

Great Western

Well Name: **Raindance FD 30-021HN**

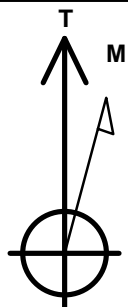
Surface Location: Raindance West Pad Sec.30-T6N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4995.9

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1407821.93	3156944.70	40.451503	-104.936053	
RKB - 16.5' WELL @ 5012.4ft (RKB - 16.5')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 352'FSL & 2262'FWL	1.0	0.0	0.0	Point
BHL 470'FNL & 1'FWL	7220.4	4375.9	-2248.3	Point
Entry Pt. 460'FSL & 1'FWL	7220.4	47.5	-2259.6	Point



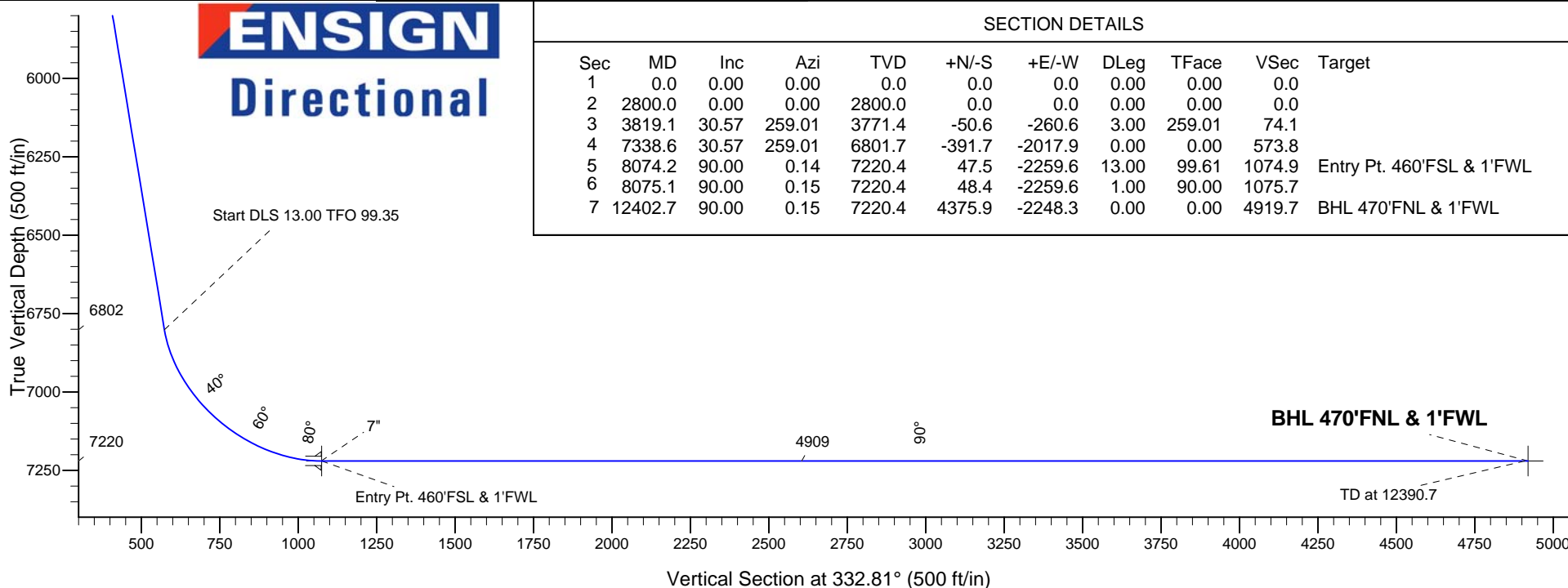
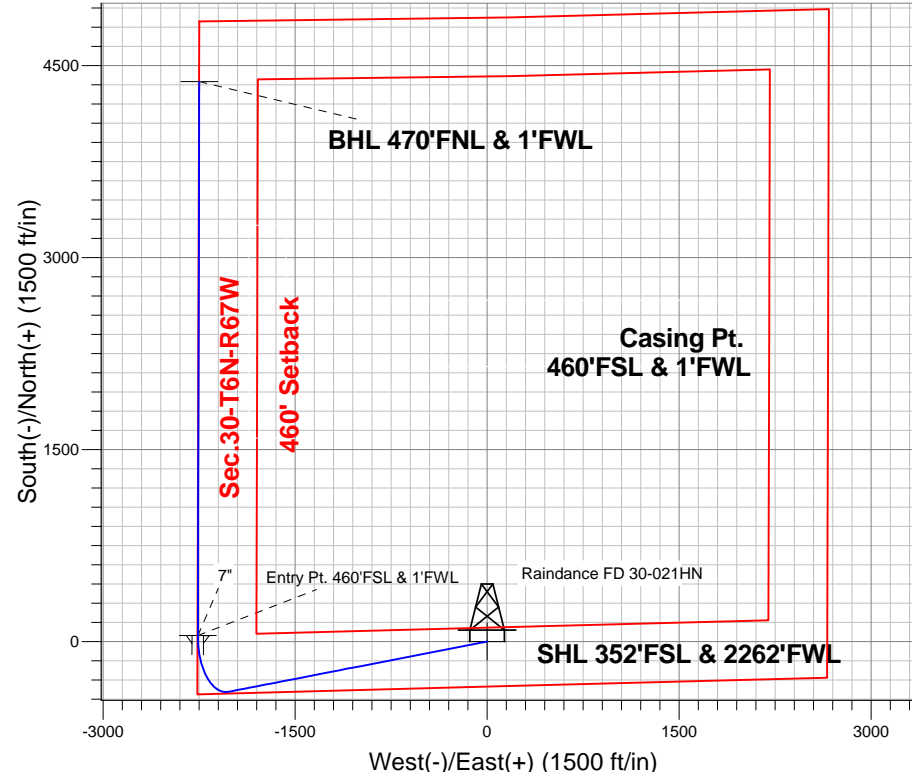
Azimuths to True North
Magnetic North: 8.64°

Magnetic Field
Strength: 52884.6snT
Dip Angle: 66.98°
Date: 11/12/2013
Model: IGRF2010

Raindance West Pad Sec.30-T6N-R67W
Raindance FD 30-021HN
Plan #1 (11-12-13)
14:37, November 13 2013

ANNOTATIONS

TVD	MD	Annotation
2800.0	2800.0	KOP - Start Build 3.00
6801.8	7338.7	Start DLS 13.00 TFO 99.35
7220.4	12390.7	TD at 12390.7



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	2800.0	0.00	0.00	2800.0	0.0	0.0	0.00	0.00	0.0	
3	3819.1	30.57	259.01	3771.4	-50.6	-260.6	3.00	259.01	74.1	
4	7338.6	30.57	259.01	6801.7	-391.7	-2017.9	0.00	0.00	573.8	
5	8074.2	90.00	0.14	7220.4	47.5	-2259.6	13.00	99.61	1074.9	Entry Pt. 460'FSL & 1'FWL
6	8075.1	90.00	0.15	7220.4	48.4	-2259.6	1.00	90.00	1075.7	
7	12402.7	90.00	0.15	7220.4	4375.9	-2248.3	0.00	0.00	4919.7	BHL 470'FNL & 1'FWL



Great Western

SEC.30-T6N-R67W

Raindance West Pad Sec.30-T6N-R67W

Raindance FD 30-021HN

Wellbore #1

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

Standard Planning Report

13 November, 2013

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	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,819.1	30.57	259.01	3,771.4	-50.6	-260.6	3.00	3.00	0.00	259.01	
7,338.6	30.57	259.01	6,801.7	-391.7	-2,017.9	0.00	0.00	0.00	0.00	
8,074.2	90.00	0.14	7,220.4	47.5	-2,259.6	13.00	8.08	13.75	99.61	Entry Pt. 460'FSL &
8,075.1	90.00	0.15	7,220.4	48.4	-2,259.6	1.00	0.00	1.00	90.00	
12,402.7	90.00	0.15	7,220.4	4,375.9	-2,248.3	0.00	0.00	0.00	0.00	BHL 470'FNL & 1'F

