

Shell Exploration & Production Co. Inc.

Harper Co. KS (NAD-27)

Sec 01-T35S-R09W

Chain Land Ranch 3509 #1-1H

900033430

Wellbore #1

Design: Wellbore #1

Sperry Drilling Services

Combo Report With Grid North & True North

14 January, 2013

Surface UWI : 900033430

TD Date : 6th Dec, 2012

Well Coordinates: 129,595.56 N, 2,072,449.48 E (37° 01' 20.33" N, 098° 15' 06.70" W)

Ground Level: 1,247.00 ft

Local Coordinate Origin:

Centered on Well Chain Land Ranch 3509 #1-1H

Viewing Datum:

WELL @ 1274.50ft (Nabors F-01 (27.5'))

TVDs to System:

N

North Reference:

Grid

Unit System:

API US New

Version: 2003.21 Build: 46

HALLIBURTON

Design Report for Chain Land Ranch 3509 #1-1H - Wellbore #1

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	True Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates (ft)		Map Coordinates (ft)		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
						Northing	Easting	Northing	Easting			
0.00	0.00	0.00	0.16	-1,274.50	0.00	0.00 N	0.00 E	129,595.56	2,072,449.48	0.00	0.00	
150.00	0.81	283.42	283.58	-1,124.50	150.00	0.25 N	1.03 W	129,595.81	2,072,448.45	0.54	0.37	Start MWD @ 150.00 MD
245.00	2.10	272.07	272.23	-1,029.54	244.96	0.46 N	3.42 W	129,596.03	2,072,446.06	1.38	0.89	
340.00	3.76	271.93	272.09	-934.66	339.84	0.63 N	8.28 W	129,596.19	2,072,441.20	1.75	1.67	
435.00	5.56	266.70	266.86	-839.98	434.52	0.47 N	15.99 W	129,596.03	2,072,433.49	1.94	2.48	
484.00	5.99	267.63	267.79	-791.23	483.27	0.23 N	20.91 W	129,595.79	2,072,428.57	0.90	2.86	
629.00	6.82	267.52	267.68	-647.14	627.36	0.46 S	37.07 W	129,595.11	2,072,412.41	0.57	4.22	
724.00	6.27	254.22	254.38	-552.75	721.75	2.11 S	47.70 W	129,593.45	2,072,401.78	1.69	3.92	
819.00	6.49	265.38	265.54	-458.34	816.16	3.95 S	58.04 W	129,591.61	2,072,391.44	1.32	3.39	
915.00	5.75	264.16	264.32	-362.88	911.62	4.88 S	68.23 W	129,590.68	2,072,381.25	0.78	3.76	
1,010.00	5.15	262.30	262.46	-268.31	1,006.19	5.94 S	77.19 W	129,589.63	2,072,372.29	0.66	3.84	
1,100.00	5.13	260.68	260.84	-178.68	1,095.82	7.13 S	85.17 W	129,588.43	2,072,364.31	0.16	3.66	
1,191.00	5.35	260.49	260.65	-88.06	1,186.44	8.49 S	93.37 W	129,587.07	2,072,356.11	0.24	3.35	
1,282.00	5.76	259.33	259.49	2.52	1,277.02	10.03 S	102.04 W	129,585.53	2,072,347.44	0.47	2.91	
