



Company: CHESAPEAKE
 Lease/Well: OCC-A/OHI-10H
 Location:
 Rig Name: NOMAC #241
 State/County: WEST VIRGINIA/OHIO
 Latitude: 40.08, Longitude: -80.60
 GRID North is 0.70 Degrees West of True North
 VS-Azi: 0.00 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB=20'

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: occ-a-ohi10h_ed.ut
 Minimum Curvature Method
 Report Date/Time: 8/19/2012 / 05:10

Vaughn Energy Services
 Morgantown, West Virginia
 304-777-2189
 Michael Komarek

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.15	216.17	100.00	-0.11	-0.08	-0.11	0.13	216.17	0.15
200.00	0.14	246.78	200.00	-0.26	-0.27	-0.26	0.37	225.82	0.08
300.00	0.08	144.14	300.00	-0.36	-0.34	-0.36	0.50	223.20	0.18
400.00	0.27	165.02	400.00	-0.65	-0.24	-0.65	0.69	200.31	0.20
500.00	0.36	162.06	500.00	-1.18	-0.08	-1.18	1.19	183.93	0.09
600.00	0.42	174.12	600.00	-1.85	0.05	-1.85	1.85	178.33	0.10
700.00	0.26	190.50	699.99	-2.43	0.05	-2.43	2.43	178.83	0.18
800.00	0.27	264.19	799.99	-2.68	-0.23	-2.68	2.69	184.89	0.32
900.00	0.27	271.01	899.99	-2.70	-0.70	-2.70	2.79	194.60	0.03
1000.00	0.26	258.65	999.99	-2.74	-1.16	-2.74	2.97	202.93	0.06
1100.00	0.45	247.04	1099.99	-2.94	-1.74	-2.94	3.41	210.69	0.21
1200.00	0.58	238.33	1199.98	-3.36	-2.54	-3.36	4.21	217.08	0.14
1300.00	0.54	246.29	1299.98	-3.81	-3.39	-3.81	5.10	221.70	0.09
1400.00	0.47	243.91	1399.98	-4.18	-4.19	-4.18	5.91	225.09	0.07
1500.00	0.37	253.03	1499.97	-4.45	-4.86	-4.45	6.59	227.54	0.12
1600.00	0.31	246.24	1599.97	-4.65	-5.41	-4.65	7.14	229.34	0.07
1700.00	0.12	291.10	1699.97	-4.72	-5.76	-4.72	7.45	230.67	0.24
1800.00	0.17	263.31	1799.97	-4.70	-6.01	-4.70	7.63	232.00	0.09
1900.00	0.40	269.25	1899.97	-4.72	-6.52	-4.72	8.05	234.08	0.23
2000.00	0.46	266.39	1999.97	-4.75	-7.27	-4.75	8.68	236.83	0.06
2100.00	0.44	265.37	2099.96	-4.81	-8.05	-4.81	9.38	239.17	0.02
2200.00	0.42	258.43	2199.96	-4.91	-8.80	-4.91	10.08	240.83	0.06
2300.00	0.44	270.51	2299.96	-4.98	-9.54	-4.98	10.77	242.44	0.09
2400.00	0.50	278.22	2399.95	-4.92	-10.36	-4.92	11.47	244.62	0.09
2500.00	0.57	275.76	2499.95	-4.80	-11.29	-4.80	12.27	246.95	0.07
2600.00	0.61	282.88	2599.94	-4.63	-12.30	-4.63	13.15	249.36	0.09
2700.00	0.62	281.46	2699.94	-4.41	-13.36	-4.41	14.06	251.74	0.02
2800.00	0.56	280.50	2799.93	-4.21	-14.37	-4.21	14.98	253.67	0.06
2900.00	0.54	277.64	2899.93	-4.06	-15.32	-4.06	15.85	255.16	0.04
3000.00	0.55	281.32	2999.92	-3.90	-16.25	-3.90	16.72	256.50	0.04
3100.00	0.45	271.20	3099.92	-3.80	-17.12	-3.80	17.54	257.49	0.13
3200.00	0.56	268.98	3199.92	-3.80	-18.00	-3.80	18.40	258.08	0.11
3300.00	0.58	277.93	3299.91	-3.74	-18.99	-3.74	19.36	258.87	0.09
3400.00	0.44	272.39	3399.91	-3.65	-19.88	-3.65	20.22	259.59	0.15

