

Great Western

Well Name: **Raindance FD 30-022HN**

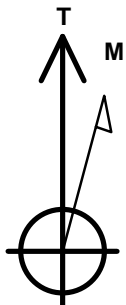
Surface Location: Raindance West Pad Sec.30-T6N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4995.9

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1407823.22	3156975.03	40.451506	-104.935944	
RKB - 16.5' WELL @ 5012.4ft (RKB - 16.5')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 352'FSL & 2292'FWL	1.0	0.0	0.0	Point
BHL 470'FNL & 470'FWL	7220.4	4381.0	-1809.5	Point
Entry Pt. 460'FSL & 470'FWL	7220.4	58.7	-1821.5	Point



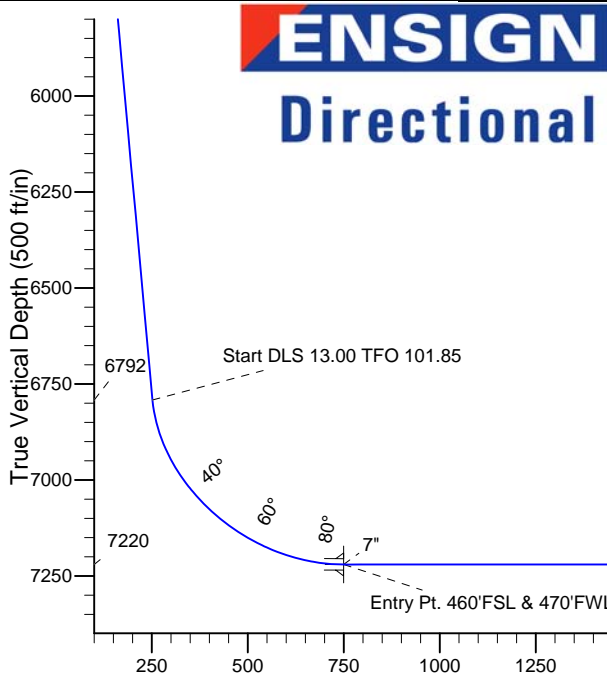
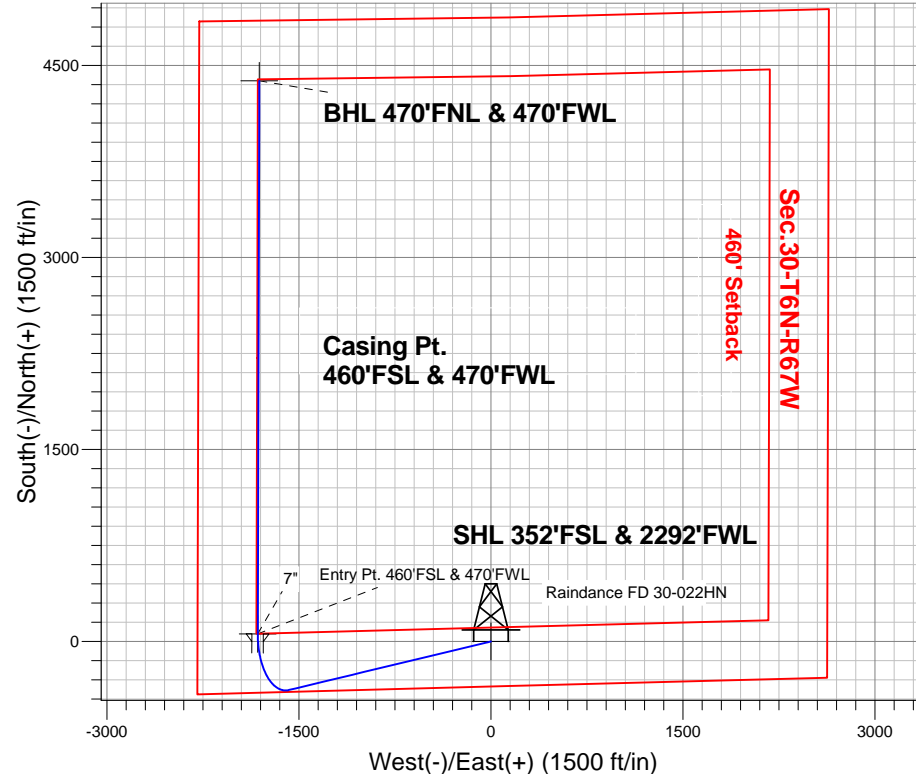
Azimuths to True North
Magnetic North: 8.64°

Magnetic Field
Strength: 52884.7snT
Dip Angle: 66.98°
Date: 11/12/2013
Model: IGRF2010

Raindance West Pad Sec.30-T6N-R67W
Raindance FD 30-022HN
Plan #1 (11-12-13)
15:29, November 13 2013

ANNOTATIONS

TVD	MD	Annotation
3500.0	3500.0	KOP - Start Build 3.00
6791.6	7207.6	Start DLS 13.00 TFO 101.85
7220.4	12274.9	TD at 12274.9



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	3500.0	0.00	0.00	3500.0	0.0	0.0	0.00	0.00	0.0	
3	4511.5	30.34	256.48	4464.9	-61.2	-254.4	3.00	256.48	40.6	
4	7207.6	30.34	256.48	6791.6	-379.5	-1578.8	0.00	0.00	252.0	
5	7952.6	90.00	0.15	7220.4	58.7	-1821.5	13.00	101.85	749.7	Entry Pt. 460'FSL & 470'FWL
6	7953.5	90.00	0.16	7220.4	59.6	-1821.5	1.00	90.00	750.5	
7	12274.9	90.00	0.16	7220.4	4381.0	-1809.5	0.00	0.00	4740.0	BHL 470'FNL & 470'FWL

Vertical Section at 337.56° (500 ft/in)



Great Western

SEC.30-T6N-R67W

Raindance West Pad Sec.30-T6N-R67W

Raindance FD 30-022HN

Wellbore #1

Plan: Plan #1 (11-12-13)

Standard Planning Report

13 November, 2013

Database:	Landmark	Local Co-ordinate Reference:	Well Raindance FD 30-022HN
Company:	Great Western	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Project:	SEC.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site:	Raindance West Pad Sec.30-T6N-R67W	North Reference:	True
Well:	Raindance FD 30-022HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-12-13)		

Project	SEC.30-T6N-R67W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Raindance West Pad Sec.30-T6N-R67W			
Site Position:		Northing:	1,407,829.31 ft	Latitude: 40.451519
From:	Lat/Long	Easting:	3,157,185.11 ft	Longitude: -104.935189
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence: 0.36 °

Well	Raindance FD 30-022HN			
Well Position	+N/-S	-4.7 ft	Northing:	1,407,823.22 ft
	+E/-W	-210.1 ft	Easting:	3,156,975.03 ft
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft
			Ground Level:	4,995.9 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/12/2013	8.64	66.98	52,885

Design	Plan #1 (11-12-13)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	337.56

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,511.5	30.34	256.48	4,464.9	-61.2	-254.4	3.00	3.00	0.00	256.48	
7,207.6	30.34	256.48	6,791.6	-379.5	-1,578.8	0.00	0.00	0.00	0.00	
7,952.6	90.00	0.15	7,220.4	58.7	-1,821.5	13.00	8.01	13.91	101.85	Entry Pt. 460'FSL &
7,953.5	90.00	0.16	7,220.4	59.6	-1,821.5	1.00	0.00	1.00	90.00	
12,274.9	90.00	0.16	7,220.4	4,381.0	-1,809.5	0.00	0.00	0.00	0.00	BHL 470'FNL & 47

Database:	Landmark	Local Co-ordinate Reference:	Well Raindance FD 30-022HN
Company:	Great Western	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Project:	SEC.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site:	Raindance West Pad Sec.30-T6N-R67W	North Reference:	True
Well:	Raindance FD 30-022HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-12-13)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 352'FSL & 2292'FWL									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 3.00									
3,600.0	3.00	256.48	3,600.0	-0.6	-2.5	0.4	3.00	3.00	0.00
3,700.0	6.00	256.48	3,699.6	-2.4	-10.2	1.6	3.00	3.00	0.00
3,800.0	9.00	256.48	3,798.8	-5.5	-22.9	3.6	3.00	3.00	0.00
3,900.0	12.00	256.48	3,897.1	-9.8	-40.6	6.5	3.00	3.00	0.00
4,000.0	15.00	256.48	3,994.3	-15.2	-63.3	10.1	3.00	3.00	0.00
4,100.0	18.00	256.48	4,090.2	-21.8	-90.9	14.5	3.00	3.00	0.00
4,200.0	21.00	256.48	4,184.4	-29.6	-123.3	19.7	3.00	3.00	0.00
4,300.0	24.00	256.48	4,276.8	-38.6	-160.5	25.6	3.00	3.00	0.00
4,400.0	27.00	256.48	4,367.1	-48.7	-202.4	32.3	3.00	3.00	0.00
4,500.0	30.00	256.48	4,454.9	-59.8	-248.8	39.7	3.00	3.00	0.00
4,511.5	30.34	256.48	4,464.9	-61.2	-254.4	40.6	3.00	3.00	0.00
4,600.0	30.34	256.48	4,541.2	-71.6	-297.9	47.5	0.00	0.00	0.00
4,700.0	30.34	256.48	4,627.5	-83.4	-347.0	55.4	0.00	0.00	0.00
4,800.0	30.34	256.48	4,713.8	-95.2	-396.1	63.2	0.00	0.00	0.00
4,900.0	30.34	256.48	4,800.1	-107.0	-445.2	71.1	0.00	0.00	0.00

