

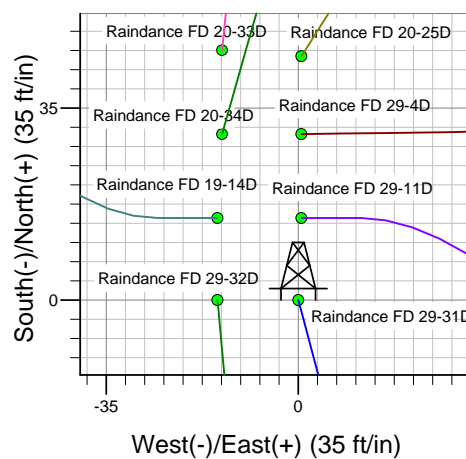
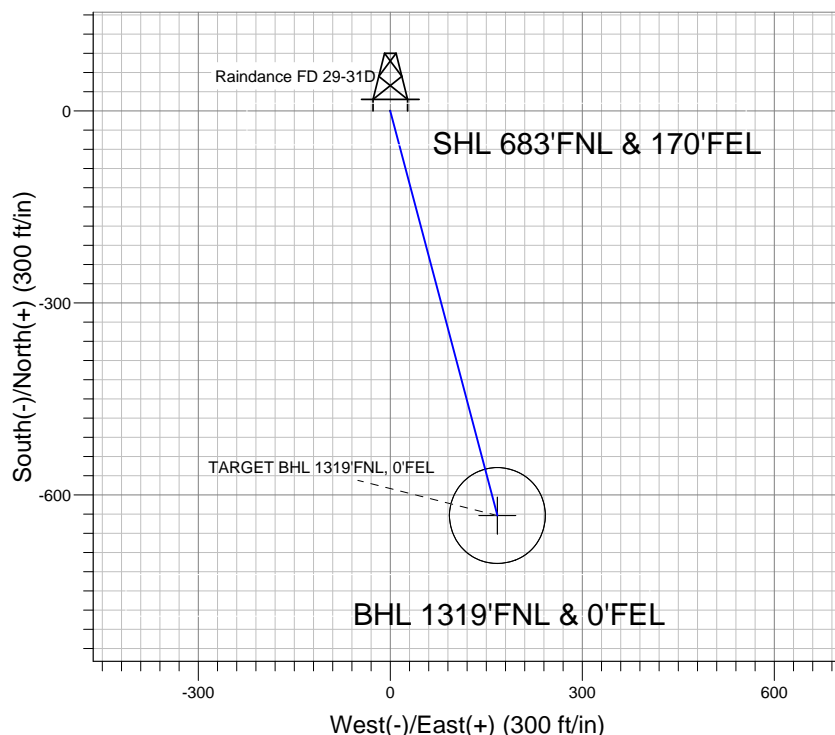
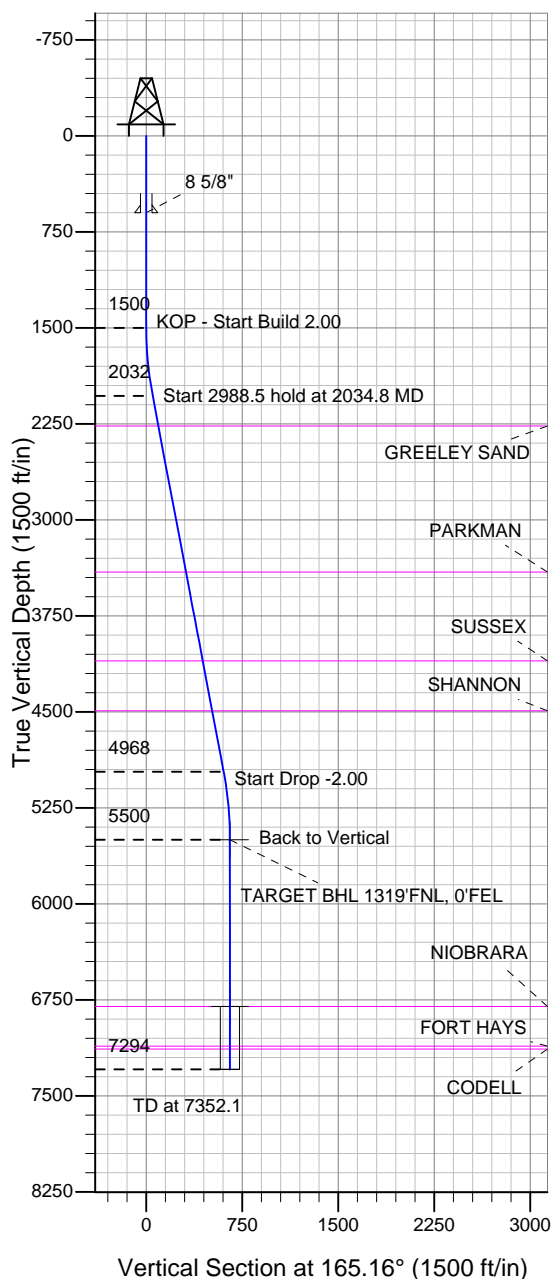
### Well Name: Raindance FD 29-31D

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

Ground Elevation: 4782.4

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1412068.88	3159417.55	40.463117	-104.927069	
Original Well Elev WELL @ 4796.4ft (Original Well Elev)						

## Great Western



Raindance FD East Row Pad Sec.30-T6N-R67W  
Raindance FD 29-31D  
Plan #1 (10-18-12)  
15:18, October 30 2012



Azimuths to True North  
Magnetic North: 8.78°  
Magnetic Field  
Strength: 53005.8snT  
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 1319'FNL, 0'FEL	5500.0	-632.4	167.5	40.461381	-104.926467	Point
TARGET CIRCLE 1319'FNL & 0'FEL	6801.0	-632.4	167.5	40.461381	-104.926467	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	2034.8	10.70	165.16	2031.7	-48.1	12.7	2.00	165.16	49.8	
4	5023.3	10.70	165.16	4968.3	-584.3	154.8	0.00	0.00	604.5	
5	5558.1	0.00	0.00	5500.0	-632.4	167.5	2.00	180.00	654.3	TARGET BHL 1319'FNL, 0'FEL
6	7352.1	0.00	0.00	7294.0	-632.4	167.5	0.00	0.00	654.3	



## **Great Western**

**SEC.30-T6N-R67W**

**Raindance FD East Row Pad Sec.30-T6N-R67W**

**Raindance FD 29-31D**

**Wellbore #1**

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

## **Standard Planning Report**

**30 October, 2012**

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	
2,034.8	10.70	165.16	2,031.7	-48.1	12.7	2.00	2.00	0.00	165.16	
5,023.3	10.70	165.16	4,968.3	-584.3	154.8	0.00	0.00	0.00	0.00	
5,558.1	0.00	0.00	5,500.0	-632.4	167.5	2.00	-2.00	0.00	180.00	TARGET BHL 1319
7,352.1	0.00	0.00	7,294.0	-632.4	167.5	0.00	0.00	0.00	0.00	

