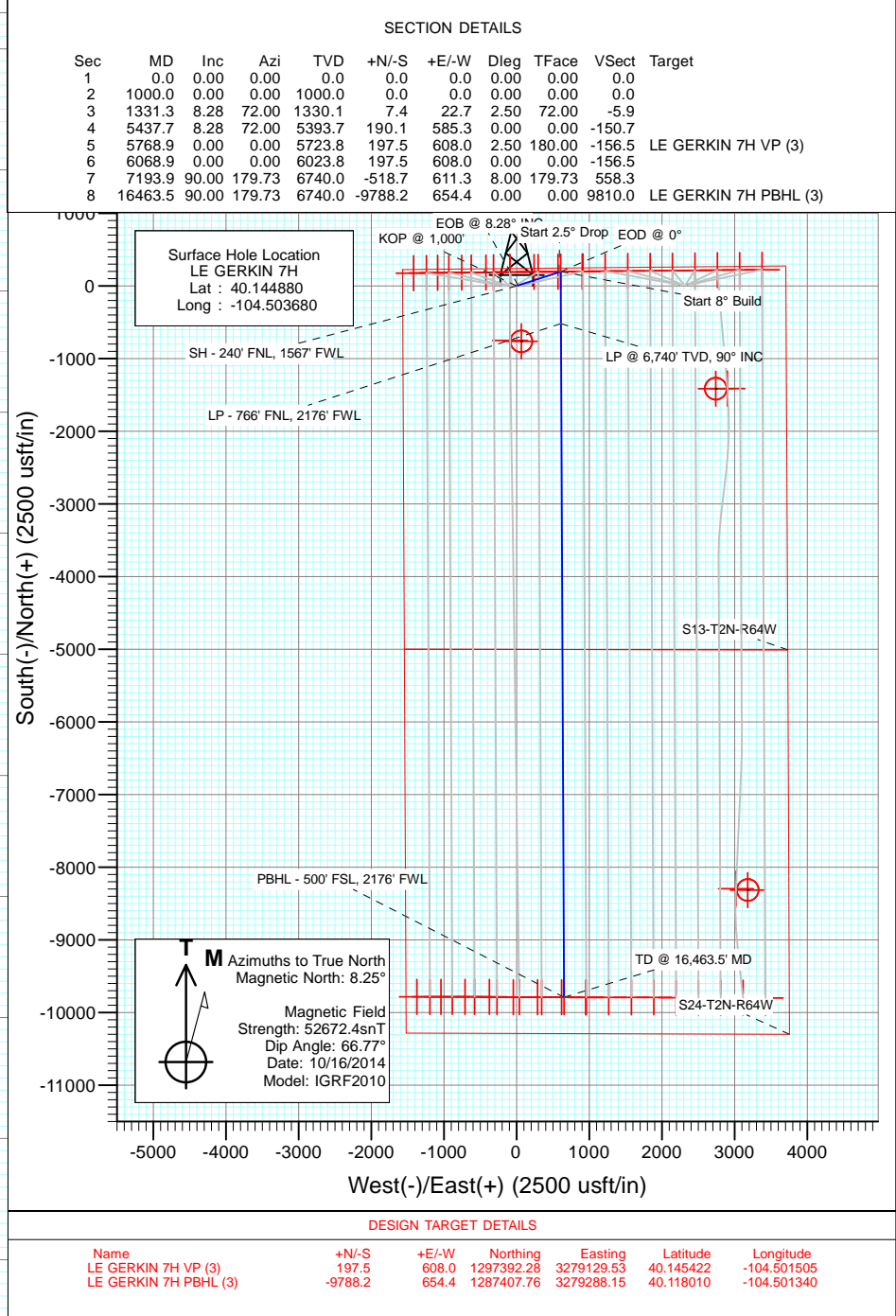
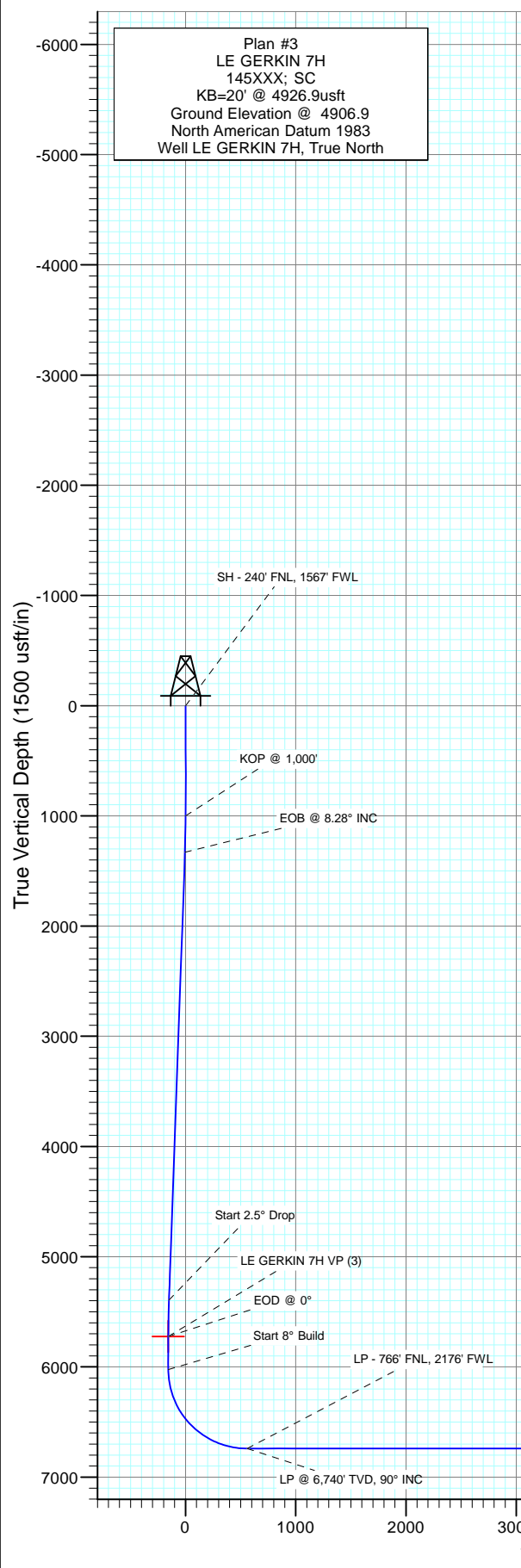
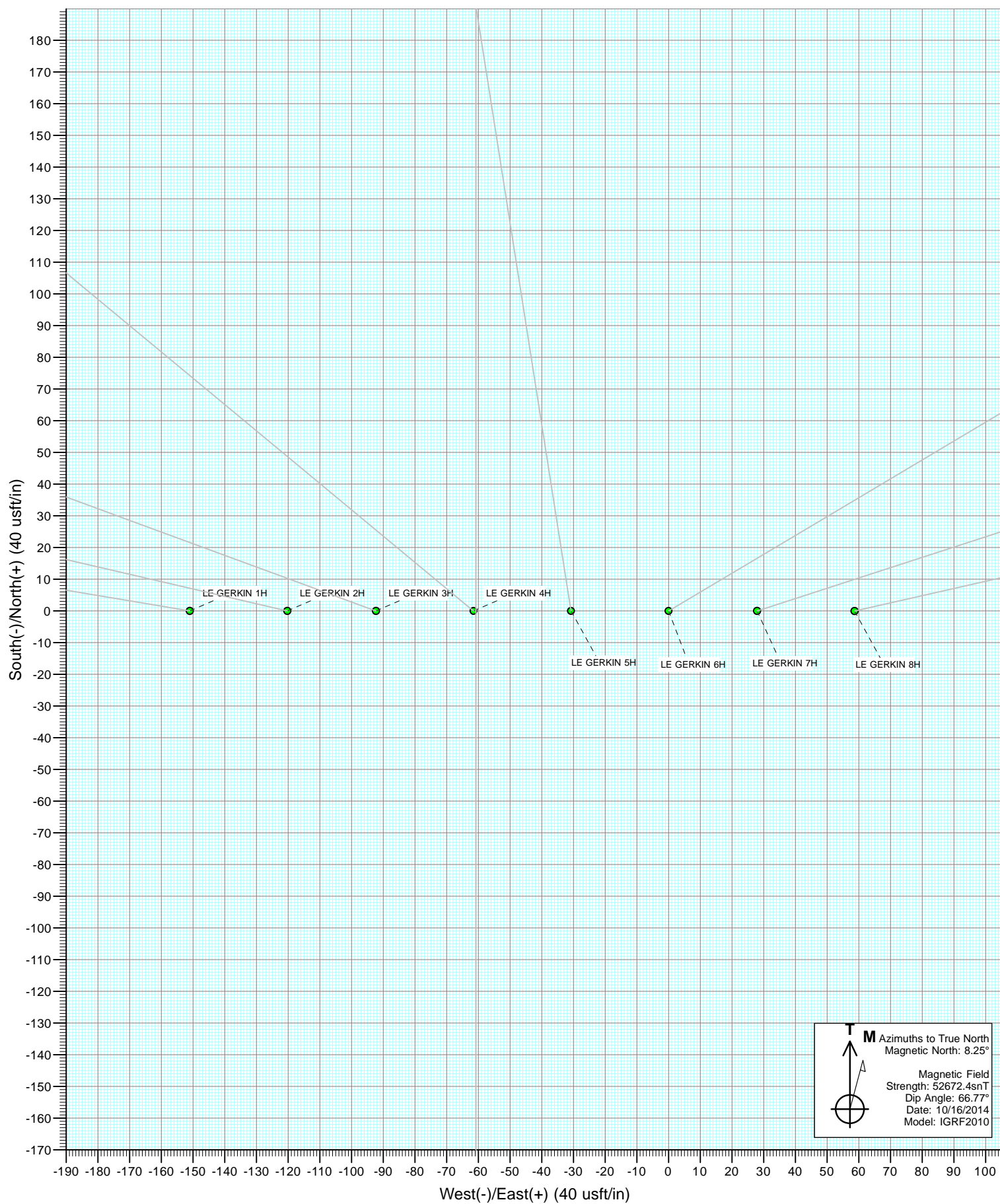
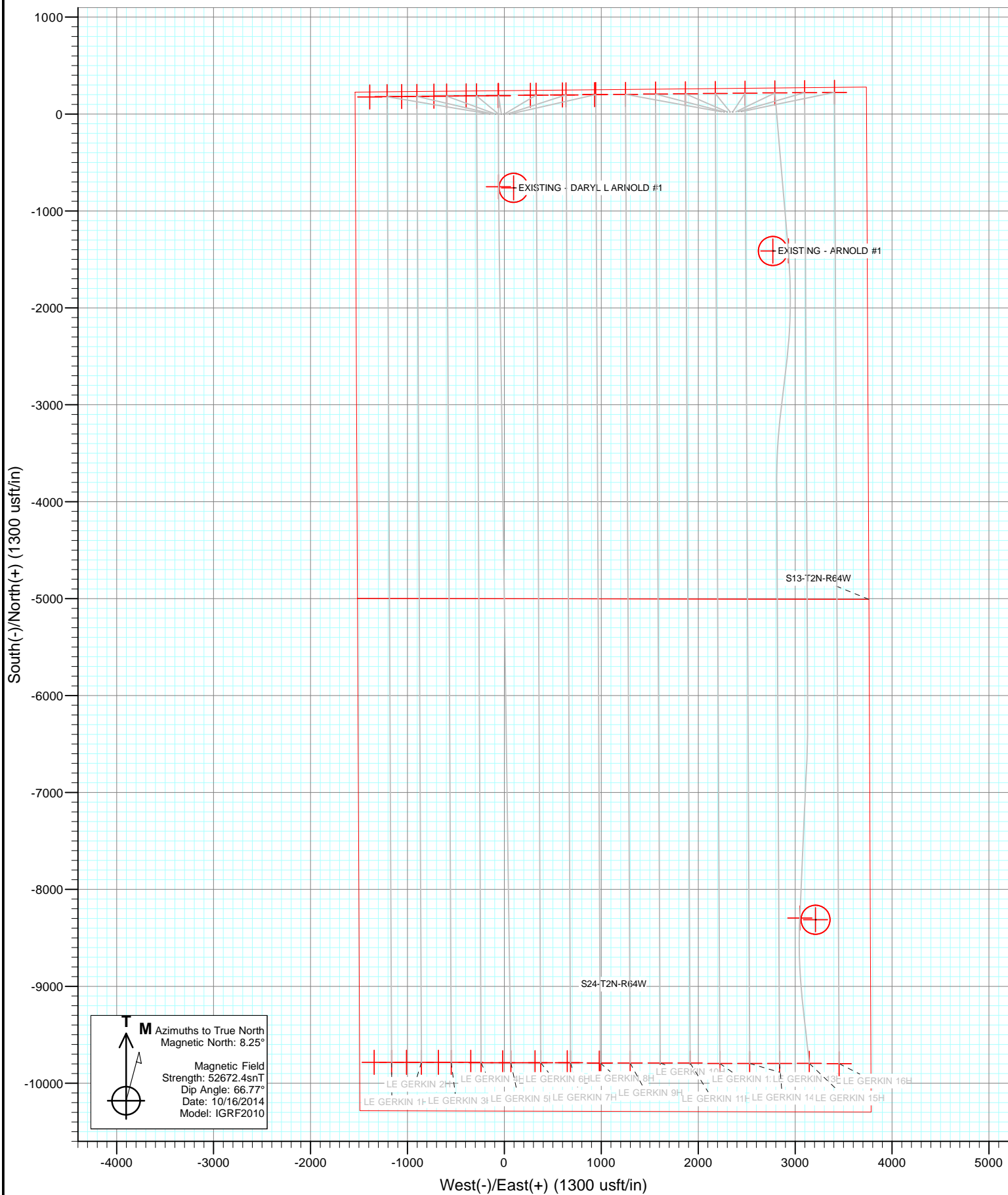




