



Company: Chesapeake Operating, Inc Lease / Well: Clarence Farms OHI #8H County/Parish: Ohio County State: WV Date: 6/2/2013 API#: 47-6900168 Dir. Company: WEATHERFORD	Operator: Justin Blocker Job Number: SVPA-130230 Gyro Serial #: IS-167 Proposed Direction: 150.13 Mag. Declination: 8.11 W-G NORTH Rig/RKB: Nomac #337 Tie-in Company: NA
---	---

22' ft.

FIELD USE ONLY, DEFINITIVE SURVEY WILL COME FROM MS SURVEY OFFICES

TIE-IN Survey					
Measured Depth (ft.)	Inclination	Azimuth Bearing	Vertical Depth	Coordinates (+N/-S) (+E/-W)	
0.00	0.00	0.00	0.00	0.00	0.00

Digital Multi-Shot Survey Report									
Measured Depth (ft.)	Inclination	Azimuth Bearing	Vertical Depth	Vertical Section	Coordinates (+N/-S) (+E/-W)		Dog-Leg / 100 ft.	Closure Distance	Closure Direction
100.00	0.24	48.42	100.00	-0.04	0.14	0.16	0.24	0.21	48.42
200.00	0.02	208.70	200.00	-0.08	0.26	0.30	0.26	0.40	49.26
300.00	0.12	271.21	300.00	-0.12	0.25	0.19	0.11	0.31	37.55
400.00	0.16	235.54	400.00	-0.16	0.17	-0.03	0.09	0.18	350.81
500.00	0.45	228.62	500.00	-0.07	-0.17	-0.44	0.29	0.47	249.25
600.00	0.57	234.10	599.99	0.06	-0.72	-1.14	0.13	1.34	237.72

RECEIVED

FEB 27 2015

WV GEOLOGICAL SURVEY
MORGANTOWN, WV



Weatherford®

SURVEY REPORT

Report Date: 6/17/2013
 Customer: Chesapeake
 Job Name: 4029553
 Well Name: Clarence Farmer 8H

Field: Marcellus Shale
 Rig: Nomac 337
 Rig Loc: Ohio County

Survey Calculation Method: Minimum Curvature						
Magnetic Reference	Target Direction	Total Magnetic Field	Magnetic Dip Angle	Magnetic Declination	Grid Convergence	Total Correction
Grid North	150.11 deg	53255 nT	68.14 deg	-8.80 deg	-0.69 deg	-8.11 deg
Survey Tie-On	Depth	INC	AZ	TVD	NS	EW
	600.00 ft	0.57 deg	234.10 deg	599.99 ft	-0.72 ft	-1.14 ft