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Raindance FD 29-31D
<b>Company:</b>	Great Western	<b>TVD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Project:</b>	SEC.30-T6N-R67W	<b>MD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Site:</b>	Raindance FD East Row Pad Sec.30-T6N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Raindance FD 29-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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	165.16	1,520.0	-0.1	0.0	0.1	2.00	2.00	0.00
1,560.0	1.20	165.16	1,560.0	-0.6	0.2	0.6	2.00	2.00	0.00
1,600.0	2.00	165.16	1,600.0	-1.7	0.4	1.7	2.00	2.00	0.00
1,640.0	2.80	165.16	1,639.9	-3.3	0.9	3.4	2.00	2.00	0.00
1,680.0	3.60	165.16	1,679.9	-5.5	1.4	5.7	2.00	2.00	0.00
1,720.0	4.40	165.16	1,719.8	-8.2	2.2	8.4	2.00	2.00	0.00
1,760.0	5.20	165.16	1,759.6	-11.4	3.0	11.8	2.00	2.00	0.00
1,800.0	6.00	165.16	1,799.5	-15.2	4.0	15.7	2.00	2.00	0.00
1,840.0	6.80	165.16	1,839.2	-19.5	5.2	20.2	2.00	2.00	0.00
1,880.0	7.60	165.16	1,878.9	-24.3	6.4	25.2	2.00	2.00	0.00
1,920.0	8.40	165.16	1,918.5	-29.7	7.9	30.7	2.00	2.00	0.00
1,960.0	9.20	165.16	1,958.0	-35.6	9.4	36.9	2.00	2.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Raindance FD 29-31D
<b>Company:</b>	Great Western	<b>TVD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Project:</b>	SEC.30-T6N-R67W	<b>MD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Site:</b>	Raindance FD East Row Pad Sec.30-T6N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Raindance FD 29-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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	165.16	1,997.5	-42.1	11.1	43.5	2.00	2.00	0.00
2,034.8	10.70	165.16	2,031.7	-48.1	12.7	49.8	2.00	2.00	0.00
<b>Start 2988.5 hold at 2034.8 MD</b>									
2,040.0	10.70	165.16	2,036.8	-49.0	13.0	50.7	0.00	0.00	0.00
2,080.0	10.70	165.16	2,076.1	-56.2	14.9	58.2	0.00	0.00	0.00
2,120.0	10.70	165.16	2,115.4	-63.4	16.8	65.6	0.00	0.00	0.00
2,160.0	10.70	165.16	2,154.7	-70.6	18.7	73.0	0.00	0.00	0.00
2,200.0	10.70	165.16	2,194.0	-77.8	20.6	80.4	0.00	0.00	0.00
2,240.0	10.70	165.16	2,233.3	-84.9	22.5	87.9	0.00	0.00	0.00
2,274.3	10.70	165.16	2,267.0	-91.1	24.1	94.2	0.00	0.00	0.00
<b>GREELEY SAND</b>									
2,280.0	10.70	165.16	2,272.6	-92.1	24.4	95.3	0.00	0.00	0.00
2,320.0	10.70	165.16	2,311.9	-99.3	26.3	102.7	0.00	0.00	0.00
2,360.0	10.70	165.16	2,351.2	-106.5	28.2	110.1	0.00	0.00	0.00
2,400.0	10.70	165.16	2,390.6	-113.6	30.1	117.6	0.00	0.00	0.00
2,440.0	10.70	165.16	2,429.9	-120.8	32.0	125.0	0.00	0.00	0.00
2,480.0	10.70	165.16	2,469.2	-128.0	33.9	132.4	0.00	0.00	0.00
2,520.0	10.70	165.16	2,508.5	-135.2	35.8	139.8	0.00	0.00	0.00
2,560.0	10.70	165.16	2,547.8	-142.3	37.7	147.3	0.00	0.00	0.00
2,600.0	10.70	165.16	2,587.1	-149.5	39.6	154.7	0.00	0.00	0.00
2,640.0	10.70	165.16	2,626.4	-156.7	41.5	162.1	0.00	0.00	0.00
2,680.0	10.70	165.16	2,665.7	-163.9	43.4	169.5	0.00	0.00	0.00
2,720.0	10.70	165.16	2,705.0	-171.1	45.3	177.0	0.00	0.00	0.00
2,760.0	10.70	165.16	2,744.3	-178.2	47.2	184.4	0.00	0.00	0.00
2,800.0	10.70	165.16	2,783.6	-185.4	49.1	191.8	0.00	0.00	0.00
2,840.0	10.70	165.16	2,822.9	-192.6	51.0	199.2	0.00	0.00	0.00
2,880.0	10.70	165.16	2,862.2	-199.8	52.9	206.7	0.00	0.00	0.00
2,920.0	10.70	165.16	2,901.5	-206.9	54.8	214.1	0.00	0.00	0.00
2,960.0	10.70	165.16	2,940.8	-214.1	56.7	221.5	0.00	0.00	0.00
3,000.0	10.70	165.16	2,980.1	-221.3	58.6	228.9	0.00	0.00	0.00
3,040.0	10.70	165.16	3,019.4	-228.5	60.5	236.4	0.00	0.00	0.00
3,080.0	10.70	165.16	3,058.7	-235.6	62.4	243.8	0.00	0.00	0.00
3,120.0	10.70	165.16	3,098.0	-242.8	64.3	251.2	0.00	0.00	0.00
3,160.0	10.70	165.16	3,137.3	-250.0	66.2	258.6	0.00	0.00	0.00
3,200.0	10.70	165.16	3,176.7	-257.2	68.1	266.0	0.00	0.00	0.00
3,240.0	10.70	165.16	3,216.0	-264.4	70.0	273.5	0.00	0.00	0.00
3,280.0	10.70	165.16	3,255.3	-271.5	71.9	280.9	0.00	0.00	0.00
3,320.0	10.70	165.16	3,294.6	-278.7	73.8	288.3	0.00	0.00	0.00
3,360.0	10.70	165.16	3,333.9	-285.9	75.7	295.7	0.00	0.00	0.00
3,400.0	10.70	165.16	3,373.2	-293.1	77.6	303.2	0.00	0.00	0.00
3,435.4	10.70	165.16	3,408.0	-299.4	79.3	309.7	0.00	0.00	0.00
<b>PARKMAN</b>									
3,440.0	10.70	165.16	3,412.5	-300.2	79.5	310.6	0.00	0.00	0.00
3,480.0	10.70	165.16	3,451.8	-307.4	81.4	318.0	0.00	0.00	0.00
3,520.0	10.70	165.16	3,491.1	-314.6	83.3	325.4	0.00	0.00	0.00
3,560.0	10.70	165.16	3,530.4	-321.8	85.2	332.9	0.00	0.00	0.00
3,600.0	10.70	165.16	3,569.7	-328.9	87.1	340.3	0.00	0.00	0.00
3,640.0	10.70	165.16	3,609.0	-336.1	89.0	347.7	0.00	0.00	0.00
3,680.0	10.70	165.16	3,648.3	-343.3	90.9	355.1	0.00	0.00	0.00
3,720.0	10.70	165.16	3,687.6	-350.5	92.8	362.6	0.00	0.00	0.00
3,760.0	10.70	165.16	3,726.9	-357.7	94.7	370.0	0.00	0.00	0.00
3,800.0	10.70	165.16	3,766.2	-364.8	96.6	377.4	0.00	0.00	0.00
3,840.0	10.70	165.16	3,805.5	-372.0	98.5	384.8	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Raindance FD 29-31D
<b>Company:</b>	Great Western	<b>TVD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Project:</b>	SEC.30-T6N-R67W	<b>MD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Site:</b>	Raindance FD East Row Pad Sec.30-T6N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Raindance FD 29-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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	10.70	165.16	3,844.8	-379.2	100.4	392.3	0.00	0.00	0.00
3,920.0	10.70	165.16	3,884.1	-386.4	102.3	399.7	0.00	0.00	0.00
3,960.0	10.70	165.16	3,923.4	-393.5	104.2	407.1	0.00	0.00	0.00
4,000.0	10.70	165.16	3,962.8	-400.7	106.1	414.5	0.00	0.00	0.00
4,040.0	10.70	165.16	4,002.1	-407.9	108.0	422.0	0.00	0.00	0.00
4,080.0	10.70	165.16	4,041.4	-415.1	109.9	429.4	0.00	0.00	0.00
4,120.0	10.70	165.16	4,080.7	-422.2	111.8	436.8	0.00	0.00	0.00
4,140.7	10.70	165.16	4,101.0	-426.0	112.8	440.7	0.00	0.00	0.00
<b>SUSSEX</b>									
4,160.0	10.70	165.16	4,120.0	-429.4	113.7	444.2	0.00	0.00	0.00
4,200.0	10.70	165.16	4,159.3	-436.6	115.6	451.7	0.00	0.00	0.00
4,240.0	10.70	165.16	4,198.6	-443.8	117.5	459.1	0.00	0.00	0.00
4,280.0	10.70	165.16	4,237.9	-451.0	119.4	466.5	0.00	0.00	0.00
4,320.0	10.70	165.16	4,277.2	-458.1	121.3	473.9	0.00	0.00	0.00
4,360.0	10.70	165.16	4,316.5	-465.3	123.2	481.4	0.00	0.00	0.00
4,400.0	10.70	165.16	4,355.8	-472.5	125.1	488.8	0.00	0.00	0.00
4,440.0	10.70	165.16	4,395.1	-479.7	127.1	496.2	0.00	0.00	0.00
4,480.0	10.70	165.16	4,434.4	-486.8	129.0	503.6	0.00	0.00	0.00
4,520.0	10.70	165.16	4,473.7	-494.0	130.9	511.1	0.00	0.00	0.00
4,537.6	10.70	165.16	4,491.0	-497.2	131.7	514.3	0.00	0.00	0.00
<b>SHANNON</b>									
4,560.0	10.70	165.16	4,513.0	-501.2	132.8	518.5	0.00	0.00	0.00
4,600.0	10.70	165.16	4,552.3	-508.4	134.7	525.9	0.00	0.00	0.00
4,640.0	10.70	165.16	4,591.6	-515.6	136.6	533.3	0.00	0.00	0.00
4,680.0	10.70	165.16	4,630.9	-522.7	138.5	540.8	0.00	0.00	0.00
4,720.0	10.70	165.16	4,670.2	-529.9	140.4	548.2	0.00	0.00	0.00
4,760.0	10.70	165.16	4,709.5	-537.1	142.3	555.6	0.00	0.00	0.00
4,800.0	10.70	165.16	4,748.8	-544.3	144.2	563.0	0.00	0.00	0.00
4,840.0	10.70	165.16	4,788.2	-551.4	146.1	570.5	0.00	0.00	0.00
4,880.0	10.70	165.16	4,827.5	-558.6	148.0	577.9	0.00	0.00	0.00
4,920.0	10.70	165.16	4,866.8	-565.8	149.9	585.3	0.00	0.00	0.00
4,960.0	10.70	165.16	4,906.1	-573.0	151.8	592.7	0.00	0.00	0.00
5,000.0	10.70	165.16	4,945.4	-580.1	153.7	600.1	0.00	0.00	0.00
5,023.3	10.70	165.16	4,968.3	-584.3	154.8	604.5	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
5,040.0	10.36	165.16	4,984.7	-587.3	155.6	607.5	2.00	-2.00	0.00
5,080.0	9.56	165.16	5,024.1	-594.0	157.3	614.4	2.00	-2.00	0.00
5,120.0	8.76	165.16	5,063.6	-600.1	159.0	620.8	2.00	-2.00	0.00
5,160.0	7.96	165.16	5,103.1	-605.7	160.4	626.6	2.00	-2.00	0.00
5,200.0	7.16	165.16	5,142.8	-610.8	161.8	631.9	2.00	-2.00	0.00
5,240.0	6.36	165.16	5,182.5	-615.4	163.0	636.6	2.00	-2.00	0.00
5,280.0	5.56	165.16	5,222.3	-619.4	164.1	640.8	2.00	-2.00	0.00
5,320.0	4.76	165.16	5,262.1	-622.9	165.0	644.4	2.00	-2.00	0.00
5,360.0	3.96	165.16	5,302.0	-625.8	165.8	647.4	2.00	-2.00	0.00
5,400.0	3.16	165.16	5,341.9	-628.2	166.4	649.9	2.00	-2.00	0.00
5,440.0	2.36	165.16	5,381.9	-630.1	166.9	651.8	2.00	-2.00	0.00
5,480.0	1.56	165.16	5,421.9	-631.4	167.2	653.2	2.00	-2.00	0.00
5,520.0	0.76	165.16	5,461.9	-632.2	167.5	654.0	2.00	-2.00	0.00
5,558.1	0.00	0.00	5,500.0	-632.4	167.5	654.3	2.00	-2.00	0.00
<b>Back to Vertical - TARGET BHL 1319'FNL, 0'FEL</b>									
5,560.0	0.00	0.00	5,501.9	-632.4	167.5	654.3	0.00	0.00	0.00
5,600.0	0.00	0.00	5,541.9	-632.4	167.5	654.3	0.00	0.00	0.00
5,640.0	0.00	0.00	5,581.9	-632.4	167.5	654.3	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Raindance FD 29-31D
<b>Company:</b>	Great Western	<b>TVD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Project:</b>	SEC.30-T6N-R67W	<b>MD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Site:</b>	Raindance FD East Row Pad Sec.30-T6N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Raindance FD 29-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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	5,621.9	-632.4	167.5	654.3	0.00	0.00	0.00
5,720.0	0.00	0.00	5,661.9	-632.4	167.5	654.3	0.00	0.00	0.00
5,760.0	0.00	0.00	5,701.9	-632.4	167.5	654.3	0.00	0.00	0.00
5,800.0	0.00	0.00	5,741.9	-632.4	167.5	654.3	0.00	0.00	0.00
5,840.0	0.00	0.00	5,781.9	-632.4	167.5	654.3	0.00	0.00	0.00
5,880.0	0.00	0.00	5,821.9	-632.4	167.5	654.3	0.00	0.00	0.00
5,920.0	0.00	0.00	5,861.9	-632.4	167.5	654.3	0.00	0.00	0.00
5,960.0	0.00	0.00	5,901.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,000.0	0.00	0.00	5,941.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,040.0	0.00	0.00	5,981.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,080.0	0.00	0.00	6,021.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,120.0	0.00	0.00	6,061.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,160.0	0.00	0.00	6,101.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,200.0	0.00	0.00	6,141.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,240.0	0.00	0.00	6,181.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,280.0	0.00	0.00	6,221.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,320.0	0.00	0.00	6,261.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,360.0	0.00	0.00	6,301.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,400.0	0.00	0.00	6,341.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,440.0	0.00	0.00	6,381.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,480.0	0.00	0.00	6,421.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,520.0	0.00	0.00	6,461.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,560.0	0.00	0.00	6,501.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,600.0	0.00	0.00	6,541.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,640.0	0.00	0.00	6,581.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,680.0	0.00	0.00	6,621.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,720.0	0.00	0.00	6,661.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,760.0	0.00	0.00	6,701.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,800.0	0.00	0.00	6,741.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,840.0	0.00	0.00	6,781.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,859.1	0.00	0.00	6,801.0	-632.4	167.5	654.3	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 1319'FNL & 0'FEL									
6,880.0	0.00	0.00	6,821.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,920.0	0.00	0.00	6,861.9	-632.4	167.5	654.3	0.00	0.00	0.00
6,960.0	0.00	0.00	6,901.9	-632.4	167.5	654.3	0.00	0.00	0.00
7,000.0	0.00	0.00	6,941.9	-632.4	167.5	654.3	0.00	0.00	0.00
7,040.0	0.00	0.00	6,981.9	-632.4	167.5	654.3	0.00	0.00	0.00
7,080.0	0.00	0.00	7,021.9	-632.4	167.5	654.3	0.00	0.00	0.00
7,120.0	0.00	0.00	7,061.9	-632.4	167.5	654.3	0.00	0.00	0.00
7,160.0	0.00	0.00	7,101.9	-632.4	167.5	654.3	0.00	0.00	0.00
7,170.1	0.00	0.00	7,112.0	-632.4	167.5	654.3	0.00	0.00	0.00
FORT HAYS									
7,192.1	0.00	0.00	7,134.0	-632.4	167.5	654.3	0.00	0.00	0.00
CODELL									
7,200.0	0.00	0.00	7,141.9	-632.4	167.5	654.3	0.00	0.00	0.00
7,240.0	0.00	0.00	7,181.9	-632.4	167.5	654.3	0.00	0.00	0.00
7,280.0	0.00	0.00	7,221.9	-632.4	167.5	654.3	0.00	0.00	0.00
7,320.0	0.00	0.00	7,261.9	-632.4	167.5	654.3	0.00	0.00	0.00
7,352.1	0.00	0.00	7,294.0	-632.4	167.5	654.3	0.00	0.00	0.00
TD at 7352.1									