Project: Weld County, Colorado
Site: S13-T2N-R64W (LE GERKIN PADS)
Well: LE GERKIN 7H
Wellbore: HZ
Design: Plan #3







Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well LE GERKIN 7H
Company:	Red Hawk Petroleum	TVD Reference:	KB=20' @ 4926.9usft
Project:	Weld County, Colorado	MD Reference:	KB=20' @ 4926.9usft
Site:	S13-T2N-R64W (LE GERKIN PADS)	North Reference:	True
Well:	LE GERKIN 7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

Project	Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		S13-T2N-R64W (LE GERKIN PADS)			
Site Position:		Northing:	1,297,185.96 usft	Latitude:	40.144880
From:	Lat/Long	Easting:	3,278,344.88 usft	Longitude:	-104.504320
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.64 °

Well	LE GERKIN 7H					
Well Position	+N/-S	0.0 usft	Northing:	1,297,187.96 usft	Latitude:	40.144880
	+E/-W	0.0 usft	Easting:	3,278,523.79 usft	Longitude:	-104.503680
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	4,906.9 usft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/16/2014	8.25	66.77	52,672

Design	Plan #3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	176.18

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,331.3	8.28	72.00	1,330.1	7.4	22.7	2.50	2.50	0.00	72.00	
5,437.7	8.28	72.00	5,393.7	190.1	585.3	0.00	0.00	0.00	0.00	
5,768.9	0.00	0.00	5,723.8	197.5	608.0	2.50	-2.50	0.00	180.00	LE GERKIN 7H VP (3
6,068.9	0.00	0.00	6,023.8	197.5	608.0	0.00	0.00	0.00	0.00	
7,193.9	90.00	179.73	6,740.0	-518.7	611.3	8.00	8.00	15.98	179.73	
16,463.5	90.00	179.73	6,740.0	-9,788.2	654.4	0.00	0.00	0.00	0.00	LE GERKIN 7H PBHL

