

Job# 900033716
Rig: Nabors 180

Shell Exploration & Production Co. Inc.

Reno Co. KS (NAD-27) Sec 07-T22S-R07W (Grid)
API# 151552162401

Siegrist 2207 #7-1H (280 FSL, 235 FEL)

Wellbore #1

Design: Final Survey

Sperry Drilling Services

Combo Report With Grid North & True North

24 April, 2013

TD Date : 26th Mar, 2013

Well Coordinates: 38° 08' 44.06" N
098° 07' 32.54" W

NAD 1927 (NADCON CONUS)
Kansas South 1502
538,711.01 N
2,107,641.00 E

Ground Level: 1,602.00 ft

Local Coordinate Origin:

Centered on Well Siegrist 2207 #7-1H

Viewing Datum:

WELL @ 1625.00ft (Nabors 180 (23'))

TVDs to System:

N

North Reference:

Grid

Unit System:

API US New

Version: 2003.21 Build: 46

HALLIBURTON

Design Report for Siegrist 2207 #7-1H - Final Survey

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	0.22	-1,625.00	0.00	0.00 N	0.00 E	538,711.01	2,107,641.00	0.00	0.00	
82.00	0.14	225.57	225.79	-1,543.00	82.00	0.07 S	0.07 W	538,710.94	2,107,640.93	0.17	-0.07	
152.00	0.06	196.25	196.47	-1,473.00	152.00	0.17 S	0.14 W	538,710.84	2,107,640.86	0.13	-0.17	
222.00	0.26	214.93	215.15	-1,403.00	222.00	0.33 S	0.24 W	538,710.68	2,107,640.76	0.29	-0.34	
292.00	0.32	210.03	210.25	-1,333.00	292.00	0.63 S	0.43 W	538,710.38	2,107,640.57	0.09	-0.64	
362.00	0.36	218.84	219.06	-1,263.00	362.00	0.97 S	0.67 W	538,710.04	2,107,640.33	0.09	-0.98	
430.00	0.20	185.80	186.02	-1,195.00	430.00	1.26 S	0.81 W	538,709.75	2,107,640.19	0.33	-1.27	
525.00	0.30	170.50	170.72	-1,100.00	525.00	1.67 S	0.79 W	538,709.34	2,107,640.21	0.13	-1.68	
999.00	0.20	265.10	265.32	-626.01	998.99	2.96 S	1.41 W	538,708.05	2,107,639.59	0.08	-2.99	
1,092.00	0.20	251.30	251.52	-533.01	1,091.99	3.03 S	1.73 W	538,707.98	2,107,639.27	0.05	-3.06	
1,185.00	0.20	237.60	237.82	-440.01	1,184.99	3.16 S	2.02 W	538,707.85	2,107,638.98	0.05	-3.20	
1,278.00	0.20	269.70	269.92	-347.01	1,277.99	3.25 S	2.32 W	538,707.76	2,107,638.68	0.12	-3.30	
1,371.00	0.10	216.70	216.92	-254.01	1,370.99	3.32 S	2.53 W	538,707.69	2,107,638.47	0.17	-3.37	
1,465.00	0.10	221.60	221.82	-160.01	1,464.99	3.45 S	2.63 W	538,707.56	2,107,638.37	0.01	-3.50	
