

Great Western

Well Name: **Taoka KF 01-039HN**

Surface Location: Taoka East Pad Sec.1-T1N-R65W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

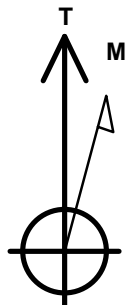
Ground Elevation: 4955.9

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1271007.26	3250337.48	40.073839	-104.605444	

RKB - 16.5' WELL @ 4972.4ft (RKB - 16.5')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 224'FSL & 778'FEL	1.0	0.0	0.0	Point
BHL 470'FNL & 470'FEL	6962.4	4479.7	304.4	Point
Entry Pt. 460'FSL & 470'FEL	6962.4	235.7	307.8	Point



Azimuths to True North
Magnetic North: 8.42°

Magnetic Field
Strength: 52719.9snT
Dip Angle: 66.73°
Date: 11/18/2013
Model: IGRF2010

Taoka East Pad Sec.1-T1N-R65W
Taoka KF 01-039HN
Plan #1 (11-18-13)
9:27, November 20 2013

ANNOTATIONS

TVD	MD	Annotation
5640.0	5640.0	KOP - Start Build 4.00
6368.5	6404.3	Start DLS 13.00 TFO -141.76
6962.4	11531.1	TD at 11531.1

South(-)/North(+) (1500 ft/in)

Sec.1-T1N-R65W

460' Setback

BHL 470'FNL & 470'FEL

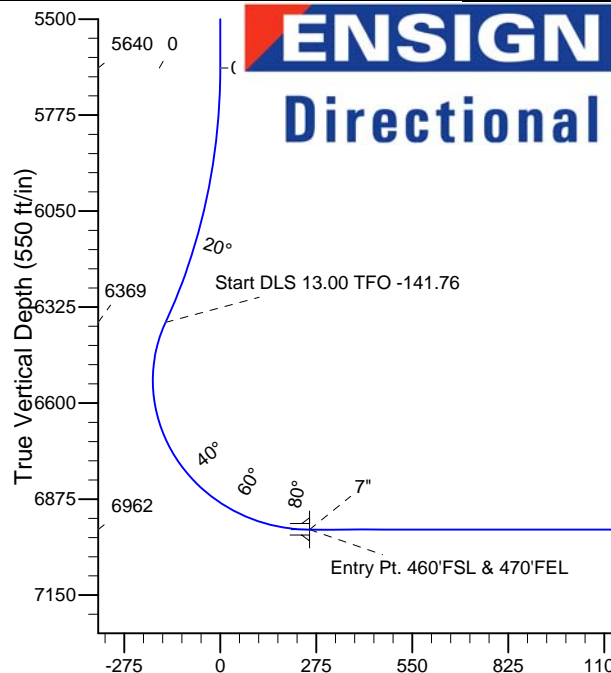
Taoka KF 01-039HN

**Casing Pt.
460'FSL & 470'FEL**

Entry Pt. 460'FSL & 470'FEL

SHL 224'FSL & 778'FEL

West(-)/East(+) (1500 ft/in)



ENSIGN
Directional

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	5640.0	0.00	0.00	5640.0	0.0	0.0	0.00	0.00	0.0	
3	6401.0	30.44	145.77	6365.7	-163.2	111.1	4.00	145.77	-155.3	
4	6404.3	30.44	145.77	6368.5	-164.6	112.0	0.00	0.00	-156.6	
5	7287.1	90.00	359.96	6962.4	235.7	307.8	13.00	-141.76	256.0	Entry Pt. 460'FSL & 470'FEL
6	7287.8	90.00	359.95	6962.4	236.3	307.8	1.00	-90.00	256.6	
7	11531.1	90.00	359.95	6962.4	4479.7	304.4	0.00	0.00	4490.0	BHL 470'FNL & 470'FEL

BHL 470'FNL & 470'FEL

TD at 11531.1

Vertical Section at 3.89° (550 ft/in)



Great Western

SEC.1-T1N-R65W

Taoka East Pad Sec.1-T1N-R65W

Taoka KF 01-039HN

Wellbore #1

Plan: Plan #1 (11-18-13)

Standard Planning Report

20 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	
5,640.0	0.00	0.00	5,640.0	0.0	0.0	0.00	0.00	0.00	0.00	
6,401.0	30.44	145.77	6,365.7	-163.2	111.1	4.00	4.00	0.00	145.77	
6,404.3	30.44	145.77	6,368.5	-164.6	112.0	0.00	0.00	0.00	0.00	
7,287.1	90.00	359.96	6,962.4	235.7	307.8	13.00	6.75	-16.51	-141.76	Entry Pt. 460'FSL &
7,287.8	90.00	359.95	6,962.4	236.3	307.8	1.00	0.00	-1.00	-90.00	
11,531.1	90.00	359.95	6,962.4	4,479.7	304.4	0.00	0.00	0.00	0.00	BHL 470'FNL & 470'

Database:	Landmark	Local Co-ordinate Reference:	Well Taoka KF 01-039HN
Company:	Great Western	TVD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Project:	SEC.1-T1N-R65W	MD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Site:	Taoka East Pad Sec.1-T1N-R65W	North Reference:	True
Well:	Taoka KF 01-039HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-18-13)		

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 224'FSL & 778'FEL									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Taoka KF 01-039HN
Company:	Great Western	TVD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Project:	SEC.1-T1N-R65W	MD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Site:	Taoka East Pad Sec.1-T1N-R65W	North Reference:	True
Well:	Taoka KF 01-039HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-18-13)		

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)
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,640.0	0.00	0.00	5,640.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 4.00									
5,700.0	2.40	145.77	5,700.0	-1.0	0.7	-1.0	4.00	4.00	0.00
5,800.0	6.40	145.77	5,799.7	-7.4	5.0	-7.0	4.00	4.00	0.00
5,900.0	10.40	145.77	5,898.6	-19.5	13.2	-18.5	4.00	4.00	0.00
6,000.0	14.40	145.77	5,996.2	-37.2	25.3	-35.4	4.00	4.00	0.00
6,100.0	18.40	145.77	6,092.1	-60.5	41.2	-57.6	4.00	4.00	0.00
6,200.0	22.40	145.77	6,185.8	-89.4	60.8	-85.0	4.00	4.00	0.00
6,300.0	26.40	145.77	6,276.9	-123.5	84.0	-117.5	4.00	4.00	0.00
6,400.0	30.40	145.77	6,364.8	-162.8	110.8	-154.9	4.00	4.00	0.00
6,401.0	30.44	145.77	6,365.7	-163.2	111.1	-155.3	4.00	4.00	0.00
6,404.3	30.44	145.77	6,368.5	-164.6	112.0	-156.6	0.00	0.00	0.00
Start DLS 13.00 TFO -141.76									
6,500.0	21.93	124.84	6,454.5	-195.0	140.4	-185.0	13.01	-8.90	-21.87
6,600.0	18.29	87.82	6,548.8	-205.1	171.6	-193.0	13.00	-3.64	-37.02
6,700.0	22.68	52.16	6,642.8	-192.6	202.6	-178.4	13.00	4.39	-35.66
6,800.0	31.95	31.94	6,731.7	-158.2	231.9	-142.1	13.00	9.27	-20.22
6,900.0	43.04	20.67	6,811.1	-103.6	258.1	-85.8	13.00	11.09	-11.26
7,000.0	54.84	13.41	6,876.7	-31.6	279.7	-12.5	13.00	11.81	-7.26
7,100.0	66.97	8.03	6,925.2	54.1	295.7	74.0	13.00	12.13	-5.38
7,200.0	79.25	3.55	6,954.2	149.1	305.2	169.5	13.00	12.28	-4.47
7,287.1	89.99	359.96	6,962.4	235.7	307.8	256.0	12.99	12.33	-4.12
7" - Entry Pt. 460'FSL & 470'FEL									
7,287.8	90.00	359.95	6,962.4	236.3	307.8	256.6	1.65	0.98	-1.32
7,300.0	90.00	359.95	6,962.4	248.6	307.8	268.9	0.00	0.00	0.00
7,400.0	90.00	359.95	6,962.4	348.6	307.8	368.6	0.00	0.00	0.00
7,500.0	90.00	359.95	6,962.4	448.6	307.7	468.4	0.00	0.00	0.00
7,600.0	90.00	359.95	6,962.4	548.6	307.6	568.2	0.00	0.00	0.00
7,700.0	90.00	359.95	6,962.4	648.6	307.5	667.9	0.00	0.00	0.00
7,800.0	90.00	359.95	6,962.4	748.6	307.4	767.7	0.00	0.00	0.00
7,900.0	90.00	359.95	6,962.4	848.6	307.4	867.4	0.00	0.00	0.00
8,000.0	90.00	359.95	6,962.4	948.6	307.3	967.2	0.00	0.00	0.00
8,100.0	90.00	359.95	6,962.4	1,048.6	307.2	1,067.0	0.00	0.00	0.00
8,200.0	90.00	359.95	6,962.4	1,148.6	307.1	1,166.7	0.00	0.00	0.00
8,300.0	90.00	359.95	6,962.4	1,248.6	307.0	1,266.5	0.00	0.00	0.00
8,400.0	90.00	359.95	6,962.4	1,348.6	307.0	1,366.3	0.00	0.00	0.00
8,500.0	90.00	359.95	6,962.4	1,448.6	306.9	1,466.0	0.00	0.00	0.00
8,600.0	90.00	359.95	6,962.4	1,548.6	306.8	1,565.8	0.00	0.00	0.00
8,700.0	90.00	359.95	6,962.4	1,648.6	306.7	1,665.6	0.00	0.00	0.00
8,800.0	90.00	359.95	6,962.4	1,748.6	306.6	1,765.3	0.00	0.00	0.00
8,900.0	90.00	359.95	6,962.4	1,848.6	306.5	1,865.1	0.00	0.00	0.00
9,000.0	90.00	359.95	6,962.4	1,948.6	306.5	1,964.9	0.00	0.00	0.00
9,100.0	90.00	359.95	6,962.4	2,048.6	306.4	2,064.6	0.00	0.00	0.00
9,200.0	90.00	359.95	6,962.4	2,148.6	306.3	2,164.4	0.00	0.00	0.00
9,300.0	90.00	359.95	6,962.4	2,248.6	306.2	2,264.1	0.00	0.00	0.00
9,400.0	90.00	359.95	6,962.4	2,348.6	306.1	2,363.9	0.00	0.00	0.00
9,500.0	90.00	359.95	6,962.4	2,448.6	306.1	2,463.7	0.00	0.00	0.00
9,600.0	90.00	359.95	6,962.4	2,548.6	306.0	2,563.4	0.00	0.00	0.00