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well LE GERKIN 7H
Company:	Red Hawk Petroleum	TVD Reference:	KB=20' @ 4926.9usft
Project:	Weld County, Colorado	MD Reference:	KB=20' @ 4926.9usft
Site:	S13-T2N-R64W (LE GERKIN PADS)	North Reference:	True
Well:	LE GERKIN 7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
0.5	0.00	0.00	0.5	0.0	0.0	0.0	0.00	0.00	SH - 240' FNL, 1567' FWL
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	KOP @ 1,000'
1,100.0	2.50	72.00	1,100.0	0.7	2.1	-0.5	2.50	2.50	
1,200.0	5.00	72.00	1,199.7	2.7	8.3	-2.1	2.50	2.50	
1,300.0	7.50	72.00	1,299.1	6.1	18.6	-4.8	2.50	2.50	
1,331.3	8.28	72.00	1,330.1	7.4	22.7	-5.9	2.50	2.50	EOB @ 8.28° INC
1,400.0	8.28	72.00	1,398.1	10.4	32.1	-8.3	0.00	0.00	
1,500.0	8.28	72.00	1,497.1	14.9	45.8	-11.8	0.00	0.00	
1,600.0	8.28	72.00	1,596.0	19.3	59.5	-15.3	0.00	0.00	
1,700.0	8.28	72.00	1,695.0	23.8	73.2	-18.9	0.00	0.00	
1,800.0	8.28	72.00	1,794.0	28.2	86.9	-22.4	0.00	0.00	
1,900.0	8.28	72.00	1,892.9	32.7	100.6	-25.9	0.00	0.00	
2,000.0	8.28	72.00	1,991.9	37.1	114.3	-29.4	0.00	0.00	
2,100.0	8.28	72.00	2,090.8	41.6	128.0	-33.0	0.00	0.00	
2,200.0	8.28	72.00	2,189.8	46.0	141.7	-36.5	0.00	0.00	
2,300.0	8.28	72.00	2,288.7	50.5	155.4	-40.0	0.00	0.00	
2,400.0	8.28	72.00	2,387.7	54.9	169.1	-43.5	0.00	0.00	
2,500.0	8.28	72.00	2,486.7	59.4	182.8	-47.1	0.00	0.00	
2,600.0	8.28	72.00	2,585.6	63.8	196.5	-50.6	0.00	0.00	
2,700.0	8.28	72.00	2,684.6	68.3	210.2	-54.1	0.00	0.00	
2,800.0	8.28	72.00	2,783.5	72.7	223.9	-57.6	0.00	0.00	
2,900.0	8.28	72.00	2,882.5	77.2	237.6	-61.2	0.00	0.00	
3,000.0	8.28	72.00	2,981.4	81.6	251.3	-64.7	0.00	0.00	
3,100.0	8.28	72.00	3,080.4	86.1	265.0	-68.2	0.00	0.00	
3,200.0	8.28	72.00	3,179.4	90.5	278.7	-71.7	0.00	0.00	
3,300.0	8.28	72.00	3,278.3	95.0	292.4	-75.3	0.00	0.00	
3,400.0	8.28	72.00	3,377.3	99.4	306.1	-78.8	0.00	0.00	
3,500.0	8.28	72.00	3,476.2	103.9	319.8	-82.3	0.00	0.00	
3,600.0	8.28	72.00	3,575.2	108.3	333.5	-85.9	0.00	0.00	
3,700.0	8.28	72.00	3,674.1	112.8	347.2	-89.4	0.00	0.00	
3,800.0	8.28	72.00	3,773.1	117.2	360.9	-92.9	0.00	0.00	
3,900.0	8.28	72.00	3,872.1	121.7	374.6	-96.4	0.00	0.00	
4,000.0	8.28	72.00	3,971.0	126.1	388.3	-100.0	0.00	0.00	
4,100.0	8.28	72.00	4,070.0	130.6	402.0	-103.5	0.00	0.00	
4,200.0	8.28	72.00	4,168.9	135.0	415.7	-107.0	0.00	0.00	
4,300.0	8.28	72.00	4,267.9	139.5	429.4	-110.5	0.00	0.00	
4,400.0	8.28	72.00	4,366.8	143.9	443.1	-114.1	0.00	0.00	
4,500.0	8.28	72.00	4,465.8	148.4	456.8	-117.6	0.00	0.00	
4,600.0	8.28	72.00	4,564.8	152.8	470.5	-121.1	0.00	0.00	
4,700.0	8.28	72.00	4,663.7	157.3	484.2	-124.6	0.00	0.00	
4,800.0	8.28	72.00	4,762.7	161.7	497.9	-128.2	0.00	0.00	
4,900.0	8.28	72.00	4,861.6	166.2	511.6	-131.7	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well LE GERKIN 7H
Company:	Red Hawk Petroleum	TVD Reference:	KB=20' @ 4926.9usft
Project:	Weld County, Colorado	MD Reference:	KB=20' @ 4926.9usft
Site:	S13-T2N-R64W (LE GERKIN PADS)	North Reference:	True
Well:	LE GERKIN 7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
5,000.0	8.28	72.00	4,960.6	170.6	525.3	-135.2	0.00	0.00	
5,100.0	8.28	72.00	5,059.5	175.1	539.0	-138.7	0.00	0.00	
5,200.0	8.28	72.00	5,158.5	179.5	552.7	-142.3	0.00	0.00	
5,300.0	8.28	72.00	5,257.5	184.0	566.4	-145.8	0.00	0.00	
5,400.0	8.28	72.00	5,356.4	188.4	580.1	-149.3	0.00	0.00	
5,437.7	8.28	72.00	5,393.7	190.1	585.3	-150.7	0.00	0.00	Start 2.5° Drop
5,500.0	6.72	72.00	5,455.5	192.6	593.0	-152.6	2.50	-2.50	
5,600.0	4.22	72.00	5,555.0	195.6	602.1	-155.0	2.50	-2.50	
5,700.0	1.72	72.00	5,654.9	197.2	607.0	-156.2	2.50	-2.50	
5,768.9	0.00	72.00	5,723.8	197.5	608.0	-156.5	2.50	-2.50	EOD @ 0°
5,800.0	0.00	0.00	5,754.9	197.5	608.0	-156.5	0.00	0.00	
5,900.0	0.00	0.00	5,854.9	197.5	608.0	-156.5	0.00	0.00	
6,000.0	0.00	0.00	5,954.9	197.5	608.0	-156.5	0.00	0.00	
6,068.9	0.00	0.00	6,023.8	197.5	608.0	-156.5	0.00	0.00	Start 8° Build
6,100.0	2.49	179.73	6,054.9	196.8	608.0	-155.8	7.99	7.99	
6,150.0	6.49	179.73	6,104.7	192.9	608.0	-151.9	8.00	8.00	
6,200.0	10.49	179.73	6,154.1	185.5	608.1	-144.6	8.00	8.00	
6,250.0	14.49	179.73	6,203.0	174.7	608.1	-133.8	8.00	8.00	
6,300.0	18.49	179.73	6,250.9	160.5	608.2	-119.6	8.00	8.00	
6,350.0	22.49	179.73	6,297.7	143.1	608.3	-102.2	8.00	8.00	
6,400.0	26.49	179.73	6,343.2	122.3	608.3	-81.5	8.00	8.00	
6,450.0	30.49	179.73	6,387.1	98.5	608.5	-57.7	8.00	8.00	
6,500.0	34.49	179.73	6,429.3	71.6	608.6	-30.9	8.00	8.00	
6,550.0	38.49	179.73	6,469.5	41.9	608.7	-1.2	8.00	8.00	
6,600.0	42.49	179.73	6,507.5	9.5	608.9	31.2	8.00	8.00	
6,650.0	46.49	179.73	6,543.2	-25.6	609.0	66.1	8.00	8.00	
6,700.0	50.49	179.73	6,576.3	-63.0	609.2	103.5	8.00	8.00	
6,750.0	54.49	179.73	6,606.8	-102.7	609.4	143.1	8.00	8.00	
6,800.0	58.49	179.73	6,634.4	-144.3	609.6	184.7	8.00	8.00	
6,850.0	62.49	179.73	6,659.0	-187.8	609.8	228.1	8.00	8.00	
6,900.0	66.49	179.73	6,680.5	-232.9	610.0	273.1	8.00	8.00	
6,950.0	70.49	179.73	6,698.9	-279.5	610.2	319.5	8.00	8.00	
7,000.0	74.49	179.73	6,713.9	-327.1	610.4	367.1	8.00	8.00	
7,050.0	78.49	179.73	6,725.6	-375.7	610.7	415.6	8.00	8.00	
7,100.0	82.49	179.73	6,733.8	-425.0	610.9	464.8	8.00	8.00	
7,150.0	86.49	179.73	6,738.7	-474.8	611.1	514.5	8.00	8.00	
7,193.9	90.00	179.73	6,740.0	-518.7	611.3	558.3	8.00	8.00	LP - 766' FNL, 2176' FWL - LP @ 6,740' TVD, 9
7,200.0	90.00	179.73	6,740.0	-524.8	611.4	564.4	0.03	0.03	
7,300.0	90.00	179.73	6,740.0	-624.8	611.8	664.2	0.00	0.00	
7,400.0	90.00	179.73	6,740.0	-724.8	612.3	764.0	0.00	0.00	
7,500.0	90.00	179.73	6,740.0	-824.8	612.8	863.8	0.00	0.00	
7,600.0	90.00	179.73	6,740.0	-924.8	613.2	963.6	0.00	0.00	
7,700.0	90.00	179.73	6,740.0	-1,024.8	613.7	1,063.4	0.00	0.00	
7,800.0	90.00	179.73	6,740.0	-1,124.8	614.1	1,163.2	0.00	0.00	
7,900.0	90.00	179.73	6,740.0	-1,224.8	614.6	1,263.0	0.00	0.00	
8,000.0	90.00	179.73	6,740.0	-1,324.8	615.1	1,362.8	0.00	0.00	
8,100.0	90.00	179.73	6,740.0	-1,424.8	615.5	1,462.6	0.00	0.00	
8,200.0	90.00	179.73	6,740.0	-1,524.8	616.0	1,562.4	0.00	0.00	
8,300.0	90.00	179.73	6,740.0	-1,624.8	616.5	1,662.3	0.00	0.00	