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Raindance FD 29-31D
<b>Company:</b>	Great Western	<b>TVD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Project:</b>	SEC.30-T6N-R67W	<b>MD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Site:</b>	Raindance FD East Row Pad Sec.30-T6N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Raindance FD 29-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (10-18-12)		

Targets									
Target Name	- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	
- Shape		(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	Latitude Longitude
TARGET CIRCLE 131	- plan hits target center - Circle (radius 75.0)	0.00	0.00	6,801.0	-632.4	167.5	1,411,437.55	3,159,589.14	40.461381 -104.926467
TARGET BHL 1319'F	- plan hits target center - Point	0.00	0.00	5,500.0	-632.4	167.5	1,411,437.55	3,159,589.14	40.461381 -104.926467

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)			(°)	(°)	
2,274.3	2,267.0	GREELEY SAND		0.00		
3,435.4	3,408.0	PARKMAN		0.00		
4,140.7	4,101.0	SUSSEX		0.00		
4,537.6	4,491.0	SHANNON		0.00		
6,859.1	6,801.0	NIOBRARA		0.00		
7,170.1	7,112.0	FORT HAYS		0.00		
7,192.1	7,134.0	CODELL		0.00		

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)		
1,500.0	1,500.0	0.0	0.0	KOP - Start Build 2.00	
2,034.8	2,031.7	-48.1	12.7	Start 2988.5 hold at 2034.8 MD	
5,023.3	4,968.3	-584.3	154.8	Start Drop -2.00	
5,558.1	5,500.0	-632.4	167.5	Back to Vertical	
7,352.1	7,294.0	-632.4	167.5	TD at 7352.1	





## **Great Western**

**SEC.30-T6N-R67W**

**Raindance FD East Row Pad Sec.30-T6N-R67W**

**Raindance FD 29-31D**

**Wellbore #1**

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

## **Anticollision Report**

**30 October, 2012**

<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well Raindance FD 29-31D
<b>Project:</b>	SEC.30-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Reference Site:</b>	Raindance FD East Row Pad Sec.30-T6N-R67W	<b>MD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Raindance FD 29-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (10-18-12)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1 (10-18-12)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b>	10/19/2012		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	7,352.1	Plan #1 (10-18-12) (Wellbore #1)	MWD	MWD - Standard

<b>Summary</b>						
<b>Site Name</b>	<b>Reference Measured Depth (ft)</b>	<b>Offset Measured Depth (ft)</b>	<b>Distance Between Centres (ft)</b>	<b>Distance Between Ellipses (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>
<b>Offset Well - Wellbore - Design</b>						
Raindance FD East Row Pad Sec.30-T6N-R67W						
Raindance FD 29-11D - Wellbore #1 - Plan #1 (10-18-12)	366.4	367.2	14.9	13.5	10.496	CC
Raindance FD 29-11D - Wellbore #1 - Plan #1 (10-18-12)	500.0	500.7	15.1	13.1	7.510	ES
Raindance FD 29-11D - Wellbore #1 - Plan #1 (10-18-12)	600.0	600.4	16.8	14.3	6.833	SF
Raindance FD West Row Pad Sec.30-T6N-R67W						
Raindance FD 19-14D - Wellbore #1 - Plan #1 (10-18-12)	200.0	199.7	21.0	20.3	31.161	CC, ES
Raindance FD 19-14D - Wellbore #1 - Plan #1 (10-18-12)	500.0	497.3	33.7	31.6	16.632	SF
Raindance FD 29-32D - Wellbore #1 - Plan #1 (10-18-12)	487.6	487.8	14.7	12.7	7.555	CC
Raindance FD 29-32D - Wellbore #1 - Plan #1 (10-18-12)	500.0	500.2	14.7	12.7	7.360	ES
Raindance FD 29-32D - Wellbore #1 - Plan #1 (10-18-12)	600.0	600.0	15.7	13.3	6.525	SF