1,558.00	0.00	282.00	282.22	-67.01	1,557.99	3.51 S	2.68 W	538,707.50	2,107,638.32	0.11	-3.56	
1,651.00	0.00	4.90	5.12	25.99	1,650.99	3.51 S	2.68 W	538,707.50	2,107,638.32	0.00	-3.56	
1,745.00	0.10	184.40	184.62	119.99	1,744.99	3.59 S	2.69 W	538,707.42	2,107,638.31	0.11	-3.64	
1,838.00	0.10	4.40	4.62	212.99	1,837.99	3.59 S	2.69 W	538,707.42	2,107,638.31	0.22	-3.64	
1,932.00	0.00	73.40	73.62	306.99	1,931.99	3.51 S	2.68 W	538,707.50	2,107,638.32	0.11	-3.56	
2,026.00	0.10	128.50	128.72	400.99	2,025.99	3.56 S	2.62 W	538,707.45	2,107,638.38	0.11	-3.61	
2,121.00	0.10	212.00	212.22	495.99	2,120.99	3.68 S	2.60 W	538,707.33	2,107,638.40	0.14	-3.73	
2,215.00	0.10	184.40	184.62	589.99	2,214.99	3.83 S	2.65 W	538,707.18	2,107,638.35	0.05	-3.88	
2,310.00	0.10	274.90	275.12	684.99	2,309.99	3.91 S	2.74 W	538,707.10	2,107,638.26	0.15	-3.96	
2,405.00	0.20	155.60	155.82	779.99	2,404.99	4.05 S	2.75 W	538,706.96	2,107,638.25	0.28	-4.10	
2,500.00	0.30	196.80	197.02	874.99	2,499.99	4.44 S	2.75 W	538,706.57	2,107,638.25	0.21	-4.49	
2,595.00	0.20	170.00	170.22	969.99	2,594.99	4.84 S	2.80 W	538,706.17	2,107,638.20	0.16	-4.90	
2,690.00	0.00	118.10	118.32	1,064.99	2,689.99	5.00 S	2.77 W	538,706.01	2,107,638.23	0.21	-5.06	
2,784.00	0.20	213.10	213.32	1,158.99	2,783.99	5.14 S	2.86 W	538,705.87	2,107,638.14	0.21	-5.20	
2,879.00	0.80	16.60	16.82	1,253.99	2,878.99	4.64 S	2.76 W	538,706.37	2,107,638.24	1.05	-4.70	
2,911.00	2.40	357.90	358.12	1,285.97	2,910.97	3.76 S	2.72 W	538,707.25	2,107,638.28	5.19	-3.81	
2,942.00	3.90	357.70	357.92	1,316.92	2,941.92	2.06 S	2.79 W	538,708.95	2,107,638.21	4.84	-2.11	
2,974.00	4.90	350.60	350.82	1,348.83	2,973.83	0.38 N	3.05 W	538,711.39	2,107,637.95	3.55	0.32	
3,005.00	6.80	352.70	352.92	1,379.67	3,004.67	3.50 N	3.50 W	538,714.51	2,107,637.50	6.17	3.43	
3,037.00	9.30	355.30	355.52	1,411.35	3,036.35	7.96 N	3.96 W	538,718.97	2,107,637.04	7.89	7.88	
3,068.00	12.30	359.10	359.32	1,441.80	3,066.80	13.76 N	4.21 W	538,724.77	2,107,636.79	9.94	13.67	
3,100.00	15.80	0.70	0.92	1,472.83	3,097.83	21.53 N	4.21 W	538,732.54	2,107,636.79	11.00	21.44	
3,132.00	19.10	0.60	0.82	1,503.36	3,128.36	31.12 N	4.10 W	538,742.13	2,107,636.90	10.31	31.03	