8,400.0	90.00	179.73	6,740.0	-1,724.8	616.9	1,762.1	0.00	0.00	
8,500.0	90.00	179.73	6,740.0	-1,824.8	617.4	1,861.9	0.00	0.00	
8,600.0	90.00	179.73	6,740.0	-1,924.7	617.9	1,961.7	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well LE GERKIN 7H
Company:	Red Hawk Petroleum	TVD Reference:	KB=20' @ 4926.9usft
Project:	Weld County, Colorado	MD Reference:	KB=20' @ 4926.9usft
Site:	S13-T2N-R64W (LE GERKIN PADS)	North Reference:	True
Well:	LE GERKIN 7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
8,700.0	90.00	179.73	6,740.0	-2,024.7	618.3	2,061.5	0.00	0.00	
8,800.0	90.00	179.73	6,740.0	-2,124.7	618.8	2,161.3	0.00	0.00	
8,900.0	90.00	179.73	6,740.0	-2,224.7	619.3	2,261.1	0.00	0.00	
9,000.0	90.00	179.73	6,740.0	-2,324.7	619.7	2,360.9	0.00	0.00	
9,100.0	90.00	179.73	6,740.0	-2,424.7	620.2	2,460.7	0.00	0.00	
9,200.0	90.00	179.73	6,740.0	-2,524.7	620.7	2,560.5	0.00	0.00	
9,300.0	90.00	179.73	6,740.0	-2,624.7	621.1	2,660.3	0.00	0.00	
9,400.0	90.00	179.73	6,740.0	-2,724.7	621.6	2,760.1	0.00	0.00	
9,500.0	90.00	179.73	6,740.0	-2,824.7	622.1	2,859.9	0.00	0.00	
9,600.0	90.00	179.73	6,740.0	-2,924.7	622.5	2,959.7	0.00	0.00	
9,700.0	90.00	179.73	6,740.0	-3,024.7	623.0	3,059.6	0.00	0.00	
9,800.0	90.00	179.73	6,740.0	-3,124.7	623.4	3,159.4	0.00	0.00	
9,900.0	90.00	179.73	6,740.0	-3,224.7	623.9	3,259.2	0.00	0.00	
10,000.0	90.00	179.73	6,740.0	-3,324.7	624.4	3,359.0	0.00	0.00	
10,100.0	90.00	179.73	6,740.0	-3,424.7	624.8	3,458.8	0.00	0.00	
10,200.0	90.00	179.73	6,740.0	-3,524.7	625.3	3,558.6	0.00	0.00	
10,300.0	90.00	179.73	6,740.0	-3,624.7	625.8	3,658.4	0.00	0.00	
10,400.0	90.00	179.73	6,740.0	-3,724.7	626.2	3,758.2	0.00	0.00	
10,500.0	90.00	179.73	6,740.0	-3,824.7	626.7	3,858.0	0.00	0.00	
10,600.0	90.00	179.73	6,740.0	-3,924.7	627.2	3,957.8	0.00	0.00	
10,700.0	90.00	179.73	6,740.0	-4,024.7	627.6	4,057.6	0.00	0.00	
10,800.0	90.00	179.73	6,740.0	-4,124.7	628.1	4,157.4	0.00	0.00	
10,900.0	90.00	179.73	6,740.0	-4,224.7	628.6	4,257.2	0.00	0.00	
11,000.0	90.00	179.73	6,740.0	-4,324.7	629.0	4,357.1	0.00	0.00	
11,100.0	90.00	179.73	6,740.0	-4,424.7	629.5	4,456.9	0.00	0.00	
11,200.0	90.00	179.73	6,740.0	-4,524.7	630.0	4,556.7	0.00	0.00	
11,300.0	90.00	179.73	6,740.0	-4,624.7	630.4	4,656.5	0.00	0.00	
11,400.0	90.00	179.73	6,740.0	-4,724.7	630.9	4,756.3	0.00	0.00	
11,500.0	90.00	179.73	6,740.0	-4,824.7	631.3	4,856.1	0.00	0.00	
11,600.0	90.00	179.73	6,740.0	-4,924.7	631.8	4,955.9	0.00	0.00	
11,700.0	90.00	179.73	6,740.0	-5,024.7	632.3	5,055.7	0.00	0.00	
11,800.0	90.00	179.73	6,740.0	-5,124.7	632.7	5,155.5	0.00	0.00	
11,900.0	90.00	179.73	6,740.0	-5,224.7	633.2	5,255.3	0.00	0.00	
12,000.0	90.00	179.73	6,740.0	-5,324.7	633.7	5,355.1	0.00	0.00	
12,100.0	90.00	179.73	6,740.0	-5,424.7	634.1	5,454.9	0.00	0.00	
12,200.0	90.00	179.73	6,740.0	-5,524.7	634.6	5,554.7	0.00	0.00	
12,300.0	90.00	179.73	6,740.0	-5,624.7	635.1	5,654.5	0.00	0.00	
12,400.0	90.00	179.73	6,740.0	-5,724.7	635.5	5,754.4	0.00	0.00	
12,500.0	90.00	179.73	6,740.0	-5,824.7	636.0	5,854.2	0.00	0.00	
12,600.0	90.00	179.73	6,740.0	-5,924.7	636.5	5,954.0	0.00	0.00	
12,700.0	90.00	179.73	6,740.0	-6,024.7	636.9	6,053.8	0.00	0.00	
12,800.0	90.00	179.73	6,740.0	-6,124.7	637.4	6,153.6	0.00	0.00	
12,900.0	90.00	179.73	6,740.0	-6,224.7	637.9	6,253.4	0.00	0.00	
13,000.0	90.00	179.73	6,740.0	-6,324.7	638.3	6,353.2	0.00	0.00	
13,100.0	90.00	179.73	6,740.0	-6,424.7	638.8	6,453.0	0.00	0.00	
13,200.0	90.00	179.73	6,740.0	-6,524.7	639.3	6,552.8	0.00	0.00	
13,300.0	90.00	179.73	6,740.0	-6,624.7	639.7	6,652.6	0.00	0.00	
13,400.0	90.00	179.73	6,740.0	-6,724.7	640.2	6,752.4	0.00	0.00	
13,500.0	90.00	179.73	6,740.0	-6,824.7	640.6	6,852.2	0.00	0.00	
13,600.0	90.00	179.73	6,740.0	-6,924.7	641.1	6,952.0	0.00	0.00	
13,700.0	90.00	179.73	6,740.0	-7,024.7	641.6	7,051.8	0.00	0.00	
13,800.0	90.00	179.73	6,740.0	-7,124.7	642.0	7,151.7	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well LE GERKIN 7H
Company:	Red Hawk Petroleum	TVD Reference:	KB=20' @ 4926.9usft
Project:	Weld County, Colorado	MD Reference:	KB=20' @ 4926.9usft
Site:	S13-T2N-R64W (LE GERKIN PADS)	North Reference:	True
Well:	LE GERKIN 7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
13,900.0	90.00	179.73	6,740.0	-7,224.7	642.5	7,251.5	0.00	0.00	
14,000.0	90.00	179.73	6,740.0	-7,324.7	643.0	7,351.3	0.00	0.00	
14,100.0	90.00	179.73	6,740.0	-7,424.7	643.4	7,451.1	0.00	0.00	
14,200.0	90.00	179.73	6,740.0	-7,524.7	643.9	7,550.9	0.00	0.00	
14,300.0	90.00	179.73	6,740.0	-7,624.7	644.4	7,650.7	0.00	0.00	
14,400.0	90.00	179.73	6,740.0	-7,724.7	644.8	7,750.5	0.00	0.00	
14,500.0	90.00	179.73	6,740.0	-7,824.7	645.3	7,850.3	0.00	0.00	
14,600.0	90.00	179.73	6,740.0	-7,924.7	645.8	7,950.1	0.00	0.00	
14,700.0	90.00	179.73	6,740.0	-8,024.7	646.2	8,049.9	0.00	0.00	
14,800.0	90.00	179.73	6,740.0	-8,124.7	646.7	8,149.7	0.00	0.00	
14,900.0	90.00	179.73	6,740.0	-8,224.7	647.2	8,249.5	0.00	0.00	
15,000.0	90.00	179.73	6,740.0	-8,324.7	647.6	8,349.3	0.00	0.00	
15,100.0	90.00	179.73	6,740.0	-8,424.7	648.1	8,449.1	0.00	0.00	
15,200.0	90.00	179.73	6,740.0	-8,524.7	648.6	8,549.0	0.00	0.00	
15,300.0	90.00	179.73	6,740.0	-8,624.7	649.0	8,648.8	0.00	0.00	
15,400.0	90.00	179.73	6,740.0	-8,724.7	649.5	8,748.6	0.00	0.00	
15,500.0	90.00	179.73	6,740.0	-8,824.7	649.9	8,848.4	0.00	0.00	
15,600.0	90.00	179.73	6,740.0	-8,924.7	650.4	8,948.2	0.00	0.00	
15,700.0	90.00	179.73	6,740.0	-9,024.7	650.9	9,048.0	0.00	0.00	
15,800.0	90.00	179.73	6,740.0	-9,124.7	651.3	9,147.8	0.00	0.00	
15,900.0	90.00	179.73	6,740.0	-9,224.7	651.8	9,247.6	0.00	0.00	
16,000.0	90.00	179.73	6,740.0	-9,324.7	652.3	9,347.4	0.00	0.00	
16,100.0	90.00	179.73	6,740.0	-9,424.7	652.7	9,447.2	0.00	0.00	
16,200.0	90.00	179.73	6,740.0	-9,524.7	653.2	9,547.0	0.00	0.00	
16,300.0	90.00	179.73	6,740.0	-9,624.7	653.7	9,646.8	0.00	0.00	
16,400.0	90.00	179.73	6,740.0	-9,724.7	654.1	9,746.6	0.00	0.00	
16,463.5	90.00	179.73	6,740.0	-9,788.2	654.4	9,810.0	0.00	0.00	TD @ 16,463.5' MD - PBHL - 500' FSL, 2176' F