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Project:	SEC.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site:	Raindance West Pad Sec.30-T6N-R67W	North Reference:	True
Well:	Raindance FD 30-022HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-12-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,000.0	30.34	256.48	4,886.4	-118.8	-494.4	78.9	0.00	0.00	0.00
5,100.0	30.34	256.48	4,972.7	-130.6	-543.5	86.7	0.00	0.00	0.00
5,200.0	30.34	256.48	5,059.0	-142.4	-592.6	94.6	0.00	0.00	0.00
5,300.0	30.34	256.48	5,145.3	-154.3	-641.7	102.4	0.00	0.00	0.00
5,400.0	30.34	256.48	5,231.6	-166.1	-690.8	110.3	0.00	0.00	0.00
5,500.0	30.34	256.48	5,317.9	-177.9	-740.0	118.1	0.00	0.00	0.00
5,600.0	30.34	256.48	5,404.2	-189.7	-789.1	125.9	0.00	0.00	0.00
5,700.0	30.34	256.48	5,490.5	-201.5	-838.2	133.8	0.00	0.00	0.00
5,800.0	30.34	256.48	5,576.8	-213.3	-887.3	141.6	0.00	0.00	0.00
5,900.0	30.34	256.48	5,663.1	-225.1	-936.5	149.4	0.00	0.00	0.00
6,000.0	30.34	256.48	5,749.4	-236.9	-985.6	157.3	0.00	0.00	0.00
6,100.0	30.34	256.48	5,835.7	-248.7	-1,034.7	165.1	0.00	0.00	0.00
6,200.0	30.34	256.48	5,922.0	-260.5	-1,083.8	173.0	0.00	0.00	0.00
6,300.0	30.34	256.48	6,008.3	-272.3	-1,132.9	180.8	0.00	0.00	0.00
6,400.0	30.34	256.48	6,094.6	-284.1	-1,182.1	188.6	0.00	0.00	0.00
6,500.0	30.34	256.48	6,180.9	-295.9	-1,231.2	196.5	0.00	0.00	0.00
6,600.0	30.34	256.48	6,267.2	-307.8	-1,280.3	204.3	0.00	0.00	0.00
6,700.0	30.34	256.48	6,353.5	-319.6	-1,329.4	212.2	0.00	0.00	0.00
6,800.0	30.34	256.48	6,439.8	-331.4	-1,378.5	220.0	0.00	0.00	0.00
6,900.0	30.34	256.48	6,526.1	-343.2	-1,427.7	227.8	0.00	0.00	0.00
7,000.0	30.34	256.48	6,612.4	-355.0	-1,476.8	235.7	0.00	0.00	0.00
7,100.0	30.34	256.48	6,698.7	-366.8	-1,525.9	243.5	0.00	0.00	0.00
7,200.0	30.34	256.48	6,785.0	-378.6	-1,575.0	251.4	0.00	0.00	0.00
7,207.6	30.34	256.48	6,791.6	-379.5	-1,578.8	252.0	0.00	0.00	0.00
Start DLS 13.00 TFO 101.85									
7,300.0	30.04	280.50	6,871.8	-380.7	-1,624.4	268.2	13.00	-0.33	25.99
7,400.0	34.32	303.71	6,956.7	-360.4	-1,672.6	305.4	13.00	4.28	23.21
7,500.0	41.94	320.88	7,035.5	-318.7	-1,717.4	361.1	13.00	7.62	17.17
7,600.0	51.42	333.17	7,104.2	-257.6	-1,756.3	432.4	13.00	9.48	12.29
7,700.0	61.88	342.45	7,159.2	-180.4	-1,787.3	515.6	13.00	10.45	9.28
7,800.0	72.84	350.04	7,197.7	-90.9	-1,809.0	606.6	13.00	10.97	7.58
7,900.0	84.06	356.76	7,217.7	6.2	-1,820.1	700.6	13.00	11.22	6.72
7,952.6	90.00	0.15	7,220.4	58.7	-1,821.5	749.7	13.00	11.29	6.45
7" - Entry Pt. 460'FSL & 470'FWL									
7,953.5	90.00	0.16	7,220.4	59.6	-1,821.5	750.5	1.09	0.15	1.08
8,000.0	90.00	0.16	7,220.4	106.1	-1,821.4	793.4	0.00	0.00	0.00
8,100.0	90.00	0.16	7,220.4	206.1	-1,821.1	885.7	0.00	0.00	0.00
8,200.0	90.00	0.16	7,220.4	306.1	-1,820.8	978.1	0.00	0.00	0.00
8,300.0	90.00	0.16	7,220.4	406.1	-1,820.6	1,070.4	0.00	0.00	0.00
8,400.0	90.00	0.16	7,220.4	506.1	-1,820.3	1,162.7	0.00	0.00	0.00
8,500.0	90.00	0.16	7,220.4	606.1	-1,820.0	1,255.0	0.00	0.00	0.00
8,600.0	90.00	0.16	7,220.4	706.1	-1,819.7	1,347.3	0.00	0.00	0.00
8,700.0	90.00	0.16	7,220.4	806.1	-1,819.5	1,439.7	0.00	0.00	0.00
8,800.0	90.00	0.16	7,220.4	906.1	-1,819.2	1,532.0	0.00	0.00	0.00
8,900.0	90.00	0.16	7,220.4	1,006.1	-1,818.9	1,624.3	0.00	0.00	0.00
9,000.0	90.00	0.16	7,220.4	1,106.1	-1,818.6	1,716.6	0.00	0.00	0.00
9,100.0	90.00	0.16	7,220.4	1,206.1	-1,818.3	1,808.9	0.00	0.00	0.00
9,200.0	90.00	0.16	7,220.4	1,306.1	-1,818.1	1,901.3	0.00	0.00	0.00
9,300.0	90.00	0.16	7,220.4	1,406.1	-1,817.8	1,993.6	0.00	0.00	0.00
9,400.0	90.00	0.16	7,220.4	1,506.1	-1,817.5	2,085.9	0.00	0.00	0.00
9,500.0	90.00	0.16	7,220.4	1,606.1	-1,817.2	2,178.2	0.00	0.00	0.00
9,600.0	90.00	0.16	7,220.4	1,706.1	-1,817.0	2,270.5	0.00	0.00	0.00
9,700.0	90.00	0.16	7,220.4	1,806.1	-1,816.7	2,362.9	0.00	0.00	0.00
9,800.0	90.00	0.16	7,220.4	1,906.1	-1,816.4	2,455.2	0.00	0.00	0.00

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Site:	Raindance West Pad Sec.30-T6N-R67W	North Reference:	True
Well:	Raindance FD 30-022HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-12-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,900.0	90.00	0.16	7,220.4	2,006.1	-1,816.1	2,547.5	0.00	0.00	0.00
10,000.0	90.00	0.16	7,220.4	2,106.1	-1,815.8	2,639.8	0.00	0.00	0.00
10,100.0	90.00	0.16	7,220.4	2,206.1	-1,815.6	2,732.1	0.00	0.00	0.00
10,200.0	90.00	0.16	7,220.4	2,306.1	-1,815.3	2,824.5	0.00	0.00	0.00
10,300.0	90.00	0.16	7,220.4	2,406.1	-1,815.0	2,916.8	0.00	0.00	0.00
10,400.0	90.00	0.16	7,220.4	2,506.1	-1,814.7	3,009.1	0.00	0.00	0.00
10,500.0	90.00	0.16	7,220.4	2,606.1	-1,814.5	3,101.4	0.00	0.00	0.00
10,600.0	90.00	0.16	7,220.4	2,706.1	-1,814.2	3,193.7	0.00	0.00	0.00
10,700.0	90.00	0.16	7,220.4	2,806.1	-1,813.9	3,286.1	0.00	0.00	0.00
10,800.0	90.00	0.16	7,220.4	2,906.1	-1,813.6	3,378.4	0.00	0.00	0.00
10,900.0	90.00	0.16	7,220.4	3,006.1	-1,813.3	3,470.7	0.00	0.00	0.00
11,000.0	90.00	0.16	7,220.4	3,106.1	-1,813.1	3,563.0	0.00	0.00	0.00
11,100.0	90.00	0.16	7,220.4	3,206.1	-1,812.8	3,655.3	0.00	0.00	0.00
11,200.0	90.00	0.16	7,220.4	3,306.1	-1,812.5	3,747.7	0.00	0.00	0.00
11,300.0	90.00	0.16	7,220.4	3,406.1	-1,812.2	3,840.0	0.00	0.00	0.00
11,400.0	90.00	0.16	7,220.4	3,506.1	-1,812.0	3,932.3	0.00	0.00	0.00
11,500.0	90.00	0.16	7,220.4	3,606.1	-1,811.7	4,024.6	0.00	0.00	0.00
11,600.0	90.00	0.16	7,220.4	3,706.1	-1,811.4	4,116.9	0.00	0.00	0.00
11,700.0	90.00	0.16	7,220.4	3,806.1	-1,811.1	4,209.2	0.00	0.00	0.00
11,800.0	90.00	0.16	7,220.4	3,906.1	-1,810.8	4,301.6	0.00	0.00	0.00
11,900.0	90.00	0.16	7,220.4	4,006.1	-1,810.6	4,393.9	0.00	0.00	0.00
12,000.0	90.00	0.16	7,220.4	4,106.1	-1,810.3	4,486.2	0.00	0.00	0.00
12,100.0	90.00	0.16	7,220.4	4,206.1	-1,810.0	4,578.5	0.00	0.00	0.00
12,200.0	90.00	0.16	7,220.4	4,306.1	-1,809.7	4,670.8	0.00	0.00	0.00
12,274.9	90.00	0.16	7,220.4	4,381.0	-1,809.5	4,740.0	0.00	0.00	0.00
BHL 470'FNL & 470'FWL									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,952.6	7,220.4	7"	7	7-1/2

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
3,500.0	3,500.0	0.0	0.0	KOP - Start Build 3.00
7,207.6	6,791.6	-379.5	-1,578.8	Start DLS 13.00 TFO 101.85
12,274.9	7,220.4	4,381.0	-1,809.5	TD at 12274.9



Great Western

SEC.30-T6N-R67W

Raindance West Pad Sec.30-T6N-R67W

Raindance FD 30-022HN

Wellbore #1

Plan #1 (11-12-13)

Anticollision Report

13 November, 2013

Raindance FD Horizontal Pad Sec.30-T6N-R67W - Raindance FD 19-21HN - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS, 7105-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
1,600.0	1,600.0	1,606.0	1,605.7	3.5	3.3	87.89	5.8	158.7	158.8	152.0	6.82	23.285		
1,700.0	1,700.0	1,706.9	1,706.7	3.7	3.5	87.92	5.8	159.0	159.1	151.9	7.19	22.122		
1,800.0	1,800.0	1,807.2	1,806.9	3.9	3.7	87.86	5.9	158.8	158.9	151.3	7.63	20.825		
1,900.0	1,900.0	1,907.3	1,907.0	4.2	3.9	87.95	5.7	158.6	158.7	150.7	8.06	19.698		
2,000.0	2,000.0	2,007.5	2,007.2	4.4	4.1	88.20	5.0	158.3	158.4	149.9	8.49	18.654		
2,100.0	2,100.0	2,107.7	2,107.4	4.6	4.3	88.38	4.5	157.9	157.9	149.0	8.95	17.649		
2,200.0	2,200.0	2,207.9	2,207.7	4.8	4.6	88.37	4.5	157.3	157.3	147.9	9.41	16.715		
2,300.0	2,300.0	2,307.9	2,307.7	5.1	4.8	88.18	5.0	156.6	156.6	146.8	9.86	15.889		
2,400.0	2,400.0	2,407.8	2,407.6	5.3	5.0	87.89	5.7	155.8	155.9	145.7	10.29	15.159		
2,463.0	2,463.0	2,469.9	2,469.6	5.4	5.1	87.67	6.3	155.6	155.7	145.2	10.53	14.797	CC	
2,500.0	2,500.0	2,506.4	2,506.1	5.5	5.2	87.53	6.7	155.7	155.8	145.2	10.66	14.615		
2,600.0	2,600.0	2,606.3	2,606.0	5.7	5.2	87.43	7.0	156.0	156.2	145.2	10.98	14.229		
2,700.0	2,700.0	2,706.5	2,706.2	6.0	5.4	87.66	6.4	156.3	156.4	145.1	11.31	13.835		
2,800.0	2,800.0	2,804.5	2,804.2	6.2	5.5	88.02	5.4	157.2	157.3	145.7	11.64	13.515		
2,900.0	2,900.0	2,905.1	2,904.8	6.4	5.6	88.45	4.3	158.6	158.6	146.7	11.97	13.255		
3,000.0	3,000.0	3,005.7	3,005.4	6.6	5.7	88.89	3.1	159.5	159.6	147.3	12.32	12.954		
3,100.0	3,100.0	3,106.3	3,105.9	6.9	5.8	89.31	1.9	160.2	160.2	147.5	12.70	12.617		
3,200.0	3,200.0	3,207.1	3,206.7	7.1	6.0	89.63	1.0	160.3	160.3	147.2	13.11	12.234		
3,300.0	3,300.0	3,308.0	3,307.6	7.3	6.3	89.80	0.6	160.0	160.0	146.4	13.56	11.800		
3,400.0	3,400.0	3,409.0	3,408.6	7.5	6.5	90.01	0.0	159.0	159.0	145.0	14.03	11.337		
3,500.0	3,500.0	3,509.8	3,509.5	7.8	6.7	90.41	-1.1	157.4	157.4	142.9	14.50	10.859		
3,535.5	3,535.5	3,545.3	3,545.0	7.8	6.8	-165.91	-1.7	156.8	157.1	142.5	14.65	10.721	ES	
3,600.0	3,600.0	3,609.6	3,609.2	8.0	7.0	-165.66	-2.9	155.6	158.2	143.3	14.93	10.594	SF	
3,700.0	3,699.6	3,707.4	3,707.0	8.2	7.2	-165.74	-4.4	154.6	164.7	149.4	15.30	10.769		
3,800.0	3,798.8	3,804.3	3,803.9	8.4	7.4	-166.46	-5.0	154.8	177.6	162.1	15.56	11.420		
3,900.0	3,897.1	3,902.6	3,902.2	8.6	7.5	-167.55	-5.1	155.5	196.2	180.5	15.71	12.483		
4,000.0	3,994.3	3,998.5	3,998.0	8.8	7.6	-168.69	-5.2	156.5	220.0	204.2	15.84	13.895		
4,100.0	4,090.2	4,095.9	4,095.5	9.1	7.6	-169.89	-4.9	157.4	248.9	232.9	15.92	15.637		
4,200.0	4,184.4	4,190.5	4,190.0	9.5	7.7	-171.07	-4.1	157.7	282.2	266.3	15.96	17.679		
4,300.0	4,276.8	4,281.2	4,280.8	9.9	7.8	-172.10	-3.3	158.2	320.7	304.7	15.98	20.063		
4,400.0	4,367.1	4,368.0	4,367.5	10.4	7.9	-172.85	-3.0	159.2	364.5	348.5	15.97	22.820		
4,500.0	4,454.9	4,454.6	4,454.1	11.1	8.0	-173.44	-3.1	160.8	413.6	397.7	15.94	25.944		
4,600.0	4,541.2	4,541.3	4,540.8	11.8	8.1	-174.11	-3.0	162.3	465.3	449.0	16.24	28.643		
4,700.0	4,627.5	4,627.1	4,626.6	12.6	8.2	-174.70	-2.8	163.5	516.9	500.3	16.60	31.130		
4,800.0	4,713.8	4,711.8	4,711.3	13.4	8.4	-175.16	-2.6	164.8	568.6	551.6	16.98	33.488		
4,900.0	4,800.1	4,796.9	4,796.4	14.3	8.5	-175.49	-2.9	166.2	620.4	603.0	17.38	35.702		
5,000.0	4,886.4	4,885.8	4,885.3	15.2	8.6	-175.76	-3.5	167.6	672.0	654.2	17.80	37.753		
5,100.0	4,972.7	4,974.1	4,973.6	16.1	8.8	-176.01	-3.9	168.6	723.3	705.0	18.24	39.663		
5,200.0	5,059.0	5,049.7	5,049.1	17.1	8.9	-176.18	-4.4	169.6	774.7	756.1	18.66	41.509		
5,300.0	5,145.3	5,100.0	5,099.4	18.1	9.0	-176.22	-5.4	171.2	828.1	809.0	19.07	43.431		
5,400.0	5,231.6	5,168.4	5,167.7	19.0	9.1	-176.25	-6.6	175.5	883.7	864.2	19.50	45.310		
5,500.0	5,317.9	5,224.9	5,223.9	20.1	9.2	-176.27	-7.1	181.1	942.1	922.2	19.92	47.285		

