

Great Western

Well Name: **Schmunk EF 31-362HN**

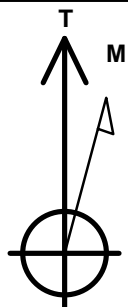
Surface Location: Schmunk Pad Sec.31-T7N-R65W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4850.3

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1439633.16	3221384.60	40.537464	-104.703486	
RKB - 16.5' WELL @ 4866.8ft (RKB - 16.5')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 527'FNL & 1884'FEL	1.0	0.0	0.0	Point
BHL 470'FSL & 470'FEL	7106.8	-4330.2	1379.2	Point
Entry Pt. 460'FNL & 470'FEL	7106.8	25.2	1413.7	Point



Azimuths to True North
Magnetic North: 8.52°

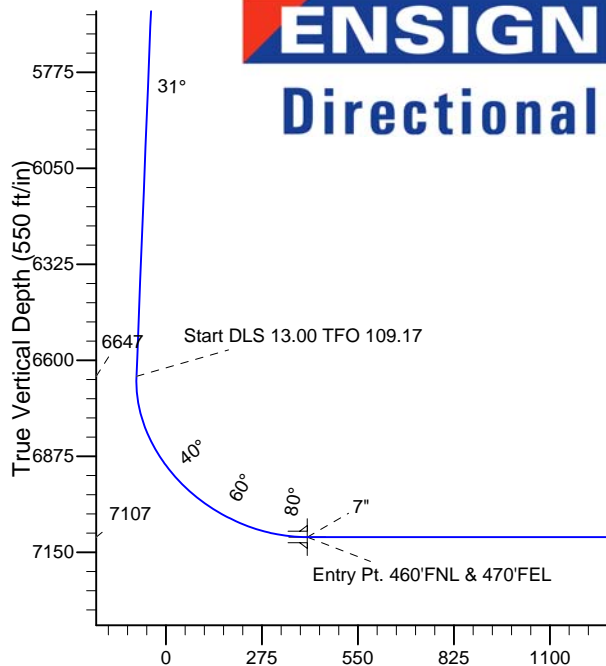
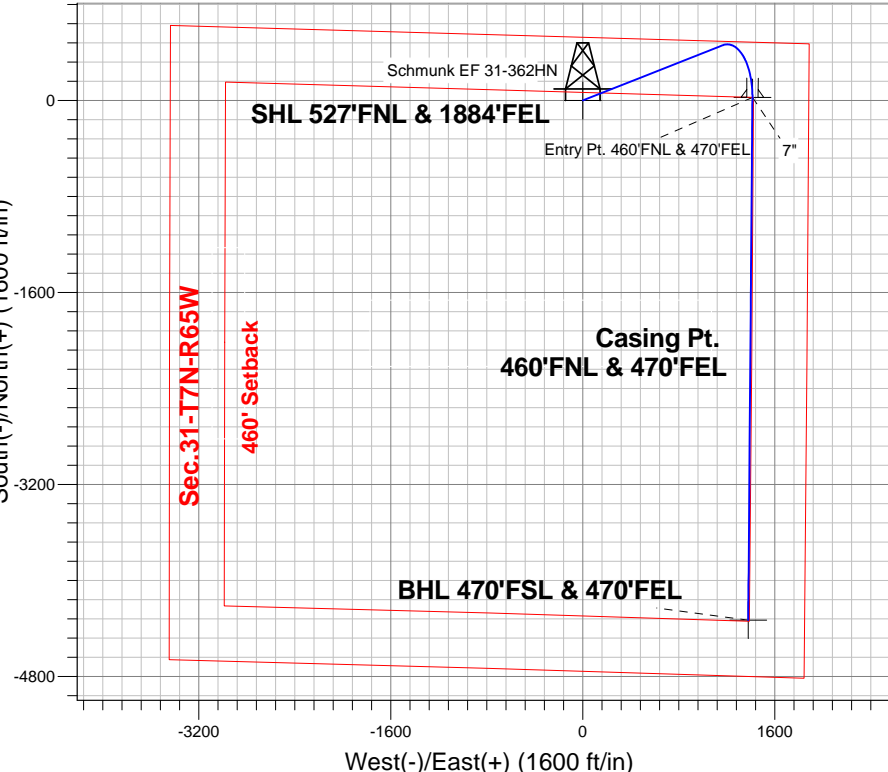
Magnetic Field
Strength: 52955.0snT
Dip Angle: 67.09°
Date: 11/13/2013
Model: IGRF2010

Schmunk Pad Sec.31-T7N-R65W
Schmunk EF 31-362HN
Plan #1 (11-13-13)
15:20, November 14 2013

ANNOTATIONS

TVD	MD	Annotation
4000.0	4000.0	KOP - Start Build 3.00
6646.6	6963.6	Start DLS 13.00 TFO 109.17
7106.8	12095.8	TD at 12095.8

South(-)/North(+) (1600 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	4000.0	0.00	0.00	4000.0	0.0	0.0	0.00	0.00	0.0	
3	5017.2	30.52	68.47	4969.8	97.1	246.1	3.00	68.47	-17.8	
4	6963.6	30.52	68.47	6646.6	459.8	1165.5	0.00	0.00	-84.5	
5	7740.2	90.00	180.44	7106.8	25.2	1413.7	13.00	109.17	405.0	Entry Pt. 460'FNL & 470'FEL
6	7741.6	90.00	180.45	7106.8	23.8	1413.7	1.00	90.00	406.3	
7	12095.8	90.00	180.45	7106.8	-4330.2	1379.2	0.00	0.00	4544.6	BHL 470'FSL & 470'FEL

Vertical Section at 162.33° (550 ft/in)



Great Western

SEC.31-T7N-R65W

Schmunk Pad Sec.31-T7N-R65W

Schmunk EF 31-362HN

Wellbore #1

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

Standard Planning Report

14 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	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,017.2	30.52	68.47	4,969.8	97.1	246.1	3.00	3.00	0.00	68.47	
6,963.6	30.52	68.47	6,646.6	459.8	1,165.5	0.00	0.00	0.00	0.00	
7,740.2	90.00	180.44	7,106.8	25.2	1,413.7	13.00	7.66	14.42	109.17	Entry Pt. 460°FNL & 470°FSL
7,741.6	90.00	180.45	7,106.8	23.8	1,413.7	1.00	0.00	1.00	90.00	
12,095.8	90.00	180.45	7,106.8	-4,330.2	1,379.2	0.00	0.00	0.00	0.00	BHL 470°FSL & 470°FNL

Database:	Landmark	Local Co-ordinate Reference:	Well Schmunk EF 31-362HN
Company:	Great Western	TVD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Project:	SEC.31-T7N-R65W	MD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Site:	Schmunk Pad Sec.31-T7N-R65W	North Reference:	True
Well:	Schmunk EF 31-362HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-13-13)		

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 527'FNL & 1884'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
KOP - Start Build 3.00									
4,100.0	3.00	68.47	4,100.0	1.0	2.4	-0.2	3.00	3.00	0.00
4,200.0	6.00	68.47	4,199.6	3.8	9.7	-0.7	3.00	3.00	0.00
4,300.0	9.00	68.47	4,298.8	8.6	21.9	-1.6	3.00	3.00	0.00
4,400.0	12.00	68.47	4,397.1	15.3	38.8	-2.8	3.00	3.00	0.00
4,500.0	15.00	68.47	4,494.3	23.9	60.5	-4.4	3.00	3.00	0.00
4,600.0	18.00	68.47	4,590.2	34.3	87.0	-6.3	3.00	3.00	0.00
4,700.0	21.00	68.47	4,684.4	46.6	118.0	-8.6	3.00	3.00	0.00
4,800.0	24.00	68.47	4,776.8	60.6	153.6	-11.1	3.00	3.00	0.00
4,900.0	27.00	68.47	4,867.1	76.4	193.6	-14.0	3.00	3.00	0.00
5,000.0	30.00	68.47	4,954.9	93.9	238.0	-17.2	3.00	3.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Schmunk EF 31-362HN
Company:	Great Western	TVD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Project:	SEC.31-T7N-R65W	MD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Site:	Schmunk Pad Sec.31-T7N-R65W	North Reference:	True
Well:	Schmunk EF 31-362HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-13-13)		

