



Chesapeake Appalachia, LLC

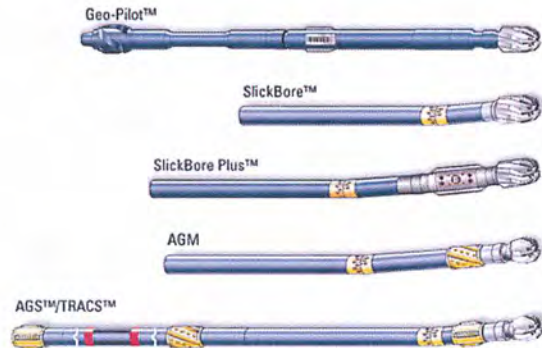
Chad Glauser OHI 5H

Ohio County, West Virginia
Nomac #25

Sperry Drilling Services

End of Well Report

Prepared For: Chesapeake Appalachia, LLC



August 7, 2012

Submitted by:
Tim Aitken - Well Planner
Darin Brown - Directional Drilling Coordinator
Randy Guice - Sperry Account Rep.
1-800-332-3992
Houston, TX 77032

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05/23/2014

69-00136

Chesapeake Appalachia, LLC

Ohio County, WV
Valley Grove
Chad Glauser OHI 5H

Wellbore #1

Design: Surveys

Sperry Drilling Services

Combo Report

07 August, 2012

Well Coordinates: 559,086.10 N, 1,692,672.93 E (40° 01' 47.39" N, 080° 35' 50.90" W)
Ground Level: 1,240.00 ft

Local Coordinate Origin:	Centered on Well Chad Glauser OHI 5H
Viewing Datum:	GL 1240' + KB 16' @ 1256.00ft (Nomac 25)
TVDs to System:	N
North Reference:	Grid
Unit System:	API-US Survey Feet

Version: 2003.16 Build: 431

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WV Department of
Environmental Protection
05/23/2014