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
LE GERKIN 7H PBHL (2) - hit/miss target - Shape	0.00	0.00	6,740.0	-9,788.2	620.9	1,287,407.38	3,279,254.59	40.118010	-104.501460
- plan misses target center by 33.6usft at 16463.4usft MD (6740.0 TVD, -9788.0 N, 654.4 E)									
- Point									
LE GERKIN 7H VP (2) - hit/miss target - Shape	0.00	0.00	5,723.8	196.6	570.8	1,297,390.92	3,279,092.35	40.145420	-104.501638
- plan misses target center by 37.2usft at 5768.4usft MD (5723.3 TVD, 197.5 N, 608.0 E)									
- Point									
LE GERKIN 7H VP (3) - hit/miss target - Shape	0.00	0.00	5,723.8	197.5	608.0	1,297,392.28	3,279,129.53	40.145422	-104.501505
- plan hits target center									
- Point									
LE GERKIN 7H PBHL (3) - hit/miss target - Shape	0.00	0.00	6,740.0	-9,788.2	654.4	1,287,407.76	3,279,288.15	40.118010	-104.501340
- plan hits target center									
- Point									

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well LE GERKIN 7H
Company:	Red Hawk Petroleum	TVD Reference:	KB=20' @ 4926.9usft
Project:	Weld County, Colorado	MD Reference:	KB=20' @ 4926.9usft
Site:	S13-T2N-R64W (LE GERKIN PADS)	North Reference:	True
Well:	LE GERKIN 7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.5	0.5	0.0	0.0	SH - 240' FNL, 1567' FWL
1,000.0	1,000.0	0.0	0.0	KOP @ 1,000'
1,331.3	1,330.1	7.4	22.7	EOB @ 8.28° INC
5,437.7	5,393.7	190.1	585.3	Start 2.5° Drop
5,768.9	5,723.8	197.5	608.0	EOD @ 0°
6,068.9	6,023.8	197.5	608.0	Start 8° Build
7,193.9	6,740.0	-518.7	611.3	LP - 766' FNL, 2176' FWL
7,193.9	6,740.0	-518.7	611.3	LP @ 6,740' TVD, 90° INC
16,463.5	6,740.0	-9,788.2	654.4	TD @ 16,463.5' MD
16,463.5	6,740.0	-9,788.2	654.4	PBHL - 500' FSL, 2176' FWL

Red Hawk Petroleum

Weld County, Colorado

S13-T2N-R64W (LE GERKIN PADS)

LE GERKIN 7H

HZ

Plan #3

Anticollision Report

30 October, 2014

Anticollision Report

Company:	Red Hawk Petroleum	Local Co-ordinate Reference:	Well LE GERKIN 7H
Project:	Weld County, Colorado	TVD Reference:	KB=20' @ 4926.9usft
Reference Site:	S13-T2N-R64W (LE GERKIN PADS)	MD Reference:	KB=20' @ 4926.9usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	LE GERKIN 7H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Reference	Plan #3		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 200.0usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	10/30/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	16,463.5	Plan #3 (HZ)	Geolink MWD	Geolink MWD

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
S13-T2N-R64W (LE GERKIN PADS)						
EXISTING - ARNOLD #1 - EXISTING - EXISTING - NO S						Out of range
EXISTING - DARYL L ARNOLD #1 - EXISTING - EXISTI						Out of range
EXISTING - MCCLINTOCK ET AL #1 - EXISTING - EXIS						Out of range
LE GERKIN 10H - HZ - Plan #1						Out of range
LE GERKIN 11H - HZ - Plan #1						Out of range
LE GERKIN 12H - HZ - Plan #1						Out of range
LE GERKIN 13H - HZ - Plan #1						Out of range
LE GERKIN 14H - HZ - Plan #1						Out of range
LE GERKIN 15H - HZ - Plan #1						Out of range
LE GERKIN 16H - HZ - Plan #1						Out of range
LE GERKIN 1H - HZ - Plan #3	1,000.0	1,000.0	178.9	175.5	52.302	CC, ES
LE GERKIN 1H - HZ - Plan #3	1,200.0	1,184.5	195.1	191.1	47.783	SF
LE GERKIN 2H - HZ - Plan #3	1,000.0	1,000.0	148.2	144.7	43.313	CC, ES
LE GERKIN 2H - HZ - Plan #3	1,200.0	1,186.9	164.4	160.3	40.210	SF
LE GERKIN 3H - HZ - Plan #3	1,000.0	1,000.0	120.2	116.8	35.140	CC, ES
LE GERKIN 3H - HZ - Plan #3	1,100.0	1,095.2	124.2	120.5	33.044	SF
LE GERKIN 4H - HZ - Plan #3	1,000.0	1,000.0	89.5	86.0	26.151	CC, ES
LE GERKIN 4H - HZ - Plan #3	1,100.0	1,096.9	93.2	89.4	24.756	SF
LE GERKIN 5H - HZ - Plan #3	1,000.0	1,000.0	58.7	55.3	17.162	CC, ES
LE GERKIN 5H - HZ - Plan #3	1,100.0	1,099.5	61.1	57.4	16.223	SF
LE GERKIN 6H - HZ - Plan #3	900.0	900.0	28.0	24.9	9.101	CC
LE GERKIN 6H - HZ - Plan #3	1,100.0	1,101.1	28.1	24.4	7.463	ES
LE GERKIN 6H - HZ - Plan #3	1,200.0	1,202.0	28.8	24.6	6.978	SF
LE GERKIN 8H - HZ - Plan #3	1,000.0	1,000.0	30.8	27.3	8.989	CC
LE GERKIN 8H - HZ - Plan #3	1,300.0	1,296.1	31.0	26.6	6.968	ES
LE GERKIN 8H - HZ - Plan #3	1,400.0	1,394.8	32.3	27.4	6.699	SF
LE GERKIN 9H - HZ - Plan #1						Out of range

