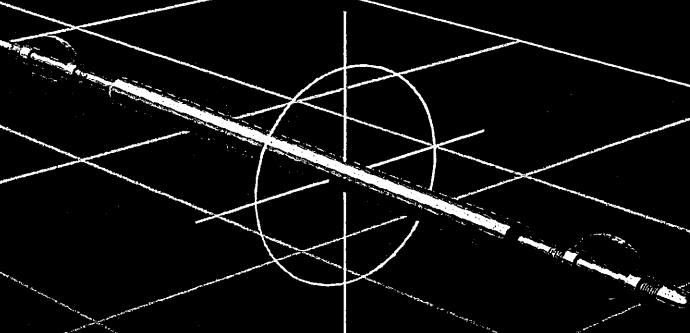


SCIENTIFIC DRILLING

End of Well Survey Report for

Chesapeake Operating, Inc.
Mark Harper 3H (831378)
Upshur, WV

Scientific Drilling
337-232-7302
Lafayette, Louisiana





CHESAPEAKE OPERATING, INC.

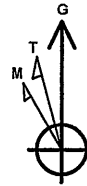
Field: Upshur, WV
 Site: Mark Harper
 Well: 3H
 Wellpath: OH



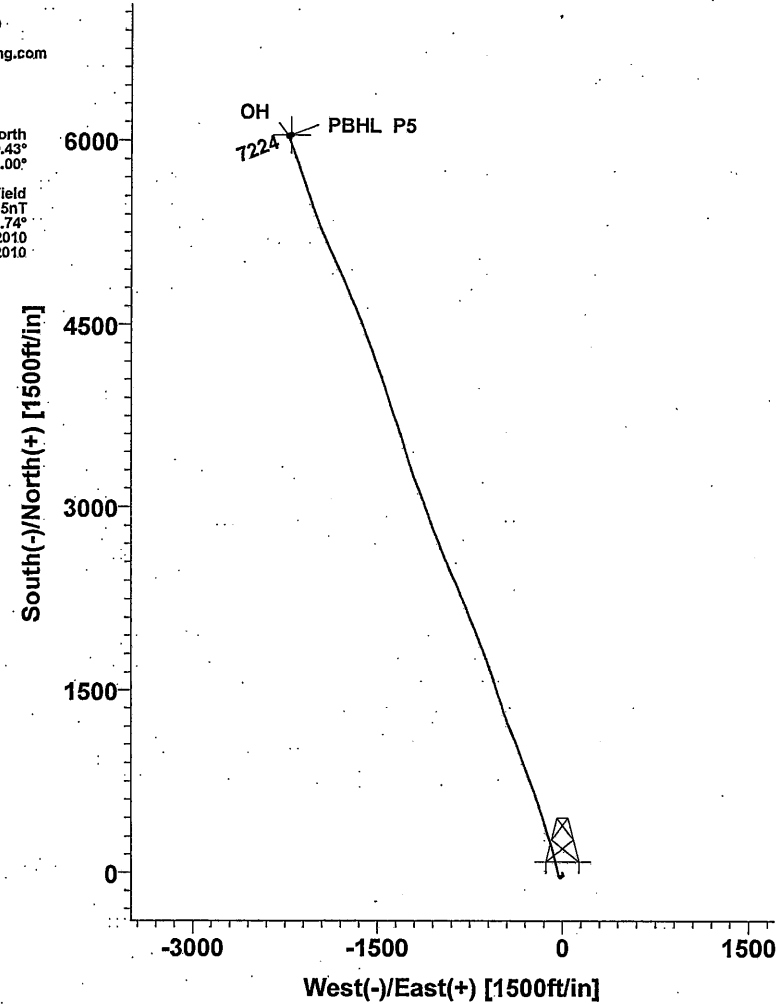
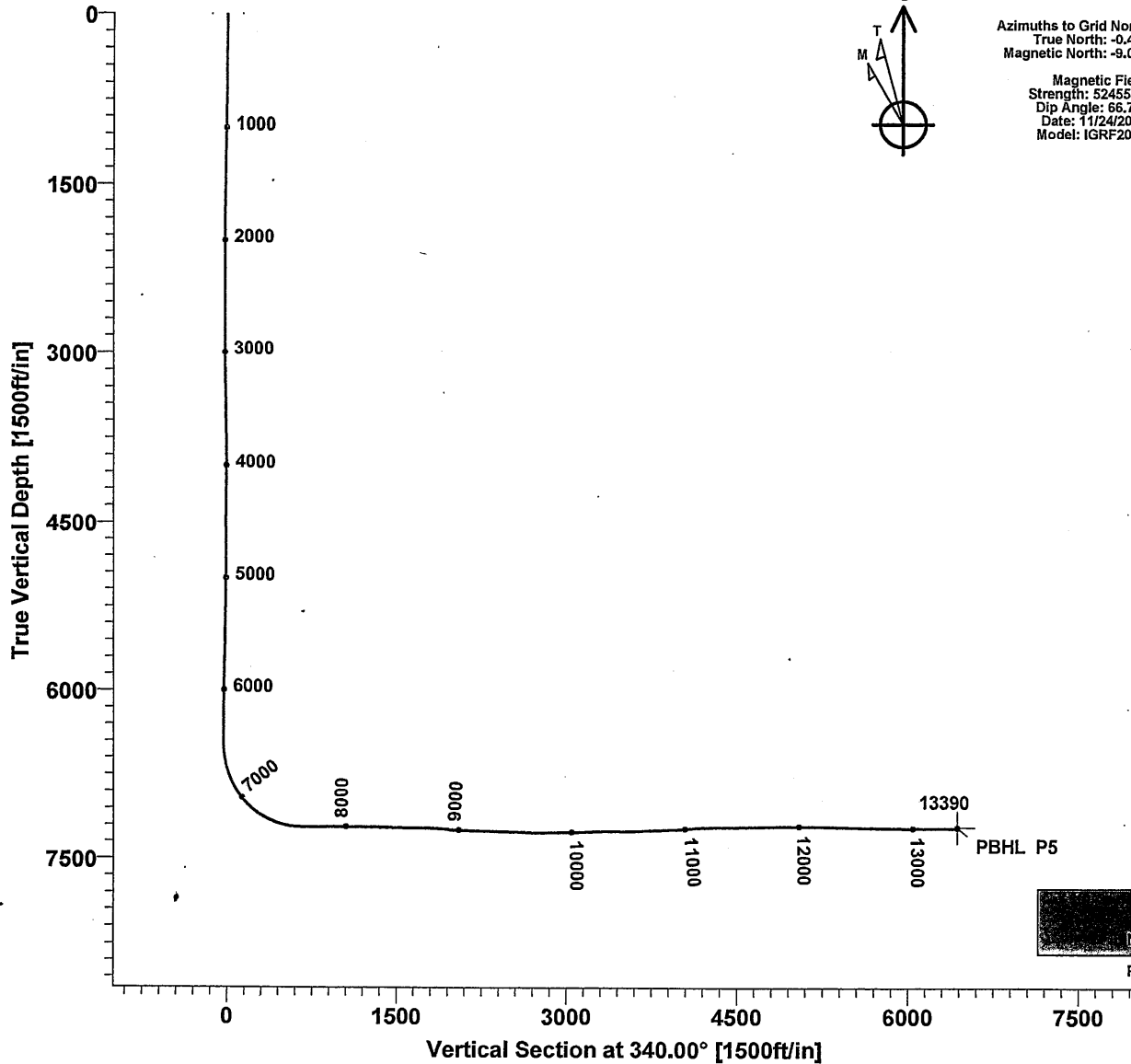
097-03691

WELL DETAILS							
Name	W/S	W/E/W	Northing	Easting	Latitude	Longitude	Slat
3H	0.00	0.00	673370.70	2199161.60	38°50'49.709N	080°18'02.682W	N/A

Plot Date: 11/28/2010
 By: Troy Lewis
 Troy.Lewis@scientificdrilling.com
 337-232-7302



Azimuths to Grid North
 True North: -0.43°
 Magnetic North: -9.00°
 Magnetic Field
 Strength: 52455nT
 Dip Angle: 66.74°
 Date: 11/24/2010
 Model: IGRF2010



TARGET DETAILS						
Name	TVD	W/S	W/E/W	Northing	Easting	Shape
PBHL P5	7217.00	6046.30	-2200.60	679417.00	2196961.00	Point