Design Report for Chad Glauser OHI 5H - Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)		
0.00	0.00	0.00	-1,256.00	0.00	0.00 N	0.00 E	559,086.10	1,692,672.93	0.00	0.00
100.00	0.13	19.60	-1,156.00	100.00	0.11 N	0.04 E	559,086.21	1,692,672.97	0.13	0.07
200.00	0.51	83.15	-1,056.00	200.00	0.27 N	0.52 E	559,086.37	1,692,673.45	0.47	-0.05
300.00	0.42	117.77	-956.00	300.00	0.15 N	1.28 E	559,086.25	1,692,674.22	0.29	-0.55
400.00	0.39	114.36	-856.01	399.99	0.16 S	1.92 E	559,085.94	1,692,674.85	0.04	-1.15
500.00	0.13	120.90	-756.01	499.99	0.36 S	2.33 E	559,085.74	1,692,675.26	0.26	-1.54
600.00	0.16	219.86	-656.01	599.99	0.53 S	2.33 E	559,085.58	1,692,675.26	0.22	-1.68
650.00	0.11	220.37	-606.01	649.99	0.62 S	2.26 E	559,085.49	1,692,675.19	0.10	-1.72
700.00	0.14	310.39	-556.01	699.99	0.61 S	2.18 E	559,085.49	1,692,675.11	0.36	-1.68
800.00	0.14	170.74	-456.01	799.99	0.65 S	2.11 E	559,085.45	1,692,675.04	0.26	-1.67
900.00	0.14	114.45	-356.01	899.99	0.83 S	2.24 E	559,085.28	1,692,675.17	0.13	-1.89
1,000.00	0.20	133.03	-256.01	999.99	1.00 S	2.48 E	559,085.11	1,692,675.41	0.08	-2.16
1,100.00	0.13	8.67	-156.01	1,099.99	1.00 S	2.62 E	559,085.10	1,692,675.55	0.29	-2.24
1,200.00	0.10	121.50	-56.01	1,199.99	0.94 S	2.71 E	559,085.17	1,692,675.64	0.19	-2.23
1,300.00	0.15	357.69	43.99	1,299.99	0.85 S	2.78 E	559,085.25	1,692,675.71	0.22	-2.20
1,400.00	0.15	32.89	143.99	1,399.99	0.61 S	2.85 E	559,085.49	1,692,675.78	0.09	-2.03
1,500.00	0.56	21.63	243.99	1,499.99	0.05 S	3.10 E	559,086.06	1,692,676.03	0.41	-1.68
1,600.00	0.82	11.23	343.98	1,599.98	1.11 N	3.42 E	559,087.21	1,692,676.35	0.29	-0.87
1,700.00	0.83	1.38	443.97	1,699.97	2.54 N	3.58 E	559,088.64	1,692,676.51	0.14	0.26
1,800.00	0.93	355.88	543.96	1,799.96	4.07 N	3.53 E	559,090.17	1,692,676.47	0.13	1.58
1,900.00	0.97	354.96	643.94	1,899.94	5.72 N	3.40 E	559,091.83	1,692,676.33	0.04	3.05
2,000.00	1.00	355.02	743.93	1,999.93	7.43 N	3.25 E	559,093.54	1,692,676.18	0.03	4.58
2,100.00	0.93	348.22	843.92	2,099.92	9.10 N	3.01 E	559,095.20	1,692,675.94	0.13	6.12
2,138.00	0.94	347.88	881.91	2,137.91	9.71 N	2.88 E	559,095.81	1,692,675.81	0.03	6.70
2,286.00	1.10	327.14	1,029.89	2,285.89	12.09 N	1.86 E	559,098.19	1,692,674.79	0.27	9.27
2,346.00	2.55	351.52	1,089.86	2,345.86	13.89 N	1.35 E	559,099.99	1,692,674.28	2.69	11.07
2,409.00	1.63	104.88	1,152.83	2,408.83	15.05 N	2.01 E	559,101.15	1,692,674.94	5.60	11.70
2,471.00	4.57	109.79	1,214.73	2,470.73	13.98 N	5.18 E	559,100.09	1,692,678.11	4.76	9.11
2,535.00	3.93	92.42	1,278.56	2,534.56	13.03 N	9.77 E	559,099.13	1,692,682.70	2.23	5.87
2,598.00	4.31	77.06	1,341.40	2,597.40	13.47 N	14.24 E	559,099.57	1,692,687.17	1.85	3.87
2,660.00	4.98	88.61	1,403.20	2,659.20	14.05 N	19.20 E	559,100.16	1,692,692.13	1.85	1.74
2,723.00	5.16	76.85	1,465.95	2,721.95	14.76 N	24.69 E	559,100.87	1,692,697.62	1.67	-0.56
2,787.00	6.06	81.38	1,529.65	2,785.65	15.93 N	30.83 E	559,102.03	1,692,703.77	1.57	-2.83
2,850.00	7.09	81.05	1,592.23	2,848.23	17.03 N	37.96 E	559,103.13	1,692,710.89	1.64	-5.68
2,913.00	7.89	86.12	1,654.69	2,910.69	17.93 N	46.12 E	559,104.03	1,692,719.05	1.65	-9.24
2,977.00	6.41	90.96	1,718.19	2,974.19	18.16 N	54.07 E	559,104.27	1,692,727.00	2.49	-13.25
3,036.00	8.45	85.54	1,776.70	3,032.70	18.45 N	61.69 E	559,104.55	1,692,734.62	3.65	-17.05
3,099.00	8.90	84.08	1,838.98	3,094.98	19.31 N	71.15 E	559,105.41	1,692,744.08	0.80	-21.33
3,161.00	8.27	84.93	1,900.28	3,156.28	20.20 N	80.36 E	559,106.30	1,692,753.29	1.04	-25.46
3,225.00	9.51	84.38	1,963.51	3,219.51	21.12 N	90.21 E	559,107.22	1,692,763.14	1.94	-29.89
3,287.00	9.05	84.02	2,024.70	3,280.70	22.13 N	100.16 E	559,108.23	1,692,773.09	0.75	-34.31
3,351.00	8.70	85.39	2,087.93	3,343.93	23.04 N	109.99 E	559,109.15	1,692,782.92	0.64	-38.74
3,414.00	8.63	93.98	2,150.22	3,406.22	23.10 N	119.45 E	559,109.20	1,692,792.38	2.06	-43.71
3,476.00	7.90	84.86	2,211.57	3,467.57	23.16 N	128.34 E	559,109.26	1,692,801.27	2.42	-48.37
3,539.00	8.14	83.96	2,273.96	3,529.96	24.02 N	137.08 E	559,110.12	1,692,810.02	0.43	-52.28