1,373.00	6.19	257.23	257.39	93.02	1,367.52	11.96 S	111.31 W	129,583.60	2,072,338.17	0.53	2.16	
1,465.00	6.17	257.10	257.26	184.49	1,458.99	14.16 S	120.97 W	129,581.40	2,072,328.51	0.03	1.19	
1,558.00	5.43	252.39	252.55	277.01	1,551.51	16.61 S	130.03 W	129,578.95	2,072,319.45	0.95	-0.09	
1,652.00	4.96	248.94	249.10	370.62	1,645.12	19.42 S	138.06 W	129,576.15	2,072,311.42	0.60	-1.86	
1,745.00	4.68	273.99	274.15	463.31	1,737.81	20.60 S	145.60 W	129,574.96	2,072,303.88	2.26	-2.08	
1,846.00	6.85	287.58	287.74	563.79	1,838.29	18.49 S	155.46 W	129,577.07	2,072,294.02	2.52	1.25	
1,939.00	9.36	289.14	289.30	655.86	1,930.36	14.34 S	167.89 W	129,581.23	2,072,281.59	2.71	6.94	
2,034.00	11.37	284.86	285.02	749.30	2,023.80	9.40 S	184.24 W	129,586.16	2,072,265.24	2.26	13.89	
2,129.00	13.29	283.65	283.81	842.11	2,116.61	4.42 S	203.90 W	129,591.14	2,072,245.58	2.04	21.31	
2,225.00	13.77	278.17	278.33	935.45	2,209.95	0.19 S	225.94 W	129,595.37	2,072,223.54	1.43	28.28	
2,320.00	14.82	270.64	270.80	1,027.51	2,302.01	1.55 N	249.28 W	129,597.11	2,072,200.20	2.25	32.95	
2,415.00	15.22	270.09	270.25	1,119.27	2,393.77	1.70 N	273.90 W	129,597.27	2,072,175.58	0.45	36.21	
2,510.00	14.93	270.34	270.50	1,211.00	2,485.50	1.80 N	298.61 W	129,597.36	2,072,150.87	0.31	39.41	
2,605.00	14.74	270.63	270.79	1,302.83	2,577.33	2.00 N	322.93 W	129,597.56	2,072,126.55	0.21	42.68	
2,700.00	13.96	269.61	269.77	1,394.87	2,669.37	2.06 N	346.47 W	129,597.62	2,072,103.01	0.86	45.70	
2,795.00	14.06	269.20	269.36	1,487.04	2,761.54	1.82 N	369.47 W	129,597.38	2,072,080.01	0.15	48.37	
2,890.00	14.92	269.50	269.66	1,579.02	2,853.52	1.55 N	393.24 W	129,597.11	2,072,056.24	0.91	51.09	
2,985.00	15.50	269.21	269.37	1,670.69	2,945.19	1.27 N	418.16 W	129,596.83	2,072,031.32	0.62	53.96	
3,081.00	14.10	270.08	270.24	1,763.50	3,038.00	1.11 N	442.68 W	129,596.67	2,072,006.80	1.48	56.89	
3,176.00	12.39	266.00	266.16	1,855.97	3,130.47	0.41 N	464.42 W	129,595.97	2,071,985.06	2.05	58.94	
3,271.00	10.62	265.73	265.89	1,949.06	3,223.56	0.95 S	483.32 W	129,594.61	2,071,966.16	1.86	59.97	
3,366.00	10.85	265.26	265.42	2,042.40	3,316.90	2.34 S	500.96 W	129,593.22	2,071,948.52	0.26	60.81	
3,461.00	9.09	271.87	272.03	2,135.96	3,410.46	2.84 S	517.37 W	129,592.73	2,071,932.11	2.21	62.39	

