

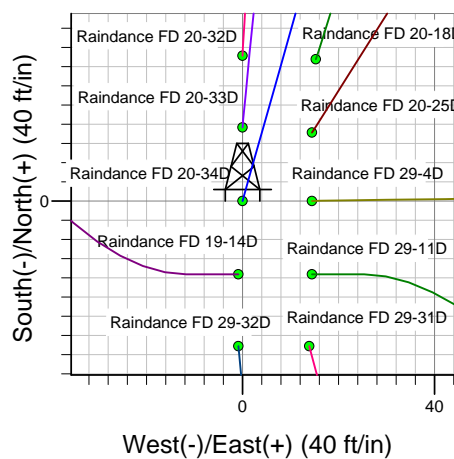
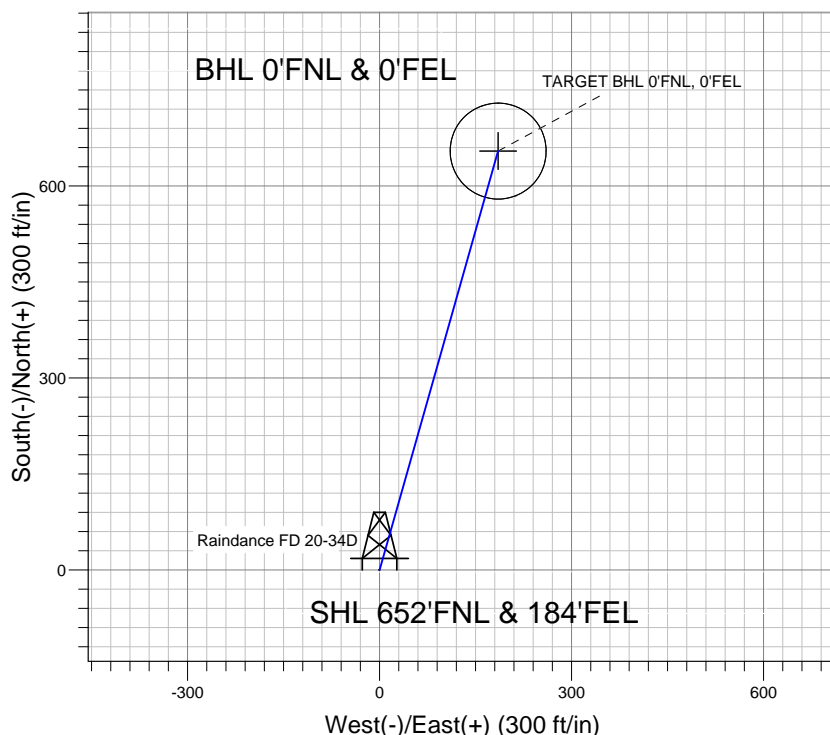
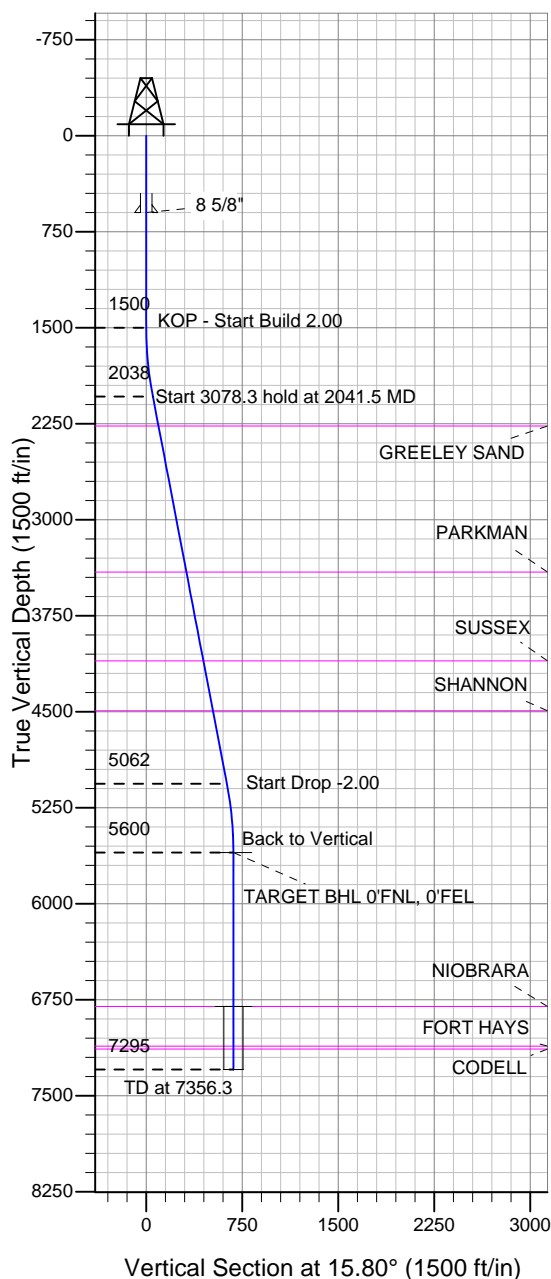
Well Name: Raindance FD 20-34D

Surface Location: Raindance FD West Row Pad Sec.30-T6N-R67W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4782.7

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1412099.02	3159403.44	40.463200	-104.927119	

Original Well Elev WELL @ 4796.7ft (Original Well Elev)

Great Western



Raindance FD West Row Pad Sec.30-T6N-R67W
 Raindance FD 20-34D
 Plan #1 (10-18-12)
 10:52, October 22 2012



Azimuths to True North
 Magnetic North: 8.78°

Magnetic Field
 Strength: 53005.9snT
 Dip Angle: 67.03°
 Date: 10/18/2012
 Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 0'FNL, 0'FEL	5600.0	654.7	185.3	40.464997	-104.926453	Point
TARGET CIRCLE 0'FNL & 0'FEL	6802.0	654.7	185.3	40.464997	-104.926453	Circle (Radius: 75.0)

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	1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0	
3	2041.5	10.83	15.80	2038.3	49.1	13.9	2.00	15.80	51.0	
4	5119.8	10.83	15.80	5061.7	605.6	171.4	0.00	0.00	629.4	
5	5661.3	0.00	0.00	5600.0	654.7	185.3	2.00	180.00	680.4	TARGET BHL 0'FNL, 0'FEL
6	7356.3	0.00	0.00	7295.0	654.7	185.3	0.00	0.00	680.4	



Great Western

SEC.30-T6N-R67W

Raindance FD West Row Pad Sec.30-T6N-R67W

Raindance FD 20-34D

Wellbore #1

Plan: Plan #1 (10-18-12)

Standard Planning Report

22 October, 2012

Database:	Landmark	Local Co-ordinate Reference:	Well Raindance FD 20-34D
Company:	Great Western	TVD Reference:	WELL @ 4796.7ft (Original Well Elev)
Project:	SEC.30-T6N-R67W	MD Reference:	WELL @ 4796.7ft (Original Well Elev)
Site:	Raindance FD West Row Pad Sec.30-T6N-R67W	North Reference:	True
Well:	Raindance FD 20-34D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (10-18-12)		

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 FD West Row Pad Sec.30-T6N-R67W											
Site Position:						Northing:			1,412,129.27 ft			Latitude:			40.463283		
From:			Lat/Long			Easting:			3,159,403.24 ft			Longitude:			-104.927119		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.37 °		

Well	Raindance FD 20-34D					
Well Position	+N/-S	-30.3 ft	Northing:	1,412,099.02 ft	Latitude:	40.463200
	+E/-W	0.0 ft	Easting:	3,159,403.44 ft	Longitude:	-104.927119
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,782.7 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/18/2012	8.78	67.03	53,006

Design	Plan #1 (10-18-12)			
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	15.80

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	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,041.5	10.83	15.80	2,038.3	49.1	13.9	2.00	2.00	0.00	15.80	
5,119.8	10.83	15.80	5,061.7	605.6	171.4	0.00	0.00	0.00	0.00	
5,661.3	0.00	0.00	5,600.0	654.7	185.3	2.00	-2.00	0.00	180.00	TARGET BHL 0'FN
7,356.3	0.00	0.00	7,295.0	654.7	185.3	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Raindance FD 20-34D
Company:	Great Western	TVD Reference:	WELL @ 4796.7ft (Original Well Elev)
Project:	SEC.30-T6N-R67W	MD Reference:	WELL @ 4796.7ft (Original Well Elev)
Site:	Raindance FD West Row Pad Sec.30-T6N-R67W	North Reference:	True
Well:	Raindance FD 20-34D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (10-18-12)		

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
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	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
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	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
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	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
8 5/8"									
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	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
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.00	0.00	960.0	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
1,040.0	0.00	0.00	1,040.0	0.0	0.0	0.0	0.00	0.00	0.00
1,080.0	0.00	0.00	1,080.0	0.0	0.0	0.0	0.00	0.00	0.00
1,120.0	0.00	0.00	1,120.0	0.0	0.0	0.0	0.00	0.00	0.00
1,160.0	0.00	0.00	1,160.0	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
1,240.0	0.00	0.00	1,240.0	0.0	0.0	0.0	0.00	0.00	0.00
1,280.0	0.00	0.00	1,280.0	0.0	0.0	0.0	0.00	0.00	0.00
1,320.0	0.00	0.00	1,320.0	0.0	0.0	0.0	0.00	0.00	0.00
1,360.0	0.00	0.00	1,360.0	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
1,440.0	0.00	0.00	1,440.0	0.0	0.0	0.0	0.00	0.00	0.00
1,480.0	0.00	0.00	1,480.0	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
KOP - Start Build 2.00									
1,520.0	0.40	15.80	1,520.0	0.1	0.0	0.1	2.00	2.00	0.00
1,560.0	1.20	15.80	1,560.0	0.6	0.2	0.6	2.00	2.00	0.00
1,600.0	2.00	15.80	1,600.0	1.7	0.5	1.7	2.00	2.00	0.00
1,640.0	2.80	15.80	1,639.9	3.3	0.9	3.4	2.00	2.00	0.00
1,680.0	3.60	15.80	1,679.9	5.4	1.5	5.7	2.00	2.00	0.00
1,720.0	4.40	15.80	1,719.8	8.1	2.3	8.4	2.00	2.00	0.00
1,760.0	5.20	15.80	1,759.6	11.3	3.2	11.8	2.00	2.00	0.00
1,800.0	6.00	15.80	1,799.5	15.1	4.3	15.7	2.00	2.00	0.00
1,840.0	6.80	15.80	1,839.2	19.4	5.5	20.2	2.00	2.00	0.00
1,880.0	7.60	15.80	1,878.9	24.2	6.9	25.2	2.00	2.00	0.00
1,920.0	8.40	15.80	1,918.5	29.6	8.4	30.7	2.00	2.00	0.00
1,960.0	9.20	15.80	1,958.0	35.5	10.0	36.9	2.00	2.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Raindance FD 20-34D
Company:	Great Western	TVD Reference:	WELL @ 4796.7ft (Original Well Elev)
Project:	SEC.30-T6N-R67W	MD Reference:	WELL @ 4796.7ft (Original Well Elev)
Site:	Raindance FD West Row Pad Sec.30-T6N-R67W	North Reference:	True
Well:	Raindance FD 20-34D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (10-18-12)		