Design Report for Chad Glauser OHI 5H - Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)		
3,602.00	8.26	90.04	2,336.32	3,592.32	24.48 N	146.05 E	559,110.58	1,692,818.98	1.39	-56.63
3,665.00	7.51	89.71	2,398.72	3,654.72	24.50 N	154.69 E	559,110.60	1,692,827.62	1.19	-61.20
3,728.00	8.55	88.48	2,461.10	3,717.10	24.64 N	163.49 E	559,110.75	1,692,836.42	1.67	-65.74
3,790.00	7.60	95.99	2,522.49	3,778.49	24.34 N	172.17 E	559,110.44	1,692,845.10	2.29	-70.60
3,853.00	7.65	89.38	2,584.93	3,840.93	23.95 N	180.51 E	559,110.05	1,692,853.44	1.39	-75.35
3,915.00	8.52	83.19	2,646.32	3,902.32	24.54 N	189.20 E	559,110.64	1,692,862.13	1.98	-79.45
3,978.00	6.48	88.89	2,708.77	3,964.77	25.16 N	197.39 E	559,111.26	1,692,870.32	3.44	-83.26
4,040.00	6.80	85.43	2,770.36	4,026.36	25.52 N	204.54 E	559,111.62	1,692,877.47	0.83	-86.75
4,102.00	8.67	93.51	2,831.79	4,087.79	25.53 N	212.87 E	559,111.63	1,692,885.80	3.48	-91.15
4,164.00	7.66	84.82	2,893.17	4,149.17	25.61 N	221.65 E	559,111.72	1,692,894.58	2.57	-95.73
4,227.00	7.19	82.84	2,955.64	4,211.64	26.48 N	229.74 E	559,112.59	1,692,902.67	0.85	-99.28
4,290.00	8.27	79.36	3,018.07	4,274.07	27.81 N	238.11 E	559,113.92	1,692,911.04	1.87	-102.59
4,353.00	9.04	80.84	3,080.35	4,336.35	29.44 N	247.44 E	559,115.54	1,692,920.38	1.27	-106.16
4,416.00	9.07	87.47	3,142.56	4,398.56	30.44 N	257.29 E	559,116.55	1,692,930.22	1.66	-110.53
4,480.00	9.22	89.40	3,205.75	4,461.75	30.72 N	267.46 E	559,116.82	1,692,940.39	0.53	-115.68
4,543.00	9.13	81.92	3,267.95	4,523.95	31.48 N	277.45 E	559,117.58	1,692,950.39	1.90	-120.34
4,606.00	8.87	78.51	3,330.17	4,586.17	33.15 N	287.16 E	559,119.25	1,692,960.09	0.94	-124.06
4,670.00	8.64	86.04	3,393.43	4,649.43	34.46 N	296.79 E	559,120.56	1,692,969.73	1.83	-128.05
4,796.00	6.99	83.50	3,518.25	4,774.25	35.98 N	313.85 E	559,122.09	1,692,986.79	1.34	-135.80
4,861.00	7.30	84.94	3,582.75	4,838.75	36.79 N	321.90 E	559,122.90	1,692,994.83	0.55	-139.38
4,923.00	7.03	107.38	3,644.28	4,900.28	36.01 N	329.44 E	559,122.11	1,693,002.37	4.51	-144.04
4,985.00	6.15	111.76	3,705.87	4,961.87	33.64 N	336.15 E	559,119.75	1,693,009.08	1.63	-149.60
5,049.00	5.94	103.31	3,769.51	5,025.51	31.61 N	342.56 E	559,117.71	1,693,015.49	1.43	-154.72
5,112.00	3.55	97.55	3,832.29	5,088.29	30.60 N	347.66 E	559,116.71	1,693,020.59	3.86	-158.28
5,173.00	0.67	105.05	3,893.24	5,149.24	30.26 N	349.88 E	559,116.37	1,693,022.81	4.73	-159.74
5,237.00	1.11	358.85	3,957.24	5,213.24	30.79 N	350.23 E	559,116.89	1,693,023.16	2.26	-159.49
5,364.00	1.15	106.56	4,084.23	5,340.23	31.65 N	351.43 E	559,117.76	1,693,024.36	1.44	-159.38
5,489.00	0.64	187.82	4,209.21	5,465.21	30.60 N	352.53 E	559,116.71	1,693,025.46	0.98	-160.86
5,613.00	2.56	149.11	4,333.16	5,589.16	27.54 N	353.86 E	559,113.64	1,693,026.79	1.69	-164.16
5,738.00	2.79	324.49	4,458.12	5,714.12	27.62 N	353.53 E	559,113.72	1,693,026.46	4.28	-163.92
5,790.00	2.66	306.24	4,510.06	5,766.06	29.36 N	351.82 E	559,115.47	1,693,024.75	1.68	-161.53
5,842.00	2.56	307.69	4,562.00	5,818.00	30.79 N	349.93 E	559,116.89	1,693,022.86	0.23	-159.32
5,873.00	4.48	311.18	4,592.94	5,848.94	32.01 N	348.47 E	559,118.11	1,693,021.40	6.23	-157.51
5,905.00	7.48	317.56	4,624.77	5,880.77	34.37 N	346.12 E	559,120.47	1,693,019.05	9.59	-154.27
5,936.00	11.14	322.11	4,655.35	5,911.35	38.22 N	342.92 E	559,124.33	1,693,015.85	12.03	-149.30
5,967.00	13.84	321.94	4,685.62	5,941.62	43.51 N	338.79 E	559,129.61	1,693,011.72	8.71	-142.64
5,999.00	17.79	322.86	4,716.40	5,972.40	50.42 N	333.48 E	559,136.52	1,693,006.41	12.37	-133.96
6,030.00	20.48	326.02	4,745.69	6,001.69	58.69 N	327.59 E	559,144.80	1,693,000.52	9.30	-123.82
6,062.00	22.60	334.88	4,775.46	6,031.46	68.91 N	321.85 E	559,155.01	1,692,994.78	12.12	-112.12
6,093.00	25.40	337.97	4,803.78	6,059.78	80.47 N	316.82 E	559,166.57	1,692,989.75	9.90	-99.65
6,125.00	28.09	341.29	4,832.35	6,088.35	93.97 N	311.83 E	559,180.07	1,692,984.76	9.61	-85.56
6,156.00	31.70	341.05	4,859.22	6,115.22	108.59 N	306.84 E	559,194.69	1,692,979.77	11.65	-70.51
6,188.00	34.97	340.72	4,885.95	6,141.95	125.20 N	301.08 E	559,211.30	1,692,974.01	10.23	-53.37
6,219.00	37.02	343.07	4,911.03	6,167.03	142.52 N	295.43 E	559,228.62	1,692,968.36	7.97	-35.69
6,250.00	39.11	346.36	4,935.44	6,191.44	160.95 N	290.41 E	559,247.05	1,692,963.34	9.39	-17.40