<b>Offset Design</b>												
Raindance FD East Row Pad Sec.30-T6N-R67W - Raindance FD 29-11D - Wellbore #1 - Plan #1 (10-1												
Survey Program: 0-MWD												
Reference Offset Semi Major Axis Distance												
<b>Measured Depth (ft)</b>	<b>Vertical Depth (ft)</b>	<b>Measured Depth (ft)</b>	<b>Vertical Depth (ft)</b>	<b>Reference (ft)</b>	<b>Offset (ft)</b>	<b>Highside Toolface (°)</b>	<b>Offset Wellbore Centre +N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Between Centres (ft)</b>	<b>Between Ellipses (ft)</b>	<b>Minimum Separation (ft)</b>	<b>Separation Factor</b>
0.0	0.0	0.8	0.8	0.0	0.0	2.13	14.9	0.6	14.9	14.9	0.00	N/A
100.0	100.0	100.8	100.8	0.1	0.1	2.13	14.9	0.6	14.9	14.7	0.23	65.974
200.0	200.0	200.8	200.8	0.3	0.3	2.13	14.9	0.6	14.9	14.3	0.68	22.108
300.0	300.0	300.8	300.8	0.6	0.6	2.13	14.9	0.6	14.9	13.8	1.13	13.279
366.4	366.4	367.2	367.2	0.7	0.7	2.13	14.9	0.6	14.9	13.5	1.42	10.496 CC
400.0	400.0	400.8	400.8	0.8	0.8	2.13	14.9	0.6	14.9	13.4	1.58	9.490
403.6	403.6	404.4	404.4	0.8	0.8	2.15	14.9	0.6	14.9	13.4	1.59	9.397
500.0	500.0	500.7	500.7	1.0	1.0	8.86	14.9	2.3	15.1	13.1	2.01	7.510 ES
600.0	600.0	600.4	600.3	1.2	1.2	26.86	14.9	7.6	16.8	14.3	2.45	6.833 SF
700.0	700.0	700.1	699.6	1.5	1.4	47.69	14.5	16.0	21.6	18.7	2.89	7.465
800.0	800.0	799.8	798.7	1.7	1.7	66.43	11.2	25.7	28.1	24.8	3.32	8.469
900.0	900.0	898.9	897.0	1.9	1.9	82.75	4.6	36.3	36.8	33.1	3.75	9.824
1,000.0	1,000.0	997.3	994.2	2.1	2.2	96.10	-5.1	47.9	48.6	44.4	4.19	11.602
1,100.0	1,100.0	1,094.6	1,090.0	2.4	2.6	106.54	-17.9	60.3	63.9	59.2	4.65	13.747
1,200.0	1,200.0	1,190.8	1,183.9	2.6	2.9	114.58	-33.6	73.5	82.6	77.5	5.11	16.167
1,300.0	1,300.0	1,285.6	1,275.9	2.8	3.4	120.79	-52.1	87.4	104.7	99.1	5.58	18.772
1,400.0	1,400.0	1,378.8	1,365.5	3.0	3.8	125.65	-73.0	101.8	130.2	124.1	6.06	21.495

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

<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well Raindance FD 29-31D
<b>Project:</b>	SEC.30-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Reference Site:</b>	Raindance FD East Row Pad Sec.30-T6N-R67W	<b>MD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Raindance FD 29-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (10-18-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Raindance FD East Row Pad Sec.30-T6N-R67W - Raindance FD 29-11D - 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	
1,500.0	1,500.0	1,470.3	1,452.7	3.3	4.3	129.52	-96.4	116.8	158.9	152.3	6.54	24.285		
1,600.0	1,600.0	1,562.1	1,539.4	3.5	4.9	-32.42	-122.3	132.6	189.1	182.2	6.96	27.181		
1,700.0	1,699.8	1,657.8	1,629.5	3.6	5.5	-30.34	-150.0	149.2	217.5	210.1	7.39	29.421		
1,800.0	1,799.5	1,754.4	1,720.4	3.8	6.1	-29.14	-177.9	165.9	243.1	235.2	7.84	30.992		
1,900.0	1,898.7	1,851.8	1,812.1	4.0	6.8	-28.51	-206.1	182.8	265.7	257.4	8.31	31.968		
2,000.0	1,997.5	1,949.9	1,904.4	4.2	7.4	-28.33	-234.4	199.8	285.4	276.6	8.80	32.420		
2,034.8	2,031.7	1,984.2	1,936.7	4.3	7.7	-28.35	-244.4	205.8	291.5	282.5	8.98	32.468		
2,100.0	2,095.8	2,048.4	1,997.1	4.5	8.1	-28.52	-262.9	216.9	302.6	293.3	9.33	32.449		
2,200.0	2,194.0	2,146.9	2,089.8	4.8	8.8	-28.77	-291.4	234.0	319.7	309.9	9.87	32.379		
2,300.0	2,292.3	2,245.4	2,182.6	5.1	9.5	-28.99	-319.9	251.1	336.8	326.4	10.44	32.271		
2,400.0	2,390.6	2,343.9	2,275.3	5.4	10.1	-29.19	-348.4	268.2	353.9	342.9	11.01	32.136		
2,500.0	2,488.8	2,442.4	2,368.1	5.7	10.8	-29.37	-376.9	285.3	371.1	359.5	11.60	31.984		
2,600.0	2,587.1	2,541.0	2,460.8	6.1	11.5	-29.54	-405.4	302.4	388.2	376.0	12.20	31.821		
2,700.0	2,685.3	2,639.5	2,553.6	6.4	12.2	-29.69	-433.9	319.5	405.3	392.5	12.80	31.653		
2,800.0	2,783.6	2,738.0	2,646.3	6.8	12.9	-29.83	-462.4	336.6	422.4	409.0	13.42	31.482		
2,900.0	2,881.9	2,836.5	2,739.1	7.2	13.6	-29.95	-490.9	353.7	439.5	425.5	14.04	31.311		
3,000.0	2,980.1	2,935.0	2,831.8	7.6	14.2	-30.07	-519.4	370.8	456.7	442.0	14.66	31.143		
3,100.0	3,078.4	3,033.5	2,924.5	7.9	14.9	-30.18	-547.9	387.9	473.8	458.5	15.29	30.978		
3,200.0	3,176.7	3,132.1	3,017.3	8.3	15.6	-30.29	-576.4	405.0	490.9	475.0	15.93	30.817		
3,300.0	3,274.9	3,230.6	3,110.0	8.7	16.3	-30.38	-604.8	422.1	508.1	491.5	16.57	30.660		
3,400.0	3,373.2	3,329.1	3,202.8	9.1	17.0	-30.47	-633.3	439.2	525.2	508.0	17.21	30.509		
3,500.0	3,471.4	3,427.6	3,295.5	9.5	17.7	-30.55	-661.8	456.3	542.3	524.5	17.86	30.363		
3,600.0	3,569.7	3,526.1	3,388.3	9.9	18.4	-30.63	-690.3	473.4	559.5	540.9	18.51	30.223		
3,700.0	3,668.0	3,624.7	3,481.0	10.3	19.1	-30.71	-718.8	490.5	576.6	557.4	19.16	30.088		
3,800.0	3,766.2	3,723.2	3,573.8	10.7	19.8	-30.78	-747.3	507.6	593.7	573.9	19.82	29.957		
3,900.0	3,864.5	3,821.7	3,666.5	11.1	20.5	-30.84	-775.8	524.7	610.9	590.4	20.48	29.832		
4,000.0	3,962.8	3,920.2	3,759.3	11.5	21.1	-30.90	-804.3	541.8	628.0	606.9	21.14	29.712		
4,100.0	4,061.0	4,018.7	3,852.0	11.9	21.8	-30.96	-832.8	558.9	645.1	623.3	21.80	29.597		
4,200.0	4,159.3	4,117.2	3,944.7	12.3	22.5	-31.02	-861.3	576.0	662.3	639.8	22.46	29.486		
4,300.0	4,257.5	4,215.8	4,037.5	12.7	23.2	-31.07	-889.8	593.1	679.4	656.3	23.13	29.380		
4,400.0	4,355.8	4,314.3	4,130.2	13.1	23.9	-31.12	-918.3	610.1	696.6	672.8	23.79	29.277		
4,500.0	4,454.1	4,412.8	4,223.0	13.5	24.6	-31.17	-946.8	627.2	713.7	689.2	24.46	29.179		
4,600.0	4,552.3	4,511.3	4,315.7	13.9	25.3	-31.21	-975.3	644.3	730.8	705.7	25.13	29.085		
4,700.0	4,650.6	4,609.8	4,408.5	14.4	26.0	-31.26	-1,003.8	661.4	748.0	722.2	25.80	28.994		
4,800.0	4,748.8	4,708.4	4,501.2	14.8	26.7	-31.30	-1,032.3	678.5	765.1	738.7	26.47	28.906		
4,900.0	4,847.1	4,806.9	4,594.0	15.2	27.4	-31.34	-1,060.7	695.6	782.3	755.1	27.14	28.822		
5,000.0	4,945.4	4,905.4	4,686.7	15.6	28.1	-31.38	-1,089.2	712.7	799.4	771.6	27.81	28.741		
5,023.3	4,968.3	4,928.3	4,708.3	15.7	28.2	-31.39	-1,095.9	716.7	803.4	775.4	27.97	28.723		
5,100.0	5,043.8	5,003.8	4,779.3	16.0	28.8	-31.53	-1,117.7	729.8	817.4	789.0	28.44	28.738		
5,200.0	5,142.8	5,117.2	4,886.3	16.2	29.5	-31.60	-1,150.1	749.2	837.9	808.9	29.01	28.885		
5,300.0	5,242.2	5,254.3	5,017.2	16.5	30.1	-31.58	-1,184.9	770.1	857.6	828.1	29.51	29.056		
5,400.0	5,341.9	5,393.1	5,151.6	16.7	30.7	-31.50	-1,214.6	788.0	875.6	845.7	29.94	29.242		
5,500.0	5,441.9	5,533.5	5,289.1	16.8	31.2	-31.36	-1,239.0	802.6	892.0	861.7	30.29	29.448		
5,558.1	5,500.0	5,615.8	5,370.3	16.9	31.4	133.91	-1,250.6	809.5	900.7	870.3	30.46	29.569		
5,600.0	5,541.9	5,675.4	5,429.3	17.0	31.5	134.05	-1,257.7	813.8	906.4	875.8	30.62	29.603		
5,700.0	5,641.9	5,819.1	5,572.2	17.1	31.8	134.30	-1,270.6	821.5	916.5	885.5	30.98	29.582		
5,800.0	5,741.9	5,963.9	5,716.7	17.2	32.0	134.42	-1,277.3	825.6	921.7	890.4	31.34	29.410		
5,900.0	5,841.9	6,089.8	5,842.7	17.4	32.2	134.44	-1,278.4	826.2	922.5	890.9	31.68	29.117		
6,000.0	5,941.9	6,189.8	5,942.7	17.5	32.2	134.44	-1,278.4	826.2	922.5	890.6	31.98	28.843		
6,100.0	6,041.9	6,289.8	6,042.7	17.7	32.3	134.44	-1,278.4	826.2	922.5	890.3	32.29	28.573		
6,200.0	6,141.9	6,389.8	6,142.7	17.8	32.4	134.44	-1,278.4	826.2	922.5	889.9	32.59	28.304		