SDI Survey Report

Company: CHESAPEAKE OPERATING, INC.		Date: 11/30/2010	Time: 08:50:33	Page: 1						
Field: Upshur, WV	Co-ordinate(NE) Reference: Well: 3H, Grid North		Vertical (TVD) Reference: GL 1857'+15RKB 1872.0							
Site: Mark Harper	Section (VS) Reference: Well (0.00N,0.00E,340.00Azi)		Survey Calculation Method: Minimum Curvature							
Well: 3H	Survey Calculation Method: Minimum Curvature		Db: Sybase							
Field: Upshur, WV										
Map System: US State Plane Coordinate System 1927		Map Zone: West Virginia, Southern Zone								
Geo Datum: NAD27 (Clarke 1866)		Coordinate System: Well Centre								
Sys Datum: Mean Sea Level		Geomagnetic Model: IGRF2010								
Site: Mark Harper										
Site Position:	Northing: 673370.70 ft	Latitude: 38 50 49.709 N								
From: Map	Easting: 2199161.60 ft	Longitude: 80 18 2.682 W								
Position Uncertainty: 0.00 ft		North Reference: Grid								
Ground Level: 1857.00 ft		Grid Convergence: 0.43 deg								
Well: 3H										
Slot Name:										
Well Position:	+N/-S 0.00 ft	Northing: 673370.70 ft	Latitude: 38 50 49.709 N							
	+E/-W 0.00 ft	Easting: 2199161.60 ft	Longitude: 80 18 2.682 W							
Position Uncertainty: 0.00 ft										
Wellpath: OH										
Current Datum: GL 1857'+15RKB	Height 1872.00 ft	Drilled From: Surface								
Magnetic Data: 11/24/2010		Tie-on Depth: 0.00 ft								
Field Strength: 52455 nT		Above System Datum: Mean Sea Level								
Vertical Section: Depth From (TVD)	+N/-S ft	Declination: -8.57 deg								
		Mag Dip Angle: 66.74 deg								
		+E/-W ft	Direction deg							
0.00	0.00	0.00	340.00							
Survey Program for Definitive Wellpath										
Date: 11/30/2010		Validated: No		Version: 1						
Actual From ft	To ft	Survey	Toolcode	Tool Name						
0.00	6330.00	Survey #1 (0.00-6330.00)	NS-GYRO-MS	North sensing gyrocompassing m						
6330.00	13390.00	Survey #2 (6330.00-13390.00)	SDI MWD	SDI MWD - Standard ver 1.0.1						
Survey										
MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIE LINE
100.00	0.75	184.16	100.00	-0.65	-0.05	-0.60	0.75	0.75	0.00	NS-GYRO-MS
200.00	1.00	9.33	199.99	-0.44	0.05	-0.43	1.75	0.25	-174.83	NS-GYRO-MS
300.00	0.75	203.49	299.99	-0.18	-0.07	-0.15	1.74	-0.25	-165.84	NS-GYRO-MS
400.00	0.75	149.66	399.98	-1.35	0.00	-1.27	0.68	0.00	-53.83	NS-GYRO-MS
500.00	0.50	64.82	499.98	-1.73	0.72	-1.87	0.86	-0.25	-84.84	NS-GYRO-MS
600.00	0.75	163.99	599.97	-2.17	1.30	-2.48	0.97	0.25	99.17	NS-GYRO-MS
700.00	0.50	155.15	699.97	-3.20	1.66	-3.57	0.27	-0.25	-8.84	NS-GYRO-MS
800.00	1.00	156.32	799.96	-4.39	2.20	-4.88	0.50	0.50	1.17	NS-GYRO-MS
900.00	1.00	157.48	899.94	-6.00	2.88	-6.62	0.02	0.00	1.16	NS-GYRO-MS
1000.00	0.75	155.64	999.93	-7.40	3.48	-8.14	0.25	-0.25	-1.84	NS-GYRO-MS
1100.00	1.00	131.81	1099.92	-8.58	4.40	-9.57	0.44	0.25	-23.83	NS-GYRO-MS
1200.00	1.00	166.97	1199.91	-10.01	5.25	-11.20	0.60	0.00	35.16	NS-GYRO-MS
1300.00	1.00	141.14	1299.89	-11.54	6.00	-12.89	0.45	0.00	-25.83	NS-GYRO-MS
1400.00	1.00	147.12	1399.88	-12.95	7.02	-14.57	0.10	0.00	5.98	NS-GYRO-MS
1500.00	1.00	154.28	1499.86	-14.47	7.87	-16.29	0.12	0.00	7.16	NS-GYRO-MS
1600.00	0.75	155.45	1599.85	-15.85	8.52	-17.81	0.25	-0.25	1.17	NS-GYRO-MS
1700.00	0.75	168.61	1699.84	-17.09	8.92	-19.11	0.17	0.00	13.16	NS-GYRO-MS
1800.00	0.75	227.77	1799.83	-18.17	8.57	-20.00	0.74	0.00	59.16	NS-GYRO-MS
1900.00	0.50	102.94	1899.83	-18.71	8.51	-20.49	1.11	-0.25	-124.83	NS-GYRO-MS
2000.00	0.50	215.10	1999.83	-19.16	8.68	-20.98	0.83	0.00	112.16	NS-GYRO-MS
2100.00	0.50	69.27	2099.83	-19.36	8.84	-21.22	0.96	0.00	-145.83	NS-GYRO-MS

SDI Survey Report

Company: CHESAPEAKE OPERATING, INC.
Field: Upshur, WV
Site: Mark Harper
Well: 3H
Wellpath: OH

Date: 11/30/2010 **Time:** 08:50:33 **Page:** 2
Co-ordinate(NE) Reference: Well: 3H, Grid North
Vertical (TVD) Reference: GL 1857'+15RKB 1872.0
Section (VS) Reference: Well (0.00N,0.00E,340.00Azi)
Survey Calculation Method: Minimum Curvature **Db:** Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
2200.00	0.50	38.43	2199.82	-18.87	9.52	-20.99	0.27	0.00	-30.84	NS-GYRO-MS
2300.00	0.50	210.59	2299.82	-18.90	9.57	-21.03	1.00	0.00	172.16	NS-GYRO-MS
2400.00	0.75	358.51	2399.82	-18.62	9.33	-20.69	1.20	0.25	147.92	NS-GYRO-MS
2500.00	0.75	208.42	2499.82	-18.54	9.00	-20.50	1.45	0.00	-150.09	NS-GYRO-MS
2600.00	0.50	229.34	2599.81	-19.40	8.36	-21.09	0.33	-0.25	20.92	NS-GYRO-MS
2700.00	0.50	232.25	2699.81	-19.96	7.68	-21.38	0.03	0.00	2.91	NS-GYRO-MS
2800.00	0.75	248.16	2799.80	-20.47	6.73	-21.53	0.30	0.25	15.91	NS-GYRO-MS
2900.00	0.75	273.08	2899.79	-20.68	5.47	-21.30	0.32	0.00	24.92	NS-GYRO-MS
3000.00	1.00	248.99	2999.78	-20.95	4.00	-21.06	0.44	0.25	-24.09	NS-GYRO-MS
3100.00	1.50	282.91	3099.76	-20.97	1.91	-20.36	0.87	0.50	33.92	NS-GYRO-MS
3200.00	2.00	280.83	3199.71	-20.35	-1.08	-18.76	0.50	0.50	-2.08	NS-GYRO-MS
3300.00	2.50	277.75	3299.63	-19.73	-4.96	-16.85	0.51	0.50	-3.08	NS-GYRO-MS
3400.00	3.25	269.24	3399.51	-19.47	-9.95	-14.90	0.86	0.75	-8.51	NS-GYRO-MS
3500.00	3.25	270.15	3499.35	-19.50	-15.62	-12.99	0.05	0.00	0.91	NS-GYRO-MS
3600.00	3.50	272.07	3599.17	-19.39	-21.51	-10.86	0.27	0.25	1.92	NS-GYRO-MS
3700.00	2.50	273.89	3699.03	-19.13	-26.73	-8.83	1.00	-1.00	1.82	NS-GYRO-MS
3800.00	2.00	268.80	3798.96	-19.02	-30.65	-7.39	0.54	-0.50	-5.09	NS-GYRO-MS
3900.00	1.75	266.71	3898.90	-19.14	-33.92	-6.39	0.26	-0.25	-2.09	NS-GYRO-MS
4000.00	0.75	115.62	3998.89	-19.51	-34.86	-6.41	2.43	-1.00	-151.09	NS-GYRO-MS
4100.00	0.75	101.53	4098.88	-19.93	-33.62	-7.22	0.18	0.00	-14.09	NS-GYRO-MS
4200.00	1.00	117.45	4198.87	-20.46	-32.21	-8.21	0.35	0.25	15.92	NS-GYRO-MS
4300.00	1.00	118.51	4298.86	-21.28	-30.67	-9.51	0.02	0.00	1.06	NS-GYRO-MS
4400.00	1.00	118.58	4398.84	-22.11	-29.13	-10.81	0.00	0.00	0.07	NS-GYRO-MS
4500.00	0.75	57.64	4498.83	-22.18	-27.82	-11.33	0.91	-0.25	-60.94	NS-GYRO-MS
4600.00	0.50	36.70	4598.82	-21.48	-27.00	-10.95	0.33	-0.25	-20.94	NS-GYRO-MS
4700.00	0.75	51.76	4698.82	-20.72	-26.23	-10.50	0.30	0.25	15.06	NS-GYRO-MS
4800.00	0.75	46.83	4798.81	-19.87	-25.24	-10.04	0.06	0.00	-4.93	NS-GYRO-MS
4900.00	0.75	81.89	4898.80	-19.33	-24.11	-9.92	0.45	0.00	35.06	NS-GYRO-MS
5000.00	1.00	111.96	4998.79	-19.56	-22.65	-10.64	0.51	0.25	30.07	NS-GYRO-MS
5100.00	1.00	117.03	5098.78	-20.29	-21.07	-11.86	0.09	0.00	5.07	NS-GYRO-MS
5200.00	1.75	106.10	5198.75	-21.11	-18.82	-13.40	0.79	0.75	-10.93	NS-GYRO-MS
5300.00	2.00	106.48	5298.69	-22.03	-15.68	-15.33	0.25	0.25	0.38	NS-GYRO-MS
5400.00	1.75	102.54	5398.64	-22.85	-12.52	-17.19	0.28	-0.25	-3.94	NS-GYRO-MS
5500.00	1.50	82.60	5498.60	-23.02	-9.73	-18.30	0.61	-0.25	-19.94	NS-GYRO-MS
5600.00	2.50	103.68	5598.54	-23.36	-6.31	-19.79	1.23	1.00	21.08	NS-GYRO-MS
5700.00	2.25	117.75	5698.45	-24.79	-2.46	-22.46	0.63	-0.25	14.07	NS-GYRO-MS
5800.00	2.25	207.77	5798.40	-27.44	-1.63	-25.23	3.18	0.00	90.02	NS-GYRO-MS
5900.00	2.75	225.82	5898.31	-30.85	-4.27	-27.53	0.93	0.50	18.05	NS-GYRO-MS
6000.00	2.00	233.91	5998.22	-33.55	-7.40	-29.00	0.82	-0.75	8.09	NS-GYRO-MS
6100.00	1.75	237.97	6098.17	-35.39	-10.10	-29.80	0.28	-0.25	4.06	NS-GYRO-MS
6200.00	1.50	239.04	6198.13	-36.87	-12.52	-30.37	0.25	-0.25	1.07	NS-GYRO-MS
6300.00	1.50	241.08	6298.09	-38.18	-14.79	-30.82	0.05	0.00	2.04	NS-GYRO-MS
6330.00	1.50	233.11	6328.08	-38.61	-15.45	-30.99	0.69	0.00	-26.57	NS-GYRO-MS
6394.00	0.93	246.96	6392.07	-39.31	-16.59	-31.27	1.00	-0.89	21.64	SDI MWD
6456.00	1.01	254.92	6454.06	-39.65	-17.58	-31.25	0.25	0.13	12.84	SDI MWD
6488.00	1.25	265.60	6486.05	-39.75	-18.21	-31.13	0.99	0.75	33.37	SDI MWD
6519.00	2.67	305.91	6517.04	-39.35	-19.13	-30.44	6.12	4.58	130.03	SDI MWD
6550.00	5.59	322.63	6547.95	-37.73	-20.63	-28.40	10.09	9.42	53.94	SDI MWD
6582.00	7.77	330.12	6579.74	-34.61	-22.65	-24.78	7.32	6.81	23.41	SDI MWD
6613.00	9.61	333.19	6610.38	-30.49	-24.86	-20.15	6.12	5.94	9.90	SDI MWD
6645.00	11.60	336.84	6641.83	-25.15	-27.33	-14.28	6.56	6.22	11.41	SDI MWD
6677.00	14.28	342.32	6673.02	-18.43	-29.80	-7.12	9.20	8.37	17.12	SDI MWD
6708.00	16.39	344.67	6702.91	-10.56	-32.12	1.06	7.09	6.81	7.58	SDI MWD