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head			Dogleg (deg/100ft)
				NS (ft)	EW (ft)	Vsect (ft)	
765.00	0.60	119.73	764.99	-1.63	-1.05	0.89	0.60
828.00	1.68	58.42	827.97	-1.31	0.02	1.14	2.36
923.00	4.61	41.85	922.82	2.26	3.75	-0.09	3.20
1018.00	5.71	32.93	1017.44	9.08	8.87	-3.45	1.43
1112.00	7.87	25.75	1110.77	18.80	14.21	-9.22	2.46
1206.00	8.11	21.47	1203.86	30.76	19.43	-16.99	0.68
1301.00	8.49	25.00	1297.87	43.36	24.85	-25.21	0.67
1395.00	8.54	28.34	1390.83	55.79	31.09	-32.87	0.53
1490.00	7.96	25.03	1484.85	67.96	37.22	-40.37	0.79
1585.00	7.63	23.86	1578.97	79.69	42.56	-47.88	0.39
1679.00	7.21	22.85	1672.18	90.83	47.37	-55.14	0.47
1774.00	6.32	33.96	1766.53	100.66	52.61	-61.05	1.66
1868.00	4.43	49.55	1860.11	107.31	58.26	-64.00	2.52
1960.00	1.86	47.56	1951.97	110.62	62.07	-64.97	2.80
2055.00	1.51	36.79	2046.93	112.66	63.96	-65.80	0.50
2081.00	1.61	43.03	2072.92	113.20	64.41	-66.05	0.76
2243.00	0.40	308.49	2234.89	115.22	65.52	-67.24	1.04
2306.00	0.70	293.88	2297.89	115.51	65.00	-67.76	0.52
2400.00	0.85	275.48	2391.88	115.81	63.78	-68.62	0.31
2494.00	0.83	276.86	2485.87	115.96	62.41	-69.43	0.03
2589.00	0.98	279.36	2580.86	116.17	60.92	-70.36	0.16
2683.00	1.03	293.27	2674.85	116.64	59.35	-71.54	0.26
2778.00	0.96	293.86	2769.83	117.30	57.84	-72.87	0.07
2873.00	0.93	291.01	2864.82	117.90	56.40	-74.11	0.06
2968.00	0.98	278.56	2959.81	118.29	54.87	-75.21	0.22
3062.00	0.93	281.51	3053.79	118.57	53.33	-76.22	0.07
3157.00	0.81	294.32	3148.78	119.00	51.96	-77.27	0.24
3252.00	0.81	292.89	3243.77	119.53	50.73	-78.35	0.02
3346.00	0.81	300.50	3337.76	120.13	49.55	-79.46	0.11
3442.00	0.96	297.12	3433.75	120.84	48.25	-80.72	0.17
3535.00	0.91	284.58	3526.74	121.38	46.84	-81.89	0.23
3629.00	0.82	283.80	3620.73	121.73	45.46	-82.88	0.10
3724.00	0.81	279.53	3715.72	122.00	44.14	-83.78	0.06
3819.00	0.81	292.14	3810.71	122.37	42.86	-84.73	0.19
3914.00	0.65	303.48	3905.70	122.92	41.78	-85.74	0.23