Design Report for Siegrist 2207 #7-1H - Final Survey

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	True Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft) Easting (ft)		Map Coordinates Northing (ft) Easting (ft)		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
3,163.00	22.10	2.00	2.22	1,532.37	3,157.37	42.02 N	3.85 W	538,753.03	2,107,637.15	9.81	41.94	
3,195.00	24.40	2.70	2.92	1,561.77	3,186.77	54.64 N	3.33 W	538,765.65	2,107,637.67	7.24	54.57	
3,227.00	25.80	3.30	3.52	1,590.75	3,215.75	68.20 N	2.61 W	538,779.21	2,107,638.39	4.45	68.13	
3,258.00	28.30	1.90	2.12	1,618.36	3,243.36	82.28 N	1.98 W	538,793.29	2,107,639.02	8.32	82.22	
3,290.00	31.50	359.80	360.02	1,646.09	3,271.09	98.23 N	1.76 W	538,809.24	2,107,639.24	10.52	98.17	
3,322.00	34.20	359.70	359.92	1,672.97	3,297.97	115.58 N	1.84 W	538,826.59	2,107,639.16	8.44	115.52	
3,353.00	37.40	359.10	359.32	1,698.11	3,323.11	133.71 N	2.03 W	538,844.72	2,107,638.97	10.38	133.65	
3,385.00	41.00	359.10	359.32	1,722.91	3,347.91	153.93 N	2.35 W	538,864.94	2,107,638.65	11.25	153.85	
3,416.00	42.90	1.40	1.62	1,745.96	3,370.96	174.65 N	2.25 W	538,885.66	2,107,638.75	7.88	174.57	
3,448.00	45.40	2.60	2.82	1,768.92	3,393.92	196.92 N	1.47 W	538,907.93	2,107,639.53	8.24	196.85	
3,480.00	48.10	1.80	2.02	1,790.85	3,415.85	220.21 N	0.58 W	538,931.22	2,107,640.42	8.63	220.16	
3,511.00	51.50	2.70	2.92	1,810.85	3,435.85	243.87 N	0.36 E	538,954.88	2,107,641.36	11.19	243.83	
3,543.00	54.80	2.30	2.52	1,830.04	3,455.04	269.44 N	1.47 E	538,980.45	2,107,642.47	10.36	269.42	
3,575.00	58.70	2.60	2.82	1,847.59	3,472.59	296.18 N	2.62 E	539,007.19	2,107,643.62	12.21	296.17	
3,606.00	62.70	2.90	3.12	1,862.75	3,487.75	323.17 N	3.92 E	539,034.18	2,107,644.92	12.93	323.19	
3,638.00	66.60	2.00	2.22	1,876.45	3,501.45	352.06 N	5.15 E	539,063.07	2,107,646.15	12.45	352.09	
3,670.00	70.30	2.00	2.22	1,888.20	3,513.20	381.80 N	6.19 E	539,092.81	2,107,647.19	11.56	381.85	
3,701.00	72.20	1.50	1.72	1,898.17	3,523.17	411.14 N	7.08 E	539,122.15	2,107,648.08	6.32	411.20	
3,732.00	73.80	1.60	1.82	1,907.23	3,532.23	440.77 N	7.89 E	539,151.78	2,107,648.89	5.17	440.84	
3,764.00	76.00	1.80	2.02	1,915.57	3,540.57	471.65 N	8.80 E	539,182.66	2,107,649.80	6.90	471.73	
3,795.00	78.00	2.30	2.52	1,922.54	3,547.54	501.84 N	9.88 E	539,212.85	2,107,650.88	6.64	501.93	
3,827.00	81.30	3.80	4.02	1,928.29	3,553.29	533.27 N	11.56 E	539,244.28	2,107,652.56	11.30	533.39	
3,939.00	80.36	3.03	3.25	1,946.14	3,571.14	643.64 N	18.15 E	539,354.65	2,107,659.15	1.08	643.87	Start MWD @ 3939.00 MD
3,970.00	80.56	3.36	3.58	1,951.27	3,576.27	674.16 N	19.85 E	539,385.17	2,107,660.85	1.23	674.42	
4,002.00	82.45	2.81	3.03	1,956.00	3,581.00	705.76 N	21.55 E	539,416.77	2,107,662.55	6.15	706.05	
4,034.00	85.90	3.09	3.31	1,959.25	3,584.25	737.55 N	23.19 E	539,448.56	2,107,664.19	10.82	737.86	
4,065.00	89.26	2.86	3.08	1,960.56	3,585.56	768.48 N	24.80 E	539,479.48	2,107,665.80	10.86	768.82	
4,097.00	90.06	2.46	2.68	1,960.75	3,585.75	800.44 N	26.28 E	539,511.45	2,107,667.28	2.80	800.80	
4,128.00	90.00	2.69	2.91	1,960.73	3,585.73	831.41 N	27.68 E	539,542.42	2,107,668.68	0.77	831.79	
4,160.00	91.42	2.91	3.13	1,960.33	3,585.33	863.37 N	29.24 E	539,574.38	2,107,670.24	4.49	863.78	
4,192.00	92.50	1.87	2.09	1,959.24	3,584.24	895.32 N	30.57 E	539,606.33	2,107,671.57	4.68	895.75	
4,223.00	93.24	0.87	1.09	1,957.69	3,582.69	926.27 N	31.31 E	539,637.28	2,107,672.31	4.01	926.71	
4,255.00	93.42	0.56	0.78	1,955.83	3,580.83	958.22 N	31.71 E	539,669.22	2,107,672.71	1.12	958.66	
4,286.00	93.45	0.99	1.21	1,953.97	3,578.97	989.16 N	32.13 E	539,700.16	2,107,673.13	1.39	989.60	
4,318.00	93.77	0.71	0.93	1,951.96	3,576.96	1,021.09 N	32.61 E	539,732.10	2,107,673.61	1.33	1,021.54	
4,350.00	94.10	359.38	359.60	1,949.76	3,574.76	1,053.01 N	32.63 E	539,764.02	2,107,673.63	4.27	1,053.45	
4,381.00	94.38	359.53	359.75	1,947.47	3,572.47	1,083.93 N	32.34 E	539,794.94	2,107,673.34	1.02	1,084.36	