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Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
3500.00	0.54	262.66	3499.90	-3.69	-20.73	-3.69	21.06	259.89	0.13
3600.00	0.49	263.72	3599.90	-3.80	-21.62	-3.80	21.95	260.03	0.05
3700.00	0.50	257.26	3699.90	-3.94	-22.46	-3.94	22.80	260.04	0.06
3800.00	0.49	253.65	3799.89	-4.16	-23.30	-4.16	23.66	259.88	0.03
3900.00	0.48	264.90	3899.89	-4.32	-24.13	-4.32	24.51	259.85	0.10
4000.00	0.43	277.22	3999.89	-4.31	-24.92	-4.31	25.29	260.19	0.11
4100.00	0.53	274.68	4099.88	-4.22	-25.75	-4.22	26.09	260.69	0.10
4200.00	0.48	286.92	4199.88	-4.06	-26.61	-4.06	26.92	261.32	0.12
4300.00	0.54	288.40	4299.87	-3.79	-27.46	-3.79	27.72	262.14	0.06
4400.00	0.60	277.11	4399.87	-3.58	-28.43	-3.58	28.65	262.83	0.13
4500.00	0.71	279.82	4499.86	-3.41	-29.56	-3.41	29.75	263.42	0.11
4600.00	0.72	305.24	4599.86	-2.94	-30.68	-2.94	30.82	264.53	0.31
4700.00	0.67	307.75	4699.85	-2.22	-31.66	-2.22	31.73	265.99	0.06
4800.00	0.51	308.44	4799.84	-1.58	-32.47	-1.58	32.51	267.21	0.16
4900.00	0.61	309.60	4899.84	-0.97	-33.23	-0.97	33.24	268.34	0.10
5000.00	0.51	317.17	4999.83	-0.30	-33.94	-0.30	33.94	269.49	0.13
5100.00	0.51	285.37	5099.83	0.14	-34.67	0.14	34.67	270.23	0.28
5200.00	0.60	159.15	5199.83	-0.23	-34.91	-0.23	34.91	269.62	1.00

HORIZONTAL DISPLACEMENT IS
34.91 FEET AT 269.62 DEGREES

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WV GEOLOGICAL SURVEY
MORGANTOWN, WV



Weatherford®

SURVEY REPORT

Report Date: 8/28/2012
 Customer: Chesapeake
 Job Name: 4027051
 Well Name: OCC-A OHI 10H

Field: Ohio County
 Rig: Nomac 241
 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	137.28 deg	53443 nT	68.12 deg	-8.72 deg	-0.70 deg	-8.02 deg
Survey Tie-On	Depth	INC	AZ	TVD	NS	EW
	5200.00 ft	0.60 deg	159.15 deg	5199.83 ft	-0.24 ft	-34.89 ft