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)
5,017.2	30.52	68.47	4,969.8	97.1	246.1	-17.8	3.00	3.00	0.00
5,100.0	30.52	68.47	5,041.1	112.5	285.2	-20.7	0.00	0.00	0.00
5,200.0	30.52	68.47	5,127.3	131.2	332.4	-24.1	0.00	0.00	0.00
5,300.0	30.52	68.47	5,213.4	149.8	379.7	-27.5	0.00	0.00	0.00
5,400.0	30.52	68.47	5,299.6	168.4	426.9	-30.9	0.00	0.00	0.00
5,500.0	30.52	68.47	5,385.7	187.1	474.1	-34.4	0.00	0.00	0.00
5,600.0	30.52	68.47	5,471.9	205.7	521.4	-37.8	0.00	0.00	0.00
5,700.0	30.52	68.47	5,558.0	224.3	568.6	-41.2	0.00	0.00	0.00
5,800.0	30.52	68.47	5,644.2	243.0	615.8	-44.6	0.00	0.00	0.00
5,900.0	30.52	68.47	5,730.3	261.6	663.1	-48.1	0.00	0.00	0.00
6,000.0	30.52	68.47	5,816.5	280.3	710.3	-51.5	0.00	0.00	0.00
6,100.0	30.52	68.47	5,902.6	298.9	757.5	-54.9	0.00	0.00	0.00
6,200.0	30.52	68.47	5,988.8	317.5	804.8	-58.3	0.00	0.00	0.00
6,300.0	30.52	68.47	6,074.9	336.2	852.0	-61.7	0.00	0.00	0.00
6,400.0	30.52	68.47	6,161.0	354.8	899.2	-65.2	0.00	0.00	0.00
6,500.0	30.52	68.47	6,247.2	373.4	946.5	-68.6	0.00	0.00	0.00
6,600.0	30.52	68.47	6,333.3	392.1	993.7	-72.0	0.00	0.00	0.00
6,700.0	30.52	68.47	6,419.5	410.7	1,040.9	-75.4	0.00	0.00	0.00
6,800.0	30.52	68.47	6,505.6	429.3	1,088.2	-78.9	0.00	0.00	0.00
6,900.0	30.52	68.47	6,591.8	448.0	1,135.4	-82.3	0.00	0.00	0.00
6,963.6	30.52	68.47	6,646.6	459.8	1,165.4	-84.5	0.00	0.00	0.00
Start DLS 13.00 TFO 109.17									
7,000.0	29.27	77.64	6,678.2	465.1	1,182.7	-84.3	13.00	-3.42	25.19
7,100.0	29.39	104.36	6,765.7	464.3	1,230.6	-68.9	13.00	0.11	26.72
7,200.0	34.34	127.30	6,850.9	441.0	1,277.0	-32.7	13.00	4.95	22.94
7,300.0	42.46	143.76	6,929.4	396.5	1,319.6	22.7	13.00	8.12	16.46
7,400.0	52.27	155.42	6,997.2	333.0	1,356.1	94.2	13.00	9.81	11.66
7,500.0	62.95	164.23	7,050.8	253.9	1,384.8	178.3	13.00	10.68	8.81
7,600.0	74.08	171.47	7,087.4	163.1	1,404.1	270.7	13.00	11.13	7.24
7,700.0	85.42	177.93	7,105.2	65.3	1,413.1	366.6	13.00	11.34	6.46
7,740.2	90.00	180.44	7,106.8	25.2	1,413.7	405.0	12.99	11.39	6.24
7" - Entry Pt. 460'FNL & 470'FEL									
7,741.6	90.00	180.45	7,106.8	23.8	1,413.7	406.3	1.19	0.28	1.15
7,800.0	90.00	180.45	7,106.8	-34.6	1,413.2	461.9	0.00	0.00	0.00
7,900.0	90.00	180.45	7,106.8	-134.6	1,412.4	556.9	0.00	0.00	0.00
8,000.0	90.00	180.45	7,106.8	-234.6	1,411.6	651.9	0.00	0.00	0.00
8,100.0	90.00	180.45	7,106.8	-334.6	1,410.8	747.0	0.00	0.00	0.00
8,200.0	90.00	180.45	7,106.8	-434.6	1,410.0	842.0	0.00	0.00	0.00
8,300.0	90.00	180.45	7,106.8	-534.6	1,409.2	937.1	0.00	0.00	0.00
8,400.0	90.00	180.45	7,106.8	-634.6	1,408.4	1,032.1	0.00	0.00	0.00
8,500.0	90.00	180.45	7,106.8	-734.6	1,407.7	1,127.1	0.00	0.00	0.00
8,600.0	90.00	180.45	7,106.8	-834.6	1,406.9	1,222.2	0.00	0.00	0.00
8,700.0	90.00	180.45	7,106.8	-934.6	1,406.1	1,317.2	0.00	0.00	0.00
8,800.0	90.00	180.45	7,106.8	-1,034.6	1,405.3	1,412.3	0.00	0.00	0.00
8,900.0	90.00	180.45	7,106.8	-1,134.6	1,404.5	1,507.3	0.00	0.00	0.00
9,000.0	90.00	180.45	7,106.8	-1,234.6	1,403.7	1,602.3	0.00	0.00	0.00
9,100.0	90.00	180.45	7,106.8	-1,334.6	1,402.9	1,697.4	0.00	0.00	0.00
9,200.0	90.00	180.45	7,106.8	-1,434.6	1,402.1	1,792.4	0.00	0.00	0.00
9,300.0	90.00	180.45	7,106.8	-1,534.6	1,401.3	1,887.5	0.00	0.00	0.00
9,400.0	90.00	180.45	7,106.8	-1,634.6	1,400.5	1,982.5	0.00	0.00	0.00
9,500.0	90.00	180.45	7,106.8	-1,734.6	1,399.7	2,077.6	0.00	0.00	0.00
9,600.0	90.00	180.45	7,106.8	-1,834.6	1,398.9	2,172.6	0.00	0.00	0.00
9,700.0	90.00	180.45	7,106.8	-1,934.6	1,398.2	2,267.6	0.00	0.00	0.00
9,800.0	90.00	180.45	7,106.8	-2,034.6	1,397.4	2,362.7	0.00	0.00	0.00

Plan Annotations					
	Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
			+N/-S (ft)	+E/-W (ft)	
	4,000.0	4,000.0	0.0	0.0	
	6,963.6	6,646.6	459.8	1,165.4	
	12,095.8	7,106.8	-4,330.3	1,379.2	
					KOP - Start Build 3.00
					Start DLS 13.00 TFO 109.17
					TD at 12095.8



Great Western

SEC.31-T7N-R65W

Schmunk Pad Sec.31-T7N-R65W

Schmunk EF 31-362HN

Wellbore #1

Plan #1 (11-13-13)

Anticollision Report

14 November, 2013

Company:	Great Western	Local Co-ordinate Reference:	Well Schmunk EF 31-362HN
Project:	SEC.31-T7N-R65W	TVD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	MD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schmunk EF 31-362HN	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 (11-13-13)	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		
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	92.04	-1.1	30.0	30.0	19.9	10.11	2.970		
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	92.04	-1.1	30.0	30.0	19.5	10.56	2.843		
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	92.04	-1.1	30.0	30.0	19.0	11.01	2.727		
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	92.04	-1.1	30.0	30.0	18.6	11.46	2.620		
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	92.04	-1.1	30.0	30.0	18.1	11.91	2.522		
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	92.04	-1.1	30.0	30.0	17.7	12.36	2.430		
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	92.04	-1.1	30.0	30.0	17.2	12.81	2.345		
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	92.04	-1.1	30.0	30.0	16.8	13.26	2.265		
3,100.0	3,100.0	3,100.0	3,100.0	6.9	6.9	92.04	-1.1	30.0	30.0	16.3	13.71	2.191		
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	92.04	-1.1	30.0	30.0	15.9	14.16	2.121		
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	92.04	-1.1	30.0	30.0	15.4	14.61	2.056 CC, ES, SF		
3,400.0	3,400.0	3,398.4	3,398.4	7.5	7.5	90.68	-0.4	32.5	32.5	17.5	15.05	2.160		
3,500.0	3,500.0	3,496.4	3,496.0	7.8	7.7	87.61	1.7	39.7	40.0	24.5	15.48	2.582		
3,600.0	3,600.0	3,593.2	3,592.1	8.0	7.9	84.47	5.0	51.7	52.5	36.6	15.91	3.298		
3,700.0	3,700.0	3,688.6	3,686.0	8.2	8.2	81.98	9.6	68.0	70.1	53.7	16.36	4.281		
3,800.0	3,800.0	3,782.1	3,777.0	8.4	8.4	80.18	15.3	88.3	92.5	75.7	16.83	5.498		
3,900.0	3,900.0	3,873.3	3,864.7	8.7	8.7	78.91	22.0	112.2	119.7	102.4	17.31	6.913		
4,000.0	4,000.0	3,961.8	3,948.7	8.9	9.0	78.01	29.6	139.3	151.4	133.6	17.83	8.490		
4,100.0	4,100.0	4,048.4	4,029.4	9.1	9.3	8.83	38.0	169.4	185.0	167.1	17.96	10.299		
4,200.0	4,199.6	4,133.8	4,107.6	9.3	9.7	8.46	47.3	202.5	218.0	199.7	18.31	11.908		
4,300.0	4,298.8	4,218.1	4,183.2	9.5	10.2	8.27	57.4	238.4	250.3	231.7	18.61	13.447		
4,400.0	4,397.1	4,301.4	4,256.2	9.8	10.7	8.20	68.2	277.1	281.8	262.9	18.88	14.923		
4,500.0	4,494.3	4,395.4	4,337.2	10.0	11.4	8.26	81.1	322.8	311.0	291.8	19.15	16.237		
4,600.0	4,590.2	4,492.4	4,420.9	10.3	12.2	8.45	94.3	370.0	335.2	315.8	19.41	17.276		
4,700.0	4,684.4	4,590.5	4,505.5	10.7	13.0	8.74	107.7	417.8	354.4	334.8	19.64	18.045		
4,800.0	4,776.8	4,689.4	4,590.9	11.1	13.8	9.15	121.2	466.0	368.6	348.7	19.87	18.552		
4,900.0	4,867.1	4,788.9	4,676.7	11.5	14.7	9.68	134.8	514.4	377.6	357.5	20.08	18.801		
5,000.0	4,954.9	4,888.7	4,762.8	12.1	15.7	10.35	148.5	563.0	381.5	361.2	20.30	18.793		
5,100.0	5,041.1	4,988.6	4,849.0	12.8	16.6	11.12	162.1	611.7	382.1	361.2	20.85	18.323		
5,200.0	5,127.3	5,088.4	4,935.1	13.5	17.6	11.89	175.8	660.3	382.6	361.1	21.50	17.793		
5,300.0	5,213.4	5,188.3	5,021.3	14.3	18.6	12.66	189.4	708.9	383.3	361.1	22.19	17.271		
5,400.0	5,299.6	5,288.2	5,107.4	15.1	19.6	13.42	203.1	757.6	384.0	361.1	22.92	16.757		
5,500.0	5,385.7	5,388.0	5,193.6	15.9	20.6	14.19	216.7	806.2	384.8	361.1	23.68	16.252		
5,600.0	5,471.9	5,487.9	5,279.7	16.8	21.6	14.95	230.4	854.8	385.6	361.2	24.48	15.757		
5,700.0	5,558.0	5,587.8	5,365.9	17.7	22.6	15.70	244.0	903.5	386.6	361.3	25.31	15.272		
5,800.0	5,644.2	5,687.6	5,452.0	18.6	23.7	16.45	257.6	952.1	387.6	361.4	26.19	14.799		
5,900.0	5,730.3	5,787.5	5,538.2	19.6	24.7	17.20	271.3	1,000.7	388.6	361.5	27.10	14.338		
6,000.0	5,816.5	5,887.4	5,624.3	20.5	25.8	17.95	284.9	1,049.3	389.7	361.7	28.06	13.889		
6,100.0	5,902.6	5,987.2	5,710.5	21.5	26.8	18.69	298.6	1,098.0	390.9	361.9	29.06	13.453		
6,200.0	5,988.8	6,087.1	5,796.6	22.5	27.9	19.42	312.2	1,146.6	392.2	362.1	30.10	13.030		
6,300.0	6,074.9	6,187.0	5,882.8	23.5	28.9	20.15	325.9	1,195.2	393.5	362.3	31.18	12.621		
6,400.0	6,161.0	6,286.8	5,968.9	24.5	30.0	20.88	339.5	1,243.9	394.9	362.6	32.30	12.225		
6,500.0	6,247.2	6,386.7	6,055.1	25.5	31.1	21.60	353.2	1,292.5	396.3	362.9	33.46	11.843		
6,600.0	6,333.3	6,486.6	6,141.2	26.5	32.1	22.31	366.8	1,341.1	397.8	363.2	34.67	11.475		
6,700.0	6,419.5	6,586.4	6,227.4	27.6	33.2	23.02	380.4	1,389.8	399.4	363.5	35.91	11.120		
6,800.0	6,505.6	6,686.3	6,313.5	28.6	34.3	23.73	394.1	1,438.4	401.0	363.8	37.20	10.780		
6,900.0	6,591.8	6,786.2	6,399.7	29.6	35.4	24.42	407.7	1,487.0	402.7	364.2	38.53	10.452		
7,000.0	6,678.2	6,886.1	6,485.9	30.6	36.5	17.02	421.4	1,535.7	404.3	364.5	39.75	10.171		
7,100.0	6,765.7	6,984.8	6,571.0	31.5	37.5	-8.40	434.9	1,583.8	404.3	364.9	39.44	10.253		
7,141.2	6,801.4	7,024.0	6,604.9	31.8	38.0	-18.94	440.2	1,602.9	404.2	365.3	38.91	10.389		
7,200.0	6,850.9	7,077.7	6,651.2	32.2	38.5	-32.69	447.6	1,629.0	404.8	366.6	38.16	10.607		
7,300.0	6,929.4	7,170.3	6,731.5	32.7	39.4	-51.59	454.4	1,674.3	410.3	372.9	37.37	10.980		