Database:	Landmark	Local Co-ordinate Reference:	Well Raindance FD 30-021HN
Company:	Great Western	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Project:	SEC.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site:	Raindance West Pad Sec.30-T6N-R67W	North Reference:	True
Well:	Raindance FD 30-021HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-12-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 352'FSL & 2262'FWL									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 3.00									
2,900.0	3.00	259.01	2,900.0	-0.5	-2.6	0.7	3.00	3.00	0.00
3,000.0	6.00	259.01	2,999.6	-2.0	-10.3	2.9	3.00	3.00	0.00
3,100.0	9.00	259.01	3,098.8	-4.5	-23.1	6.6	3.00	3.00	0.00
3,200.0	12.00	259.01	3,197.1	-8.0	-41.0	11.6	3.00	3.00	0.00
3,300.0	15.00	259.01	3,294.3	-12.4	-63.9	18.2	3.00	3.00	0.00
3,400.0	18.00	259.01	3,390.2	-17.8	-91.8	26.1	3.00	3.00	0.00
3,500.0	21.00	259.01	3,484.4	-24.2	-124.5	35.4	3.00	3.00	0.00
3,600.0	24.00	259.01	3,576.8	-31.5	-162.1	46.1	3.00	3.00	0.00
3,700.0	27.00	259.01	3,667.1	-39.7	-204.3	58.1	3.00	3.00	0.00
3,800.0	30.00	259.01	3,754.9	-48.8	-251.2	71.4	3.00	3.00	0.00
3,819.1	30.57	259.01	3,771.4	-50.6	-260.6	74.1	3.00	3.00	0.00
3,900.0	30.57	259.01	3,841.1	-58.4	-301.0	85.6	0.00	0.00	0.00
4,000.0	30.57	259.01	3,927.2	-68.1	-351.0	99.8	0.00	0.00	0.00
4,100.0	30.57	259.01	4,013.3	-77.8	-400.9	114.0	0.00	0.00	0.00
4,200.0	30.57	259.01	4,099.4	-87.5	-450.8	128.2	0.00	0.00	0.00
4,300.0	30.57	259.01	4,185.5	-97.2	-500.8	142.4	0.00	0.00	0.00
4,400.0	30.57	259.01	4,271.6	-106.9	-550.7	156.6	0.00	0.00	0.00
4,500.0	30.57	259.01	4,357.7	-116.6	-600.6	170.8	0.00	0.00	0.00
4,600.0	30.57	259.01	4,443.8	-126.3	-650.5	185.0	0.00	0.00	0.00
4,700.0	30.57	259.01	4,529.9	-136.0	-700.5	199.2	0.00	0.00	0.00
4,800.0	30.57	259.01	4,616.0	-145.7	-750.4	213.4	0.00	0.00	0.00
4,900.0	30.57	259.01	4,702.1	-155.4	-800.3	227.6	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Raindance FD 30-021HN
Company:	Great Western	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Project:	SEC.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site:	Raindance West Pad Sec.30-T6N-R67W	North Reference:	True
Well:	Raindance FD 30-021HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-12-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,000.0	30.57	259.01	4,788.2	-165.1	-850.3	241.8	0.00	0.00	0.00
5,100.0	30.57	259.01	4,874.3	-174.7	-900.2	256.0	0.00	0.00	0.00
5,200.0	30.57	259.01	4,960.4	-184.4	-950.1	270.2	0.00	0.00	0.00
5,300.0	30.57	259.01	5,046.5	-194.1	-1,000.1	284.4	0.00	0.00	0.00
5,400.0	30.57	259.01	5,132.6	-203.8	-1,050.0	298.6	0.00	0.00	0.00
5,500.0	30.57	259.01	5,218.7	-213.5	-1,099.9	312.8	0.00	0.00	0.00
5,600.0	30.57	259.01	5,304.8	-223.2	-1,149.9	327.0	0.00	0.00	0.00
5,700.0	30.57	259.01	5,390.9	-232.9	-1,199.8	341.2	0.00	0.00	0.00
5,800.0	30.57	259.01	5,477.0	-242.6	-1,249.7	355.3	0.00	0.00	0.00
5,900.0	30.57	259.01	5,563.1	-252.3	-1,299.6	369.5	0.00	0.00	0.00
6,000.0	30.57	259.01	5,649.1	-262.0	-1,349.6	383.7	0.00	0.00	0.00
6,100.0	30.57	259.01	5,735.2	-271.7	-1,399.5	397.9	0.00	0.00	0.00
6,200.0	30.57	259.01	5,821.3	-281.4	-1,449.4	412.1	0.00	0.00	0.00
6,300.0	30.57	259.01	5,907.4	-291.1	-1,499.4	426.3	0.00	0.00	0.00
6,400.0	30.57	259.01	5,993.5	-300.8	-1,549.3	440.5	0.00	0.00	0.00
6,500.0	30.57	259.01	6,079.6	-310.4	-1,599.2	454.7	0.00	0.00	0.00
6,600.0	30.57	259.01	6,165.7	-320.1	-1,649.2	468.9	0.00	0.00	0.00
6,700.0	30.57	259.01	6,251.8	-329.8	-1,699.1	483.1	0.00	0.00	0.00
6,800.0	30.57	259.01	6,337.9	-339.5	-1,749.0	497.3	0.00	0.00	0.00
6,900.0	30.57	259.01	6,424.0	-349.2	-1,799.0	511.5	0.00	0.00	0.00
7,000.0	30.57	259.01	6,510.1	-358.9	-1,848.9	525.7	0.00	0.00	0.00
7,100.0	30.57	259.01	6,596.2	-368.6	-1,898.8	539.9	0.00	0.00	0.00
7,200.0	30.57	259.01	6,682.3	-378.3	-1,948.7	554.1	0.00	0.00	0.00
7,300.0	30.57	259.01	6,768.4	-388.0	-1,998.7	568.3	0.00	0.00	0.00
7,338.6	30.57	259.01	6,801.7	-391.7	-2,017.9	573.8	0.00	0.00	0.00
7,338.7	30.57	259.01	6,801.8	-391.7	-2,018.0	573.8	0.00	0.00	0.00
Start DLS 13.00 TFO 99.35									
7,400.0	30.18	274.82	6,854.7	-393.4	-2,048.7	586.3	13.02	-0.64	25.78
7,500.0	33.46	298.84	6,940.0	-377.9	-2,098.1	622.7	13.00	3.28	24.02
7,600.0	40.41	317.23	7,020.2	-340.7	-2,144.5	677.0	13.00	6.96	18.40
7,700.0	49.50	330.46	7,091.0	-283.6	-2,185.4	746.5	13.00	9.09	13.23
7,800.0	59.72	340.36	7,148.9	-209.5	-2,218.8	827.7	13.00	10.22	9.89
7,900.0	70.54	348.32	7,191.0	-122.3	-2,243.0	916.3	13.00	10.82	7.96
8,000.0	81.66	355.27	7,215.0	-26.4	-2,256.6	1,007.8	13.00	11.12	6.95
8,073.2	89.88	0.07	7,220.4	46.4	-2,259.6	1,074.0	13.00	11.23	6.57
7"									
8,074.2	90.00	0.14	7,220.4	47.5	-2,259.6	1,074.9	13.00	11.25	6.52
Entry Pt. 460'FSL & 1'FWL									
8,075.1	90.00	0.15	7,220.4	48.4	-2,259.6	1,075.7	1.00	0.00	1.00
8,100.0	90.00	0.15	7,220.4	73.2	-2,259.5	1,097.8	0.00	0.00	0.00
8,200.0	90.00	0.15	7,220.4	173.2	-2,259.3	1,186.6	0.00	0.00	0.00
8,300.0	90.00	0.15	7,220.4	273.2	-2,259.0	1,275.4	0.00	0.00	0.00
8,400.0	90.00	0.15	7,220.4	373.2	-2,258.7	1,364.2	0.00	0.00	0.00
8,500.0	90.00	0.15	7,220.4	473.2	-2,258.5	1,453.1	0.00	0.00	0.00
8,600.0	90.00	0.15	7,220.4	573.2	-2,258.2	1,541.9	0.00	0.00	0.00
8,700.0	90.00	0.15	7,220.4	673.2	-2,258.0	1,630.7	0.00	0.00	0.00
8,800.0	90.00	0.15	7,220.4	773.2	-2,257.7	1,719.6	0.00	0.00	0.00
8,900.0	90.00	0.15	7,220.4	873.2	-2,257.4	1,808.4	0.00	0.00	0.00
9,000.0	90.00	0.15	7,220.4	973.2	-2,257.2	1,897.2	0.00	0.00	0.00
9,100.0	90.00	0.15	7,220.4	1,073.2	-2,256.9	1,986.0	0.00	0.00	0.00
9,200.0	90.00	0.15	7,220.4	1,173.2	-2,256.7	2,074.9	0.00	0.00	0.00
9,300.0	90.00	0.15	7,220.4	1,273.2	-2,256.4	2,163.7	0.00	0.00	0.00
9,400.0	90.00	0.15	7,220.4	1,373.2	-2,256.1	2,252.5	0.00	0.00	0.00

Plan Annotations					
	Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
			+N/-S	+E/-W	
			(ft)	(ft)	
	2,800.0	2,800.0	0.0	0.0	KOP - Start Build 3.00
	7,338.7	6,801.8	-391.7	-2,018.0	Start DLS 13.00 TFO 99.35
	12,390.7	7,220.4	4,363.9	-2,248.4	TD at 12390.7



Great Western

SEC.30-T6N-R67W

Raindance West Pad Sec.30-T6N-R67W

Raindance FD 30-021HN

Wellbore #1

Plan #1 (11-12-13)

Anticollision Report

13 November, 2013

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-021HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-021HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (11-12-13)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 11/13/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	12,402.7	Plan #1 (11-12-13) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Raindance FD Horizontal Pad Sec.30-T6N-R67W						
Raindance FD 19-21HN - Wellbore #1 - Wellbore #1	2,463.1	2,469.9	186.1	175.6	17.681	CC
Raindance FD 19-21HN - Wellbore #1 - Wellbore #1	2,700.0	2,706.4	186.8	175.5	16.520	ES
Raindance FD 19-21HN - Wellbore #1 - Wellbore #1	2,900.0	2,904.7	191.6	179.6	16.049	SF
Raindance West Pad Sec.30-T6N-R67W						
Raindance FD 30-022HN - Wellbore #1 - Plan #1 (11-12-	2,800.0	2,800.0	30.4	18.0	2.456	CC, ES, SF
Raindance FD 30-024HC - Wellbore #1 - Plan #1 (11-13-	2,800.0	2,800.0	60.4	48.0	4.886	CC, ES
Raindance FD 30-024HC - Wellbore #1 - Plan #1 (11-13-	12,402.7	12,303.2	757.6	582.9	4.338	SF
Raindance FD 30-025HN - Wellbore #1 - Plan #1 (11-13-	2,800.0	2,800.0	90.5	78.1	7.318	CC, ES
Raindance FD 30-025HN - Wellbore #1 - Plan #1 (11-13-	12,402.7	12,114.8	1,030.9	856.9	5.922	SF

Offset Design												Offset Site Error:	0.0 ft
Raindance FD Horizontal Pad Sec.30-T6N-R67W - Raindance FD 19-21HN - Wellbore #1 - Wellbore #1													
Survey Program: 100-NS-GYRO-MS, 7105-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
							+N/-S (ft)	+E/-W (ft)					
0.0	0.0	6.6	6.6	0.0	0.0	88.61	5.1	210.4	210.5	210.5	0.01	N/A	
100.0	100.0	106.0	106.0	0.1	0.1	88.65	5.0	210.6	210.6	210.4	0.26	808.269	
200.0	200.0	206.3	206.3	0.3	0.4	88.73	4.7	210.8	210.8	210.1	0.75	282.700	
300.0	300.0	306.4	306.4	0.6	0.7	88.80	4.4	210.9	211.0	209.8	1.23	171.834	
400.0	400.0	407.3	407.3	0.8	0.8	88.85	4.2	210.8	210.9	209.2	1.63	129.182	
500.0	500.0	507.9	507.9	1.0	1.0	88.88	4.1	210.4	210.4	208.4	2.00	105.349	
600.0	600.0	608.9	608.9	1.2	1.2	88.92	4.0	209.5	209.6	207.2	2.40	87.420	
700.0	700.0	709.9	709.9	1.5	1.4	88.95	3.8	208.1	208.2	205.4	2.82	73.814	
800.0	800.0	810.1	810.0	1.7	1.6	88.97	3.7	206.5	206.6	203.3	3.26	63.385	
900.0	900.0	910.8	910.7	1.9	1.8	88.98	3.6	204.7	204.7	201.0	3.71	55.166	
1,000.0	1,000.0	1,011.0	1,011.0	2.1	2.0	88.92	3.8	202.6	202.6	198.5	4.16	48.670	
1,100.0	1,100.0	1,110.9	1,110.8	2.4	2.2	88.72	4.5	200.4	200.5	195.9	4.61	43.496	
1,200.0	1,200.0	1,211.2	1,211.1	2.6	2.5	88.47	5.3	198.2	198.3	193.3	5.06	39.198	
1,300.0	1,300.0	1,312.2	1,312.0	2.8	2.7	88.24	6.0	195.7	195.8	190.3	5.52	35.448	
1,400.0	1,400.0	1,412.7	1,412.5	3.0	3.0	88.05	6.6	192.7	192.9	186.9	6.00	32.154	
1,500.0	1,500.0	1,511.4	1,511.1	3.3	3.2	87.91	6.9	189.8	190.0	183.5	6.46	29.407	
1,575.3	1,575.3	1,582.1	1,581.9	3.4	3.3	87.89	7.0	189.0	189.1	182.4	6.73	28.090	
1,600.0	1,600.0	1,605.8	1,605.5	3.5	3.3	87.90	6.9	189.1	189.2	182.4	6.82	27.736	