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

<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well Raindance FD 29-31D
<b>Project:</b>	SEC.30-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Reference Site:</b>	Raindance FD East Row Pad Sec.30-T6N-R67W	<b>MD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Raindance FD 29-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (10-18-12)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Raindance FD East Row Pad Sec.30-T6N-R67W - Raindance FD 29-11D - Wellbore #1 - Plan #1 (10-1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Reference	Offset	Reference	Offset	(ft)	(ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
6,300.0	6,241.9	6,489.8	6,242.7	17.9	32.5	134.44	-1,278.4	826.2	922.5	889.6	32.90	28.038	
6,400.0	6,341.9	6,589.8	6,342.7	18.1	32.5	134.44	-1,278.4	826.2	922.5	889.3	33.22	27.775	
6,500.0	6,441.9	6,689.8	6,442.7	18.2	32.6	134.44	-1,278.4	826.2	922.5	889.0	33.53	27.513	
6,600.0	6,541.9	6,789.8	6,542.7	18.4	32.7	134.44	-1,278.4	826.2	922.5	888.7	33.85	27.255	
6,700.0	6,641.9	6,889.8	6,642.7	18.5	32.8	134.44	-1,278.4	826.2	922.5	888.4	34.17	26.998	
6,800.0	6,741.9	6,989.8	6,742.7	18.7	32.9	134.44	-1,278.4	826.2	922.5	888.0	34.49	26.745	
6,900.0	6,841.9	7,089.8	6,842.7	18.8	32.9	134.44	-1,278.4	826.2	922.5	887.7	34.82	26.494	
7,000.0	6,941.9	7,189.8	6,942.7	19.0	33.0	134.44	-1,278.4	826.2	922.5	887.4	35.15	26.246	
7,100.0	7,041.9	7,289.8	7,042.7	19.2	33.1	134.44	-1,278.4	826.2	922.5	887.1	35.48	26.000	
7,200.0	7,141.9	7,389.8	7,142.7	19.3	33.2	134.44	-1,278.4	826.2	922.5	886.7	35.82	25.757	
7,300.0	7,241.9	7,489.8	7,242.7	19.5	33.3	134.44	-1,278.4	826.2	922.5	886.4	36.15	25.517	
7,352.1	7,294.0	7,542.0	7,294.8	19.6	33.3	134.44	-1,278.4	826.2	922.5	886.2	36.33	25.393	