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 Schmunk EF 31-362HN
Project:	SEC.31-T7N-R65W	TVD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	MD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schmunk EF 31-362HN	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 (11-13-13)	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						
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
7,400.0	6,997.2	7,276.9	6,823.2	33.1	40.3	-65.54	438.7	1,725.8	422.1	384.7	37.33	11.305	
7,500.0	7,050.8	7,404.0	6,924.5	33.3	41.2	-76.20	387.9	1,782.5	438.3	400.8	37.45	11.703	
7,600.0	7,087.4	7,560.4	7,025.4	33.4	41.9	-84.32	283.8	1,838.6	455.1	417.8	37.29	12.205	
7,700.0	7,105.2	7,749.9	7,096.4	33.3	42.2	-89.24	114.0	1,877.2	466.8	429.5	37.22	12.542	
7,800.0	7,106.8	7,903.1	7,106.8	33.3	42.2	-90.00	-38.3	1,881.9	468.7	431.1	37.60	12.467	
7,900.0	7,106.8	8,003.1	7,106.8	33.3	42.2	-90.00	-138.3	1,881.1	468.7	430.6	38.10	12.303	
8,000.0	7,106.8	8,103.1	7,106.8	33.4	42.2	-90.00	-238.3	1,880.3	468.7	429.8	38.97	12.026	
8,100.0	7,106.8	8,203.1	7,106.8	33.5	42.3	-90.00	-338.3	1,879.5	468.7	428.5	40.20	11.660	
8,200.0	7,106.8	8,303.1	7,106.8	33.8	42.5	-90.00	-438.3	1,878.8	468.7	427.0	41.75	11.228	
8,300.0	7,106.8	8,403.1	7,106.8	34.1	42.8	-90.00	-538.3	1,878.0	468.7	425.2	43.58	10.757	
8,400.0	7,106.8	8,503.1	7,106.8	34.6	43.1	-90.00	-638.3	1,877.2	468.7	423.1	45.66	10.267	
8,500.0	7,106.8	8,603.1	7,106.8	35.2	43.5	-90.00	-738.3	1,876.4	468.7	420.8	47.95	9.775	
8,600.0	7,106.8	8,703.1	7,106.8	35.8	44.0	-90.00	-838.3	1,875.6	468.7	418.3	50.44	9.293	
8,700.0	7,106.8	8,803.1	7,106.8	36.6	44.6	-90.00	-938.3	1,874.8	468.7	415.7	53.09	8.829	
8,800.0	7,106.8	8,903.1	7,106.8	37.4	45.2	-90.00	-1,038.3	1,874.0	468.7	412.9	55.88	8.389	
8,900.0	7,106.8	9,003.1	7,106.8	38.4	45.9	-90.00	-1,138.3	1,873.2	468.7	410.0	58.78	7.974	
9,000.0	7,106.8	9,103.1	7,106.8	39.4	46.7	-90.00	-1,238.3	1,872.4	468.7	407.0	61.79	7.586	
9,100.0	7,106.8	9,203.1	7,106.8	40.5	47.5	-90.00	-1,338.3	1,871.6	468.8	403.9	64.89	7.224	
9,200.0	7,106.8	9,303.1	7,106.8	41.7	48.5	-90.00	-1,438.3	1,870.9	468.8	400.7	68.06	6.888	
9,300.0	7,106.8	9,403.1	7,106.8	43.0	49.4	-90.00	-1,538.3	1,870.1	468.8	397.5	71.30	6.575	
9,400.0	7,106.8	9,503.1	7,106.8	44.3	50.5	-90.00	-1,638.3	1,869.3	468.8	394.2	74.59	6.284	
9,500.0	7,106.8	9,603.1	7,106.8	45.7	51.6	-90.00	-1,738.3	1,868.5	468.8	390.8	77.94	6.015	
9,600.0	7,106.8	9,703.1	7,106.8	47.1	52.8	-90.00	-1,838.3	1,867.7	468.8	387.4	81.33	5.764	
9,700.0	7,106.8	9,803.1	7,106.8	48.5	54.0	-90.00	-1,938.3	1,866.9	468.8	384.0	84.75	5.531	
9,800.0	7,106.8	9,903.1	7,106.8	50.0	55.3	-90.00	-2,038.3	1,866.1	468.8	380.6	88.21	5.314	
9,900.0	7,106.8	10,003.1	7,106.8	51.5	56.6	-90.00	-2,138.3	1,865.3	468.8	377.1	91.71	5.112	
10,000.0	7,106.8	10,103.1	7,106.8	53.1	58.0	-90.00	-2,238.3	1,864.5	468.8	373.5	95.23	4.923	
10,100.0	7,106.8	10,203.1	7,106.8	54.7	59.4	-90.00	-2,338.3	1,863.7	468.8	370.0	98.77	4.746	
10,200.0	7,106.8	10,303.1	7,106.8	56.3	60.8	-90.00	-2,438.2	1,863.0	468.8	366.4	102.33	4.581	
10,300.0	7,106.8	10,403.1	7,106.8	57.9	62.3	-90.00	-2,538.2	1,862.2	468.8	362.9	105.92	4.426	
10,400.0	7,106.8	10,503.1	7,106.8	59.5	63.7	-90.00	-2,638.2	1,861.4	468.8	359.3	109.52	4.280	
10,500.0	7,106.8	10,603.1	7,106.8	61.2	65.3	-90.00	-2,738.2	1,860.6	468.8	355.6	113.14	4.143	
10,600.0	7,106.8	10,703.1	7,106.8	62.9	66.8	-90.00	-2,838.2	1,859.8	468.8	352.0	116.77	4.015	
10,700.0	7,106.8	10,803.1	7,106.8	64.5	68.4	-90.00	-2,938.2	1,859.0	468.8	348.4	120.41	3.893	
10,800.0	7,106.8	10,903.1	7,106.8	66.2	70.0	-90.00	-3,038.2	1,858.2	468.8	344.7	124.07	3.778	
10,900.0	7,106.8	11,003.1	7,106.8	68.0	71.6	-90.00	-3,138.2	1,857.4	468.8	341.1	127.74	3.670	
11,000.0	7,106.8	11,103.1	7,106.8	69.7	73.2	-90.00	-3,238.2	1,856.6	468.8	337.4	131.41	3.567	
11,100.0	7,106.8	11,203.1	7,106.8	71.4	74.8	-90.00	-3,338.2	1,855.8	468.8	333.7	135.10	3.470	
11,200.0	7,106.8	11,303.1	7,106.8	73.2	76.5	-90.00	-3,438.2	1,855.1	468.8	330.0	138.80	3.378	
11,300.0	7,106.8	11,403.1	7,106.8	74.9	78.1	-90.00	-3,538.2	1,854.3	468.8	326.3	142.50	3.290	
11,400.0	7,106.8	11,503.1	7,106.8	76.7	79.8	-90.00	-3,638.2	1,853.5	468.8	322.6	146.21	3.206	
11,500.0	7,106.8	11,603.1	7,106.8	78.5	81.5	-90.00	-3,738.2	1,852.7	468.8	318.9	149.93	3.127	
11,600.0	7,106.8	11,703.1	7,106.8	80.3	83.2	-90.00	-3,838.2	1,851.9	468.8	315.2	153.65	3.051	
11,700.0	7,106.8	11,803.1	7,106.8	82.0	84.9	-90.00	-3,938.2	1,851.1	468.8	311.4	157.38	2.979	
11,800.0	7,106.8	11,903.1	7,106.8	83.8	86.6	-90.00	-4,038.2	1,850.3	468.8	307.7	161.11	2.910	
11,900.0	7,106.8	12,003.1	7,106.8	85.6	88.4	-90.00	-4,138.2	1,849.5	468.8	304.0	164.85	2.844	
12,000.0	7,106.8	12,103.1	7,106.8	87.4	90.1	-90.00	-4,238.2	1,848.7	468.8	300.2	168.59	2.781	
12,095.8	7,106.8	12,198.8	7,106.8	89.2	91.8	-90.00	-4,333.9	1,848.0	468.8	296.6	172.18	2.723	