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)
2,000.0	10.00	15.80	1,997.5	41.9	11.9	43.5	2.00	2.00	0.00
2,040.0	10.80	15.80	2,036.8	48.8	13.8	50.7	2.00	2.00	0.00
2,041.5	10.83	15.80	2,038.3	49.1	13.9	51.0	2.00	2.00	0.00
Start 3078.3 hold at 2041.5 MD									
2,080.0	10.83	15.80	2,076.1	56.1	15.9	58.3	0.00	0.00	0.00
2,120.0	10.83	15.80	2,115.4	63.3	17.9	65.8	0.00	0.00	0.00
2,160.0	10.83	15.80	2,154.7	70.5	20.0	73.3	0.00	0.00	0.00
2,200.0	10.83	15.80	2,194.0	77.7	22.0	80.8	0.00	0.00	0.00
2,240.0	10.83	15.80	2,233.2	85.0	24.1	88.3	0.00	0.00	0.00
2,275.4	10.83	15.80	2,268.0	91.4	25.9	95.0	0.00	0.00	0.00
GREELEY SAND									
2,280.0	10.83	15.80	2,272.5	92.2	26.1	95.8	0.00	0.00	0.00
2,320.0	10.83	15.80	2,311.8	99.4	28.1	103.4	0.00	0.00	0.00
2,360.0	10.83	15.80	2,351.1	106.7	30.2	110.9	0.00	0.00	0.00
2,400.0	10.83	15.80	2,390.4	113.9	32.2	118.4	0.00	0.00	0.00
2,440.0	10.83	15.80	2,429.7	121.1	34.3	125.9	0.00	0.00	0.00
2,480.0	10.83	15.80	2,469.0	128.4	36.3	133.4	0.00	0.00	0.00
2,520.0	10.83	15.80	2,508.3	135.6	38.4	140.9	0.00	0.00	0.00
2,560.0	10.83	15.80	2,547.5	142.8	40.4	148.4	0.00	0.00	0.00
2,600.0	10.83	15.80	2,586.8	150.1	42.5	156.0	0.00	0.00	0.00
2,640.0	10.83	15.80	2,626.1	157.3	44.5	163.5	0.00	0.00	0.00
2,680.0	10.83	15.80	2,665.4	164.5	46.6	171.0	0.00	0.00	0.00
2,720.0	10.83	15.80	2,704.7	171.8	48.6	178.5	0.00	0.00	0.00
2,760.0	10.83	15.80	2,744.0	179.0	50.7	186.0	0.00	0.00	0.00
2,800.0	10.83	15.80	2,783.3	186.2	52.7	193.5	0.00	0.00	0.00
2,840.0	10.83	15.80	2,822.6	193.5	54.8	201.1	0.00	0.00	0.00
2,880.0	10.83	15.80	2,861.8	200.7	56.8	208.6	0.00	0.00	0.00
2,920.0	10.83	15.80	2,901.1	207.9	58.9	216.1	0.00	0.00	0.00
2,960.0	10.83	15.80	2,940.4	215.1	60.9	223.6	0.00	0.00	0.00
3,000.0	10.83	15.80	2,979.7	222.4	62.9	231.1	0.00	0.00	0.00
3,040.0	10.83	15.80	3,019.0	229.6	65.0	238.6	0.00	0.00	0.00
3,080.0	10.83	15.80	3,058.3	236.8	67.0	246.1	0.00	0.00	0.00
3,120.0	10.83	15.80	3,097.6	244.1	69.1	253.7	0.00	0.00	0.00
3,160.0	10.83	15.80	3,136.9	251.3	71.1	261.2	0.00	0.00	0.00
3,200.0	10.83	15.80	3,176.1	258.5	73.2	268.7	0.00	0.00	0.00
3,240.0	10.83	15.80	3,215.4	265.8	75.2	276.2	0.00	0.00	0.00
3,280.0	10.83	15.80	3,254.7	273.0	77.3	283.7	0.00	0.00	0.00
3,320.0	10.83	15.80	3,294.0	280.2	79.3	291.2	0.00	0.00	0.00
3,360.0	10.83	15.80	3,333.3	287.5	81.4	298.8	0.00	0.00	0.00
3,400.0	10.83	15.80	3,372.6	294.7	83.4	306.3	0.00	0.00	0.00
3,437.1	10.83	15.80	3,409.0	301.4	85.3	313.2	0.00	0.00	0.00
PARKMAN									
3,440.0	10.83	15.80	3,411.9	301.9	85.5	313.8	0.00	0.00	0.00
3,480.0	10.83	15.80	3,451.2	309.2	87.5	321.3	0.00	0.00	0.00
3,520.0	10.83	15.80	3,490.5	316.4	89.6	328.8	0.00	0.00	0.00
3,560.0	10.83	15.80	3,529.7	323.6	91.6	336.3	0.00	0.00	0.00
3,600.0	10.83	15.80	3,569.0	330.8	93.6	343.8	0.00	0.00	0.00
3,640.0	10.83	15.80	3,608.3	338.1	95.7	351.4	0.00	0.00	0.00
3,680.0	10.83	15.80	3,647.6	345.3	97.7	358.9	0.00	0.00	0.00
3,720.0	10.83	15.80	3,686.9	352.5	99.8	366.4	0.00	0.00	0.00
3,760.0	10.83	15.80	3,726.2	359.8	101.8	373.9	0.00	0.00	0.00
3,800.0	10.83	15.80	3,765.5	367.0	103.9	381.4	0.00	0.00	0.00
3,840.0	10.83	15.80	3,804.8	374.2	105.9	388.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Raindance FD 20-34D
Company:	Great Western	TVD Reference:	WELL @ 4796.7ft (Original Well Elev)
Project:	SEC.30-T6N-R67W	MD Reference:	WELL @ 4796.7ft (Original Well Elev)
Site:	Raindance FD West Row Pad Sec.30-T6N-R67W	North Reference:	True
Well:	Raindance FD 20-34D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (10-18-12)		

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)
3,880.0	10.83	15.80	3,844.0	381.5	108.0	396.5	0.00	0.00	0.00
3,920.0	10.83	15.80	3,883.3	388.7	110.0	404.0	0.00	0.00	0.00
3,960.0	10.83	15.80	3,922.6	395.9	112.1	411.5	0.00	0.00	0.00
4,000.0	10.83	15.80	3,961.9	403.2	114.1	419.0	0.00	0.00	0.00
4,040.0	10.83	15.80	4,001.2	410.4	116.2	426.5	0.00	0.00	0.00
4,080.0	10.83	15.80	4,040.5	417.6	118.2	434.0	0.00	0.00	0.00
4,120.0	10.83	15.80	4,079.8	424.9	120.3	441.5	0.00	0.00	0.00
4,142.6	10.83	15.80	4,102.0	428.9	121.4	445.8	0.00	0.00	0.00
SUSSEX									
4,160.0	10.83	15.80	4,119.1	432.1	122.3	449.1	0.00	0.00	0.00
4,200.0	10.83	15.80	4,158.3	439.3	124.4	456.6	0.00	0.00	0.00
4,240.0	10.83	15.80	4,197.6	446.5	126.4	464.1	0.00	0.00	0.00
4,280.0	10.83	15.80	4,236.9	453.8	128.4	471.6	0.00	0.00	0.00
4,320.0	10.83	15.80	4,276.2	461.0	130.5	479.1	0.00	0.00	0.00
4,360.0	10.83	15.80	4,315.5	468.2	132.5	486.6	0.00	0.00	0.00
4,400.0	10.83	15.80	4,354.8	475.5	134.6	494.2	0.00	0.00	0.00
4,440.0	10.83	15.80	4,394.1	482.7	136.6	501.7	0.00	0.00	0.00
4,480.0	10.83	15.80	4,433.4	489.9	138.7	509.2	0.00	0.00	0.00
4,520.0	10.83	15.80	4,472.6	497.2	140.7	516.7	0.00	0.00	0.00
4,539.7	10.83	15.80	4,492.0	500.7	141.7	520.4	0.00	0.00	0.00
SHANNON									
4,560.0	10.83	15.80	4,511.9	504.4	142.8	524.2	0.00	0.00	0.00
4,600.0	10.83	15.80	4,551.2	511.6	144.8	531.7	0.00	0.00	0.00
4,640.0	10.83	15.80	4,590.5	518.9	146.9	539.2	0.00	0.00	0.00
4,680.0	10.83	15.80	4,629.8	526.1	148.9	546.8	0.00	0.00	0.00
4,720.0	10.83	15.80	4,669.1	533.3	151.0	554.3	0.00	0.00	0.00
4,760.0	10.83	15.80	4,708.4	540.6	153.0	561.8	0.00	0.00	0.00
4,800.0	10.83	15.80	4,747.7	547.8	155.1	569.3	0.00	0.00	0.00
4,840.0	10.83	15.80	4,786.9	555.0	157.1	576.8	0.00	0.00	0.00
4,880.0	10.83	15.80	4,826.2	562.2	159.2	584.3	0.00	0.00	0.00
4,920.0	10.83	15.80	4,865.5	569.5	161.2	591.9	0.00	0.00	0.00
4,960.0	10.83	15.80	4,904.8	576.7	163.2	599.4	0.00	0.00	0.00
5,000.0	10.83	15.80	4,944.1	583.9	165.3	606.9	0.00	0.00	0.00
5,040.0	10.83	15.80	4,983.4	591.2	167.3	614.4	0.00	0.00	0.00
5,080.0	10.83	15.80	5,022.7	598.4	169.4	621.9	0.00	0.00	0.00
5,119.8	10.83	15.80	5,061.7	605.6	171.4	629.4	0.00	0.00	0.00
Start Drop -2.00									
5,120.0	10.83	15.80	5,062.0	605.6	171.4	629.4	0.00	0.00	0.00
5,160.0	10.03	15.80	5,101.3	612.6	173.4	636.7	2.01	-2.01	0.00
5,200.0	9.23	15.80	5,140.7	619.0	175.2	643.4	2.00	-2.00	0.00
5,240.0	8.43	15.80	5,180.3	624.9	176.9	649.5	2.00	-2.00	0.00
5,280.0	7.63	15.80	5,219.9	630.3	178.4	655.1	2.00	-2.00	0.00
5,320.0	6.83	15.80	5,259.5	635.2	179.8	660.1	2.00	-2.00	0.00
5,360.0	6.03	15.80	5,299.3	639.5	181.0	664.6	2.00	-2.00	0.00
5,400.0	5.23	15.80	5,339.1	643.2	182.1	668.5	2.00	-2.00	0.00
5,440.0	4.43	15.80	5,379.0	646.5	183.0	671.9	2.00	-2.00	0.00
5,480.0	3.63	15.80	5,418.9	649.2	183.8	674.7	2.00	-2.00	0.00
5,520.0	2.83	15.80	5,458.8	651.3	184.4	676.9	2.00	-2.00	0.00
5,560.0	2.03	15.80	5,498.8	653.0	184.8	678.6	2.00	-2.00	0.00
5,600.0	1.23	15.80	5,538.7	654.1	185.1	679.8	2.00	-2.00	0.00
5,640.0	0.43	15.80	5,578.7	654.6	185.3	680.3	2.00	-2.00	0.00
5,661.3	0.00	0.00	5,600.0	654.7	185.3	680.4	2.00	-2.00	-74.34
Back to Vertical - TARGET BHL 0°FNL, 0°FEL									