<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well Rainsance FD 29-31D
<b>Project:</b>	SEC.30-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Reference Site:</b>	Rainsance FD East Row Pad Sec.30-T6N-R67W	<b>MD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Rainsance FD 29-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (10-18-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													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	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-44.64		14.9	-14.7	21.0				
100.0	100.0	99.7	99.7	0.1	0.1	-44.64		14.9	-14.7	21.0	20.8	0.22	93.529	
200.0	200.0	199.7	199.7	0.3	0.3	-44.64		14.9	-14.7	21.0	20.3	0.67	31.161 CC, ES	
300.0	300.0	299.1	299.1	0.6	0.6	-47.78		14.9	-16.5	22.2	21.1	1.11	19.992	
400.0	400.0	398.4	398.2	0.8	0.8	-55.35		14.9	-21.6	26.3	24.8	1.56	16.874	
500.0	500.0	497.3	496.8	1.0	1.0	-62.82		15.3	-29.8	33.7	31.6	2.02	16.632 SF	
600.0	600.0	596.0	595.0	1.2	1.3	-64.48		18.6	-39.0	43.4	41.0	2.48	17.498	
700.0	700.0	694.3	692.6	1.5	1.6	-62.60		25.2	-48.6	55.2	52.3	2.95	18.750	
800.0	800.0	791.9	789.2	1.7	1.9	-59.18		35.0	-58.7	69.2	65.8	3.41	20.294	
900.0	900.0	888.7	884.5	1.9	2.2	-55.27		48.0	-69.2	85.6	81.7	3.88	22.075	
1,000.0	1,000.0	984.3	978.2	2.1	2.6	-51.41		63.9	-80.1	104.7	100.4	4.35	24.065	
1,100.0	1,100.0	1,078.7	1,070.0	2.4	3.0	-47.83		82.7	-91.3	126.7	121.9	4.83	26.224	
1,200.0	1,200.0	1,171.6	1,159.7	2.6	3.4	-44.63		104.1	-102.8	151.6	146.3	5.32	28.516	
1,300.0	1,300.0	1,262.9	1,247.0	2.8	3.9	-41.81		127.9	-114.4	179.5	173.7	5.81	30.902	
1,400.0	1,400.0	1,352.4	1,331.9	3.0	4.4	-39.34		154.0	-126.2	210.3	204.0	6.31	33.354	
1,500.0	1,500.0	1,440.1	1,414.1	3.3	5.0	-37.19		182.0	-138.1	244.0	237.2	6.81	35.845	
1,600.0	1,600.0	1,525.2	1,492.9	3.5	5.5	159.34		211.6	-150.0	282.0	274.9	7.12	39.594	
1,700.0	1,699.8	1,606.7	1,567.6	3.6	6.1	160.92		242.1	-161.7	325.7	318.1	7.52	43.301	
1,800.0	1,799.5	1,684.4	1,637.9	3.8	6.8	162.33		273.2	-173.0	374.8	366.9	7.91	47.411	
1,900.0	1,898.7	1,758.0	1,703.7	4.0	7.4	163.55		304.4	-184.0	429.2	420.9	8.27	51.885	
2,000.0	1,997.5	1,827.3	1,764.8	4.2	8.0	164.58		335.2	-194.6	488.5	479.9	8.62	56.693	
2,034.8	2,031.7	1,850.5	1,785.1	4.3	8.2	164.90		345.9	-198.1	510.3	501.6	8.73	58.435	
2,100.0	2,095.8	1,900.0	1,828.1	4.5	8.7	165.83		369.2	-205.8	552.0	542.9	9.00	61.299	
2,200.0	2,194.0	1,955.5	1,875.8	4.8	9.2	166.76		396.2	-214.5	617.2	607.9	9.37	65.844	
2,300.0	2,292.3	2,016.0	1,927.2	5.1	9.8	167.67		426.7	-224.1	684.2	674.5	9.76	70.090	
2,400.0	2,390.6	2,074.2	1,976.0	5.4	10.4	168.44		457.0	-233.5	752.8	742.7	10.15	74.167	
2,500.0	2,488.8	2,130.2	2,022.3	5.7	11.0	169.11		487.1	-242.6	822.9	812.4	10.54	78.097	
2,600.0	2,587.1	2,184.5	2,066.6	6.1	11.6	169.71		517.2	-251.6	894.3	883.4	10.92	81.881	
2,700.0	2,685.3	2,253.4	2,122.5	6.4	12.4	170.38		555.8	-262.9	966.4	955.1	11.35	85.152	
2,800.0	2,783.6	2,322.3	2,178.4	6.8	13.1	170.96		594.4	-274.3	1,038.6	1,026.8	11.77	88.213	
2,900.0	2,881.9	2,391.2	2,234.3	7.2	13.9	171.46		633.1	-285.7	1,110.8	1,098.6	12.20	91.029	
3,000.0	2,980.1	2,460.0	2,290.2	7.6	14.7	171.90		671.7	-297.1	1,183.0	1,170.4	12.64	93.618	
3,100.0	3,078.4	2,528.9	2,346.0	7.9	15.5	172.29		710.3	-308.5	1,255.3	1,242.2	13.07	96.016	
3,200.0	3,176.7	2,597.8	2,401.9	8.3	16.3	172.64		748.9	-319.8	1,327.6	1,314.1	13.51	98.239	
3,300.0	3,274.9	2,666.7	2,457.8	8.7	17.1	172.96		787.6	-331.2	1,399.9	1,386.0	13.96	100.292	
3,400.0	3,373.2	2,735.5	2,513.7	9.1	17.8	173.24		826.2	-342.6	1,472.3	1,457.9	14.41	102.205	
3,500.0	3,471.4	2,804.4	2,569.5	9.5	18.6	173.50		864.8	-354.0	1,544.6	1,529.8	14.85	103.988	
3,600.0	3,569.7	2,873.3	2,625.4	9.9	19.4	173.73		903.4	-365.4	1,617.0	1,601.7	15.31	105.645	
3,700.0	3,668.0	2,942.2	2,681.3	10.3	20.2	173.94		942.0	-376.8	1,689.3	1,673.6	15.76	107.195	
3,800.0	3,766.2	3,011.0	2,737.2	10.7	21.0	174.14		980.7	-388.1	1,761.7	1,745.5	16.22	108.648	
3,900.0	3,864.5	3,079.9	2,793.1	11.1	21.8	174.32		1,019.3	-399.5	1,834.1	1,817.5	16.67	110.007	
4,000.0	3,962.8	3,148.8	2,848.9	11.5	22.6	174.49		1,057.9	-410.9	1,906.5	1,889.4	17.13	111.282	
4,100.0	4,061.0	3,217.7	2,904.8	11.9	23.4	174.64		1,096.5	-422.3	1,978.9	1,961.3	17.59	112.483	
4,200.0	4,159.3	3,286.5	2,960.7	12.3	24.2	174.79		1,135.2	-433.7	2,051.4	2,033.3	18.06	113.612	
4,300.0	4,257.5	3,355.4	3,016.6	12.7	25.0	174.92		1,173.8	-445.1	2,123.8	2,105.3	18.52	114.676	
4,400.0	4,355.8	3,424.3	3,072.5	13.1	25.8	175.05		1,212.4	-456.4	2,196.2	2,177.2	18.98	115.681	
4,500.0	4,454.1	3,493.2	3,128.3	13.5	26.6	175.16		1,251.0	-467.8	2,268.6	2,249.2	19.45	116.632	
4,600.0	4,552.3	3,562.0	3,184.2	13.9	27.4	175.27		1,289.7	-479.2	2,341.1	2,321.2	19.92	117.530	
4,700.0	4,650.6	3,630.9	3,240.1	14.4	28.2	175.38		1,328.3	-490.6	2,413.5	2,393.1	20.39	118.381	
4,800.0	4,748.8	3,699.8	3,296.0	14.8	29.0	175.47		1,366.9	-502.0	2,486.0	2,465.1	20.86	119.190	
4,900.0	4,847.1	3,768.7	3,351.8	15.2	29.8	175.57		1,405.5	-513.3	2,558.4	2,537.1	21.33	119.956	

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

<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well Raindance FD 29-31D
<b>Project:</b>	SEC.30-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Reference Site:</b>	Raindance FD East Row Pad Sec.30-T6N-R67W	<b>MD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Raindance FD 29-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (10-18-12)	<b>Offset TVD Reference:</b>	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	
5,000.0	4,945.4	3,837.5	3,407.7	15.6	30.6	175.65	1,444.1	-524.7	2,630.9	2,609.1	21.80	120.684		
5,023.3	4,968.3	3,853.6	3,420.7	15.7	30.8	175.67	1,453.1	-527.4	2,647.7	2,625.8	21.91	120.849		
5,100.0	5,043.8	3,907.1	3,464.2	16.0	31.4	175.85	1,483.2	-536.2	2,702.6	2,680.1	22.48	120.211		
5,200.0	5,142.8	3,979.2	3,522.6	16.2	32.2	176.05	1,523.6	-548.1	2,771.9	2,748.7	23.21	119.423		
5,300.0	5,242.2	4,053.5	3,583.0	16.5	33.1	176.23	1,565.3	-560.4	2,838.7	2,814.8	23.93	118.614		
5,400.0	5,341.9	4,130.2	3,645.2	16.7	34.0	176.39	1,608.3	-573.1	2,902.9	2,878.2	24.64	117.789		
5,500.0	5,441.9	4,209.1	3,709.2	16.8	34.9	176.53	1,652.5	-586.1	2,964.3	2,939.0	25.35	116.954		
5,558.1	5,500.0	4,255.9	3,747.1	16.9	35.4	-18.23	1,678.7	-593.9	2,998.8	2,973.0	25.75	116.443		
5,600.0	5,541.9	4,289.9	3,774.7	17.0	35.8	-18.22	1,697.8	-599.5	3,023.3	2,997.3	25.96	116.454		
5,700.0	5,641.9	4,371.0	3,840.5	17.1	36.8	-18.18	1,743.3	-612.9	3,081.7	3,055.3	26.45	116.507		
5,800.0	5,741.9	4,452.1	3,906.3	17.2	37.7	-18.15	1,788.8	-626.3	3,140.1	3,113.2	26.94	116.551		
5,900.0	5,841.9	4,533.2	3,972.2	17.4	38.7	-18.12	1,834.3	-639.7	3,198.6	3,171.2	27.44	116.586		
6,000.0	5,941.9	4,614.4	4,038.0	17.5	39.6	-18.09	1,879.8	-653.1	3,257.0	3,229.1	27.93	116.613		
6,100.0	6,041.9	4,695.5	4,103.8	17.7	40.5	-18.06	1,925.3	-666.5	3,315.5	3,287.1	28.43	116.633		
6,200.0	6,141.9	4,776.6	4,169.6	17.8	41.5	-18.03	1,970.8	-679.9	3,373.9	3,345.0	28.92	116.646		
6,300.0	6,241.9	4,857.8	4,235.5	17.9	42.4	-18.00	2,016.3	-693.3	3,432.4	3,402.9	29.42	116.653		
6,400.0	6,341.9	4,938.9	4,301.3	18.1	43.4	-17.98	2,061.8	-706.7	3,490.8	3,460.9	29.92	116.655		
6,500.0	6,441.9	5,020.0	4,367.1	18.2	44.3	-17.95	2,107.3	-720.1	3,549.3	3,518.8	30.43	116.651		
6,600.0	6,541.9	5,101.2	4,432.9	18.4	45.3	-17.93	2,152.8	-733.6	3,607.7	3,576.8	30.93	116.643		
6,700.0	6,641.9	5,182.3	4,498.8	18.5	46.2	-17.90	2,198.2	-747.0	3,666.2	3,634.7	31.43	116.630		
6,800.0	6,741.9	5,263.4	4,564.6	18.7	47.2	-17.88	2,243.7	-760.4	3,724.6	3,692.7	31.94	116.614		
6,900.0	6,841.9	5,344.6	4,630.4	18.8	48.1	-17.86	2,289.2	-773.8	3,783.1	3,750.6	32.45	116.594		
7,000.0	6,941.9	5,425.7	4,696.2	19.0	49.0	-17.84	2,334.7	-787.2	3,841.5	3,808.6	32.95	116.571		
7,100.0	7,041.9	5,506.8	4,762.0	19.2	50.0	-17.81	2,380.2	-800.6	3,900.0	3,866.5	33.46	116.545		
7,200.0	7,141.9	5,588.0	4,827.9	19.3	50.9	-17.79	2,425.7	-814.0	3,958.4	3,924.4	33.97	116.517		
7,300.0	7,241.9	5,669.1	4,893.7	19.5	51.9	-17.77	2,471.2	-827.4	4,016.9	3,982.4	34.48	116.486		
7,352.1	7,294.0	5,711.4	4,928.0	19.6	52.4	-17.76	2,494.9	-834.4	4,047.3	4,012.6	34.75	116.469		