Company:	Great Western	Local Co-ordinate Reference:	Well Schmunk EF 31-362HN
Project:	SEC.31-T7N-R65W	TVD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	MD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schmunk EF 31-362HN	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 (11-13-13)	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	-89.98	0.0	-30.0	30.0					
100.0	100.0	100.0	100.0	0.1	0.1	-89.98	0.0	-30.0	30.0	29.8	0.22	133.557		
200.0	200.0	200.0	200.0	0.3	0.3	-89.98	0.0	-30.0	30.0	29.3	0.67	44.519		
300.0	300.0	300.0	300.0	0.6	0.6	-89.98	0.0	-30.0	30.0	28.9	1.12	26.711		
400.0	400.0	400.0	400.0	0.8	0.8	-89.98	0.0	-30.0	30.0	28.4	1.57	19.080		
500.0	500.0	500.0	500.0	1.0	1.0	-89.98	0.0	-30.0	30.0	28.0	2.02	14.840		
600.0	600.0	600.0	600.0	1.2	1.2	-89.98	0.0	-30.0	30.0	27.5	2.47	12.142		
700.0	700.0	700.0	700.0	1.5	1.5	-89.98	0.0	-30.0	30.0	27.1	2.92	10.274		
800.0	800.0	800.0	800.0	1.7	1.7	-89.98	0.0	-30.0	30.0	26.6	3.37	8.904		
900.0	900.0	900.0	900.0	1.9	1.9	-89.98	0.0	-30.0	30.0	26.2	3.82	7.856		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-89.98	0.0	-30.0	30.0	25.7	4.27	7.029		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-89.98	0.0	-30.0	30.0	25.3	4.72	6.360		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-89.98	0.0	-30.0	30.0	24.8	5.17	5.807		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-89.98	0.0	-30.0	30.0	24.4	5.62	5.342		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-89.98	0.0	-30.0	30.0	24.0	6.07	4.947		
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	-89.98	0.0	-30.0	30.0	23.5	6.52	4.605		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-89.98	0.0	-30.0	30.0	23.1	6.97	4.308		
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	-89.98	0.0	-30.0	30.0	22.6	7.42	4.047		
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	-89.98	0.0	-30.0	30.0	22.2	7.87	3.816		
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	-89.98	0.0	-30.0	30.0	21.7	8.32	3.610		
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	-89.98	0.0	-30.0	30.0	21.3	8.77	3.425		
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	-89.98	0.0	-30.0	30.0	20.8	9.22	3.257		
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	-89.98	0.0	-30.0	30.0	20.4	9.66	3.106		
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	-89.98	0.0	-30.0	30.0	19.9	10.11	2.968		
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	-89.98	0.0	-30.0	30.0	19.5	10.56	2.842		
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	-89.98	0.0	-30.0	30.0	19.0	11.01	2.726		
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	-89.98	0.0	-30.0	30.0	18.6	11.46	2.619		
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	-89.98	0.0	-30.0	30.0	18.1	11.91	2.520		
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	-89.98	0.0	-30.0	30.0	17.7	12.36	2.428		
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	-89.98	0.0	-30.0	30.0	17.2	12.81	2.343		
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	-89.98	0.0	-30.0	30.0	16.8	13.26	2.264		
3,100.0	3,100.0	3,100.0	3,100.0	6.9	6.9	-89.98	0.0	-30.0	30.0	16.3	13.71	2.189		
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	-89.98	0.0	-30.0	30.0	15.9	14.16	2.120		
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	-89.98	0.0	-30.0	30.0	15.4	14.61	2.055		
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	-89.98	0.0	-30.0	30.0	15.0	15.06	1.993		
3,500.0	3,500.0	3,500.0	3,500.0	7.8	7.8	-89.98	0.0	-30.0	30.0	14.5	15.51	1.936		
3,600.0	3,600.0	3,600.0	3,600.0	8.0	8.0	-89.98	0.0	-30.0	30.0	14.1	15.96	1.881		
3,700.0	3,700.0	3,700.0	3,700.0	8.2	8.2	-89.98	0.0	-30.0	30.0	13.6	16.41	1.830		
3,800.0	3,800.0	3,800.0	3,800.0	8.4	8.4	-89.98	0.0	-30.0	30.0	13.2	16.86	1.781		
3,900.0	3,900.0	3,900.0	3,900.0	8.7	8.7	-89.98	0.0	-30.0	30.0	12.7	17.31	1.735		
4,000.0	4,000.0	4,000.0	4,000.0	8.9	8.9	-89.98	0.0	-30.0	30.0	12.3	17.76	1.691 CC, ES, SF		
4,100.0	4,100.0	4,100.0	4,100.0	9.1	9.1	-160.12	0.0	-30.0	32.5	14.3	18.18	1.786		
4,200.0	4,199.6	4,199.6	4,199.6	9.3	9.3	-163.88	0.0	-30.0	39.9	21.4	18.55	2.153		
4,300.0	4,298.8	4,298.8	4,298.8	9.5	9.5	-167.75	0.0	-30.0	52.6	33.7	18.87	2.788		
4,400.0	4,397.1	4,397.1	4,397.1	9.8	9.8	-170.80	0.0	-30.0	70.5	51.4	19.14	3.684		
4,500.0	4,494.3	4,494.3	4,494.3	10.0	10.0	-173.00	0.0	-30.0	93.6	74.3	19.36	4.836		
4,600.0	4,590.2	4,590.2	4,590.2	10.3	10.2	-174.54	0.0	-30.0	121.9	102.4	19.54	6.239		
4,700.0	4,684.4	4,691.7	4,691.7	10.7	10.4	-175.56	1.0	-28.1	153.2	133.5	19.67	7.787		
4,800.0	4,776.8	4,795.7	4,795.4	11.1	10.7	-176.03	4.7	-21.2	184.4	164.7	19.76	9.335		
4,900.0	4,867.1	4,901.7	4,900.5	11.5	10.9	-176.18	11.1	-9.0	215.5	195.7	19.81	10.879		
5,000.0	4,954.9	5,009.7	5,006.6	12.1	11.1	-176.13	20.4	8.7	246.3	226.4	19.83	12.418		
5,100.0	5,041.1	5,120.4	5,114.0	12.8	11.4	-175.95	32.9	32.3	275.0	254.7	20.23	13.593		