Database:	Landmark	Local Co-ordinate Reference:	Well Raindance FD 20-34D
Company:	Great Western	TVD Reference:	WELL @ 4796.7ft (Original Well Elev)
Project:	SEC.30-T6N-R67W	MD Reference:	WELL @ 4796.7ft (Original Well Elev)
Site:	Raindance FD West Row Pad Sec.30-T6N-R67W	North Reference:	True
Well:	Raindance FD 20-34D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (10-18-12)		

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)
5,680.0	0.00	0.00	5,618.7	654.7	185.3	680.4	0.00	0.00	0.00
5,720.0	0.00	0.00	5,658.7	654.7	185.3	680.4	0.00	0.00	0.00
5,760.0	0.00	0.00	5,698.7	654.7	185.3	680.4	0.00	0.00	0.00
5,800.0	0.00	0.00	5,738.7	654.7	185.3	680.4	0.00	0.00	0.00
5,840.0	0.00	0.00	5,778.7	654.7	185.3	680.4	0.00	0.00	0.00
5,880.0	0.00	0.00	5,818.7	654.7	185.3	680.4	0.00	0.00	0.00
5,920.0	0.00	0.00	5,858.7	654.7	185.3	680.4	0.00	0.00	0.00
5,960.0	0.00	0.00	5,898.7	654.7	185.3	680.4	0.00	0.00	0.00
6,000.0	0.00	0.00	5,938.7	654.7	185.3	680.4	0.00	0.00	0.00
6,040.0	0.00	0.00	5,978.7	654.7	185.3	680.4	0.00	0.00	0.00
6,080.0	0.00	0.00	6,018.7	654.7	185.3	680.4	0.00	0.00	0.00
6,120.0	0.00	0.00	6,058.7	654.7	185.3	680.4	0.00	0.00	0.00
6,160.0	0.00	0.00	6,098.7	654.7	185.3	680.4	0.00	0.00	0.00
6,200.0	0.00	0.00	6,138.7	654.7	185.3	680.4	0.00	0.00	0.00
6,240.0	0.00	0.00	6,178.7	654.7	185.3	680.4	0.00	0.00	0.00
6,280.0	0.00	0.00	6,218.7	654.7	185.3	680.4	0.00	0.00	0.00
6,320.0	0.00	0.00	6,258.7	654.7	185.3	680.4	0.00	0.00	0.00
6,360.0	0.00	0.00	6,298.7	654.7	185.3	680.4	0.00	0.00	0.00
6,400.0	0.00	0.00	6,338.7	654.7	185.3	680.4	0.00	0.00	0.00
6,440.0	0.00	0.00	6,378.7	654.7	185.3	680.4	0.00	0.00	0.00
6,480.0	0.00	0.00	6,418.7	654.7	185.3	680.4	0.00	0.00	0.00
6,520.0	0.00	0.00	6,458.7	654.7	185.3	680.4	0.00	0.00	0.00
6,560.0	0.00	0.00	6,498.7	654.7	185.3	680.4	0.00	0.00	0.00
6,600.0	0.00	0.00	6,538.7	654.7	185.3	680.4	0.00	0.00	0.00
6,640.0	0.00	0.00	6,578.7	654.7	185.3	680.4	0.00	0.00	0.00
6,680.0	0.00	0.00	6,618.7	654.7	185.3	680.4	0.00	0.00	0.00
6,720.0	0.00	0.00	6,658.7	654.7	185.3	680.4	0.00	0.00	0.00
6,760.0	0.00	0.00	6,698.7	654.7	185.3	680.4	0.00	0.00	0.00
6,800.0	0.00	0.00	6,738.7	654.7	185.3	680.4	0.00	0.00	0.00
6,840.0	0.00	0.00	6,778.7	654.7	185.3	680.4	0.00	0.00	0.00
6,863.3	0.00	0.00	6,802.0	654.7	185.3	680.4	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 0°FNL & 0°FEL									
6,880.0	0.00	0.00	6,818.7	654.7	185.3	680.4	0.00	0.00	0.00
6,920.0	0.00	0.00	6,858.7	654.7	185.3	680.4	0.00	0.00	0.00
6,960.0	0.00	0.00	6,898.7	654.7	185.3	680.4	0.00	0.00	0.00
7,000.0	0.00	0.00	6,938.7	654.7	185.3	680.4	0.00	0.00	0.00
7,040.0	0.00	0.00	6,978.7	654.7	185.3	680.4	0.00	0.00	0.00
7,080.0	0.00	0.00	7,018.7	654.7	185.3	680.4	0.00	0.00	0.00
7,120.0	0.00	0.00	7,058.7	654.7	185.3	680.4	0.00	0.00	0.00
7,160.0	0.00	0.00	7,098.7	654.7	185.3	680.4	0.00	0.00	0.00
7,174.3	0.00	0.00	7,113.0	654.7	185.3	680.4	0.00	0.00	0.00
FORT HAYS									
7,196.3	0.00	0.00	7,135.0	654.7	185.3	680.4	0.00	0.00	0.00
CODELL									
7,200.0	0.00	0.00	7,138.7	654.7	185.3	680.4	0.00	0.00	0.00
7,240.0	0.00	0.00	7,178.7	654.7	185.3	680.4	0.00	0.00	0.00
7,280.0	0.00	0.00	7,218.7	654.7	185.3	680.4	0.00	0.00	0.00
7,320.0	0.00	0.00	7,258.7	654.7	185.3	680.4	0.00	0.00	0.00
7,356.3	0.00	0.00	7,295.0	654.7	185.3	680.4	0.00	0.00	0.00
TD at 7356.3									

Database:	Landmark	Local Co-ordinate Reference:	Well Raindance FD 20-34D
Company:	Great Western	TVD Reference:	WELL @ 4796.7ft (Original Well Elev)
Project:	SEC.30-T6N-R67W	MD Reference:	WELL @ 4796.7ft (Original Well Elev)
Site:	Raindance FD West Row Pad Sec.30-T6N-R67W	North Reference:	True
Well:	Raindance FD 20-34D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (10-18-12)		

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
TARGET BHL 0'FNL, - plan hits target center - Point	0.00	0.00	5,600.0	654.7	185.3	1,412,754.87	3,159,584.52	40.464997	-104.926453
TARGET CIRCLE 0'F - plan hits target center - Circle (radius 75.0)	0.00	0.00	6,802.0	654.7	185.3	1,412,754.87	3,159,584.52	40.464997	-104.926453

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(")	(")
600.0	600.0	8 5/8"		8-5/8	12-1/4

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
2,275.4	2,268.0	GREELEY SAND		0.00		
3,437.1	3,409.0	PARKMAN		0.00		
4,142.6	4,102.0	SUSSEX		0.00		
4,539.7	4,492.0	SHANNON		0.00		
6,863.3	6,802.0	NIOBRARA		0.00		
7,174.3	7,113.0	FORT HAYS		0.00		
7,196.3	7,135.0	CODELL		0.00		

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S	+E/-W		
(ft)	(ft)	(ft)	(ft)		
1,500.0	1,500.0	0.0	0.0	KOP - Start Build 2.00	
2,041.5	2,038.3	49.1	13.9	Start 3078.3 hold at 2041.5 MD	
5,119.8	5,061.7	605.6	171.4	Start Drop -2.00	
5,661.3	5,600.0	654.7	185.3	Back to Vertical	
7,356.3	7,295.0	654.7	185.3	TD at 7356.3	



Great Western

SEC.30-T6N-R67W

Raindance FD West Row Pad Sec.30-T6N-R67W

Raindance FD 20-34D

Wellbore #1

Plan #1 (10-18-12)