Design Report for Chain Land Ranch 3509 #1-1H - Wellbore #1

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	True Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates (ft)		Map Coordinates (ft)		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
						Northing	Easting	Northing	Easting			
3,556.00	7.13	275.27	275.43	2,230.01	3,504.51	2.05 S	530.75 W	129,593.51	2,071,918.73	2.12	64.85	
3,651.00	6.80	274.52	274.68	2,324.31	3,598.81	1.06 S	542.23 W	129,594.50	2,071,907.26	0.36	67.28	
3,746.00	4.98	276.69	276.85	2,418.80	3,693.30	0.14 S	551.93 W	129,595.42	2,071,897.55	1.93	69.42	
3,841.00	3.17	267.39	267.55	2,513.56	3,788.06	0.22 N	558.65 W	129,595.78	2,071,890.83	2.02	70.62	
3,936.00	1.43	269.75	269.91	2,608.48	3,882.98	0.10 N	562.46 W	129,595.66	2,071,887.02	1.83	70.98	
4,031.00	0.43	167.32	167.48	2,703.47	3,977.97	0.26 S	563.56 W	129,595.30	2,071,885.92	1.66	70.77	
4,126.00	0.48	177.27	177.43	2,798.47	4,072.97	1.00 S	563.47 W	129,594.56	2,071,886.01	0.10	70.02	
4,221.00	0.58	156.23	156.39	2,893.46	4,167.96	1.84 S	563.25 W	129,593.72	2,071,886.23	0.23	69.16	
4,253.00	0.73	355.07	355.23	2,925.46	4,199.96	1.79 S	563.21 W	129,593.78	2,071,886.27	4.04	69.21	
4,285.00	3.08	348.76	348.92	2,957.44	4,231.94	0.74 S	563.39 W	129,594.82	2,071,886.09	7.36	70.27	
4,316.00	5.55	350.44	350.60	2,988.35	4,262.85	1.56 N	563.80 W	129,597.12	2,071,885.68	7.98	72.60	
4,348.00	8.22	350.59	350.75	3,020.12	4,294.62	5.34 N	564.43 W	129,600.90	2,071,885.05	8.34	76.43	
4,380.00	10.23	350.87	351.03	3,051.70	4,326.20	10.40 N	565.26 W	129,605.96	2,071,884.22	6.28	81.56	
4,411.00	12.48	352.29	352.45	3,082.09	4,356.59	16.44 N	566.15 W	129,612.00	2,071,883.34	7.31	87.66	
4,443.00	15.84	353.45	353.61	3,113.12	4,387.62	24.21 N	567.11 W	129,619.77	2,071,882.37	10.54	95.48	
4,475.00	18.50	355.11	355.27	3,143.69	4,418.19	33.61 N	568.04 W	129,629.17	2,071,881.44	8.45	104.93	
4,506.00	21.33	356.40	356.56	3,172.83	4,447.33	44.14 N	568.81 W	129,639.70	2,071,880.67	9.24	115.47	
4,538.00	24.80	357.59	357.75	3,202.27	4,476.77	56.65 N	569.46 W	129,652.22	2,071,880.02	10.94	127.97	
4,570.00	28.64	358.08	358.24	3,230.85	4,505.35	71.03 N	570.00 W	129,666.59	2,071,879.48	12.02	142.30	
4,601.00	32.33	358.30	358.46	3,257.56	4,532.06	86.74 N	570.49 W	129,682.31	2,071,878.99	11.91	157.95	
4,633.00	36.68	358.35	358.51	3,283.92	4,558.42	104.86 N	571.02 W	129,700.42	2,071,878.46	13.59	175.99	
4,665.00	41.01	358.34	358.50	3,308.84	4,583.34	124.92 N	571.60 W	129,720.48	2,071,877.88	13.53	195.96	
4,696.00	45.04	358.15	358.31	3,331.50	4,606.00	146.06 N	572.25 W	129,741.62	2,071,877.23	13.01	217.01	
4,728.00	48.45	358.86	359.02	3,353.42	4,627.92	169.35 N	572.86 W	129,764.91	2,071,876.62	10.78	240.19	
4,760.00	51.38	358.59	358.75	3,374.02	4,648.52	193.82 N	573.40 W	129,789.39	2,071,876.08	9.18	264.54	
4,791.00	54.70	358.16	358.32	3,392.66	4,667.16	218.58 N	574.11 W	129,814.14	2,071,875.37	10.77	289.19	
4,823.00	57.79	357.90	358.06	3,410.44	4,684.94	245.17 N	575.02 W	129,840.73	2,071,874.46	9.68	315.68	
4,855.00	61.12	359.28	359.44	3,426.70	4,701.20	272.71 N	575.69 W	129,868.28	2,071,873.79	11.05	343.09	
4,886.00	63.38	1.19	1.35	3,441.14	4,715.64	300.14 N	575.58 W	129,895.71	2,071,873.90	9.10	370.29	
4,918.00	65.66	2.37	2.53	3,454.90	4,729.40	329.02 N	574.68 W	129,924.58	2,071,874.80	7.86	398.82	
4,950.00	68.71	3.13	3.29	3,467.31	4,741.81	358.47 N	573.26 W	129,954.04	2,071,876.22	9.78	427.86	
4,981.00	72.48	2.35	2.51	3,477.61	4,752.11	387.67 N	571.87 W	129,983.24	2,071,877.62	12.39	456.65	
5,013.00	75.36	0.87	1.03	3,486.47	4,760.97	418.41 N	571.00 W	130,013.97	2,071,878.48	10.04	487.03	
5,045.00	78.42	0.31	0.47	3,493.73	4,768.23	449.57 N	570.68 W	130,045.13	2,071,878.80	9.71	517.90	
5,054.00	79.74	0.10	0.26	3,495.43	4,769.93	458.40 N	570.65 W	130,053.96	2,071,878.83	14.84	526.67	
5,102.82	82.72	0.12	0.28	3,502.88	4,777.38	506.65 N	570.56 W	130,102.21	2,071,878.92	6.09	574.51	Chain Land Ranch 3509 #1-1H PP
5,149.00	85.53	0.14	0.30	3,507.60	4,782.10	552.58 N	570.46 W	130,148.14	2,071,879.03	6.09	620.07	

