

Great Western

Well Name: **Schmunk EF 31-361HN**

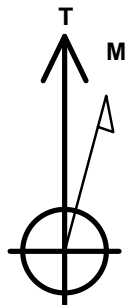
Surface Location: Schmunk Pad Sec.31-T7N-R65W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4850.3

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1439632.36	3221414.62	40.537461	-104.703378	
RKB - 16.5' WELL @ 4866.8ft (RKB - 16.5')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 526'FNL & 1854'FEL	1.0	0.0	0.0	Point
BHL 470'FSL & 1'FEL	7106.8	-4344.4	1817.9	Point
Entry Pt. 460'FNL & 1'FEL	7106.8	13.2	1852.3	Point



Azimuths to True North
Magnetic North: 8.52°

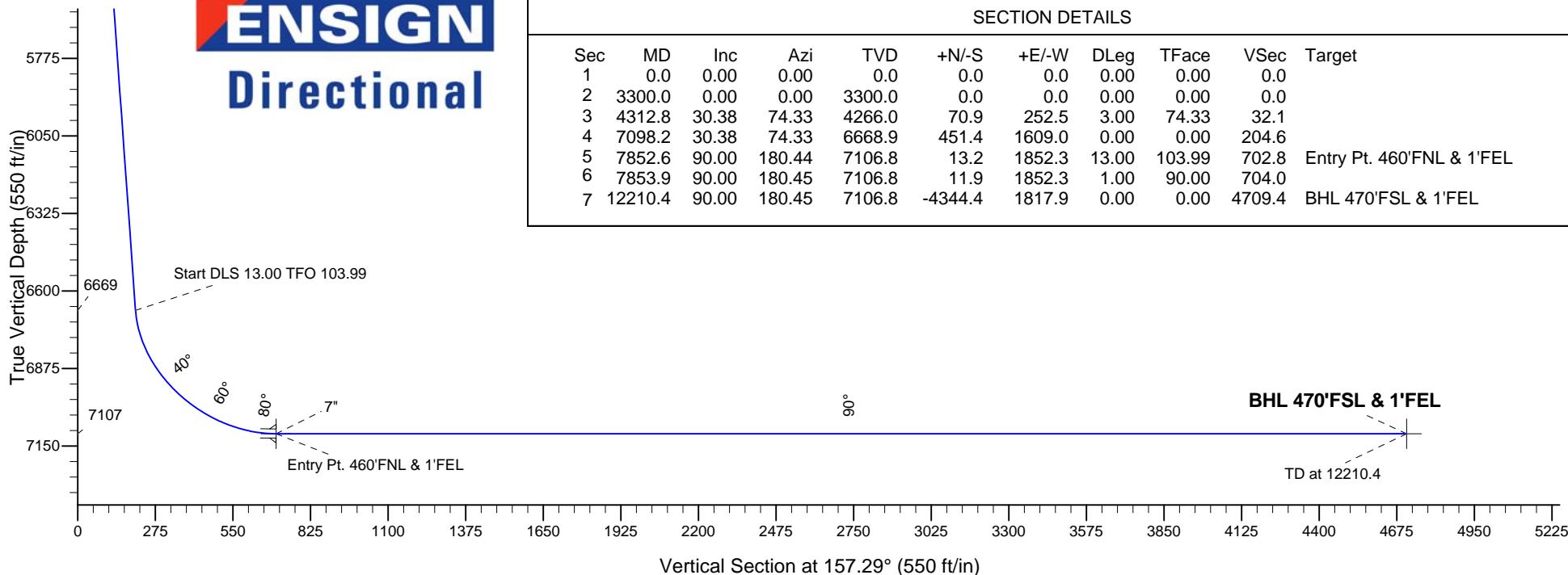
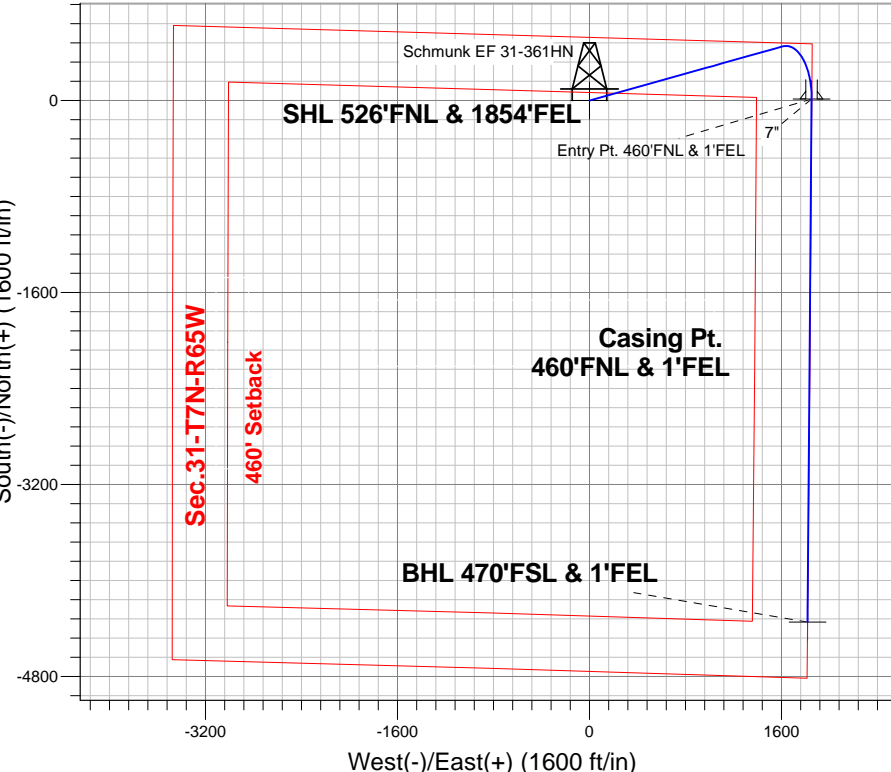
Magnetic Field
Strength: 52955.0snT
Dip Angle: 67.09°
Date: 11/13/2013
Model: IGRF2010