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head			Dogleg (deg/100ft)
				NS (ft)	EW (ft)	Vsect (ft)	
5242.00	0.63	315.88	5241.83	-0.28	-34.97	-23.52	2.87
5267.00	0.69	315.34	5266.83	-0.07	-35.17	-23.81	0.24
5310.00	0.64	314.12	5309.82	0.28	-35.53	-24.31	0.12
5352.00	0.38	312.36	5351.82	0.53	-35.80	-24.68	0.62
5395.00	3.15	133.06	5394.80	-0.18	-35.04	-23.64	8.21
5437.00	7.94	126.86	5436.60	-2.71	-31.88	-19.64	11.48
5480.00	12.62	118.90	5478.90	-6.76	-25.38	-12.25	11.35
5523.00	14.15	104.93	5520.74	-10.39	-16.19	-3.35	8.29
5565.00	17.35	90.44	5561.17	-11.76	-4.96	5.27	12.02
5608.00	21.44	77.25	5601.74	-10.07	9.13	13.59	13.88
5650.00	26.83	70.54	5640.06	-5.21	25.57	21.18	14.38
5693.00	30.07	63.16	5677.88	2.89	44.34	27.96	11.11
5735.00	34.52	57.52	5713.38	14.04	63.78	32.96	12.79
5778.00	38.06	53.89	5748.04	28.40	84.78	36.65	9.63
5821.00	41.24	51.74	5781.14	44.99	106.62	39.28	8.05
5863.00	45.08	49.99	5811.77	63.13	128.89	41.06	9.58
5906.00	49.54	48.04	5840.92	83.87	152.73	42.00	10.89
5948.00	54.00	46.59	5866.91	106.24	176.97	42.01	10.96
5991.00	59.11	45.82	5890.60	131.07	202.85	41.33	11.98
6034.00	63.89	45.79	5911.11	157.40	229.94	40.35	11.12
6077.00	66.13	45.68	5929.28	184.60	257.84	39.30	5.21
6119.00	65.90	49.75	5946.36	210.42	286.22	39.59	8.87
6162.00	66.11	55.10	5963.85	234.36	317.35	43.11	11.38
6205.00	66.50	60.46	5981.14	255.34	350.64	50.29	11.45
6247.00	68.30	66.05	5997.29	272.77	385.25	60.97	13.01
6290.00	68.76	70.54	6013.04	287.56	422.42	75.31	9.78
6333.00	68.93	73.77	6028.56	299.85	460.59	92.18	7.02
6375.00	68.38	77.91	6043.85	309.42	498.51	110.88	9.27
6418.00	68.60	82.10	6059.63	316.36	537.90	132.50	9.08
6460.00	69.20	87.27	6074.76	319.98	576.89	156.29	11.57
6503.00	70.99	92.31	6089.40	320.12	617.31	183.61	11.78
6546.00	71.51	98.53	6103.24	316.27	657.82	213.92	13.75
6589.00	69.97	104.03	6117.43	308.34	697.61	246.74	12.59
6631.00	68.37	109.59	6132.37	297.01	735.17	280.55	12.94
6674.00	69.88	114.26	6147.70	282.00	772.43	316.84	10.74