SDI

Survey Report

Company: CHESAPEAKE OPERATING, INC.
 Field: Upshur, WV
 Site: Mark Harper
 Well: 3H
 Wellpath: OH

Date: 11/30/2010 Time: 08:50:33 Page: 3
 Co-ordinate(NE) Reference: Well: 3H, Grid North
 Vertical (TVD) Reference: GL 1857'+15RKB 1872.0
 Section (VS) Reference: Well (0.00N,0.00E,340.00Azi)
 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
6740.00	18.18	345.31	6733.46	-1.38	-34.58	10.53	5.63	5.59	2.00	SDI MWD
6771.00	20.39	346.20	6762.72	8.54	-37.09	20.71	7.19	7.13	2.87	SDI MWD
6803.00	22.89	346.67	6792.47	20.01	-39.86	32.44	7.83	7.81	1.47	SDI MWD
6834.00	24.96	346.24	6820.80	32.24	-42.80	44.93	6.70	6.68	-1.39	SDI MWD
6866.00	27.12	347.26	6849.55	45.91	-46.02	58.88	6.89	6.75	3.19	SDI MWD
6897.00	29.55	348.43	6876.83	60.29	-49.11	73.45	8.04	7.84	3.77	SDI MWD
6928.00	32.48	347.56	6903.40	75.91	-52.44	89.27	9.56	9.45	-2.81	SDI MWD
6960.00	34.96	346.52	6930.01	93.22	-56.42	106.90	7.96	7.75	-3.25	SDI MWD
6991.00	37.58	346.25	6955.01	111.04	-60.74	125.12	8.47	8.45	-0.87	SDI MWD
7023.00	40.43	346.25	6979.87	130.60	-65.53	145.14	8.91	8.91	0.00	SDI MWD
7055.00	42.63	346.15	7003.82	151.21	-70.59	166.23	6.88	6.87	-0.31	SDI MWD
7086.00	45.69	345.12	7026.06	172.12	-75.95	187.72	10.14	9.87	-3.32	SDI MWD
7118.00	48.37	345.10	7047.87	194.75	-81.97	211.04	8.38	8.37	-0.06	SDI MWD
7149.00	51.15	344.61	7067.89	217.59	-88.15	234.62	9.05	8.97	-1.58	SDI MWD
7180.00	54.54	343.20	7086.62	241.32	-95.01	259.26	11.52	10.94	-4.55	SDI MWD
7211.00	57.64	342.70	7103.91	265.91	-102.55	284.95	10.09	10.00	-1.61	SDI MWD
7242.00	59.68	342.59	7120.03	291.19	-110.45	311.40	6.59	6.58	-0.35	SDI MWD
7274.00	61.53	342.70	7135.74	317.79	-118.77	339.25	5.79	5.78	0.34	SDI MWD
7305.00	64.24	343.36	7149.86	344.18	-126.82	366.80	8.94	8.74	2.13	SDI MWD
7337.00	66.14	343.01	7163.29	371.99	-135.22	395.80	6.02	5.94	-1.09	SDI MWD
7354.00	67.59	343.03	7169.97	386.94	-139.78	411.41	8.53	8.53	0.12	SDI MWD
7391.00	71.93	343.46	7182.77	420.17	-149.79	446.06	11.78	11.73	1.16	SDI MWD
7422.00	73.58	343.41	7191.96	448.55	-158.23	475.62	5.32	5.32	-0.16	SDI MWD
7454.00	76.47	342.43	7200.23	478.09	-167.31	506.49	9.50	9.03	-3.06	SDI MWD
7486.00	79.40	341.87	7206.91	507.88	-176.90	537.75	9.31	9.16	-1.75	SDI MWD
7518.00	82.96	341.12	7211.82	537.86	-186.94	569.36	11.36	11.12	-2.34	SDI MWD
7550.00	85.12	341.74	7215.14	568.03	-197.07	601.17	7.02	6.75	1.94	SDI MWD
7581.00	87.55	341.76	7217.12	597.41	-206.76	632.09	7.84	7.84	0.06	SDI MWD
7613.00	89.80	341.05	7217.86	627.72	-216.96	664.07	7.37	7.03	-2.22	SDI MWD
7645.00	90.34	340.61	7217.82	657.95	-227.47	696.07	2.18	1.69	-1.37	SDI MWD
7708.00	89.97	340.22	7217.65	717.30	-248.58	759.07	0.85	-0.59	-0.62	SDI MWD
7772.00	90.07	340.40	7217.63	777.56	-270.15	823.07	0.32	0.16	0.28	SDI MWD
7835.00	90.20	339.62	7217.48	836.77	-291.68	886.07	1.26	0.21	-1.24	SDI MWD
7899.00	90.03	339.40	7217.35	896.72	-314.09	950.06	0.43	-0.27	-0.34	SDI MWD
7962.00	90.00	339.15	7217.34	955.64	-336.38	1013.06	0.40	-0.05	-0.40	SDI MWD
8026.00	89.46	338.53	7217.64	1015.32	-359.48	1077.04	1.28	-0.84	-0.97	SDI MWD
8089.00	90.92	339.76	7217.43	1074.19	-381.91	1140.03	3.03	2.32	1.95	SDI MWD
8152.00	88.55	338.31	7217.72	1133.02	-404.45	1203.02	4.41	-3.76	-2.30	SDI MWD
8216.00	89.06	338.06	7219.06	1192.42	-428.23	1266.97	0.89	0.80	-0.39	SDI MWD
8280.00	89.50	340.57	7219.86	1252.28	-450.83	1330.96	3.98	0.69	3.92	SDI MWD
8343.00	88.96	342.04	7220.71	1311.95	-471.02	1393.93	2.49	-0.86	2.33	SDI MWD
8407.00	88.15	341.63	7222.32	1372.74	-490.97	1457.88	1.42	-1.27	-0.64	SDI MWD
8470.00	88.29	342.33	7224.28	1432.62	-510.45	1520.81	1.13	0.22	1.11	SDI MWD
8534.00	88.46	342.05	7226.09	1493.53	-530.01	1584.74	0.51	0.27	-0.44	SDI MWD
8598.00	90.67	342.83	7226.58	1554.54	-549.32	1648.67	3.66	3.45	1.22	SDI MWD
8661.00	88.66	342.24	7226.95	1614.64	-568.23	1711.61	3.33	-3.19	-0.94	SDI MWD
8725.00	91.18	342.52	7227.04	1675.63	-587.60	1775.55	3.96	3.94	0.44	SDI MWD
8789.00	86.37	340.23	7228.41	1736.24	-608.03	1839.49	8.32	-7.52	-3.58	SDI MWD
8852.00	84.34	339.12	7233.51	1795.12	-629.83	1902.28	3.67	-3.22	-1.76	SDI MWD
8916.00	84.41	338.15	7239.78	1854.44	-653.04	1965.95	1.51	0.11	-1.52	SDI MWD
8979.00	86.54	338.63	7244.75	1912.82	-676.17	2028.73	3.47	3.38	0.76	SDI MWD
9042.00	88.42	338.85	7247.52	1971.47	-698.99	2091.65	3.00	2.98	0.35	SDI MWD
9106.00	87.92	337.98	7249.56	2030.95	-722.52	2155.59	1.57	-0.78	-1.36	SDI MWD
9169.00	88.35	338.14	7251.61	2089.36	-746.04	2218.52	0.73	0.68	0.25	SDI MWD

