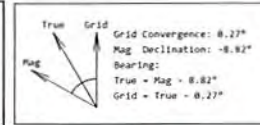


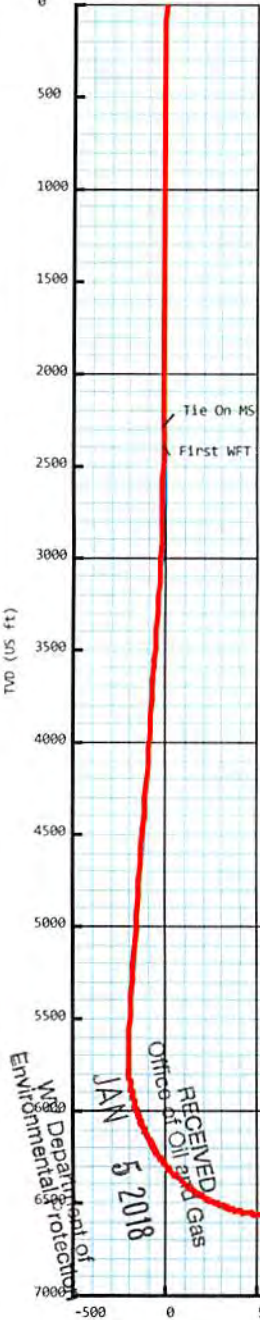


Deborah Craig OHI 10H
Ohio County, WV
SDC 40

Drawing By: TVH Date: 07/11/2017
Weatherford Drilling Services
7725 W. Reno, Ste. #220
Oklahoma City, OK 73127
+1.405.773.1100 Main
+1.405.773.1887 Fax



KB: 1355.3'
GL: 1329.3'
0



Plan Data for Deborah Craig OHI 10H

Plan Point Information:
Dogleg Severity Unit: %/100.00ft

MD (USft)	Inc (°)	Az (°)	TVD (USft)	+N/-S (USft)	+E/-W (USft)	VSec (USft)	DLS (DLSU)	Toolface (°)	Comments
1795.00	1.35	127.00	1794.94	3.55	1.74	-1.83	0.48	14.2	
1882.00	1.35	127.00	1881.92	2.31	3.38	0.14	0.00	0.0	
1949.50	0.00	0.00	1949.41	1.83	4.02	0.90	2.00	180.0	
2130.00	0.00	0.00	2129.91	1.83	4.02	0.90	0.00	0.0	
2600.00	0.00	0.00	2599.91	1.83	4.02	0.90	0.00	0.0	KOP
3100.00	10.00	31.00	3097.38	39.14	26.43	-15.92	2.00	31.0	Hold
5754.34	10.00	31.00	5711.39	434.23	263.82	-194.01	0.00	0.0	Build / Turn
6676.85	60.05	145.48	6478.94	141.98	564.04	219.21	7.00	119.2	Build / Turn
6941.08	83.83	145.49	6560.27	-63.53	705.35	468.50	9.00	0.0	Landing Point
7001.08	89.23	145.49	6563.90	-112.86	739.27	528.34	9.00	0.0	Hold
12815.20	89.23	145.49	6642.03	-4903.42	4032.97	6339.19	0.00	0.0	Turn
13152.20	89.32	152.23	6646.30	-5191.68	4207.13	6674.63	2.00	89.3	Hold
15292.55	89.32	152.23	6671.71	-7085.38	5204.29	8791.31	0.00	0.0	BHL

Target Set Information:

Name: Deborah Craig OHI 10H
Position offsets from Slot centre

Name	TVD (USft)	+N/-S (USft)	+E/-W (USft)	Northing (USft)	Easting (USft)	Lat (°)	Long (°)
LP DC10H	6564.00	-114.71	735.23	14544298.22	1757436.07	40.047481	-80.581860
Turn DC10H	6646.44	-5193.58	4203.66	14539219.35	1760904.50	40.033489	-80.569555
PBHL DC10H	6672.00	-7087.00	5200.55	14537325.93	1761901.39	40.028276	-80.566027

Plan Data for Deborah Craig OHI 10H

Field: SOUTHWESTERN_OHIO CO, WV UTM NAD 83 (17N)
Map Unit: USFt Vertical Reference Datum (VRD): Mean Sea Level
Projected Coordinate System: NAD83 / UTM zone 17N

Site: Deborah Craig Pad

Unit: USFeet TVD Reference:
Company Name: SOUTHWESTERN ENERGY
Position: Northing: 14544424.86USft Latitude: 40.047840°
Easting: 1756629.10USft Longitude: -80.584742°
North Reference: Grid Grid Convergence: 0.27°
Elevation Above VRD: 1329.30USft