Plan Annotations					
	Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
			+N/-S	+E/-W	
			(ft)	(ft)	
	5,640.0	5,640.0	0.0	0.0	KOP - Start Build 4.00
	6,404.3	6,368.5	-164.6	112.0	Start DLS 13.00 TFO -141.76
	11,531.1	6,962.4	4,479.7	304.4	TD at 11531.1



Great Western

SEC.1-T1N-R65W

Taoka East Pad Sec.1-T1N-R65W

Taoka KF 01-039HN

Wellbore #1

Plan #1 (11-18-13)

Anticollision Report

20 November, 2013

Company:	Great Western	Local Co-ordinate Reference:	Well Taoka KF 01-039HN
Project:	SEC.1-T1N-R65W	TVD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Reference Site:	Taoka East Pad Sec.1-T1N-R65W	MD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Taoka KF 01-039HN	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 (11-18-13)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (11-18-13)		
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 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 11/19/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,531.1	Plan #1 (11-18-13) (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						
Taoka East Pad Sec.1-T1N-R65W						
Taoka KF 01-036HN - Wellbore #1 - Plan #1 (11-18-13)	5,600.0	5,600.0	59.9	34.9	2.401	CC
Taoka KF 01-036HN - Wellbore #1 - Plan #1 (11-18-13)	5,618.9	5,618.9	59.9	34.9	2.394	ES, SF
Taoka KF 01-038HC - Wellbore #1 - Plan #1 (11-18-13)	5,600.0	5,600.0	29.7	4.7	1.189	Level 2, CC
Taoka KF 01-038HC - Wellbore #1 - Plan #1 (11-18-13)	5,613.9	5,613.9	29.7	4.7	1.187	Level 2, ES, SF
Taoka KF 01-040HN - Wellbore #1 - Plan #1 (11-18-13)	5,044.5	5,044.5	30.2	7.8	1.346	Level 3, CC, ES, SF

Offset Design												
Taoka East Pad Sec.1-T1N-R65W - Taoka KF 01-036HN - Wellbore #1 - Plan #1 (11-18-13)												
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
0.0	0.0	0.0	0.0	0.0	0.0	-90.04	0.0	-59.9	59.9			
100.0	100.0	100.0	100.0	0.1	0.1	-90.04	0.0	-59.9	59.9	59.7	0.22	266.457
200.0	200.0	200.0	200.0	0.3	0.3	-90.04	0.0	-59.9	59.9	59.2	0.67	88.819
300.0	300.0	300.0	300.0	0.6	0.6	-90.04	0.0	-59.9	59.9	58.8	1.12	53.291
400.0	400.0	400.0	400.0	0.8	0.8	-90.04	0.0	-59.9	59.9	58.3	1.57	38.065
500.0	500.0	500.0	500.0	1.0	1.0	-90.04	0.0	-59.9	59.9	57.9	2.02	29.606
600.0	600.0	600.0	600.0	1.2	1.2	-90.04	0.0	-59.9	59.9	57.4	2.47	24.223
700.0	700.0	700.0	700.0	1.5	1.5	-90.04	0.0	-59.9	59.9	57.0	2.92	20.497
800.0	800.0	800.0	800.0	1.7	1.7	-90.04	0.0	-59.9	59.9	56.5	3.37	17.764
900.0	900.0	900.0	900.0	1.9	1.9	-90.04	0.0	-59.9	59.9	56.1	3.82	15.674
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-90.04	0.0	-59.9	59.9	55.6	4.27	14.024
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-90.04	0.0	-59.9	59.9	55.2	4.72	12.688
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-90.04	0.0	-59.9	59.9	54.7	5.17	11.585
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-90.04	0.0	-59.9	59.9	54.3	5.62	10.658
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-90.04	0.0	-59.9	59.9	53.8	6.07	9.869
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	-90.04	0.0	-59.9	59.9	53.4	6.52	9.188
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-90.04	0.0	-59.9	59.9	52.9	6.97	8.595
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	-90.04	0.0	-59.9	59.9	52.5	7.42	8.074
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	-90.04	0.0	-59.9	59.9	52.0	7.87	7.613
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	-90.04	0.0	-59.9	59.9	51.6	8.32	7.202
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	-90.04	0.0	-59.9	59.9	51.1	8.77	6.832
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	-90.04	0.0	-59.9	59.9	50.7	9.22	6.499