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 Schmunk EF 31-362HN
Project:	SEC.31-T7N-R65W	TVD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	MD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schmunk EF 31-362HN	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 (11-13-13)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,200.0	5,127.3	5,234.6	5,222.9	13.5	11.8	-175.58	48.8	62.4	298.1	277.4	20.73	14.383	
5,300.0	5,213.4	5,351.5	5,332.3	14.3	12.2	-175.03	68.1	99.1	315.5	294.2	21.26	14.838	
5,400.0	5,299.6	5,470.4	5,440.6	15.1	12.7	-174.29	91.0	142.4	326.9	305.0	21.83	14.974	
5,500.0	5,385.7	5,590.5	5,546.7	15.9	13.3	-173.33	117.2	192.1	332.2	309.7	22.44	14.805	
5,600.0	5,471.9	5,696.5	5,637.9	16.8	13.9	-172.33	142.4	239.8	332.9	309.9	23.05	14.442	
5,700.0	5,558.0	5,796.3	5,723.7	17.7	14.6	-171.37	166.3	285.0	333.5	309.8	23.69	14.076	
5,800.0	5,644.2	5,896.2	5,809.4	18.6	15.3	-170.41	190.2	330.3	334.1	309.8	24.37	13.710	
5,900.0	5,730.3	5,996.0	5,895.2	19.6	16.1	-169.46	214.0	375.5	334.9	309.8	25.10	13.345	
6,000.0	5,816.5	6,095.9	5,980.9	20.5	16.9	-168.51	237.9	420.7	335.7	309.9	25.86	12.980	
6,100.0	5,902.6	6,195.7	6,066.7	21.5	17.7	-167.57	261.7	465.9	336.7	310.0	26.68	12.618	
6,200.0	5,988.8	6,295.5	6,152.5	22.5	18.6	-166.63	285.6	511.1	337.7	310.2	27.55	12.259	
6,300.0	6,074.9	6,395.4	6,238.2	23.5	19.4	-165.70	309.5	556.3	338.8	310.4	28.46	11.904	
6,400.0	6,161.0	6,495.2	6,324.0	24.5	20.3	-164.78	333.3	601.6	340.0	310.6	29.43	11.554	
6,500.0	6,247.2	6,595.1	6,409.7	25.5	21.3	-163.86	357.2	646.8	341.3	310.9	30.45	11.210	
6,600.0	6,333.3	6,694.9	6,495.5	26.5	22.2	-162.95	381.1	692.0	342.7	311.2	31.52	10.873	
6,700.0	6,419.5	6,794.8	6,581.2	27.6	23.2	-162.04	404.9	737.2	344.2	311.5	32.64	10.544	
6,800.0	6,505.6	6,894.6	6,667.0	28.6	24.1	-161.15	428.8	782.4	345.7	311.9	33.82	10.223	
6,900.0	6,591.8	6,994.4	6,752.8	29.6	25.1	-160.26	452.6	827.6	347.3	312.3	35.05	9.911	
7,000.0	6,678.2	7,095.0	6,839.7	30.6	26.0	-167.70	473.5	873.5	349.0	312.9	36.12	9.663	
7,100.0	6,765.7	7,196.5	6,929.4	31.5	26.8	-168.89	473.9	920.6	350.7	314.1	36.63	9.574	
7,200.0	6,850.9	7,298.3	7,017.1	32.2	27.4	-149.24	451.1	966.4	352.4	315.6	36.75	9.589	
7,300.0	6,929.4	7,400.3	7,098.0	32.7	27.8	-136.16	406.2	1,008.6	353.9	317.3	36.57	9.676	
7,400.0	6,997.2	7,502.3	7,167.8	33.1	28.1	-128.05	341.5	1,044.7	355.2	318.9	36.28	9.790	
7,500.0	7,050.8	7,604.2	7,222.6	33.3	28.2	-123.09	260.5	1,072.9	356.2	320.1	36.06	9.877	
7,600.0	7,087.4	7,706.0	7,259.5	33.4	28.2	-120.20	167.7	1,091.6	356.8	320.8	36.08	9.890	
7,700.0	7,105.2	7,807.6	7,276.6	33.3	28.1	-118.79	68.2	1,099.8	357.2	320.7	36.42	9.806	
7,800.0	7,106.8	7,907.9	7,277.8	33.3	28.0	-118.60	-32.1	1,099.6	357.2	320.2	36.99	9.657	
7,900.0	7,106.8	8,007.9	7,277.8	33.3	28.1	-118.60	-132.1	1,098.8	357.2	319.4	37.80	9.449	
8,000.0	7,106.8	8,107.9	7,277.8	33.4	28.2	-118.60	-232.1	1,098.0	357.2	318.3	38.91	9.181	
8,100.0	7,106.8	8,207.9	7,277.8	33.5	28.4	-118.60	-332.1	1,097.2	357.2	316.9	40.28	8.869	
8,200.0	7,106.8	8,307.9	7,277.8	33.8	28.7	-118.60	-432.1	1,096.4	357.2	315.3	41.88	8.528	
8,300.0	7,106.8	8,407.9	7,277.8	34.1	29.2	-118.60	-532.1	1,095.6	357.2	313.5	43.71	8.173	
8,400.0	7,106.8	8,507.9	7,277.8	34.6	29.8	-118.60	-632.1	1,094.9	357.2	311.5	45.72	7.813	
8,500.0	7,106.8	8,607.9	7,277.8	35.2	30.6	-118.60	-732.1	1,094.1	357.2	309.3	47.89	7.459	
8,600.0	7,106.8	8,707.9	7,277.8	35.8	31.4	-118.60	-832.1	1,093.3	357.2	307.0	50.20	7.115	
8,700.0	7,106.8	8,807.9	7,277.8	36.6	32.4	-118.60	-932.1	1,092.5	357.2	304.6	52.64	6.785	
8,800.0	7,106.8	8,907.9	7,277.8	37.4	33.4	-118.60	-1,032.1	1,091.7	357.2	302.0	55.19	6.472	
8,900.0	7,106.8	9,007.9	7,277.8	38.4	34.6	-118.60	-1,132.1	1,090.9	357.2	299.4	57.83	6.176	
9,000.0	7,106.8	9,107.9	7,277.8	39.4	35.8	-118.60	-1,232.1	1,090.1	357.2	296.6	60.55	5.899	
9,100.0	7,106.8	9,207.9	7,277.8	40.5	37.1	-118.60	-1,332.1	1,089.3	357.2	293.9	63.35	5.639	
9,200.0	7,106.8	9,307.9	7,277.8	41.7	38.5	-118.60	-1,432.1	1,088.5	357.2	291.0	66.20	5.396	
9,300.0	7,106.8	9,407.9	7,277.8	43.0	39.9	-118.60	-1,532.1	1,087.7	357.2	288.1	69.11	5.169	
9,400.0	7,106.8	9,507.9	7,277.8	44.3	41.4	-118.60	-1,632.1	1,086.9	357.2	285.1	72.06	4.957	
9,500.0	7,106.8	9,607.9	7,277.8	45.7	42.9	-118.60	-1,732.1	1,086.1	357.2	282.1	75.06	4.759	
9,600.0	7,106.8	9,707.9	7,277.8	47.1	44.4	-118.60	-1,832.1	1,085.3	357.2	279.1	78.10	4.574	
9,700.0	7,106.8	9,807.9	7,277.8	48.5	46.0	-118.60	-1,932.1	1,084.5	357.2	276.0	81.16	4.401	
9,800.0	7,106.8	9,907.9	7,277.8	50.0	47.6	-118.60	-2,032.1	1,083.7	357.2	273.0	84.26	4.239	
9,900.0	7,106.8	10,007.9	7,277.8	51.5	49.2	-118.60	-2,132.1	1,083.0	357.2	269.8	87.38	4.088	
10,000.0	7,106.8	10,107.9	7,277.8	53.1	50.9	-118.60	-2,232.1	1,082.2	357.2	266.7	90.53	3.946	
10,100.0	7,106.8	10,207.9	7,277.8	54.7	52.5	-118.60	-2,332.1	1,081.4	357.2	263.5	93.70	3.812	
10,200.0	7,106.8	10,307.9	7,277.8	56.3	54.2	-118.60	-2,432.1	1,080.6	357.2	260.3	96.88	3.687	
10,300.0	7,106.8	10,407.9	7,277.8	57.9	55.9	-118.60	-2,532.1	1,079.8	357.2	257.1	100.09	3.569	

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

Schmunk Pad Sec.31-T7N-R65W - Schmunk EF 31-363HC - Wellbore #1 - Plan #1 (11-13-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
10,400.0	7,106.8	10,507.9	7,277.8	59.5	57.6	118.60	-2,632.1	1,079.0	357.2	253.9	103.31	3.458		
10,500.0	7,106.8	10,607.9	7,277.8	61.2	59.4	118.60	-2,732.0	1,078.2	357.2	250.7	106.54	3.353		
10,600.0	7,106.8	10,707.9	7,277.8	62.9	61.1	118.60	-2,832.0	1,077.4	357.2	247.4	109.79	3.254		
10,700.0	7,106.8	10,807.9	7,277.8	64.5	62.8	118.60	-2,932.0	1,076.6	357.2	244.2	113.05	3.160		
10,800.0	7,106.8	10,907.9	7,277.8	66.2	64.6	118.60	-3,032.0	1,075.8	357.2	240.9	116.32	3.071		
10,900.0	7,106.8	11,007.9	7,277.8	68.0	66.4	118.60	-3,132.0	1,075.0	357.2	237.6	119.59	2.987		
11,000.0	7,106.8	11,107.9	7,277.8	69.7	68.1	118.60	-3,232.0	1,074.2	357.2	234.3	122.88	2.907		
11,100.0	7,106.8	11,207.9	7,277.8	71.4	69.9	118.60	-3,332.0	1,073.4	357.2	231.0	126.18	2.831		
11,200.0	7,106.8	11,307.9	7,277.8	73.2	71.7	118.60	-3,432.0	1,072.6	357.2	227.7	129.48	2.759		
11,300.0	7,106.8	11,407.9	7,277.8	74.9	73.5	118.60	-3,532.0	1,071.8	357.2	224.4	132.80	2.690		
11,400.0	7,106.8	11,507.9	7,277.8	76.7	75.3	118.60	-3,632.0	1,071.1	357.2	221.1	136.11	2.624		
11,500.0	7,106.8	11,607.9	7,277.8	78.5	77.1	118.60	-3,732.0	1,070.3	357.2	217.8	139.44	2.562		
11,600.0	7,106.8	11,707.9	7,277.8	80.3	79.0	118.60	-3,832.0	1,069.5	357.2	214.5	142.77	2.502		
11,700.0	7,106.8	11,807.9	7,277.8	82.0	80.8	118.60	-3,932.0	1,068.7	357.2	211.1	146.11	2.445		
11,800.0	7,106.8	11,907.9	7,277.8	83.8	82.6	118.60	-4,032.0	1,067.9	357.2	207.8	149.45	2.390		
11,900.0	7,106.8	12,007.9	7,277.8	85.6	84.4	118.60	-4,132.0	1,067.1	357.2	204.4	152.79	2.338		
12,000.0	7,106.8	12,107.9	7,277.8	87.4	86.3	118.60	-4,232.0	1,066.3	357.2	201.1	156.14	2.288		
12,055.5	7,106.8	12,163.4	7,277.8	88.4	87.3	118.60	-4,287.5	1,065.9	357.2	199.2	158.00	2.261		
12,095.8	7,106.8	12,196.0	7,277.8	89.2	87.9	118.60	-4,320.1	1,065.6	357.3	198.1	159.22	2.244		