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-022HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-022HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design Raindance West Pad Sec.30-T6N-R67W - Raindance FD 30-021HN - Wellbore #1 - Plan #1 (11-12-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	-92.07	-1.1	-30.3	30.4					
100.0	100.0	100.0	100.0	0.1	0.1	-92.07	-1.1	-30.3	30.4	30.1	0.22	135.054		
200.0	200.0	200.0	200.0	0.3	0.3	-92.07	-1.1	-30.3	30.4	29.7	0.67	45.018		
300.0	300.0	300.0	300.0	0.6	0.6	-92.07	-1.1	-30.3	30.4	29.2	1.12	27.011		
400.0	400.0	400.0	400.0	0.8	0.8	-92.07	-1.1	-30.3	30.4	28.8	1.57	19.293		
500.0	500.0	500.0	500.0	1.0	1.0	-92.07	-1.1	-30.3	30.4	28.3	2.02	15.006		
600.0	600.0	600.0	600.0	1.2	1.2	-92.07	-1.1	-30.3	30.4	27.9	2.47	12.278		
700.0	700.0	700.0	700.0	1.5	1.5	-92.07	-1.1	-30.3	30.4	27.4	2.92	10.389		
800.0	800.0	800.0	800.0	1.7	1.7	-92.07	-1.1	-30.3	30.4	27.0	3.37	9.004		
900.0	900.0	900.0	900.0	1.9	1.9	-92.07	-1.1	-30.3	30.4	26.5	3.82	7.944		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-92.07	-1.1	-30.3	30.4	26.1	4.27	7.108		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-92.07	-1.1	-30.3	30.4	25.6	4.72	6.431		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-92.07	-1.1	-30.3	30.4	25.2	5.17	5.872		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-92.07	-1.1	-30.3	30.4	24.7	5.62	5.402		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-92.07	-1.1	-30.3	30.4	24.3	6.07	5.002		
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	-92.07	-1.1	-30.3	30.4	23.8	6.52	4.657		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-92.07	-1.1	-30.3	30.4	23.4	6.97	4.357		
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	-92.07	-1.1	-30.3	30.4	22.9	7.42	4.093		
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	-92.07	-1.1	-30.3	30.4	22.5	7.87	3.859		
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	-92.07	-1.1	-30.3	30.4	22.0	8.32	3.650		
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	-92.07	-1.1	-30.3	30.4	21.6	8.77	3.463		
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	-92.07	-1.1	-30.3	30.4	21.1	9.22	3.294		
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	-92.07	-1.1	-30.3	30.4	20.7	9.66	3.141		
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	-92.07	-1.1	-30.3	30.4	20.2	10.11	3.001		
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	-92.07	-1.1	-30.3	30.4	19.8	10.56	2.873		
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	-92.07	-1.1	-30.3	30.4	19.3	11.01	2.756		
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	-92.07	-1.1	-30.3	30.4	18.9	11.46	2.648		
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	-92.07	-1.1	-30.3	30.4	18.4	11.91	2.548		
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	-92.07	-1.1	-30.3	30.4	18.0	12.36	2.456 CC, ES, SF		
2,900.0	2,900.0	2,898.4	2,898.3	6.4	6.4	-92.76	-1.6	-32.8	32.9	20.1	12.79	2.572		
3,000.0	3,000.0	2,996.2	2,995.9	6.6	6.6	-94.29	-3.0	-40.2	40.5	27.3	13.21	3.069		
3,100.0	3,100.0	3,093.0	3,091.9	6.9	6.8	-95.86	-5.4	-52.4	53.3	39.6	13.64	3.904		
3,200.0	3,200.0	3,188.4	3,185.7	7.1	7.0	-97.10	-8.6	-69.0	71.0	56.9	14.09	5.038		
3,300.0	3,300.0	3,281.8	3,276.7	7.3	7.3	-98.01	-12.6	-89.7	93.5	79.0	14.55	6.425		
3,400.0	3,400.0	3,372.9	3,364.3	7.5	7.5	-98.65	-17.3	-114.1	120.8	105.7	15.05	8.021		
3,500.0	3,500.0	3,461.4	3,448.3	7.8	7.9	-99.11	-22.7	-141.6	152.5	136.9	15.59	9.779		
3,600.0	3,600.0	3,547.9	3,528.9	8.0	8.2	4.05	-28.6	-172.3	186.1	170.4	15.66	11.888		
3,700.0	3,699.6	3,633.3	3,607.1	8.2	8.7	3.85	-35.2	-206.0	219.0	203.0	15.99	13.701		
3,800.0	3,798.8	3,717.6	3,682.7	8.4	9.2	3.75	-42.3	-242.6	251.2	234.9	16.29	15.422		
3,900.0	3,897.1	3,800.0	3,754.9	8.6	9.7	3.70	-49.9	-281.5	282.6	266.0	16.56	17.062		
4,000.0	3,994.3	3,893.8	3,835.7	8.8	10.5	3.71	-58.9	-328.3	311.9	295.1	16.85	18.514		
4,100.0	4,090.2	3,990.7	3,919.2	9.1	11.3	3.77	-68.3	-376.7	336.3	319.1	17.12	19.644		
4,200.0	4,184.4	4,088.9	4,003.7	9.5	12.2	3.89	-77.8	-425.7	355.5	338.1	17.38	20.456		
4,300.0	4,276.8	4,187.8	4,088.9	9.9	13.1	4.06	-87.4	-475.1	369.6	352.0	17.63	20.962		
4,400.0	4,367.1	4,287.4	4,174.6	10.4	14.1	4.29	-97.1	-524.8	378.6	360.7	17.88	21.171		
4,500.0	4,454.9	4,387.3	4,260.6	11.1	15.1	4.58	-106.8	-574.7	382.3	364.2	18.12	21.094		
4,600.0	4,541.2	4,487.3	4,346.7	11.8	16.1	4.91	-116.5	-624.6	382.9	364.2	18.68	20.492		
4,700.0	4,627.5	4,587.3	4,432.8	12.6	17.1	5.24	-126.1	-674.5	383.4	364.1	19.31	19.858		
4,800.0	4,713.8	4,687.2	4,518.9	13.4	18.1	5.57	-135.8	-724.4	384.0	364.0	19.96	19.243		
4,900.0	4,800.1	4,787.2	4,605.0	14.3	19.2	5.89	-145.5	-774.4	384.6	364.0	20.62	18.648		
5,000.0	4,886.4	4,887.2	4,691.0	15.2	20.2	6.22	-155.2	-824.3	385.2	363.9	21.31	18.073		
5,100.0	4,972.7	4,987.2	4,777.1	16.1	21.3	6.55	-164.9	-874.2	385.8	363.7	22.02	17.519		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-022HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-022HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design Raindance West Pad Sec.30-T6N-R67W - Raindance FD 30-021HN - Wellbore #1 - Plan #1 (11-12-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,200.0	5,059.0	5,087.1	4,863.2	17.1	22.4	6.87	-174.6	-924.1	386.4	363.6	22.75	16.986		
5,300.0	5,145.3	5,187.1	4,949.3	18.1	23.5	7.19	-184.3	-974.0	387.0	363.5	23.49	16.473		
5,400.0	5,231.6	5,287.1	5,035.3	19.0	24.5	7.52	-194.0	-1,023.9	387.6	363.4	24.26	15.981		
5,500.0	5,317.9	5,387.1	5,121.4	20.1	25.6	7.84	-203.7	-1,073.9	388.3	363.3	25.04	15.508		
5,600.0	5,404.2	5,487.0	5,207.5	21.1	26.7	8.16	-213.4	-1,123.8	389.0	363.1	25.84	15.055		
5,700.0	5,490.5	5,587.0	5,293.6	22.1	27.8	8.48	-223.0	-1,173.7	389.6	363.0	26.65	14.619		
5,800.0	5,576.8	5,687.0	5,379.6	23.1	28.9	8.80	-232.7	-1,223.6	390.3	362.8	27.48	14.202		
5,900.0	5,663.1	5,786.9	5,465.7	24.2	30.0	9.11	-242.4	-1,273.5	391.0	362.7	28.33	13.802		
6,000.0	5,749.4	5,886.9	5,551.8	25.2	31.1	9.43	-252.1	-1,323.5	391.7	362.5	29.20	13.418		
6,100.0	5,835.7	5,986.9	5,637.9	26.3	32.3	9.74	-261.8	-1,373.4	392.5	362.4	30.08	13.049		
6,200.0	5,922.0	6,086.9	5,723.9	27.4	33.4	10.06	-271.5	-1,423.3	393.2	362.2	30.97	12.696		
6,300.0	6,008.3	6,186.8	5,810.0	28.4	34.5	10.37	-281.2	-1,473.2	393.9	362.1	31.88	12.356		
6,400.0	6,094.6	6,286.8	5,896.1	29.5	35.6	10.68	-290.9	-1,523.1	394.7	361.9	32.81	12.030		
6,500.0	6,180.9	6,386.8	5,982.2	30.6	36.7	10.99	-300.6	-1,573.0	395.5	361.7	33.75	11.717		
6,600.0	6,267.2	6,486.8	6,068.3	31.7	37.8	11.30	-310.3	-1,623.0	396.3	361.5	34.71	11.417		
6,700.0	6,353.5	6,586.7	6,154.3	32.8	38.9	11.61	-319.9	-1,672.9	397.0	361.4	35.68	11.128		
6,800.0	6,439.8	6,686.7	6,240.4	33.8	40.1	11.92	-329.6	-1,722.8	397.9	361.2	36.67	10.850		
6,900.0	6,526.1	6,786.7	6,326.5	34.9	41.2	12.22	-339.3	-1,772.7	398.7	361.0	37.67	10.582		
7,000.0	6,612.4	6,886.7	6,412.6	36.0	42.3	12.52	-349.0	-1,822.6	399.5	360.8	38.69	10.325		
7,100.0	6,698.7	6,986.6	6,498.6	37.1	43.4	12.83	-358.7	-1,872.5	400.3	360.6	39.72	10.078		
7,200.0	6,785.0	7,086.6	6,584.7	38.2	44.6	13.13	-368.4	-1,922.5	401.2	360.4	40.77	9.839		
7,300.0	6,871.8	7,186.1	6,670.4	39.2	45.7	-8.69	-378.0	-1,972.1	401.9	360.8	41.11	9.775		
7,400.0	6,956.7	7,281.4	6,752.4	40.0	46.7	-32.20	-387.3	-2,019.7	403.6	363.2	40.47	9.973		
7,500.0	7,035.5	7,373.7	6,832.0	40.7	47.7	-51.24	-394.8	-2,065.9	410.7	370.4	40.30	10.191		
7,600.0	7,104.2	7,465.1	6,927.6	41.2	48.8	-65.87	-382.7	-2,121.2	424.3	383.5	40.86	10.386		
7,700.0	7,159.2	7,520.3	7,035.4	41.6	49.8	-77.04	-331.7	-2,183.6	441.9	400.6	41.25	10.713		
7,800.0	7,197.7	7,788.6	7,143.1	41.8	50.7	-85.33	-219.8	-2,245.8	458.7	417.8	40.90	11.214		
7,900.0	7,217.7	7,990.5	7,213.5	41.9	51.1	-89.71	-36.9	-2,286.2	468.0	427.4	40.64	11.518		
8,000.0	7,220.4	8,135.2	7,220.4	41.9	51.1	-90.00	107.3	-2,289.8	468.4	427.0	41.34	11.331		
8,100.0	7,220.4	8,235.2	7,220.4	41.9	51.1	-90.00	207.3	-2,289.5	468.4	426.4	42.03	11.143		
8,200.0	7,220.4	8,335.2	7,220.4	42.0	51.2	-90.00	307.3	-2,289.2	468.4	425.3	43.06	10.878		
8,300.0	7,220.4	8,435.2	7,220.4	42.1	51.3	-90.00	407.3	-2,289.0	468.4	424.0	44.40	10.550		
8,400.0	7,220.4	8,535.2	7,220.4	42.4	51.5	-90.00	507.3	-2,288.7	468.4	422.4	46.02	10.179		
8,500.0	7,220.4	8,635.2	7,220.4	42.7	51.7	-90.00	607.3	-2,288.5	468.5	420.6	47.90	9.781		
8,600.0	7,220.4	8,735.2	7,220.4	43.0	52.0	-90.00	707.3	-2,288.2	468.5	418.5	50.00	9.370		
8,700.0	7,220.4	8,835.2	7,220.4	43.5	52.3	-90.00	807.3	-2,287.9	468.5	416.2	52.30	8.958		
8,800.0	7,220.4	8,935.2	7,220.4	44.0	52.7	-90.00	907.3	-2,287.7	468.5	413.7	54.77	8.554		
8,900.0	7,220.4	9,035.2	7,220.4	44.6	53.2	-90.00	1,007.3	-2,287.4	468.5	411.1	57.39	8.164		
9,000.0	7,220.4	9,135.2	7,220.4	45.3	53.7	-90.00	1,107.3	-2,287.2	468.5	408.4	60.15	7.790		
9,100.0	7,220.4	9,235.2	7,220.4	46.0	54.3	-90.00	1,207.3	-2,286.9	468.6	405.6	63.02	7.436		
9,200.0	7,220.4	9,335.2	7,220.4	46.9	55.0	-90.00	1,307.3	-2,286.7	468.6	402.6	65.98	7.102		
9,300.0	7,220.4	9,435.2	7,220.4	47.8	55.7	-90.00	1,407.3	-2,286.4	468.6	399.6	69.04	6.788		
9,400.0	7,220.4	9,535.2	7,220.4	48.8	56.5	-90.00	1,507.3	-2,286.1	468.6	396.5	72.17	6.494		
9,500.0	7,220.4	9,635.2	7,220.4	49.8	57.3	-90.00	1,607.3	-2,285.9	468.6	393.3	75.36	6.218		
9,600.0	7,220.4	9,735.2	7,220.4	50.9	58.2	-90.00	1,707.3	-2,285.6	468.7	390.0	78.62	5.961		
9,700.0	7,220.4	9,835.2	7,220.4	52.1	59.1	-90.00	1,807.3	-2,285.4	468.7	386.8	81.92	5.721		
9,800.0	7,220.4	9,935.2	7,220.4	53.3	60.1	-90.00	1,907.3	-2,285.1	468.7	383.4	85.27	5.497		
9,900.0	7,220.4	10,035.2	7,220.4	54.6	61.2	-90.00	2,007.3	-2,284.8	468.7	380.0	88.66	5.287		
10,000.0	7,220.4	10,135.2	7,220.4	55.9	62.3	-90.00	2,107.3	-2,284.6	468.7	376.6	92.09	5.090		
10,100.0	7,220.4	10,235.2	7,220.4	57.2	63.4	-90.00	2,207.3	-2,284.3	468.7	373.2	95.54	4.906		
10,200.0	7,220.4	10,335.2	7,220.4	58.6	64.6	-90.00	2,307.3	-2,284.1	468.8	369.7	99.03	4.734		
10,300.0	7,220.4	10,435.2	7,220.4	60.1	65.9	-90.00	2,407.3	-2,283.8	468.8	366.2	102.54	4.572		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-022HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-022HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Raindance West Pad Sec.30-T6N-R67W - Raindance FD 30-021HN - Wellbore #1 - Plan #1 (11-12-13)												Offset Well Error:	0.0 ft
Survey Program: 0-MWD													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,400.0	7,220.4	10,535.2	7,220.4	61.5	67.2	-90.00	2,507.3	-2,283.5	468.8	362.7	106.07	4.420	
10,500.0	7,220.4	10,635.2	7,220.4	63.0	68.5	-90.00	2,607.3	-2,283.3	468.8	359.2	109.63	4.276	
10,600.0	7,220.4	10,735.2	7,220.4	64.5	69.8	-90.00	2,707.3	-2,283.0	468.8	355.6	113.20	4.142	
10,700.0	7,220.4	10,835.2	7,220.4	66.1	71.2	-90.00	2,807.3	-2,282.8	468.9	352.1	116.79	4.014	
10,800.0	7,220.4	10,935.2	7,220.4	67.6	72.6	-90.00	2,907.3	-2,282.5	468.9	348.5	120.40	3.894	
10,900.0	7,220.4	11,035.2	7,220.4	69.2	74.1	-90.00	3,007.3	-2,282.2	468.9	344.9	124.02	3.781	
11,000.0	7,220.4	11,135.2	7,220.4	70.8	75.6	-90.00	3,107.3	-2,282.0	468.9	341.3	127.65	3.673	
11,100.0	7,220.4	11,235.2	7,220.4	72.5	77.1	-90.00	3,207.3	-2,281.7	468.9	337.6	131.30	3.571	
11,200.0	7,220.4	11,335.2	7,220.4	74.1	78.6	-90.00	3,307.3	-2,281.5	468.9	334.0	134.95	3.475	
11,300.0	7,220.4	11,435.2	7,220.4	75.8	80.1	-90.00	3,407.3	-2,281.2	469.0	330.3	138.62	3.383	
11,400.0	7,220.4	11,535.2	7,220.4	77.4	81.7	-90.00	3,507.3	-2,280.9	469.0	326.7	142.30	3.296	
11,500.0	7,220.4	11,635.2	7,220.4	79.1	83.2	-90.00	3,607.3	-2,280.7	469.0	323.0	145.98	3.213	
11,600.0	7,220.4	11,735.2	7,220.4	80.8	84.8	-90.00	3,707.3	-2,280.4	469.0	319.3	149.67	3.134	
11,700.0	7,220.4	11,835.2	7,220.4	82.5	86.4	-90.00	3,807.3	-2,280.2	469.0	315.7	153.37	3.058	
11,800.0	7,220.4	11,935.2	7,220.4	84.2	88.1	-90.00	3,907.3	-2,279.9	469.1	312.0	157.08	2.986	
11,900.0	7,220.4	12,035.2	7,220.4	85.9	89.7	-90.00	4,007.3	-2,279.6	469.1	308.3	160.79	2.917	
12,000.0	7,220.4	12,135.2	7,220.4	87.7	91.4	-90.00	4,107.3	-2,279.4	469.1	304.6	164.51	2.851	
12,100.0	7,220.4	12,235.2	7,220.4	89.4	93.0	-90.00	4,207.3	-2,279.1	469.1	300.9	168.24	2.788	
12,200.0	7,220.4	12,335.2	7,220.4	91.2	94.7	-90.00	4,307.3	-2,278.9	469.1	297.2	171.96	2.728	
12,241.1	7,220.4	12,376.3	7,220.4	91.9	95.4	-90.00	4,348.5	-2,278.7	469.1	295.6	173.50	2.704	
12,274.9	7,220.4	12,402.7	7,220.4	92.5	95.8	-90.00	4,374.8	-2,278.7	469.2	294.6	174.62	2.687	