Slot: Deborah Craig OHI 10H

Position:
Offset is from Site centre
+N/-S: -11.93USft Northing: 14544412.93USft Latitude: 40.047806°
+E/-W: 71.74USft Easting: 1756700.84USft Longitude: -80.584486°
Elevation Above VRD: 1329.30USft

Well: Deborah Craig OHI 10H

Type: Main-Well
File Number:
Plan Folder: P1 Plan: P3:V1
Vertical Section: Position offset of origin from Slot centre:
+N/-S: -0.00USft Azimuth: 143.73°
+E/-W: 0.00USft
Magnetic Parameters:
Model: Field Strength: Declination: Dip: Date:
bggm2017 52361(nT) -8.82° 67.13° 2017-07-07



RECEIVED
Office of Oil and Gas
JAN 5 2018
WV Department of Environmental Protection

VS (US ft)(Bearing:143.73° Scale:1000USft/in)



Weatherford®

SURVEY REPORT

Report Date: 7/19/2017
 Customer: SWN Production Co., LLC Field: Panhandle
 Job Name: NE-12532444 Rig: SDC 40
 Well Name: Deborah Craig OHI 10H Rig Loc: Ohio Co., WV

Survey Calculation Method:		Minimum Curvature				
Magnetic Reference	Target Direction	Total Magnetic Field	Magnetic Dip Angle	Magnetic Declination	Grid Convergence	Total Correction
Grid North	143.73 deg	52360 nT	67.13 deg	-8.82 deg	0.27 deg	-9.09 deg
Survey Tie-On	Depth	INC	AZ	TVD	NS	EW
	0.00 ft	0.00 deg	0.00 deg	0.00 ft	0.00 ft	0.00 ft

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		Vsect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
100.00	0.75	349.43	100.00	0.64	-0.12	-0.59	0.75
200.00	0.74	351.57	199.99	1.93	-0.33	-1.75	0.03
300.00	0.59	341.26	299.98	3.05	-0.59	-2.81	0.19
400.00	0.74	343.16	399.98	4.16	-0.95	-3.91	0.15
500.00	0.43	343.06	499.97	5.13	-1.24	-4.88	0.31
600.00	0.29	332.81	599.97	5.72	-1.47	-5.48	0.15
700.00	0.21	253.27	699.97	5.89	-1.76	-5.79	0.33
800.00	0.23	267.49	799.97	5.83	-2.14	-5.96	0.06
900.00	0.24	280.58	899.97	5.86	-2.54	-6.23	0.05
1000.00	0.13	254.13	999.96	5.87	-2.86	-6.42	0.14
1100.00	0.11	236.70	1099.96	5.78	-3.05	-6.46	0.04
1200.00	0.24	268.98	1199.96	5.73	-3.34	-6.59	0.16
1300.00	0.10	301.51	1299.96	5.77	-3.62	-6.79	0.16
1400.00	0.15	4.60	1399.96	5.94	-3.68	-6.97	0.14
1500.00	0.15	55.03	1499.96	6.15	-3.57	-7.07	0.13
1600.00	0.62	114.36	1599.96	6.00	-2.97	-6.59	0.56
1700.00	0.75	125.90	1699.95	5.39	-1.94	-5.50	0.19
1800.00	1.36	126.09	1799.94	4.31	-0.45	-3.74	0.61
1900.00	1.34	103.39	1899.91	3.34	1.64	-1.72	0.53
2000.00	1.68	52.11	1999.88	3.97	3.94	-0.87	1.34
2100.00	1.67	30.22	2099.84	6.13	5.83	-1.50	0.64
2200.00	1.52	353.68	2199.80	8.71	6.41	-3.23	1.01
2291.00	2.18	5.30	2290.75	11.63	6.44	-5.57	0.83
2387.00	2.76	27.22	2386.67	15.50	7.67	-7.96	1.14
2480.00	2.92	28.09	2479.55	19.59	9.81	-9.99	0.18
2573.00	2.97	22.48	2572.43	23.90	11.84	-12.26	0.31
2666.00	3.38	28.97	2665.29	28.53	14.09	-14.66	0.59
2759.00	3.80	37.67	2758.10	33.36	17.30	-16.66	0.74
2851.00	3.74	35.68	2849.90	38.21	20.92	-18.44	0.16
2944.00	4.75	36.57	2942.65	43.77	24.98	-20.51	1.09
3037.00	6.26	32.34	3035.22	51.15	29.99	-23.50	1.68
3130.00	6.34	27.76	3127.66	59.98	35.09	-27.60	0.55
3223.00	7.13	24.63	3220.01	69.77	39.89	-32.65	0.94
3315.00	6.99	20.29	3311.32	80.21	44.21	-38.51	0.60
3405.00	7.40	26.39	3400.61	90.54	48.68	-44.18	0.96