Company:	Great Western	Local Co-ordinate Reference:	Well Schmunk EF 31-362HN
Project:	SEC.31-T7N-R65W	TVD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	MD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schmunk EF 31-362HN	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 (11-13-13)	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	-89.98	0.0	-59.5	59.5					
100.0	100.0	100.0	100.0	0.1	0.1	-89.98	0.0	-59.5	59.5	59.3	0.22	264.641		
200.0	200.0	200.0	200.0	0.3	0.3	-89.98	0.0	-59.5	59.5	58.8	0.67	88.214		
300.0	300.0	300.0	300.0	0.6	0.6	-89.98	0.0	-59.5	59.5	58.4	1.12	52.928		
400.0	400.0	400.0	400.0	0.8	0.8	-89.98	0.0	-59.5	59.5	57.9	1.57	37.806		
500.0	500.0	500.0	500.0	1.0	1.0	-89.98	0.0	-59.5	59.5	57.5	2.02	29.405		
600.0	600.0	600.0	600.0	1.2	1.2	-89.98	0.0	-59.5	59.5	57.0	2.47	24.058		
700.0	700.0	700.0	700.0	1.5	1.5	-89.98	0.0	-59.5	59.5	56.6	2.92	20.357		
800.0	800.0	800.0	800.0	1.7	1.7	-89.98	0.0	-59.5	59.5	56.1	3.37	17.643		
900.0	900.0	900.0	900.0	1.9	1.9	-89.98	0.0	-59.5	59.5	55.7	3.82	15.567		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-89.98	0.0	-59.5	59.5	55.2	4.27	13.928		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-89.98	0.0	-59.5	59.5	54.8	4.72	12.602		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-89.98	0.0	-59.5	59.5	54.3	5.17	11.506		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-89.98	0.0	-59.5	59.5	53.9	5.62	10.586		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-89.98	0.0	-59.5	59.5	53.4	6.07	9.802		
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	-89.98	0.0	-59.5	59.5	53.0	6.52	9.126		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-89.98	0.0	-59.5	59.5	52.5	6.97	8.537		
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	-89.98	0.0	-59.5	59.5	52.1	7.42	8.019		
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	-89.98	0.0	-59.5	59.5	51.6	7.87	7.561		
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	-89.98	0.0	-59.5	59.5	51.2	8.32	7.152		
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	-89.98	0.0	-59.5	59.5	50.7	8.77	6.786		
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	-89.98	0.0	-59.5	59.5	50.3	9.22	6.455		
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	-89.98	0.0	-59.5	59.5	49.8	9.66	6.154		
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	-89.98	0.0	-59.5	59.5	49.4	10.11	5.881		
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	-89.98	0.0	-59.5	59.5	48.9	10.56	5.631		
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	-89.98	0.0	-59.5	59.5	48.5	11.01	5.401		
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	-89.98	0.0	-59.5	59.5	48.0	11.46	5.189		
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	-89.98	0.0	-59.5	59.5	47.6	11.91	4.993		
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	-89.98	0.0	-59.5	59.5	47.1	12.36	4.812		
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	-89.98	0.0	-59.5	59.5	46.7	12.81	4.643		
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	-89.98	0.0	-59.5	59.5	46.2	13.26	4.485		
3,100.0	3,100.0	3,100.0	3,100.0	6.9	6.9	-89.98	0.0	-59.5	59.5	45.8	13.71	4.338		
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	-89.98	0.0	-59.5	59.5	45.3	14.16	4.201		
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	-89.98	0.0	-59.5	59.5	44.9	14.61	4.071		
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	-89.98	0.0	-59.5	59.5	44.4	15.06	3.950		
3,500.0	3,500.0	3,500.0	3,500.0	7.8	7.8	-89.98	0.0	-59.5	59.5	44.0	15.51	3.835		
3,600.0	3,600.0	3,600.0	3,600.0	8.0	8.0	-89.98	0.0	-59.5	59.5	43.5	15.96	3.727		
3,700.0	3,700.0	3,700.0	3,700.0	8.2	8.2	-89.98	0.0	-59.5	59.5	43.1	16.41	3.625		
3,800.0	3,800.0	3,800.0	3,800.0	8.4	8.4	-89.98	0.0	-59.5	59.5	42.6	16.86	3.529		
3,900.0	3,900.0	3,900.0	3,900.0	8.7	8.7	-89.98	0.0	-59.5	59.5	42.2	17.31	3.437		
4,000.0	4,000.0	4,000.0	4,000.0	8.9	8.9	-89.98	0.0	-59.5	59.5	41.7	17.76	3.350 CC, ES, SF		
4,100.0	4,100.0	4,100.0	4,100.0	9.1	9.1	-159.31	0.0	-59.5	61.9	43.7	18.18	3.407		
4,200.0	4,199.6	4,199.6	4,199.6	9.3	9.3	-161.53	0.0	-59.5	69.3	50.8	18.55	3.737		
4,300.0	4,298.8	4,298.8	4,298.8	9.5	9.5	-164.32	0.0	-59.5	81.8	62.9	18.87	4.334		
4,400.0	4,397.1	4,397.1	4,397.1	9.8	9.8	-167.04	0.0	-59.5	99.5	80.3	19.15	5.195		
4,500.0	4,494.3	4,494.3	4,494.3	10.0	10.0	-169.36	0.0	-59.5	122.4	103.0	19.37	6.316		
4,600.0	4,590.2	4,590.2	4,590.2	10.3	10.2	-171.22	0.0	-59.5	150.4	130.8	19.55	7.693		
4,700.0	4,684.4	4,684.4	4,684.4	10.7	10.4	-172.68	0.0	-59.5	183.5	163.8	19.68	9.326		
4,800.0	4,776.8	4,780.1	4,780.1	11.1	10.6	-173.82	0.2	-59.3	221.3	201.6	19.76	11.201		
4,900.0	4,867.1	4,884.3	4,884.2	11.5	10.9	-174.46	2.9	-55.7	260.5	240.7	19.81	13.152		
5,000.0	4,954.9	4,990.9	4,990.2	12.1	11.1	-174.59	9.2	-47.4	299.8	280.0	19.83	15.121		
5,100.0	5,041.1	5,100.7	5,098.7	12.8	11.3	-174.44	19.5	-33.9	337.4	317.2	20.22	16.687		

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 Schmunk EF 31-362HN
Project:	SEC.31-T7N-R65W	TVD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	MD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schmunk EF 31-362HN	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 (11-13-13)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,200.0	5,127.3	5,215.0	5,210.4	13.5	11.6	-173.95	34.2	-14.7	369.9	349.2	20.72	17.852	
5,300.0	5,213.4	5,333.3	5,324.3	14.3	11.9	-173.15	53.6	10.8	397.0	375.7	21.25	18.679	
5,400.0	5,299.6	5,454.8	5,438.9	15.1	12.3	-172.05	78.0	42.8	418.5	396.7	21.83	19.168	
5,500.0	5,385.7	5,578.6	5,552.9	15.9	12.8	-170.65	107.3	81.2	434.4	411.9	22.47	19.326	
5,600.0	5,471.9	5,703.8	5,664.6	16.8	13.3	-168.90	141.4	126.0	444.5	421.3	23.20	19.160	
5,700.0	5,558.0	5,813.7	5,760.0	17.7	14.0	-167.12	174.5	169.4	450.1	426.1	23.97	18.775	
5,800.0	5,644.2	5,912.7	5,845.6	18.6	14.6	-165.52	204.7	209.0	455.6	430.8	24.79	18.381	
5,900.0	5,730.3	6,011.7	5,931.2	19.6	15.2	-163.96	234.8	248.6	461.4	435.7	25.68	17.971	
6,000.0	5,816.5	6,110.8	6,016.9	20.5	15.9	-162.44	265.0	288.1	467.6	440.9	26.65	17.548	
6,100.0	5,902.6	6,209.8	6,102.5	21.5	16.6	-160.96	295.2	327.7	474.1	446.4	27.70	17.117	
6,200.0	5,988.8	6,308.8	6,188.1	22.5	17.4	-159.52	325.3	367.2	480.9	452.0	28.83	16.682	
6,300.0	6,074.9	6,407.9	6,273.8	23.5	18.2	-158.12	355.5	406.8	488.0	457.9	30.04	16.247	
6,400.0	6,161.0	6,506.9	6,359.4	24.5	19.0	-156.76	385.6	446.4	495.4	464.0	31.32	15.816	
6,500.0	6,247.2	6,605.9	6,445.0	25.5	19.8	-155.44	415.8	485.9	503.0	470.3	32.68	15.393	
6,600.0	6,333.3	6,705.0	6,530.7	26.5	20.7	-154.16	446.0	525.5	510.9	476.8	34.11	14.981	
6,700.0	6,419.5	6,810.5	6,622.5	27.6	21.6	-153.09	475.9	567.9	518.9	483.3	35.54	14.600	
6,800.0	6,505.6	6,924.9	6,725.8	28.6	22.3	-154.55	484.8	615.5	524.4	488.4	35.98	14.575	
6,900.0	6,591.8	7,026.7	6,816.9	29.6	22.8	-158.44	467.9	657.2	528.9	493.6	35.33	14.971	
7,000.0	6,678.2	7,110.1	6,887.3	30.6	23.0	-171.55	437.2	689.3	536.6	502.4	34.22	15.683	
7,100.0	6,765.7	7,184.8	6,945.0	31.5	23.1	159.30	397.8	715.6	549.4	515.9	33.44	16.427	
7,200.0	6,850.9	7,255.3	6,993.1	32.2	23.2	134.38	351.4	737.4	565.2	531.8	33.47	16.889	
7,300.0	6,929.4	7,325.0	7,033.6	32.7	23.2	116.64	297.7	755.6	582.0	548.1	33.92	17.160	
7,400.0	6,997.2	7,388.5	7,063.3	33.1	23.1	104.88	243.2	768.9	597.8	563.5	34.30	17.428	
7,500.0	7,050.8	7,450.0	7,085.1	33.3	23.1	97.20	186.6	778.5	611.0	576.6	34.42	17.754	
7,600.0	7,087.4	7,516.3	7,100.3	33.4	23.0	92.46	122.5	785.0	620.6	586.1	34.44	18.017	
7,700.0	7,105.2	7,579.2	7,106.5	33.3	22.9	90.25	59.9	787.4	625.7	591.0	34.69	18.035	
7,800.0	7,106.8	7,669.5	7,106.8	33.3	22.8	90.00	-30.3	786.9	626.3	591.2	35.09	17.847	
7,900.0	7,106.8	7,769.5	7,106.8	33.3	22.9	90.00	-130.3	786.3	626.2	590.5	35.69	17.546	
8,000.0	7,106.8	7,869.5	7,106.8	33.4	23.1	90.00	-230.3	785.6	626.1	589.4	36.68	17.070	
8,100.0	7,106.8	7,969.5	7,106.8	33.5	23.4	90.00	-330.3	784.9	626.0	587.9	38.03	16.461	
8,200.0	7,106.8	8,069.5	7,106.8	33.8	24.0	90.00	-430.3	784.2	625.9	586.1	39.71	15.762	
8,300.0	7,106.8	8,169.5	7,106.8	34.1	24.7	90.00	-530.3	783.5	625.7	584.1	41.67	15.015	
8,400.0	7,106.8	8,269.5	7,106.8	34.6	25.6	90.00	-630.3	782.8	625.6	581.8	43.89	14.255	
8,500.0	7,106.8	8,369.5	7,106.8	35.2	26.6	90.00	-730.3	782.1	625.5	579.2	46.32	13.505	
8,600.0	7,106.8	8,469.5	7,106.8	35.8	27.7	90.00	-830.3	781.4	625.4	576.5	48.93	12.783	
8,700.0	7,106.8	8,569.5	7,106.8	36.6	28.9	90.00	-930.3	780.8	625.3	573.6	51.69	12.097	
8,800.0	7,106.8	8,669.5	7,106.8	37.4	30.2	90.00	-1,030.3	780.1	625.2	570.6	54.59	11.454	
8,900.0	7,106.8	8,769.5	7,106.8	38.4	31.6	90.00	-1,130.3	779.4	625.1	567.5	57.59	10.854	
9,000.0	7,106.8	8,869.5	7,106.8	39.4	33.0	90.00	-1,230.3	778.7	625.0	564.3	60.69	10.298	
9,100.0	7,106.8	8,969.5	7,106.8	40.5	34.5	90.00	-1,330.3	778.0	624.9	561.0	63.87	9.784	
9,200.0	7,106.8	9,069.5	7,106.8	41.7	36.0	90.00	-1,430.3	777.3	624.8	557.7	67.12	9.308	
9,300.0	7,106.8	9,169.5	7,106.8	43.0	37.6	90.00	-1,530.3	776.6	624.7	554.3	70.43	8.869	
9,400.0	7,106.8	9,269.5	7,106.8	44.3	39.2	90.00	-1,630.3	776.0	624.6	550.8	73.79	8.464	
9,500.0	7,106.8	9,369.5	7,106.8	45.7	40.8	90.00	-1,730.3	775.3	624.5	547.3	77.20	8.089	
9,600.0	7,106.8	9,469.5	7,106.8	47.1	42.5	90.00	-1,830.3	774.6	624.4	543.7	80.65	7.742	
9,700.0	7,106.8	9,569.5	7,106.8	48.5	44.1	90.00	-1,930.3	773.9	624.3	540.1	84.12	7.421	
9,800.0	7,106.8	9,669.5	7,106.8	50.0	45.8	90.00	-2,030.3	773.2	624.2	536.5	87.63	7.122	
9,900.0	7,106.8	9,769.5	7,106.8	51.5	47.5	90.00	-2,130.3	772.5	624.1	532.9	91.17	6.845	
10,000.0	7,106.8	9,869.5	7,106.8	53.1	49.3	90.00	-2,230.3	771.8	623.9	529.2	94.73	6.586	
10,100.0	7,106.8	9,969.5	7,106.8	54.7	51.0	90.00	-2,330.3	771.2	623.8	525.5	98.31	6.345	
10,200.0	7,106.8	10,069.5	7,106.8	56.3	52.7	90.00	-2,430.3	770.5	623.7	521.8	101.91	6.120	
10,300.0	7,106.8	10,169.5	7,106.8	57.9	54.5	90.00	-2,530.3	769.8	623.6	518.1	105.53	5.909	