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

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-021HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-021HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS, 7105-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
1,700.0	1,700.0	1,707.0	1,706.7	3.7	3.5	87.92	6.9	189.3	189.4	182.2	7.19	26.343		
1,800.0	1,800.0	1,807.2	1,807.0	3.9	3.7	87.87	7.0	189.2	189.3	181.7	7.63	24.802		
1,900.0	1,900.0	1,907.4	1,907.1	4.2	3.9	87.95	6.8	189.0	189.1	181.0	8.06	23.465		
2,000.0	2,000.0	2,007.6	2,007.4	4.4	4.1	88.15	6.1	188.6	188.7	180.3	8.49	22.228		
2,100.0	2,100.0	2,107.8	2,107.6	4.6	4.3	88.31	5.6	188.2	188.3	179.3	8.95	21.040		
2,200.0	2,200.0	2,208.1	2,207.9	4.8	4.6	88.29	5.6	187.6	187.7	178.3	9.41	19.939		
2,300.0	2,300.0	2,308.1	2,307.9	5.1	4.8	88.14	6.1	186.9	187.0	177.1	9.86	18.967		
2,400.0	2,400.0	2,408.0	2,407.8	5.3	5.0	87.89	6.8	186.2	186.3	176.0	10.29	18.109		
2,463.1	2,463.1	2,469.9	2,469.7	5.4	5.1	87.71	7.4	186.0	186.1	175.6	10.53	17.681 CC		
2,500.0	2,500.0	2,506.3	2,506.0	5.5	5.2	87.59	7.8	186.0	186.2	175.5	10.66	17.462		
2,600.0	2,600.0	2,606.2	2,605.9	5.7	5.2	87.51	8.1	186.3	186.5	175.5	10.98	16.994		
2,700.0	2,700.0	2,706.4	2,706.2	6.0	5.4	87.70	7.5	186.6	186.8	175.5	11.31	16.520 ES		
2,800.0	2,800.0	2,804.1	2,803.8	6.2	5.5	88.00	6.5	187.6	187.7	176.0	11.64	16.122		
2,900.0	2,900.0	2,904.7	2,904.4	6.4	5.6	-170.76	5.4	188.9	191.6	179.6	11.94	16.049 SF		
3,000.0	2,999.6	3,005.0	3,004.7	6.6	5.7	-170.72	4.2	189.9	200.2	188.0	12.21	16.395		
3,100.0	3,098.8	3,104.8	3,104.5	6.8	5.8	-170.91	3.0	190.5	213.7	201.2	12.49	17.117		
3,200.0	3,197.1	3,204.2	3,203.9	7.0	6.0	-171.33	2.2	190.7	231.9	219.1	12.76	18.173		
3,300.0	3,294.3	3,302.8	3,302.5	7.3	6.2	-171.92	1.7	190.3	254.6	241.6	13.04	19.530		
3,400.0	3,390.2	3,400.7	3,400.4	7.6	6.5	-172.54	1.1	189.4	281.9	268.6	13.30	21.190		
3,500.0	3,484.4	3,497.4	3,497.1	8.0	6.7	-173.05	0.1	188.0	313.5	300.0	13.53	23.163		
3,600.0	3,576.8	3,590.7	3,590.3	8.5	6.9	-173.44	-1.4	186.3	349.7	336.0	13.73	25.472		
3,700.0	3,667.1	3,677.8	3,677.4	9.0	7.1	-173.76	-2.9	185.1	391.2	377.3	13.88	28.182		
3,800.0	3,754.9	3,760.9	3,760.5	9.7	7.3	-174.12	-3.8	184.8	438.4	424.4	13.96	31.410		
3,900.0	3,841.1	3,844.3	3,843.9	10.5	7.4	-174.64	-4.0	185.4	489.5	475.3	14.25	34.342		
4,000.0	3,927.2	3,929.4	3,929.0	11.4	7.5	-175.12	-4.1	186.1	540.9	526.3	14.61	37.026		
4,100.0	4,013.3	4,013.2	4,012.8	12.3	7.6	-175.52	-4.0	187.0	592.6	577.6	14.97	39.578		
4,200.0	4,099.4	4,103.1	4,102.7	13.2	7.6	-175.91	-3.8	187.8	644.1	628.7	15.35	41.961		
4,300.0	4,185.5	4,189.7	4,189.3	14.2	7.7	-176.27	-3.1	188.1	695.2	679.5	15.74	44.175		
4,400.0	4,271.6	4,272.7	4,272.2	15.2	7.8	-176.58	-2.3	188.4	746.5	730.4	16.14	46.258		
4,500.0	4,357.7	4,352.6	4,352.2	16.2	7.9	-176.80	-2.0	189.3	798.3	781.7	16.55	48.241		
4,600.0	4,443.8	4,434.9	4,434.4	17.2	8.0	-176.97	-2.0	190.8	850.6	833.7	16.97	50.122		
4,700.0	4,529.9	4,523.0	4,522.5	18.3	8.1	-177.13	-2.0	192.3	902.9	885.5	17.41	51.853		
4,800.0	4,616.0	4,609.5	4,609.0	19.3	8.2	-177.29	-1.7	193.6	955.0	937.1	17.86	53.473		
4,900.0	4,702.1	4,693.2	4,692.7	20.4	8.3	-177.42	-1.5	194.8	1,007.1	988.8	18.31	54.998		
5,000.0	4,788.2	4,777.6	4,777.1	21.4	8.5	-177.52	-1.7	196.2	1,059.3	1,040.5	18.78	56.401		
5,100.0	4,874.3	4,867.1	4,866.6	22.5	8.6	-177.59	-2.3	197.7	1,111.5	1,092.2	19.27	57.670		
5,200.0	4,960.4	4,957.4	4,956.9	23.6	8.7	-177.67	-2.8	198.7	1,163.2	1,143.4	19.77	58.825		
5,300.0	5,046.5	5,033.1	5,032.6	24.7	8.9	-177.72	-3.1	199.6	1,214.9	1,194.6	20.26	59.961		
5,400.0	5,132.6	5,100.0	5,099.4	25.8	9.0	-177.72	-4.3	201.5	1,268.0	1,247.2	20.74	61.126		
5,500.0	5,218.7	5,141.9	5,141.3	26.9	9.1	-177.70	-5.2	203.8	1,322.9	1,301.7	21.19	62.433		
5,600.0	5,304.8	5,200.0	5,199.1	28.0	9.2	-177.69	-5.8	208.7	1,380.4	1,358.8	21.66	63.725		
5,700.0	5,390.9	5,238.3	5,237.2	29.1	9.2	-177.68	-6.2	212.9	1,439.7	1,417.6	22.11	65.129		
5,800.0	5,477.0	5,300.0	5,298.4	30.2	9.3	-177.62	-7.5	220.6	1,500.5	1,477.9	22.59	66.429		
5,900.0	5,563.1	5,347.9	5,345.8	31.3	9.4	-177.53	-9.2	227.4	1,562.4	1,539.4	23.05	67.774		
6,000.0	5,649.1	5,400.0	5,397.1	32.4	9.5	-177.40	-11.9	235.8	1,625.7	1,602.2	23.53	69.086		
6,100.0	5,735.2	5,443.5	5,439.9	33.5	9.6	-177.27	-14.7	243.7	1,690.4	1,666.4	24.00	70.429		
6,200.0	5,821.3	5,500.0	5,495.0	34.6	9.7	-177.10	-18.3	255.1	1,756.6	1,732.1	24.49	71.717		
6,300.0	5,907.4	5,542.0	5,536.0	35.7	9.8	-176.97	-21.2	264.3	1,823.8	1,798.8	24.97	73.053		
6,400.0	5,993.5	5,606.8	5,599.0	36.9	9.9	-176.76	-25.9	278.7	1,891.6	1,866.1	25.48	74.244		
6,500.0	6,079.6	5,697.2	5,686.8	38.0	10.1	-176.46	-33.2	298.6	1,959.2	1,933.1	26.04	75.235		
6,600.0	6,165.7	5,736.3	5,724.7	39.1	10.2	-176.32	-36.8	307.5	2,027.1	2,000.5	26.52	76.438		
6,700.0	6,251.8	5,772.5	5,759.7	40.2	10.3	-176.18	-40.3	316.3	2,096.3	2,069.3	27.00	77.653		

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

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-021HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-021HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS, 7105-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,800.0	6,337.9	5,800.0	5,786.1	41.3	10.3	-176.08	-43.2	323.4	2,166.7	2,139.3	27.46	78.912	
6,900.0	6,424.0	5,835.2	5,819.7	42.5	10.4	-175.93	-47.1	333.2	2,238.4	2,210.5	27.94	80.122	
7,000.0	6,510.1	5,863.0	5,846.0	43.6	10.5	-175.81	-50.3	341.4	2,311.4	2,283.0	28.41	81.370	
7,100.0	6,596.2	5,900.0	5,880.8	44.7	10.6	-175.63	-54.9	353.2	2,385.7	2,356.8	28.90	82.559	
7,200.0	6,682.3	5,900.0	5,880.8	45.8	10.6	-175.63	-54.9	353.2	2,461.0	2,431.7	29.31	83.961	
7,300.0	6,768.4	5,952.5	5,929.7	47.0	10.7	-175.39	-61.7	371.0	2,537.0	2,507.2	29.84	85.026	
7,400.0	6,854.7	6,000.0	5,973.6	48.0	10.8	162.01	-67.9	388.0	2,613.7	2,583.3	30.42	85.929	
7,500.0	6,940.0	6,029.6	6,000.9	48.9	10.9	128.72	-71.8	398.8	2,687.5	2,653.1	34.42	78.090	
7,600.0	7,020.2	6,088.5	6,055.1	49.7	11.0	104.96	-79.9	420.3	2,755.0	2,717.6	37.42	73.626	
7,700.0	7,091.0	6,125.4	6,089.1	50.3	11.1	89.03	-85.2	433.7	2,813.6	2,776.0	37.55	74.926	
7,800.0	7,148.9	6,149.2	6,111.0	50.7	11.2	78.71	-88.7	442.4	2,861.4	2,826.3	35.09	81.551	
7,900.0	7,191.0	6,162.4	6,123.1	51.0	11.2	72.32	-90.7	447.3	2,897.1	2,865.8	31.24	92.733	
8,000.0	7,215.0	6,164.6	6,125.1	51.1	11.2	68.80	-91.0	448.1	2,919.3	2,891.3	27.94	104.498	
8,100.0	7,220.4	6,156.3	6,117.4	51.1	11.2	67.70	-89.8	445.0	2,927.8	2,900.6	27.26	107.408	
8,200.0	7,220.4	6,145.1	6,107.2	51.1	11.1	67.48	-88.1	440.9	2,934.8	2,907.5	27.33	107.389	
8,300.0	7,220.4	6,134.0	6,097.0	51.2	11.1	67.27	-86.5	436.9	2,945.2	2,917.6	27.58	106.769	
8,400.0	7,220.4	6,123.1	6,087.0	51.3	11.1	67.05	-84.9	432.9	2,958.8	2,930.8	28.01	105.616	
8,500.0	7,220.4	6,100.0	6,065.7	51.4	11.0	66.61	-81.6	424.5	2,975.7	2,947.2	28.50	104.398	
8,600.0	7,220.4	6,100.0	6,065.7	51.6	11.0	66.61	-81.6	424.5	2,995.7	2,966.4	29.33	102.154	
8,700.0	7,220.4	6,087.8	6,054.5	51.9	11.0	66.37	-79.8	420.0	3,018.9	2,988.7	30.17	100.058	
8,800.0	7,220.4	6,073.9	6,041.7	52.2	11.0	66.10	-77.9	415.0	3,045.1	3,014.0	31.11	97.883	
8,900.0	7,220.4	6,060.2	6,029.1	52.6	10.9	65.84	-76.0	410.0	3,074.3	3,042.2	32.14	95.647	
9,000.0	7,220.4	6,046.9	6,016.8	53.0	10.9	65.58	-74.1	405.1	3,106.4	3,073.1	33.25	93.413	
9,100.0	7,220.4	6,033.9	6,004.8	53.5	10.9	65.33	-72.4	400.4	3,141.3	3,106.8	34.43	91.225	
9,200.0	7,220.4	6,021.1	5,993.1	54.1	10.8	65.08	-70.7	395.7	3,178.8	3,143.2	35.67	89.116	
9,300.0	7,220.4	6,008.7	5,981.6	54.7	10.8	64.84	-69.0	391.2	3,219.0	3,182.1	36.96	87.105	
9,400.0	7,220.4	6,000.0	5,973.6	55.4	10.8	64.67	-67.9	388.0	3,261.8	3,223.5	38.31	85.134	
9,500.0	7,220.4	6,000.0	5,973.6	56.2	10.8	64.67	-67.9	388.0	3,307.0	3,267.2	39.78	83.123	
9,600.0	7,220.4	6,000.0	5,973.6	57.0	10.8	64.67	-67.9	388.0	3,354.5	3,313.2	41.28	81.253	
9,700.0	7,220.4	6,000.0	5,973.6	57.9	10.8	64.67	-67.9	388.0	3,404.4	3,361.6	42.81	79.519	
9,800.0	7,220.4	6,000.0	5,973.6	58.8	10.8	64.67	-67.9	388.0	3,456.4	3,412.0	44.36	77.913	
9,900.0	7,220.4	5,969.1	5,945.1	59.8	10.7	64.07	-63.8	376.8	3,510.2	3,464.5	45.63	76.931	
10,000.0	7,220.4	5,963.3	5,939.7	60.8	10.7	63.96	-63.1	374.8	3,566.1	3,519.0	47.15	75.631	
10,100.0	7,220.4	5,957.5	5,934.3	61.9	10.7	63.85	-62.3	372.8	3,624.0	3,575.3	48.69	74.432	
10,200.0	7,220.4	5,951.7	5,929.0	63.0	10.7	63.74	-61.6	370.7	3,683.6	3,633.3	50.24	73.325	
10,300.0	7,220.4	5,946.0	5,923.7	64.2	10.7	63.63	-60.8	368.8	3,744.9	3,693.1	51.79	72.303	
10,400.0	7,220.4	5,940.3	5,918.4	65.4	10.6	63.52	-60.1	366.8	3,807.8	3,754.5	53.36	71.360	
10,500.0	7,220.4	5,934.6	5,913.0	66.7	10.6	63.41	-59.3	364.8	3,872.3	3,817.4	54.93	70.490	
10,600.0	7,220.4	5,928.9	5,907.8	68.0	10.6	63.30	-58.6	362.9	3,938.3	3,881.7	56.51	69.687	
10,700.0	7,220.4	10,426.0	7,199.9	69.4	53.5	89.61	2,603.4	1,720.2	3,973.7	3,865.4	108.33	36.682	
10,800.0	7,220.4	10,486.3	7,200.0	70.7	54.4	89.61	2,663.7	1,721.5	3,975.6	3,864.5	111.11	35.781	
10,900.0	7,220.4	10,664.0	7,200.1	72.1	57.4	89.61	2,841.3	1,725.2	3,977.7	3,861.8	115.95	34.306	
11,000.0	7,220.4	10,950.0	7,200.5	73.6	62.2	89.62	3,127.2	1,720.4	3,975.5	3,852.8	122.70	32.399	
11,100.0	7,220.4	11,036.7	7,202.1	75.0	63.6	89.64	3,213.8	1,717.4	3,971.7	3,845.7	125.99	31.523	
11,200.0	7,220.4	11,122.8	7,204.1	76.5	65.1	89.67	3,299.8	1,714.5	3,968.1	3,838.8	129.29	30.692	
11,300.0	7,220.4	11,195.2	7,204.4	78.0	66.3	89.67	3,372.2	1,712.4	3,964.9	3,832.6	132.37	29.954	
11,400.0	7,220.4	11,300.1	7,204.4	79.6	68.1	89.67	3,477.1	1,709.6	3,962.0	3,825.9	136.03	29.126	
11,500.0	7,220.4	11,380.0	7,205.7	81.1	69.4	89.69	3,557.0	1,707.7	3,959.3	3,820.0	139.25	28.433	
11,600.0	7,220.4	11,651.2	7,208.0	82.7	74.1	89.72	3,827.9	1,697.4	3,956.0	3,810.2	145.87	27.120	
11,700.0	7,220.4	11,857.0	7,210.1	84.3	77.7	89.75	4,033.0	1,680.9	3,947.5	3,796.2	151.37	26.079	
11,800.0	7,220.4	11,904.0	7,210.1	85.9	78.4	89.75	4,079.8	1,677.0	3,938.9	3,784.8	154.02	25.574	
11,900.0	7,220.4	11,953.0	7,209.5	87.5	79.3	89.75	4,128.7	1,673.3	3,931.3	3,774.6	156.72	25.086	