Anticollision Report

22 October, 2012

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 20-34D
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 4796.7ft (Original Well Elev)
Reference Site:	Raindance FD West Row Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 4796.7ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 20-34D	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 (10-18-12)	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		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
1,500.0	1,500.0	1,407.8	1,372.3	3.3	5.5	18.77	268.6	91.3	310.9	303.9	6.96	44.675	
1,600.0	1,600.0	1,489.7	1,446.6	3.5	6.2	2.81	301.5	101.8	351.5	344.2	7.28	48.263	
1,700.0	1,699.8	1,570.8	1,519.1	3.7	6.8	2.70	336.1	112.8	391.5	383.8	7.78	50.327	
1,800.0	1,799.5	1,658.7	1,596.8	3.9	7.6	2.62	375.4	125.2	430.5	422.2	8.30	51.847	
1,900.0	1,898.7	1,752.0	1,679.2	4.2	8.4	2.57	417.2	138.5	466.3	457.5	8.85	52.718	
2,000.0	1,997.5	1,846.6	1,762.6	4.4	9.3	2.54	459.5	152.0	498.9	489.5	9.40	53.089	
2,041.5	2,038.3	1,886.1	1,797.5	4.5	9.6	2.54	477.2	157.6	511.5	501.9	9.63	53.113	
2,100.0	2,095.7	1,942.0	1,846.9	4.7	10.1	2.55	502.2	165.5	528.8	518.8	9.97	53.050	
2,200.0	2,194.0	2,037.5	1,931.2	5.0	11.0	2.57	545.0	179.1	558.4	547.8	10.55	52.929	
2,300.0	2,292.2	2,133.1	2,015.5	5.3	11.8	2.59	587.7	192.7	587.9	576.8	11.14	52.797	
2,400.0	2,390.4	2,228.6	2,099.9	5.6	12.7	2.60	630.5	206.3	617.5	605.8	11.73	52.659	
2,500.0	2,488.6	2,324.1	2,184.2	6.0	13.5	2.62	673.3	219.9	647.0	634.7	12.32	52.517	
2,600.0	2,586.8	2,419.7	2,268.5	6.3	14.4	2.63	716.0	233.5	676.6	663.7	12.92	52.375	
2,700.0	2,685.1	2,515.2	2,352.9	6.7	15.3	2.64	758.8	247.1	706.2	692.7	13.52	52.235	
2,800.0	2,783.3	2,610.7	2,437.2	7.0	16.1	2.65	801.6	260.7	735.7	721.6	14.12	52.098	
2,900.0	2,881.5	2,706.3	2,521.5	7.4	17.0	2.66	844.3	274.3	765.3	750.6	14.73	51.964	
3,000.0	2,979.7	2,801.8	2,605.9	7.8	17.8	2.67	887.1	287.9	794.9	779.5	15.33	51.834	
3,100.0	3,077.9	2,897.3	2,690.2	8.1	18.7	2.68	929.9	301.4	824.4	808.5	15.94	51.709	
3,200.0	3,176.1	2,992.8	2,774.5	8.5	19.6	2.69	972.6	315.0	854.0	837.4	16.55	51.588	
3,300.0	3,274.4	3,088.4	2,858.9	8.9	20.4	2.69	1,015.4	328.6	883.6	866.4	17.17	51.471	
3,400.0	3,372.6	3,183.9	2,943.2	9.3	21.3	2.70	1,058.2	342.2	913.1	895.4	17.78	51.359	
3,500.0	3,470.8	3,279.4	3,027.5	9.7	22.2	2.71	1,100.9	355.8	942.7	924.3	18.39	51.251	
3,600.0	3,569.0	3,375.0	3,111.9	10.1	23.0	2.71	1,143.7	369.4	972.3	953.3	19.01	51.147	
3,700.0	3,667.2	3,470.5	3,196.2	10.5	23.9	2.72	1,186.5	383.0	1,001.8	982.2	19.63	51.048	
3,800.0	3,765.5	3,566.0	3,280.5	10.8	24.8	2.72	1,229.2	396.6	1,031.4	1,011.2	20.24	50.952	
3,900.0	3,863.7	3,661.5	3,364.9	11.2	25.6	2.73	1,272.0	410.2	1,061.0	1,040.1	20.86	50.860	
4,000.0	3,961.9	3,757.1	3,449.2	11.6	26.5	2.73	1,314.8	423.8	1,090.5	1,069.0	21.48	50.772	
4,100.0	4,060.1	3,852.6	3,533.6	12.0	27.4	2.74	1,357.5	437.4	1,120.1	1,098.0	22.10	50.687	
4,200.0	4,158.3	3,948.1	3,617.9	12.4	28.2	2.74	1,400.3	451.0	1,149.7	1,126.9	22.72	50.605	
4,300.0	4,256.6	4,043.7	3,702.2	12.8	29.1	2.75	1,443.1	464.5	1,179.2	1,155.9	23.34	50.527	
4,400.0	4,354.8	4,139.2	3,786.6	13.2	30.0	2.75	1,485.8	478.1	1,208.8	1,184.8	23.96	50.451	
4,500.0	4,453.0	4,234.7	3,870.9	13.6	30.8	2.75	1,528.6	491.7	1,238.3	1,213.8	24.58	50.378	
4,600.0	4,551.2	4,330.3	3,955.2	14.0	31.7	2.76	1,571.4	505.3	1,267.9	1,242.7	25.20	50.308	
4,700.0	4,649.4	4,425.8	4,039.6	14.4	32.6	2.76	1,614.1	518.9	1,297.5	1,271.7	25.83	50.241	
4,800.0	4,747.7	4,521.3	4,123.9	14.8	33.4	2.76	1,656.9	532.5	1,327.0	1,300.6	26.45	50.175	
4,900.0	4,845.9	4,616.8	4,208.2	15.2	34.3	2.77	1,699.7	546.1	1,356.6	1,329.5	27.07	50.113	
5,000.0	4,944.1	4,712.4	4,292.6	15.6	35.2	2.77	1,742.4	559.7	1,386.2	1,358.5	27.69	50.052	
5,100.0	5,042.3	4,807.9	4,376.9	16.0	36.0	2.77	1,785.2	573.3	1,415.7	1,387.4	28.32	49.993	
5,119.8	5,061.7	4,826.8	4,393.6	16.1	36.2	2.77	1,793.7	576.0	1,421.6	1,393.1	28.44	49.982	
5,200.0	5,140.7	4,903.1	4,460.9	16.4	36.9	2.80	1,827.8	586.8	1,446.4	1,417.6	28.82	50.195	
5,300.0	5,239.7	4,997.2	4,544.0	16.7	37.7	2.83	1,869.9	600.2	1,480.2	1,451.0	29.21	50.679	
5,400.0	5,339.1	5,090.0	4,625.9	16.9	38.6	2.85	1,911.5	613.4	1,517.4	1,487.8	29.55	51.352	
5,500.0	5,438.8	5,181.5	4,706.7	17.1	39.4	2.88	1,952.5	626.4	1,557.7	1,527.9	29.83	52.212	
5,600.0	5,538.7	5,271.5	4,786.2	17.3	40.2	2.90	1,992.8	639.2	1,601.2	1,571.2	30.07	53.258	
5,661.3	5,600.0	5,325.9	4,834.2	17.4	40.7	18.72	2,017.1	647.0	1,629.4	1,599.2	30.18	53.991	
5,700.0	5,638.7	5,360.1	4,864.4	17.4	41.0	18.71	2,032.4	651.8	1,647.6	1,617.2	30.37	54.247	
5,800.0	5,738.7	5,448.4	4,942.3	17.6	41.8	18.68	2,071.9	664.4	1,694.6	1,663.7	30.89	54.852	
5,900.0	5,838.7	5,536.7	5,020.3	17.7	42.6	18.65	2,111.5	677.0	1,741.5	1,710.1	31.42	55.435	
6,000.0	5,938.7	5,625.0	5,098.2	17.9	43.4	18.62	2,151.0	689.5	1,788.5	1,756.6	31.94	55.998	
6,100.0	6,038.7	5,713.3	5,176.1	18.0	44.2	18.60	2,190.5	702.1	1,835.5	1,803.0	32.46	56.541	
6,200.0	6,138.7	5,801.5	5,254.1	18.2	45.0	18.57	2,230.0	714.6	1,882.4	1,849.5	32.99	57.066	

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 20-34D
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 4796.7ft (Original Well Elev)
Reference Site:	Raindance FD West Row Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 4796.7ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 20-34D	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 (10-18-12)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Raindance FD East Row Pad Sec.30-T6N-R67W - Raindance FD 20-18D - Wellbore #1 - Plan #1 (10-1													
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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,300.0	6,238.7	5,889.8	5,332.0	18.4	45.8	18.55	2,269.5	727.2	1,929.4	1,895.9	33.51	57.574	
6,400.0	6,338.7	5,978.1	5,409.9	18.5	46.6	18.53	2,309.1	739.8	1,976.4	1,942.3	34.04	58.064	
6,500.0	6,438.7	6,157.7	5,569.9	18.7	48.0	18.49	2,387.0	764.5	2,022.5	1,987.6	34.86	58.026	
6,600.0	6,538.7	6,480.0	5,868.0	18.9	49.9	18.43	2,503.0	801.4	2,060.3	2,024.3	36.03	57.189	
6,700.0	6,638.7	6,829.1	6,204.3	19.0	51.4	18.40	2,591.8	829.6	2,087.1	2,050.0	37.11	56.236	
6,800.0	6,738.7	7,197.2	6,568.2	19.2	52.4	18.38	2,642.6	845.8	2,101.6	2,063.6	38.02	55.276	
6,900.0	6,838.7	7,467.5	6,838.2	19.4	52.6	18.38	2,651.5	848.6	2,104.1	2,065.5	38.58	54.537	
7,000.0	6,938.7	7,567.5	6,938.2	19.5	52.7	18.38	2,651.5	848.6	2,104.1	2,065.2	38.92	54.062	
7,100.0	7,038.7	7,667.5	7,038.2	19.7	52.8	18.38	2,651.5	848.6	2,104.1	2,064.8	39.26	53.588	
7,200.0	7,138.7	7,767.5	7,138.2	19.9	52.8	18.38	2,651.5	848.6	2,104.1	2,064.5	39.61	53.121	
7,300.0	7,238.7	7,867.5	7,238.2	20.0	52.9	18.38	2,651.5	848.6	2,104.1	2,064.2	39.96	52.659	
7,335.5	7,274.2	7,902.9	7,273.7	20.1	52.9	18.38	2,651.5	848.6	2,104.1	2,064.0	40.08	52.497	
7,356.3	7,295.0	7,918.2	7,289.0	20.1	52.9	18.38	2,651.5	848.6	2,104.1	2,064.0	40.15	52.412	

Raindance FD East Row Pad Sec.30-T6N-R67W - Raindance FD 20-25D - Wellbore #1 - Plan #1 (10-1)													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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(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	45.51	14.2	14.5	20.3					
100.0	100.0	99.9	99.9	0.1	0.1	45.51	14.2	14.5	20.3	20.1	0.22	90.281		
200.0	200.0	199.9	199.9	0.3	0.3	45.51	14.2	14.5	20.3	19.6	0.67	30.089		
300.0	300.0	299.9	299.9	0.6	0.6	45.51	14.2	14.5	20.3	19.2	1.12	18.051		
400.0	400.0	399.9	399.9	0.8	0.8	45.51	14.2	14.5	20.3	18.7	1.57	12.893		
500.0	500.0	499.9	499.9	1.0	1.0	45.51	14.2	14.5	20.3	18.3	2.02	10.027		
600.0	600.0	599.9	599.9	1.2	1.2	45.51	14.2	14.5	20.3	17.8	2.47	8.204		
700.0	700.0	699.9	699.9	1.5	1.5	45.51	14.2	14.5	20.3	17.4	2.92	6.942		
800.0	800.0	799.9	799.9	1.7	1.7	45.51	14.2	14.5	20.3	16.9	3.37	6.016 CC, ES		
900.0	900.0	899.2	899.2	1.9	1.9	44.49	15.7	15.4	22.0	18.2	3.82	5.754 SF		
1,000.0	1,000.0	998.2	998.1	2.1	2.1	42.18	20.0	18.1	27.1	22.8	4.27	6.344		
1,100.0	1,100.0	1,096.8	1,096.3	2.4	2.4	39.81	27.2	22.7	35.6	30.9	4.72	7.546		
1,200.0	1,200.0	1,194.6	1,193.4	2.6	2.6	37.94	37.2	29.0	47.6	42.4	5.17	9.198		
1,300.0	1,300.0	1,291.6	1,289.2	2.8	2.9	36.57	49.8	36.9	62.9	57.3	5.63	11.180		
1,400.0	1,400.0	1,387.4	1,383.3	3.0	3.2	35.61	65.0	46.5	81.6	75.5	6.09	13.402		
1,500.0	1,500.0	1,481.9	1,475.5	3.3	3.5	34.92	82.5	57.6	103.5	97.0	6.55	15.798		
1,600.0	1,600.0	1,575.4	1,565.9	3.5	3.9	18.71	102.4	70.2	127.1	120.1	6.99	18.191		
1,700.0	1,699.8	1,668.1	1,654.9	3.7	4.3	18.76	124.6	84.2	150.6	143.1	7.44	20.237		
1,800.0	1,799.5	1,760.1	1,742.2	3.9	4.8	19.06	149.0	99.6	174.0	166.1	7.90	22.030		
1,900.0	1,898.7	1,853.2	1,829.7	4.2	5.3	19.55	175.9	116.6	197.2	188.8	8.36	23.580		
2,000.0	1,997.5	1,950.9	1,921.2	4.4	5.9	20.24	204.9	134.9	218.0	209.1	8.84	24.649		
2,041.5	2,038.3	1,991.7	1,959.4	4.5	6.2	20.58	217.0	142.5	225.7	216.6	9.05	24.950		
2,100.0	2,095.7	2,049.2	2,013.3	4.7	6.5	21.13	234.0	153.3	236.2	226.8	9.36	25.244		
2,200.0	2,194.0	2,147.5	2,105.3	5.0	7.2	21.97	263.1	171.7	254.2	244.3	9.90	25.684		
2,300.0	2,292.2	2,245.8	2,197.4	5.3	7.8	22.70	292.2	190.1	272.2	261.8	10.45	26.053		
2,400.0	2,390.4	2,344.1	2,289.5	5.6	8.5	23.33	321.4	208.5	290.3	279.3	11.01	26.361		
2,500.0	2,488.6	2,442.4	2,381.6	6.0	9.1	23.89	350.5	226.9	308.4	296.8	11.58	26.619		
2,600.0	2,586.8	2,540.7	2,473.6	6.3	9.8	24.39	379.6	245.3	326.5	314.3	12.17	26.835		
2,700.0	2,685.1	2,639.0	2,565.7	6.7	10.4	24.84	408.7	263.7	344.6	331.9	12.76	27.016		
2,800.0	2,783.3	2,737.3	2,657.8	7.0	11.1	25.24	437.8	282.0	362.8	349.4	13.35	27.169		
2,900.0	2,881.5	2,835.7	2,749.9	7.4	11.8	25.61	466.9	300.4	381.0	367.0	13.96	27.296		
3,000.0	2,979.7	2,934.0	2,841.9	7.8	12.4	25.94	496.1	318.8	399.2	384.6	14.57	27.404		
3,100.0	3,077.9	3,032.3	2,934.0	8.1	13.1	26.24	525.2	337.2	417.4	402.2	15.18	27.494		
3,200.0	3,176.1	3,130.6	3,026.1	8.5	13.8	26.52	554.3	355.6	435.6	419.8	15.80	27.570		
3,300.0	3,274.4	3,228.9	3,118.2	8.9	14.5	26.77	583.4	374.0	453.8	437.4	16.42	27.634		
3,400.0	3,372.6	3,327.2	3,210.3	9.3	15.1	27.00	612.5	392.4	472.0	455.0	17.05	27.687		
3,500.0	3,470.8	3,425.5	3,302.3	9.7	15.8	27.22	641.7	410.8	490.3	472.6	17.68	27.732		
3,600.0	3,569.0	3,523.8	3,394.4	10.1	16.5	27.42	670.8	429.2	508.5	490.2	18.31	27.769		
3,700.0	3,667.2	3,622.1	3,486.5	10.5	17.2	27.61	699.9	447.6	526.8	507.8	18.95	27.800		
3,800.0	3,765.5	3,720.4	3,578.6	10.8	17.8	27.79	729.0	466.0	545.0	525.4	19.59	27.825		
3,900.0	3,863.7	3,818.7	3,670.6	11.2	18.5	27.95	758.1	484.4	563.3	543.1	20.23	27.846		
4,000.0	3,961.9	3,917.0	3,762.7	11.6	19.2	28.10	787.2	502.8	581.6	560.7	20.87	27.863		
4,100.0	4,060.1	4,015.3	3,854.8	12.0	19.9	28.25	816.4	521.2	599.8	578.3	21.52	27.876		
4,200.0	4,158.3	4,113.6	3,946.9	12.4	20.6	28.38	845.5	539.5	618.1	595.9	22.16	27.886		
4,300.0	4,256.6	4,211.9	4,038.9	12.8	21.3	28.51	874.6	557.9	636.4	613.6	22.81	27.894		
4,400.0	4,354.8	4,310.2	4,131.0	13.2	21.9	28.63	903.7	576.3	654.6	631.2	23.46	27.900		
4,500.0	4,453.0	4,408.6	4,223.1	13.6	22.6	28.75	932.8	594.7	672.9	648.8	24.12	27.904		
4,600.0	4,551.2	4,506.9	4,315.2	14.0	23.3	28.85	962.0	613.1	691.2	666.4	24.77	27.906		
4,700.0	4,649.4	4,605.2	4,407.2	14.4	24.0	28.96	991.1	631.5	709.5	684.1	25.42	27.907		
4,800.0	4,747.7	4,703.5	4,499.3	14.8	24.7	29.05	1,020.2	649.9	727.8	701.7	26.08	27.906		
4,900.0	4,845.9	4,801.8	4,591.4	15.2	25.4	29.15	1,049.3	668.3	746.1	719.3	26.74	27.905		