Design Report for Chad Glauser OHI 5H - Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)		
6,282.00	39.48	346.99	4,960.21	6,216.21	180.67 N	285.74 E	559,266.77	1,692,958.67	1.70	1.80
6,313.00	41.34	345.95	4,983.81	6,239.81	200.21 N	281.03 E	559,286.31	1,692,953.96	6.38	20.86
6,345.00	43.69	347.68	5,007.40	6,263.40	221.26 N	276.11 E	559,307.36	1,692,949.04	8.20	41.32
6,375.00	46.35	347.79	5,028.60	6,284.60	241.99 N	271.60 E	559,328.10	1,692,944.53	8.87	61.30
6,406.00	49.51	345.76	5,049.37	6,305.37	264.39 N	266.33 E	559,350.49	1,692,939.26	11.29	83.08
6,438.00	53.27	344.72	5,069.34	6,325.34	288.56 N	259.95 E	559,374.67	1,692,932.88	12.02	106.96
6,470.00	57.09	344.18	5,087.60	6,343.60	313.87 N	252.91 E	559,399.97	1,692,925.84	12.02	132.15
6,501.00	62.32	344.76	5,103.24	6,359.24	339.65 N	245.75 E	559,425.75	1,692,918.68	16.95	157.81
6,532.00	65.72	345.18	5,116.81	6,372.81	366.56 N	238.52 E	559,452.66	1,692,911.45	11.04	184.46
6,564.00	68.43	345.67	5,129.28	6,385.28	395.08 N	231.11 E	559,481.18	1,692,904.04	8.59	212.58
6,596.00	69.45	346.70	5,140.78	6,396.78	424.08 N	223.98 E	559,510.18	1,692,896.91	4.38	240.95
6,627.00	72.08	346.69	5,150.99	6,406.99	452.56 N	217.24 E	559,538.66	1,692,890.17	8.48	268.67
6,658.00	75.25	346.18	5,159.71	6,415.71	481.47 N	210.27 E	559,567.58	1,692,883.20	10.35	296.89
6,690.00	79.88	346.38	5,166.60	6,422.60	511.82 N	202.86 E	559,597.93	1,692,875.79	14.48	326.55
6,721.00	84.35	346.55	5,170.85	6,426.85	541.67 N	195.67 E	559,627.77	1,692,868.60	14.43	355.67
6,753.00	89.63	346.23	5,172.53	6,428.53	572.72 N	188.15 E	559,658.82	1,692,861.09	16.53	385.98
6,784.00	90.40	343.33	5,172.52	6,428.52	602.63 N	180.02 E	559,688.73	1,692,852.95	9.68	415.66
6,847.00	90.47	337.99	5,172.04	6,428.04	662.05 N	159.16 E	559,748.15	1,692,832.09	8.48	477.11
6,911.00	91.01	334.10	5,171.21	6,427.21	720.52 N	133.18 E	559,806.62	1,692,806.11	6.14	540.46
6,973.00	89.90	330.30	5,170.72	6,426.72	775.35 N	104.27 E	559,861.45	1,692,777.21	6.38	602.28
7,036.00	91.28	328.07	5,170.07	6,426.07	829.45 N	72.01 E	559,915.55	1,692,744.94	4.16	665.25
7,099.00	92.32	328.09	5,168.09	6,424.09	882.89 N	38.71 E	559,969.00	1,692,711.64	1.65	728.22