Anticollision Report

Company:	Red Hawk Petroleum	Local Co-ordinate Reference:	Well LE GERKIN 7H
Project:	Weld County, Colorado	TVD Reference:	KB=20' @ 4926.9usft
Reference Site:	S13-T2N-R64W (LE GERKIN PADS)	MD Reference:	KB=20' @ 4926.9usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	LE GERKIN 7H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S13-T2N-R64W (LE GERKIN PADS) - LE GERKIN 1H - HZ - Plan #3													Offset Site Error: 0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-178.9	178.9				
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-178.9	178.9	178.6	0.28	640.700	
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-178.9	178.9	178.3	0.63	284.756	
300.0	300.0	300.0	300.0	0.5	0.5	-90.00	0.0	-178.9	178.9	177.9	0.98	183.057	
400.0	400.0	400.0	400.0	0.7	0.7	-90.00	0.0	-178.9	178.9	177.6	1.33	134.884	
500.0	500.0	500.0	500.0	0.8	0.8	-90.00	0.0	-178.9	178.9	177.2	1.68	106.783	
600.0	600.0	600.0	600.0	1.0	1.0	-90.00	0.0	-178.9	178.9	176.9	2.02	88.372	
700.0	700.0	700.0	700.0	1.2	1.2	-90.00	0.0	-178.9	178.9	176.5	2.37	75.377	
800.0	800.0	800.0	800.0	1.4	1.4	-90.00	0.0	-178.9	178.9	176.2	2.72	65.713	
900.0	900.0	900.0	900.0	1.5	1.5	-90.00	0.0	-178.9	178.9	175.8	3.07	58.246	
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	-90.00	0.0	-178.9	178.9	175.5	3.42	52.302 CC, ES	
1,100.0	1,100.0	1,092.7	1,092.7	1.9	1.9	-162.07	0.3	-180.8	183.0	179.2	3.76	48.729	
1,200.0	1,199.7	1,184.5	1,184.3	2.1	2.0	-162.25	1.2	-186.2	195.1	191.1	4.08	47.783 SF	

Anticollision Report

Company:	Red Hawk Petroleum	Local Co-ordinate Reference:	Well LE GERKIN 7H
Project:	Weld County, Colorado	TVD Reference:	KB=20' @ 4926.9usft
Reference Site:	S13-T2N-R64W (LE GERKIN PADS)	MD Reference:	KB=20' @ 4926.9usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	LE GERKIN 7H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S13-T2N-R64W (LE GERKIN PADS) - LE GERKIN 2H - HZ - Plan #3													Offset Site Error: 0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-148.2	148.2				
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-148.2	148.2	147.9	0.28	530.580	
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-148.2	148.2	147.5	0.63	235.813	
300.0	300.0	300.0	300.0	0.5	0.5	-90.00	0.0	-148.2	148.2	147.2	0.98	151.594	
400.0	400.0	400.0	400.0	0.7	0.7	-90.00	0.0	-148.2	148.2	146.8	1.33	111.701	
500.0	500.0	500.0	500.0	0.8	0.8	-90.00	0.0	-148.2	148.2	146.5	1.68	88.430	
600.0	600.0	600.0	600.0	1.0	1.0	-90.00	0.0	-148.2	148.2	146.1	2.02	73.183	
700.0	700.0	700.0	700.0	1.2	1.2	-90.00	0.0	-148.2	148.2	145.8	2.37	62.421	
800.0	800.0	800.0	800.0	1.4	1.4	-90.00	0.0	-148.2	148.2	145.4	2.72	54.418	
900.0	900.0	900.0	900.0	1.5	1.5	-90.00	0.0	-148.2	148.2	145.1	3.07	48.235	
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	-90.00	0.0	-148.2	148.2	144.7	3.42	43.313 CC, ES	
1,100.0	1,100.0	1,093.9	1,093.9	1.9	1.9	-162.05	0.4	-150.0	152.2	148.5	3.76	40.517	
1,200.0	1,199.7	1,186.9	1,186.7	2.1	2.0	-162.16	1.7	-155.6	164.4	160.3	4.09	40.210 SF	
1,300.0	1,299.1	1,278.1	1,277.4	2.3	2.2	-162.29	3.8	-164.6	184.5	180.1	4.41	41.809	

Anticollision Report

Company:	Red Hawk Petroleum	Local Co-ordinate Reference:	Well LE GERKIN 7H
Project:	Weld County, Colorado	TVD Reference:	KB=20' @ 4926.9usft
Reference Site:	S13-T2N-R64W (LE GERKIN PADS)	MD Reference:	KB=20' @ 4926.9usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	LE GERKIN 7H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S13-T2N-R64W (LE GERKIN PADS) - LE GERKIN 3H - HZ - Plan #3												Offset Site Error: 0.0 usft		
Survey Program: 0-Geolink MWD												Offset Well Error: 0.0 usft		
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-120.2	120.2					
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-120.2	120.2	119.9	0.28	430.470		
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-120.2	120.2	119.6	0.63	191.320		
300.0	300.0	300.0	300.0	0.5	0.5	-90.00	0.0	-120.2	120.2	119.2	0.98	122.992		
400.0	400.0	400.0	400.0	0.7	0.7	-90.00	0.0	-120.2	120.2	118.9	1.33	90.625		
500.0	500.0	500.0	500.0	0.8	0.8	-90.00	0.0	-120.2	120.2	118.5	1.68	71.745		
600.0	600.0	600.0	600.0	1.0	1.0	-90.00	0.0	-120.2	120.2	118.2	2.02	59.375		
700.0	700.0	700.0	700.0	1.2	1.2	-90.00	0.0	-120.2	120.2	117.8	2.37	50.644		
800.0	800.0	800.0	800.0	1.4	1.4	-90.00	0.0	-120.2	120.2	117.5	2.72	44.151		
900.0	900.0	900.0	900.0	1.5	1.5	-90.00	0.0	-120.2	120.2	117.1	3.07	39.134		
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	-90.00	0.0	-120.2	120.2	116.8	3.42	35.140 CC, ES		
1,100.0	1,100.0	1,095.2	1,095.1	1.9	1.9	-161.95	0.7	-122.1	124.2	120.5	3.76	33.044 SF		
1,200.0	1,199.7	1,189.4	1,189.2	2.1	2.1	-161.82	2.7	-127.6	136.3	132.2	4.09	33.284		
1,300.0	1,299.1	1,282.3	1,281.6	2.3	2.2	-161.62	6.0	-136.5	156.1	151.7	4.42	35.298		
1,400.0	1,398.1	1,379.3	1,377.9	2.5	2.4	-161.68	10.0	-147.4	180.7	175.9	4.77	37.872		

Anticollision Report

Company:	Red Hawk Petroleum	Local Co-ordinate Reference:	Well LE GERKIN 7H
Project:	Weld County, Colorado	TVD Reference:	KB=20' @ 4926.9usft
Reference Site:	S13-T2N-R64W (LE GERKIN PADS)	MD Reference:	KB=20' @ 4926.9usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	LE GERKIN 7H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S13-T2N-R64W (LE GERKIN PADS) - LE GERKIN 4H - HZ - Plan #3													Offset Site Error: 0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-89.5	89.5				
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-89.5	89.5	89.2	0.28	320.350	
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-89.5	89.5	88.8	0.63	142.378	
300.0	300.0	300.0	300.0	0.5	0.5	-90.00	0.0	-89.5	89.5	88.5	0.98	91.529	
400.0	400.0	400.0	400.0	0.7	0.7	-90.00	0.0	-89.5	89.5	88.1	1.33	67.442	
500.0	500.0	500.0	500.0	0.8	0.8	-90.00	0.0	-89.5	89.5	87.8	1.68	53.392	
600.0	600.0	600.0	600.0	1.0	1.0	-90.00	0.0	-89.5	89.5	87.4	2.02	44.186	
700.0	700.0	700.0	700.0	1.2	1.2	-90.00	0.0	-89.5	89.5	87.1	2.37	37.688	
800.0	800.0	800.0	800.0	1.4	1.4	-90.00	0.0	-89.5	89.5	86.7	2.72	32.856	
900.0	900.0	900.0	900.0	1.5	1.5	-90.00	0.0	-89.5	89.5	86.4	3.07	29.123	
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	-90.00	0.0	-89.5	89.5	86.0	3.42	26.151 CC, ES	
1,100.0	1,100.0	1,096.9	1,096.9	1.9	1.9	-161.57	1.3	-91.0	93.2	89.4	3.76	24.756 SF	
1,200.0	1,199.7	1,194.7	1,194.5	2.1	2.1	-160.60	5.0	-95.4	103.9	99.8	4.11	25.308	
1,300.0	1,299.1	1,293.5	1,293.1	2.3	2.2	-160.30	9.0	-100.3	119.2	114.7	4.45	26.792	
1,400.0	1,398.1	1,391.8	1,391.2	2.5	2.4	-160.59	13.0	-105.2	137.5	132.7	4.80	28.653	
1,500.0	1,497.1	1,490.1	1,489.3	2.8	2.6	-160.88	17.1	-110.0	156.1	150.9	5.16	30.255	
1,600.0	1,596.0	1,588.4	1,587.3	3.0	2.8	-161.11	21.1	-114.9	174.7	169.1	5.52	31.638	
1,700.0	1,695.0	1,686.6	1,685.4	3.3	3.0	-161.29	25.1	-119.7	193.2	187.3	5.88	32.842	