RECEIVED

FEB 27 2015

WV GEOLOGICAL SURVEY
MORGANTOWN, WV

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
4007.00	0.59	327.93	3998.70	123.61	41.09	-86.69	0.29
4104.00	0.63	303.22	4095.69	124.33	40.38	-87.67	0.27
4199.00	0.90	306.71	4190.68	125.06	39.34	-88.82	0.29
4294.00	0.68	330.82	4285.67	126.00	38.47	-90.07	0.41
4389.00	0.49	340.26	4380.67	126.87	38.06	-91.03	0.22
4482.00	0.70	313.96	4473.66	127.64	37.52	-91.97	0.36
4576.00	0.85	322.55	4567.65	128.60	36.68	-93.21	0.20
4671.00	0.23	30.79	4662.65	129.32	36.35	-94.00	0.84
4765.00	0.34	42.20	4756.65	129.69	36.63	-94.18	0.13
4860.00	0.35	338.75	4851.65	130.17	36.72	-94.56	0.38
4955.00	0.49	319.88	4946.64	130.75	36.35	-95.24	0.21
5050.00	0.46	303.11	5041.64	131.27	35.77	-95.98	0.15
5144.00	0.50	297.35	5135.64	131.66	35.09	-96.66	0.07
5239.00	0.65	283.03	5230.63	131.97	34.19	-97.38	0.22
5334.00	0.81	291.09	5325.63	132.34	33.04	-98.27	0.20
5428.00	0.71	300.29	5419.62	132.87	31.92	-99.29	0.17
5472.00	0.47	285.69	5463.61	133.05	31.51	-99.65	0.64
5567.00	0.36	298.00	5558.61	133.30	30.87	-100.18	0.15
5661.00	0.66	303.14	5652.61	133.73	30.16	-100.92	0.32
5693.00	0.73	300.69	5684.61	133.94	29.83	-101.26	0.24
5724.00	0.49	181.26	5715.61	133.91	29.66	-101.32	3.42
5756.00	3.14	161.11	5747.59	132.94	29.94	-100.34	8.39
5787.00	6.58	162.61	5778.47	130.44	30.74	-97.77	11.10
5818.00	10.00	161.05	5809.14	126.20	32.15	-93.39	11.06
5850.00	12.58	157.84	5840.52	120.34	34.37	-87.21	8.30
5882.00	14.56	156.12	5871.63	113.44	37.31	-79.76	6.31
5913.00	16.90	156.23	5901.46	105.75	40.70	-71.40	7.55
5945.00	19.54	158.01	5931.86	96.53	44.58	-61.47	8.43
5988.00	23.30	159.50	5971.88	81.89	50.25	-45.95	8.83
6020.00	26.21	159.86	6000.93	69.33	54.90	-32.74	9.11
6051.00	29.03	159.75	6028.40	55.84	59.87	-18.58	9.10
6083.00	32.48	159.73	6055.89	40.49	65.53	-2.45	10.78
6114.00	35.83	158.66	6081.54	24.23	71.72	14.74	10.98
6146.00	38.87	157.25	6106.98	6.24	79.01	33.97	9.87
6177.00	41.41	157.47	6130.68	-12.21	86.70	53.79	8.21
6209.00	43.88	157.61	6154.21	-32.24	94.98	75.28	7.72
6240.00	47.50	157.39	6175.86	-52.73	103.47	97.28	11.69
6272.00	51.17	157.24	6196.71	-75.12	112.83	121.36	11.47
6303.00	54.83	156.74	6215.37	-97.90	122.51	145.93	11.88
6335.00	57.10	156.27	6233.28	-122.22	133.08	172.28	7.20
6366.00	60.24	156.01	6249.39	-146.43	143.80	198.61	10.15
6398.00	62.82	155.93	6264.65	-172.12	155.25	226.59	8.07
6429.00	65.69	156.54	6278.11	-197.68	166.50	254.35	9.43
6461.00	68.92	157.41	6290.45	-224.84	178.04	283.66	10.40
6493.00	72.24	157.71	6301.09	-252.73	189.56	313.58	10.41
6524.00	74.20	157.94	6310.04	-280.22	200.76	342.99	6.36
6556.00	75.81	157.86	6318.32	-308.86	212.39	373.61	5.04
6587.00	78.44	158.25	6325.23	-336.88	223.68	403.54	8.57
6618.00	81.51	158.88	6330.62	-365.30	234.84	433.73	10.10
6650.00	85.16	158.70	6334.34	-394.92	246.33	465.15	11.42