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 20-34D
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 4796.7ft (Original Well Elev)
Reference Site:	Raindance FD West Row Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 4796.7ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 20-34D	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 (10-18-12)	Offset TVD Reference:	Offset Datum

Offset Design Raindance FD East Row Pad Sec.30-T6N-R67W - Raindance FD 20-25D - Wellbore #1 - Plan #1 (10-1													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	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,000.0	4,944.1	4,900.1	4,683.5	15.6	26.0	29.23	1,078.4	686.7	764.4	737.0	27.39	27.903		
5,100.0	5,042.3	4,998.4	4,775.5	16.0	26.7	29.32	1,107.5	705.1	782.6	754.6	28.05	27.899		
5,119.8	5,061.7	5,017.8	4,793.8	16.1	26.9	29.34	1,113.3	708.7	786.3	758.1	28.18	27.899		
5,200.0	5,140.7	5,096.5	4,867.4	16.4	27.4	29.52	1,136.6	723.4	801.9	773.2	28.66	27.976		
5,300.0	5,239.7	5,194.0	4,958.8	16.7	28.1	29.66	1,165.5	741.7	824.1	794.9	29.19	28.235		
5,400.0	5,339.1	5,313.7	5,071.3	16.9	28.8	29.68	1,200.1	763.5	848.4	818.7	29.70	28.571		
5,500.0	5,438.8	5,451.1	5,202.2	17.1	29.5	29.60	1,235.1	785.6	871.6	841.5	30.14	28.919		
5,600.0	5,538.7	5,590.5	5,337.1	17.3	30.1	29.45	1,265.1	804.6	893.2	862.7	30.51	29.276		
5,661.3	5,600.0	5,676.9	5,421.4	17.4	30.4	45.14	1,281.0	814.6	905.6	874.9	30.70	29.502		
5,700.0	5,638.7	5,732.0	5,475.5	17.4	30.6	44.99	1,289.9	820.3	912.9	882.0	30.85	29.587		
5,800.0	5,738.7	5,875.9	5,617.5	17.6	31.0	44.68	1,309.2	832.5	928.3	897.1	31.28	29.679		
5,900.0	5,838.7	6,021.8	5,762.6	17.7	31.3	44.47	1,322.5	840.9	938.9	907.2	31.70	29.622		
6,000.0	5,938.7	6,169.0	5,909.4	17.9	31.5	44.36	1,329.7	845.4	944.5	912.4	32.10	29.424		
6,100.0	6,038.7	6,298.2	6,038.6	18.0	31.7	44.34	1,330.9	846.1	945.5	913.0	32.47	29.115		
6,200.0	6,138.7	6,398.2	6,138.6	18.2	31.8	44.34	1,330.9	846.1	945.5	912.7	32.82	28.805		
6,300.0	6,238.7	6,498.2	6,238.6	18.4	31.9	44.34	1,330.9	846.1	945.5	912.3	33.17	28.500		
6,400.0	6,338.7	6,598.2	6,338.6	18.5	31.9	44.34	1,330.9	846.1	945.5	911.9	33.53	28.199		
6,500.0	6,438.7	6,698.2	6,438.6	18.7	32.0	44.34	1,330.9	846.1	945.5	911.6	33.88	27.903		
6,600.0	6,538.7	6,798.2	6,538.6	18.9	32.1	44.34	1,330.9	846.1	945.5	911.2	34.24	27.611		
6,700.0	6,638.7	6,898.2	6,638.6	19.0	32.2	44.34	1,330.9	846.1	945.5	910.9	34.60	27.324		
6,800.0	6,738.7	6,998.2	6,738.6	19.2	32.3	44.34	1,330.9	846.1	945.5	910.5	34.96	27.041		
6,900.0	6,838.7	7,098.2	6,838.6	19.4	32.4	44.34	1,330.9	846.1	945.5	910.1	35.33	26.762		
7,000.0	6,938.7	7,198.2	6,938.6	19.5	32.5	44.34	1,330.9	846.1	945.5	909.8	35.69	26.488		
7,100.0	7,038.7	7,298.2	7,038.6	19.7	32.6	44.34	1,330.9	846.1	945.5	909.4	36.06	26.218		
7,200.0	7,138.7	7,398.2	7,138.6	19.9	32.7	44.34	1,330.9	846.1	945.5	909.0	36.43	25.952		
7,300.0	7,238.7	7,498.2	7,238.6	20.0	32.8	44.34	1,330.9	846.1	945.5	908.7	36.80	25.690		
7,335.7	7,274.5	7,533.9	7,274.4	20.1	32.9	44.34	1,330.9	846.1	945.5	908.5	36.94	25.597		
7,356.3	7,295.0	7,549.5	7,290.0	20.1	32.9	44.34	1,330.9	846.1	945.5	908.5	37.00	25.550		