7,162.00	91.88	327.18	5,165.78	6,421.78	936.07 N	5.01 E	560,022.17	1,692,677.94	1.60	791.18
7,225.00	92.79	327.15	5,163.22	6,419.22	988.96 N	29.12 W	560,075.07	1,692,643.81	1.45	854.12
7,288.00	90.94	327.11	5,161.17	6,417.17	1,041.85 N	63.29 W	560,127.95	1,692,609.64	2.94	917.07
7,350.00	91.78	327.11	5,159.70	6,415.70	1,093.89 N	96.95 W	560,180.00	1,692,575.98	1.35	979.05
7,412.00	89.63	327.44	5,158.93	6,414.93	1,146.04 N	130.46 W	560,232.15	1,692,542.47	3.51	1,041.04
7,476.00	90.20	328.93	5,159.03	6,415.03	1,200.43 N	164.20 W	560,286.53	1,692,508.73	2.49	1,105.03
7,539.00	92.05	328.60	5,157.79	6,413.79	1,254.28 N	196.86 W	560,340.39	1,692,476.07	2.98	1,168.01
7,602.00	90.94	326.31	5,156.15	6,412.15	1,307.37 N	230.74 W	560,393.47	1,692,442.19	4.04	1,230.98
7,664.00	90.10	325.43	5,155.59	6,411.59	1,358.69 N	265.52 W	560,444.79	1,692,407.41	1.96	1,292.94
7,727.00	90.97	325.69	5,155.00	6,411.00	1,410.64 N	301.15 W	560,496.74	1,692,371.78	1.44	1,355.88
7,791.00	92.12	326.32	5,153.27	6,409.27	1,463.68 N	336.92 W	560,549.78	1,692,336.01	2.05	1,419.81
7,853.00	90.24	326.43	5,151.99	6,407.99	1,515.29 N	371.25 W	560,601.40	1,692,301.68	3.04	1,481.77
7,916.00	88.56	327.78	5,152.65	6,408.65	1,568.19 N	405.46 W	560,654.29	1,692,267.47	3.42	1,544.76
7,978.00	89.03	327.67	5,153.96	6,409.96	1,620.60 N	438.56 W	560,706.70	1,692,234.37	0.78	1,606.74
8,041.00	90.23	328.31	5,154.36	6,410.36	1,674.01 N	471.95 W	560,760.12	1,692,200.98	2.16	1,669.74
8,104.00	91.51	329.43	5,153.41	6,409.41	1,727.93 N	504.51 W	560,814.04	1,692,168.42	2.70	1,732.72
8,167.00	91.65	328.51	5,151.67	6,407.67	1,781.90 N	536.98 W	560,868.00	1,692,135.95	1.48	1,795.69
8,230.00	91.41	327.30	5,149.99	6,405.99	1,835.25 N	570.44 W	560,921.35	1,692,102.49	1.96	1,858.67
8,293.00	90.37	326.86	5,149.01	6,405.01	1,888.13 N	604.67 W	560,974.23	1,692,068.26	1.79	1,921.65
8,355.00	89.46	327.85	5,149.10	6,405.10	1,940.33 N	638.12 W	561,026.43	1,692,034.81	2.17	1,983.64
8,482.00	91.04	326.01	5,148.55	6,404.55	2,046.75 N	707.41 W	561,132.85	1,691,965.52	1.91	2,110.61
8,545.00	91.88	326.08	5,146.94	6,402.94	2,098.99 N	742.59 W	561,185.09	1,691,930.34	1.34	2,173.55
8,608.00	89.83	326.71	5,146.00	6,402.00	2,151.45 N	777.45 W	561,237.55	1,691,895.48	3.40	2,236.52