RECEIVED

FEB 27 2015

WV GEOLOGICAL SURVEY
MORGANTOWN, WV

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
6681.00	88.18	157.97	6336.14	-423.68	257.76	495.77	10.02
6713.00	89.25	157.46	6336.86	-453.28	269.89	527.48	3.70
6806.00	87.44	155.43	6339.54	-538.49	307.04	619.87	2.92
6900.00	88.07	154.92	6343.22	-623.74	346.47	713.43	0.86
6995.00	88.48	154.85	6346.08	-709.72	386.77	808.06	0.44
7089.00	87.14	153.53	6349.68	-794.27	427.67	901.74	2.00
7182.00	86.30	151.87	6355.00	-876.78	470.25	994.49	2.00
7275.00	86.09	151.87	6361.17	-958.61	514.00	1087.24	0.23
7369.00	86.55	149.92	6367.20	-1040.57	559.63	1181.04	2.13
7464.00	88.51	149.69	6371.30	-1122.60	607.36	1275.94	2.08
7558.00	88.11	150.19	6374.07	-1203.92	654.42	1369.90	0.68
7653.00	90.40	148.85	6375.30	-1285.78	702.60	1464.88	2.79
7748.00	90.49	148.10	6374.57	-1366.75	752.27	1559.84	0.80
7842.00	89.68	150.44	6374.43	-1447.55	800.30	1653.82	2.63
7937.00	89.79	151.08	6374.87	-1530.44	846.71	1748.81	0.68
8032.00	89.84	150.48	6375.17	-1613.35	893.08	1843.80	0.63
8126.00	89.79	149.56	6375.48	-1694.77	940.05	1937.80	0.98
8221.00	89.14	149.98	6376.36	-1776.85	987.88	2032.80	0.81
8316.00	88.93	149.47	6377.96	-1858.88	1035.77	2127.78	0.58
8410.00	89.16	149.97	6379.53	-1940.04	1083.16	2221.76	0.59
8505.00	88.93	150.86	6381.11	-2022.65	1130.06	2316.75	0.97
8600.00	89.33	151.96	6382.56	-2106.05	1175.51	2411.71	1.23
8692.00	89.19	150.42	6383.74	-2186.66	1219.84	2503.69	1.68
8787.00	89.49	150.01	6384.84	-2269.10	1267.03	2598.68	0.53
8882.00	89.74	150.30	6385.48	-2351.50	1314.30	2693.68	0.40
8976.00	89.46	150.46	6386.13	-2433.21	1360.76	2787.67	0.34
9071.00	88.97	150.66	6387.43	-2515.94	1407.45	2882.66	0.56
9164.00	88.98	150.62	6389.10	-2596.98	1453.04	2975.64	0.04
9259.00	89.16	150.38	6390.64	-2679.65	1499.82	3070.63	0.32
9353.00	89.39	149.89	6391.83	-2761.16	1546.62	3164.62	0.58
9446.00	88.98	150.48	6393.15	-2841.84	1592.85	3257.61	0.77
9539.00	90.28	149.69	6393.75	-2922.45	1639.23	3350.60	1.64
9631.00	90.33	149.95	6393.26	-3001.98	1685.48	3442.60	0.29
9723.00	89.74	147.99	6393.21	-3080.81	1732.90	3534.58	2.22
9816.00	90.18	150.46	6393.27	-3160.70	1780.49	3627.56	2.70
9907.00	90.25	150.19	6392.93	-3239.77	1825.54	3718.56	0.31
9999.00	90.67	150.41	6392.19	-3319.68	1871.12	3810.55	0.52
10090.00	90.65	150.16	6391.14	-3398.71	1916.22	3901.55	0.28
10183.00	91.07	149.94	6389.75	-3479.28	1962.65	3994.54	0.51
10275.00	88.20	149.79	6390.33	-3558.84	2008.83	4086.53	3.12
10367.00	88.49	148.28	6392.99	-3637.69	2056.14	4178.47	1.67
10462.00	88.65	148.02	6395.36	-3718.36	2106.26	4273.38	0.32
10555.00	88.95	148.23	6397.31	-3797.32	2155.36	4366.31	0.39
10650.00	88.90	147.81	6399.09	-3877.89	2205.66	4461.23	0.45
10745.00	88.41	148.67	6401.32	-3958.64	2255.65	4556.15	1.04
10840.00	87.95	150.36	6404.34	-4040.46	2303.82	4651.09	1.84
10935.00	88.02	150.39	6407.68	-4122.99	2350.75	4746.03	0.08
11030.00	88.04	150.35	6410.95	-4205.52	2397.69	4840.97	0.05
11125.00	89.23	151.17	6413.21	-4288.39	2444.08	4935.94	1.52
11219.00	89.44	151.24	6414.30	-4370.76	2489.36	5029.92	0.24