RECEIVED
 Office of Oil and Gas
 JAN 5 2018
 WV Department of
 Environmental Protection
 03/02/2018

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
3498.00	9.00	30.94	3492.66	102.14	55.09	-49.76	1.86
3590.00	10.44	30.94	3583.33	115.46	63.07	-55.78	1.57
3683.00	10.42	28.11	3674.80	130.11	71.37	-62.68	0.55
3776.00	10.06	32.46	3766.32	144.38	79.69	-69.26	0.92
3869.00	9.33	30.69	3857.99	157.72	87.90	-75.16	0.85
3962.00	9.12	33.54	3949.79	170.34	95.82	-80.65	0.54
4055.00	9.81	32.66	4041.52	183.16	104.16	-86.04	0.76
4147.00	10.84	30.25	4132.03	197.23	112.75	-92.31	1.21
4237.00	10.24	26.84	4220.51	211.68	120.63	-99.30	0.96
4327.00	10.51	27.57	4309.04	226.09	128.04	-106.54	0.33
4417.00	11.27	29.98	4397.42	240.99	136.23	-113.70	0.98
4509.00	11.74	35.86	4487.57	256.36	146.21	-120.19	1.37
4602.00	11.41	35.99	4578.68	271.47	157.16	-125.90	0.36
4695.00	10.70	33.42	4669.96	286.12	167.32	-131.70	0.93
4785.00	10.08	31.22	4758.48	299.83	176.00	-137.61	0.82
4874.00	9.72	29.78	4846.15	313.01	183.77	-143.64	0.49
4967.00	10.01	32.63	4937.78	326.63	192.03	-149.74	0.61
5060.00	10.07	32.87	5029.36	340.27	200.80	-155.55	0.08
5150.00	9.82	30.87	5118.00	353.46	209.01	-161.33	0.47
5243.00	9.87	29.83	5209.63	367.19	217.04	-167.64	0.20
5335.00	9.76	27.38	5300.29	380.95	224.55	-174.29	0.47
5428.00	9.33	35.30	5392.00	394.10	232.53	-180.18	1.48
5521.00	8.72	34.06	5483.85	406.10	240.84	-184.93	0.69
5611.00	9.39	35.87	5572.73	417.70	248.96	-189.48	0.81
5703.00	10.67	38.69	5663.32	430.43	258.68	-193.99	1.49
5750.00	10.87	49.88	5709.50	436.68	264.79	-195.42	4.46
5796.00	10.53	65.26	5754.71	441.24	271.93	-194.87	6.23
5842.00	10.86	81.50	5799.92	443.64	280.03	-192.01	6.57
5889.00	11.77	95.38	5846.02	443.84	289.19	-186.76	6.09
5935.00	13.28	108.54	5890.93	441.72	298.87	-179.32	7.00
5982.00	14.68	119.68	5936.54	437.05	309.16	-169.47	6.44
6028.00	16.56	129.52	5980.85	429.99	319.29	-157.79	7.05
6074.00	19.47	132.28	6024.59	420.66	330.02	-143.92	6.59
6121.00	22.49	132.33	6068.47	409.34	342.46	-127.43	6.43
6190.00	26.08	132.28	6131.36	390.24	363.45	-99.62	5.20
6237.00	28.47	132.30	6173.13	375.75	379.38	-78.51	5.09
6283.00	31.91	131.70	6212.88	360.28	396.57	-55.86	7.51
6330.00	35.77	132.98	6251.91	342.64	415.90	-30.21	8.35
6376.00	39.39	135.58	6288.36	323.04	435.96	-2.54	8.59
6422.00	43.20	138.07	6322.92	300.90	456.71	27.59	9.02
6469.00	46.16	139.89	6356.34	275.96	478.38	60.52	6.86
6515.00	48.08	141.51	6387.64	249.87	499.72	94.18	4.91
6559.00	50.68	143.03	6416.28	223.46	520.15	127.56	6.46
6605.00	55.17	143.64	6444.01	194.02	542.06	164.25	9.82
6651.00	60.10	143.19	6468.62	162.83	565.21	203.09	10.75
6698.00	64.15	142.90	6490.59	129.64	590.18	244.62	8.63
6744.00	66.80	143.07	6509.69	96.23	615.38	286.47	5.77
6791.00	69.91	144.16	6527.02	61.06	641.28	330.15	6.96
6837.00	74.01	145.71	6541.26	25.27	666.40	373.86	9.47
6883.00	77.63	147.26	6552.53	-11.91	691.02	418.40	