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

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-021HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-021HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Raindance FD Horizontal Pad Sec.30-T6N-R67W - Raindance FD 19-21HN - Wellbore #1 - Wellbore #1												Offset Well Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS, 7105-MWD													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
12,000.0	7,220.4	12,000.0	7,208.4	89.1	80.1	89.73	4,175.6	1,670.4	3,925.1	3,765.7	159.39	24.626	
12,100.0	7,220.4	12,085.8	7,205.4	90.8	81.6	89.68	4,261.2	1,666.3	3,920.0	3,757.2	162.74	24.087	
12,200.0	7,220.4	12,146.9	7,203.2	92.4	82.6	89.65	4,322.2	1,663.6	3,915.4	3,749.7	165.67	23.634	
12,300.0	7,220.4	12,308.5	7,199.6	94.1	85.4	89.60	4,483.6	1,656.7	3,911.1	3,740.7	170.39	22.954	
12,400.0	7,220.4	12,442.3	7,194.5	95.8	87.8	89.52	4,617.1	1,648.7	3,904.8	3,730.1	174.67	22.355	
12,402.7	7,220.4	12,445.0	7,194.4	95.8	87.9	89.52	4,619.8	1,648.5	3,904.6	3,729.8	174.77	22.342	

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-021HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-021HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	87.93	1.1	30.3	30.4					
100.0	100.0	100.0	100.0	0.1	0.1	87.93	1.1	30.3	30.4	30.1	0.22	135.054		
200.0	200.0	200.0	200.0	0.3	0.3	87.93	1.1	30.3	30.4	29.7	0.67	45.018		
300.0	300.0	300.0	300.0	0.6	0.6	87.93	1.1	30.3	30.4	29.2	1.12	27.011		
400.0	400.0	400.0	400.0	0.8	0.8	87.93	1.1	30.3	30.4	28.8	1.57	19.293		
500.0	500.0	500.0	500.0	1.0	1.0	87.93	1.1	30.3	30.4	28.3	2.02	15.006		
600.0	600.0	600.0	600.0	1.2	1.2	87.93	1.1	30.3	30.4	27.9	2.47	12.278		
700.0	700.0	700.0	700.0	1.5	1.5	87.93	1.1	30.3	30.4	27.4	2.92	10.389		
800.0	800.0	800.0	800.0	1.7	1.7	87.93	1.1	30.3	30.4	27.0	3.37	9.004		
900.0	900.0	900.0	900.0	1.9	1.9	87.93	1.1	30.3	30.4	26.5	3.82	7.944		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	87.93	1.1	30.3	30.4	26.1	4.27	7.108		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	87.93	1.1	30.3	30.4	25.6	4.72	6.431		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	87.93	1.1	30.3	30.4	25.2	5.17	5.872		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	87.93	1.1	30.3	30.4	24.7	5.62	5.402		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	87.93	1.1	30.3	30.4	24.3	6.07	5.002		
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	87.93	1.1	30.3	30.4	23.8	6.52	4.657		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	87.93	1.1	30.3	30.4	23.4	6.97	4.357		
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	87.93	1.1	30.3	30.4	22.9	7.42	4.093		
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	87.93	1.1	30.3	30.4	22.5	7.87	3.859		
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	87.93	1.1	30.3	30.4	22.0	8.32	3.650		
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	87.93	1.1	30.3	30.4	21.6	8.77	3.463		
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	87.93	1.1	30.3	30.4	21.1	9.22	3.294		
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	87.93	1.1	30.3	30.4	20.7	9.66	3.141		
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	87.93	1.1	30.3	30.4	20.2	10.11	3.001		
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	87.93	1.1	30.3	30.4	19.8	10.56	2.873		
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	87.93	1.1	30.3	30.4	19.3	11.01	2.756		
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	87.93	1.1	30.3	30.4	18.9	11.46	2.648		
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	87.93	1.1	30.3	30.4	18.4	11.91	2.548		
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	87.93	1.1	30.3	30.4	18.0	12.36	2.456 CC, ES, SF		
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	-171.78	1.1	30.3	32.9	20.2	12.78	2.578		
3,000.0	2,999.6	2,999.6	2,999.6	6.6	6.6	-173.33	1.1	30.3	40.7	27.6	13.15	3.097		
3,100.0	3,098.8	3,098.8	3,098.8	6.8	6.9	-174.91	1.1	30.3	53.7	40.2	13.49	3.982		
3,200.0	3,197.1	3,197.1	3,197.1	7.0	7.1	-176.16	1.1	30.3	71.9	58.1	13.79	5.211		
3,300.0	3,294.3	3,294.3	3,294.3	7.3	7.3	-177.07	1.1	30.3	95.2	81.1	14.06	6.768		
3,400.0	3,390.2	3,390.2	3,390.2	7.6	7.5	-177.71	1.1	30.3	123.6	109.3	14.30	8.640		
3,500.0	3,484.4	3,484.4	3,484.4	8.0	7.7	-178.16	1.1	30.3	156.9	142.4	14.50	10.821		
3,600.0	3,576.8	3,585.5	3,585.4	8.5	7.9	-178.48	0.7	28.5	193.4	178.8	14.67	13.187		
3,700.0	3,667.1	3,690.2	3,689.9	9.0	8.1	-178.63	-1.1	21.1	229.9	215.1	14.80	15.535		
3,800.0	3,754.9	3,797.3	3,796.1	9.7	8.4	-178.68	-4.3	7.9	266.1	251.1	14.91	17.845		
3,900.0	3,841.1	3,907.6	3,904.5	10.5	8.6	-178.67	-9.0	-11.8	300.2	284.9	15.31	19.614		
4,000.0	3,927.2	4,022.3	4,015.8	11.4	8.9	-178.59	-15.5	-38.7	328.9	313.1	15.80	20.810		
4,100.0	4,013.3	4,140.7	4,128.8	12.3	9.3	-178.44	-23.8	-73.2	351.6	335.3	16.32	21.541		
4,200.0	4,099.4	4,262.2	4,242.1	13.2	9.8	-178.22	-34.0	-115.6	368.3	351.4	16.89	21.808		
4,300.0	4,185.5	4,385.7	4,354.3	14.2	10.4	-177.93	-46.1	-165.8	378.6	361.1	17.48	21.654		
4,400.0	4,271.6	4,510.4	4,464.0	15.2	11.1	-177.57	-59.9	-223.5	382.4	364.3	18.12	21.108		
4,500.0	4,357.7	4,610.6	4,550.4	16.2	11.9	-177.24	-71.8	-272.8	383.0	364.2	18.72	20.456		
4,600.0	4,443.8	4,710.6	4,636.7	17.2	12.7	-176.91	-83.6	-321.9	383.5	364.2	19.35	19.822		
4,700.0	4,529.9	4,810.6	4,723.0	18.3	13.5	-176.58	-95.4	-371.0	384.1	364.1	20.00	19.208		
4,800.0	4,616.0	4,910.5	4,809.2	19.3	14.4	-176.25	-107.2	-420.1	384.6	364.0	20.67	18.613		
4,900.0	4,702.1	5,010.5	4,895.5	20.4	15.3	-175.92	-119.0	-469.2	385.2	363.9	21.36	18.039		
5,000.0	4,788.2	5,110.5	4,981.8	21.4	16.2	-175.60	-130.8	-518.3	385.8	363.8	22.07	17.485		
5,100.0	4,874.3	5,210.5	5,068.1	22.5	17.2	-175.27	-142.6	-567.4	386.5	363.7	22.80	16.953		