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 Taoka KF 01-039HN
Project:	SEC.1-T1N-R65W	TVD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Reference Site:	Taoka East Pad Sec.1-T1N-R65W	MD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Taoka KF 01-039HN	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 (11-18-13)	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		
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	-90.04	0.0	-59.9	59.9	50.2	9.66	6.197		
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	-90.04	0.0	-59.9	59.9	49.8	10.11	5.921		
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	-90.04	0.0	-59.9	59.9	49.3	10.56	5.669		
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	-90.04	0.0	-59.9	59.9	48.9	11.01	5.438		
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	-90.04	0.0	-59.9	59.9	48.4	11.46	5.225		
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	-90.04	0.0	-59.9	59.9	48.0	11.91	5.027		
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	-90.04	0.0	-59.9	59.9	47.5	12.36	4.845		
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	-90.04	0.0	-59.9	59.9	47.1	12.81	4.675		
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	-90.04	0.0	-59.9	59.9	46.6	13.26	4.516		
3,100.0	3,100.0	3,100.0	3,100.0	6.9	6.9	-90.04	0.0	-59.9	59.9	46.2	13.71	4.368		
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	-90.04	0.0	-59.9	59.9	45.7	14.16	4.229		
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	-90.04	0.0	-59.9	59.9	45.3	14.61	4.099		
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	-90.04	0.0	-59.9	59.9	44.8	15.06	3.977		
3,500.0	3,500.0	3,500.0	3,500.0	7.8	7.8	-90.04	0.0	-59.9	59.9	44.4	15.51	3.862		
3,600.0	3,600.0	3,600.0	3,600.0	8.0	8.0	-90.04	0.0	-59.9	59.9	43.9	15.96	3.753		
3,700.0	3,700.0	3,700.0	3,700.0	8.2	8.2	-90.04	0.0	-59.9	59.9	43.5	16.41	3.650		
3,800.0	3,800.0	3,800.0	3,800.0	8.4	8.4	-90.04	0.0	-59.9	59.9	43.0	16.86	3.553		
3,900.0	3,900.0	3,900.0	3,900.0	8.7	8.7	-90.04	0.0	-59.9	59.9	42.6	17.31	3.460		
4,000.0	4,000.0	4,000.0	4,000.0	8.9	8.9	-90.04	0.0	-59.9	59.9	42.1	17.76	3.373		
4,100.0	4,100.0	4,100.0	4,100.0	9.1	9.1	-90.04	0.0	-59.9	59.9	41.7	18.21	3.290		
4,200.0	4,200.0	4,200.0	4,200.0	9.3	9.3	-90.04	0.0	-59.9	59.9	41.2	18.66	3.210		
4,300.0	4,300.0	4,300.0	4,300.0	9.6	9.6	-90.04	0.0	-59.9	59.9	40.8	19.11	3.135		
4,400.0	4,400.0	4,400.0	4,400.0	9.8	9.8	-90.04	0.0	-59.9	59.9	40.3	19.55	3.063		
4,500.0	4,500.0	4,500.0	4,500.0	10.0	10.0	-90.04	0.0	-59.9	59.9	39.9	20.00	2.994		
4,600.0	4,600.0	4,600.0	4,600.0	10.2	10.2	-90.04	0.0	-59.9	59.9	39.4	20.45	2.928		
4,700.0	4,700.0	4,700.0	4,700.0	10.5	10.5	-90.04	0.0	-59.9	59.9	39.0	20.90	2.865		
4,800.0	4,800.0	4,800.0	4,800.0	10.7	10.7	-90.04	0.0	-59.9	59.9	38.5	21.35	2.805		
4,900.0	4,900.0	4,900.0	4,900.0	10.9	10.9	-90.04	0.0	-59.9	59.9	38.1	21.80	2.747		
5,000.0	5,000.0	5,000.0	5,000.0	11.1	11.1	-90.04	0.0	-59.9	59.9	37.6	22.25	2.691		
5,100.0	5,100.0	5,100.0	5,100.0	11.4	11.4	-90.04	0.0	-59.9	59.9	37.2	22.70	2.638		
5,200.0	5,200.0	5,200.0	5,200.0	11.6	11.6	-90.04	0.0	-59.9	59.9	36.7	23.15	2.587		
5,300.0	5,300.0	5,300.0	5,300.0	11.8	11.8	-90.04	0.0	-59.9	59.9	36.3	23.60	2.538		
5,400.0	5,400.0	5,400.0	5,400.0	12.0	12.0	-90.04	0.0	-59.9	59.9	35.8	24.05	2.490		
5,500.0	5,500.0	5,500.0	5,500.0	12.2	12.2	-90.04	0.0	-59.9	59.9	35.4	24.50	2.445		
5,600.0	5,600.0	5,600.0	5,600.0	12.5	12.5	-90.04	0.0	-59.9	59.9	34.9	24.95	2.401 CC		
5,618.9	5,618.9	5,618.9	5,618.9	12.5	12.5	124.25	0.0	-59.9	59.9	34.9	25.03	2.394 ES, SF		
5,700.0	5,700.0	5,699.0	5,699.0	12.7	12.7	124.42	-0.8	-60.3	61.0	35.6	25.36	2.406		
5,800.0	5,799.7	5,796.6	5,796.4	12.9	12.9	124.44	-6.6	-63.5	68.6	42.9	25.66	2.673		
5,900.0	5,898.6	5,893.1	5,892.0	13.0	13.0	124.03	-18.1	-69.8	83.3	57.3	25.93	3.212		
6,000.0	5,996.2	5,987.8	5,984.7	13.2	13.2	123.34	-34.8	-78.9	104.9	78.7	26.18	4.005		
6,100.0	6,092.1	6,080.2	6,073.7	13.4	13.4	122.49	-56.3	-90.6	133.2	106.7	26.44	5.036		
6,200.0	6,185.8	6,169.6	6,158.3	13.7	13.6	121.51	-81.9	-104.6	167.8	141.1	26.73	6.278		
6,300.0	6,276.9	6,255.7	6,237.8	14.0	13.8	120.42	-110.8	-120.4	208.5	181.4	27.07	7.700		
6,400.0	6,364.8	6,338.3	6,312.1	14.4	14.1	119.21	-142.4	-137.6	254.8	227.3	27.50	9.265		
6,500.0	6,454.5	6,418.5	6,382.8	14.8	14.3	143.82	-175.2	-156.2	305.8	278.1	27.73	11.031		
6,600.0	6,548.8	6,498.5	6,457.0	15.2	14.6	-175.99	-197.2	-176.2	359.7	331.6	28.13	12.785		
6,700.0	6,642.8	6,580.2	6,535.5	15.5	14.9	-137.50	-205.0	-197.2	414.1	385.5	28.68	14.438		
6,800.0	6,731.7	6,666.6	6,618.4	15.7	15.1	-115.18	-196.8	-219.5	467.0	437.8	29.27	15.957		
6,900.0	6,811.1	6,761.5	6,705.8	15.8	15.3	-102.89	-168.8	-242.9	516.1	486.3	29.74	17.354		
7,000.0	6,876.7	6,869.5	6,795.5	15.9	15.4	-95.90	-114.2	-267.0	558.8	528.8	30.06	18.591		
7,100.0	6,925.2	6,994.7	6,879.9	16.1	15.6	-92.11	-25.1	-289.6	592.4	562.0	30.39	19.495		
7,200.0	6,954.2	7,138.4	6,942.5	16.3	15.9	-90.40	102.4	-306.4	613.5	582.4	31.08	19.743		

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 Taoka KF 01-039HN
Project:	SEC.1-T1N-R65W	TVD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Reference Site:	Taoka East Pad Sec.1-T1N-R65W	MD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Taoka KF 01-039HN	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 (11-18-13)	Offset TVD Reference:	Offset Datum