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-022HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-022HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	90.03	0.0	30.1	30.1					
100.0	100.0	100.0	100.0	0.1	0.1	90.03	0.0	30.1	30.1	29.8	0.22	133.728		
200.0	200.0	200.0	200.0	0.3	0.3	90.03	0.0	30.1	30.1	29.4	0.67	44.576		
300.0	300.0	300.0	300.0	0.6	0.6	90.03	0.0	30.1	30.1	28.9	1.12	26.746		
400.0	400.0	400.0	400.0	0.8	0.8	90.03	0.0	30.1	30.1	28.5	1.57	19.104		
500.0	500.0	500.0	500.0	1.0	1.0	90.03	0.0	30.1	30.1	28.0	2.02	14.859		
600.0	600.0	600.0	600.0	1.2	1.2	90.03	0.0	30.1	30.1	27.6	2.47	12.157		
700.0	700.0	700.0	700.0	1.5	1.5	90.03	0.0	30.1	30.1	27.1	2.92	10.287		
800.0	800.0	800.0	800.0	1.7	1.7	90.03	0.0	30.1	30.1	26.7	3.37	8.915		
900.0	900.0	900.0	900.0	1.9	1.9	90.03	0.0	30.1	30.1	26.2	3.82	7.866		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.03	0.0	30.1	30.1	25.8	4.27	7.038		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	90.03	0.0	30.1	30.1	25.3	4.72	6.368		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	90.03	0.0	30.1	30.1	24.9	5.17	5.814		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	90.03	0.0	30.1	30.1	24.4	5.62	5.349		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	90.03	0.0	30.1	30.1	24.0	6.07	4.953		
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	90.03	0.0	30.1	30.1	23.5	6.52	4.611		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	90.03	0.0	30.1	30.1	23.1	6.97	4.314		
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	90.03	0.0	30.1	30.1	22.6	7.42	4.052		
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	90.03	0.0	30.1	30.1	22.2	7.87	3.821		
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	90.03	0.0	30.1	30.1	21.7	8.32	3.614		
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	90.03	0.0	30.1	30.1	21.3	8.77	3.429		
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	90.03	0.0	30.1	30.1	20.8	9.22	3.262		
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	90.03	0.0	30.1	30.1	20.4	9.66	3.110		
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	90.03	0.0	30.1	30.1	19.9	10.11	2.972		
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	90.03	0.0	30.1	30.1	19.5	10.56	2.845		
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	90.03	0.0	30.1	30.1	19.0	11.01	2.729		
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	90.03	0.0	30.1	30.1	18.6	11.46	2.622		
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	90.03	0.0	30.1	30.1	18.1	11.91	2.523		
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	90.03	0.0	30.1	30.1	17.7	12.36	2.431		
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	90.03	0.0	30.1	30.1	17.2	12.81	2.346		
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	90.03	0.0	30.1	30.1	16.8	13.26	2.267		
3,100.0	3,100.0	3,100.0	3,100.0	6.9	6.9	90.03	0.0	30.1	30.1	16.3	13.71	2.192		
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	90.03	0.0	30.1	30.1	15.9	14.16	2.123		
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	90.03	0.0	30.1	30.1	15.4	14.61	2.057		
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	90.03	0.0	30.1	30.1	15.0	15.06	1.996		
3,500.0	3,500.0	3,500.0	3,500.0	7.8	7.8	90.03	0.0	30.1	30.1	14.5	15.51	1.938 CC, ES		
3,600.0	3,600.0	3,600.0	3,600.0	8.0	8.0	-167.51	0.0	30.1	32.6	16.7	15.92	2.048		
3,700.0	3,699.6	3,699.6	3,699.6	8.2	8.2	-169.88	0.0	30.1	40.3	24.0	16.28	2.475		
3,800.0	3,798.8	3,798.8	3,798.8	8.4	8.4	-172.30	0.0	30.1	53.2	36.6	16.60	3.205		
3,900.0	3,897.1	3,897.1	3,897.1	8.6	8.6	-174.21	0.0	30.1	71.3	54.4	16.87	4.226		
4,000.0	3,994.3	3,994.3	3,994.3	8.8	8.9	-175.58	0.0	30.1	94.6	77.5	17.11	5.527		
4,100.0	4,090.2	4,096.3	4,096.2	9.1	9.1	-176.49	-0.7	27.7	120.6	103.3	17.29	6.976		
4,200.0	4,184.4	4,200.1	4,199.7	9.5	9.3	-177.00	-2.8	20.0	146.6	129.2	17.42	8.415		
4,300.0	4,276.8	4,305.5	4,304.2	9.9	9.5	-177.28	-6.6	6.6	172.3	154.8	17.52	9.835		
4,400.0	4,367.1	4,412.5	4,409.3	10.4	9.7	-177.41	-11.9	-12.7	197.8	180.2	17.60	11.238		
4,500.0	4,454.9	4,521.3	4,514.8	11.1	10.0	-177.46	-19.0	-38.0	222.9	205.2	17.66	12.620		
4,600.0	4,541.2	4,632.3	4,620.8	11.8	10.3	-177.43	-27.9	-69.8	245.4	227.4	18.08	13.577		
4,700.0	4,627.5	4,745.9	4,727.1	12.6	10.8	-177.31	-38.6	-108.5	262.3	243.7	18.58	14.121		
4,800.0	4,713.8	4,861.5	4,832.6	13.4	11.3	-177.07	-51.3	-153.9	273.3	254.1	19.11	14.302		
4,900.0	4,800.1	4,978.1	4,935.9	14.3	11.9	-176.73	-65.8	-206.0	278.2	258.5	19.67	14.142		
5,000.0	4,886.4	5,081.5	5,025.5	15.2	12.6	-176.36	-79.7	-255.7	278.9	258.7	20.23	13.788		
5,100.0	4,972.7	5,181.5	5,112.0	16.1	13.3	-176.00	-93.1	-304.0	279.6	258.8	20.81	13.436		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-022HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-022HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design Raindance West Pad Sec.30-T6N-R67W - Raindance FD 30-024HC - Wellbore #1 - Plan #1 (11-13-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,200.0	5,059.0	5,281.5	5,198.6	17.1	14.1	-175.64	-106.6	-352.2	280.3	258.9	21.41	13.090		
5,300.0	5,145.3	5,381.5	5,285.1	18.1	14.9	-175.28	-120.0	-400.4	281.0	258.9	22.04	12.749		
5,400.0	5,231.6	5,481.5	5,371.7	19.0	15.8	-174.93	-133.5	-448.6	281.7	259.0	22.69	12.415		
5,500.0	5,317.9	5,581.4	5,458.2	20.1	16.7	-174.57	-146.9	-496.9	282.4	259.0	23.36	12.089		
5,600.0	5,404.2	5,681.4	5,544.8	21.1	17.6	-174.22	-160.3	-545.1	283.1	259.0	24.05	11.772		
5,700.0	5,490.5	5,781.4	5,631.3	22.1	18.5	-173.87	-173.8	-593.3	283.8	259.1	24.76	11.463		
5,800.0	5,576.8	5,881.4	5,717.9	23.1	19.4	-173.52	-187.2	-641.5	284.6	259.1	25.49	11.163		
5,900.0	5,663.1	5,981.4	5,804.4	24.2	20.4	-173.17	-200.7	-689.8	285.3	259.1	26.24	10.872		
6,000.0	5,749.4	6,081.3	5,890.9	25.2	21.4	-172.83	-214.1	-738.0	286.1	259.1	27.01	10.590		
6,100.0	5,835.7	6,181.3	5,977.5	26.3	22.4	-172.49	-227.6	-786.2	286.9	259.0	27.80	10.311		
6,200.0	5,922.0	6,281.3	6,064.0	27.4	23.4	-172.14	-241.0	-834.4	287.6	259.0	28.61	10.052		
6,300.0	6,008.3	6,381.3	6,150.6	28.4	24.4	-171.80	-254.5	-882.7	288.4	259.0	29.44	9.797		
6,400.0	6,094.6	6,481.3	6,237.1	29.5	25.4	-171.47	-267.9	-930.9	289.2	258.9	30.29	9.550		
6,500.0	6,180.9	6,581.3	6,323.7	30.6	26.4	-171.13	-281.3	-979.1	290.0	258.9	31.15	9.311		
6,600.0	6,267.2	6,681.2	6,410.2	31.7	27.5	-170.80	-294.8	-1,027.3	290.9	258.8	32.03	9.081		
6,700.0	6,353.5	6,781.2	6,496.8	32.8	28.5	-170.47	-308.2	-1,075.6	291.7	258.8	32.93	8.858		
6,800.0	6,439.8	6,881.2	6,583.3	33.8	29.6	-170.14	-321.7	-1,123.8	292.5	258.7	33.84	8.644		
6,900.0	6,526.1	6,981.2	6,669.9	34.9	30.6	-169.81	-335.1	-1,172.0	293.4	258.6	34.78	8.436		
7,000.0	6,612.4	7,081.2	6,756.4	36.0	31.7	-169.48	-348.6	-1,220.2	294.2	258.5	35.73	8.236		
7,100.0	6,698.7	7,181.2	6,842.9	37.1	32.7	-169.16	-362.0	-1,268.5	295.1	258.4	36.70	8.042		
7,200.0	6,785.0	7,280.7	6,929.3	38.2	33.7	-169.12	-373.9	-1,316.6	296.0	258.5	37.56	7.882		
7,300.0	6,871.8	7,378.4	7,014.3	39.2	34.6	-168.42	-368.4	-1,363.9	297.2	259.5	37.71	7.881		
7,400.0	6,956.7	7,474.4	7,094.9	40.0	35.3	-147.19	-342.1	-1,408.7	298.5	260.6	37.90	7.875		
7,500.0	7,035.5	7,569.1	7,167.6	40.7	35.9	-132.34	-297.4	-1,449.1	299.8	261.6	38.22	7.844		
7,600.0	7,104.2	7,662.8	7,229.8	41.2	36.3	-122.85	-236.6	-1,483.5	301.0	262.3	38.68	7.781		
7,700.0	7,159.2	7,755.7	7,279.0	41.6	36.6	-117.02	-162.9	-1,510.8	301.9	262.7	39.27	7.688		
7,800.0	7,197.7	7,848.1	7,313.6	41.8	36.7	-113.73	-79.5	-1,529.8	302.5	262.6	39.96	7.571		
7,900.0	7,217.7	7,940.5	7,332.2	41.9	36.8	-112.36	10.2	-1,539.9	302.7	262.0	40.75	7.429		
8,000.0	7,220.4	8,035.8	7,335.4	41.9	36.8	-112.33	105.4	-1,541.4	302.7	261.1	41.58	7.279		
8,100.0	7,220.4	8,135.8	7,335.4	41.9	36.9	-112.33	205.4	-1,541.2	302.6	260.1	42.52	7.118		
8,200.0	7,220.4	8,235.8	7,335.4	42.0	37.0	-112.33	305.4	-1,540.9	302.6	258.9	43.73	6.921		
8,300.0	7,220.4	8,335.8	7,335.4	42.1	37.2	-112.33	405.4	-1,540.6	302.6	257.4	45.20	6.696		
8,400.0	7,220.4	8,435.8	7,335.4	42.4	37.4	-112.33	505.4	-1,540.4	302.6	255.7	46.90	6.453		
8,500.0	7,220.4	8,535.8	7,335.4	42.7	37.8	-112.33	605.4	-1,540.1	302.6	253.8	48.80	6.201		
8,600.0	7,220.4	8,635.8	7,335.4	43.0	38.3	-112.34	705.4	-1,539.8	302.6	251.7	50.89	5.947		
8,700.0	7,220.4	8,735.8	7,335.4	43.5	38.8	-112.34	805.4	-1,539.6	302.6	249.5	53.14	5.695		
8,800.0	7,220.4	8,835.8	7,335.4	44.0	39.4	-112.34	905.4	-1,539.3	302.6	247.1	55.53	5.449		
8,900.0	7,220.4	8,935.8	7,335.4	44.6	40.1	-112.34	1,005.4	-1,539.0	302.6	244.5	58.05	5.213		
9,000.0	7,220.4	9,035.8	7,335.4	45.3	40.9	-112.34	1,105.4	-1,538.7	302.6	241.9	60.67	4.987		
9,100.0	7,220.4	9,135.8	7,335.4	46.0	41.8	-112.34	1,205.4	-1,538.5	302.6	239.2	63.39	4.773		
9,200.0	7,220.4	9,235.8	7,335.4	46.9	42.8	-112.34	1,305.4	-1,538.2	302.6	236.4	66.20	4.571		
9,300.0	7,220.4	9,335.8	7,335.4	47.8	43.9	-112.34	1,405.4	-1,537.9	302.6	233.5	69.08	4.380		
9,400.0	7,220.4	9,435.8	7,335.4	48.8	45.0	-112.34	1,505.4	-1,537.7	302.6	230.5	72.02	4.201		
9,500.0	7,220.4	9,535.8	7,335.4	49.8	46.2	-112.34	1,605.4	-1,537.4	302.6	227.5	75.02	4.033		
9,600.0	7,220.4	9,635.8	7,335.4	50.9	47.4	-112.34	1,705.4	-1,537.1	302.5	224.5	78.07	3.875		
9,700.0	7,220.4	9,735.8	7,335.4	52.1	48.7	-112.34	1,805.4	-1,536.8	302.5	221.4	81.16	3.728		
9,800.0	7,220.4	9,835.8	7,335.4	53.3	50.1	-112.34	1,905.4	-1,536.6	302.5	218.2	84.30	3.589		
9,900.0	7,220.4	9,935.8	7,335.4	54.6	51.5	-112.34	2,005.4	-1,536.3	302.5	215.1	87.47	3.459		
10,000.0	7,220.4	10,035.8	7,335.4	55.9	52.9	-112.34	2,105.4	-1,536.0	302.5	211.8	90.67	3.336		
10,100.0	7,220.4	10,135.8	7,335.4	57.2	54.4	-112.34	2,205.4	-1,535.8	302.5	208.6	93.90	3.222		
10,200.0	7,220.4	10,235.8	7,335.4	58.6	55.9	-112.34	2,305.4	-1,535.5	302.5	205.3	97.16	3.114		
10,300.0	7,220.4	10,335.8	7,335.4	60.1	57.4	-112.34	2,405.4	-1,535.2	302.5	202.1	100.44	3.012		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-022HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-022HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design Raindance West Pad Sec.30-T6N-R67W - Raindance FD 30-024HC - Wellbore #1 - Plan #1 (11-13-13)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,400.0	7,220.4	10,435.8	7,335.4	61.5	58.9	112.34	2,505.4	-1,535.0	302.5	198.8	103.74	2.916	
10,500.0	7,220.4	10,535.8	7,335.4	63.0	60.5	112.34	2,605.4	-1,534.7	302.5	195.4	107.06	2.825	
10,600.0	7,220.4	10,635.8	7,335.4	64.5	62.1	112.35	2,705.4	-1,534.4	302.5	192.1	110.40	2.740	
10,700.0	7,220.4	10,735.8	7,335.4	66.1	63.8	112.35	2,805.4	-1,534.1	302.5	188.7	113.75	2.659	
10,800.0	7,220.4	10,835.8	7,335.4	67.6	65.4	112.35	2,905.4	-1,533.9	302.5	185.4	117.12	2.583	
10,900.0	7,220.4	10,935.8	7,335.4	69.2	67.1	112.35	3,005.3	-1,533.6	302.5	182.0	120.50	2.510	
11,000.0	7,220.4	11,035.8	7,335.4	70.8	68.7	112.35	3,105.3	-1,533.3	302.5	178.6	123.89	2.441	
11,100.0	7,220.4	11,135.8	7,335.4	72.5	70.4	112.35	3,205.3	-1,533.1	302.4	175.2	127.29	2.376	
11,200.0	7,220.4	11,235.8	7,335.4	74.1	72.1	112.35	3,305.3	-1,532.8	302.4	171.7	130.71	2.314	
11,300.0	7,220.4	11,335.8	7,335.4	75.8	73.8	112.35	3,405.3	-1,532.5	302.4	168.3	134.13	2.255	
11,400.0	7,220.4	11,435.8	7,335.4	77.4	75.5	112.35	3,505.3	-1,532.2	302.4	164.9	137.56	2.198	
11,500.0	7,220.4	11,535.8	7,335.4	79.1	77.3	112.35	3,605.3	-1,532.0	302.4	161.4	141.00	2.145	
11,600.0	7,220.4	11,635.8	7,335.4	80.8	79.0	112.35	3,705.3	-1,531.7	302.4	158.0	144.45	2.094	
11,700.0	7,220.4	11,735.8	7,335.4	82.5	80.8	112.35	3,805.3	-1,531.4	302.4	154.5	147.91	2.045	
11,800.0	7,220.4	11,835.8	7,335.4	84.2	82.5	112.35	3,905.3	-1,531.2	302.4	151.0	151.37	1.998	
11,900.0	7,220.4	11,935.8	7,335.4	85.9	84.3	112.35	4,005.3	-1,530.9	302.4	147.6	154.84	1.953	
12,000.0	7,220.4	12,035.8	7,335.4	87.7	86.1	112.35	4,105.3	-1,530.6	302.4	144.1	158.31	1.910	
12,100.0	7,220.4	12,135.8	7,335.4	89.4	87.8	112.35	4,205.3	-1,530.4	302.4	140.6	161.79	1.869	
12,200.0	7,220.4	12,235.8	7,335.4	91.2	89.6	112.35	4,305.3	-1,530.1	302.4	137.1	165.27	1.830	
12,274.9	7,220.4	12,310.7	7,335.4	92.5	91.0	112.35	4,380.2	-1,529.9	302.4	134.5	167.88	1.801 SF	