Raindance FD East Row Pad Sec.30-T6N-R67W - Raindance FD 29-4D - Wellbore #1 - Plan #1 (10-18)													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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(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	89.97	0.0	14.5	14.5	14.5	0.00	N/A		
100.0	100.0	99.9	99.9	0.1	0.1	89.97	0.0	14.5	14.5	14.2	0.22	64.408		
200.0	200.0	199.9	199.9	0.3	0.3	89.97	0.0	14.5	14.5	13.8	0.67	21.466		
300.0	300.0	299.9	299.9	0.6	0.6	89.97	0.0	14.5	14.5	13.3	1.12	12.878		
400.0	400.0	399.9	399.9	0.8	0.8	89.97	0.0	14.5	14.5	12.9	1.57	9.198		
500.0	500.0	499.9	499.9	1.0	1.0	89.97	0.0	14.5	14.5	12.4	2.02	7.154		
600.0	600.0	599.9	599.9	1.2	1.2	89.97	0.0	14.5	14.5	12.0	2.47	5.853		
700.0	700.0	699.9	699.9	1.5	1.5	89.97	0.0	14.5	14.5	11.5	2.92	4.952		
800.0	800.0	799.9	799.9	1.7	1.7	89.97	0.0	14.5	14.5	11.1	3.37	4.292		
900.0	900.0	899.9	899.9	1.9	1.9	89.97	0.0	14.5	14.5	10.6	3.82	3.787		
1,000.0	1,000.0	999.9	999.9	2.1	2.1	89.97	0.0	14.5	14.5	10.2	4.27	3.388 CC, ES, SF		
1,100.0	1,100.0	1,099.4	1,099.3	2.4	2.3	89.89	0.0	16.2	16.2	11.5	4.71	3.443		
1,200.0	1,200.0	1,198.6	1,198.4	2.6	2.6	89.73	0.1	21.3	21.4	16.3	5.13	4.169		
1,300.0	1,300.0	1,297.3	1,296.8	2.8	2.8	89.58	0.2	29.9	30.0	24.5	5.57	5.398		
1,400.0	1,400.0	1,395.4	1,394.1	3.0	3.0	89.48	0.4	41.7	42.1	36.1	6.01	7.012		
1,500.0	1,500.0	1,492.5	1,490.1	3.3	3.3	89.41	0.6	56.7	57.5	51.1	6.45	8.922		
1,600.0	1,600.0	1,588.7	1,584.6	3.5	3.6	74.46	0.8	74.7	75.8	68.9	6.88	11.020		
1,700.0	1,699.8	1,686.8	1,680.6	3.7	3.9	76.89	1.1	94.6	94.8	87.5	7.32	12.943		
1,800.0	1,799.5	1,784.8	1,776.7	3.9	4.3	80.14	1.4	114.4	113.3	105.5	7.77	14.570		
1,900.0	1,898.7	1,882.8	1,872.5	4.2	4.6	83.89	1.6	134.2	131.7	123.4	8.25	15.966		
2,000.0	1,997.5	1,980.4	1,968.2	4.4	5.0	87.94	1.9	153.9	150.4	141.7	8.75	17.184		
2,041.5	2,038.3	2,020.8	2,007.7	4.5	5.2	89.68	2.0	162.1	158.4	149.4	8.98	17.646		
2,100.0	2,095.7	2,077.7	2,063.5	4.7	5.4	92.19	2.2	173.6	170.0	160.7	9.31	18.264		
2,200.0	2,194.0	2,175.0	2,158.7	5.0	5.8	95.78	2.4	193.2	190.3	180.4	9.89	19.240		
2,300.0	2,292.2	2,272.2	2,254.0	5.3	6.2	98.67	2.7	212.9	211.3	200.8	10.50	20.116		
2,400.0	2,390.4	2,369.5	2,349.3	5.6	6.6	101.05	3.0	232.6	232.6	221.5	11.13	20.897		
2,500.0	2,488.6	2,466.8	2,444.5	6.0	7.0	103.02	3.3	252.2	254.3	242.5	11.78	21.593		
2,600.0	2,586.8	2,564.1	2,539.8	6.3	7.4	104.68	3.5	271.9	276.2	263.8	12.44	22.214		
2,700.0	2,685.1	2,661.3	2,635.1	6.7	7.8	106.10	3.8	291.6	298.4	285.3	13.10	22.769		
2,800.0	2,783.3	2,758.6	2,730.3	7.0	8.2	107.33	4.1	311.2	320.6	306.8	13.78	23.267		
2,900.0	2,881.5	2,855.9	2,825.6	7.4	8.7	108.39	4.3	330.9	343.0	328.6	14.46	23.716		
3,000.0	2,979.7	2,953.2	2,920.9	7.8	9.1	109.32	4.6	350.5	365.5	350.4	15.15	24.122		
3,100.0	3,077.9	3,050.4	3,016.1	8.1	9.5	110.15	4.9	370.2	388.1	372.2	15.85	24.490		
3,200.0	3,176.1	3,147.7	3,111.4	8.5	9.9	110.89	5.1	389.9	410.7	394.2	16.54	24.825		
3,300.0	3,274.4	3,245.0	3,206.7	8.9	10.4	111.54	5.4	409.5	433.4	416.2	17.25	25.130		
3,400.0	3,372.6	3,342.3	3,301.9	9.3	10.8	112.14	5.7	429.2	456.2	438.2	17.95	25.410		
3,500.0	3,470.8	3,439.5	3,397.2	9.7	11.2	112.68	5.9	448.9	478.9	460.3	18.66	25.668		
3,600.0	3,569.0	3,536.8	3,492.5	10.1	11.6	113.16	6.2	468.5	501.8	482.4	19.37	25.905		
3,700.0	3,667.2	3,634.1	3,587.7	10.5	12.1	113.61	6.5	488.2	524.6	504.5	20.08	26.124		
3,800.0	3,765.5	3,731.4	3,683.0	10.8	12.5	114.02	6.7	507.9	547.5	526.7	20.80	26.327		
3,900.0	3,863.7	3,828.6	3,778.3	11.2	12.9	114.39	7.0	527.5	570.4	548.9	21.51	26.515		
4,000.0	3,961.9	3,925.9	3,873.5	11.6	13.4	114.74	7.3	547.2	593.3	571.1	22.23	26.691		
4,100.0	4,060.1	4,023.2	3,968.8	12.0	13.8	115.06	7.5	566.8	616.3	593.3	22.95	26.855		
4,200.0	4,158.3	4,120.5	4,064.1	12.4	14.2	115.36	7.8	586.5	639.3	615.6	23.67	27.008		
4,300.0	4,256.6	4,217.8	4,159.3	12.8	14.7	115.64	8.1	606.2	662.2	637.8	24.39	27.151		
4,400.0	4,354.8	4,315.0	4,254.6	13.2	15.1	115.90	8.4	625.8	685.2	660.1	25.11	27.286		
4,500.0	4,453.0	4,412.3	4,349.9	13.6	15.5	116.14	8.6	645.5	708.2	682.4	25.84	27.412		
4,600.0	4,551.2	4,509.6	4,445.1	14.0	16.0	116.36	8.9	665.2	731.3	704.7	26.56	27.532		
4,700.0	4,649.4	4,606.9	4,540.4	14.4	16.4	116.58	9.2	684.8	754.3	727.0	27.29	27.644		
4,800.0	4,747.7	4,704.1	4,635.7	14.8	16.8	116.78	9.4	704.5	777.3	749.3	28.01	27.750		
4,900.0	4,845.9	4,801.4	4,730.9	15.2	17.3	116.97	9.7	724.1	800.4	771.6	28.74	27.851		

COMPASS 2003.21 Build 46

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 20-34D
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 4796.7ft (Original Well Elev)
Reference Site:	Raindance FD West Row Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 4796.7ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 20-34D	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 (10-18-12)	Offset TVD Reference:	Offset Datum

Offset Design Raindance FD East Row Pad Sec.30-T6N-R67W - Raindance FD 29-4D - Wellbore #1 - Plan #1 (10-18)													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	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,000.0	4,944.1	4,898.7	4,826.2	15.6	17.7	117.14	10.0	743.8	823.4	793.9	29.46	27.946		
5,100.0	5,042.3	4,996.0	4,921.5	16.0	18.1	117.31	10.2	763.5	846.5	816.3	30.19	28.036		
5,119.8	5,061.7	5,015.2	4,940.3	16.1	18.2	117.35	10.3	767.4	851.0	820.7	30.34	28.054		
5,200.0	5,140.7	5,093.4	5,016.9	16.4	18.6	117.73	10.5	783.2	869.0	838.1	30.93	28.094		
5,300.0	5,239.7	5,217.4	5,138.8	16.7	19.0	118.06	10.8	805.8	888.7	857.1	31.60	28.125		
5,400.0	5,339.1	5,344.2	5,264.4	16.9	19.3	118.30	11.1	823.4	903.6	871.4	32.18	28.079		
5,500.0	5,438.8	5,472.3	5,391.9	17.1	19.6	118.46	11.2	835.6	913.8	881.1	32.68	27.961		
5,600.0	5,538.7	5,601.3	5,520.7	17.3	19.8	118.55	11.3	842.0	919.2	886.1	33.10	27.773		
5,661.3	5,600.0	5,680.5	5,599.9	17.4	19.9	134.36	11.3	843.1	920.1	886.8	33.31	27.626		
5,700.0	5,638.7	5,719.2	5,638.6	17.4	19.9	134.36	11.3	843.1	920.1	886.7	33.42	27.531		
5,800.0	5,738.7	5,819.2	5,738.6	17.6	20.1	134.36	11.3	843.1	920.1	886.4	33.74	27.274		
5,900.0	5,838.7	5,919.2	5,838.6	17.7	20.2	134.36	11.3	843.1	920.1	886.1	34.05	27.019		
6,000.0	5,938.7	6,019.2	5,938.6	17.9	20.3	134.36	11.3	843.1	920.1	885.8	34.38	26.767		
6,100.0	6,038.7	6,119.2	6,038.6	18.0	20.5	134.36	11.3	843.1	920.1	885.4	34.70	26.517		
6,200.0	6,138.7	6,219.2	6,138.6	18.2	20.6	134.36	11.3	843.1	920.1	885.1	35.03	26.270		
6,300.0	6,238.7	6,319.2	6,238.6	18.4	20.8	134.36	11.3	843.1	920.1	884.8	35.36	26.025		
6,400.0	6,338.7	6,419.2	6,338.6	18.5	20.9	134.36	11.3	843.1	920.1	884.4	35.69	25.783		
6,500.0	6,438.7	6,519.2	6,438.6	18.7	21.0	134.36	11.3	843.1	920.1	884.1	36.02	25.544		
6,600.0	6,538.7	6,619.2	6,538.6	18.9	21.2	134.36	11.3	843.1	920.1	883.8	36.36	25.307		
6,700.0	6,638.7	6,719.2	6,638.6	19.0	21.3	134.36	11.3	843.1	920.1	883.4	36.70	25.073		
6,800.0	6,738.7	6,819.2	6,738.6	19.2	21.5	134.36	11.3	843.1	920.1	883.1	37.04	24.842		
6,900.0	6,838.7	6,919.2	6,838.6	19.4	21.6	134.36	11.3	843.1	920.1	882.7	37.38	24.613		
7,000.0	6,938.7	7,019.2	6,938.6	19.5	21.8	134.36	11.3	843.1	920.1	882.4	37.73	24.387		
7,100.0	7,038.7	7,119.2	7,038.6	19.7	21.9	134.36	11.3	843.1	920.1	882.1	38.08	24.164		
7,200.0	7,138.7	7,219.2	7,138.6	19.9	22.1	134.36	11.3	843.1	920.1	881.7	38.43	23.944		
7,300.0	7,238.7	7,319.2	7,238.6	20.0	22.2	134.36	11.3	843.1	920.1	881.4	38.78	23.726		
7,356.3	7,295.0	7,375.5	7,294.9	20.1	22.3	134.36	11.3	843.1	920.1	881.2	38.98	23.605		

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 20-34D
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 4796.7ft (Original Well Elev)
Reference Site:	Raindance FD West Row Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 4796.7ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 20-34D	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 (10-18-12)	Offset TVD Reference:	Offset Datum