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 Schmunk EF 31-362HN
Project:	SEC.31-T7N-R65W	TVD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	MD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schmunk EF 31-362HN	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 (11-13-13)	Offset TVD Reference:	Offset Datum

Offset Design Schmunk Pad Sec.31-T7N-R65W - Schmunk EF 31-365HN - Wellbore #1 - Plan #1 (11-13-13)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,400.0	7,106.8	10,269.5	7,106.8	59.5	56.3	90.00	-2,630.3	769.1	623.5	514.4	109.17	5.712	
10,500.0	7,106.8	10,369.5	7,106.8	61.2	58.1	90.00	-2,730.3	768.4	623.4	510.6	112.81	5.526	
10,600.0	7,106.8	10,469.5	7,106.8	62.9	59.8	90.00	-2,830.3	767.7	623.3	506.8	116.47	5.352	
10,700.0	7,106.8	10,569.5	7,106.8	64.5	61.6	90.00	-2,930.3	767.0	623.2	503.1	120.14	5.187	
10,800.0	7,106.8	10,669.5	7,106.8	66.2	63.4	90.00	-3,030.3	766.4	623.1	499.3	123.82	5.032	
10,900.0	7,106.8	10,769.5	7,106.8	68.0	65.3	90.00	-3,130.2	765.7	623.0	495.5	127.52	4.886	
11,000.0	7,106.8	10,869.5	7,106.8	69.7	67.1	90.00	-3,230.2	765.0	622.9	491.7	131.22	4.747	
11,100.0	7,106.8	10,969.5	7,106.8	71.4	68.9	90.00	-3,330.2	764.3	622.8	487.9	134.92	4.616	
11,200.0	7,106.8	11,069.5	7,106.8	73.2	70.7	90.00	-3,430.2	763.6	622.7	484.0	138.64	4.491	
11,300.0	7,106.8	11,169.5	7,106.8	74.9	72.6	90.00	-3,530.2	762.9	622.6	480.2	142.36	4.373	
11,400.0	7,106.8	11,269.5	7,106.8	76.7	74.4	90.00	-3,630.2	762.2	622.5	476.4	146.09	4.261	
11,500.0	7,106.8	11,369.5	7,106.8	78.5	76.2	90.00	-3,730.2	761.6	622.4	472.5	149.82	4.154	
11,600.0	7,106.8	11,469.5	7,106.8	80.3	78.1	90.00	-3,830.2	760.9	622.2	468.7	153.56	4.052	
11,700.0	7,106.8	11,569.5	7,106.8	82.0	79.9	90.00	-3,930.2	760.2	622.1	464.8	157.30	3.955	
11,800.0	7,106.8	11,669.5	7,106.8	83.8	81.8	90.00	-4,030.2	759.5	622.0	461.0	161.05	3.862	
11,900.0	7,106.8	11,769.5	7,106.8	85.6	83.6	90.00	-4,130.2	758.8	621.9	457.1	164.81	3.774	
12,000.0	7,106.8	11,869.5	7,106.8	87.4	85.5	90.00	-4,230.2	758.1	621.8	453.3	168.56	3.689	
12,065.5	7,106.8	11,935.0	7,106.8	88.6	86.7	90.00	-4,295.7	757.7	621.8	450.7	171.03	3.635	
12,095.8	7,106.8	11,950.2	7,106.8	89.2	87.0	90.00	-4,311.0	757.6	621.9	450.0	171.88	3.618	

Company:	Great Western	Local Co-ordinate Reference:	Well Schmunk EF 31-362HN
Project:	SEC.31-T7N-R65W	TVD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	MD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schmunk EF 31-362HN	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 (11-13-13)	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
0.0	0.0	0.0	0.0	0.0	0.0	-89.98	0.0	-89.5	89.5				
100.0	100.0	100.0	100.0	0.1	0.1	-89.98	0.0	-89.5	89.5	89.3	0.22	398.198	
200.0	200.0	200.0	200.0	0.3	0.3	-89.98	0.0	-89.5	89.5	88.8	0.67	132.733	
300.0	300.0	300.0	300.0	0.6	0.6	-89.98	0.0	-89.5	89.5	88.4	1.12	79.640	
400.0	400.0	400.0	400.0	0.8	0.8	-89.98	0.0	-89.5	89.5	87.9	1.57	56.885	
500.0	500.0	500.0	500.0	1.0	1.0	-89.98	0.0	-89.5	89.5	87.5	2.02	44.244	
600.0	600.0	600.0	600.0	1.2	1.2	-89.98	0.0	-89.5	89.5	87.0	2.47	36.200	
700.0	700.0	700.0	700.0	1.5	1.5	-89.98	0.0	-89.5	89.5	86.6	2.92	30.631	
800.0	800.0	800.0	800.0	1.7	1.7	-89.98	0.0	-89.5	89.5	86.1	3.37	26.547	
900.0	900.0	900.0	900.0	1.9	1.9	-89.98	0.0	-89.5	89.5	85.7	3.82	23.423	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-89.98	0.0	-89.5	89.5	85.2	4.27	20.958	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-89.98	0.0	-89.5	89.5	84.8	4.72	18.962	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-89.98	0.0	-89.5	89.5	84.3	5.17	17.313	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-89.98	0.0	-89.5	89.5	83.9	5.62	15.928	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-89.98	0.0	-89.5	89.5	83.4	6.07	14.748	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	-89.98	0.0	-89.5	89.5	83.0	6.52	13.731	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-89.98	0.0	-89.5	89.5	82.5	6.97	12.845	
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	-89.98	0.0	-89.5	89.5	82.1	7.42	12.067	
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	-89.98	0.0	-89.5	89.5	81.6	7.87	11.377	
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	-89.98	0.0	-89.5	89.5	81.2	8.32	10.762	
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	-89.98	0.0	-89.5	89.5	80.7	8.77	10.210	
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	-89.98	0.0	-89.5	89.5	80.3	9.22	9.712	
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	-89.98	0.0	-89.5	89.5	79.8	9.66	9.260	
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	-89.98	0.0	-89.5	89.5	79.4	10.11	8.849	
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	-89.98	0.0	-89.5	89.5	78.9	10.56	8.472	
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	-89.98	0.0	-89.5	89.5	78.5	11.01	8.126	
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	-89.98	0.0	-89.5	89.5	78.0	11.46	7.808	
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	-89.98	0.0	-89.5	89.5	77.6	11.91	7.513	
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	-89.98	0.0	-89.5	89.5	77.1	12.36	7.240	
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	-89.98	0.0	-89.5	89.5	76.7	12.81	6.986	
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	-89.98	0.0	-89.5	89.5	76.2	13.26	6.749	
3,100.0	3,100.0	3,100.0	3,100.0	6.9	6.9	-89.98	0.0	-89.5	89.5	75.8	13.71	6.528	
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	-89.98	0.0	-89.5	89.5	75.3	14.16	6.321	
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	-89.98	0.0	-89.5	89.5	74.9	14.61	6.126	
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	-89.98	0.0	-89.5	89.5	74.4	15.06	5.943	
3,500.0	3,500.0	3,500.0	3,500.0	7.8	7.8	-89.98	0.0	-89.5	89.5	74.0	15.51	5.771	
3,600.0	3,600.0	3,600.0	3,600.0	8.0	8.0	-89.98	0.0	-89.5	89.5	73.5	15.96	5.608	
3,700.0	3,700.0	3,700.0	3,700.0	8.2	8.2	-89.98	0.0	-89.5	89.5	73.1	16.41	5.455	
3,800.0	3,800.0	3,800.0	3,800.0	8.4	8.4	-89.98	0.0	-89.5	89.5	72.6	16.86	5.309	
3,900.0	3,900.0	3,900.0	3,900.0	8.7	8.7	-89.98	0.0	-89.5	89.5	72.2	17.31	5.171	
4,000.0	4,000.0	4,000.0	4,000.0	8.9	8.9	-89.98	0.0	-89.5	89.5	71.7	17.76	5.040 CC, ES, SF	
4,100.0	4,100.0	4,100.0	4,100.0	9.1	9.1	-159.03	0.0	-89.5	91.9	73.8	18.18	5.058	
4,200.0	4,199.6	4,199.6	4,199.6	9.3	9.3	-160.57	0.0	-89.5	99.3	80.8	18.55	5.353	
4,300.0	4,298.8	4,298.8	4,298.8	9.5	9.5	-162.69	0.0	-89.5	111.7	92.8	18.88	5.918	
4,400.0	4,397.1	4,397.1	4,397.1	9.8	9.8	-164.95	0.0	-89.5	129.2	110.1	19.15	6.747	
4,500.0	4,494.3	4,494.3	4,494.3	10.0	10.0	-167.08	0.0	-89.5	151.9	132.5	19.38	7.838	
4,600.0	4,590.2	4,590.2	4,590.2	10.3	10.2	-168.93	0.0	-89.5	179.8	160.2	19.56	9.190	
4,700.0	4,684.4	4,684.4	4,684.4	10.7	10.4	-170.49	0.0	-89.5	212.7	193.0	19.69	10.801	
4,800.0	4,776.8	4,776.8	4,776.8	11.1	10.6	-171.76	0.0	-89.5	250.5	230.8	19.77	12.673	
4,900.0	4,867.1	4,867.1	4,867.1	11.5	10.8	-172.78	0.0	-89.5	293.3	273.5	19.80	14.807	
5,000.0	4,954.9	4,954.9	4,954.9	12.1	11.0	-173.61	0.0	-89.5	340.7	320.9	19.80	17.209	
5,100.0	5,041.1	5,041.1	5,041.1	12.8	11.2	-174.41	0.0	-89.5	391.2	371.1	20.14	19.422	