Raindance West Pad Sec.30-T6N-R67W - Raindance FD 30-025HN - Wellbore #1 - Plan #1 (11-13-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
0.0	0.0	0.0	0.0	0.0	0.0	89.31	0.7	60.1	60.1					
100.0	100.0	100.0	100.0	0.1	0.1	89.31	0.7	60.1	60.1	59.9	0.22	267.475		
200.0	200.0	200.0	200.0	0.3	0.3	89.31	0.7	60.1	60.1	59.4	0.67	89.158		
300.0	300.0	300.0	300.0	0.6	0.6	89.31	0.7	60.1	60.1	59.0	1.12	53.495		
400.0	400.0	400.0	400.0	0.8	0.8	89.31	0.7	60.1	60.1	58.5	1.57	38.211		
500.0	500.0	500.0	500.0	1.0	1.0	89.31	0.7	60.1	60.1	58.1	2.02	29.719		
600.0	600.0	600.0	600.0	1.2	1.2	89.31	0.7	60.1	60.1	57.6	2.47	24.316		
700.0	700.0	700.0	700.0	1.5	1.5	89.31	0.7	60.1	60.1	57.2	2.92	20.575		
800.0	800.0	800.0	800.0	1.7	1.7	89.31	0.7	60.1	60.1	56.7	3.37	17.832		
900.0	900.0	900.0	900.0	1.9	1.9	89.31	0.7	60.1	60.1	56.3	3.82	15.734		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	89.31	0.7	60.1	60.1	55.8	4.27	14.078		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	89.31	0.7	60.1	60.1	55.4	4.72	12.737		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	89.31	0.7	60.1	60.1	54.9	5.17	11.629		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	89.31	0.7	60.1	60.1	54.5	5.62	10.699		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	89.31	0.7	60.1	60.1	54.1	6.07	9.906		
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	89.31	0.7	60.1	60.1	53.6	6.52	9.223		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	89.31	0.7	60.1	60.1	53.2	6.97	8.628		
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	89.31	0.7	60.1	60.1	52.7	7.42	8.105		
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	89.31	0.7	60.1	60.1	52.3	7.87	7.642		
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	89.31	0.7	60.1	60.1	51.8	8.32	7.229		
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	89.31	0.7	60.1	60.1	51.4	8.77	6.858		
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	89.31	0.7	60.1	60.1	50.9	9.22	6.524		
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	89.31	0.7	60.1	60.1	50.5	9.66	6.220		
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	89.31	0.7	60.1	60.1	50.0	10.11	5.944		
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	89.31	0.7	60.1	60.1	49.6	10.56	5.691		
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	89.31	0.7	60.1	60.1	49.1	11.01	5.459		
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	89.31	0.7	60.1	60.1	48.7	11.46	5.245		
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	89.31	0.7	60.1	60.1	48.2	11.91	5.047		
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	89.31	0.7	60.1	60.1	47.8	12.36	4.863		
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	89.31	0.7	60.1	60.1	47.3	12.81	4.693		
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	89.31	0.7	60.1	60.1	46.9	13.26	4.533		
3,100.0	3,100.0	3,100.0	3,100.0	6.9	6.9	89.31	0.7	60.1	60.1	46.4	13.71	4.385		
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	89.31	0.7	60.1	60.1	46.0	14.16	4.246		
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	89.31	0.7	60.1	60.1	45.5	14.61	4.115		
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	89.31	0.7	60.1	60.1	45.1	15.06	3.992		
3,500.0	3,500.0	3,500.0	3,500.0	7.8	7.8	89.31	0.7	60.1	60.1	44.6	15.51	3.876 CC, ES		
3,600.0	3,600.0	3,600.0	3,600.0	8.0	8.0	-167.69	0.7	60.1	62.7	46.8	15.92	3.936		
3,700.0	3,699.6	3,699.6	3,699.6	8.2	8.2	-169.01	0.7	60.1	70.4	54.1	16.28	4.321		
3,800.0	3,798.8	3,798.8	3,798.8	8.4	8.4	-170.66	0.7	60.1	83.2	66.6	16.60	5.013		
3,900.0	3,897.1	3,897.1	3,897.1	8.6	8.6	-172.26	0.7	60.1	101.2	84.4	16.88	5.999		
4,000.0	3,994.3	3,994.3	3,994.3	8.8	8.9	-173.63	0.7	60.1	124.4	107.3	17.11	7.271		
4,100.0	4,090.2	4,090.2	4,090.2	9.1	9.1	-174.73	0.7	60.1	152.7	135.4	17.30	8.824		
4,200.0	4,184.4	4,184.4	4,184.4	9.5	9.3	-175.59	0.7	60.1	186.0	168.5	17.45	10.655		
4,300.0	4,276.8	4,276.8	4,276.8	9.9	9.5	-176.26	0.7	60.1	224.1	206.6	17.56	12.763		
4,400.0	4,367.1	4,377.8	4,377.8	10.4	9.7	-176.80	0.2	58.6	265.8	248.1	17.64	15.068		
4,500.0	4,454.9	4,484.6	4,484.3	11.1	9.9	-177.10	-2.1	51.7	307.3	289.7	17.67	17.392		
4,600.0	4,541.2	4,595.4	4,594.2	11.8	10.1	-177.27	-6.6	38.5	346.7	328.6	18.06	19.193		
4,700.0	4,627.5	4,711.3	4,708.2	12.6	10.4	-177.26	-13.4	18.3	380.6	362.1	18.53	20.535		
4,800.0	4,713.8	4,832.1	4,825.2	13.4	10.7	-177.11	-22.8	-9.7	408.7	389.6	19.04	21.468		
4,900.0	4,800.1	4,956.8	4,943.9	14.3	11.1	-176.83	-35.0	-45.8	430.6	411.0	19.57	22.005		
5,000.0	4,886.4	5,084.6	5,062.7	15.2	11.5	-176.43	-50.1	-90.5	446.0	425.9	20.13	22.153		
5,100.0	4,972.7	5,214.5	5,179.9	16.1	12.2	-175.89	-68.0	-143.4	454.9	434.2	20.74	21.930		