Offset Design Taoka East Pad Sec.1-T1N-R65W - Taoka KF 01-036HN - Wellbore #1 - Plan #1 (11-18-13)												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
7,300.0	6,962.4	7,286.6	6,962.4	16.8	16.7	-90.00	248.5	-311.8	619.6	587.2	32.36	19.148	
7,400.0	6,962.4	7,386.6	6,962.4	17.5	17.4	-90.00	348.5	-311.8	619.5	585.8	33.76	18.349	
7,500.0	6,962.4	7,486.6	6,962.4	18.3	18.3	-90.00	448.5	-311.8	619.5	583.9	35.53	17.436	
7,600.0	6,962.4	7,586.6	6,962.4	19.3	19.3	-90.00	548.5	-311.8	619.4	581.8	37.60	16.472	
7,700.0	6,962.4	7,686.6	6,962.4	20.5	20.5	-90.00	648.5	-311.8	619.3	579.4	39.94	15.507	
7,800.0	6,962.4	7,786.6	6,962.4	21.7	21.7	-90.00	748.5	-311.8	619.3	576.8	42.49	14.574	
7,900.0	6,962.4	7,886.6	6,962.4	23.0	23.1	-90.00	848.5	-311.8	619.2	574.0	45.23	13.691	
8,000.0	6,962.4	7,986.6	6,962.4	24.4	24.5	-90.00	948.5	-311.9	619.1	571.0	48.11	12.869	
8,100.0	6,962.4	8,086.6	6,962.4	25.9	26.0	-90.00	1,048.5	-311.9	619.1	567.9	51.12	12.110	
8,200.0	6,962.4	8,186.6	6,962.4	27.4	27.5	-90.00	1,148.5	-311.9	619.0	564.8	54.23	11.413	
8,300.0	6,962.4	8,286.6	6,962.4	29.0	29.1	-90.00	1,248.5	-311.9	618.9	561.5	57.43	10.776	
8,400.0	6,962.4	8,386.6	6,962.4	30.6	30.8	-90.00	1,348.5	-311.9	618.8	558.1	60.71	10.194	
8,500.0	6,962.4	8,486.6	6,962.4	32.3	32.4	-90.00	1,448.5	-311.9	618.8	554.7	64.04	9.662	
8,600.0	6,962.4	8,586.6	6,962.4	33.9	34.1	-90.00	1,548.5	-311.9	618.7	551.3	67.43	9.175	
8,700.0	6,962.4	8,686.6	6,962.4	35.6	35.8	-90.00	1,648.5	-311.9	618.6	547.8	70.87	8.729	
8,800.0	6,962.4	8,786.6	6,962.4	37.4	37.5	-90.00	1,748.5	-311.9	618.6	544.2	74.34	8.321	
8,900.0	6,962.4	8,886.6	6,962.4	39.1	39.3	-90.00	1,848.5	-312.0	618.5	540.7	77.85	7.945	
9,000.0	6,962.4	8,986.6	6,962.4	40.9	41.0	-90.00	1,948.5	-312.0	618.4	537.1	81.39	7.599	
9,100.0	6,962.4	9,086.6	6,962.4	42.6	42.8	-90.00	2,048.5	-312.0	618.4	533.4	84.95	7.279	
9,200.0	6,962.4	9,186.6	6,962.4	44.4	44.6	-90.00	2,148.5	-312.0	618.3	529.8	88.53	6.984	
9,300.0	6,962.4	9,286.6	6,962.4	46.2	46.4	-90.00	2,248.5	-312.0	618.2	526.1	92.14	6.710	
9,400.0	6,962.4	9,386.6	6,962.4	48.0	48.2	-90.00	2,348.5	-312.0	618.2	522.4	95.76	6.455	
9,500.0	6,962.4	9,486.6	6,962.4	49.8	50.0	-90.00	2,448.5	-312.0	618.1	518.7	99.40	6.218	
9,600.0	6,962.4	9,586.6	6,962.4	51.6	51.8	-90.00	2,548.5	-312.0	618.0	515.0	103.05	5.997	
9,700.0	6,962.4	9,686.6	6,962.4	53.5	53.7	-90.00	2,648.5	-312.1	618.0	511.2	106.72	5.791	
9,800.0	6,962.4	9,786.6	6,962.4	55.3	55.5	-90.00	2,748.5	-312.1	617.9	507.5	110.40	5.597	
9,900.0	6,962.4	9,886.6	6,962.4	57.1	57.3	-90.00	2,848.5	-312.1	617.8	503.7	114.08	5.416	
10,000.0	6,962.4	9,986.6	6,962.4	59.0	59.2	-90.00	2,948.5	-312.1	617.8	500.0	117.78	5.245	
10,100.0	6,962.4	10,086.6	6,962.4	60.8	61.0	-90.00	3,048.5	-312.1	617.7	496.2	121.48	5.085	
10,200.0	6,962.4	10,186.6	6,962.4	62.7	62.9	-90.00	3,148.5	-312.1	617.6	492.4	125.20	4.933	
10,300.0	6,962.4	10,286.6	6,962.4	64.5	64.7	-90.00	3,248.5	-312.1	617.6	488.6	128.92	4.790	
10,400.0	6,962.4	10,386.6	6,962.4	66.4	66.6	-90.00	3,348.5	-312.1	617.5	484.8	132.64	4.655	
10,500.0	6,962.4	10,486.6	6,962.4	68.2	68.5	-90.00	3,448.5	-312.2	617.4	481.0	136.37	4.527	
10,600.0	6,962.4	10,586.6	6,962.4	70.1	70.3	-90.00	3,548.5	-312.2	617.3	477.2	140.11	4.406	
10,700.0	6,962.4	10,686.6	6,962.4	72.0	72.2	-90.00	3,648.5	-312.2	617.3	473.4	143.86	4.291	
10,800.0	6,962.4	10,786.6	6,962.4	73.8	74.1	-90.00	3,748.5	-312.2	617.2	469.6	147.60	4.182	
10,900.0	6,962.4	10,886.6	6,962.4	75.7	75.9	-90.00	3,848.5	-312.2	617.1	465.8	151.35	4.077	
11,000.0	6,962.4	10,986.6	6,962.4	77.6	77.8	-90.00	3,948.5	-312.2	617.1	462.0	155.11	3.978	
11,100.0	6,962.4	11,086.6	6,962.4	79.5	79.7	-90.00	4,048.5	-312.2	617.0	458.1	158.87	3.884	
11,200.0	6,962.4	11,186.6	6,962.4	81.3	81.6	-90.00	4,148.5	-312.2	616.9	454.3	162.63	3.793	
11,300.0	6,962.4	11,286.6	6,962.4	83.2	83.4	-90.00	4,248.5	-312.3	616.9	450.5	166.40	3.707	
11,400.0	6,962.4	11,386.6	6,962.4	85.1	85.3	-90.00	4,348.5	-312.3	616.8	446.6	170.17	3.625	
11,500.0	6,962.4	11,486.6	6,962.4	87.0	87.2	-90.00	4,448.5	-312.3	616.7	442.8	173.94	3.546	
11,531.1	6,962.4	11,517.7	6,962.4	87.6	87.8	-90.00	4,479.6	-312.3	616.7	441.6	175.11	3.522	

Taoka East Pad Sec.1-T1N-R65W - Taoka KF 01-038HC - Wellbore #1 - Plan #1 (11-18-13)												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	
0.0	0.0	0.0	0.0	0.0	0.0	-90.11	-0.1	-29.7	29.7				
100.0	100.0	100.0	100.0	0.1	0.1	-90.11	-0.1	-29.7	29.7	29.4	0.22	131.983	
200.0	200.0	200.0	200.0	0.3	0.3	-90.11	-0.1	-29.7	29.7	29.0	0.67	43.994	
300.0	300.0	300.0	300.0	0.6	0.6	-90.11	-0.1	-29.7	29.7	28.5	1.12	26.397	
400.0	400.0	400.0	400.0	0.8	0.8	-90.11	-0.1	-29.7	29.7	28.1	1.57	18.855	
500.0	500.0	500.0	500.0	1.0	1.0	-90.11	-0.1	-29.7	29.7	27.6	2.02	14.665	
600.0	600.0	600.0	600.0	1.2	1.2	-90.11	-0.1	-29.7	29.7	27.2	2.47	11.998	
700.0	700.0	700.0	700.0	1.5	1.5	-90.11	-0.1	-29.7	29.7	26.7	2.92	10.153	
800.0	800.0	800.0	800.0	1.7	1.7	-90.11	-0.1	-29.7	29.7	26.3	3.37	8.799	
900.0	900.0	900.0	900.0	1.9	1.9	-90.11	-0.1	-29.7	29.7	25.8	3.82	7.764	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-90.11	-0.1	-29.7	29.7	25.4	4.27	6.946	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-90.11	-0.1	-29.7	29.7	24.9	4.72	6.285	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-90.11	-0.1	-29.7	29.7	24.5	5.17	5.738	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-90.11	-0.1	-29.7	29.7	24.0	5.62	5.279	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-90.11	-0.1	-29.7	29.7	23.6	6.07	4.888	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	-90.11	-0.1	-29.7	29.7	23.1	6.52	4.551	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-90.11	-0.1	-29.7	29.7	22.7	6.97	4.258	
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	-90.11	-0.1	-29.7	29.7	22.2	7.42	3.999	
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	-90.11	-0.1	-29.7	29.7	21.8	7.87	3.771	
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	-90.11	-0.1	-29.7	29.7	21.3	8.32	3.567	
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	-90.11	-0.1	-29.7	29.7	20.9	8.77	3.384	
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	-90.11	-0.1	-29.7	29.7	20.4	9.22	3.219	
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	-90.11	-0.1	-29.7	29.7	20.0	9.66	3.069	
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	-90.11	-0.1	-29.7	29.7	19.6	10.11	2.933	
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	-90.11	-0.1	-29.7	29.7	19.1	10.56	2.808	
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	-90.11	-0.1	-29.7	29.7	18.7	11.01	2.694	
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	-90.11	-0.1	-29.7	29.7	18.2	11.46	2.588	
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	-90.11	-0.1	-29.7	29.7	17.8	11.91	2.490	
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	-90.11	-0.1	-29.7	29.7	17.3	12.36	2.400	
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	-90.11	-0.1	-29.7	29.7	16.9	12.81	2.315	
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	-90.11	-0.1	-29.7	29.7	16.4	13.26	2.237	
3,100.0	3,100.0	3,100.0	3,100.0	6.9	6.9	-90.11	-0.1	-29.7	29.7	16.0	13.71	2.164	
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	-90.11	-0.1	-29.7	29.7	15.5	14.16	2.095	
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	-90.11	-0.1	-29.7	29.7	15.1	14.61	2.031	
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	-90.11	-0.1	-29.7	29.7	14.6	15.06	1.970	
3,500.0	3,500.0	3,500.0	3,500.0	7.8	7.8	-90.11	-0.1	-29.7	29.7	14.2	15.51	1.913	
3,600.0	3,600.0	3,600.0	3,600.0	8.0	8.0	-90.11	-0.1	-29.7	29.7	13.7	15.96	1.859	
3,700.0	3,700.0	3,700.0	3,700.0	8.2	8.2	-90.11	-0.1	-29.7	29.7	13.3	16.41	1.808	
3,800.0	3,800.0	3,800.0	3,800.0	8.4	8.4	-90.11	-0.1	-29.7	29.7	12.8	16.86	1.760	
3,900.0	3,900.0	3,900.0	3,900.0	8.7	8.7	-90.11	-0.1	-29.7	29.7	12.4	17.31	1.714	
4,000.0	4,000.0	4,000.0	4,000.0	8.9	8.9	-90.11	-0.1	-29.7	29.7	11.9	17.76	1.671	
4,100.0	4,100.0	4,100.0	4,100.0	9.1	9.1	-90.11	-0.1	-29.7	29.7	11.5	18.21	1.629	
4,200.0	4,200.0	4,200.0	4,200.0	9.3	9.3	-90.11	-0.1	-29.7	29.7	11.0	18.66	1.590	
4,300.0	4,300.0	4,300.0	4,300.0	9.6	9.6	-90.11	-0.1	-29.7	29.7	10.6	19.11	1.553	
4,400.0	4,400.0	4,400.0	4,400.0	9.8	9.8	-90.11	-0.1	-29.7	29.7	10.1	19.55	1.517	
4,500.0	4,500.0	4,500.0	4,500.0	10.0	10.0	-90.11	-0.1	-29.7	29.7	9.7	20.00	1.483 Level 3	
4,600.0	4,600.0	4,600.0	4,600.0	10.2	10.2	-90.11	-0.1	-29.7	29.7	9.2	20.45	1.450 Level 3	
4,700.0	4,700.0	4,700.0	4,700.0	10.5	10.5	-90.11	-0.1	-29.7	29.7	8.8	20.90	1.419 Level 3	
4,800.0	4,800.0	4,800.0	4,800.0	10.7	10.7	-90.11	-0.1	-29.7	29.7	8.3	21.35	1.389 Level 3	
4,900.0	4,900.0	4,900.0	4,900.0	10.9	10.9	-90.11	-0.1	-29.7	29.7	7.9	21.80	1.361 Level 3	
5,000.0	5,000.0	5,000.0	5,000.0	11.1	11.1	-90.11	-0.1	-29.7	29.7	7.4	22.25	1.333 Level 3	
5,100.0	5,100.0	5,100.0	5,100.0	11.4	11.4	-90.11	-0.1	-29.7	29.7	7.0	22.70	1.307 Level 3	