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Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
6717.00	72.62	117.11	6161.53	264.35	809.11	354.70	8.94
6760.00	74.51	120.07	6173.69	244.61	845.31	393.76	7.93
6802.00	76.94	124.90	6184.06	222.75	879.63	433.10	12.56
6845.00	80.38	128.03	6192.51	197.70	913.52	474.50	10.72
6888.00	82.01	130.05	6199.09	170.93	946.52	516.55	5.99
6930.00	81.94	131.21	6204.96	143.85	978.09	557.86	2.74
6973.00	83.35	134.35	6210.46	114.89	1009.38	600.37	7.95
7015.00	86.01	139.12	6214.36	84.45	1038.03	642.17	12.96
7058.00	90.91	145.19	6215.52	50.53	1064.38	684.97	18.13
7101.00	92.52	147.18	6214.23	14.82	1088.30	727.43	5.95
7143.00	91.89	148.60	6212.61	-20.72	1110.60	768.68	3.70
7186.00	89.02	152.05	6212.27	-58.07	1131.89	810.56	10.44
7228.00	89.16	154.18	6212.94	-95.53	1150.87	850.95	5.08
7271.00	89.02	155.70	6213.62	-134.47	1169.08	891.92	3.55
7313.00	88.46	155.13	6214.55	-172.66	1186.55	931.83	1.90
7399.00	85.31	150.87	6219.22	-249.15	1225.52	1014.46	6.15
7484.00	86.08	147.83	6225.60	-322.05	1268.73	1097.33	3.68
7569.00	87.34	145.70	6230.48	-393.03	1315.23	1181.02	2.91
7655.00	88.88	145.75	6233.32	-464.05	1363.64	1266.04	1.79
7740.00	90.42	145.69	6233.84	-534.28	1411.51	1350.12	1.81
7825.00	90.56	145.07	6233.11	-604.23	1459.80	1434.27	0.75
7910.00	88.74	145.50	6233.63	-674.10	1508.20	1518.43	2.20
7995.00	90.00	145.58	6234.56	-744.18	1556.30	1602.55	1.49
8081.00	88.25	147.32	6235.88	-815.83	1603.82	1687.43	2.87
8166.00	90.14	147.53	6237.07	-887.45	1649.57	1771.09	2.24
8251.00	87.34	149.60	6238.94	-959.95	1693.89	1854.41	4.10
8336.00	88.60	148.64	6241.95	-1032.85	1737.48	1937.55	1.86
8421.00	86.50	147.81	6245.58	-1105.04	1782.20	2020.92	2.66
8507.00	88.25	147.69	6249.52	-1177.69	1828.04	2105.40	2.04
8592.00	90.07	148.19	6250.77	-1249.72	1873.15	2188.92	2.22
8677.00	92.17	148.02	6249.11	-1321.87	1918.05	2272.38	2.48
8763.00	89.72	147.24	6247.69	-1394.49	1964.09	2356.97	2.99
8848.00	90.84	146.68	6247.27	-1465.74	2010.43	2440.75	1.47
8933.00	92.31	146.90	6244.94	-1536.83	2056.96	2524.55	1.75
9018.00	87.76	146.99	6244.89	-1608.05	2103.31	2608.32	5.35
9104.00	90.35	149.00	6246.30	-1680.96	2148.88	2692.80	3.81
9189.00	87.48	148.71	6247.91	-1753.69	2192.83	2776.05	3.39
9274.00	86.50	147.92	6252.38	-1825.92	2237.41	2859.36	1.48
9360.00	88.95	148.39	6255.79	-1898.91	2282.75	2943.74	2.90
9445.00	89.93	148.45	6256.62	-1971.32	2327.26	3027.14	1.16
9530.00	91.61	149.17	6255.48	-2044.02	2371.28	3110.41	2.15
9615.00	92.80	149.29	6252.21	-2117.00	2414.73	3193.50	1.41
9701.00	93.57	148.61	6247.43	-2190.56	2459.02	3277.59	1.19
9787.00	92.45	146.46	6242.91	-2263.02	2505.11	3362.10	2.82
9872.00	89.37	144.83	6241.56	-2333.17	2553.07	3446.17	4.10
9957.00	88.25	141.38	6243.33	-2401.12	2604.08	3530.70	4.27
10042.00	88.81	141.38	6245.51	-2467.51	2657.11	3615.45	0.66
10128.00	88.95	143.63	6247.19	-2535.73	2709.45	3701.07	2.62
10213.00	88.60	143.03	6249.01	-2603.89	2760.20	3785.58	0.82
10299.00	87.69	145.36	6251.79	-2673.59	2810.48	3870.90	2.91

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Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		Vsect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
10384.00	88.18	144.57	6254.86	-2743.14	2859.24	3955.08	1.09
10469.00	89.02	145.47	6256.93	-2812.77	2907.96	4039.28	1.45
10555.00	88.74	144.20	6258.61	-2883.06	2957.48	4124.52	1.51
10640.00	89.09	143.55	6260.22	-2951.70	3007.58	4208.94	0.87
10725.00	89.09	145.69	6261.57	-3020.99	3056.79	4293.23	2.52
10811.00	89.79	146.55	6262.41	-3092.39	3104.72	4378.20	1.29
10896.00	90.84	146.15	6261.95	-3163.14	3151.82	4462.14	1.32
10981.00	89.37	148.69	6261.79	-3234.76	3197.59	4545.80	3.45
11067.00	90.14	149.54	6262.16	-3308.56	3241.73	4629.97	1.33
11152.00	88.32	151.71	6263.30	-3382.62	3283.42	4712.66	3.33
11237.00	88.25	150.86	6265.85	-3457.13	3324.24	4795.09	1.00
11323.00	88.74	151.33	6268.10	-3532.39	3365.79	4878.58	0.79
11408.00	89.93	151.94	6269.09	-3607.18	3406.17	4960.92	1.57
11464.00	90.91	152.20	6268.68	-3656.65	3432.40	5015.06	1.81

Vertical Section is 5073.10 ft along the target direction of 137.28 deg at a measured depth of 11524.08 ft.
Horizontal Displacement is 5073.17 ft along the well bore azimuth of 136.99 deg.
The total correction is -8.02 deg relative to Grid North.

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