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-022HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-022HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,200.0	5,059.0	5,335.1	5,285.3	17.1	12.9	-175.26	-86.7	-199.0	457.4	436.1	21.37	21.404	
5,300.0	5,145.3	5,435.0	5,371.8	18.1	13.5	-174.70	-102.8	-246.4	458.5	436.5	21.98	20.859	
5,400.0	5,231.6	5,534.9	5,458.2	19.0	14.3	-174.16	-118.8	-293.9	459.5	436.9	22.62	20.319	
5,500.0	5,317.9	5,634.8	5,544.7	20.1	15.0	-173.61	-134.8	-341.3	460.6	437.4	23.28	19.785	
5,600.0	5,404.2	5,734.7	5,631.1	21.1	15.8	-173.07	-150.8	-388.7	461.8	437.8	23.98	19.259	
5,700.0	5,490.5	5,834.6	5,717.6	22.1	16.7	-172.52	-166.8	-436.2	463.0	438.3	24.71	18.741	
5,800.0	5,576.8	5,934.5	5,804.0	23.1	17.6	-171.99	-182.8	-483.6	464.3	438.8	25.46	18.234	
5,900.0	5,663.1	6,034.4	5,890.5	24.2	18.5	-171.45	-198.8	-531.0	465.5	439.3	26.25	17.737	
6,000.0	5,749.4	6,134.3	5,976.9	25.2	19.4	-170.92	-214.8	-578.5	466.9	439.8	27.06	17.251	
6,100.0	5,835.7	6,234.2	6,063.4	26.3	20.3	-170.39	-230.8	-625.9	468.2	440.3	27.91	16.778	
6,200.0	5,922.0	6,334.1	6,149.8	27.4	21.3	-169.86	-246.9	-673.3	469.6	440.8	28.78	16.316	
6,300.0	6,008.3	6,434.0	6,236.3	28.4	22.2	-169.34	-262.9	-720.8	471.1	441.4	29.69	15.867	
6,400.0	6,094.6	6,533.9	6,322.7	29.5	23.2	-168.82	-278.9	-768.2	472.6	441.9	30.62	15.431	
6,500.0	6,180.9	6,633.8	6,409.1	30.6	24.2	-168.30	-294.9	-815.7	474.1	442.5	31.59	15.008	
6,600.0	6,267.2	6,733.7	6,495.6	31.7	25.2	-167.79	-310.9	-863.1	475.6	443.0	32.58	14.598	
6,700.0	6,353.5	6,833.6	6,582.0	32.8	26.2	-167.28	-326.9	-910.5	477.2	443.6	33.61	14.201	
6,800.0	6,439.8	6,933.5	6,668.5	33.8	27.2	-166.78	-342.9	-958.0	478.9	444.2	34.66	13.817	
6,900.0	6,526.1	7,033.4	6,754.9	34.9	28.3	-166.27	-358.9	-1,005.4	480.5	444.8	35.74	13.445	
7,000.0	6,612.4	7,133.3	6,844.3	36.0	29.2	-166.70	-367.5	-1,054.4	482.0	445.6	36.43	13.232	
7,100.0	6,698.7	7,233.2	6,928.1	37.1	29.9	-166.60	-354.3	-1,100.3	483.6	447.6	36.05	13.414	
7,200.0	6,785.0	7,315.4	6,996.5	38.2	30.5	-173.92	-326.5	-1,137.7	488.5	453.1	35.41	13.797	
7,300.0	6,871.8	7,387.4	7,051.3	39.2	30.9	159.74	-291.0	-1,167.7	498.9	463.4	35.48	14.060	
7,400.0	6,956.7	7,455.7	7,098.1	40.0	31.1	134.86	-248.2	-1,193.2	512.3	475.7	36.59	14.002	
7,500.0	7,035.5	7,525.0	7,139.0	40.7	31.4	116.71	-197.1	-1,215.5	526.7	488.8	37.87	13.908	
7,600.0	7,104.2	7,585.9	7,168.8	41.2	31.5	104.74	-146.5	-1,231.7	540.1	501.7	38.42	14.059	
7,700.0	7,159.2	7,650.0	7,193.2	41.6	31.6	96.90	-88.8	-1,244.9	551.2	513.0	38.19	14.431	
7,800.0	7,197.7	7,711.5	7,209.5	41.8	31.7	92.27	-30.2	-1,253.7	558.7	521.1	37.60	14.860	
7,900.0	7,217.7	7,775.0	7,218.7	41.9	31.7	90.16	32.3	-1,258.5	562.2	524.8	37.42	15.024	
8,000.0	7,220.4	7,847.3	7,220.4	41.9	31.7	90.00	104.6	-1,259.3	562.1	524.2	37.91	14.830	
8,100.0	7,220.4	7,947.3	7,220.4	41.9	31.8	90.00	204.6	-1,259.0	562.1	523.5	38.59	14.565	
8,200.0	7,220.4	8,047.3	7,220.4	42.0	31.9	90.00	304.6	-1,258.7	562.1	522.4	39.70	14.159	
8,300.0	7,220.4	8,147.3	7,220.4	42.1	32.2	90.00	404.6	-1,258.5	562.1	521.0	41.14	13.664	
8,400.0	7,220.4	8,247.3	7,220.4	42.4	32.5	90.00	504.6	-1,258.2	562.1	519.2	42.87	13.111	
8,500.0	7,220.4	8,347.3	7,220.4	42.7	33.0	90.00	604.6	-1,257.9	562.1	517.2	44.87	12.527	
8,600.0	7,220.4	8,447.3	7,220.4	43.0	33.5	90.00	704.6	-1,257.6	562.1	515.0	47.10	11.935	
8,700.0	7,220.4	8,547.3	7,220.4	43.5	34.2	90.00	804.6	-1,257.4	562.1	512.6	49.52	11.350	
8,800.0	7,220.4	8,647.3	7,220.4	44.0	35.0	90.00	904.6	-1,257.1	562.1	510.0	52.12	10.785	
8,900.0	7,220.4	8,747.3	7,220.4	44.6	35.8	90.00	1,004.6	-1,256.8	562.1	507.2	54.86	10.245	
9,000.0	7,220.4	8,847.3	7,220.4	45.3	36.8	90.00	1,104.6	-1,256.6	562.1	504.3	57.73	9.736	
9,100.0	7,220.4	8,947.3	7,220.4	46.0	37.9	90.00	1,204.6	-1,256.3	562.1	501.3	60.70	9.259	
9,200.0	7,220.4	9,047.3	7,220.4	46.9	39.0	90.00	1,304.6	-1,256.0	562.0	498.3	63.77	8.813	
9,300.0	7,220.4	9,147.3	7,220.4	47.8	40.2	90.00	1,404.6	-1,255.8	562.0	495.1	66.92	8.398	
9,400.0	7,220.4	9,247.3	7,220.4	48.8	41.5	90.00	1,504.6	-1,255.5	562.0	491.9	70.14	8.013	
9,500.0	7,220.4	9,347.3	7,220.4	49.8	42.8	90.00	1,604.6	-1,255.2	562.0	488.6	73.42	7.655	
9,600.0	7,220.4	9,447.3	7,220.4	50.9	44.2	90.00	1,704.6	-1,254.9	562.0	485.3	76.75	7.323	
9,700.0	7,220.4	9,547.3	7,220.4	52.1	45.6	90.00	1,804.6	-1,254.7	562.0	481.9	80.12	7.014	
9,800.0	7,220.4	9,647.3	7,220.4	53.3	47.1	90.00	1,904.6	-1,254.4	562.0	478.5	83.54	6.727	
9,900.0	7,220.4	9,747.3	7,220.4	54.6	48.6	90.00	2,004.6	-1,254.1	562.0	475.0	86.99	6.460	
10,000.0	7,220.4	9,847.3	7,220.4	55.9	50.1	90.00	2,104.6	-1,253.9	562.0	471.5	90.48	6.211	
10,100.0	7,220.4	9,947.3	7,220.4	57.2	51.7	90.00	2,204.6	-1,253.6	562.0	468.0	93.99	5.979	
10,200.0	7,220.4	10,047.3	7,220.4	58.6	53.3	90.00	2,304.6	-1,253.3	562.0	464.4	97.52	5.762	
10,300.0	7,220.4	10,147.3	7,220.4	60.1	54.9	90.00	2,404.6	-1,253.1	562.0	460.9	101.08	5.559	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-022HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-022HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design Raindance West Pad Sec.30-T6N-R67W - Raindance FD 30-025HN - Wellbore #1 - Plan #1 (11-13-13)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,400.0	7,220.4	10,247.3	7,220.4	61.5	56.6	90.00	2,504.6	-1,252.8	561.9	457.3	104.66	5.369	
10,500.0	7,220.4	10,347.3	7,220.4	63.0	58.2	90.00	2,604.6	-1,252.5	561.9	453.7	108.26	5.191	
10,600.0	7,220.4	10,447.3	7,220.4	64.5	59.9	90.00	2,704.6	-1,252.2	561.9	450.1	111.87	5.023	
10,700.0	7,220.4	10,547.3	7,220.4	66.1	61.6	90.00	2,804.6	-1,252.0	561.9	446.4	115.50	4.865	
10,800.0	7,220.4	10,647.3	7,220.4	67.6	63.3	90.00	2,904.6	-1,251.7	561.9	442.8	119.14	4.716	
10,900.0	7,220.4	10,747.3	7,220.4	69.2	65.0	90.00	3,004.6	-1,251.4	561.9	439.1	122.80	4.576	
11,000.0	7,220.4	10,847.3	7,220.4	70.8	66.7	90.00	3,104.6	-1,251.2	561.9	435.4	126.46	4.443	
11,100.0	7,220.4	10,947.3	7,220.4	72.5	68.5	90.00	3,204.6	-1,250.9	561.9	431.8	130.14	4.318	
11,200.0	7,220.4	11,047.3	7,220.4	74.1	70.2	90.00	3,304.6	-1,250.6	561.9	428.1	133.82	4.199	
11,300.0	7,220.4	11,147.3	7,220.4	75.8	72.0	90.00	3,404.6	-1,250.4	561.9	424.4	137.51	4.086	
11,400.0	7,220.4	11,247.3	7,220.4	77.4	73.8	90.00	3,504.6	-1,250.1	561.9	420.7	141.22	3.979	
11,500.0	7,220.4	11,347.3	7,220.4	79.1	75.5	90.00	3,604.6	-1,249.8	561.9	416.9	144.92	3.877	
11,600.0	7,220.4	11,447.3	7,220.4	80.8	77.3	90.00	3,704.6	-1,249.6	561.9	413.2	148.64	3.780	
11,700.0	7,220.4	11,547.3	7,220.4	82.5	79.1	90.00	3,804.6	-1,249.3	561.8	409.5	152.36	3.688	
11,800.0	7,220.4	11,647.3	7,220.4	84.2	80.9	90.00	3,904.6	-1,249.0	561.8	405.7	156.09	3.599	
11,900.0	7,220.4	11,747.3	7,220.4	85.9	82.7	90.00	4,004.6	-1,248.7	561.8	402.0	159.82	3.515	
12,000.0	7,220.4	11,847.3	7,220.4	87.7	84.5	90.00	4,104.6	-1,248.5	561.8	398.3	163.56	3.435	
12,100.0	7,220.4	11,947.3	7,220.4	89.4	86.3	90.00	4,204.6	-1,248.2	561.8	394.5	167.30	3.358	
12,200.0	7,220.4	12,047.3	7,220.4	91.2	88.1	90.00	4,304.6	-1,247.9	561.8	390.8	171.05	3.284	
12,274.9	7,220.4	12,122.2	7,220.4	92.5	89.5	90.00	4,379.5	-1,247.7	561.8	387.9	173.86	3.231 SF	