Design Report for Chain Land Ranch 3509 #1-1H - Wellbore #1

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	True Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates (ft)		Map Coordinates (ft)		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
						Northing	Easting	Northing	Easting			
5,179.00	87.64	1.07	1.23	3,509.39	4,783.89	582.52 N	570.14 W	130,178.08	2,071,879.34	7.68	649.73	
5,209.00	88.06	0.45	0.61	3,510.52	4,785.02	612.50 N	569.74 W	130,208.06	2,071,879.74	2.50	679.42	
5,240.00	88.37	1.04	1.20	3,511.48	4,785.98	643.48 N	569.34 W	130,239.04	2,071,880.14	2.15	710.10	
5,270.00	88.43	1.17	1.33	3,512.32	4,786.82	673.46 N	568.76 W	130,269.02	2,071,880.72	0.48	739.77	
5,360.00	90.09	0.57	0.73	3,513.48	4,787.98	763.44 N	567.39 W	130,359.00	2,071,882.09	1.96	828.86	
5,453.00	91.81	1.09	1.25	3,511.94	4,786.44	856.42 N	566.05 W	130,451.98	2,071,883.43	1.93	920.92	
5,546.00	91.17	358.93	359.09	3,509.52	4,784.02	949.38 N	566.03 W	130,544.94	2,071,883.45	2.42	1,013.14	
5,640.00	89.42	359.39	359.55	3,509.04	4,783.54	1,043.36 N	567.41 W	130,638.92	2,071,882.07	1.92	1,106.55	
5,733.00	90.22	358.64	358.80	3,509.33	4,783.83	1,136.35 N	569.01 W	130,731.91	2,071,880.47	1.18	1,199.00	
5,826.00	89.63	358.65	358.81	3,509.45	4,783.95	1,229.32 N	571.21 W	130,824.88	2,071,878.27	0.63	1,291.51	
5,920.00	88.43	358.62	358.78	3,511.04	4,785.54	1,323.28 N	573.45 W	130,918.84	2,071,876.04	1.28	1,385.00	
6,015.00	89.60	358.91	359.07	3,512.68	4,787.18	1,418.24 N	575.49 W	131,013.80	2,071,873.99	1.27	1,479.46	
6,110.00	89.66	359.10	359.26	3,513.29	4,787.79	1,513.22 N	577.14 W	131,108.78	2,071,872.34	0.21	1,573.89	
6,205.00	90.43	358.96	359.12	3,513.21	4,787.71	1,608.21 N	578.75 W	131,203.77	2,071,870.73	0.82	1,668.33	
6,300.00	90.49	358.45	358.61	3,512.45	4,786.95	1,703.18 N	580.90 W	131,298.74	2,071,868.58	0.54	1,762.81	
6,395.00	90.28	357.95	358.11	3,511.81	4,786.31	1,798.13 N	583.88 W	131,393.69	2,071,865.60	0.57	1,857.38	
6,490.00	91.27	358.82	358.98	3,510.53	4,785.03	1,893.08 N	586.56 W	131,488.64	2,071,862.92	1.39	1,951.91	