SDI Survey Report

Company: CHESAPEAKE OPERATING, INC.
Field: Upshur, WV
Site: Mark Harper
Well: 3H
Wellpath: OH

Date: 11/30/2010 **Time:** 08:50:33 **Page:** 4
Co-ordinate(NE) Reference: Well: 3H, Grid North
Vertical (TVD) Reference: GL 1857'+15RKB 1872.0
Section (VS) Reference: Well (0.00N,0.00E,340.00Azi)
Survey Calculation Method: Minimum Curvature **Db:** Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
9231.00	89.03	338.92	7253.03	2147.04	-768.73	2280.48	1.67	1.10	1.26	SDI MWD
9294.00	88.62	338.10	7254.32	2205.65	-791.81	2343.45	1.45	-0.65	-1.30	SDI MWD
9357.00	87.61	336.79	7256.40	2263.80	-815.96	2406.35	2.62	-1.60	-2.08	SDI MWD
9421.00	88.42	337.45	7258.61	2322.73	-840.82	2470.23	1.63	1.27	1.03	SDI MWD
9484.00	88.62	337.60	7260.24	2380.92	-864.90	2533.15	0.40	0.32	0.24	SDI MWD
9548.00	87.25	336.07	7262.55	2439.72	-890.06	2597.01	3.21	-2.14	-2.39	SDI MWD
9612.00	87.58	335.71	7265.43	2498.08	-916.17	2660.78	0.76	0.52	-0.56	SDI MWD
9675.00	88.86	336.39	7267.39	2555.62	-941.74	2723.59	2.30	2.03	1.08	SDI MWD
9738.00	91.28	339.14	7267.31	2613.93	-965.57	2786.54	5.81	3.84	4.37	SDI MWD
9802.00	91.41	339.23	7265.81	2673.74	-988.31	2850.51	0.25	0.20	0.14	SDI MWD
9863.00	91.01	338.73	7264.52	2730.66	-1010.18	2911.49	1.05	-0.66	-0.82	SDI MWD
9927.00	91.14	338.52	7263.32	2790.25	-1033.50	2975.46	0.39	0.20	-0.33	SDI MWD
9990.00	90.67	338.95	7262.33	2848.95	-1056.35	3038.43	1.01	-0.75	0.68	SDI MWD
10054.00	91.01	340.22	7261.39	2908.93	-1078.67	3102.42	2.05	0.53	1.98	SDI MWD
10117.00	92.52	340.78	7259.45	2968.28	-1099.69	3165.39	2.56	2.40	0.89	SDI MWD
10180.00	92.59	340.47	7256.64	3027.66	-1120.57	3228.32	0.50	0.11	-0.49	SDI MWD
10244.00	91.21	339.19	7254.52	3087.70	-1142.63	3292.29	2.94	-2.16	-2.00	SDI MWD
10308.00	91.01	339.10	7253.28	3147.49	-1165.41	3356.27	0.34	-0.31	-0.14	SDI MWD
10371.00	89.46	338.69	7253.02	3206.26	-1188.09	3419.25	2.54	-2.46	-0.65	SDI MWD
10434.00	88.46	340.76	7254.16	3265.35	-1209.92	3482.24	3.65	-1.59	3.29	SDI MWD
10498.00	90.00	342.27	7255.02	3326.03	-1230.20	3546.20	3.37	2.41	2.36	SDI MWD
10562.00	91.85	343.15	7253.99	3387.13	-1249.22	3610.12	3.20	2.89	1.37	SDI MWD
10625.00	93.06	343.55	7251.29	3447.43	-1267.26	3672.95	2.02	1.92	0.63	SDI MWD
10689.00	92.89	343.55	7247.97	3508.73	-1285.36	3736.75	0.27	-0.27	0.00	SDI MWD
10753.00	93.09	342.65	7244.63	3569.88	-1303.94	3800.56	1.44	0.31	-1.41	SDI MWD
10817.00	92.55	342.31	7241.48	3630.84	-1323.18	3864.43	1.00	-0.84	-0.53	SDI MWD
10880.00	91.51	341.34	7239.25	3690.66	-1342.82	3927.35	2.26	-1.65	-1.54	SDI MWD
10943.00	92.56	341.04	7237.01	3750.25	-1363.12	3990.30	1.73	1.67	-0.48	SDI MWD
11007.00	95.02	341.94	7232.78	3810.80	-1383.39	4054.13	4.09	3.84	1.41	SDI MWD
11071.00	95.51	342.64	7226.91	3871.51	-1402.78	4117.81	1.33	0.77	1.09	SDI MWD
11133.00	92.25	342.39	7222.72	3930.51	-1421.36	4179.60	5.27	-5.26	-0.40	SDI MWD
11196.00	91.38	342.00	7220.72	3990.46	-1440.61	4242.52	1.51	-1.38	-0.62	SDI MWD
11260.00	90.30	340.97	7219.78	4051.14	-1460.93	4306.49	2.33	-1.69	-1.61	SDI MWD
11324.00	90.50	341.12	7219.34	4111.66	-1481.72	4370.48	0.39	0.31	0.23	SDI MWD
11387.00	90.17	340.56	7218.97	4171.17	-1502.40	4433.47	1.03	-0.52	-0.89	SDI MWD
11451.00	91.55	341.93	7218.01	4231.77	-1522.97	4497.45	3.04	2.16	2.14	SDI MWD
11514.00	89.36	339.08	7217.51	4291.14	-1543.99	4560.43	5.70	-3.48	-4.52	SDI MWD
11578.00	91.21	339.99	7217.19	4351.10	-1566.37	4624.42	3.22	2.89	1.42	SDI MWD
11641.00	90.40	339.04	7216.30	4410.11	-1588.41	4687.42	1.98	-1.29	-1.51	SDI MWD
11705.00	91.61	339.78	7215.18	4470.01	-1610.92	4751.40	2.22	1.89	1.16	SDI MWD
11768.00	92.08	339.54	7213.15	4529.05	-1632.80	4814.37	0.84	0.75	-0.38	SDI MWD
11832.00	90.07	337.86	7211.95	4588.66	-1656.05	4878.33	4.09	-3.14	-2.62	SDI MWD
11895.00	90.44	337.51	7211.67	4646.94	-1679.97	4941.28	0.81	0.59	-0.56	SDI MWD
11959.00	90.84	337.82	7210.96	4706.14	-1704.29	5005.22	0.79	0.62	0.48	SDI MWD
12023.00	90.84	337.84	7210.02	4765.40	-1728.44	5069.17	0.03	0.00	0.03	SDI MWD
12086.00	89.56	336.34	7209.80	4823.43	-1752.96	5132.09	3.13	-2.03	-2.38	SDI MWD
12149.00	88.39	336.06	7210.92	4881.06	-1778.38	5194.94	1.91	-1.86	-0.44	SDI MWD
12213.00	88.99	336.39	7212.39	4939.61	-1804.17	5258.78	1.07	0.94	0.52	SDI MWD
12277.00	88.36	335.63	7213.87	4998.07	-1830.19	5322.61	1.54	-0.98	-1.19	SDI MWD
12340.00	88.82	335.91	7215.42	5055.50	-1856.03	5385.42	0.85	0.73	0.44	SDI MWD
12404.00	88.59	336.04	7216.86	5113.94	-1882.08	5449.24	0.41	-0.36	0.20	SDI MWD
12467.00	88.49	335.98	7218.47	5171.48	-1907.69	5512.07	0.19	-0.16	-0.10	SDI MWD
12530.00	88.32	335.95	7220.22	5228.99	-1933.34	5574.89	0.27	-0.27	-0.05	SDI MWD

SDI

Survey Report

Company: CHESAPEAKE OPERATING, INC.
 Field: Upshur, WV
 Site: Mark Harper
 Well: 3H
 Wellpath: OH