Company:	Great Western	Local Co-ordinate Reference:	Well Taoka KF 01-039HN
Project:	SEC.1-T1N-R65W	TVD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Reference Site:	Taoka East Pad Sec.1-T1N-R65W	MD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Taoka KF 01-039HN	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 (11-18-13)	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		
5,200.0	5,200.0	5,200.0	5,200.0	11.6	11.6	-90.11	-0.1	-29.7	29.7	6.5	23.15	1.281 Level 3		
5,300.0	5,300.0	5,300.0	5,300.0	11.8	11.8	-90.11	-0.1	-29.7	29.7	6.1	23.60	1.257 Level 3		
5,400.0	5,400.0	5,400.0	5,400.0	12.0	12.0	-90.11	-0.1	-29.7	29.7	5.6	24.05	1.233 Level 2		
5,500.0	5,500.0	5,500.0	5,500.0	12.2	12.2	-90.11	-0.1	-29.7	29.7	5.2	24.50	1.211 Level 2		
5,600.0	5,600.0	5,600.0	5,600.0	12.5	12.5	-90.11	-0.1	-29.7	29.7	4.7	24.95	1.189 Level 2, CC		
5,613.9	5,613.9	5,613.9	5,613.9	12.5	12.5	124.19	-0.1	-29.7	29.7	4.7	25.01	1.187 Level 2, ES, SF		
5,700.0	5,700.0	5,700.0	5,700.0	12.7	12.7	126.06	-0.1	-29.7	30.4	5.0	25.38	1.198 Level 2		
5,800.0	5,799.7	5,799.7	5,799.7	12.9	12.9	135.98	-0.1	-29.7	35.5	9.7	25.71	1.379 Level 3		
5,900.0	5,898.6	5,898.6	5,898.6	13.0	13.1	148.14	-0.1	-29.7	47.1	21.2	25.92	1.817		
6,000.0	5,996.2	5,996.2	5,996.2	13.2	13.4	157.64	-0.1	-29.7	66.4	40.4	25.99	2.553		
6,100.0	6,092.1	6,092.1	6,092.1	13.4	13.6	163.94	-0.1	-29.7	93.2	67.2	25.95	3.590		
6,200.0	6,185.8	6,198.2	6,197.9	13.7	13.8	166.26	-6.8	-29.3	122.8	97.0	25.81	4.759		
6,300.0	6,276.9	6,309.8	6,306.8	14.0	14.0	163.80	-30.5	-27.9	148.6	123.0	25.64	5.795		
6,400.0	6,364.8	6,423.6	6,412.7	14.4	14.2	158.37	-71.8	-25.6	170.8	145.2	25.60	6.673		
6,500.0	6,454.5	6,527.1	6,502.9	14.8	14.4	169.48	-122.3	-22.8	185.1	157.9	27.15	6.818		
6,600.0	6,548.8	6,609.9	6,575.1	15.2	14.7	-165.29	-162.8	-20.4	198.3	170.1	28.24	7.022		
6,700.0	6,642.8	6,690.5	6,650.7	15.5	14.9	-139.84	-190.3	-17.9	220.6	191.8	28.86	7.646		
6,800.0	6,731.7	6,778.3	6,737.2	15.7	15.2	-128.39	-204.1	-15.0	251.3	222.2	29.04	8.654		
6,900.0	6,811.1	6,877.4	6,835.9	15.8	15.4	-124.73	-198.8	-11.8	287.3	258.5	28.81	9.971		
7,000.0	6,876.7	6,994.4	6,947.3	15.9	15.5	-124.40	-164.5	-8.1	324.8	296.6	28.26	11.495		
7,100.0	6,925.2	7,138.4	7,066.0	16.1	15.6	-125.68	-84.1	-4.3	359.0	331.5	27.57	13.021		
7,200.0	6,954.2	7,317.1	7,167.5	16.3	15.8	-127.38	61.5	-1.1	383.4	356.1	27.28	14.054		
7,300.0	6,962.4	7,508.9	7,203.4	16.8	16.6	-128.06	248.3	0.0	391.0	362.8	28.20	13.866		
7,400.0	6,962.4	7,608.9	7,203.4	17.5	17.3	-128.06	348.3	-0.1	391.0	361.6	29.38	13.308		
7,500.0	6,962.4	7,708.9	7,203.4	18.3	18.2	-128.06	448.3	-0.2	391.0	360.1	30.84	12.677		
7,600.0	6,962.4	7,808.9	7,203.4	19.3	19.2	-128.06	548.3	-0.2	391.0	358.4	32.54	12.014		
7,700.0	6,962.4	7,908.9	7,203.4	20.5	20.3	-128.06	648.3	-0.3	391.0	356.5	34.45	11.349		
7,800.0	6,962.4	8,008.9	7,203.4	21.7	21.6	-128.06	748.3	-0.4	391.0	354.4	36.53	10.702		
7,900.0	6,962.4	8,108.9	7,203.4	23.0	22.9	-128.06	848.3	-0.5	391.0	352.2	38.76	10.088		
8,000.0	6,962.4	8,208.9	7,203.4	24.4	24.3	-128.06	948.3	-0.6	391.0	349.9	41.10	9.512		
8,100.0	6,962.4	8,308.9	7,203.4	25.9	25.8	-128.06	1,048.3	-0.6	391.0	347.4	43.55	8.977		
8,200.0	6,962.4	8,408.9	7,203.4	27.4	27.4	-128.06	1,148.3	-0.7	391.0	344.9	46.08	8.483		
8,300.0	6,962.4	8,508.9	7,203.4	29.0	28.9	-128.06	1,248.3	-0.8	391.0	342.3	48.69	8.029		
8,400.0	6,962.4	8,608.9	7,203.4	30.6	30.6	-128.06	1,348.3	-0.9	390.9	339.6	51.36	7.612		
8,500.0	6,962.4	8,708.9	7,203.4	32.3	32.2	-128.06	1,448.3	-1.0	390.9	336.9	54.08	7.229		
8,600.0	6,962.4	8,808.9	7,203.4	33.9	33.9	-128.06	1,548.3	-1.0	390.9	334.1	56.84	6.878		
8,700.0	6,962.4	8,908.9	7,203.4	35.6	35.6	-128.06	1,648.3	-1.1	390.9	331.3	59.65	6.554		
8,800.0	6,962.4	9,008.9	7,203.4	37.4	37.3	-128.06	1,748.3	-1.2	390.9	328.5	62.48	6.257		
8,900.0	6,962.4	9,108.9	7,203.4	39.1	39.1	-128.06	1,848.3	-1.3	390.9	325.6	65.35	5.982		
9,000.0	6,962.4	9,208.9	7,203.4	40.9	40.8	-128.06	1,948.3	-1.4	390.9	322.7	68.24	5.729		
9,100.0	6,962.4	9,308.9	7,203.4	42.6	42.6	-128.06	2,048.3	-1.4	390.9	319.8	71.15	5.494		
9,200.0	6,962.4	9,408.9	7,203.4	44.4	44.4	-128.06	2,148.3	-1.5	390.9	316.9	74.08	5.277		
9,300.0	6,962.4	9,508.9	7,203.4	46.2	46.2	-128.06	2,248.3	-1.6	390.9	313.9	77.03	5.075		
9,400.0	6,962.4	9,608.9	7,203.4	48.0	48.0	-128.06	2,348.3	-1.7	390.9	310.9	80.00	4.887		
9,500.0	6,962.4	9,708.9	7,203.4	49.8	49.8	-128.06	2,448.3	-1.8	390.9	308.0	82.98	4.711		
9,600.0	6,962.4	9,808.9	7,203.4	51.6	51.6	-128.06	2,548.3	-1.8	390.9	305.0	85.97	4.547		
9,700.0	6,962.4	9,908.9	7,203.4	53.5	53.5	-128.06	2,648.3	-1.9	390.9	302.0	88.97	4.394		
9,800.0	6,962.4	10,008.9	7,203.4	55.3	55.3	-128.06	2,748.3	-2.0	390.9	299.0	91.99	4.250		
9,900.0	6,962.4	10,108.9	7,203.4	57.1	57.1	-128.06	2,848.3	-2.1	390.9	295.9	95.01	4.115		
10,000.0	6,962.4	10,208.9	7,203.4	59.0	59.0	-128.06	2,948.3	-2.1	390.9	292.9	98.04	3.988		
10,100.0	6,962.4	10,308.9	7,203.4	60.8	60.8	-128.06	3,048.3	-2.2	390.9	289.9	101.07	3.868		
10,200.0	6,962.4	10,408.9	7,203.4	62.7	62.7	-128.06	3,148.3	-2.3	390.9	286.8	104.12	3.755		