Design Report for Chad Glauser OHI 5H - Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)		
8,670.00	89.60	326.63	5,146.31	6,402.31	2,203.25 N	811.51 W	561,289.35	1,691,861.42	0.39	2,298.50
8,733.00	90.17	326.09	5,146.44	6,402.44	2,255.70 N	846.41 W	561,341.80	1,691,826.52	1.25	2,361.47
8,795.00	89.40	327.49	5,146.67	6,402.67	2,307.57 N	880.37 W	561,393.68	1,691,792.56	2.58	2,423.46
8,858.00	90.10	327.25	5,146.95	6,402.95	2,360.63 N	914.34 W	561,446.73	1,691,758.59	1.17	2,486.45
8,921.00	90.44	326.56	5,146.65	6,402.65	2,413.41 N	948.74 W	561,499.51	1,691,724.19	1.22	2,549.44
8,984.00	91.88	329.07	5,145.37	6,401.37	2,466.71 N	982.29 W	561,552.81	1,691,690.64	4.59	2,612.42
9,047.00	92.69	330.00	5,142.86	6,398.86	2,520.97 N	1,014.20 W	561,607.07	1,691,658.73	1.96	2,675.35
9,110.00	90.44	331.13	5,141.14	6,397.14	2,575.81 N	1,045.15 W	561,661.91	1,691,627.78	4.00	2,738.25
9,173.00	90.24	332.17	5,140.77	6,396.77	2,631.25 N	1,075.06 W	561,717.35	1,691,597.87	1.68	2,801.12
9,235.00	90.60	331.11	5,140.31	6,396.31	2,685.81 N	1,104.51 W	561,771.91	1,691,568.42	1.81	2,863.00
9,299.00	91.01	330.50	5,139.41	6,395.41	2,741.67 N	1,135.73 W	561,827.77	1,691,537.20	1.15	2,926.91
9,362.00	90.54	328.60	5,138.56	6,394.56	2,795.97 N	1,167.65 W	561,882.08	1,691,505.28	3.11	2,989.88
9,424.00	90.57	327.15	5,137.96	6,393.96	2,848.48 N	1,200.62 W	561,934.58	1,691,472.31	2.34	3,051.88
9,487.00	90.57	326.33	5,137.33	6,393.33	2,901.15 N	1,235.17 W	561,987.26	1,691,437.76	1.30	3,114.86
9,550.00	90.64	326.25	5,136.67	6,392.67	2,953.56 N	1,270.13 W	562,039.66	1,691,402.80	0.17	3,177.83
9,612.00	92.22	326.61	5,135.12	6,391.12	3,005.20 N	1,304.40 W	562,091.30	1,691,368.53	2.61	3,239.78
9,675.00	90.67	326.91	5,133.53	6,389.53	3,057.87 N	1,338.92 W	562,143.98	1,691,334.01	2.51	3,302.74
9,738.00	91.52	327.05	5,132.33	6,388.33	3,110.69 N	1,373.25 W	562,196.79	1,691,299.68	1.37	3,365.72
9,801.00	90.57	326.85	5,131.18	6,387.18	3,163.48 N	1,407.60 W	562,249.59	1,691,265.33	1.54	3,428.70
9,864.00	91.34	327.26	5,130.13	6,386.13	3,216.35 N	1,441.86 W	562,302.45	1,691,231.07	1.38	3,491.68
9,927.00	89.06	327.95	5,129.91	6,385.91	3,269.54 N	1,475.61 W	562,355.64	1,691,197.33	3.78	3,554.68
9,990.00	89.66	328.71	5,130.61	6,386.61	3,323.15 N	1,508.68 W	562,409.26	1,691,164.25	1.54	3,617.67
