28	40.174542	-80.562340	0.15	
8108.00	88.40	159.87	6248.18	1647.77	-748.15	1837.53	40.174316	-80.562237	1.11	
8194.00	88.77	159.95	6250.31	1731.23	-828.89	1867.06	40.174094	-80.562133	0.44	
8281.00	88.89	160.14	6252.08	1815.61	-910.65	1896.75	40.173869	-80.562028	0.26	
8368.00	89.32	161.37	6253.44	1899.73	-992.77	1925.42	40.173644	-80.561927	1.50	
8455.00	89.14	159.34	6254.61	1984.00	-1074.70	1954.66	40.173418	-80.561824	2.34	
8542.00	88.95	156.23	6256.06	2069.14	-1155.22	1987.55	40.173197	-80.561707	3.58	
8628.00	89.01	156.60	6257.59	2153.71	-1234.02	2021.95	40.172980	-80.561585	0.44	
8715.00	89.01	155.56	6259.10	2239.36	-1313.54	2057.22	40.172761	-80.561461	1.20	
8811.00	88.76	155.25	6260.96	2334.05	-1400.81	2097.17	40.172521	-80.561319	0.41	
8907.00	88.89	154.73	6262.93	2428.85	-1487.79	2137.75	40.172281	-80.561175	0.56	
9003.00	88.64	156.21	6265.00	2523.51	-1575.10	2177.59	40.172041	-80.561034	1.56	
9099.00	88.95	159.31	6267.02	2617.47	-1663.93	2213.91	40.171797	-80.560906	3.24	
9196.00	89.07	160.75	6268.70	2711.56	-1755.08	2247.04	40.171546	-80.560789	1.49	
9292.00	88.77	161.32	6270.51	2804.25	-1845.86	2278.23	40.171296	-80.560679	0.67	
9389.00	88.70	159.68	6272.65	2898.14	-1937.27	2310.60	40.171045	-80.560565	1.69	
9485.00	88.83	157.91	6274.72	2991.73	-2026.74	2345.31	40.170799	-80.560442	1.85	
9581.00	89.14	159.76	6276.42	3085.31	-2116.25	2379.97	40.170552	-80.560320	1.95	
9677.00	88.83	163.16	6278.12	3177.81	-2207.24	2410.48	40.170302	-80.560212	3.56	
9773.00	88.95	163.38	6279.98	3269.46	-2299.16	2438.11	40.170049	-80.560115	0.26	
9869.00	88.77	160.23	6281.89	3361.80	-2390.33	2468.08	40.169798	-80.560009	3.29	
9965.00	88.83	157.20	6283.90	3455.42	-2479.75	2502.92	40.169552	-80.559886	3.16	
10061.00	88.64	157.11	6286.02	3549.58	-2568.20	2540.18	40.169309	-80.559754	0.22	
10157.00	88.58	154.83	6288.35	3644.10	-2655.85	2579.26	40.169068	-80.559616	2.38	
10253.00	88.83	152.15	6290.52	3739.25	-2741.72	2622.09	40.168831	-80.559464	2.80	
10349.00	88.95	157.24	6292.38	3834.09	-2828.47	2663.11	40.168593	-80.559319	5.30	
10445.00	89.14	161.18	6293.98	3927.52	-2918.18	2697.17	40.168346	-80.559198	4.11	
10541.00	89.07	165.58	6295.48	4019.11	-3010.14	2724.62	40.168093	-80.559102	4.58	
10637.00	88.89	163.88	6297.19	4110.00	-3102.73	2749.89	40.167838	-80.559013	1.78	
10734.00	88.09	161.33	6299.75	4202.92	-3195.26	2778.88	40.167584	-80.558911	2.75	
10829.00	88.40	161.37	6302.66	4294.49	-3285.23	2809.25	40.167336	-80.558804	0.33	
10925.00	88.95	161.23	6304.88	4387.06	-3376.13	2840.02	40.167086	-80.558695	0.59	
11022.00	88.83	159.10	6306.76	4481.09	-3467.36	2872.92	40.166835	-80.558579	2.20	
11118.00	88.15	157.16	6309.29	4574.90	-3556.41	2908.67	40.166590	-80.558453	2.14	
11214.00	88.09	154.68	6312.44	4669.41	-3644.00	2947.81	40.166349	-80.558314	2.58	
11311.00	88.33	156.64	6315.47	4764.98	-3732.33	2987.77	40.166106	-80.558173	2.03	
11407.00	88.03	159.35	6318.52	4858.83	-3821.29	3023.72	40.165861	-80.558046	2.84	
11503.00	88.09	158.83	6321.76	4952.28	-3910.91	3057.96	40.165615	-80.557925	0.54	
11600.00	88.89	156.57	6324.32	5047.23	-4000.62	3094.75	40.165368	-80.557794	2.47	
11696.00	88.89	158.31	6326.18	5141.30	-4089.25	3131.57	40.165124	-80.557664	1.81	
11791.00	88.89	161.18	6328.02	5233.55	-4178.35	3164.45	40.164879	-80.557548	3.02	
11888.00	88.58	162.68	6330.16	5326.80	-4270.54	3194.53	40.164625	-80.557442	1.58	
11984.00	88.40	161.78	6332.69	5418.94	-4361.93	3223.82	40.164374	-80.557339	0.96	
12080.00	88.21	159.24	6335.53	5511.83	-4452.38	3255.83	40.164125	-80.557226	2.65	
12176.00	88.46	158.94	6338.32	5605.30	-4542.02	3290.08	40.163879	-80.557105	0.41	
12272.00	88.95	158.20	6340.49	5698.97	-4631.36	3325.15	40.163633	-80.556981	0.92	
12367.00	89.08	158.35	6342.13	5791.79	-4719.60	3360.31	40.163390	-80.556857	0.21	
12464.00	88.70	158.43	6344.00	5886.51	-4809.77	3396.02	40.163142	-80.556731	0.40	
12559.00	88.89	158.47	6346.00	5979.26	-4898.11	3430.91	40.162899	-80.556607	0.20	
12655.00	89.14	159.06	6347.65	6072.87	-4987.57	3465.68	40.162653	-80.556484	0.67	
12751.00	88.58	158.44	6349.56	6166.48	-5077.03	3500.46	40.162407	-80.556362	0.87	
12847.00	88.95	156.44	6351.63	6260.55	-5165.66	3537.28	40.162163	-80.556231	2.12	
12944.00	88.95	156.24	6353.41	6355.96	-5254.49	3576.20	40.161918	-80.556094	0.21	
13026.00	88.83	157.44	6355.00	6436.48	-5329.86	3608.45	40.161711	-80.555980	1.47	
13049.00	88.83	157.44	6355.47	6459.02	-5351.10	3617.27	40.161652	-80.555948	0.00	

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