RECEIVED
Office of Oil and Gas

JAN 5 2018

03/02/2018
WV Department of
Environmental Protection

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
6930.00	82.76	147.41	6560.53	-50.89	716.00	464.61	10.92
6976.00	87.16	147.41	6564.57	-89.49	740.68	510.33	9.57
7023.00	88.27	146.80	6566.45	-128.92	766.18	557.21	2.69
7115.00	89.32	149.09	6568.38	-206.87	815.00	648.93	2.74
7208.00	88.83	152.06	6569.88	-287.85	860.67	741.24	3.24
7301.00	88.94	151.52	6571.69	-369.79	904.63	833.31	0.59
7394.00	88.77	150.81	6573.55	-451.24	949.47	925.51	0.78
7487.00	88.46	145.86	6575.80	-530.35	998.26	1018.15	5.33
7579.00	87.78	145.02	6578.82	-606.07	1050.42	1110.06	1.17
7672.00	87.90	144.29	6582.32	-681.88	1104.18	1202.98	0.79
7765.00	88.64	143.90	6585.13	-757.17	1158.70	1295.93	0.90
7858.00	88.52	145.91	6587.44	-833.24	1212.15	1388.88	2.16
7950.00	89.69	145.14	6588.87	-909.07	1264.22	1480.82	1.52
8043.00	89.26	143.53	6589.73	-984.62	1318.43	1573.81	1.79
8136.00	88.64	141.76	6591.43	-1058.53	1374.85	1666.77	2.02
8229.00	89.38	141.84	6593.04	-1131.60	1432.35	1759.71	0.80
8322.00	89.07	141.95	6594.29	-1204.77	1489.74	1852.65	0.35
8414.00	89.63	145.11	6595.34	-1278.74	1544.41	1944.63	3.49
8507.00	89.29	145.17	6596.22	-1355.05	1597.57	2037.60	0.37
8600.00	89.38	143.18	6597.29	-1430.45	1651.99	2130.59	2.14
8693.00	89.51	143.28	6598.20	-1504.94	1707.66	2223.58	0.18
8786.00	90.18	142.68	6598.45	-1579.19	1763.66	2316.57	0.97
8878.00	89.94	145.37	6598.35	-1653.64	1817.69	2408.56	2.94
8971.00	89.75	148.03	6598.60	-1731.36	1868.75	2501.42	2.87
9064.00	90.00	147.81	6598.81	-1810.16	1918.14	2594.18	0.36
9157.00	89.20	143.94	6599.45	-1887.13	1970.30	2687.09	4.25
9249.00	88.46	142.32	6601.33	-1960.71	2025.49	2779.06	1.94
9342.00	89.20	142.61	6603.23	-2034.44	2082.14	2872.02	0.85
9435.00	88.64	142.98	6604.99	-2108.50	2138.36	2964.99	0.72
9528.00	88.89	146.08	6606.99	-2184.22	2192.31	3057.95	3.34
9621.00	88.52	148.86	6609.09	-2262.60	2242.30	3150.72	3.01
9713.00	88.95	148.62	6611.12	-2341.22	2290.03	3242.34	0.54
9806.00	88.64	149.58	6613.08	-2421.00	2337.78	3334.91	1.08
9899.00	89.14	149.03	6614.88	-2500.96	2385.24	3427.45	0.80
9992.00	89.08	149.94	6616.33	-2581.07	2432.46	3519.97	0.98
10084.00	89.01	146.44	6617.86	-2659.23	2480.94	3611.67	3.80
10177.00	88.83	144.82	6619.61	-2735.97	2533.43	3704.60	1.75
10270.00	88.83	144.80	6621.51	-2811.96	2587.01	3797.56	0.02
10363.00	88.95	144.45	6623.31	-2887.78	2640.84	3890.53	0.40
10455.00	88.95	143.66	6625.00	-2962.24	2694.84	3982.52	0.86
10545.00	89.01	144.03	6626.60	-3034.90	2747.92	4072.50	0.42
10635.00	88.83	145.57	6628.30	-3108.43	2799.79	4162.47	1.72
10728.00	88.95	145.68	6630.10	-3185.17	2852.29	4255.40	0.18
10817.00	89.26	146.54	6631.49	-3259.04	2901.91	4344.31	1.03
10909.00	89.32	146.97	6632.63	-3335.98	2952.34	4436.17	0.47
11002.00	88.71	148.35	6634.23	-3414.54	3002.08	4528.94	1.62
11095.00	89.14	148.26	6635.97	-3493.66	3050.94	4621.63	0.47
11187.00	88.77	146.43	6637.65	-3571.10	3100.57	4713.42	2.03
11280.00	88.77	143.48	6639.65	-3647.21	3153.95	4806.37	3.17
11373.00	88.89	144.10	6641.55	-3722.23	3208.88	4899.35	

RECEIVED 68
Office of Oil and Gas

JAN 5 2018

03/03/2018
WV Department of
Environmental Protection