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-022HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-022HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toelface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	88.85	1.8	90.5	90.5					
100.0	100.0	100.0	100.0	0.1	0.1	88.85	1.8	90.5	90.5	90.2	0.22	402.502		
200.0	200.0	200.0	200.0	0.3	0.3	88.85	1.8	90.5	90.5	89.8	0.67	134.167		
300.0	300.0	300.0	300.0	0.6	0.6	88.85	1.8	90.5	90.5	89.3	1.12	80.500		
400.0	400.0	400.0	400.0	0.8	0.8	88.85	1.8	90.5	90.5	88.9	1.57	57.500		
500.0	500.0	500.0	500.0	1.0	1.0	88.85	1.8	90.5	90.5	88.4	2.02	44.722		
600.0	600.0	600.0	600.0	1.2	1.2	88.85	1.8	90.5	90.5	88.0	2.47	36.591		
700.0	700.0	700.0	700.0	1.5	1.5	88.85	1.8	90.5	90.5	87.5	2.92	30.962		
800.0	800.0	800.0	800.0	1.7	1.7	88.85	1.8	90.5	90.5	87.1	3.37	26.833		
900.0	900.0	900.0	900.0	1.9	1.9	88.85	1.8	90.5	90.5	86.6	3.82	23.677		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	88.85	1.8	90.5	90.5	86.2	4.27	21.184		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	88.85	1.8	90.5	90.5	85.7	4.72	19.167		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	88.85	1.8	90.5	90.5	85.3	5.17	17.500		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	88.85	1.8	90.5	90.5	84.8	5.62	16.100		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	88.85	1.8	90.5	90.5	84.4	6.07	14.907		
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	88.85	1.8	90.5	90.5	84.0	6.52	13.879		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	88.85	1.8	90.5	90.5	83.5	6.97	12.984		
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	88.85	1.8	90.5	90.5	83.1	7.42	12.197		
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	88.85	1.8	90.5	90.5	82.6	7.87	11.500		
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	88.85	1.8	90.5	90.5	82.2	8.32	10.878		
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	88.85	1.8	90.5	90.5	81.7	8.77	10.321		
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	88.85	1.8	90.5	90.5	81.3	9.22	9.817		
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	88.85	1.8	90.5	90.5	80.8	9.66	9.361		
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	88.85	1.8	90.5	90.5	80.4	10.11	8.944		
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	88.85	1.8	90.5	90.5	79.9	10.56	8.564		
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	88.85	1.8	90.5	90.5	79.5	11.01	8.214		
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	88.85	1.8	90.5	90.5	79.0	11.46	7.892		
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	88.85	1.8	90.5	90.5	78.6	11.91	7.594		
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	88.85	1.8	90.5	90.5	78.1	12.36	7.318		
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	88.85	1.8	90.5	90.5	77.7	12.81	7.061		
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	88.85	1.8	90.5	90.5	77.2	13.26	6.822		
3,100.0	3,100.0	3,100.0	3,100.0	6.9	6.9	88.85	1.8	90.5	90.5	76.8	13.71	6.598		
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	88.85	1.8	90.5	90.5	76.3	14.16	6.389		
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	88.85	1.8	90.5	90.5	75.9	14.61	6.192		
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	88.85	1.8	90.5	90.5	75.4	15.06	6.007		
3,500.0	3,500.0	3,500.0	3,500.0	7.8	7.8	88.85	1.8	90.5	90.5	75.0	15.51	5.833 CC, ES, SF		
3,600.0	3,600.0	3,600.0	3,600.0	8.0	8.0	-167.96	1.8	90.5	93.0	77.1	15.92	5.843		
3,700.0	3,699.6	3,699.6	3,699.6	8.2	8.2	-168.85	1.8	90.5	100.7	84.4	16.28	6.186		
3,800.0	3,798.8	3,798.8	3,798.8	8.4	8.4	-170.06	1.8	90.5	113.5	96.9	16.60	6.840		
3,900.0	3,897.1	3,897.1	3,897.1	8.6	8.6	-171.34	1.8	90.5	131.5	114.7	16.88	7.793		
4,000.0	3,994.3	3,994.3	3,994.3	8.8	8.9	-172.55	1.8	90.5	154.7	137.6	17.11	9.038		
4,100.0	4,090.2	4,090.2	4,090.2	9.1	9.1	-173.61	1.8	90.5	182.9	165.6	17.31	10.567		
4,200.0	4,184.4	4,184.4	4,184.4	9.5	9.3	-174.49	1.8	90.5	216.1	198.6	17.46	12.379		
4,300.0	4,276.8	4,276.8	4,276.8	9.9	9.5	-175.22	1.8	90.5	254.2	236.7	17.57	14.473		
4,400.0	4,367.1	4,367.1	4,367.1	10.4	9.7	-175.81	1.8	90.5	297.2	279.5	17.64	16.849		
4,500.0	4,454.9	4,454.9	4,454.9	11.1	9.9	-176.28	1.8	90.5	344.8	327.1	17.67	19.511		
4,600.0	4,541.2	4,541.2	4,541.2	11.8	10.1	-176.75	1.8	90.5	395.2	377.2	18.05	21.894		
4,700.0	4,627.5	4,627.5	4,627.5	12.6	10.3	-177.11	1.8	90.5	445.7	427.2	18.49	24.104		
4,800.0	4,713.8	4,713.8	4,713.8	13.4	10.5	-177.41	1.8	90.5	496.2	477.2	18.94	26.196		
4,900.0	4,800.1	4,800.1	4,800.1	14.3	10.7	-177.65	1.8	90.5	546.6	527.2	19.40	28.175		
5,000.0	4,886.4	4,886.4	4,886.4	15.2	10.9	-177.85	1.8	90.5	597.1	577.3	19.87	30.048		
5,100.0	4,972.7	4,972.7	4,972.7	16.1	11.1	-178.01	1.8	90.5	647.6	627.3	20.35	31.820		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-022HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-022HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Raindance West Pad Sec.30-T6N-R67W - Raindance FD 30-027HN - Wellbore #1 - Plan #1 (11-13-13)												Offset Well Error:	0.0 ft
Survey Program: 0-MWD													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,200.0	5,059.0	5,059.0	5,059.0	17.1	11.3	-178.16	1.8	90.5	698.1	677.3	20.84	33.497	
5,300.0	5,145.3	5,171.8	5,171.8	18.1	11.5	-178.28	1.1	89.3	747.8	726.4	21.38	34.985	
5,400.0	5,231.6	5,316.4	5,315.9	19.0	11.8	-178.16	-4.6	80.0	792.1	770.2	21.94	36.097	
5,500.0	5,317.9	5,470.6	5,468.3	20.1	12.1	-177.75	-17.0	60.0	829.7	807.1	22.55	36.801	
5,600.0	5,404.2	5,633.3	5,626.4	21.1	12.4	-177.06	-37.1	27.5	860.0	836.8	23.19	37.081	
5,700.0	5,490.5	5,802.7	5,786.9	22.1	12.9	-176.08	-65.4	-18.2	882.4	858.5	23.90	36.922	
5,800.0	5,576.8	5,976.4	5,946.0	23.1	13.6	-174.78	-102.1	-77.6	896.8	872.1	24.70	36.306	
5,900.0	5,663.1	6,132.2	6,082.8	24.2	14.4	-173.35	-141.3	-140.9	903.3	877.7	25.57	35.330	
6,000.0	5,749.4	6,231.0	6,168.1	25.2	14.9	-172.39	-167.5	-183.2	907.7	881.4	26.32	34.487	
6,100.0	5,835.7	6,329.7	6,253.4	26.3	15.6	-171.45	-193.6	-225.4	912.4	885.2	27.12	33.635	
6,200.0	5,922.0	6,428.4	6,338.7	27.4	16.3	-170.51	-219.7	-267.7	917.3	889.3	27.98	32.778	
6,300.0	6,008.3	6,527.1	6,424.0	28.4	17.0	-169.58	-245.9	-309.9	922.4	893.5	28.90	31.919	
6,400.0	6,094.6	6,625.9	6,509.4	29.5	17.7	-168.66	-272.0	-352.2	927.8	897.9	29.87	31.062	
6,500.0	6,180.9	6,724.6	6,594.7	30.6	18.5	-167.75	-298.2	-394.4	933.4	902.5	30.90	30.212	
6,600.0	6,267.2	6,823.3	6,680.0	31.7	19.3	-166.85	-324.3	-436.7	939.3	907.3	31.98	29.373	
6,700.0	6,353.5	6,925.5	6,769.0	32.8	20.1	-166.15	-347.9	-480.8	945.3	912.3	33.05	28.605	
6,800.0	6,439.8	7,030.2	6,862.6	33.8	20.8	-166.76	-350.3	-527.1	950.9	917.2	33.62	28.280	
6,900.0	6,526.1	7,125.0	6,945.7	34.9	21.3	-168.56	-331.2	-568.1	956.6	922.9	33.69	28.391	
7,000.0	6,612.4	7,204.8	7,011.5	36.0	21.6	-170.92	-300.1	-600.5	964.4	930.8	33.56	28.733	
7,100.0	6,698.7	7,268.4	7,059.6	37.1	21.8	-173.29	-266.2	-624.2	976.4	942.9	33.50	29.143	
7,200.0	6,785.0	7,318.4	7,094.2	38.2	21.9	-175.41	-234.2	-641.2	994.2	960.6	33.60	29.585	