Date: 11/30/2010 Time: 08:50:33 Page: 5
 Co-ordinate(NE) Reference: Well: 3H, Grid North
 Vertical (TVD) Reference: GL 1857'+15RKB 1872.0
 Section (VS) Reference: Well (0.00N,0.00E,340.00Azi)
 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
12593.00	89.23	337.81	7221.57	5286.92	-1958.07	5637.78	3.29	1.44	2.95	SDI MWD
12657.00	89.36	339.17	7222.36	5346.46	-1981.53	5701.75	2.13	0.20	2.12	SDI MWD
12720.00	89.09	340.32	7223.21	5405.55	-2003.34	5764.74	1.87	-0.43	1.83	SDI MWD
12783.00	89.70	341.37	7223.87	5465.06	-2024.01	5827.73	1.93	0.97	1.67	SDI MWD
12846.00	89.36	340.84	7224.39	5524.66	-2044.41	5890.72	1.00	-0.54	-0.84	SDI MWD
12910.00	89.46	340.98	7225.05	5585.14	-2065.34	5954.70	0.27	0.16	0.22	SDI MWD
12974.00	90.17	341.30	7225.26	5645.70	-2086.03	6018.69	1.22	1.11	0.50	SDI MWD
13037.00	90.47	341.31	7224.91	5705.38	-2106.22	6081.67	0.48	0.48	0.02	SDI MWD
13100.00	90.77	341.81	7224.22	5765.14	-2126.15	6144.65	0.93	0.48	0.79	SDI MWD
13164.00	90.77	341.73	7223.36	5825.92	-2146.17	6208.61	0.12	0.00	-0.12	SDI MWD
13227.00	89.60	340.25	7223.16	5885.48	-2166.69	6271.60	2.99	-1.86	-2.35	SDI MWD
13290.00	89.70	340.24	7223.55	5944.77	-2187.98	6334.60	0.16	0.16	-0.02	SDI MWD
13337.00	89.76	340.40	7223.77	5989.03	-2203.81	6381.59	0.36	0.13	0.34	SDI MWD
13390.00	89.76	340.40	7223.99	6038.96	-2221.59	6434.59	0.00	0.00	0.00	PTB

Targets

Name	Description Dip. Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude ---> Deg Min Sec	<--- Longitude ---> Deg Min Sec
PBHL P5		7217.00	6046.30	-2200.60	679417.00	2196961.00	38 51 49.636 N	80 18 29.925 W

Annotation

MD ft	TVD ft	
13390.00	7223.99	PTB

SDI

Survey Report - Geographic

Company: CHESAPEAKE OPERATING, INC.		Date: 11/30/2010	Time: 08:50:49	Page: 1
Field: Upshur, WV	Co-ordinate(NE) Reference: Well: 3H, Grid North		Vertical (TVD) Reference: GL 1857'+15RKB 1872.0	
Site: Mark Harper	Section (VS) Reference: Well (0.00N,0.00E,340.00Azi)		Survey Calculation Method: Minimum Curvature	
Well: 3H	Survey Calculation Method: Minimum Curvature		Db: Sybase	
Wellpath: OH				

Field: Upshur, WV	
Map System: US State Plane Coordinate System 1927	Map Zone: West Virginia, Southern Zone
Geo Datum: NAD27 (Clarke 1866)	Coordinate System: Well Centre
Sys Datum: Mean Sea Level	Geomagnetic Model: IGRF2010

Site: Mark Harper		
Site Position:	Northing: 673370.70 ft	Latitude: 38 50 49.709 N
From: Map	Easting: 2199161.60 ft	Longitude: 80 18 2.682 W
Position Uncertainty: 0.00 ft	North Reference: Grid	Grid Convergence: 0.43 deg
Ground Level: 1857.00 ft		

Well: 3H		Slot Name:	
Well Position:	+N/-S 0.00 ft	Northing: 673370.70 ft	Latitude: 38 50 49.709 N
	+E/-W 0.00 ft	Easting: 2199161.60 ft	Longitude: 80 18 2.682 W
Position Uncertainty: 0.00 ft			

Wellpath: OH		Drilled From: Surface
Current Datum: GL 1857'+15RKB	Height 1872.00 ft	Tie-on Depth: 0.00 ft
Magnetic Data: 11/24/2010		Above System Datum: Mean Sea Level
Field Strength: 52455 nT		Declination: -8.57 deg
Vertical Section: Depth From (TVD)	+N/-S ft	Mag Dip Angle: 66.74 deg
	+E/-W ft	Direction deg
0.00	0.00	0.00
		340.00

Survey Program for Definitive Wellpath				
Date: 11/30/2010	Validated: No	Version: 1		
Actual From ft	To ft	Survey	Toolcode	Tool Name
0.00	6330.00	Survey #1 (0.00-6330.00)	NS-GYRO-MS	North sensing gyrocompassing m
6330.00	13390.00	Survey #2 (6330.00-13390.00)	SDI MWD	SDI MWD - Standard ver 1.0.1

Survey													
MD	Incl	Azim	TVD	+N/-S	+E/-W	Map	Map	<--- Latitude --->		<--- Longitude --->			
ft	deg	deg	ft	ft	ft	Northing	Easting	Deg	Min	Sec	Deg	Min	Sec
0.00	0.00	0.00	0.00	0.00	0.00	673370.70	2199161.60	38	50	49.709 N	80	18	2.682 W
100.00	0.75	184.16	100.00	-0.65	-0.05	673370.05	2199161.55	38	50	49.703 N	80	18	2.683 W
200.00	1.00	9.33	199.99	-0.44	0.05	673370.26	2199161.65	38	50	49.705 N	80	18	2.682 W
300.00	0.75	203.49	299.99	-0.18	-0.07	673370.52	2199161.53	38	50	49.707 N	80	18	2.683 W
400.00	0.75	149.66	399.98	-1.35	0.00	673369.35	2199161.60	38	50	49.696 N	80	18	2.682 W
500.00	0.50	64.82	499.98	-1.73	0.72	673368.97	2199162.32	38	50	49.692 N	80	18	2.673 W
600.00	0.75	163.99	599.97	-2.17	1.30	673368.53	2199162.90	38	50	49.688 N	80	18	2.666 W
700.00	0.50	155.15	699.97	-3.20	1.66	673367.50	2199163.26	38	50	49.677 N	80	18	2.661 W
800.00	1.00	156.32	799.96	-4.39	2.20	673366.31	2199163.80	38	50	49.666 N	80	18	2.655 W
900.00	1.00	157.48	899.94	-6.00	2.88	673364.70	2199164.48	38	50	49.650 N	80	18	2.646 W
1000.00	0.75	155.64	999.93	-7.40	3.48	673363.30	2199165.08	38	50	49.636 N	80	18	2.639 W
1100.00	1.00	131.81	1099.92	-8.58	4.40	673362.12	2199166.00	38	50	49.624 N	80	18	2.627 W
1200.00	1.00	166.97	1199.91	-10.01	5.25	673360.69	2199166.85	38	50	49.610 N	80	18	2.617 W
1300.00	1.00	141.14	1299.89	-11.54	6.00	673359.16	2199167.60	38	50	49.595 N	80	18	2.608 W
1400.00	1.00	147.12	1399.88	-12.95	7.02	673357.75	2199168.62	38	50	49.581 N	80	18	2.595 W
1500.00	1.00	154.28	1499.86	-14.47	7.87	673356.23	2199169.47	38	50	49.565 N	80	18	2.584 W
1600.00	0.75	155.45	1599.85	-15.85	8.52	673354.85	2199170.12	38	50	49.552 N	80	18	2.576 W
1700.00	0.75	168.61	1699.84	-17.09	8.92	673353.61	2199170.52	38	50	49.540 N	80	18	2.571 W
1800.00	0.75	227.77	1799.83	-18.17	8.57	673352.53	2199170.17	38	50	49.529 N	80	18	2.576 W
1900.00	0.50	102.94	1899.83	-18.71	8.51	673351.99	2199170.11	38	50	49.524 N	80	18	2.576 W
2000.00	0.50	215.10	1999.83	-19.16	8.68	673351.54	2199170.28	38	50	49.519 N	80	18	2.574 W

SDI

Survey Report - Geographic

Company: CHESAPEAKE OPERATING, INC.
 Field: Upshur, WV
 Site: Mark Harper
 Well: 3H
 Wellpath: OH