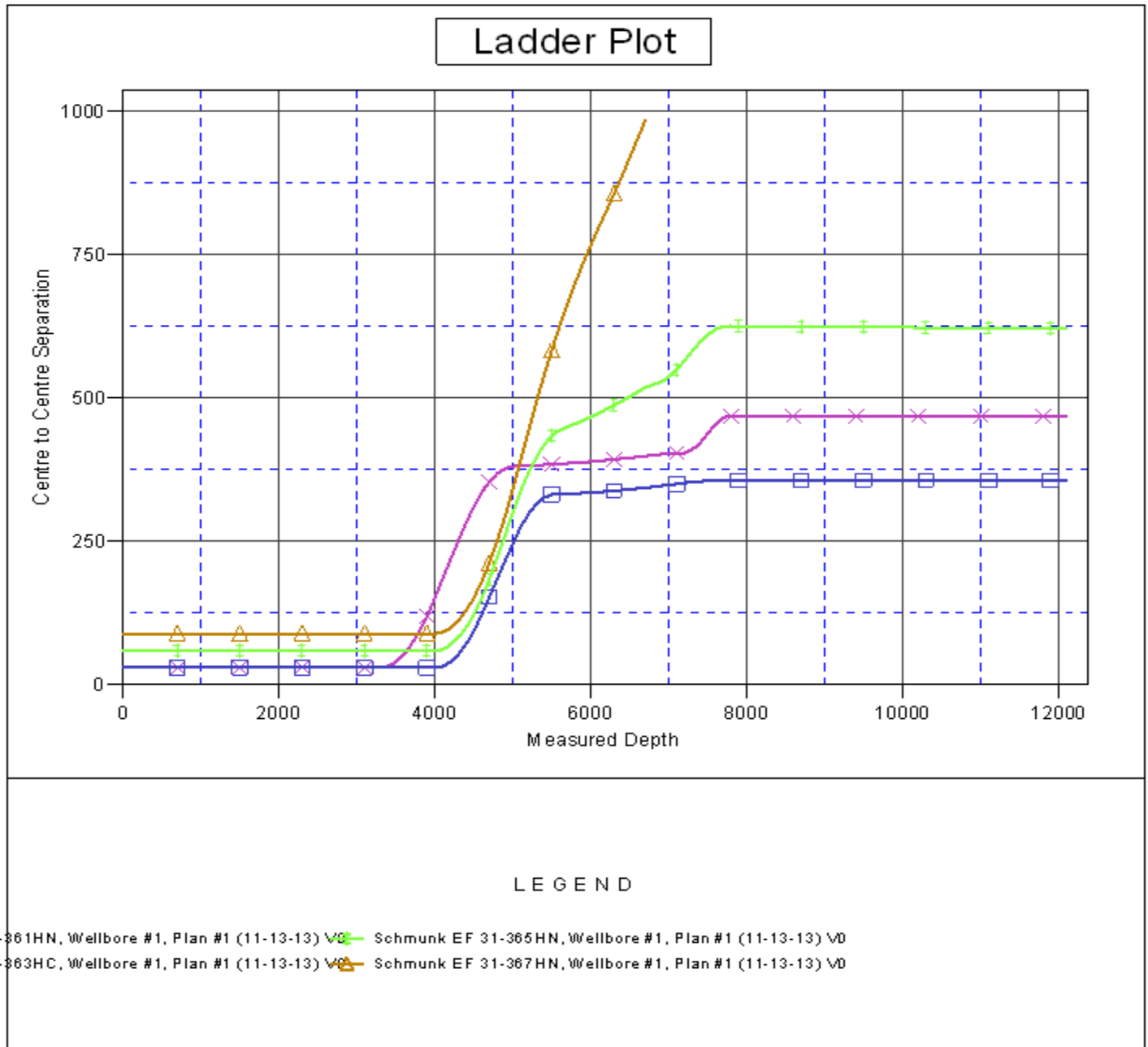
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Schmunk Pad Sec.31-T7N-R65W - Schmunk EF 31-367HN - Wellbore #1 - Plan #1 (11-13-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,200.0	5,127.3	5,127.3	5,127.3	13.5	11.4	-175.05	0.0	-89.5	441.8	421.3	20.58	21.472		
5,300.0	5,213.4	5,224.4	5,224.4	14.3	11.6	-175.46	1.4	-89.1	491.8	470.7	21.04	23.369		
5,400.0	5,299.6	5,328.6	5,328.4	15.1	11.9	-175.28	8.0	-87.0	539.1	517.6	21.54	25.032		
5,500.0	5,385.7	5,435.9	5,434.9	15.9	12.1	-174.61	20.4	-83.1	583.7	561.6	22.06	26.463		
5,600.0	5,471.9	5,545.8	5,543.0	16.8	12.4	-173.51	39.0	-77.3	625.5	602.8	22.61	27.662		
5,700.0	5,558.0	5,657.6	5,651.7	17.7	12.6	-172.06	64.0	-69.4	664.5	641.3	23.21	28.630		
5,800.0	5,644.2	5,770.6	5,759.7	18.6	12.9	-170.29	95.4	-59.6	700.9	677.1	23.88	29.357		
5,900.0	5,730.3	5,884.0	5,866.1	19.6	13.2	-168.26	132.9	-47.8	735.0	710.4	24.63	29.839		
6,000.0	5,816.5	5,997.0	5,969.5	20.5	13.6	-165.98	176.3	-34.2	767.1	741.6	25.51	30.070		
6,100.0	5,902.6	6,108.8	6,069.0	21.5	14.1	-163.51	224.9	-18.9	797.5	771.0	26.54	30.052		
6,200.0	5,988.8	6,212.0	6,158.3	22.5	14.6	-161.06	274.3	-3.4	826.9	799.2	27.68	29.871		
6,300.0	6,074.9	6,302.3	6,235.8	23.5	15.1	-158.99	318.6	10.5	856.9	828.1	28.85	29.706		
6,400.0	6,161.0	6,392.6	6,313.3	24.5	15.6	-157.05	362.8	24.4	888.0	857.9	30.10	29.504		
6,500.0	6,247.2	6,483.0	6,390.8	25.5	16.2	-155.22	407.1	38.3	920.1	888.7	31.43	29.277		
6,600.0	6,333.3	6,574.9	6,469.7	26.5	16.7	-153.50	452.0	52.4	953.0	920.2	32.83	29.031		
6,700.0	6,419.5	6,685.9	6,571.8	27.6	17.2	-152.56	490.9	70.6	985.5	951.5	34.04	28.951		

Company:	Great Western	Local Co-ordinate Reference:	Well Schmunk EF 31-362HN
Project:	SEC.31-T7N-R65W	TVD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	MD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schmunk EF 31-362HN	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 (11-13-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4866.8ft (RKB - 16.5')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Schmunk EF 31-362HN
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.51°



Company:	Great Western	Local Co-ordinate Reference:	Well Schmunk EF 31-362HN
Project:	SEC.31-T7N-R65W	TVD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	MD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schmunk EF 31-362HN	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 (11-13-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4866.8ft (RKB - 16.5')
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: Schmunk EF 31-362HN
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.51°