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

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-021HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-021HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design Raindance West Pad Sec.30-T6N-R67W - Raindance FD 30-022HN - Wellbore #1 - Plan #1 (11-12-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,200.0	4,960.4	5,310.4	5,154.4	23.6	18.2	-174.95	-154.4	-616.5	387.1	363.5	23.54	16.441		
5,300.0	5,046.5	5,410.4	5,240.6	24.7	19.2	-174.63	-166.2	-665.6	387.7	363.4	24.31	15.950		
5,400.0	5,132.6	5,510.4	5,326.9	25.8	20.2	-174.31	-178.0	-714.7	388.4	363.3	25.09	15.478		
5,500.0	5,218.7	5,610.4	5,413.2	26.9	21.2	-173.99	-189.8	-763.8	389.0	363.1	25.89	15.025		
5,600.0	5,304.8	5,710.3	5,499.5	28.0	22.2	-173.67	-201.6	-813.0	389.7	363.0	26.71	14.591		
5,700.0	5,390.9	5,810.3	5,585.7	29.1	23.3	-173.35	-213.4	-862.1	390.4	362.9	27.54	14.174		
5,800.0	5,477.0	5,910.3	5,672.0	30.2	24.3	-173.03	-225.2	-911.2	391.1	362.7	28.39	13.775		
5,900.0	5,563.1	6,010.3	5,758.3	31.3	25.4	-172.71	-237.0	-960.3	391.8	362.6	29.26	13.392		
6,000.0	5,649.1	6,110.2	5,844.6	32.4	26.4	-172.40	-248.8	-1,009.4	392.5	362.4	30.14	13.024		
6,100.0	5,735.2	6,210.2	5,930.9	33.5	27.5	-172.09	-260.6	-1,058.5	393.3	362.2	31.04	12.671		
6,200.0	5,821.3	6,310.2	6,017.1	34.6	28.5	-171.77	-272.4	-1,107.6	394.0	362.1	31.95	12.332		
6,300.0	5,907.4	6,410.2	6,103.4	35.7	29.6	-171.46	-284.2	-1,156.7	394.8	361.9	32.88	12.007		
6,400.0	5,993.5	6,510.1	6,189.7	36.9	30.7	-171.15	-296.0	-1,205.8	395.6	361.7	33.82	11.695		
6,500.0	6,079.6	6,610.1	6,276.0	38.0	31.8	-170.84	-307.9	-1,254.9	396.3	361.6	34.78	11.395		
6,600.0	6,165.7	6,710.1	6,362.2	39.1	32.9	-170.54	-319.7	-1,304.0	397.1	361.4	35.76	11.107		
6,700.0	6,251.8	6,810.1	6,448.5	40.2	34.0	-170.23	-331.5	-1,353.2	397.9	361.2	36.75	10.829		
6,800.0	6,337.9	6,910.0	6,534.8	41.3	35.0	-169.93	-343.3	-1,402.3	398.8	361.0	37.75	10.563		
6,900.0	6,424.0	7,010.0	6,621.1	42.5	36.1	-169.62	-355.1	-1,451.4	399.6	360.8	38.77	10.306		
7,000.0	6,510.1	7,110.0	6,707.4	43.6	37.2	-169.32	-366.9	-1,500.5	400.4	360.6	39.81	10.059		
7,100.0	6,596.2	7,210.0	6,793.7	44.7	38.3	-169.02	-378.7	-1,549.6	401.3	360.4	40.86	9.822		
7,200.0	6,682.3	7,310.7	6,881.0	45.8	39.3	-170.43	-378.5	-1,599.3	402.0	361.0	40.99	9.806		
7,300.0	6,768.4	7,402.5	6,958.8	47.0	40.0	-174.48	-358.6	-1,643.5	404.1	364.0	40.11	10.074		
7,400.0	6,854.7	7,481.9	7,021.9	48.0	40.6	166.21	-326.7	-1,679.3	410.9	371.0	39.92	10.294		
7,500.0	6,940.0	7,556.1	7,075.5	48.9	41.0	140.15	-285.6	-1,709.7	421.6	380.3	41.36	10.194		
7,600.0	7,020.2	7,625.0	7,119.3	49.7	41.3	120.62	-238.6	-1,734.5	434.0	390.9	43.08	10.074		
7,700.0	7,091.0	7,695.8	7,157.2	50.3	41.6	107.18	-182.8	-1,755.9	446.1	402.3	43.87	10.170		
7,800.0	7,148.9	7,763.1	7,185.5	50.7	41.7	98.44	-124.0	-1,771.8	456.5	413.3	43.21	10.567		
7,900.0	7,191.0	7,829.4	7,205.5	51.0	41.8	93.09	-61.8	-1,783.0	464.1	422.3	41.76	11.113		
8,000.0	7,215.0	7,895.1	7,217.1	51.1	41.9	90.43	2.4	-1,789.5	468.0	427.3	40.78	11.477		
8,100.0	7,220.4	7,964.7	7,220.4	51.1	41.9	90.00	71.9	-1,791.2	468.4	427.2	41.15	11.381		
8,200.0	7,220.4	8,064.7	7,220.4	51.1	41.9	90.00	171.9	-1,790.9	468.4	426.6	41.75	11.218		
8,300.0	7,220.4	8,164.7	7,220.4	51.2	41.9	90.00	271.9	-1,790.6	468.4	425.7	42.67	10.978		
8,400.0	7,220.4	8,264.7	7,220.4	51.3	42.1	90.00	371.9	-1,790.3	468.4	424.5	43.90	10.671		
8,500.0	7,220.4	8,364.7	7,220.4	51.4	42.3	90.00	471.9	-1,790.1	468.4	423.0	45.42	10.313		
8,600.0	7,220.4	8,464.7	7,220.4	51.6	42.6	90.00	571.9	-1,789.8	468.5	421.2	47.21	9.922		
8,700.0	7,220.4	8,564.7	7,220.4	51.9	42.9	90.00	671.9	-1,789.5	468.5	419.2	49.24	9.514		
8,800.0	7,220.4	8,664.7	7,220.4	52.2	43.3	90.00	771.9	-1,789.2	468.5	417.0	51.47	9.102		
8,900.0	7,220.4	8,764.7	7,220.4	52.6	43.8	90.00	871.9	-1,788.9	468.5	414.6	53.89	8.694		
9,000.0	7,220.4	8,864.7	7,220.4	53.0	44.4	90.00	971.9	-1,788.7	468.5	412.1	56.46	8.298		
9,100.0	7,220.4	8,964.7	7,220.4	53.5	45.0	90.00	1,071.9	-1,788.4	468.5	409.4	59.17	7.919		
9,200.0	7,220.4	9,064.7	7,220.4	54.1	45.8	90.00	1,171.9	-1,788.1	468.6	406.6	62.00	7.557		
9,300.0	7,220.4	9,164.7	7,220.4	54.7	46.6	90.00	1,271.9	-1,787.8	468.6	403.6	64.94	7.216		
9,400.0	7,220.4	9,264.7	7,220.4	55.4	47.5	90.00	1,371.9	-1,787.6	468.6	400.6	67.96	6.895		
9,500.0	7,220.4	9,364.7	7,220.4	56.2	48.4	90.00	1,471.9	-1,787.3	468.6	397.5	71.07	6.594		
9,600.0	7,220.4	9,464.7	7,220.4	57.0	49.4	90.00	1,571.9	-1,787.0	468.6	394.4	74.24	6.312		
9,700.0	7,220.4	9,564.7	7,220.4	57.9	50.5	90.00	1,671.9	-1,786.7	468.7	391.2	77.47	6.049		
9,800.0	7,220.4	9,664.7	7,220.4	58.8	51.7	90.00	1,771.9	-1,786.4	468.7	387.9	80.76	5.803		
9,900.0	7,220.4	9,764.7	7,220.4	59.8	52.9	90.00	1,871.9	-1,786.2	468.7	384.6	84.10	5.573		
10,000.0	7,220.4	9,864.7	7,220.4	60.8	54.1	90.00	1,971.9	-1,785.9	468.7	381.2	87.47	5.358		
10,100.0	7,220.4	9,964.7	7,220.4	61.9	55.4	90.00	2,071.9	-1,785.6	468.7	377.8	90.89	5.157		
10,200.0	7,220.4	10,064.7	7,220.4	63.0	56.7	90.00	2,171.9	-1,785.3	468.7	374.4	94.33	4.969		
10,300.0	7,220.4	10,164.7	7,220.4	64.2	58.1	90.00	2,271.9	-1,785.1	468.8	370.9	97.81	4.793		

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

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-021HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-021HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design Raindance West Pad Sec.30-T6N-R67W - Raindance FD 30-022HN - Wellbore #1 - Plan #1 (11-12-13)													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,400.0	7,220.4	10,264.7	7,220.4	65.4	59.5	90.00	2,371.9	-1,784.8	468.8	367.5	101.31	4.627	
10,500.0	7,220.4	10,364.7	7,220.4	66.7	61.0	90.00	2,471.9	-1,784.5	468.8	364.0	104.84	4.472	
10,600.0	7,220.4	10,464.7	7,220.4	68.0	62.5	90.00	2,571.9	-1,784.2	468.8	360.4	108.38	4.325	
10,700.0	7,220.4	10,564.7	7,220.4	69.4	64.0	90.00	2,671.9	-1,783.9	468.8	356.9	111.95	4.188	
10,800.0	7,220.4	10,664.7	7,220.4	70.7	65.5	90.00	2,771.9	-1,783.7	468.8	353.3	115.54	4.058	
10,900.0	7,220.4	10,764.7	7,220.4	72.1	67.1	90.00	2,871.9	-1,783.4	468.9	349.7	119.14	3.936	
11,000.0	7,220.4	10,864.7	7,220.4	73.6	68.7	90.00	2,971.9	-1,783.1	468.9	346.1	122.75	3.820	
11,100.0	7,220.4	10,964.7	7,220.4	75.0	70.3	90.00	3,071.9	-1,782.8	468.9	342.5	126.38	3.710	
11,200.0	7,220.4	11,064.7	7,220.4	76.5	71.9	90.00	3,171.9	-1,782.6	468.9	338.9	130.02	3.606	
11,300.0	7,220.4	11,164.7	7,220.4	78.0	73.5	90.00	3,271.9	-1,782.3	468.9	335.3	133.68	3.508	
11,400.0	7,220.4	11,264.7	7,220.4	79.6	75.2	90.00	3,371.9	-1,782.0	469.0	331.6	137.34	3.415	
11,500.0	7,220.4	11,364.7	7,220.4	81.1	76.8	90.00	3,471.9	-1,781.7	469.0	328.0	141.01	3.326	
11,600.0	7,220.4	11,464.7	7,220.4	82.7	78.5	90.00	3,571.9	-1,781.4	469.0	324.3	144.69	3.241	
11,700.0	7,220.4	11,564.7	7,220.4	84.3	80.2	90.00	3,671.9	-1,781.2	469.0	320.6	148.38	3.161	
11,800.0	7,220.4	11,664.7	7,220.4	85.9	81.9	90.00	3,771.9	-1,780.9	469.0	316.9	152.08	3.084	
11,900.0	7,220.4	11,764.7	7,220.4	87.5	83.6	90.00	3,871.9	-1,780.6	469.0	313.3	155.78	3.011	
12,000.0	7,220.4	11,864.7	7,220.4	89.1	85.3	90.00	3,971.9	-1,780.3	469.1	309.6	159.49	2.941	
12,100.0	7,220.4	11,964.7	7,220.4	90.8	87.1	90.00	4,071.9	-1,780.1	469.1	305.9	163.21	2.874	
12,200.0	7,220.4	12,064.7	7,220.4	92.4	88.8	90.00	4,171.9	-1,779.8	469.1	302.2	166.93	2.810	
12,300.0	7,220.4	12,164.7	7,220.4	94.1	90.5	90.00	4,271.9	-1,779.5	469.1	298.5	170.66	2.749	
12,400.0	7,220.4	12,264.7	7,220.4	95.8	92.3	90.00	4,371.9	-1,779.2	469.1	294.7	174.39	2.690	
12,402.7	7,220.4	12,267.4	7,220.4	95.8	92.4	90.00	4,374.6	-1,779.2	469.1	294.6	174.49	2.689	