RECEIVED

FEB 27 2015

WV GEOLOGICAL SURVEY
MORGANTOWN, WV

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
11313.00	89.79	151.92	6414.93	-4453.43	2534.09	5123.88	0.81
11408.00	90.26	152.32	6414.89	-4537.40	2578.52	5218.82	0.65
11502.00	89.89	151.81	6414.77	-4620.45	2622.55	5312.77	0.67
11597.00	90.26	149.95	6414.64	-4703.44	2668.78	5407.75	2.00
11690.00	87.60	148.73	6416.38	-4783.41	2716.19	5500.72	3.15
11784.00	87.60	148.40	6420.32	-4863.55	2765.17	5594.60	0.35
11879.00	88.58	149.98	6423.48	-4945.09	2813.80	5689.53	1.96
11973.00	89.44	150.19	6425.11	-5026.55	2860.67	5783.52	0.94
12066.00	87.88	151.29	6427.28	-5107.66	2906.12	5876.48	2.05
12161.00	88.30	152.07	6430.45	-5191.24	2951.16	5971.39	0.93
12255.00	89.00	150.35	6432.66	-5273.60	2996.41	6065.35	1.98
12350.00	89.07	151.26	6434.26	-5356.52	3042.75	6160.33	0.96
12445.00	88.95	152.23	6435.90	-5440.18	3087.71	6255.27	1.03
12539.00	88.18	150.37	6438.26	-5522.61	3132.84	6349.22	2.14
12634.00	88.37	150.16	6441.12	-5605.06	3179.93	6444.17	0.30
12727.00	88.77	149.92	6443.44	-5685.61	3226.36	6537.14	0.50
12821.00	88.90	149.95	6445.35	-5766.94	3273.45	6631.12	0.14
12916.00	89.37	150.03	6446.78	-5849.20	3320.95	6726.11	0.50
13009.00	87.51	149.37	6449.31	-5929.46	3367.86	6819.07	2.12
13104.00	87.78	149.27	6453.22	-6011.09	3416.29	6913.98	0.30
13199.00	88.04	149.69	6456.68	-6092.88	3464.50	7008.91	0.52
13293.00	88.53	149.82	6459.50	-6174.05	3511.83	7102.87	0.54
13388.00	88.90	149.89	6461.63	-6256.18	3559.52	7197.84	0.40
13483.00	89.49	150.38	6462.96	-6338.55	3606.82	7292.83	0.81
13578.00	89.67	150.66	6463.66	-6421.25	3653.57	7387.83	0.35
13672.00	89.98	150.52	6463.95	-6503.14	3699.73	7481.82	0.36
13767.00	90.02	150.88	6463.95	-6585.98	3746.22	7576.82	0.38
13860.00	90.49	150.36	6463.53	-6667.02	3791.85	7669.81	0.75
13955.00	89.47	149.71	6463.56	-6749.32	3839.30	7764.81	1.27
14051.00	87.92	147.87	6465.75	-6831.40	3889.03	7860.75	2.51
14145.00	87.88	147.03	6469.20	-6910.58	3939.57	7954.59	0.89
14240.00	88.69	149.56	6472.04	-6991.36	3989.47	8049.49	2.80
14334.00	89.07	149.36	6473.88	-7072.30	4037.22	8143.47	0.46
14430.00	89.49	149.21	6475.08	-7154.83	4086.25	8239.45	0.46
14524.00	89.07	150.58	6476.26	-7236.14	4133.40	8333.44	1.52
14618.00	87.79	150.64	6478.84	-7318.01	4179.51	8427.40	1.36
14714.00	88.41	150.80	6482.02	-7401.70	4226.43	8523.34	0.67
14808.00	89.00	150.22	6484.15	-7483.50	4272.69	8617.31	0.88
14903.00	87.72	151.26	6486.87	-7566.34	4319.11	8712.26	1.74
14998.00	88.21	151.17	6490.24	-7649.55	4364.82	8807.19	0.52
15092.00	88.83	151.27	6492.67	-7731.91	4410.06	8901.14	0.67
15188.00	89.12	151.45	6494.38	-7816.15	4456.07	8997.10	0.36
15283.00	90.09	150.12	6495.04	-7899.06	4502.44	9092.09	1.73
15379.00	90.93	150.29	6494.18	-7982.37	4550.14	9188.08	0.89
15458.00	91.59	150.19	6492.45	-8050.93	4589.34	9267.06	0.84

RECEIVED

FEB 27 2015

WV GEOLOGICAL SURVEY
MORGANTOWN, WV

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
Projected to Total Depth:							
15517.00	91.59	150.19	6490.81	-8102.10	4618.66	9326.04	0.00

Vertical Section is 9326.04 ft along the target direction of 150.19 deg at a measured depth of 15517.00 ft.
Horizontal Displacement is 9326.10 ft along the well bore azimuth of 150.31 deg.
The total correction is -8.11 deg relative to Grid North.

RECEIVED

FEB 27 2015

WV GEOLOGICAL SURVEY
MORGANTOWN, WV