



HALLIBURTON

DIRECTIONAL SURVEY REPORT

Chesapeake
O E Burge 8H
Marcellus Shale
Marshall County, WV West Virginia
USA
NE-XX-0008068326

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MAY 9 2012

WV GEOLOGICAL SURVEY
MORGANTOWN, WV

Measured Depth (feet)	Inclination (degrees)	Direction (degrees)	Vertical Depth (feet)	Latitude (feet)	Departure (feet)	Vertical Section (feet)	Dogleg (deg/100ft)
6300.00	0.43	140.61	6299.50	48.70 S	42.90 E	63.17	TIE-IN
6376.00	0.65	127.71	6375.50	49.18 S	43.42 E	63.88	0.33
6418.00	3.73	98.36	6417.46	49.53 S	44.96 E	65.34	7.56
6461.00	9.38	96.38	6460.16	50.12 S	49.83 E	69.65	13.15
6504.00	9.93	95.64	6502.55	50.88 S	57.01 E	75.94	1.32
6546.00	10.57	120.99	6543.90	53.22 S	63.92 E	82.93	10.76
6589.00	10.61	124.37	6586.17	57.48 S	70.57 E	90.82	1.45
6631.00	10.85	122.68	6627.44	61.80 S	77.09 E	98.63	0.94
6674.00	15.19	127.92	6669.32	67.45 S	84.94 E	108.31	10.43
6716.00	18.42	134.73	6709.53	75.51 S	94.00 E	120.36	9.01
6759.00	22.68	132.84	6749.78	85.93 S	104.91 E	135.29	10.02
6802.00	27.62	129.89	6788.70	97.97 S	118.65 E	153.46	11.84
6844.00	32.35	130.07	6825.06	111.45 S	134.72 E	174.38	11.27
6887.00	37.40	128.63	6860.33	127.02 S	153.74 E	198.89	11.90
6930.00	42.25	125.63	6893.35	143.61 S	175.71 E	226.41	12.13
6972.00	47.89	124.46	6923.00	160.66 S	200.05 E	256.13	13.57
7015.00	52.74	124.66	6950.45	179.43 S	227.29 E	289.21	11.29
7058.00	56.30	125.74	6975.40	199.62 S	255.90 E	324.22	8.51
7100.00	60.20	126.72	6997.50	220.72 S	284.70 E	359.92	9.51
7143.00	64.09	126.28	7017.59	243.33 S	315.25 E	397.92	9.10
7185.00	67.52	125.17	7034.80	265.69 S	346.35 E	436.23	8.49
7228.00	70.95	124.87	7050.04	288.76 S	379.27 E	476.43	8.01
7271.00	74.73	124.69	7062.73	312.20 S	413.01 E	517.50	8.80
7313.00	76.73	124.87	7073.08	335.41 S	446.44 E	558.20	4.79
7356.00	79.79	124.74	7081.82	359.44 S	481.01 E	600.30	7.11
7398.00	83.83	125.48	7087.81	383.35 S	515.01 E	641.86	9.76
7441.00	88.21	125.27	7090.79	408.17 S	549.98 E	684.74	10.21
7484.00	89.69	125.51	7091.58	433.07 S	585.03 E	727.73	3.49
7527.00	90.25	125.72	7091.60	458.11 S	619.98 E	770.73	1.39
7569.00	91.21	125.55	7091.07	482.58 S	654.11 E	812.73	2.32
7612.00	91.88	126.02	7089.91	507.71 S	688.98 E	855.71	1.91
7654.00	92.56	126.45	7088.28	532.52 S	722.83 E	897.68	1.91
7740.00	92.71	126.55	7084.33	583.63 S	791.89 E	983.57	0.21
7825.00	91.35	124.21	7081.31	632.80 S	861.14 E	1068.51	3.19
7910.00	89.57	123.20	7080.63	679.96 S	931.85 E	1153.46	2.41
7995.00	88.59	123.00	7082.00	726.38 S	1003.05 E	1238.38	1.17
8080.00	88.92	122.72	7083.84	772.49 S	1074.43 E	1323.28	0.52
8166.00	89.78	122.31	7084.81	818.72 S	1146.94 E	1409.17	1.11
8251.00	90.68	122.26	7084.47	864.12 S	1218.80 E	1494.04	1.05
8336.00	89.26	123.87	7084.52	910.49 S	1290.03 E	1578.97	2.52
8421.00	89.88	124.20	7085.16	958.05 S	1360.47 E	1663.94	0.83
8506.00	90.40	125.00	7084.95	1006.32 S	1430.44 E	1748.93	1.13
8592.00	89.32	125.23	7085.16	1055.78 S	1500.79 E	1834.93	1.29
8677.00	90.37	125.11	7085.39	1104.74 S	1570.27 E	1919.93	1.24
8762.00	88.19	125.56	7086.46	1153.89 S	1639.60 E	2004.92	2.63
8848.00	88.74	125.91	7088.77	1204.10 S	1709.38 E	2090.88	0.76
8975.00	90.12	126.74	7090.03	1279.32 S	1811.70 E	2217.85	1.27
9061.00	91.42	127.74	7088.87	1331.36 S	1880.16 E	2303.80	1.91
9146.00	92.16	127.72	7086.22	1383.34 S	1947.35 E	2388.69	0.87
9231.00	90.62	126.53	7084.16	1434.63 S	2015.10 E	2473.62	2.29