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-021HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-021HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design Raindance West Pad Sec.30-T6N-R67W - Raindance FD 30-024HC - Wellbore #1 - Plan #1 (11-13-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	88.97	1.1	60.4	60.4					
100.0	100.0	100.0	100.0	0.1	0.1	88.97	1.1	60.4	60.4	60.2	0.22	268.737		
200.0	200.0	200.0	200.0	0.3	0.3	88.97	1.1	60.4	60.4	59.7	0.67	89.579		
300.0	300.0	300.0	300.0	0.6	0.6	88.97	1.1	60.4	60.4	59.3	1.12	53.747		
400.0	400.0	400.0	400.0	0.8	0.8	88.97	1.1	60.4	60.4	58.8	1.57	38.391		
500.0	500.0	500.0	500.0	1.0	1.0	88.97	1.1	60.4	60.4	58.4	2.02	29.860		
600.0	600.0	600.0	600.0	1.2	1.2	88.97	1.1	60.4	60.4	57.9	2.47	24.431		
700.0	700.0	700.0	700.0	1.5	1.5	88.97	1.1	60.4	60.4	57.5	2.92	20.672		
800.0	800.0	800.0	800.0	1.7	1.7	88.97	1.1	60.4	60.4	57.0	3.37	17.916		
900.0	900.0	900.0	900.0	1.9	1.9	88.97	1.1	60.4	60.4	56.6	3.82	15.808		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	88.97	1.1	60.4	60.4	56.1	4.27	14.144		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	88.97	1.1	60.4	60.4	55.7	4.72	12.797		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	88.97	1.1	60.4	60.4	55.2	5.17	11.684		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	88.97	1.1	60.4	60.4	54.8	5.62	10.749		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	88.97	1.1	60.4	60.4	54.3	6.07	9.953		
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	88.97	1.1	60.4	60.4	53.9	6.52	9.267		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	88.97	1.1	60.4	60.4	53.4	6.97	8.669		
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	88.97	1.1	60.4	60.4	53.0	7.42	8.144		
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	88.97	1.1	60.4	60.4	52.5	7.87	7.678		
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	88.97	1.1	60.4	60.4	52.1	8.32	7.263		
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	88.97	1.1	60.4	60.4	51.6	8.77	6.891		
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	88.97	1.1	60.4	60.4	51.2	9.22	6.555		
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	88.97	1.1	60.4	60.4	50.7	9.66	6.250		
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	88.97	1.1	60.4	60.4	50.3	10.11	5.972		
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	88.97	1.1	60.4	60.4	49.8	10.56	5.718		
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	88.97	1.1	60.4	60.4	49.4	11.01	5.484		
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	88.97	1.1	60.4	60.4	48.9	11.46	5.269		
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	88.97	1.1	60.4	60.4	48.5	11.91	5.071		
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	88.97	1.1	60.4	60.4	48.0	12.36	4.886 CC, ES		
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	-170.44	1.1	60.4	63.0	50.2	12.78	4.928		
3,000.0	2,999.6	2,999.6	2,999.6	6.6	6.6	-171.46	1.1	60.4	70.7	57.6	13.15	5.378		
3,100.0	3,098.8	3,098.8	3,098.8	6.8	6.9	-172.74	1.1	60.4	83.7	70.2	13.49	6.201		
3,200.0	3,197.1	3,197.1	3,197.1	7.0	7.1	-173.98	1.1	60.4	101.8	88.0	13.80	7.377		
3,300.0	3,294.3	3,294.3	3,294.3	7.3	7.3	-175.04	1.1	60.4	125.0	110.9	14.07	8.887		
3,400.0	3,390.2	3,390.2	3,390.2	7.6	7.5	-175.89	1.1	60.4	153.3	139.0	14.30	10.720		
3,500.0	3,484.4	3,484.4	3,484.4	8.0	7.7	-176.56	1.1	60.4	186.6	172.1	14.50	12.868		
3,600.0	3,576.8	3,576.8	3,576.8	8.5	7.9	-177.09	1.1	60.4	224.9	210.2	14.67	15.324		
3,700.0	3,667.1	3,667.1	3,667.1	9.0	8.1	-177.49	1.1	60.4	267.9	253.0	14.81	18.086		
3,800.0	3,754.9	3,754.9	3,754.9	9.7	8.3	-177.81	1.1	60.4	315.5	300.6	14.92	21.149		
3,900.0	3,841.1	3,841.1	3,841.1	10.5	8.5	-178.10	1.1	60.4	366.3	351.0	15.29	23.950		
4,000.0	3,927.2	3,927.2	3,927.2	11.4	8.7	-178.33	1.1	60.4	417.1	401.4	15.75	26.488		
4,100.0	4,013.3	4,013.3	4,013.3	12.3	8.9	-178.52	1.1	60.3	467.9	451.7	16.22	28.848		
4,200.0	4,099.4	4,136.0	4,135.8	13.2	9.2	-178.65	-0.2	55.7	515.3	498.6	16.73	30.800		
4,300.0	4,185.5	4,262.1	4,261.3	14.2	9.4	-178.67	-3.7	43.1	557.0	539.8	17.25	32.281		
4,400.0	4,271.6	4,395.6	4,392.8	15.2	9.7	-178.60	-9.9	21.1	592.5	574.6	17.81	33.264		
4,500.0	4,357.7	4,535.7	4,528.7	16.2	10.1	-178.43	-19.0	-11.5	621.2	602.8	18.40	33.750		
4,600.0	4,443.8	4,681.3	4,666.9	17.2	10.5	-178.18	-31.2	-55.4	642.7	623.6	19.03	33.773		
4,700.0	4,529.9	4,830.9	4,804.9	18.3	11.1	-177.83	-46.7	-111.0	656.6	636.9	19.70	33.334		
4,800.0	4,616.0	4,982.8	4,940.0	19.3	12.0	-177.38	-65.3	-177.9	662.8	642.4	20.41	32.468		
4,900.0	4,702.1	5,089.2	5,032.1	20.4	12.7	-177.02	-79.6	-229.1	664.1	643.0	21.05	31.546		
5,000.0	4,788.2	5,189.1	5,118.6	21.4	13.4	-176.68	-93.1	-277.3	665.3	643.7	21.70	30.668		
5,100.0	4,874.3	5,289.0	5,205.1	22.5	14.2	-176.34	-106.5	-325.5	666.6	644.3	22.36	29.813		

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

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-021HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-021HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,200.0	4,960.4	5,388.9	5,291.6	23.6	15.0	-176.01	-119.9	-373.7	668.0	644.9	23.05	28.983	
5,300.0	5,046.5	5,488.9	5,378.1	24.7	15.8	-175.67	-133.4	-421.9	669.3	645.6	23.75	28.178	
5,400.0	5,132.6	5,588.8	5,464.6	25.8	16.7	-175.34	-146.8	-470.1	670.7	646.2	24.48	27.398	
5,500.0	5,218.7	5,688.7	5,551.1	26.9	17.6	-175.00	-160.2	-518.3	672.1	646.8	25.22	26.644	
5,600.0	5,304.8	5,788.6	5,637.5	28.0	18.6	-174.67	-173.7	-566.4	673.5	647.5	25.99	25.916	
5,700.0	5,390.9	5,888.5	5,724.0	29.1	19.5	-174.34	-187.1	-614.6	674.9	648.1	26.77	25.212	
5,800.0	5,477.0	5,988.4	5,810.5	30.2	20.5	-174.01	-200.5	-662.8	676.4	648.8	27.57	24.533	
5,900.0	5,563.1	6,088.3	5,897.0	31.3	21.5	-173.68	-214.0	-711.0	677.8	649.5	28.39	23.879	
6,000.0	5,649.1	6,188.2	5,983.5	32.4	22.5	-173.36	-227.4	-759.2	679.3	650.1	29.22	23.247	
6,100.0	5,735.2	6,288.2	6,070.0	33.5	23.5	-173.03	-240.8	-807.4	680.9	650.8	30.07	22.639	
6,200.0	5,821.3	6,388.1	6,156.5	34.6	24.5	-172.71	-254.3	-855.6	682.4	651.5	30.94	22.052	
6,300.0	5,907.4	6,488.0	6,242.9	35.7	25.5	-172.39	-267.7	-903.8	684.0	652.1	31.83	21.487	
6,400.0	5,993.5	6,587.9	6,329.4	36.9	26.5	-172.07	-281.1	-952.0	685.6	652.8	32.73	20.943	
6,500.0	6,079.6	6,687.8	6,415.9	38.0	27.6	-171.75	-294.6	-1,000.2	687.2	653.5	33.65	20.418	
6,600.0	6,165.7	6,787.7	6,502.4	39.1	28.6	-171.43	-308.0	-1,048.4	688.8	654.2	34.59	19.912	
6,700.0	6,251.8	6,887.6	6,588.9	40.2	29.6	-171.12	-321.4	-1,096.6	690.4	654.9	35.54	19.425	
6,800.0	6,337.9	6,987.6	6,675.4	41.3	30.7	-170.80	-334.9	-1,144.8	692.1	655.6	36.51	18.955	
6,900.0	6,424.0	7,087.5	6,761.9	42.5	31.7	-170.49	-348.3	-1,192.9	693.8	656.3	37.50	18.502	
7,000.0	6,510.1	7,187.4	6,848.3	43.6	32.8	-170.18	-361.7	-1,241.1	695.5	657.0	38.50	18.065	
7,100.0	6,596.2	7,287.7	6,935.3	44.7	33.8	-170.04	-373.2	-1,289.6	697.2	657.8	39.42	17.686	
7,200.0	6,682.3	7,385.2	7,020.1	45.8	34.6	-171.39	-366.1	-1,336.8	699.1	659.5	39.59	17.658	
7,300.0	6,768.4	7,471.8	7,092.7	47.0	35.3	-174.00	-342.0	-1,377.2	702.5	663.3	39.28	17.886	
7,400.0	6,854.7	7,545.9	7,150.6	48.0	35.7	168.75	-308.9	-1,409.3	709.6	670.5	39.12	18.139	
7,500.0	6,940.0	7,615.4	7,199.7	48.9	36.1	144.52	-268.2	-1,436.6	719.1	679.4	39.70	18.113	
7,600.0	7,020.2	7,682.2	7,241.2	49.7	36.3	126.40	-221.1	-1,459.5	729.6	688.9	40.68	17.937	
7,700.0	7,091.0	7,750.0	7,276.4	50.3	36.6	114.13	-166.7	-1,479.0	739.6	698.2	41.46	17.839	
7,800.0	7,148.9	7,811.1	7,301.6	50.7	36.7	106.26	-112.8	-1,492.9	748.1	706.4	41.70	17.938	
7,900.0	7,191.0	7,875.0	7,320.7	51.0	36.8	101.45	-52.8	-1,503.4	754.1	712.5	41.65	18.108	
8,000.0	7,215.0	7,936.8	7,331.8	51.1	36.8	99.09	7.7	-1,509.4	757.1	715.4	41.76	18.132	
8,099.6	7,222.3	8,000.0	7,335.4	51.1	36.8	98.58	70.7	-1,511.2	757.9	715.6	42.32	17.907	
8,100.0	7,220.4	8,000.5	7,335.4	51.1	36.8	98.74	71.2	-1,511.2	757.1	714.8	42.35	17.876	
8,200.0	7,220.4	8,100.5	7,335.4	51.1	36.8	98.74	171.2	-1,510.9	757.1	714.1	43.04	17.591	
8,300.0	7,220.4	8,200.5	7,335.4	51.2	36.9	98.74	271.2	-1,510.7	757.1	713.1	44.05	17.188	
8,400.0	7,220.4	8,300.5	7,335.4	51.3	37.1	98.74	371.2	-1,510.4	757.1	711.8	45.36	16.693	
8,500.0	7,220.4	8,400.5	7,335.4	51.4	37.3	98.74	471.2	-1,510.1	757.1	710.2	46.94	16.132	
8,600.0	7,220.4	8,500.5	7,335.4	51.6	37.7	98.74	571.2	-1,509.9	757.2	708.4	48.76	15.527	
8,700.0	7,220.4	8,600.5	7,335.4	51.9	38.1	98.74	671.2	-1,509.6	757.2	706.4	50.81	14.902	
8,800.0	7,220.4	8,700.5	7,335.4	52.2	38.6	98.74	771.2	-1,509.3	757.2	704.1	53.05	14.273	
8,900.0	7,220.4	8,800.5	7,335.4	52.6	39.2	98.74	871.2	-1,509.0	757.2	701.7	55.46	13.653	
9,000.0	7,220.4	8,900.5	7,335.4	53.0	39.9	98.74	971.2	-1,508.8	757.2	699.2	58.02	13.050	
9,100.0	7,220.4	9,000.5	7,335.4	53.5	40.7	98.74	1,071.2	-1,508.5	757.2	696.5	60.71	12.472	
9,200.0	7,220.4	9,100.5	7,335.4	54.1	41.5	98.74	1,171.2	-1,508.2	757.2	693.7	63.52	11.921	
9,300.0	7,220.4	9,200.5	7,335.4	54.7	42.5	98.74	1,271.2	-1,508.0	757.2	690.8	66.42	11.400	
9,400.0	7,220.4	9,300.5	7,335.4	55.4	43.5	98.74	1,371.2	-1,507.7	757.2	687.8	69.41	10.909	
9,500.0	7,220.4	9,400.5	7,335.4	56.2	44.6	98.74	1,471.2	-1,507.4	757.3	684.8	72.48	10.448	
9,600.0	7,220.4	9,500.5	7,335.4	57.0	45.7	98.73	1,571.2	-1,507.1	757.3	681.7	75.61	10.015	
9,700.0	7,220.4	9,600.5	7,335.4	57.9	47.0	98.73	1,671.2	-1,506.9	757.3	678.5	78.81	9.609	
9,800.0	7,220.4	9,700.5	7,335.4	58.8	48.3	98.73	1,771.2	-1,506.6	757.3	675.2	82.05	9.229	
9,900.0	7,220.4	9,800.5	7,335.4	59.8	49.6	98.73	1,871.2	-1,506.3	757.3	672.0	85.34	8.874	
10,000.0	7,220.4	9,900.5	7,335.4	60.8	51.0	98.73	1,971.2	-1,506.1	757.3	668.6	88.67	8.540	
10,100.0	7,220.4	10,000.5	7,335.4	61.9	52.4	98.73	2,071.2	-1,505.8	757.3	665.3	92.04	8.228	
10,200.0	7,220.4	10,100.5	7,335.4	63.0	53.8	98.73	2,171.2	-1,505.5	757.3	661.9	95.44	7.935	