Design Report for Siegrist 2207 #7-1H - Final Survey

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			
4,413.00	94.56	359.47	359.69	1,944.98	3,569.98	1,115.83 N	32.06 E	539,826.84	2,107,673.06	0.59	1,116.24	
4,444.00	94.10	358.50	358.72	1,942.63	3,567.63	1,146.73 N	31.51 E	539,857.74	2,107,672.51	3.45	1,147.13	
4,508.00	94.20	358.42	358.64	1,938.00	3,563.00	1,210.54 N	29.80 E	539,921.55	2,107,670.79	0.20	1,210.90	
4,539.00	94.38	358.88	359.10	1,935.68	3,560.68	1,241.45 N	29.07 E	539,952.46	2,107,670.07	1.59	1,241.78	
4,571.00	92.87	358.64	358.86	1,933.66	3,558.66	1,273.38 N	28.38 E	539,984.38	2,107,669.38	4.78	1,273.69	
4,602.00	93.24	358.42	358.64	1,932.01	3,557.01	1,304.32 N	27.58 E	540,015.33	2,107,668.58	1.39	1,304.61	
4,634.00	92.83	359.68	359.90	1,930.31	3,555.31	1,336.27 N	27.05 E	540,047.28	2,107,668.05	4.14	1,336.55	
4,666.00	92.22	1.03	1.25	1,928.90	3,553.90	1,368.24 N	27.25 E	540,079.25	2,107,668.25	4.63	1,368.51	
4,697.00	91.67	1.26	1.48	1,927.85	3,552.85	1,399.21 N	27.87 E	540,110.22	2,107,668.87	1.92	1,399.49	
4,729.00	90.18	0.54	0.76	1,927.34	3,552.34	1,431.21 N	28.37 E	540,142.21	2,107,669.37	5.17	1,431.49	
4,792.00	90.12	0.68	0.90	1,927.17	3,552.17	1,494.20 N	29.04 E	540,205.21	2,107,670.04	0.24	1,494.48	
4,856.00	90.77	0.59	0.81	1,926.67	3,551.67	1,558.20 N	29.75 E	540,269.20	2,107,670.75	1.03	1,558.48	
4,919.00	89.35	0.13	0.35	1,926.61	3,551.61	1,621.19 N	30.15 E	540,332.20	2,107,671.15	2.37	1,621.47	
4,982.00	88.95	0.19	0.41	1,927.54	3,552.54	1,684.19 N	30.32 E	540,395.19	2,107,671.32	0.64	1,684.46	
5,077.00	89.38	0.30	0.52	1,928.93	3,553.93	1,779.17 N	30.73 E	540,490.18	2,107,671.73	0.47	1,779.43	
5,170.00	90.37	0.13	0.35	1,929.13	3,554.13	1,872.17 N	31.08 E	540,583.18	2,107,672.08	1.08	1,872.42	
5,263.00	90.31	0.53	0.75	1,928.58	3,553.58	1,965.17 N	31.61 E	540,676.17	2,107,672.61	0.43	1,965.41	
5,356.00	89.85	0.10	0.32	1,928.45	3,553.45	2,058.17 N	32.13 E	540,769.17	2,107,673.13	0.68	2,058.40	