<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well Raindance FD 29-31D
<b>Project:</b>	SEC.30-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Reference Site:</b>	Raindance FD East Row Pad Sec.30-T6N-R67W	<b>MD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Raindance FD 29-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (10-18-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Raindance FD West Row Pad Sec.30-T6N-R67W - Raindance FD 29-32D - 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	0.2	0.2	0.0	0.0	-90.02	0.0	-14.7	14.7	14.7	0.00	N/A		
100.0	100.0	100.2	100.2	0.1	0.1	-90.02	0.0	-14.7	14.7	14.5	0.23	65.483		
200.0	200.0	200.2	200.2	0.3	0.3	-90.02	0.0	-14.7	14.7	14.1	0.67	21.857		
300.0	300.0	300.2	300.2	0.6	0.6	-90.02	0.0	-14.7	14.7	13.6	1.12	13.118		
400.0	400.0	400.2	400.2	0.8	0.8	-90.02	0.0	-14.7	14.7	13.2	1.57	9.371		
487.6	487.6	487.8	487.8	1.0	1.0	-95.25	-1.3	-14.6	14.7	12.7	1.94	7.555 CC		
500.0	500.0	500.2	500.2	1.0	1.0	-96.84	-1.7	-14.6	14.7	12.7	2.00	7.360 ES		
600.0	600.0	600.0	599.8	1.2	1.2	-116.24	-7.0	-14.1	15.7	13.3	2.41	6.525 SF		
700.0	700.0	699.2	698.7	1.5	1.4	-139.43	-15.6	-13.3	20.5	17.7	2.85	7.194		
800.0	800.0	797.8	796.5	1.7	1.6	-156.01	-27.5	-12.2	30.3	27.0	3.31	9.140		
900.0	900.0	895.4	893.0	1.9	1.9	-165.72	-42.6	-10.8	44.5	40.7	3.78	11.775		
1,000.0	1,000.0	991.9	987.7	2.1	2.3	-171.41	-60.7	-9.2	62.6	58.4	4.25	14.724		
1,100.0	1,100.0	1,087.0	1,080.5	2.4	2.7	-174.93	-81.7	-7.2	84.3	79.6	4.73	17.808		
1,200.0	1,200.0	1,180.7	1,171.0	2.6	3.1	-177.24	-105.3	-5.1	109.4	104.1	5.22	20.936		
1,300.0	1,300.0	1,272.6	1,259.2	2.8	3.6	-178.83	-131.3	-2.7	137.6	131.9	5.72	24.061		
1,400.0	1,400.0	1,362.7	1,344.7	3.0	4.1	-179.97	-159.6	-0.1	169.0	162.7	6.22	27.155		
1,500.0	1,500.0	1,450.9	1,427.5	3.3	4.7	179.18	-189.8	2.7	203.3	196.5	6.73	30.203		
1,600.0	1,600.0	1,537.6	1,508.0	3.5	5.3	13.29	-222.0	5.7	238.9	231.9	7.01	34.068		
1,700.0	1,699.8	1,625.3	1,588.3	3.6	6.0	12.85	-256.9	8.9	274.1	266.6	7.45	36.789		
1,800.0	1,799.5	1,719.8	1,674.6	3.8	6.7	12.60	-295.3	12.4	306.9	299.0	7.92	38.764		
1,900.0	1,898.7	1,815.3	1,761.8	4.0	7.4	12.53	-334.1	16.0	336.5	328.1	8.40	40.077		
2,000.0	1,997.5	1,911.8	1,849.8	4.2	8.2	12.59	-373.4	19.6	362.9	354.0	8.89	40.804		
2,034.8	2,031.7	1,945.6	1,880.7	4.3	8.5	12.64	-387.1	20.8	371.3	362.2	9.07	40.936		
2,100.0	2,095.8	2,008.9	1,938.5	4.5	9.0	12.80	-412.8	23.2	386.6	377.2	9.42	41.060		
2,200.0	2,194.0	2,106.1	2,027.2	4.8	9.7	13.03	-452.3	26.8	410.2	400.2	9.96	41.197		
2,300.0	2,292.3	2,203.2	2,115.9	5.1	10.5	13.23	-491.8	30.5	433.7	423.2	10.51	41.283		
2,400.0	2,390.6	2,300.4	2,204.6	5.4	11.3	13.41	-531.3	34.1	457.3	446.2	11.06	41.331		
2,500.0	2,488.8	2,397.6	2,293.3	5.7	12.1	13.57	-570.8	37.7	480.9	469.2	11.63	41.349		
2,600.0	2,587.1	2,494.7	2,382.0	6.1	12.9	13.72	-610.3	41.4	504.5	492.3	12.20	41.345		
2,700.0	2,685.3	2,591.9	2,470.7	6.4	13.6	13.86	-649.8	45.0	528.0	515.2	12.78	41.324		
2,800.0	2,783.6	2,689.1	2,559.4	6.8	14.4	13.98	-689.3	48.6	551.6	538.2	13.36	41.290		
2,900.0	2,881.9	2,786.3	2,648.2	7.2	15.2	14.09	-728.8	52.3	575.2	561.2	13.95	41.246		
3,000.0	2,980.1	2,883.4	2,736.9	7.6	16.0	14.20	-768.3	55.9	598.8	584.2	14.53	41.195		
3,100.0	3,078.4	2,980.6	2,825.6	7.9	16.8	14.29	-807.8	59.5	622.4	607.2	15.13	41.139		
3,200.0	3,176.7	3,077.8	2,914.3	8.3	17.6	14.38	-847.3	63.2	645.9	630.2	15.72	41.080		
3,300.0	3,274.9	3,175.0	3,003.0	8.7	18.4	14.46	-886.8	66.8	669.5	653.2	16.32	41.018		
3,400.0	3,373.2	3,272.1	3,091.7	9.1	19.1	14.54	-926.3	70.4	693.1	676.2	16.92	40.954		
3,500.0	3,471.4	3,369.3	3,180.4	9.5	19.9	14.61	-965.8	74.1	716.7	699.2	17.53	40.890		
3,600.0	3,569.7	3,466.5	3,269.1	9.9	20.7	14.68	-1,005.3	77.7	740.3	722.2	18.13	40.825		
3,700.0	3,668.0	3,563.7	3,357.8	10.3	21.5	14.74	-1,044.8	81.3	763.9	745.1	18.74	40.761		
3,800.0	3,766.2	3,660.8	3,446.5	10.7	22.3	14.80	-1,084.3	85.0	787.5	768.1	19.35	40.697		
3,900.0	3,864.5	3,758.0	3,535.3	11.1	23.1	14.86	-1,123.8	88.6	811.1	791.1	19.96	40.635		
4,000.0	3,962.8	3,855.2	3,624.0	11.5	23.9	14.91	-1,163.3	92.2	834.7	814.1	20.57	40.573		
4,100.0	4,061.0	3,952.4	3,712.7	11.9	24.7	14.96	-1,202.8	95.8	858.3	837.1	21.19	40.512		
4,200.0	4,159.3	4,049.5	3,801.4	12.3	25.4	15.01	-1,242.3	99.5	881.9	860.1	21.80	40.452		
4,300.0	4,257.5	4,146.7	3,890.1	12.7	26.2	15.05	-1,281.8	103.1	905.4	883.0	22.42	40.394		
4,400.0	4,355.8	4,243.9	3,978.8	13.1	27.0	15.10	-1,321.3	106.7	929.0	906.0	23.03	40.337		
4,500.0	4,454.1	4,341.1	4,067.5	13.5	27.8	15.14	-1,360.8	110.4	952.6	929.0	23.65	40.282		
4,600.0	4,552.3	4,438.2	4,156.2	13.9	28.6	15.18	-1,400.3	114.0	976.2	952.0	24.27	40.228		
4,700.0	4,650.6	4,535.4	4,244.9	14.4	29.4	15.21	-1,439.8	117.6	999.8	974.9	24.89	40.175		
4,800.0	4,748.8	4,632.6	4,333.6	14.8	30.2	15.25	-1,479.3	121.3	1,023.4	997.9	25.51	40.124		