6,585.00	91.54	358.92	359.08	3,508.20	4,782.70	1,988.04 N	588.43 W	131,583.60	2,071,861.05	0.30	2,046.34	
6,680.00	91.23	359.18	359.34	3,505.90	4,780.40	2,083.00 N	590.01 W	131,678.55	2,071,859.47	0.43	2,140.74	
6,776.00	92.16	357.95	358.11	3,503.06	4,777.56	2,178.92 N	592.41 W	131,774.48	2,071,857.07	1.61	2,236.21	
6,871.00	91.79	358.74	358.90	3,499.79	4,774.29	2,273.82 N	595.15 W	131,869.38	2,071,854.33	0.92	2,330.70	
6,966.00	90.65	359.34	359.50	3,497.77	4,772.27	2,368.79 N	596.74 W	131,964.34	2,071,852.74	1.36	2,425.11	
7,061.00	89.78	1.38	1.54	3,497.41	4,771.91	2,463.78 N	596.15 W	132,059.34	2,071,853.34	2.33	2,519.26	
7,156.00	89.32	0.99	1.15	3,498.16	4,772.66	2,558.76 N	594.18 W	132,154.31	2,071,855.30	0.63	2,613.24	
7,251.00	90.55	1.13	1.29	3,498.26	4,772.76	2,653.74 N	592.42 W	132,249.29	2,071,857.06	1.30	2,707.24	
7,347.00	90.62	0.95	1.11	3,497.28	4,771.78	2,749.72 N	590.68 W	132,345.27	2,071,858.80	0.20	2,802.23	
7,442.00	90.74	1.14	1.30	3,496.16	4,770.66	2,844.69 N	588.95 W	132,440.25	2,071,860.53	0.24	2,896.24	
7,537.00	90.25	3.20	3.36	3,495.34	4,769.84	2,939.62 N	585.35 W	132,535.17	2,071,864.13	2.23	2,989.95	
7,632.00	89.72	359.97	360.13	3,495.36	4,769.86	3,034.57 N	582.72 W	132,630.12	2,071,866.76	3.45	3,083.81	
7,727.00	89.85	0.27	0.43	3,495.72	4,770.22	3,129.57 N	582.53 W	132,725.12	2,071,866.96	0.34	3,178.03	
7,822.00	89.78	359.86	360.02	3,496.02	4,770.52	3,224.57 N	582.42 W	132,820.12	2,071,867.06	0.44	3,272.26	
7,917.00	90.31	0.46	0.62	3,495.95	4,770.45	3,319.56 N	582.15 W	132,915.12	2,071,867.33	0.84	3,366.46	
8,012.00	90.68	359.68	359.84	3,495.13	4,769.63	3,414.56 N	582.04 W	133,010.12	2,071,867.45	0.91	3,460.69	
8,108.00	90.65	359.87	360.03	3,494.01	4,768.51	3,510.55 N	582.41 W	133,106.11	2,071,867.07	0.20	3,555.96	
8,203.00	90.83	0.24	0.40	3,492.79	4,767.29	3,605.54 N	582.32 W	133,201.10	2,071,867.16	0.43	3,650.18	
8,298.00	90.68	359.65	359.81	3,491.54	4,766.04	3,700.54 N	582.41 W	133,296.09	2,071,867.07	0.64	3,744.43	
8,393.00	90.46	359.90	360.06	3,490.59	4,765.09	3,795.53 N	582.79 W	133,391.08	2,071,866.70	0.35	3,838.71	