Company: Great Western
Project: SEC.30-T6N-R67W
Reference Site: Raindance West Pad Sec.30-T6N-R67W
Site Error: 0.0ft
Reference Well: Raindance FD 30-022HN
Well Error: 0.0ft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1 (11-12-13)

Local Co-ordinate Reference: Well Raindance FD 30-022HN
TVD Reference: WELL @ 5012.4ft (RKB - 16.5')
MD Reference: WELL @ 5012.4ft (RKB - 16.5')
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Landmark
Offset TVD Reference: Offset Datum

Reference Depths are relative to WELL @ 5012.4ft (RKB - 16.5')

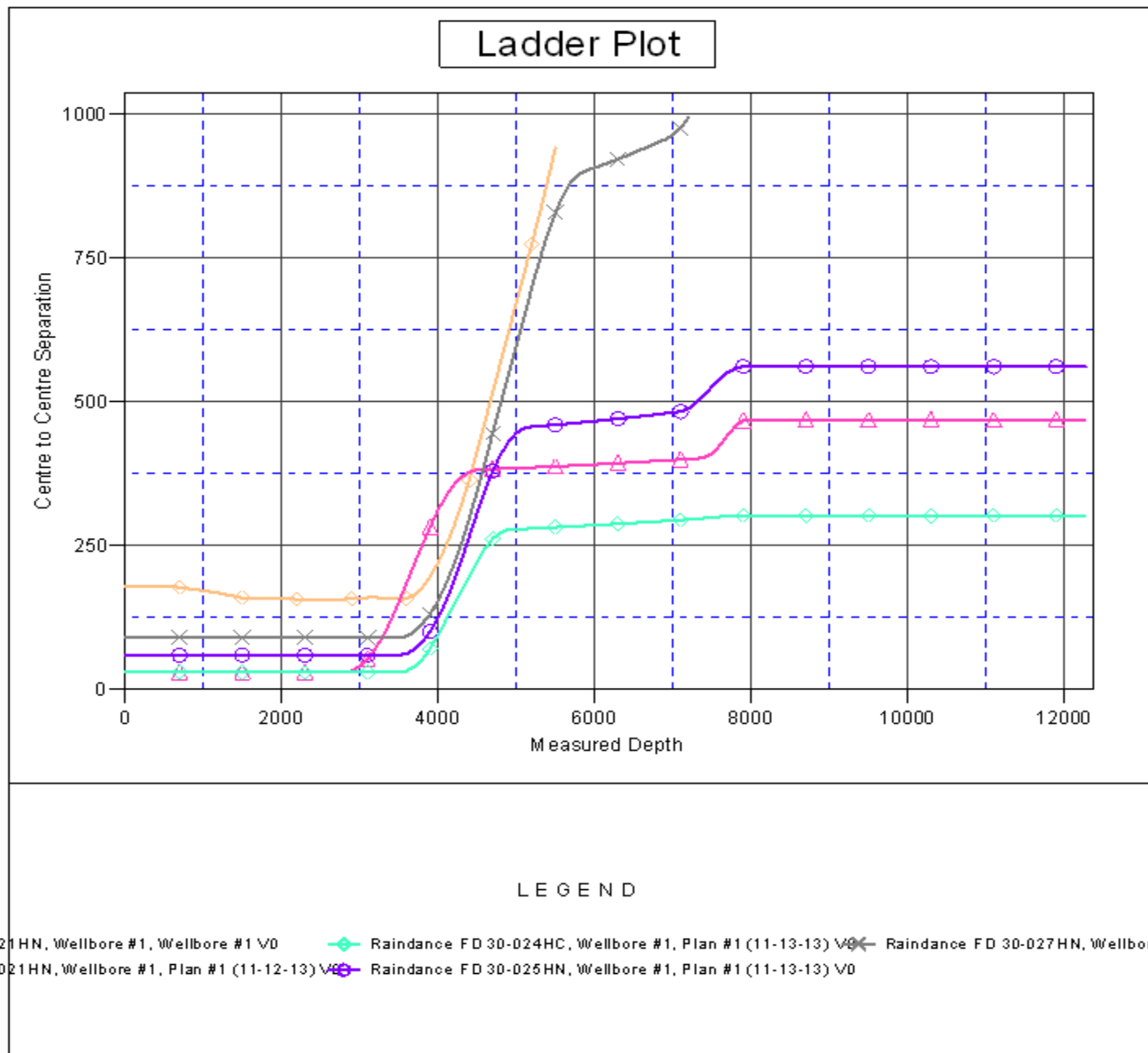
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Raindance FD 30-022HN

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.36°



Company: Great Western
Project: SEC.30-T6N-R67W
Reference Site: Raindance West Pad Sec.30-T6N-R67W
Site Error: 0.0ft
Reference Well: Raindance FD 30-022HN
Well Error: 0.0ft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1 (11-12-13)

Local Co-ordinate Reference: Well Raindance FD 30-022HN
TVD Reference: WELL @ 5012.4ft (RKB - 16.5')
MD Reference: WELL @ 5012.4ft (RKB - 16.5')
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Landmark
Offset TVD Reference: Offset Datum

Reference Depths are relative to WELL @ 5012.4ft (RKB - 16.5')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Raindance FD 30-022HN
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.36°