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



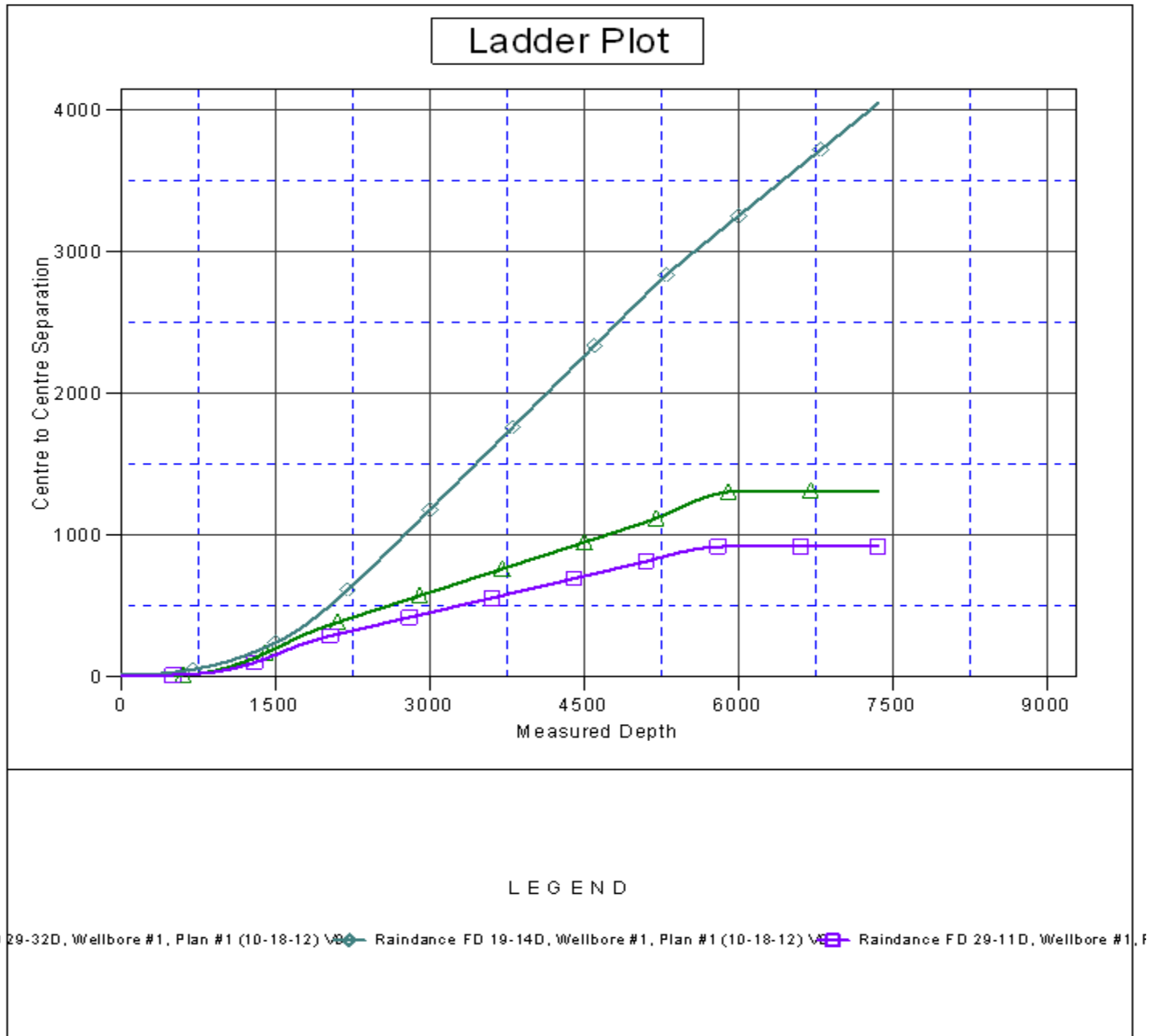
<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well Raindance FD 29-31D
<b>Project:</b>	SEC.30-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Reference Site:</b>	Raindance FD East Row Pad Sec.30-T6N-R67W	<b>MD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Raindance FD 29-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (10-18-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Raindance FD West Row Pad Sec.30-T6N-R67W - Raindance FD 29-32D - 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	
4,900.0	4,847.1	4,729.8	4,422.4	15.2	31.0	15.28	-1,518.8	124.9	1,047.0	1,020.9	26.13	40.074		
5,000.0	4,945.4	4,826.9	4,511.1	15.6	31.8	15.31	-1,558.3	128.5	1,070.6	1,043.9	26.75	40.025		
5,023.3	4,968.3	4,849.6	4,531.7	15.7	31.9	15.32	-1,567.5	129.4	1,076.1	1,049.2	26.89	40.014		
5,100.0	5,043.8	4,923.9	4,599.6	16.0	32.6	15.43	-1,597.7	132.2	1,095.2	1,067.9	27.30	40.115		
5,200.0	5,142.8	5,019.9	4,687.3	16.2	33.3	15.55	-1,636.8	135.7	1,122.9	1,095.1	27.78	40.427		
5,300.0	5,242.2	5,115.0	4,774.1	16.5	34.1	15.65	-1,675.4	139.3	1,153.8	1,125.6	28.20	40.913		
5,400.0	5,341.9	5,231.4	4,880.6	16.7	34.9	15.69	-1,722.3	143.6	1,187.6	1,159.0	28.64	41.475		
5,500.0	5,441.9	5,393.7	5,031.6	16.8	35.8	15.64	-1,781.2	149.0	1,220.5	1,191.4	29.11	41.933		
5,558.1	5,500.0	5,490.1	5,122.9	16.9	36.3	-179.24	-1,812.1	151.9	1,238.6	1,209.3	29.35	42.202		
5,600.0	5,541.9	5,560.6	5,190.2	17.0	36.6	-179.34	-1,832.7	153.8	1,250.9	1,221.3	29.60	42.261		
5,700.0	5,641.9	5,733.0	5,357.0	17.1	37.2	-179.55	-1,876.3	157.8	1,276.1	1,246.0	30.18	42.283		
5,800.0	5,741.9	5,910.3	5,530.9	17.2	37.8	-179.70	-1,910.6	160.9	1,295.5	1,264.7	30.74	42.147		
5,900.0	5,841.9	6,091.4	5,710.3	17.4	38.2	-179.81	-1,934.5	163.1	1,308.7	1,277.4	31.25	41.871		
6,000.0	5,941.9	6,274.8	5,893.3	17.5	38.5	-179.86	-1,947.1	164.3	1,315.6	1,283.8	31.73	41.467		
6,100.0	6,041.9	6,423.6	6,042.1	17.7	38.6	-179.87	-1,949.1	164.5	1,316.6	1,284.5	32.12	40.994		
6,200.0	6,141.9	6,523.6	6,142.1	17.8	38.7	-179.87	-1,949.1	164.5	1,316.6	1,284.2	32.43	40.598		
6,300.0	6,241.9	6,623.6	6,242.1	17.9	38.8	-179.87	-1,949.1	164.5	1,316.6	1,283.9	32.75	40.206		
6,400.0	6,341.9	6,723.6	6,342.1	18.1	38.8	-179.87	-1,949.1	164.5	1,316.6	1,283.6	33.07	39.818		
6,500.0	6,441.9	6,823.6	6,442.1	18.2	38.9	-179.87	-1,949.1	164.5	1,316.6	1,283.3	33.39	39.434		
6,600.0	6,541.9	6,923.6	6,542.1	18.4	38.9	-179.87	-1,949.1	164.5	1,316.6	1,282.9	33.71	39.054		
6,700.0	6,641.9	7,023.6	6,642.1	18.5	39.0	-179.87	-1,949.1	164.5	1,316.6	1,282.6	34.04	38.678		
6,800.0	6,741.9	7,123.6	6,742.1	18.7	39.1	-179.87	-1,949.1	164.5	1,316.6	1,282.3	34.37	38.307		
6,900.0	6,841.9	7,223.6	6,842.1	18.8	39.1	-179.87	-1,949.1	164.5	1,316.6	1,281.9	34.70	37.940		
7,000.0	6,941.9	7,323.6	6,942.1	19.0	39.2	-179.87	-1,949.1	164.5	1,316.6	1,281.6	35.04	37.578		
7,100.0	7,041.9	7,423.6	7,042.1	19.2	39.3	-179.87	-1,949.1	164.5	1,316.6	1,281.3	35.38	37.219		
7,200.0	7,141.9	7,523.6	7,142.1	19.3	39.3	-179.87	-1,949.1	164.5	1,316.6	1,280.9	35.71	36.866		
7,300.0	7,241.9	7,623.6	7,242.1	19.5	39.4	-179.87	-1,949.1	164.5	1,316.6	1,280.6	36.06	36.516		
7,352.1	7,294.0	7,675.7	7,294.2	19.6	39.5	-179.87	-1,949.1	164.5	1,316.6	1,280.4	36.24	36.336		



<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well Raindance FD 29-31D
<b>Project:</b>	SEC.30-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Reference Site:</b>	Raindance FD East Row Pad Sec.30-T6N-R67W	<b>MD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Raindance FD 29-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (10-18-12)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4796.4ft (Original Well Elev) Coordinates are relative to: Raindance FD 29-31D  
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°



<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well Raindance FD 29-31D
<b>Project:</b>	SEC.30-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Reference Site:</b>	Raindance FD East Row Pad Sec.30-T6N-R67W	<b>MD Reference:</b>	WELL @ 4796.4ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Raindance FD 29-31D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (10-18-12)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4796.4ft (Original Well Elev) Coordinates are relative to: Raindance FD 29-31D  
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