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 Taoka KF 01-039HN
Project:	SEC.1-T1N-R65W	TVD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Reference Site:	Taoka East Pad Sec.1-T1N-R65W	MD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Taoka KF 01-039HN	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 (11-18-13)	Offset TVD Reference:	Offset Datum

Offset Design Taoka East Pad Sec.1-T1N-R65W - Taoka KF 01-038HC - Wellbore #1 - Plan #1 (11-18-13)												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	6,962.4	10,508.9	7,203.4	64.5	64.5	-128.06	3,248.3	-2.4	390.9	283.8	107.17	3.648	
10,400.0	6,962.4	10,608.9	7,203.4	66.4	66.4	-128.06	3,348.3	-2.5	390.9	280.7	110.23	3.547	
10,500.0	6,962.4	10,708.9	7,203.4	68.2	68.3	-128.06	3,448.3	-2.5	390.9	277.6	113.29	3.451	
10,600.0	6,962.4	10,808.9	7,203.4	70.1	70.1	-128.06	3,548.3	-2.6	390.9	274.6	116.35	3.360	
10,700.0	6,962.4	10,908.9	7,203.4	72.0	72.0	-128.06	3,648.3	-2.7	390.9	271.5	119.42	3.273	
10,800.0	6,962.4	11,008.9	7,203.4	73.8	73.9	-128.06	3,748.3	-2.8	390.9	268.4	122.50	3.191	
10,900.0	6,962.4	11,108.9	7,203.4	75.7	75.7	-128.06	3,848.3	-2.9	390.9	265.3	125.58	3.113	
11,000.0	6,962.4	11,208.9	7,203.4	77.6	77.6	-128.06	3,948.3	-2.9	390.9	262.3	128.66	3.038	
11,100.0	6,962.4	11,308.9	7,203.4	79.5	79.5	-128.06	4,048.3	-3.0	390.9	259.2	131.75	2.967	
11,200.0	6,962.4	11,408.9	7,203.4	81.3	81.4	-128.06	4,148.3	-3.1	390.9	256.1	134.83	2.899	
11,300.0	6,962.4	11,508.9	7,203.4	83.2	83.3	-128.06	4,248.3	-3.2	390.9	253.0	137.93	2.834	
11,400.0	6,962.4	11,608.9	7,203.4	85.1	85.1	-128.06	4,348.3	-3.3	390.9	249.9	141.02	2.772	
11,500.0	6,962.4	11,708.9	7,203.4	87.0	87.0	-128.06	4,448.3	-3.3	390.9	246.8	144.12	2.713	
11,531.1	6,962.4	11,740.0	7,203.4	87.6	87.6	-128.06	4,479.5	-3.4	390.9	245.8	145.08	2.694	

Company:	Great Western	Local Co-ordinate Reference:	Well Taoka KF 01-039HN
Project:	SEC.1-T1N-R65W	TVD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Reference Site:	Taoka East Pad Sec.1-T1N-R65W	MD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Taoka KF 01-039HN	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 (11-18-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	90.02	0.0	30.2	30.2					
100.0	100.0	100.0	100.0	0.1	0.1	90.02	0.0	30.2	30.2	30.0	0.22	134.473		
200.0	200.0	200.0	200.0	0.3	0.3	90.02	0.0	30.2	30.2	29.6	0.67	44.824		
300.0	300.0	300.0	300.0	0.6	0.6	90.02	0.0	30.2	30.2	29.1	1.12	26.895		
400.0	400.0	400.0	400.0	0.8	0.8	90.02	0.0	30.2	30.2	28.7	1.57	19.210		
500.0	500.0	500.0	500.0	1.0	1.0	90.02	0.0	30.2	30.2	28.2	2.02	14.941		
600.0	600.0	600.0	600.0	1.2	1.2	90.02	0.0	30.2	30.2	27.8	2.47	12.225		
700.0	700.0	700.0	700.0	1.5	1.5	90.02	0.0	30.2	30.2	27.3	2.92	10.344		
800.0	800.0	800.0	800.0	1.7	1.7	90.02	0.0	30.2	30.2	26.9	3.37	8.965		
900.0	900.0	900.0	900.0	1.9	1.9	90.02	0.0	30.2	30.2	26.4	3.82	7.910		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.02	0.0	30.2	30.2	26.0	4.27	7.078		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	90.02	0.0	30.2	30.2	25.5	4.72	6.403		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	90.02	0.0	30.2	30.2	25.1	5.17	5.847		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	90.02	0.0	30.2	30.2	24.6	5.62	5.379		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	90.02	0.0	30.2	30.2	24.2	6.07	4.980		
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	90.02	0.0	30.2	30.2	23.7	6.52	4.637		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	90.02	0.0	30.2	30.2	23.3	6.97	4.338		
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	90.02	0.0	30.2	30.2	22.8	7.42	4.075		
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	90.02	0.0	30.2	30.2	22.4	7.87	3.842		
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	90.02	0.0	30.2	30.2	21.9	8.32	3.634		
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	90.02	0.0	30.2	30.2	21.5	8.77	3.448		
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	90.02	0.0	30.2	30.2	21.0	9.22	3.280		
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	90.02	0.0	30.2	30.2	20.6	9.66	3.127		
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	90.02	0.0	30.2	30.2	20.1	10.11	2.988		
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	90.02	0.0	30.2	30.2	19.7	10.56	2.861		
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	90.02	0.0	30.2	30.2	19.2	11.01	2.744		
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	90.02	0.0	30.2	30.2	18.8	11.46	2.637		
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	90.02	0.0	30.2	30.2	18.3	11.91	2.537		
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	90.02	0.0	30.2	30.2	17.9	12.36	2.445		
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	90.02	0.0	30.2	30.2	17.4	12.81	2.359		
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	90.02	0.0	30.2	30.2	17.0	13.26	2.279		
3,100.0	3,100.0	3,100.0	3,100.0	6.9	6.9	90.02	0.0	30.2	30.2	16.5	13.71	2.204		
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	90.02	0.0	30.2	30.2	16.1	14.16	2.134		
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	90.02	0.0	30.2	30.2	15.6	14.61	2.069		
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	90.02	0.0	30.2	30.2	15.2	15.06	2.007		
3,500.0	3,500.0	3,500.0	3,500.0	7.8	7.8	90.02	0.0	30.2	30.2	14.7	15.51	1.949		
3,600.0	3,600.0	3,600.0	3,600.0	8.0	8.0	90.02	0.0	30.2	30.2	14.3	15.96	1.894		
3,700.0	3,700.0	3,700.0	3,700.0	8.2	8.2	90.02	0.0	30.2	30.2	13.8	16.41	1.842		
3,800.0	3,800.0	3,800.0	3,800.0	8.4	8.4	90.02	0.0	30.2	30.2	13.4	16.86	1.793		
3,900.0	3,900.0	3,900.0	3,900.0	8.7	8.7	90.02	0.0	30.2	30.2	12.9	17.31	1.746		
4,000.0	4,000.0	4,000.0	4,000.0	8.9	8.9	90.02	0.0	30.2	30.2	12.5	17.76	1.702		
4,100.0	4,100.0	4,100.0	4,100.0	9.1	9.1	90.02	0.0	30.2	30.2	12.0	18.21	1.660		
4,200.0	4,200.0	4,200.0	4,200.0	9.3	9.3	90.02	0.0	30.2	30.2	11.6	18.66	1.620		
4,300.0	4,300.0	4,300.0	4,300.0	9.6	9.6	90.02	0.0	30.2	30.2	11.1	19.11	1.582		
4,400.0	4,400.0	4,400.0	4,400.0	9.8	9.8	90.02	0.0	30.2	30.2	10.7	19.55	1.546		
4,500.0	4,500.0	4,500.0	4,500.0	10.0	10.0	90.02	0.0	30.2	30.2	10.2	20.00	1.511		
4,600.0	4,600.0	4,600.0	4,600.0	10.2	10.2	90.02	0.0	30.2	30.2	9.8	20.45	1.478 Level 3		
4,700.0	4,700.0	4,700.0	4,700.0	10.5	10.5	90.02	0.0	30.2	30.2	9.3	20.90	1.446 Level 3		
4,800.0	4,800.0	4,800.0	4,800.0	10.7	10.7	90.02	0.0	30.2	30.2	8.9	21.35	1.416 Level 3		
4,900.0	4,900.0	4,900.0	4,900.0	10.9	10.9	90.02	0.0	30.2	30.2	8.4	21.80	1.386 Level 3		
5,000.0	5,000.0	5,000.0	5,000.0	11.1	11.1	90.02	0.0	30.2	30.2	8.0	22.25	1.358 Level 3		
5,044.5	5,044.5	5,044.5	5,044.5	11.2	11.2	90.02	0.0	30.2	30.2	7.8	22.45	1.346 Level 3, CC, ES, SF		