O E Burge 8H

Measured Depth (feet)	Inclination (degrees)	Direction (degrees)	Vertical Depth (feet)	Latitude (feet)	Departure (feet)	Vertical Section (feet)	Dogleg (deg/100ft)
9317.00	89.26	124.58	7084.25	1484.63 S	2085.06 E	2559.61	2.76
9402.00	89.75	124.59	7084.99	1532.87 S	2155.04 E	2644.60	0.58
9487.00	90.56	124.83	7084.76	1581.28 S	2224.91 E	2729.59	0.99
9572.00	89.35	124.77	7084.83	1629.79 S	2294.71 E	2814.59	1.42
9658.00	89.91	125.02	7085.38	1678.99 S	2365.24 E	2900.58	0.71
9743.00	90.74	125.26	7084.90	1727.91 S	2434.75 E	2985.58	1.02
9828.00	88.92	125.07	7085.15	1776.86 S	2504.23 E	3070.57	2.15
9913.00	89.72	125.61	7086.16	1826.02 S	2573.57 E	3155.57	1.14
9999.00	90.65	126.50	7085.88	1876.64 S	2643.09 E	3241.56	1.50
10084.00	89.17	126.02	7086.02	1926.91 S	2711.63 E	3326.55	1.84
10169.00	89.81	125.98	7086.77	1976.86 S	2780.39 E	3411.54	0.76
10254.00	90.37	125.85	7086.64	2026.72 S	2849.24 E	3496.53	0.67
10340.00	91.05	126.21	7085.57	2077.31 S	2918.78 E	3582.52	0.90
10425.00	91.58	125.94	7083.63	2127.35 S	2987.46 E	3667.49	0.70
10510.00	90.71	125.35	7081.93	2176.87 S	3056.52 E	3752.47	1.23
10595.00	90.34	125.64	7081.16	2226.22 S	3125.72 E	3837.47	0.55
10681.00	90.65	123.44	7080.42	2274.98 S	3196.55 E	3923.45	2.58
10766.00	89.08	122.37	7080.62	2321.15 S	3267.91 E	4008.37	2.23
10851.00	88.71	120.55	7082.27	2365.50 S	3340.40 E	4093.15	2.19
10937.00	91.02	121.91	7082.47	2410.09 S	3413.93 E	4178.91	3.12
11022.00	91.26	123.48	7080.78	2455.99 S	3485.45 E	4263.80	1.88
11107.00	92.22	123.79	7078.20	2503.05 S	3556.18 E	4348.72	1.19
11192.00	89.88	123.83	7076.64	2550.34 S	3626.79 E	4433.67	2.76
11278.00	90.65	124.09	7076.25	2598.38 S	3698.12 E	4519.64	0.94
11363.00	88.18	122.97	7077.11	2645.33 S	3768.96 E	4604.59	3.18
11448.00	88.83	122.97	7079.33	2691.57 S	3840.25 E	4689.48	0.76
11533.00	89.72	123.53	7080.40	2738.17 S	3911.33 E	4774.41	1.24
11618.00	90.68	123.33	7080.10	2784.99 S	3982.27 E	4859.36	1.15
11704.00	88.95	124.30	7080.38	2832.85 S	4053.72 E	4945.33	2.30
11789.00	89.60	124.03	7081.45	2880.58 S	4124.04 E	5030.30	0.82
11874.00	87.78	126.15	7083.40	2929.42 S	4193.57 E	5115.27	3.29
11959.00	88.64	126.50	7086.05	2979.75 S	4262.02 E	5200.21	1.09
12045.00	89.14	127.13	7087.72	3031.28 S	4330.85 E	5286.17	0.93
12130.00	90.15	126.75	7088.25	3082.36 S	4398.79 E	5371.14	1.28
12215.00	86.97	126.55	7090.38	3133.07 S	4466.95 E	5456.08	3.75
12301.00	87.57	126.66	7094.47	3184.29 S	4535.91 E	5541.96	0.70
12386.00	88.43	126.85	7097.45	3235.13 S	4603.97 E	5626.88	1.04
12471.00	89.51	126.59	7098.98	3285.94 S	4672.09 E	5711.84	1.31
12557.00	89.75	125.62	7099.53	3336.62 S	4741.57 E	5797.83	1.17
12642.00	88.15	126.74	7101.09	3386.79 S	4810.16 E	5882.81	2.30
12727.00	87.72	123.89	7104.15	3435.89 S	4879.47 E	5967.74	3.40
12812.00	88.40	122.90	7107.04	3482.65 S	4950.39 E	6052.64	1.41
12898.00	88.49	125.05	7109.37	3530.69 S	5021.67 E	6138.58	2.50
12983.00	87.84	128.65	7112.09	3581.64 S	5089.64 E	6223.49	4.30
13068.00	88.58	128.48	7114.75	3634.60 S	5156.07 E	6308.32	0.90
13154.00	89.60	128.59	7116.12	3688.17 S	5223.33 E	6394.18	1.19
13211.00	90.00	128.42	7116.32	3723.66 S	5267.94 E	6451.09	0.77
13260.00	90.00	128.42	7116.32	3754.11 S	5306.33 E	6500.02	0.00

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*O E Burge 8H***CALCULATION BASED ON MINIMUM CURVATURE METHOD****SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT****VERTICAL SECTION RELATIVE TO WELL HEAD
VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 125.38 DEGREES (GRID)
A TOTAL CORRECTION OF -7.93 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED****HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 13260.00 FEET
IS 6500.03 FEET ALONG 125.28 DEGREES (GRID)****SURVEYS CALCULATED USING THE LONG COLLAR METHOD.
WELL ASSUMED VERTICAL AT WELLHEAD.
SURVEYS FROM 6376' MD TO 13211' MD PROVIDED BY SPERRY DRILLING SERVICES.
SURVEY AT 13211' MD IS PROJECTED TO TD AT 13260' MD.
SPERRY DRILLING ENGINEERS: Tyler Light, Paul Tice.****RECEIVED**

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