10,053.00	90.87	328.93	5,130.32	6,386.32	3,377.05 N	1,541.30 W	562,463.15	1,691,131.63	1.95	3,680.66
10,116.00	91.81	328.80	5,128.85	6,384.85	3,430.96 N	1,573.86 W	562,517.06	1,691,099.07	1.51	3,743.64
10,178.00	92.66	329.45	5,126.43	6,382.43	3,484.13 N	1,605.65 W	562,570.23	1,691,067.28	1.73	3,805.58
10,241.00	89.66	329.28	5,125.16	6,381.16	3,538.32 N	1,637.75 W	562,624.42	1,691,035.19	4.77	3,868.54
10,304.00	89.76	328.63	5,125.47	6,381.47	3,592.30 N	1,670.23 W	562,678.40	1,691,002.70	1.04	3,931.53
10,336.00	90.60	328.52	5,125.37	6,381.37	3,619.60 N	1,686.92 W	562,705.71	1,690,986.01	2.65	3,963.53
10,428.00	91.71	328.61	5,123.52	6,379.52	3,698.08 N	1,734.89 W	562,784.19	1,690,938.04	1.21	4,055.50
10,491.00	90.64	327.16	5,122.23	6,378.23	3,751.43 N	1,768.37 W	562,837.53	1,690,904.56	2.86	4,118.49
10,553.00	90.44	326.47	5,121.64	6,377.64	3,803.31 N	1,802.31 W	562,889.42	1,690,870.62	1.16	4,180.47
10,616.00	91.28	326.04	5,120.70	6,376.70	3,855.69 N	1,837.30 W	562,941.80	1,690,835.63	1.50	4,243.43
10,678.00	92.08	326.41	5,118.88	6,374.88	3,907.21 N	1,871.75 W	562,993.31	1,690,801.18	1.42	4,305.38
10,740.00	91.41	326.39	5,116.99	6,372.99	3,958.82 N	1,906.05 W	563,044.93	1,690,766.89	1.08	4,367.32
10,802.00	89.29	326.85	5,116.61	6,372.61	4,010.59 N	1,940.15 W	563,096.70	1,690,732.78	3.50	4,429.30
10,865.00	88.89	327.47	5,117.61	6,373.61	4,063.52 N	1,974.31 W	563,149.62	1,690,698.62	1.17	4,492.29
10,927.00	89.73	327.36	5,118.36	6,374.36	4,115.75 N	2,007.70 W	563,201.86	1,690,665.23	1.37	4,554.28
10,989.00	90.94	327.73	5,118.00	6,374.00	4,168.07 N	2,040.97 W	563,254.17	1,690,631.96	2.04	4,616.27
11,052.00	91.95	327.92	5,116.41	6,372.41	4,221.38 N	2,074.51 W	563,307.48	1,690,598.42	1.63	4,679.25
11,115.00	91.18	327.29	5,114.69	6,370.69	4,274.55 N	2,108.25 W	563,360.65	1,690,564.68	1.58	4,742.23
11,178.00	90.97	327.58	5,113.51	6,369.51	4,327.64 N	2,142.15 W	563,413.74	1,690,530.78	0.57	4,805.21
11,241.00	90.91	327.37	5,112.47	6,368.47	4,380.75 N	2,176.02 W	563,466.85	1,690,496.91	0.35	4,868.20
11,307.00	88.19	326.68	5,112.99	6,368.99	4,436.11 N	2,211.94 W	563,522.21	1,690,460.99	4.25	4,934.18
11,370.00	88.15	326.48	5,115.00	6,371.00	4,488.67 N	2,246.62 W	563,574.77	1,690,426.31	0.32	4,997.13
11,433.00	89.09	326.22	5,116.52	6,372.52	4,541.09 N	2,281.52 W	563,627.20	1,690,391.41	1.55	5,060.09