5,449.00	89.63	359.47	359.69	1,928.87	3,553.87	2,151.16 N	31.78 E	540,862.17	2,107,672.78	0.72	2,151.37	
5,542.00	89.17	358.81	359.03	1,929.84	3,554.84	2,244.15 N	30.38 E	540,955.15	2,107,671.38	0.87	2,244.31	
5,636.00	89.75	359.25	359.47	1,930.73	3,555.73	2,338.13 N	28.79 E	541,049.14	2,107,669.79	0.77	2,338.24	
5,729.00	88.95	358.42	358.64	1,931.78	3,556.78	2,431.10 N	26.90 E	541,142.11	2,107,667.90	1.24	2,431.16	
5,822.00	90.52	358.31	358.53	1,932.21	3,557.21	2,524.06 N	24.25 E	541,235.07	2,107,665.25	1.69	2,524.05	
5,915.00	92.00	359.04	359.26	1,930.17	3,555.17	2,617.01 N	22.10 E	541,328.02	2,107,663.10	1.77	2,616.93	
6,009.00	92.56	359.42	359.64	1,926.43	3,551.43	2,710.93 N	20.83 E	541,421.93	2,107,661.83	0.72	2,710.81	
6,104.00	91.85	359.67	359.89	1,922.78	3,547.78	2,805.85 N	20.08 E	541,516.86	2,107,661.08	0.79	2,805.70	
6,198.00	89.32	0.43	0.65	1,921.82	3,546.82	2,899.84 N	20.16 E	541,610.84	2,107,661.16	2.81	2,899.67	
6,293.00	87.56	0.76	0.98	1,924.40	3,549.40	2,994.80 N	21.15 E	541,705.80	2,107,662.15	1.88	2,994.63	
6,388.00	88.49	1.18	1.40	1,927.68	3,552.68	3,089.72 N	22.75 E	541,800.73	2,107,663.75	1.07	3,089.57	
6,483.00	87.87	0.80	1.02	1,930.69	3,555.69	3,184.66 N	24.40 E	541,895.67	2,107,665.40	0.77	3,184.52	
6,577.00	88.86	0.76	0.98	1,933.37	3,558.37	3,278.61 N	25.67 E	541,989.62	2,107,666.67	1.05	3,278.48	
6,672.00	88.74	0.41	0.63	1,935.36	3,560.36	3,373.59 N	26.64 E	542,084.59	2,107,667.64	0.39	3,373.45	
6,767.00	88.49	359.92	360.14	1,937.66	3,562.66	3,468.56 N	26.92 E	542,179.56	2,107,667.92	0.58	3,468.41	
6,862.00	88.86	359.06	359.28	1,939.86	3,564.86	3,563.53 N	26.07 E	542,274.53	2,107,667.07	0.99	3,563.35	
6,957.00	90.06	358.14	358.36	1,940.75	3,565.75	3,658.49 N	23.75 E	542,369.50	2,107,664.75	1.59	3,658.25	
7,052.00	90.09	359.08	359.30	1,940.63	3,565.63	3,753.46 N	21.45 E	542,464.47	2,107,662.45	0.99	3,753.15	
7,147.00	90.95	0.28	0.50	1,939.77	3,564.77	3,848.46 N	20.92 E	542,559.46	2,107,661.92	1.55	3,848.12	