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

Raindance West Pad Sec.30-T6N-R67W - Raindance FD 30-024HC - Wellbore #1 - Plan #1 (11-13-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,300.0	7,220.4	10,200.5	7,335.4	64.2	55.3	98.73	2,271.2	-1,505.3	757.3	658.5	98.88	7.660		
10,400.0	7,220.4	10,300.5	7,335.4	65.4	56.9	98.73	2,371.2	-1,505.0	757.3	655.0	102.33	7.401		
10,500.0	7,220.4	10,400.5	7,335.4	66.7	58.4	98.73	2,471.2	-1,504.7	757.4	651.5	105.81	7.158		
10,600.0	7,220.4	10,500.5	7,335.4	68.0	60.0	98.73	2,571.2	-1,504.4	757.4	648.1	109.32	6.928		
10,700.0	7,220.4	10,600.5	7,335.4	69.4	61.6	98.73	2,671.2	-1,504.2	757.4	644.5	112.84	6.712		
10,800.0	7,220.4	10,700.5	7,335.4	70.7	63.2	98.73	2,771.2	-1,503.9	757.4	641.0	116.38	6.508		
10,900.0	7,220.4	10,800.5	7,335.4	72.1	64.8	98.73	2,871.2	-1,503.6	757.4	637.5	119.93	6.315		
11,000.0	7,220.4	10,900.5	7,335.4	73.6	66.5	98.73	2,971.2	-1,503.4	757.4	633.9	123.50	6.133		
11,100.0	7,220.4	11,000.5	7,335.4	75.0	68.1	98.73	3,071.2	-1,503.1	757.4	630.3	127.09	5.960		
11,200.0	7,220.4	11,100.5	7,335.4	76.5	69.8	98.73	3,171.2	-1,502.8	757.4	626.8	130.68	5.796		
11,300.0	7,220.4	11,200.5	7,335.4	78.0	71.5	98.73	3,271.2	-1,502.5	757.4	623.2	134.29	5.640		
11,400.0	7,220.4	11,300.5	7,335.4	79.6	73.2	98.73	3,371.2	-1,502.3	757.5	619.5	137.91	5.492		
11,500.0	7,220.4	11,400.5	7,335.4	81.1	74.9	98.73	3,471.2	-1,502.0	757.5	615.9	141.54	5.352		
11,600.0	7,220.4	11,500.5	7,335.4	82.7	76.7	98.73	3,571.2	-1,501.7	757.5	612.3	145.18	5.218		
11,700.0	7,220.4	11,600.5	7,335.4	84.3	78.4	98.73	3,671.2	-1,501.5	757.5	608.7	148.82	5.090		
11,800.0	7,220.4	11,700.5	7,335.4	85.9	80.2	98.73	3,771.2	-1,501.2	757.5	605.0	152.48	4.968		
11,900.0	7,220.4	11,800.5	7,335.4	87.5	81.9	98.73	3,871.2	-1,500.9	757.5	601.4	156.14	4.852		
12,000.0	7,220.4	11,900.5	7,335.4	89.1	83.7	98.73	3,971.2	-1,500.7	757.5	597.7	159.80	4.740		
12,100.0	7,220.4	12,000.5	7,335.4	90.8	85.4	98.73	4,071.2	-1,500.4	757.5	594.1	163.48	4.634		
12,200.0	7,220.4	12,100.5	7,335.4	92.4	87.2	98.73	4,171.2	-1,500.1	757.5	590.4	167.16	4.532		
12,300.0	7,220.4	12,200.5	7,335.4	94.1	89.0	98.73	4,271.2	-1,499.8	757.6	586.7	170.84	4.434		
12,400.0	7,220.4	12,300.5	7,335.4	95.8	90.8	98.73	4,371.2	-1,499.6	757.6	583.0	174.53	4.341		
12,402.7	7,220.4	12,303.2	7,335.4	95.8	90.8	98.73	4,373.9	-1,499.6	757.6	582.9	174.63	4.338 SF		

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-021HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-021HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	88.85	1.8	90.5	90.5					
100.0	100.0	100.0	100.0	0.1	0.1	88.85	1.8	90.5	90.5	90.2	0.22	402.503		
200.0	200.0	200.0	200.0	0.3	0.3	88.85	1.8	90.5	90.5	89.8	0.67	134.168		
300.0	300.0	300.0	300.0	0.6	0.6	88.85	1.8	90.5	90.5	89.3	1.12	80.501		
400.0	400.0	400.0	400.0	0.8	0.8	88.85	1.8	90.5	90.5	88.9	1.57	57.500		
500.0	500.0	500.0	500.0	1.0	1.0	88.85	1.8	90.5	90.5	88.4	2.02	44.723		
600.0	600.0	600.0	600.0	1.2	1.2	88.85	1.8	90.5	90.5	88.0	2.47	36.591		
700.0	700.0	700.0	700.0	1.5	1.5	88.85	1.8	90.5	90.5	87.5	2.92	30.962		
800.0	800.0	800.0	800.0	1.7	1.7	88.85	1.8	90.5	90.5	87.1	3.37	26.834		
900.0	900.0	900.0	900.0	1.9	1.9	88.85	1.8	90.5	90.5	86.6	3.82	23.677		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	88.85	1.8	90.5	90.5	86.2	4.27	21.184		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	88.85	1.8	90.5	90.5	85.7	4.72	19.167		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	88.85	1.8	90.5	90.5	85.3	5.17	17.500		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	88.85	1.8	90.5	90.5	84.8	5.62	16.100		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	88.85	1.8	90.5	90.5	84.4	6.07	14.908		
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	88.85	1.8	90.5	90.5	84.0	6.52	13.879		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	88.85	1.8	90.5	90.5	83.5	6.97	12.984		
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	88.85	1.8	90.5	90.5	83.1	7.42	12.197		
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	88.85	1.8	90.5	90.5	82.6	7.87	11.500		
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	88.85	1.8	90.5	90.5	82.2	8.32	10.878		
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	88.85	1.8	90.5	90.5	81.7	8.77	10.321		
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	88.85	1.8	90.5	90.5	81.3	9.22	9.817		
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	88.85	1.8	90.5	90.5	80.8	9.66	9.361		
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	88.85	1.8	90.5	90.5	80.4	10.11	8.945		
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	88.85	1.8	90.5	90.5	79.9	10.56	8.564		
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	88.85	1.8	90.5	90.5	79.5	11.01	8.214		
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	88.85	1.8	90.5	90.5	79.0	11.46	7.892		
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	88.85	1.8	90.5	90.5	78.6	11.91	7.594		
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	88.85	1.8	90.5	90.5	78.1	12.36	7.318 CC, ES		
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	-170.43	1.8	90.5	93.0	80.3	12.78	7.281		
3,000.0	2,999.6	2,999.6	2,999.6	6.6	6.6	-171.14	1.8	90.5	100.8	87.6	13.15	7.664		
3,100.0	3,098.8	3,098.8	3,098.8	6.8	6.9	-172.10	1.8	90.5	113.7	100.2	13.49	8.428		
3,200.0	3,197.1	3,197.1	3,197.1	7.0	7.1	-173.12	1.8	90.5	131.8	118.0	13.80	9.552		
3,300.0	3,294.3	3,294.3	3,294.3	7.3	7.3	-174.08	1.8	90.5	155.0	140.9	14.07	11.017		
3,400.0	3,390.2	3,390.2	3,390.2	7.6	7.5	-174.92	1.8	90.5	183.3	169.0	14.30	12.812		
3,500.0	3,484.4	3,484.4	3,484.4	8.0	7.7	-175.62	1.8	90.5	216.5	202.0	14.51	14.927		
3,600.0	3,576.8	3,576.8	3,576.8	8.5	7.9	-176.19	1.8	90.5	254.7	240.0	14.68	17.356		
3,700.0	3,667.1	3,667.1	3,667.1	9.0	8.1	-176.66	1.8	90.5	297.7	282.9	14.81	20.096		
3,800.0	3,754.9	3,754.9	3,754.9	9.7	8.3	-177.04	1.8	90.5	345.4	330.4	14.92	23.141		
3,900.0	3,841.1	3,841.1	3,841.1	10.5	8.5	-177.40	1.8	90.5	396.1	380.8	15.30	25.891		
4,000.0	3,927.2	3,927.2	3,927.2	11.4	8.7	-177.70	1.8	90.5	446.9	431.2	15.75	28.371		
4,100.0	4,013.3	4,013.3	4,013.3	12.3	8.9	-177.93	1.8	90.5	497.8	481.5	16.22	30.690		
4,200.0	4,099.4	4,099.4	4,099.4	13.2	9.1	-178.13	1.8	90.5	548.6	531.9	16.70	32.857		
4,300.0	4,185.5	4,185.5	4,185.5	14.2	9.3	-178.28	1.8	90.5	599.4	582.3	17.18	34.883		
4,400.0	4,271.6	4,271.6	4,271.6	15.2	9.5	-178.42	1.8	90.5	650.3	632.6	17.68	36.779		
4,500.0	4,357.7	4,390.4	4,390.4	16.2	9.7	-178.54	1.1	88.4	699.8	681.6	18.23	38.382		
4,600.0	4,443.8	4,534.1	4,533.6	17.2	10.0	-178.54	-2.8	76.9	743.3	724.5	18.81	39.518		
4,700.0	4,529.9	4,687.8	4,685.2	18.3	10.3	-178.39	-10.7	53.3	779.7	760.3	19.42	40.148		
4,800.0	4,616.0	4,850.3	4,842.8	19.3	10.8	-178.10	-23.4	15.8	808.4	788.3	20.07	40.271		
4,900.0	4,702.1	5,019.9	5,003.0	20.4	11.3	-177.66	-41.1	-36.6	828.8	808.0	20.78	39.893		
5,000.0	4,788.2	5,194.3	5,162.0	21.4	12.0	-177.07	-63.9	-104.3	840.5	818.9	21.54	39.028		
5,100.0	4,874.3	5,341.0	5,290.5	22.5	12.9	-176.44	-86.6	-171.5	843.8	821.5	22.29	37.863		