Offset Design Raindance FD West Row Pad Sec.30-T6N-R67W - Raindance FD 19-14D - Wellbore #1 - Plan #1 (10-1													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	Offset	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	-176.88	-15.3	-0.8	15.3	15.3	0.00	N/A		
100.0	100.0	99.4	99.4	0.1	0.1	-176.88	-15.3	-0.8	15.3	15.1	0.22	68.364		
200.0	200.0	199.4	199.4	0.3	0.3	-176.88	-15.3	-0.8	15.3	14.6	0.67	22.765		
200.5	200.5	199.9	199.9	0.3	0.3	-176.88	-15.3	-0.8	15.3	14.6	0.68	22.695 CC		
300.0	300.0	299.3	299.3	0.6	0.6	-170.51	-15.3	-2.6	15.5	14.4	1.11	13.943 ES		
400.0	400.0	399.0	398.9	0.8	0.8	-153.15	-15.3	-7.7	17.2	15.6	1.56	11.001		
500.0	500.0	498.7	498.2	1.0	1.0	-132.85	-14.9	-16.0	21.9	19.9	2.02	10.829 SF		
600.0	600.0	598.6	597.6	1.2	1.3	-114.43	-11.5	-25.3	27.9	25.4	2.49	11.199		
700.0	700.0	698.0	696.2	1.5	1.6	-97.66	-4.7	-35.1	35.5	32.6	2.95	12.040		
800.0	800.0	796.6	793.9	1.7	1.9	-83.25	5.4	-45.3	46.0	42.6	3.42	13.440		
900.0	900.0	894.4	890.2	1.9	2.2	-71.59	18.6	-56.0	59.7	55.8	3.89	15.333		
1,000.0	1,000.0	991.1	984.8	2.1	2.6	-62.45	34.9	-67.0	77.0	72.6	4.38	17.589		
1,100.0	1,100.0	1,086.4	1,077.4	2.4	3.0	-55.35	54.1	-78.3	97.7	92.8	4.86	20.088		
1,200.0	1,200.0	1,180.2	1,167.9	2.6	3.4	-49.80	76.0	-89.9	121.9	116.5	5.36	22.737		
1,300.0	1,300.0	1,272.4	1,256.0	2.8	3.9	-45.40	100.3	-101.7	149.3	143.4	5.86	25.470		
1,400.0	1,400.0	1,362.7	1,341.6	3.0	4.5	-41.85	126.9	-113.7	179.9	173.5	6.37	28.244		
1,500.0	1,500.0	1,451.1	1,424.3	3.3	5.0	-38.96	155.5	-125.7	213.6	206.7	6.88	31.027		
1,600.0	1,600.0	1,538.0	1,504.8	3.5	5.6	-52.06	186.0	-137.9	249.2	242.0	7.20	34.610		
1,700.0	1,699.8	1,623.8	1,583.2	3.7	6.3	-50.18	218.6	-150.2	285.5	277.8	7.69	37.120		
1,800.0	1,799.5	1,708.6	1,659.6	3.9	7.0	-48.86	253.0	-162.7	322.3	314.1	8.19	39.348		
1,900.0	1,898.7	1,792.4	1,734.1	4.2	7.7	-47.91	289.2	-175.3	359.5	350.8	8.70	41.294		
2,000.0	1,997.5	1,875.2	1,806.6	4.4	8.4	-47.23	327.2	-188.0	396.9	387.7	9.24	42.961		
2,041.5	2,038.3	1,909.2	1,836.1	4.5	8.7	-47.01	343.4	-193.3	412.5	403.1	9.47	43.578		
2,100.0	2,095.7	1,956.9	1,877.0	4.7	9.2	-47.05	366.6	-200.8	435.0	425.2	9.80	44.383		
2,200.0	2,194.0	2,036.9	1,944.7	5.0	10.0	-47.00	407.2	-213.6	475.2	464.8	10.38	45.777		
2,300.0	2,292.2	2,115.0	2,009.8	5.3	10.8	-46.85	448.6	-226.2	517.7	506.8	10.97	47.190		
2,400.0	2,390.4	2,192.9	2,073.4	5.6	11.7	-46.62	491.7	-239.0	562.5	550.9	11.58	48.581		
2,500.0	2,488.6	2,281.9	2,145.6	6.0	12.7	-46.36	541.6	-253.7	608.0	595.8	12.23	49.705		
2,600.0	2,586.8	2,370.9	2,217.8	6.3	13.7	-46.13	591.5	-268.4	653.6	640.7	12.90	50.680		
2,700.0	2,685.1	2,459.9	2,290.0	6.7	14.7	-45.93	641.4	-283.1	699.2	685.6	13.57	51.522		
2,800.0	2,783.3	2,548.8	2,362.2	7.0	15.7	-45.75	691.3	-297.8	744.8	730.6	14.25	52.254		
2,900.0	2,881.5	2,637.8	2,434.4	7.4	16.7	-45.60	741.1	-312.6	790.4	775.5	14.94	52.893		
3,000.0	2,979.7	2,726.8	2,506.6	7.8	17.7	-45.46	791.0	-327.3	836.0	820.4	15.64	53.455		
3,100.0	3,077.9	2,815.8	2,578.8	8.1	18.8	-45.34	840.9	-342.0	881.6	865.3	16.34	53.951		
3,200.0	3,176.1	2,904.8	2,651.0	8.5	19.8	-45.23	890.8	-356.7	927.2	910.2	17.05	54.391		
3,300.0	3,274.4	2,993.7	2,723.1	8.9	20.8	-45.13	940.7	-371.4	972.9	955.1	17.76	54.783		
3,400.0	3,372.6	3,082.7	2,795.3	9.3	21.8	-45.04	990.6	-386.1	1,018.5	1,000.0	18.47	55.133		
3,500.0	3,470.8	3,171.7	2,867.5	9.7	22.9	-44.95	1,040.5	-400.8	1,064.1	1,044.9	19.19	55.447		
3,600.0	3,569.0	3,260.7	2,939.7	10.1	23.9	-44.88	1,090.4	-415.5	1,109.7	1,089.8	19.91	55.731		
3,700.0	3,667.2	3,349.6	3,011.9	10.5	24.9	-44.81	1,140.3	-430.2	1,155.3	1,134.7	20.64	55.989		
3,800.0	3,765.5	3,438.6	3,084.1	10.8	26.0	-44.74	1,190.2	-444.9	1,201.0	1,179.6	21.36	56.222		
3,900.0	3,863.7	3,527.6	3,156.3	11.2	27.0	-44.68	1,240.1	-459.6	1,246.6	1,224.5	22.09	56.435		
4,000.0	3,961.9	3,616.6	3,228.5	11.6	28.0	-44.62	1,290.0	-474.3	1,292.2	1,269.4	22.82	56.629		
4,100.0	4,060.1	3,705.6	3,300.7	12.0	29.0	-44.57	1,339.9	-489.0	1,337.8	1,314.3	23.55	56.808		
4,200.0	4,158.3	3,794.5	3,372.8	12.4	30.1	-44.52	1,389.8	-503.7	1,383.5	1,359.2	24.28	56.971		
4,300.0	4,256.6	3,883.5	3,445.0	12.8	31.1	-44.48	1,439.7	-518.4	1,429.1	1,404.1	25.02	57.122		
4,400.0	4,354.8	3,972.5	3,517.2	13.2	32.1	-44.43	1,489.6	-533.1	1,474.7	1,449.0	25.75	57.261		
4,500.0	4,453.0	4,061.5	3,589.4	13.6	33.2	-44.39	1,539.5	-547.8	1,520.3	1,493.8	26.49	57.390		
4,600.0	4,551.2	4,150.5	3,661.6	14.0	34.2	-44.35	1,589.4	-562.5	1,566.0	1,538.7	27.23	57.509		
4,700.0	4,649.4	4,239.4	3,733.8	14.4	35.2	-44.32	1,639.3	-577.2	1,611.6	1,583.6	27.97	57.620		
4,800.0	4,747.7	4,328.4	3,806.0	14.8	36.3	-44.28	1,689.2	-591.9	1,657.2	1,628.5	28.71	57.723		

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

COMPASS 2003.21 Build 46

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 20-34D
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 4796.7ft (Original Well Elev)
Reference Site:	Raindance FD West Row Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 4796.7ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 20-34D	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 (10-18-12)	Offset TVD Reference:	Offset Datum

Offset Design Raindance FD West Row Pad Sec.30-T6N-R67W - Raindance FD 20-33D - Wellbore #1 - Plan #1 (10-1													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	Offset	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	0.00	15.3	0.0	15.3	15.3	0.00	N/A		
100.0	100.0	99.2	99.2	0.1	0.1	0.00	15.3	0.0	15.3	15.1	0.22	68.368		
200.0	200.0	199.2	199.2	0.3	0.3	0.00	15.3	0.0	15.3	14.6	0.67	22.759		
300.0	300.0	299.2	299.2	0.6	0.6	0.00	15.3	0.0	15.3	14.2	1.12	13.641		
400.0	400.0	399.2	399.2	0.8	0.8	0.00	15.3	0.0	15.3	13.7	1.57	9.739 CC, ES		
500.0	500.0	498.6	498.6	1.0	1.0	0.55	17.0	0.2	17.0	15.0	2.02	8.415 SF		
600.0	600.0	597.8	597.7	1.2	1.2	1.70	22.1	0.7	22.2	19.7	2.48	8.952		
700.0	700.0	696.6	696.0	1.5	1.5	2.75	30.6	1.5	30.8	27.8	2.93	10.488		
800.0	800.0	794.6	793.3	1.7	1.7	3.52	42.3	2.6	42.8	39.4	3.40	12.602		
900.0	900.0	891.7	889.3	1.9	2.0	4.04	57.2	4.0	58.2	54.3	3.86	15.065		
1,000.0	1,000.0	987.6	983.5	2.1	2.4	4.39	75.1	5.8	76.9	72.6	4.34	17.743		
1,100.0	1,100.0	1,082.3	1,075.9	2.4	2.7	4.63	95.8	7.8	98.9	94.1	4.81	20.545		
1,200.0	1,200.0	1,175.5	1,166.0	2.6	3.1	4.80	119.1	10.0	124.1	118.8	5.30	23.414		
1,300.0	1,300.0	1,267.0	1,253.8	2.8	3.6	4.92	144.9	12.5	152.4	146.6	5.79	26.309		
1,400.0	1,400.0	1,356.7	1,339.0	3.0	4.1	5.02	172.8	15.2	183.6	177.4	6.29	29.203		
1,500.0	1,500.0	1,444.5	1,421.5	3.3	4.6	5.09	202.8	18.1	217.9	211.1	6.79	32.077		
1,600.0	1,600.0	1,530.9	1,501.8	3.5	5.2	-10.59	234.6	21.1	253.3	246.2	7.16	35.370		
1,700.0	1,699.8	1,617.5	1,581.2	3.7	5.8	-10.59	269.0	24.4	288.4	280.7	7.65	37.706		
1,800.0	1,799.5	1,712.0	1,667.4	3.9	6.5	-10.70	307.4	28.1	321.3	313.1	8.16	39.371		
1,900.0	1,898.7	1,807.4	1,754.6	4.2	7.3	-10.89	346.2	31.9	350.9	342.2	8.68	40.443		
2,000.0	1,997.5	1,903.9	1,842.6	4.4	8.0	-11.15	385.4	35.6	377.3	368.1	9.20	40.990		
2,041.5	2,038.3	1,944.1	1,879.3	4.5	8.3	-11.27	401.8	37.2	387.2	377.8	9.43	41.083		
2,100.0	2,095.7	2,001.0	1,931.2	4.7	8.7	-11.51	424.9	39.5	400.9	391.1	9.75	41.105		
2,200.0	2,194.0	2,098.2	2,020.0	5.0	9.5	-11.87	464.4	43.3	424.2	413.9	10.32	41.116		
2,300.0	2,292.2	2,195.4	2,108.7	5.3	10.2	-12.20	504.0	47.1	447.6	436.7	10.89	41.102		
2,400.0	2,390.4	2,292.6	2,197.4	5.6	11.0	-12.49	543.5	50.9	471.0	459.5	11.47	41.069		
2,500.0	2,488.6	2,389.8	2,286.1	6.0	11.8	-12.76	583.0	54.7	494.4	482.3	12.05	41.022		
2,600.0	2,586.8	2,487.0	2,374.8	6.3	12.5	-13.00	622.6	58.5	517.8	505.2	12.64	40.966		
2,700.0	2,685.1	2,584.2	2,463.5	6.7	13.3	-13.23	662.1	62.3	541.2	528.0	13.23	40.902		
2,800.0	2,783.3	2,681.4	2,552.3	7.0	14.0	-13.43	701.6	66.1	564.6	550.8	13.83	40.834		
2,900.0	2,881.5	2,778.6	2,641.0	7.4	14.8	-13.62	741.1	69.9	588.1	573.6	14.43	40.762		
3,000.0	2,979.7	2,875.8	2,729.7	7.8	15.6	-13.79	780.7	73.7	611.5	596.5	15.03	40.689		
3,100.0	3,077.9	2,973.0	2,818.4	8.1	16.3	-13.95	820.2	77.5	634.9	619.3	15.63	40.615		
3,200.0	3,176.1	3,070.2	2,907.1	8.5	17.1	-14.10	859.7	81.3	658.4	642.1	16.24	40.540		
3,300.0	3,274.4	3,167.4	2,995.8	8.9	17.9	-14.24	899.3	85.1	681.8	665.0	16.85	40.466		
3,400.0	3,372.6	3,264.6	3,084.6	9.3	18.6	-14.37	938.8	89.0	705.3	687.8	17.46	40.393		
3,500.0	3,470.8	3,361.8	3,173.3	9.7	19.4	-14.49	978.3	92.8	728.7	710.6	18.07	40.321		
3,600.0	3,569.0	3,459.0	3,262.0	10.1	20.2	-14.60	1,017.8	96.6	752.2	733.5	18.69	40.251		
3,700.0	3,667.2	3,556.2	3,350.7	10.5	20.9	-14.71	1,057.4	100.4	775.6	756.3	19.30	40.181		
3,800.0	3,765.5	3,653.4	3,439.4	10.8	21.7	-14.81	1,096.9	104.2	799.1	779.2	19.92	40.114		
3,900.0	3,863.7	3,750.6	3,528.2	11.2	22.5	-14.90	1,136.4	108.0	822.5	802.0	20.54	40.048		
4,000.0	3,961.9	3,847.8	3,616.9	11.6	23.2	-14.99	1,176.0	111.8	846.0	824.8	21.16	39.984		
4,100.0	4,060.1	3,945.0	3,705.6	12.0	24.0	-15.07	1,215.5	115.6	869.5	847.7	21.78	39.922		
4,200.0	4,158.3	4,042.2	3,794.3	12.4	24.8	-15.15	1,255.0	119.4	892.9	870.5	22.40	39.861		
4,300.0	4,256.6	4,139.4	3,883.0	12.8	25.5	-15.23	1,294.5	123.2	916.4	893.4	23.02	39.802		
4,400.0	4,354.8	4,236.6	3,971.7	13.2	26.3	-15.30	1,334.1	127.0	939.9	916.2	23.65	39.745		
4,500.0	4,453.0	4,333.8	4,060.5	13.6	27.1	-15.37	1,373.6	130.8	963.3	939.1	24.27	39.689		
4,600.0	4,551.2	4,431.0	4,149.2	14.0	27.8	-15.44	1,413.1	134.6	986.8	961.9	24.90	39.635		
4,700.0	4,649.4	4,528.2	4,237.9	14.4	28.6	-15.50	1,452.7	138.4	1,010.3	984.8	25.52	39.583		
4,800.0	4,747.7	4,625.4	4,326.6	14.8	29.4	-15.56	1,492.2	142.3	1,033.8	1,007.6	26.15	39.532		
4,900.0	4,845.9	4,722.6	4,415.3	15.2	30.2	-15.62	1,531.7	146.1	1,057.2	1,030.5	26.78	39.483		