Design Report for Chain Land Ranch 3509 #1-1H - Wellbore #1

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	True Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates (ft)		Map Coordinates (ft)		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
						Northing	Easting	Northing	Easting			
8,488.00	91.17	0.57	0.73	3,489.24	4,763.74	3,890.52 N	582.40 W	133,486.07	2,071,867.08	1.03	3,932.90	
8,583.00	91.63	0.56	0.72	3,486.92	4,761.42	3,985.49 N	581.46 W	133,581.04	2,071,868.02	0.48	4,026.99	
8,678.00	91.42	0.93	1.09	3,484.39	4,758.89	4,080.44 N	580.23 W	133,676.00	2,071,869.26	0.45	4,121.03	
8,773.00	90.93	0.46	0.62	3,482.44	4,756.94	4,175.42 N	579.07 W	133,770.97	2,071,870.41	0.71	4,215.10	
8,869.00	90.99	1.12	1.28	3,480.83	4,755.33	4,271.39 N	577.75 W	133,866.95	2,071,871.73	0.69	4,310.15	
8,964.00	91.26	1.25	1.41	3,478.97	4,753.47	4,366.35 N	575.79 W	133,961.91	2,071,873.70	0.32	4,404.10	
9,059.00	91.97	1.83	1.99	3,476.29	4,750.79	4,461.28 N	573.23 W	134,056.83	2,071,876.25	0.96	4,497.95	
9,154.00	92.13	2.36	2.52	3,472.89	4,747.39	4,556.16 N	569.76 W	134,151.71	2,071,879.72	0.58	4,591.63	
9,222.00	91.97	3.16	3.32	3,470.46	4,744.96	4,624.03 N	566.49 W	134,219.59	2,071,882.99	1.20	4,658.56	End MWD @ 9222.00 MD - Chain Land Ranch 3509 #1-1H BHL
9,269.00	91.97	3.16	3.32	3,468.84	4,743.34	4,670.93 N	563.90 W	134,266.49	2,071,885.58	0.00	4,704.76	Projection to TD 9269.00 MD, 4743.34 TVD 4670.93 N, -563.90 E 290 FNL, 425 FWL

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
150.00	150.00	0.25	-1.03	Start MWD @ 150.00 MD
9,222.00	4,744.96	4,624.03	-566.49	End MWD @ 9222.00 MD
9,269.00	4,743.34	4,670.93	-563.90	Projection to TD 9269.00 MD, 4743.34 TVD 4670.93 N, -563.90 E 290 FNL, 425 FWL

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/_S (ft)	+E/-W (ft)	
User	No Target (Freehand)	352.76	Slot	0.00	0.00	0.00

Design Report for Chain Land Ranch 3509 #1-1H - Wellbore #1

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
150.00	484.00	Run 0100	MWD+SC
629.00	5,054.00	Run 0200	MWD+SC
5,149.00	9,269.00	Run 0300	MWD+SC

Design Targets

Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target									
- Shape	()	()	()	()	()	()	()		

Directional Difficulty Index

Average Dogleg over Survey:	1.94 °/100ft	Maximum Dogleg over Survey:	14.84 °/100ft at 5,054.00 ft
Net Tortousity applicable to Plans:	0.64 °/100ft	Directional Difficulty Index:	6.262

Audit Info

North Reference Sheet for Sec 01-T35S-R09W - Chain Land Ranch 3509 #1-1H - Wellbore #1

All data is in Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to WELL @ 1274.50ft (Nabors F-01 (27.5')). Northing and Easting are relative to Chain Land Ranch 3509 #1-1H

Coordinate System is US State Plane 1927 (Exact solution), Kansas South 1502 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 98° 30' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:37° 16' 0.000 N°

False Easting: 2,000,000.00ft, False Northing: 0.00ft, Scale Reduction: 1.00005700

Grid Coordinates of Well: 129,595.56 ft N, 2,072,449.48 ft E

Geographical Coordinates of Well: 37° 01' 20.33" N, 098° 15' 06.70" W

Grid Convergence at Surface is: 0.15°

Based upon Minimum Curvature type calculations, at a Measured Depth of 9,269.00ft the Bottom Hole Displacement is 4,704.85ft in the Direction of 353.12° (Grid).

Magnetic Convergence at surface is: -4.59° (20 November 2012, , BGGM2012)