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

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-021HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-021HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design Raindance West Pad Sec.30-T6N-R67W - Raindance FD 30-025HN - Wellbore #1 - Plan #1 (11-13-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,200.0	4,960.4	5,440.8	5,376.8	23.6	13.6	-176.00	-102.6	-218.8	845.5	822.6	22.95	36.847		
5,300.0	5,046.5	5,540.6	5,463.1	24.7	14.3	-175.55	-118.6	-266.2	847.3	823.6	23.63	35.851		
5,400.0	5,132.6	5,640.4	5,549.5	25.8	15.1	-175.11	-134.6	-313.6	849.1	824.7	24.34	34.877		
5,500.0	5,218.7	5,740.1	5,635.8	26.9	15.9	-174.67	-150.6	-361.0	850.9	825.8	25.08	33.927		
5,600.0	5,304.8	5,839.9	5,722.1	28.0	16.7	-174.23	-166.5	-408.3	852.8	827.0	25.84	33.001		
5,700.0	5,390.9	5,939.7	5,808.5	29.1	17.6	-173.80	-182.5	-455.7	854.7	828.1	26.63	32.100		
5,800.0	5,477.0	6,039.4	5,894.8	30.2	18.5	-173.36	-198.5	-503.1	856.7	829.3	27.44	31.224		
5,900.0	5,563.1	6,139.2	5,981.1	31.3	19.4	-172.93	-214.5	-550.5	858.8	830.5	28.27	30.374		
6,000.0	5,649.1	6,239.0	6,067.5	32.4	20.4	-172.50	-230.5	-597.8	860.9	831.7	29.13	29.550		
6,100.0	5,735.2	6,338.7	6,153.8	33.5	21.3	-172.07	-246.5	-645.2	863.0	833.0	30.02	28.751		
6,200.0	5,821.3	6,438.5	6,240.1	34.6	22.3	-171.64	-262.5	-692.6	865.2	834.3	30.92	27.978		
6,300.0	5,907.4	6,538.3	6,326.5	35.7	23.3	-171.22	-278.5	-740.0	867.4	835.6	31.86	27.230		
6,400.0	5,993.5	6,638.0	6,412.8	36.9	24.3	-170.80	-294.5	-787.3	869.7	836.9	32.81	26.506		
6,500.0	6,079.6	6,737.8	6,499.1	38.0	25.3	-170.38	-310.5	-834.7	872.1	838.3	33.79	25.807		
6,600.0	6,165.7	6,837.6	6,585.5	39.1	26.3	-169.96	-326.5	-882.1	874.4	839.6	34.80	25.131		
6,700.0	6,251.8	6,937.3	6,671.8	40.2	27.3	-169.55	-342.4	-929.4	876.9	841.0	35.82	24.478		
6,800.0	6,337.9	7,037.1	6,758.2	41.3	28.3	-169.13	-358.4	-976.8	879.3	842.5	36.87	23.848		
6,900.0	6,424.0	7,140.4	6,848.3	42.5	29.2	-169.28	-366.3	-1,026.3	881.7	844.0	37.65	23.415		
7,000.0	6,510.1	7,238.1	6,932.9	43.6	30.0	-170.82	-351.8	-1,072.6	884.0	846.3	37.72	23.437		
7,100.0	6,596.2	7,322.2	7,001.9	44.7	30.5	-173.19	-322.6	-1,110.3	887.9	850.4	37.46	23.703		
7,200.0	6,682.3	7,390.4	7,053.6	45.8	30.9	-175.76	-288.2	-1,138.6	895.7	858.4	37.32	24.002		
7,300.0	6,768.4	7,444.6	7,090.9	47.0	31.1	-178.14	-254.7	-1,158.9	909.3	871.9	37.47	24.271		
7,400.0	6,854.7	7,489.5	7,118.9	48.0	31.3	164.45	-223.1	-1,174.2	929.3	891.2	38.06	24.418		
7,500.0	6,940.0	7,534.6	7,144.1	48.9	31.4	139.22	-188.4	-1,187.9	951.9	912.4	39.50	24.096		
7,600.0	7,020.2	7,575.0	7,163.9	49.7	31.5	120.24	-154.8	-1,198.7	974.5	933.6	40.92	23.819		
7,700.0	7,091.0	7,625.0	7,184.5	50.3	31.6	107.01	-110.7	-1,209.9	995.1	953.5	41.60	23.923		
7,800.0	7,148.9	7,675.0	7,200.7	50.7	31.7	98.34	-64.2	-1,218.6	1,012.0	970.9	41.12	24.614		
7,900.0	7,191.0	7,725.0	7,212.1	51.0	31.7	93.03	-16.0	-1,224.7	1,024.0	984.0	39.98	25.613		
8,000.0	7,215.0	7,767.2	7,218.0	51.1	31.7	90.43	25.7	-1,227.8	1,030.1	991.0	39.18	26.290		
8,100.0	7,220.4	7,816.3	7,220.4	51.1	31.7	90.00	74.7	-1,229.0	1,030.5	991.0	39.51	26.080		
8,128.0	7,220.4	7,840.1	7,220.4	51.1	31.7	90.00	98.5	-1,228.9	1,030.5	990.9	39.64	25.999		
8,200.0	7,220.4	7,912.1	7,220.4	51.1	31.7	90.00	170.5	-1,228.8	1,030.5	990.5	40.01	25.757		
8,300.0	7,220.4	8,012.1	7,220.4	51.2	31.9	90.00	270.5	-1,228.5	1,030.5	989.6	40.96	25.157		
8,400.0	7,220.4	8,112.1	7,220.4	51.3	32.1	90.00	370.5	-1,228.2	1,030.5	988.3	42.25	24.393		
8,500.0	7,220.4	8,212.1	7,220.4	51.4	32.4	90.00	470.5	-1,227.9	1,030.5	986.7	43.83	23.511		
8,600.0	7,220.4	8,312.1	7,220.4	51.6	32.8	90.00	570.5	-1,227.7	1,030.6	984.9	45.69	22.556		
8,700.0	7,220.4	8,412.1	7,220.4	51.9	33.3	90.00	670.5	-1,227.4	1,030.6	982.8	47.78	21.568		
8,800.0	7,220.4	8,512.1	7,220.4	52.2	34.0	90.00	770.5	-1,227.1	1,030.6	980.5	50.08	20.578		
8,900.0	7,220.4	8,612.1	7,220.4	52.6	34.7	90.00	870.5	-1,226.9	1,030.6	978.0	52.56	19.607		
9,000.0	7,220.4	8,712.1	7,220.4	53.0	35.5	90.00	970.5	-1,226.6	1,030.6	975.4	55.20	18.671		
9,100.0	7,220.4	8,812.1	7,220.4	53.5	36.5	90.00	1,070.5	-1,226.3	1,030.6	972.6	57.97	17.778		
9,200.0	7,220.4	8,912.1	7,220.4	54.1	37.5	90.00	1,170.5	-1,226.1	1,030.6	969.8	60.86	16.935		
9,300.0	7,220.4	9,012.1	7,220.4	54.7	38.6	90.00	1,270.5	-1,225.8	1,030.6	966.8	63.84	16.143		
9,400.0	7,220.4	9,112.1	7,220.4	55.4	39.8	90.00	1,370.5	-1,225.5	1,030.6	963.7	66.92	15.401		
9,500.0	7,220.4	9,212.1	7,220.4	56.2	41.0	90.00	1,470.5	-1,225.2	1,030.6	960.6	70.07	14.709		
9,600.0	7,220.4	9,312.1	7,220.4	57.0	42.3	90.00	1,570.5	-1,225.0	1,030.7	957.4	73.29	14.063		
9,700.0	7,220.4	9,412.1	7,220.4	57.9	43.7	90.00	1,670.5	-1,224.7	1,030.7	954.1	76.56	13.462		
9,800.0	7,220.4	9,512.1	7,220.4	58.8	45.1	90.00	1,770.5	-1,224.4	1,030.7	950.8	79.88	12.902		
9,900.0	7,220.4	9,612.1	7,220.4	59.8	46.6	90.00	1,870.5	-1,224.2	1,030.7	947.4	83.25	12.380		
10,000.0	7,220.4	9,712.1	7,220.4	60.8	48.1	90.00	1,970.5	-1,223.9	1,030.7	944.0	86.66	11.893		
10,100.0	7,220.4	9,812.1	7,220.4	61.9	49.6	90.00	2,070.5	-1,223.6	1,030.7	940.6	90.10	11.439		
10,200.0	7,220.4	9,912.1	7,220.4	63.0	51.2	90.00	2,170.5	-1,223.4	1,030.7	937.1	93.58	11.014		

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

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-021HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-021HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Raindance West Pad Sec.30-T6N-R67W - Raindance FD 30-025HN - Wellbore #1 - Plan #1 (11-13-13)												Offset Well Error:	0.0 ft
Survey Program: 0-MWD													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,300.0	7,220.4	10,012.1	7,220.4	64.2	52.7	90.00	2,270.5	-1,223.1	1,030.7	933.6	97.08	10.617	
10,400.0	7,220.4	10,112.1	7,220.4	65.4	54.4	90.00	2,370.5	-1,222.8	1,030.7	930.1	100.61	10.245	
10,500.0	7,220.4	10,212.1	7,220.4	66.7	56.0	90.00	2,470.5	-1,222.5	1,030.7	926.6	104.16	9.896	
10,600.0	7,220.4	10,312.1	7,220.4	68.0	57.6	90.00	2,570.5	-1,222.3	1,030.8	923.0	107.72	9.568	
10,700.0	7,220.4	10,412.1	7,220.4	69.4	59.3	90.00	2,670.5	-1,222.0	1,030.8	919.5	111.31	9.260	
10,800.0	7,220.4	10,512.1	7,220.4	70.7	61.0	90.00	2,770.5	-1,221.7	1,030.8	915.9	114.92	8.970	
10,900.0	7,220.4	10,612.1	7,220.4	72.1	62.7	90.00	2,870.5	-1,221.5	1,030.8	912.2	118.53	8.696	
11,000.0	7,220.4	10,712.1	7,220.4	73.6	64.4	90.00	2,970.5	-1,221.2	1,030.8	908.6	122.17	8.438	
11,100.0	7,220.4	10,812.1	7,220.4	75.0	66.1	90.00	3,070.5	-1,220.9	1,030.8	905.0	125.81	8.193	
11,200.0	7,220.4	10,912.1	7,220.4	76.5	67.9	90.00	3,170.5	-1,220.7	1,030.8	901.3	129.47	7.962	
11,300.0	7,220.4	11,012.1	7,220.4	78.0	69.6	90.00	3,270.5	-1,220.4	1,030.8	897.7	133.13	7.743	
11,400.0	7,220.4	11,112.1	7,220.4	79.6	71.4	90.00	3,370.5	-1,220.1	1,030.8	894.0	136.81	7.535	
11,500.0	7,220.4	11,212.1	7,220.4	81.1	73.1	90.00	3,470.5	-1,219.9	1,030.8	890.3	140.50	7.337	
11,600.0	7,220.4	11,312.1	7,220.4	82.7	74.9	90.00	3,570.4	-1,219.6	1,030.9	886.7	144.19	7.149	
11,700.0	7,220.4	11,412.1	7,220.4	84.3	76.7	90.00	3,670.4	-1,219.3	1,030.9	883.0	147.89	6.970	
11,800.0	7,220.4	11,512.1	7,220.4	85.9	78.5	90.00	3,770.4	-1,219.0	1,030.9	879.3	151.60	6.800	
11,900.0	7,220.4	11,612.1	7,220.4	87.5	80.3	90.00	3,870.4	-1,218.8	1,030.9	875.6	155.31	6.637	
12,000.0	7,220.4	11,712.1	7,220.4	89.1	82.1	90.00	3,970.4	-1,218.5	1,030.9	871.9	159.03	6.482	
12,100.0	7,220.4	11,812.1	7,220.4	90.8	83.9	90.00	4,070.4	-1,218.2	1,030.9	868.1	162.76	6.334	
12,200.0	7,220.4	11,912.1	7,220.4	92.4	85.7	90.00	4,170.4	-1,218.0	1,030.9	864.4	166.49	6.192	
12,300.0	7,220.4	12,012.1	7,220.4	94.1	87.5	90.00	4,270.4	-1,217.7	1,030.9	860.7	170.23	6.056	
12,400.0	7,220.4	12,112.1	7,220.4	95.8	89.3	90.00	4,370.4	-1,217.4	1,030.9	857.0	173.97	5.926	
12,402.7	7,220.4	12,114.8	7,220.4	95.8	89.4	90.00	4,373.1	-1,217.4	1,030.9	856.9	174.07	5.922 SF	

Company:	Great Western	Local Co-ordinate Reference:	Well Raindance FD 30-021HN
Project:	SEC.30-T6N-R67W	TVD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Reference Site:	Raindance West Pad Sec.30-T6N-R67W	MD Reference:	WELL @ 5012.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Raindance FD 30-021HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-12-13)	Offset TVD Reference:	Offset Datum

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

Coordinates are relative to: Raindance FD 30-021HN
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.36°



Company: Great Western
Project: SEC.30-T6N-R67W
Reference Site: Raindance West Pad Sec.30-T6N-R67W
Site Error: 0.0ft
Reference Well: Raindance FD 30-021HN
Well Error: 0.0ft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1 (11-12-13)

Local Co-ordinate Reference: Well Raindance FD 30-021HN
TVD Reference: WELL @ 5012.4ft (RKB - 16.5')
MD Reference: WELL @ 5012.4ft (RKB - 16.5')
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Landmark
Offset TVD Reference: Offset Datum

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

Coordinates are relative to: Raindance FD 30-021HN
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.36°