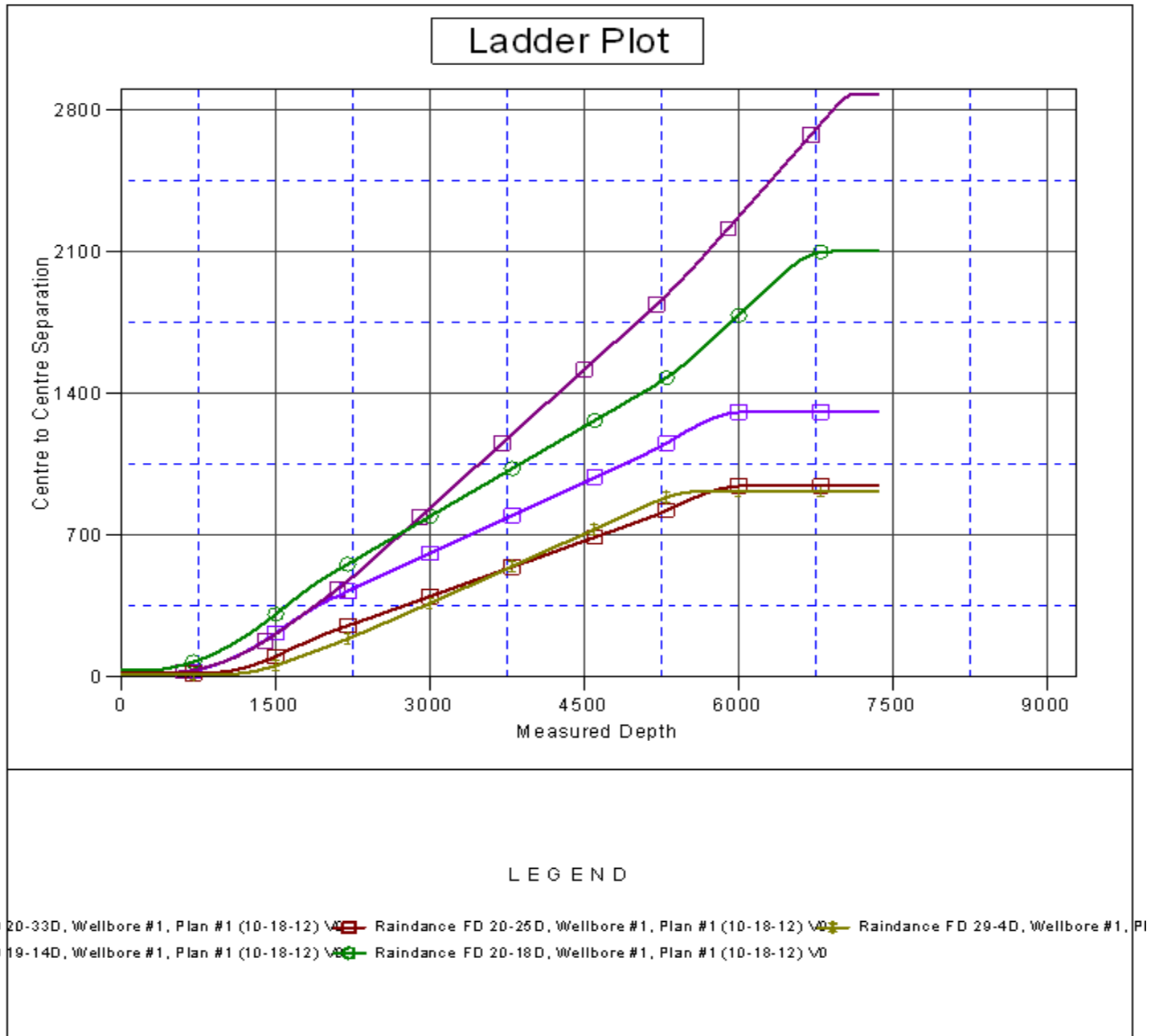
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 20-34D
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 4796.7ft (Original Well Elev)
Reference Site:	Raindance FD West Row Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 4796.7ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 20-34D	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 (10-18-12)	Offset TVD Reference:	Offset Datum

Offset Design Raindance FD West Row Pad Sec.30-T6N-R67W - Raindance FD 20-33D - Wellbore #1 - Plan #1 (10-1													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	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,000.0	4,944.1	4,819.8	4,504.1	15.6	30.9	-15.67	1,571.2	149.9	1,080.7	1,053.3	27.40	39.435		
5,100.0	5,042.3	4,917.0	4,592.8	16.0	31.7	-15.72	1,610.8	153.7	1,104.2	1,076.2	28.03	39.389		
5,119.8	5,061.7	4,936.3	4,610.3	16.1	31.9	-15.73	1,618.6	154.4	1,108.8	1,080.7	28.16	39.380		
5,200.0	5,140.7	5,014.0	4,681.3	16.4	32.5	-15.87	1,650.2	157.5	1,128.7	1,100.1	28.58	39.497		
5,300.0	5,239.7	5,110.0	4,768.9	16.7	33.2	-16.01	1,689.3	161.2	1,156.4	1,127.4	29.03	39.837		
5,400.0	5,339.1	5,225.2	4,874.3	16.9	34.1	-16.11	1,735.7	165.7	1,187.1	1,157.6	29.48	40.263		
5,500.0	5,438.8	5,389.1	5,026.7	17.1	35.0	-16.14	1,795.5	171.5	1,216.9	1,186.9	29.98	40.586		
5,600.0	5,538.7	5,557.0	5,186.2	17.3	35.8	-16.12	1,847.7	176.5	1,244.4	1,214.0	30.40	40.929		
5,661.3	5,600.0	5,661.8	5,287.2	17.4	36.2	-0.29	1,875.5	179.2	1,260.0	1,229.4	30.62	41.149		
5,700.0	5,638.7	5,728.9	5,352.4	17.4	36.5	-0.21	1,891.3	180.7	1,269.2	1,238.3	30.84	41.154		
5,800.0	5,738.7	5,905.4	5,525.4	17.6	37.1	-0.06	1,925.7	184.0	1,288.7	1,257.3	31.41	41.030		
5,900.0	5,838.7	6,085.7	5,704.0	17.7	37.6	0.05	1,949.9	186.3	1,302.1	1,270.2	31.94	40.769		
6,000.0	5,938.7	6,268.3	5,886.1	17.9	37.9	0.10	1,962.9	187.6	1,309.2	1,276.8	32.42	40.381		
6,100.0	6,038.7	6,420.1	6,037.9	18.0	38.0	0.11	1,965.1	187.8	1,310.4	1,277.6	32.83	39.918		
6,200.0	6,138.7	6,520.1	6,137.9	18.2	38.1	0.11	1,965.1	187.8	1,310.4	1,277.3	33.18	39.496		
6,300.0	6,238.7	6,620.1	6,237.9	18.4	38.2	0.11	1,965.1	187.8	1,310.4	1,276.9	33.53	39.080		
6,400.0	6,338.7	6,720.1	6,337.9	18.5	38.2	0.11	1,965.1	187.8	1,310.4	1,276.6	33.89	38.670		
6,500.0	6,438.7	6,820.1	6,437.9	18.7	38.3	0.11	1,965.1	187.8	1,310.4	1,276.2	34.24	38.267		
6,600.0	6,538.7	6,920.1	6,537.9	18.9	38.4	0.11	1,965.1	187.8	1,310.4	1,275.8	34.60	37.870		
6,700.0	6,638.7	7,020.1	6,637.9	19.0	38.5	0.11	1,965.1	187.8	1,310.4	1,275.5	34.96	37.479		
6,800.0	6,738.7	7,120.1	6,737.9	19.2	38.5	0.11	1,965.1	187.8	1,310.4	1,275.1	35.33	37.094		
6,900.0	6,838.7	7,220.1	6,837.9	19.4	38.6	0.11	1,965.1	187.8	1,310.4	1,274.8	35.69	36.715		
7,000.0	6,938.7	7,320.1	6,937.9	19.5	38.7	0.11	1,965.1	187.8	1,310.4	1,274.4	36.06	36.342		
7,100.0	7,038.7	7,420.1	7,037.9	19.7	38.8	0.11	1,965.1	187.8	1,310.4	1,274.0	36.43	35.975		
7,200.0	7,138.7	7,520.1	7,137.9	19.9	38.9	0.11	1,965.1	187.8	1,310.4	1,273.7	36.80	35.614		
7,300.0	7,238.7	7,620.1	7,237.9	20.0	38.9	0.11	1,965.1	187.8	1,310.4	1,273.3	37.17	35.258		
7,333.4	7,272.1	7,653.5	7,271.3	20.1	39.0	0.11	1,965.1	187.8	1,310.4	1,273.2	37.29	35.140		
7,356.3	7,295.0	7,666.2	7,284.0	20.1	39.0	0.11	1,965.1	187.8	1,310.5	1,273.1	37.36	35.077		

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 20-34D
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 4796.7ft (Original Well Elev)
Reference Site:	Raindance FD West Row Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 4796.7ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 20-34D	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 (10-18-12)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4796.7ft (Original Well Elev) Coordinates are relative to: Raindance FD 20-34D
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.37°



Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 20-34D
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 4796.7ft (Original Well Elev)
Reference Site:	Raindance FD West Row Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 4796.7ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 20-34D	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 (10-18-12)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4796.7ft (Original Well Elev) Coordinates are relative to: Raindance FD 20-34D
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
 Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.37°