Design Report for Siegrist 2207 #7-1H - Final Survey

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			
7,242.00	90.34	0.94	1.16	1,938.70	3,563.70	3,943.44 N	21.93 E	542,654.45	2,107,662.93	0.95	3,943.10	
7,337.00	91.02	0.40	0.62	1,937.57	3,562.57	4,038.43 N	23.04 E	542,749.43	2,107,664.04	0.91	4,038.09	
7,431.00	91.57	1.91	2.13	1,935.44	3,560.44	4,132.38 N	24.93 E	542,843.39	2,107,665.93	1.71	4,132.07	
7,527.00	91.45	1.69	1.91	1,932.92	3,557.92	4,228.30 N	27.95 E	542,939.30	2,107,668.95	0.26	4,228.03	
7,621.00	89.66	1.96	2.18	1,932.00	3,557.00	4,322.25 N	30.94 E	543,033.25	2,107,671.94	1.93	4,322.01	
7,716.00	88.15	1.84	2.06	1,933.82	3,558.82	4,417.17 N	34.09 E	543,128.18	2,107,675.09	1.59	4,416.98	
7,811.00	87.81	1.90	2.12	1,937.17	3,562.17	4,512.07 N	37.19 E	543,223.07	2,107,678.19	0.36	4,511.92	
7,906.00	88.58	2.41	2.63	1,940.16	3,565.16	4,606.95 N	40.76 E	543,317.95	2,107,681.76	0.97	4,606.85	
7,965.00	89.75	3.08	3.30	1,941.02	3,566.02	4,665.87 N	43.58 E	543,376.88	2,107,684.58	2.29	4,665.82	End MWD @ 7965.00 MD - Siegrist 2207 #7-1H BHL Plan 4
8,015.00	89.75	3.08	3.30	1,941.24	3,566.24	4,715.80 N	46.27 E	543,426.80	2,107,687.27	0.00	4,715.79	Projection to TD @ 8015.00 MD

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates (ft)		Comment
		+N/-S	+E/-W	
3,939.00	3,571.14	643.64	18.15	Start MWD @ 3939.00 MD
7,965.00	3,566.02	4,665.87	43.58	End MWD @ 7965.00 MD
8,015.00	3,566.24	4,715.80	46.27	Projection to TD @ 8015.00 MD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin (ft)		Start TVD (ft)
				+N/_S	+E/-W	
User	No Target (Freehand)	1.14	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
82.00	362.00	GYRO	NS-Gyro-MS
430.00	3,827.00	MS Surveys	MWD+SC
3,939.00	8,015.00	Run 0100	MWD+SC

Design Report for Siegrist 2207 #7-1H - Final Survey

Design Targets

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

Directional Difficulty Index

Average Dogleg over Survey:	1.88 °/100ft	Maximum Dogleg over Survey:	12.93 °/100ft at 3,606.00 ft
Net Tortosity applicable to Plans:	0.49 °/100ft	Directional Difficulty Index:	6.201

Audit Info

North Reference Sheet for Sec 07-T22S-R07W (Grid) - Siegrist 2207 #7-1H - 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 @ 1625.00ft (Nabors 180 (23')). Northing and Easting are relative to Siegrist 2207 #7-1H

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: 0.99994381

Grid Coordinates of Well: 538,711.01 ft N, 2,107,641.00 ft E

Geographical Coordinates of Well: 38° 08' 44.06" N, 098° 07' 32.54" W

Grid Convergence at Surface is: 0.23°

Based upon Minimum Curvature type calculations, at a Measured Depth of 8,015.00ft the Bottom Hole Displacement is 4,716.03ft in the Direction of 0.56° (Grid).

Magnetic Convergence at surface is: -4.42° (29 March 2013, , BGGM2012)