Anticollision Report

Company:	Red Hawk Petroleum	Local Co-ordinate Reference:	Well LE GERKIN 7H
Project:	Weld County, Colorado	TVD Reference:	KB=20' @ 4926.9usft
Reference Site:	S13-T2N-R64W (LE GERKIN PADS)	MD Reference:	KB=20' @ 4926.9usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	LE GERKIN 7H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S13-T2N-R64W (LE GERKIN PADS) - LE GERKIN 5H - HZ - Plan #3													Offset Site Error:	0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance				Total		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-58.7	58.7					
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-58.7	58.7	58.4	0.28	210.230		
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-58.7	58.7	58.1	0.63	93.435		
300.0	300.0	300.0	300.0	0.5	0.5	-90.00	0.0	-58.7	58.7	57.7	0.98	60.066		
400.0	400.0	400.0	400.0	0.7	0.7	-90.00	0.0	-58.7	58.7	57.4	1.33	44.259		
500.0	500.0	500.0	500.0	0.8	0.8	-90.00	0.0	-58.7	58.7	57.0	1.68	35.038		
600.0	600.0	600.0	600.0	1.0	1.0	-90.00	0.0	-58.7	58.7	56.7	2.02	28.997		
700.0	700.0	700.0	700.0	1.2	1.2	-90.00	0.0	-58.7	58.7	56.3	2.37	24.733		
800.0	800.0	800.0	800.0	1.4	1.4	-90.00	0.0	-58.7	58.7	56.0	2.72	21.562		
900.0	900.0	900.0	900.0	1.5	1.5	-90.00	0.0	-58.7	58.7	55.6	3.07	19.112		
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	-90.00	0.0	-58.7	58.7	55.3	3.42	17.162 CC, ES		
1,100.0	1,100.0	1,099.5	1,099.5	1.9	1.9	-160.61	2.1	-59.0	61.1	57.4	3.77	16.223 SF		
1,200.0	1,199.7	1,199.3	1,199.2	2.1	2.1	-158.93	6.2	-59.7	68.1	64.0	4.12	16.541		
1,300.0	1,299.1	1,298.7	1,298.5	2.3	2.2	-158.71	10.3	-60.3	79.1	74.6	4.46	17.729		
1,400.0	1,398.1	1,397.7	1,397.4	2.5	2.4	-159.33	14.4	-61.0	93.2	88.4	4.82	19.349		
1,500.0	1,497.1	1,496.6	1,496.2	2.8	2.6	-159.86	18.5	-61.6	107.5	102.3	5.18	20.758		
1,600.0	1,596.0	1,595.6	1,595.1	3.0	2.8	-160.27	22.6	-62.3	121.8	116.3	5.54	21.977		
1,700.0	1,695.0	1,694.6	1,694.0	3.3	3.0	-160.59	26.7	-62.9	136.2	130.3	5.91	23.041		
1,800.0	1,794.0	1,793.5	1,792.9	3.6	3.1	-160.85	30.7	-63.5	150.5	144.2	6.28	23.976		
1,900.0	1,892.9	1,892.5	1,891.8	3.8	3.3	-161.06	34.8	-64.2	164.8	158.2	6.65	24.805		
2,000.0	1,991.9	1,991.4	1,990.6	4.1	3.5	-161.24	38.9	-64.8	179.2	172.2	7.01	25.545		
2,100.0	2,090.8	2,090.4	2,089.5	4.4	3.7	-161.39	43.0	-65.5	193.5	186.1	7.38	26.208		

Anticollision Report

Company:	Red Hawk Petroleum	Local Co-ordinate Reference:	Well LE GERKIN 7H
Project:	Weld County, Colorado	TVD Reference:	KB=20' @ 4926.9usft
Reference Site:	S13-T2N-R64W (LE GERKIN PADS)	MD Reference:	KB=20' @ 4926.9usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	LE GERKIN 7H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S13-T2N-R64W (LE GERKIN PADS) - LE GERKIN 6H - HZ - Plan #3													Offset Site Error:	0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-28.0	28.0					
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-28.0	28.0	27.7	100.109			
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-28.0	28.0	27.3	44.493			
300.0	300.0	300.0	300.0	0.5	0.5	-90.00	0.0	-28.0	28.0	27.0	28.603			
400.0	400.0	400.0	400.0	0.7	0.7	-90.00	0.0	-28.0	28.0	26.6	21.076			
500.0	500.0	500.0	500.0	0.8	0.8	-90.00	0.0	-28.0	28.0	26.3	16.685			
600.0	600.0	600.0	600.0	1.0	1.0	-90.00	0.0	-28.0	28.0	25.9	13.808			
700.0	700.0	700.0	700.0	1.2	1.2	-90.00	0.0	-28.0	28.0	25.6	11.778			
800.0	800.0	800.0	800.0	1.4	1.4	-90.00	0.0	-28.0	28.0	25.2	10.268			
900.0	900.0	900.0	900.0	1.5	1.5	-90.00	0.0	-28.0	28.0	24.9	9.101 CC			
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	-90.00	0.0	-28.0	28.0	24.5	8.172			
1,100.0	1,100.0	1,101.1	1,101.0	1.9	1.9	-161.07	1.1	-26.0	28.1	24.4	7.463 ES			
1,200.0	1,199.7	1,202.0	1,201.7	2.1	2.1	-158.37	4.5	-20.3	28.8	24.6	6.978 SF			
1,300.0	1,299.1	1,301.9	1,301.3	2.3	2.3	-157.05	8.8	-13.1	32.0	27.5	7.150			
1,400.0	1,398.1	1,401.7	1,400.8	2.5	2.5	-158.01	13.1	-5.9	38.3	33.4	7.920			
1,500.0	1,497.1	1,501.5	1,500.2	2.8	2.7	-158.81	17.4	1.3	44.8	39.6	8.613			
1,600.0	1,596.0	1,601.3	1,599.6	3.0	2.9	-159.41	21.7	8.4	51.3	45.7	9.212			
1,700.0	1,695.0	1,701.1	1,699.1	3.3	3.1	-159.88	25.9	15.6	57.8	51.9	9.736			
1,800.0	1,794.0	1,800.9	1,798.5	3.6	3.3	-160.24	30.2	22.8	64.3	58.0	10.197			
1,900.0	1,892.9	1,900.7	1,897.9	3.8	3.5	-160.55	34.5	30.0	70.8	64.1	10.606			
2,000.0	1,991.9	2,000.5	1,997.4	4.1	3.7	-160.80	38.8	37.2	77.3	70.3	10.971			
2,100.0	2,090.8	2,100.2	2,096.8	4.4	3.9	-161.01	43.1	44.4	83.9	76.4	11.299			
2,200.0	2,189.8	2,200.0	2,196.3	4.7	4.2	-161.19	47.3	51.6	90.4	82.6	11.595			
2,300.0	2,288.7	2,299.8	2,295.7	5.0	4.4	-161.35	51.6	58.8	96.9	88.7	11.863			
2,400.0	2,387.7	2,399.6	2,395.1	5.3	4.6	-161.48	55.9	66.0	103.4	94.9	12.108			
2,500.0	2,486.7	2,499.4	2,494.6	5.6	4.8	-161.60	60.2	73.2	110.0	101.0	12.332			
2,600.0	2,585.6	2,599.2	2,594.0	5.9	5.0	-161.71	64.5	80.4	116.5	107.2	12.537			
2,700.0	2,684.6	2,699.0	2,693.4	6.2	5.3	-161.81	68.7	87.6	123.0	113.3	12.726			
2,800.0	2,783.5	2,798.7	2,792.9	6.5	5.5	-161.89	73.0	94.7	129.5	119.5	12.901			
2,900.0	2,882.5	2,898.5	2,892.3	6.8	5.7	-161.97	77.3	101.9	136.1	125.6	13.063			
3,000.0	2,981.4	2,998.3	2,991.7	7.1	5.9	-162.04	81.6	109.1	142.6	131.8	13.214			
3,100.0	3,080.4	3,098.1	3,091.2	7.4	6.2	-162.11	85.8	116.3	149.1	137.9	13.354			
3,200.0	3,179.4	3,197.9	3,190.6	7.7	6.4	-162.17	90.1	123.5	155.6	144.1	13.485			
3,300.0	3,278.3	3,297.7	3,290.0	8.0	6.6	-162.22	94.4	130.7	162.2	150.2	13.608			
3,400.0	3,377.3	3,397.5	3,389.5	8.3	6.8	-162.27	98.7	137.9	168.7	156.4	13.723			
3,500.0	3,476.2	3,497.3	3,488.9	8.6	7.1	-162.32	103.0	145.1	175.2	162.5	13.831			
3,600.0	3,575.2	3,597.0	3,588.3	8.9	7.3	-162.36	107.2	152.3	181.7	168.7	13.933			
3,700.0	3,674.1	3,696.8	3,687.8	9.2	7.5	-162.40	111.5	159.5	188.3	174.8	14.029			
3,800.0	3,773.1	3,796.6	3,787.2	9.5	7.7	-162.44	115.8	166.7	194.8	181.0	14.120			