Design Report for Chad Glauser OHI 5H - Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)		
11,496.00	90.34	326.34	5,116.83	6,372.83	4,593.49 N	2,316.49 W	563,679.60	1,690,356.44	1.99	5,123.06
11,560.00	91.34	326.67	5,115.90	6,371.90	4,646.86 N	2,351.81 W	563,732.96	1,690,321.13	1.65	5,187.03
11,623.00	92.22	327.61	5,113.94	6,369.94	4,699.75 N	2,385.97 W	563,785.85	1,690,286.96	2.04	5,249.99
11,682.00	93.02	327.82	5,111.24	6,367.24	4,749.58 N	2,417.45 W	563,835.68	1,690,255.48	1.40	5,308.92
Last MWD Survey at 11682' MD										
11,757.00	93.02	327.82	5,107.29	6,363.29	4,812.97 N	2,457.34 W	563,899.07	1,690,215.59	0.00	5,383.82
Projection to TD at 11757' MD										

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
11,682.00	6,367.24	4,749.58	-2,417.45	Last MWD Survey at 11682' MD
11,757.00	6,363.29	4,812.97	-2,457.34	Projection to TD at 11757' MD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/_S (ft)	+E/-W (ft)	
User	No Target (Freehand)	328.00	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
100.00	2,138.00	VES Gyro	NS-Gyro-MS
2,286.00	11,757.00	Sperry MWD	MWD

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Chad Glauser OHI 5	0.00	0.00	6,364.21	4,824.09	-2,440.68	563,910.19	1,690,232.25	40° 2' 34.764 N	80° 36' 23.036 W
- actual wellpath misses target center by 20.05ft at 11757.00ft MD (6363.29 TVD, 4812.97 N, -2457.34 E)									
- Point									