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 Taoka KF 01-039HN
Project:	SEC.1-T1N-R65W	TVD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Reference Site:	Taoka East Pad Sec.1-T1N-R65W	MD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Taoka KF 01-039HN	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 (11-18-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0ft
Survey Program: 0-MWD													Offset Well Error:	0.0ft
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		
5,100.0	5,100.0	5,099.4	5,099.4	11.4	11.3	90.30	-0.2	30.6	30.6	7.9	22.69	1.349	Level 3	
5,200.0	5,200.0	5,197.7	5,197.6	11.6	11.5	93.02	-1.8	34.8	35.0	11.9	23.10	1.514		
5,300.0	5,300.0	5,295.3	5,294.7	11.8	11.7	96.96	-5.3	43.7	44.3	20.8	23.51	1.886		
5,400.0	5,400.0	5,391.7	5,390.0	12.0	11.9	100.52	-10.6	56.9	58.8	34.8	23.92	2.457		
5,500.0	5,500.0	5,486.4	5,482.9	12.2	12.1	103.21	-17.4	74.3	78.2	53.9	24.33	3.215		
5,600.0	5,600.0	5,579.0	5,572.6	12.5	12.3	105.12	-25.8	95.4	102.5	77.8	24.75	4.143		
5,700.0	5,700.0	5,669.5	5,659.2	12.7	12.6	-39.18	-35.5	119.9	130.6	105.5	25.09	5.205		
5,800.0	5,799.7	5,758.8	5,743.3	12.9	12.9	-39.08	-46.5	147.8	158.4	133.0	25.37	6.244		
5,900.0	5,898.6	5,847.0	5,824.9	13.0	13.2	-39.98	-58.8	178.9	185.5	159.9	25.60	7.247		
6,000.0	5,996.2	5,934.1	5,903.9	13.2	13.6	-41.46	-72.3	213.0	212.1	186.3	25.80	8.222		
6,100.0	6,092.1	6,020.0	5,980.1	13.4	14.0	-43.29	-86.9	249.9	238.4	212.4	25.99	9.171		
6,200.0	6,185.8	6,110.7	6,058.9	13.7	14.5	-45.60	-103.4	291.8	263.9	237.7	26.24	10.057		
6,300.0	6,276.9	6,206.7	6,141.9	14.0	15.1	-48.57	-121.1	336.4	286.2	259.5	26.63	10.747		
6,400.0	6,364.8	6,302.5	6,224.9	14.4	15.8	-52.07	-138.7	380.9	305.2	278.0	27.21	11.217		
6,500.0	6,454.5	6,399.9	6,309.2	14.8	16.5	-37.76	-156.6	426.2	322.9	294.7	28.16	11.466		
6,600.0	6,548.8	6,497.8	6,394.1	15.2	17.3	-3.26	-174.6	471.8	339.1	310.4	28.71	11.811		
6,700.0	6,642.8	6,591.4	6,475.1	15.5	18.0	33.12	-191.8	515.3	354.8	325.8	28.99	12.238		
6,800.0	6,731.7	6,682.1	6,554.2	15.7	18.7	55.51	-204.6	557.7	373.9	344.6	29.28	12.770		
6,900.0	6,811.1	6,784.5	6,644.0	15.8	19.4	68.79	-197.9	605.9	397.2	367.5	29.68	13.382		
7,000.0	6,876.7	6,904.6	6,744.2	15.9	20.1	77.74	-160.5	659.7	422.6	392.4	30.17	14.007		
7,100.0	6,925.2	7,049.8	6,848.0	16.1	20.7	84.30	-76.7	715.4	446.3	415.6	30.73	14.525		
7,200.0	6,954.2	7,225.5	6,933.4	16.3	21.2	88.66	68.5	761.1	463.4	431.9	31.52	14.705		
7,300.0	6,962.4	7,410.1	6,962.4	16.8	21.6	90.00	248.9	776.6	468.8	436.0	32.81	14.287		
7,400.0	6,962.4	7,510.1	6,962.4	17.5	21.8	90.00	348.9	776.5	468.8	434.6	34.15	13.728		
7,500.0	6,962.4	7,610.1	6,962.4	18.3	22.3	90.00	448.9	776.5	468.8	433.0	35.85	13.077		
7,600.0	6,962.4	7,710.1	6,962.4	19.3	22.9	90.00	548.9	776.4	468.8	431.0	37.86	12.383		
7,700.0	6,962.4	7,810.1	6,962.4	20.5	23.7	90.00	648.9	776.4	468.8	428.7	40.14	11.680		
7,800.0	6,962.4	7,910.1	6,962.4	21.7	24.6	90.00	748.9	776.3	468.9	426.2	42.64	10.996		
7,900.0	6,962.4	8,010.1	6,962.4	23.0	25.6	90.00	848.9	776.2	468.9	423.5	45.33	10.344		
8,000.0	6,962.4	8,110.1	6,962.4	24.4	26.8	90.00	948.9	776.2	468.9	420.7	48.17	9.734		
8,100.0	6,962.4	8,210.1	6,962.4	25.9	28.1	90.00	1,048.9	776.1	468.9	417.8	51.15	9.168		
8,200.0	6,962.4	8,310.1	6,962.4	27.4	29.5	90.00	1,148.9	776.0	468.9	414.7	54.23	8.647		
8,300.0	6,962.4	8,410.1	6,962.4	29.0	30.9	90.00	1,248.9	776.0	468.9	411.5	57.40	8.170		
8,400.0	6,962.4	8,510.1	6,962.4	30.6	32.4	90.00	1,348.9	775.9	469.0	408.3	60.65	7.733		
8,500.0	6,962.4	8,610.1	6,962.4	32.3	33.9	90.00	1,448.9	775.9	469.0	405.0	63.96	7.332		
8,600.0	6,962.4	8,710.1	6,962.4	33.9	35.5	90.00	1,548.9	775.8	469.0	401.7	67.33	6.966		
8,700.0	6,962.4	8,810.1	6,962.4	35.6	37.1	90.00	1,648.9	775.7	469.0	398.3	70.74	6.630		
8,800.0	6,962.4	8,910.1	6,962.4	37.4	38.7	90.00	1,748.9	775.7	469.0	394.8	74.20	6.321		
8,900.0	6,962.4	9,010.1	6,962.4	39.1	40.4	90.00	1,848.9	775.6	469.1	391.4	77.69	6.037		
9,000.0	6,962.4	9,110.1	6,962.4	40.9	42.1	90.00	1,948.9	775.5	469.1	387.9	81.22	5.776		
9,100.0	6,962.4	9,210.1	6,962.4	42.6	43.8	90.00	2,048.9	775.5	469.1	384.3	84.77	5.534		
9,200.0	6,962.4	9,310.1	6,962.4	44.4	45.5	90.00	2,148.9	775.4	469.1	380.8	88.34	5.310		
9,300.0	6,962.4	9,410.1	6,962.4	46.2	47.3	90.00	2,248.9	775.4	469.1	377.2	91.93	5.103		
9,400.0	6,962.4	9,510.1	6,962.4	48.0	49.0	90.00	2,348.9	775.3	469.1	373.6	95.55	4.910		
9,500.0	6,962.4	9,610.1	6,962.4	49.8	50.8	90.00	2,448.9	775.2	469.2	370.0	99.18	4.731		
9,600.0	6,962.4	9,710.1	6,962.4	51.6	52.6	90.00	2,548.9	775.2	469.2	366.4	102.82	4.563		
9,700.0	6,962.4	9,810.1	6,962.4	53.5	54.4	90.00	2,648.9	775.1	469.2	362.7	106.48	4.406		
9,800.0	6,962.4	9,910.1	6,962.4	55.3	56.1	90.00	2,748.9	775.0	469.2	359.1	110.15	4.260		
9,900.0	6,962.4	10,010.1	6,962.4	57.1	58.0	90.00	2,848.9	775.0	469.2	355.4	113.83	4.122		
10,000.0	6,962.4	10,110.1	6,962.4	59.0	59.8	90.00	2,948.9	774.9	469.3	351.7	117.52	3.993		
10,100.0	6,962.4	10,210.1	6,962.4	60.8	61.6	90.00	3,048.9	774.9	469.3	348.1	121.22	3.871		
10,200.0	6,962.4	10,310.1	6,962.4	62.7	63.4	90.00	3,148.9	774.8	469.3	344.4	124.93	3.757		