Anticollision Report

Company:	Red Hawk Petroleum	Local Co-ordinate Reference:	Well LE GERKIN 7H
Project:	Weld County, Colorado	TVD Reference:	KB=20' @ 4926.9usft
Reference Site:	S13-T2N-R64W (LE GERKIN PADS)	MD Reference:	KB=20' @ 4926.9usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	LE GERKIN 7H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S13-T2N-R64W (LE GERKIN PADS) - LE GERKIN 8H - HZ - Plan #3													Offset Site Error:	0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.0	0.0	0.0	0.0	0.0	0.0	90.01	0.0	30.8	30.8					
100.0	100.0	100.0	100.0	0.1	0.1	90.01	0.0	30.8	30.8	30.5	0.28	110.120		
200.0	200.0	200.0	200.0	0.3	0.3	90.01	0.0	30.8	30.8	30.1	0.63	48.942		
300.0	300.0	300.0	300.0	0.5	0.5	90.01	0.0	30.8	30.8	29.8	0.98	31.463		
400.0	400.0	400.0	400.0	0.7	0.7	90.01	0.0	30.8	30.8	29.4	1.33	23.183		
500.0	500.0	500.0	500.0	0.8	0.8	90.01	0.0	30.8	30.8	29.1	1.68	18.353		
600.0	600.0	600.0	600.0	1.0	1.0	90.01	0.0	30.8	30.8	28.7	2.02	15.189		
700.0	700.0	700.0	700.0	1.2	1.2	90.01	0.0	30.8	30.8	28.4	2.37	12.955		
800.0	800.0	800.0	800.0	1.4	1.4	90.01	0.0	30.8	30.8	28.0	2.72	11.294		
900.0	900.0	900.0	900.0	1.5	1.5	90.01	0.0	30.8	30.8	27.7	3.07	10.011		
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	90.01	0.0	30.8	30.8	27.3	3.42	8.989 CC		
1,100.0	1,100.0	1,098.7	1,098.7	1.9	1.9	18.37	0.5	32.8	30.8	27.0	3.77	8.173		
1,200.0	1,199.7	1,197.4	1,197.2	2.1	2.1	19.45	1.9	39.0	30.9	26.8	4.11	7.512		
1,300.0	1,299.1	1,296.1	1,295.3	2.3	2.3	21.24	4.2	49.4	31.0	26.6	4.45	6.968 ES		
1,400.0	1,398.1	1,394.8	1,392.9	2.5	2.5	22.98	7.5	63.8	32.3	27.4	4.82	6.699 SF		
1,500.0	1,497.1	1,493.4	1,489.6	2.8	2.8	22.56	11.7	82.3	37.4	32.2	5.19	7.208		
1,600.0	1,596.0	1,593.2	1,587.2	3.0	3.1	21.60	16.3	102.7	44.1	38.6	5.56	7.941		
1,700.0	1,695.0	1,693.0	1,684.8	3.3	3.5	20.88	20.9	123.0	50.9	44.9	5.93	8.582		
1,800.0	1,794.0	1,792.7	1,782.3	3.6	3.8	20.34	25.5	143.3	57.6	51.3	6.30	9.147		
1,900.0	1,892.9	1,892.5	1,879.9	3.8	4.2	19.91	30.2	163.7	64.4	57.7	6.68	9.649		
2,000.0	1,991.9	1,992.3	1,977.5	4.1	4.5	19.56	34.8	184.0	71.2	64.1	7.05	10.097		
2,100.0	2,090.8	2,092.1	2,075.0	4.4	4.9	19.27	39.4	204.3	77.9	70.5	7.42	10.500		
2,200.0	2,189.8	2,191.8	2,172.6	4.7	5.3	19.03	44.0	224.7	84.7	76.9	7.80	10.864		
2,300.0	2,288.7	2,291.6	2,270.2	5.0	5.7	18.83	48.6	245.0	91.5	83.3	8.17	11.194		
2,400.0	2,387.7	2,391.4	2,367.7	5.3	6.1	18.65	53.2	265.3	98.3	89.7	8.55	11.495		
2,500.0	2,486.7	2,491.1	2,465.3	5.6	6.5	18.49	57.8	285.7	105.0	96.1	8.92	11.771		
2,600.0	2,585.6	2,590.9	2,562.9	5.9	6.9	18.36	62.5	306.0	111.8	102.5	9.30	12.024		
2,700.0	2,684.6	2,690.7	2,660.4	6.2	7.3	18.24	67.1	326.3	118.6	108.9	9.68	12.258		
2,800.0	2,783.5	2,790.4	2,758.0	6.5	7.7	18.13	71.7	346.7	125.4	115.3	10.05	12.474		
2,900.0	2,882.5	2,890.2	2,855.6	6.8	8.1	18.03	76.3	367.0	132.2	121.7	10.43	12.674		
3,000.0	2,981.4	2,990.0	2,953.1	7.1	8.5	17.95	80.9	387.4	138.9	128.1	10.80	12.860		
3,100.0	3,080.4	3,089.7	3,050.7	7.4	8.9	17.87	85.5	407.7	145.7	134.5	11.18	13.033		
3,200.0	3,179.4	3,189.5	3,148.3	7.7	9.3	17.80	90.1	428.0	152.5	140.9	11.56	13.196		
3,300.0	3,278.3	3,289.3	3,245.8	8.0	9.7	17.73	94.8	448.4	159.3	147.3	11.93	13.347		
3,400.0	3,377.3	3,389.1	3,343.4	8.3	10.1	17.67	99.4	468.7	166.1	153.7	12.31	13.490		
3,500.0	3,476.2	3,488.8	3,441.0	8.6	10.5	17.62	104.0	489.0	172.8	160.2	12.69	13.624		
3,600.0	3,575.2	3,588.6	3,538.5	8.9	10.9	17.56	108.6	509.4	179.6	166.6	13.06	13.750		
3,700.0	3,674.1	3,688.4	3,636.1	9.2	11.3	17.52	113.2	529.7	186.4	173.0	13.44	13.869		
3,800.0	3,773.1	3,788.1	3,733.7	9.5	11.7	17.47	117.8	550.0	193.2	179.4	13.82	13.982		
3,900.0	3,872.1	3,887.9	3,831.2	9.8	12.1	17.43	122.4	570.4	200.0	185.8	14.19	14.088		

Anticollision Report

Company:	Red Hawk Petroleum	Local Co-ordinate Reference:	Well LE GERKIN 7H
Project:	Weld County, Colorado	TVD Reference:	KB=20' @ 4926.9usft
Reference Site:	S13-T2N-R64W (LE GERKIN PADS)	MD Reference:	KB=20' @ 4926.9usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	LE GERKIN 7H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB=20' @ 4926.9usft

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: LE GERKIN 7H

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.64°