Date: 11/30/2010 Time: 08:50:49 Page: 2
 Co-ordinate(NE) Reference: Well: 3H, Grid North
 Vertical (TVD) Reference: GL 1857+15RKB 1872.0
 Section (VS) Reference: Well (0.00N,0.00E,340.00Azi)
 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<---- Latitude ---->		<--- Longitude --->	
								Deg	Min Sec	Deg	Min Sec
2100.00	0.50	69.27	2099.83	-19.36	8.84	673351.34	2199170.44	38 50	49.517 N	80 18	2.572 W
2200.00	0.50	38.43	2199.82	-18.87	9.52	673351.83	2199171.12	38 50	49.522 N	80 18	2.564 W
2300.00	0.50	210.59	2299.82	-18.90	9.57	673351.80	2199171.17	38 50	49.522 N	80 18	2.563 W
2400.00	0.75	358.51	2399.82	-18.62	9.33	673352.08	2199170.93	38 50	49.524 N	80 18	2.566 W
2500.00	0.75	208.42	2499.82	-18.54	9.00	673352.16	2199170.60	38 50	49.525 N	80 18	2.570 W
2600.00	0.50	229.34	2599.81	-19.40	8.36	673351.30	2199169.96	38 50	49.517 N	80 18	2.578 W
2700.00	0.50	232.25	2699.81	-19.96	7.68	673350.74	2199169.28	38 50	49.511 N	80 18	2.587 W
2800.00	0.75	248.16	2799.80	-20.47	6.73	673350.23	2199168.33	38 50	49.506 N	80 18	2.599 W
2900.00	0.75	273.08	2899.79	-20.68	5.47	673350.02	2199167.07	38 50	49.504 N	80 18	2.615 W
3000.00	1.00	248.99	2999.78	-20.95	4.00	673349.75	2199165.60	38 50	49.502 N	80 18	2.634 W
3100.00	1.50	282.91	3099.76	-20.97	1.91	673349.73	2199163.51	38 50	49.502 N	80 18	2.660 W
3200.00	2.00	280.83	3199.71	-20.35	-1.08	673350.35	2199160.52	38 50	49.508 N	80 18	2.698 W
3300.00	2.50	277.75	3299.63	-19.73	-4.96	673350.97	2199156.64	38 50	49.514 N	80 18	2.747 W
3400.00	3.25	269.24	3399.51	-19.47	-9.95	673351.23	2199151.65	38 50	49.517 N	80 18	2.810 W
3500.00	3.25	270.15	3499.35	-19.50	-15.62	673351.20	2199145.98	38 50	49.517 N	80 18	2.881 W
3600.00	3.50	272.07	3599.17	-19.39	-21.51	673351.31	2199140.09	38 50	49.519 N	80 18	2.956 W
3700.00	2.50	273.89	3699.03	-19.13	-26.73	673351.57	2199134.87	38 50	49.522 N	80 18	3.022 W
3800.00	2.00	268.80	3798.96	-19.02	-30.65	673351.68	2199130.95	38 50	49.523 N	80 18	3.071 W
3900.00	1.75	266.71	3898.90	-19.14	-33.92	673351.56	2199127.68	38 50	49.522 N	80 18	3.113 W
4000.00	0.75	115.62	3998.89	-19.51	-34.86	673351.19	2199126.74	38 50	49.519 N	80 18	3.125 W
4100.00	0.75	101.53	4098.88	-19.93	-33.62	673350.77	2199127.98	38 50	49.515 N	80 18	3.109 W
4200.00	1.00	117.45	4198.87	-20.46	-32.21	673350.24	2199129.39	38 50	49.509 N	80 18	3.091 W
4300.00	1.00	118.51	4298.86	-21.28	-30.67	673349.42	2199130.93	38 50	49.501 N	80 18	3.072 W
4400.00	1.00	118.58	4398.84	-22.11	-29.13	673348.59	2199132.47	38 50	49.493 N	80 18	3.053 W
4500.00	0.75	57.64	4498.83	-22.18	-27.82	673348.52	2199133.78	38 50	49.492 N	80 18	3.036 W
4600.00	0.50	36.70	4598.82	-21.48	-27.00	673349.22	2199134.60	38 50	49.499 N	80 18	3.026 W
4700.00	0.75	51.76	4698.82	-20.72	-26.23	673349.98	2199135.37	38 50	49.506 N	80 18	3.016 W
4800.00	0.75	46.83	4798.81	-19.87	-25.24	673350.83	2199136.36	38 50	49.515 N	80 18	3.003 W
4900.00	0.75	81.89	4898.80	-19.33	-24.11	673351.37	2199137.49	38 50	49.520 N	80 18	2.989 W
5000.00	1.00	111.96	4998.79	-19.56	-22.65	673351.14	2199138.95	38 50	49.517 N	80 18	2.970 W
5100.00	1.00	117.03	5098.78	-20.29	-21.07	673350.41	2199140.53	38 50	49.510 N	80 18	2.950 W
5200.00	1.75	106.10	5198.75	-21.11	-18.82	673349.59	2199142.78	38 50	49.502 N	80 18	2.922 W
5300.00	2.00	106.48	5298.69	-22.03	-15.68	673348.67	2199145.92	38 50	49.493 N	80 18	2.882 W
5400.00	1.75	102.54	5398.64	-22.85	-12.52	673347.85	2199149.08	38 50	49.484 N	80 18	2.843 W
5500.00	1.50	82.60	5498.60	-23.02	-9.73	673347.68	2199151.87	38 50	49.482 N	80 18	2.807 W
5600.00	2.50	103.68	5598.54	-23.36	-6.31	673347.34	2199155.29	38 50	49.479 N	80 18	2.764 W
5700.00	2.25	117.75	5698.45	-24.79	-2.46	673345.91	2199159.14	38 50	49.464 N	80 18	2.716 W
5800.00	2.25	207.77	5798.40	-27.44	-1.63	673343.26	2199159.97	38 50	49.438 N	80 18	2.705 W
5900.00	2.75	225.82	5898.31	-30.85	-4.27	673339.85	2199157.33	38 50	49.404 N	80 18	2.739 W
6000.00	2.00	233.91	5998.22	-33.55	-7.40	673337.15	2199154.20	38 50	49.378 N	80 18	2.779 W
6100.00	1.75	237.97	6098.17	-35.39	-10.10	673335.31	2199151.50	38 50	49.360 N	80 18	2.813 W
6200.00	1.50	239.04	6198.13	-36.87	-12.52	673333.83	2199149.08	38 50	49.346 N	80 18	2.844 W
6300.00	1.50	241.08	6298.09	-38.18	-14.79	673332.52	2199146.81	38 50	49.333 N	80 18	2.873 W
6330.00	1.50	233.11	6328.08	-38.61	-15.45	673332.09	2199146.15	38 50	49.329 N	80 18	2.881 W
6394.00	0.93	246.96	6392.07	-39.31	-16.59	673331.39	2199145.01	38 50	49.322 N	80 18	2.896 W
6456.00	1.01	254.92	6454.06	-39.65	-17.58	673331.05	2199144.02	38 50	49.318 N	80 18	2.908 W
6488.00	1.25	265.60	6486.05	-39.75	-18.21	673330.95	2199143.39	38 50	49.318 N	80 18	2.916 W
6519.00	2.67	305.91	6517.04	-39.35	-19.13	673331.35	2199142.47	38 50	49.322 N	80 18	2.928 W
6550.00	5.59	322.63	6547.95	-37.73	-20.63	673332.97	2199140.97	38 50	49.338 N	80 18	2.947 W
6582.00	7.77	330.12	6579.74	-34.61	-22.65	673336.09	2199138.95	38 50	49.369 N	80 18	2.972 W
6613.00	9.61	333.19	6610.38	-30.49	-24.86	673340.21	2199136.74	38 50	49.410 N	80 18	2.999 W
6645.00	11.60	336.84	6641.83	-25.15	-27.33	673345.55	2199134.27	38 50	49.463 N	80 18	3.030 W
6677.00	14.28	342.32	6673.02	-18.43	-29.80	673352.27	2199131.80	38 50	49.529 N	80 18	3.061 W

SDI

Survey Report - Geographic

Company: CHESAPEAKE OPERATING, INC.
 Field: Upshur, WV
 Site: Mark Harper
 Well: 3H
 Wellpath: OH