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

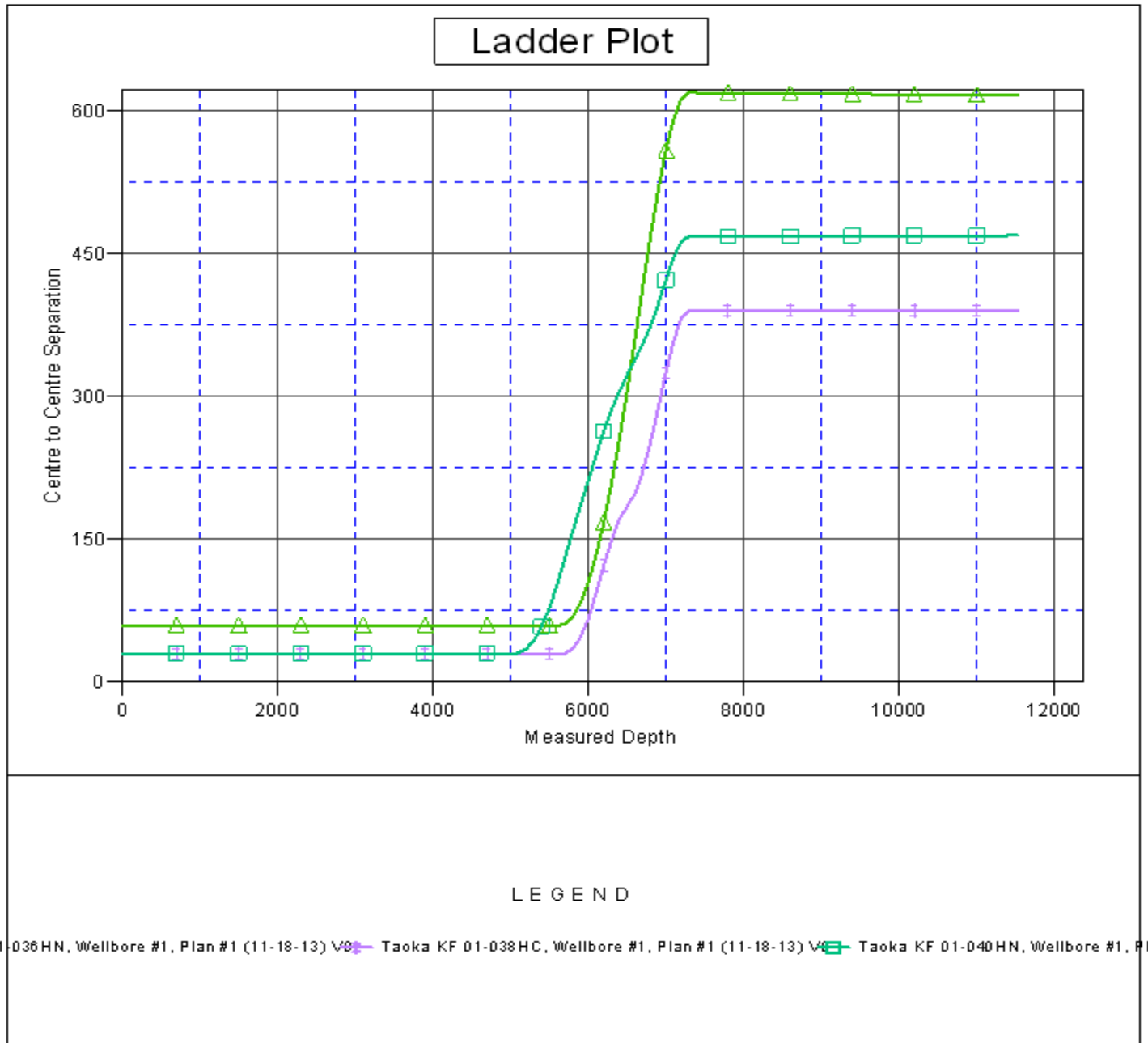
Company:	Great Western	Local Co-ordinate Reference:	Well Taoka KF 01-039HN
Project:	SEC.1-T1N-R65W	TVD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Reference Site:	Taoka East Pad Sec.1-T1N-R65W	MD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Taoka KF 01-039HN	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 (11-18-13)	Offset TVD Reference:	Offset Datum

Offset Design Taoka East Pad Sec.1-T1N-R65W - Taoka KF 01-040HN - Wellbore #1 - Plan #1 (11-18-13)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,300.0	6,962.4	10,410.1	6,962.4	64.5	65.2	90.00	3,248.9	774.7	469.3	340.7	128.64	3.648	
10,400.0	6,962.4	10,510.1	6,962.4	66.4	67.1	90.00	3,348.9	774.7	469.3	337.0	132.36	3.546	
10,500.0	6,962.4	10,610.1	6,962.4	68.2	68.9	90.00	3,448.9	774.6	469.3	333.3	136.09	3.449	
10,600.0	6,962.4	10,710.1	6,962.4	70.1	70.7	90.00	3,548.9	774.5	469.4	329.5	139.82	3.357	
10,700.0	6,962.4	10,810.1	6,962.4	72.0	72.6	90.00	3,648.9	774.5	469.4	325.8	143.56	3.270	
10,800.0	6,962.4	10,910.1	6,962.4	73.8	74.4	90.00	3,748.9	774.4	469.4	322.1	147.30	3.187	
10,900.0	6,962.4	11,010.1	6,962.4	75.7	76.3	90.00	3,848.9	774.4	469.4	318.4	151.05	3.108	
11,000.0	6,962.4	11,110.1	6,962.4	77.6	78.1	90.00	3,948.9	774.3	469.4	314.6	154.81	3.032	
11,100.0	6,962.4	11,210.1	6,962.4	79.5	80.0	90.00	4,048.9	774.2	469.4	310.9	158.56	2.961	
11,200.0	6,962.4	11,310.1	6,962.4	81.3	81.9	90.00	4,148.9	774.2	469.5	307.1	162.32	2.892	
11,300.0	6,962.4	11,410.1	6,962.4	83.2	83.7	90.00	4,248.9	774.1	469.5	303.4	166.08	2.827	
11,400.0	6,962.4	11,510.1	6,962.4	85.1	85.6	90.00	4,348.9	774.0	469.5	299.7	169.85	2.764	
11,500.0	6,962.4	11,610.1	6,962.4	87.0	87.5	90.00	4,448.9	774.0	469.5	295.9	173.62	2.704	
11,513.2	6,962.4	11,623.3	6,962.4	87.2	87.7	90.00	4,462.0	774.0	469.5	295.4	174.12	2.697	
11,531.1	6,962.4	11,637.0	6,962.4	87.6	88.0	90.00	4,475.7	774.0	469.5	294.8	174.71	2.688	

Company:	Great Western	Local Co-ordinate Reference:	Well Taoka KF 01-039HN
Project:	SEC.1-T1N-R65W	TVD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Reference Site:	Taoka East Pad Sec.1-T1N-R65W	MD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Taoka KF 01-039HN	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 (11-18-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4972.4ft (RKB - 16.5')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Taoka KF 01-039HN
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.58°



Company:	Great Western	Local Co-ordinate Reference:	Well Taoka KF 01-039HN
Project:	SEC.1-T1N-R65W	TVD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Reference Site:	Taoka East Pad Sec.1-T1N-R65W	MD Reference:	WELL @ 4972.4ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Taoka KF 01-039HN	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 (11-18-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4972.4ft (RKB - 16.5')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Taoka KF 01-039HN
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.58°