Date: 11/30/2010 Time: 08:50:49 Page: 3
 Co-ordinate(NE) Reference: Well: 3H, Grid North
 Vertical (TVD) Reference: GL 1857'+15RKB 1872.0
 Section (VS) Reference: Well (0.00N,0.00E,340.00Azi)
 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude --->		<--- Longitude --->	
								Deg	Min Sec	Deg	Min Sec
6708.00	16.39	344.67	6702.91	-10.56	-32.12	673360.14	2199129.48	38 50	49.607 N	80 18	3.089 W
6740.00	18.18	345.31	6733.46	-1.38	-34.58	673369.32	2199127.02	38 50	49.698 N	80 18	3.119 W
6771.00	20.39	346.20	6762.72	8.54	-37.09	673379.24	2199124.51	38 50	49.796 N	80 18	3.150 W
6803.00	22.89	346.67	6792.47	20.01	-39.86	673390.71	2199121.74	38 50	49.910 N	80 18	3.184 W
6834.00	24.96	346.24	6820.80	32.24	-42.80	673402.94	2199118.80	38 50	50.031 N	80 18	3.220 W
6866.00	27.12	347.26	6849.55	45.91	-46.02	673416.61	2199115.58	38 50	50.166 N	80 18	3.259 W
6897.00	29.55	348.43	6876.83	60.29	-49.11	673430.99	2199112.49	38 50	50.309 N	80 18	3.297 W
6928.00	32.48	347.56	6903.40	75.91	-52.44	673446.61	2199109.16	38 50	50.463 N	80 18	3.338 W
6960.00	34.96	346.52	6930.01	93.22	-56.42	673463.92	2199105.18	38 50	50.635 N	80 18	3.386 W
6991.00	37.58	346.25	6955.01	111.04	-60.74	673481.74	2199100.86	38 50	50.811 N	80 18	3.439 W
7023.00	40.43	346.25	6979.87	130.60	-65.53	673501.30	2199096.07	38 50	51.005 N	80 18	3.498 W
7055.00	42.63	346.15	7003.82	151.21	-70.59	673521.91	2199091.01	38 50	51.209 N	80 18	3.560 W
7086.00	45.69	345.12	7026.06	172.12	-75.95	673542.82	2199085.65	38 50	51.416 N	80 18	3.626 W
7118.00	48.37	345.10	7047.87	194.75	-81.97	673565.45	2199079.63	38 50	51.640 N	80 18	3.700 W
7149.00	51.15	344.61	7067.89	217.59	-88.15	673588.29	2199073.45	38 50	51.866 N	80 18	3.776 W
7180.00	54.54	343.20	7086.62	241.32	-95.01	673612.02	2199066.59	38 50	52.101 N	80 18	3.860 W
7211.00	57.64	342.70	7103.91	265.91	-102.55	673636.61	2199059.05	38 50	52.345 N	80 18	3.953 W
7242.00	59.68	342.59	7120.03	291.19	-110.45	673661.89	2199051.15	38 50	52.595 N	80 18	4.050 W
7274.00	61.53	342.70	7135.74	317.79	-118.77	673688.49	2199042.83	38 50	52.859 N	80 18	4.153 W
7305.00	64.24	343.36	7149.86	344.18	-126.82	673714.88	2199034.78	38 50	53.121 N	80 18	4.252 W
7337.00	66.14	343.01	7163.29	371.99	-135.22	673742.69	2199026.38	38 50	53.396 N	80 18	4.356 W
7354.00	67.59	343.03	7169.97	386.94	-139.78	673757.64	2199021.82	38 50	53.544 N	80 18	4.412 W
7391.00	71.93	343.46	7182.77	420.17	-149.79	673790.87	2199011.81	38 50	53.873 N	80 18	4.535 W
7422.00	73.58	343.41	7191.96	448.55	-158.23	673819.25	2199003.37	38 50	54.154 N	80 18	4.639 W
7454.00	76.47	342.43	7200.23	478.09	-167.31	673848.79	2198994.29	38 50	54.447 N	80 18	4.751 W
7486.00	79.40	341.87	7206.91	507.88	-176.90	673878.58	2198984.70	38 50	54.742 N	80 18	4.870 W
7518.00	82.96	341.12	7211.82	537.86	-186.94	673908.56	2198974.66	38 50	55.039 N	80 18	4.994 W
7550.00	85.12	341.74	7215.14	568.03	-197.07	673938.73	2198964.53	38 50	55.338 N	80 18	5.119 W
7581.00	87.55	341.76	7217.12	597.41	-206.76	673968.11	2198954.84	38 50	55.629 N	80 18	5.239 W
7613.00	89.80	341.05	7217.86	627.72	-216.96	673998.42	2198944.64	38 50	55.930 N	80 18	5.365 W
7645.00	90.34	340.61	7217.82	657.95	-227.47	674028.65	2198934.13	38 50	56.229 N	80 18	5.494 W
7708.00	89.97	340.22	7217.65	717.30	-248.58	674088.00	2198913.02	38 50	56.818 N	80 18	5.756 W
7772.00	90.07	340.40	7217.63	777.56	-270.15	674148.26	2198891.45	38 50	57.415 N	80 18	6.023 W
7835.00	90.20	339.62	7217.48	836.77	-291.68	674207.47	2198869.92	38 50	58.002 N	80 18	6.289 W
7899.00	90.03	339.40	7217.35	896.72	-314.09	674267.42	2198847.51	38 50	58.596 N	80 18	6.567 W
7962.00	90.00	339.15	7217.34	955.64	-336.38	674326.34	2198825.22	38 50	59.180 N	80 18	6.843 W
8026.00	89.46	338.53	7217.64	1015.32	-359.48	674386.02	2198802.12	38 50	59.772 N	80 18	7.129 W
8089.00	90.92	339.76	7217.43	1074.19	-381.91	674444.89	2198779.69	38 51	0.355 N	80 18	7.407 W
8152.00	88.55	338.31	7217.72	1133.02	-404.45	674503.72	2198757.15	38 51	0.938 N	80 18	7.686 W
8216.00	89.06	338.06	7219.06	1192.42	-428.23	674563.12	2198733.37	38 51	1.527 N	80 18	7.981 W
8280.00	89.50	340.57	7219.86	1252.28	-450.83	674622.98	2198710.77	38 51	2.121 N	80 18	8.261 W
8343.00	88.96	342.04	7220.71	1311.95	-471.02	674682.65	2198690.58	38 51	2.712 N	80 18	8.511 W
8407.00	88.15	341.63	7222.32	1372.74	-490.97	674743.44	2198670.63	38 51	3.314 N	80 18	8.757 W
8470.00	88.29	342.33	7224.28	1432.62	-510.45	674803.32	2198651.15	38 51	3.908 N	80 18	8.998 W
8534.00	88.46	342.05	7226.09	1493.53	-530.01	674864.23	2198631.59	38 51	4.511 N	80 18	9.239 W
8598.00	90.67	342.83	7226.58	1554.54	-549.32	674925.24	2198612.28	38 51	5.116 N	80 18	9.477 W
8661.00	88.66	342.24	7226.95	1614.64	-568.23	674985.34	2198593.37	38 51	5.711 N	80 18	9.711 W
8725.00	91.18	342.52	7227.04	1675.63	-587.60	675046.33	2198574.00	38 51	6.315 N	80 18	9.950 W
8789.00	86.37	340.23	7228.41	1736.24	-608.03	675106.94	2198553.57	38 51	6.916 N	80 18	10.202 W
8852.00	84.34	339.12	7233.51	1795.12	-629.83	675165.82	2198531.77	38 51	7.499 N	80 18	10.472 W
8916.00	84.41	338.15	7239.78	1854.44	-653.04	675225.14	2198508.56	38 51	8.087 N	80 18	10.760 W
8979.00	86.54	338.63	7244.75	1912.82	-676.17	675283.52	2198485.43	38 51	8.666 N	80 18	11.047 W

SDI

Survey Report - Geographic

Company: CHESAPEAKE OPERATING, INC.
 Field: Upshur, WV
 Site: Mark Harper
 Well: 3H
 Wellpath: OH

Date: 11/30/2010 Time: 08:50:49 Page: 4
 Co-ordinate(NE) Reference: Well: 3H, Grid North
 Vertical (TVD) Reference: GL 1857'+15RKB 1872.0
 Section (VS) Reference: Well (0.00N,0.00E,340.00Azi)
 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N-S ft	+E-W ft	Map Northing ft	Map Easting ft	<--- Latitude --->		<--- Longitude --->	
								Deg	Min Sec	Deg	Min Sec
9042.00	88.42	338.85	7247.52	1971.47	-698.99	675342.17	2198462.61	38 51	9.248 N	80 18	11.329 W
9106.00	87.92	337.98	7249.56	2030.95	-722.52	675401.65	2198439.08	38 51	9.837 N	80 18	11.621 W
9169.00	88.35	338.14	7251.61	2089.36	-746.04	675460.06	2198415.56	38 51	10.416 N	80 18	11.913 W
9231.00	89.03	338.92	7253.03	2147.04	-768.73	675517.74	2198392.87	38 51	10.988 N	80 18	12.194 W
9294.00	88.62	338.10	7254.32	2205.65	-791.81	675576.35	2198369.79	38 51	11.569 N	80 18	12.480 W
9357.00	87.61	336.79	7256.40	2263.80	-815.96	675634.50	2198345.64	38 51	12.146 N	80 18	12.780 W
9421.00	88.42	337.45	7258.61	2322.73	-840.82	675693.43	2198320.78	38 51	12.730 N	80 18	13.089 W
9484.00	88.62	337.60	7260.24	2380.92	-864.90	675751.62	2198296.70	38 51	13.307 N	80 18	13.388 W
9548.00	87.25	336.07	7262.55	2439.72	-890.06	675810.42	2198271.54	38 51	13.890 N	80 18	13.700 W
9612.00	87.58	335.71	7265.43	2498.08	-916.17	675868.78	2198245.43	38 51	14.469 N	80 18	14.025 W
9675.00	88.86	336.39	7267.39	2555.62	-941.74	675926.32	2198219.86	38 51	15.040 N	80 18	14.342 W
9738.00	91.28	339.14	7267.31	2613.93	-965.57	675984.63	2198196.03	38 51	15.618 N	80 18	14.638 W
9802.00	91.41	339.23	7265.81	2673.74	-988.31	676044.44	2198173.29	38 51	16.211 N	80 18	14.920 W
9863.00	91.01	338.73	7264.52	2730.66	-1010.18	676101.36	2198151.42	38 51	16.775 N	80 18	15.191 W
9927.00	91.14	338.52	7263.32	2790.25	-1033.50	676160.95	2198128.10	38 51	17.366 N	80 18	15.480 W
9990.00	90.67	338.95	7262.33	2848.95	-1056.35	676219.65	2198105.25	38 51	17.948 N	80 18	15.763 W
10054.00	91.01	340.22	7261.39	2908.93	-1078.67	676279.63	2198082.93	38 51	18.542 N	80 18	16.040 W
10117.00	92.52	340.78	7259.45	2968.28	-1099.69	676338.98	2198061.91	38 51	19.130 N	80 18	16.300 W
10180.00	92.59	340.47	7256.64	3027.66	-1120.57	676398.36	2198041.03	38 51	19.719 N	80 18	16.558 W
10244.00	91.21	339.19	7254.52	3087.70	-1142.63	676458.40	2198018.97	38 51	20.314 N	80 18	16.831 W
10308.00	91.01	339.10	7253.28	3147.49	-1165.41	676518.19	2197996.19	38 51	20.906 N	80 18	17.113 W
10371.00	89.46	338.69	7253.02	3206.26	-1188.09	676576.96	2197973.51	38 51	21.489 N	80 18	17.395 W
10434.00	88.46	340.76	7254.16	3265.35	-1209.92	676636.05	2197951.68	38 51	22.075 N	80 18	17.665 W
10498.00	90.00	342.27	7255.02	3326.03	-1230.20	676696.73	2197931.40	38 51	22.676 N	80 18	17.916 W
10562.00	91.85	343.15	7253.99	3387.13	-1249.22	676757.83	2197912.38	38 51	23.281 N	80 18	18.150 W
10625.00	93.06	343.55	7251.29	3447.43	-1267.26	676818.13	2197894.34	38 51	23.879 N	80 18	18.372 W
10689.00	92.89	343.55	7247.97	3508.73	-1285.36	676879.43	2197876.24	38 51	24.486 N	80 18	18.595 W
10753.00	93.09	342.65	7244.63	3569.88	-1303.94	676940.58	2197857.66	38 51	25.092 N	80 18	18.825 W
10817.00	92.55	342.31	7241.48	3630.84	-1323.18	677001.54	2197838.42	38 51	25.696 N	80 18	19.062 W
10880.00	91.51	341.34	7239.25	3690.66	-1342.82	677061.36	2197818.78	38 51	26.288 N	80 18	19.305 W
10943.00	92.56	341.04	7237.01	3750.25	-1363.12	677120.95	2197798.48	38 51	26.879 N	80 18	19.556 W
11007.00	95.02	341.94	7232.78	3810.80	-1383.39	677181.50	2197778.21	38 51	27.479 N	80 18	19.806 W
11071.00	95.51	342.64	7226.91	3871.51	-1402.78	677242.21	2197758.82	38 51	28.080 N	80 18	20.045 W
11133.00	92.25	342.39	7222.72	3930.51	-1421.36	677301.21	2197740.24	38 51	28.665 N	80 18	20.275 W
11196.00	91.38	342.00	7220.72	3990.46	-1440.61	677361.16	2197720.99	38 51	29.259 N	80 18	20.512 W
11260.00	90.30	340.97	7219.78	4051.14	-1460.93	677421.84	2197700.67	38 51	29.860 N	80 18	20.764 W
11324.00	90.50	341.12	7219.34	4111.66	-1481.72	677482.36	2197679.88	38 51	30.460 N	80 18	21.021 W
11387.00	90.17	340.56	7218.97	4171.17	-1502.40	677541.87	2197659.20	38 51	31.050 N	80 18	21.276 W
11451.00	91.55	341.93	7218.01	4231.77	-1522.97	677602.47	2197638.63	38 51	31.650 N	80 18	21.531 W
11514.00	89.36	339.08	7217.51	4291.14	-1543.99	677661.84	2197617.61	38 51	32.239 N	80 18	21.791 W
11578.00	91.21	339.99	7217.19	4351.10	-1566.37	677721.80	2197595.23	38 51	32.833 N	80 18	22.068 W
11641.00	90.40	339.04	7216.30	4410.11	-1588.41	677780.81	2197573.19	38 51	33.418 N	80 18	22.341 W
11705.00	91.61	339.78	7215.18	4470.01	-1610.92	677840.71	2197550.68	38 51	34.012 N	80 18	22.620 W
11768.00	92.08	339.54	7213.15	4529.05	-1632.80	677899.75	2197528.80	38 51	34.597 N	80 18	22.891 W
11832.00	90.07	337.86	7211.95	4588.66	-1656.05	677959.36	2197505.55	38 51	35.188 N	80 18	23.179 W
11895.00	90.44	337.51	7211.67	4646.94	-1679.97	678017.64	2197481.63	38 51	35.766 N	80 18	23.476 W
11959.00	90.84	337.82	7210.96	4706.14	-1704.29	678076.84	2197457.31	38 51	36.352 N	80 18	23.778 W
12023.00	90.84	337.84	7210.02	4765.40	-1728.44	678136.10	2197433.16	38 51	36.940 N	80 18	24.077 W
12086.00	89.56	336.34	7209.80	4823.43	-1752.96	678194.13	2197408.64	38 51	37.515 N	80 18	24.382 W
12149.00	88.39	336.06	7210.92	4881.06	-1778.38	678251.76	2197383.22	38 51	38.087 N	80 18	24.698 W
12213.00	88.99	336.39	7212.39	4939.61	-1804.17	678310.31	2197357.43	38 51	38.668 N	80 18	25.018 W
12277.00	88.36	335.63	7213.87	4998.07	-1830.19	678368.77	2197331.41	38 51	39.247 N	80 18	25.342 W
12340.00	88.82	335.91	7215.42	5055.50	-1856.03	678426.20	2197305.57	38 51	39.817 N	80 18	25.663 W

SDI

Survey Report - Geographic

Company: CHESAPEAKE OPERATING, INC.
 Field: Upshur, WV
 Site: Mark Harper
 Well: 3H
 Wellpath: OH

Date: 11/30/2010 Time: 08:50:49 Page: 5
 Co-ordinate(NE) Reference: Well: 3H, Grid North
 Vertical (TVD) Reference: GL 1857'+15RKB 1872.0
 Section (VS) Reference: Well (0.00N,0.00E,340.00Azi)
 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude --->		<--- Longitude --->					
								Deg	Min	Sec	Deg	Min	Sec		
12404.00	88.59	336.04	7216.86	5113.94	-1882.08	678484.64	2197279.52	38	51	40.396	N	80	18	25.987	W
12467.00	88.49	335.98	7218.47	5171.48	-1907.69	678542.18	2197253.91	38	51	40.967	N	80	18	26.305	W
12530.00	88.32	335.95	7220.22	5228.99	-1933.34	678599.69	2197228.26	38	51	41.537	N	80	18	26.624	W
12593.00	89.23	337.81	7221.57	5286.92	-1958.07	678657.62	2197203.53	38	51	42.112	N	80	18	26.931	W
12657.00	89.36	339.17	7222.36	5346.46	-1981.53	678717.16	2197180.07	38	51	42.702	N	80	18	27.222	W
12720.00	89.09	340.32	7223.21	5405.55	-2003.34	678776.25	2197158.26	38	51	43.288	N	80	18	27.492	W
12783.00	89.70	341.37	7223.87	5465.06	-2024.01	678835.76	2197137.59	38	51	43.877	N	80	18	27.748	W
12846.00	89.36	340.84	7224.39	5524.66	-2044.41	678895.36	2197117.19	38	51	44.468	N	80	18	28.000	W
12910.00	89.46	340.98	7225.05	5585.14	-2065.34	678955.84	2197096.26	38	51	45.067	N	80	18	28.259	W
12974.00	90.17	341.30	7225.26	5645.70	-2086.03	679016.40	2197075.57	38	51	45.668	N	80	18	28.515	W
13037.00	90.47	341.31	7224.91	5705.38	-2106.22	679076.08	2197055.38	38	51	46.259	N	80	18	28.765	W
13100.00	90.77	341.81	7224.22	5765.14	-2126.15	679135.84	2197035.45	38	51	46.851	N	80	18	29.011	W
13164.00	90.77	341.73	7223.36	5825.92	-2146.17	679196.62	2197015.43	38	51	47.453	N	80	18	29.258	W
13227.00	89.60	340.25	7223.16	5885.48	-2166.69	679256.18	2196994.91	38	51	48.044	N	80	18	29.512	W
13290.00	89.70	340.24	7223.55	5944.77	-2187.98	679315.47	2196973.62	38	51	48.631	N	80	18	29.776	W
13337.00	89.76	340.40	7223.77	5989.03	-2203.81	679359.73	2196957.79	38	51	49.070	N	80	18	29.971	W
13390.00	89.76	340.40	7223.99	6038.96	-2221.59	679409.66	2196940.01	38	51	49.565	N	80	18	30.192	W

Targets

Name	Description		TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude --->		<--- Longitude --->					
	Dip.	Dir.						Deg	Min	Sec	Deg	Min	Sec		
PBHL P5			7217.00	6046.30	-2200.60	679417.00	2196961.00	38	51	49.636	N	80	18	29.925	W

Annotation

MD ft	TVD ft	
13390.00	7223.99	PTB