Schmunk Pad Sec.31-T7N-R65W
Schmunk EF 31-361HN
Plan #1 (11-13-13)
15:38, November 14 2013

ANNOTATIONS

TVD	MD	Annotation
3300.0	3300.0	KOP - Start Build 3.00
6668.9	7098.2	Start DLS 13.00 TFO 103.99
7106.8	12210.4	TD at 12210.4

South(-)/North(+) (1600 ft/in)



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	3300.0	0.00	0.00	3300.0	0.0	0.0	0.00	0.00	0.0	
3	4312.8	30.38	74.33	4266.0	70.9	252.5	3.00	74.33	32.1	
4	7098.2	30.38	74.33	6668.9	451.4	1609.0	0.00	0.00	204.6	
5	7852.6	90.00	180.44	7106.8	13.2	1852.3	13.00	103.99	702.8	Entry Pt. 460'FNL & 1'FEL
6	7853.9	90.00	180.45	7106.8	11.9	1852.3	1.00	90.00	704.0	
7	12210.4	90.00	180.45	7106.8	-4344.4	1817.9	0.00	0.00	4709.4	BHL 470'FSL & 1'FEL



Great Western

SEC.31-T7N-R65W

Schmunk Pad Sec.31-T7N-R65W

Schmunk EF 31-361HN

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	
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,312.8	30.38	74.33	4,266.0	70.9	252.5	3.00	3.00	0.00	74.33	
7,098.2	30.38	74.33	6,668.9	451.4	1,609.0	0.00	0.00	0.00	0.00	
7,852.6	90.00	180.44	7,106.8	13.2	1,852.3	13.00	7.90	14.07	103.99	Entry Pt. 460'FNL & 1'FBL
7,853.9	90.00	180.45	7,106.8	11.9	1,852.3	1.00	0.00	1.00	90.00	
12,210.4	90.00	180.45	7,106.8	-4,344.4	1,817.9	0.00	0.00	0.00	0.00	BHL 470'FSL & 1'FBL

Database:	Landmark	Local Co-ordinate Reference:	Well Schmunk EF 31-361HN
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 31-361HN	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 526'FNL & 1854'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
KOP - Start Build 3.00									
3,400.0	3.00	74.33	3,400.0	0.7	2.5	0.3	3.00	3.00	0.00
3,500.0	6.00	74.33	3,499.6	2.8	10.1	1.3	3.00	3.00	0.00
3,600.0	9.00	74.33	3,598.8	6.4	22.6	2.9	3.00	3.00	0.00
3,700.0	12.00	74.33	3,697.1	11.3	40.2	5.1	3.00	3.00	0.00
3,800.0	15.00	74.33	3,794.3	17.6	62.7	8.0	3.00	3.00	0.00
3,900.0	18.00	74.33	3,890.2	25.3	90.0	11.4	3.00	3.00	0.00
4,000.0	21.00	74.33	3,984.4	34.3	122.1	15.5	3.00	3.00	0.00
4,100.0	24.00	74.33	4,076.8	44.6	159.0	20.2	3.00	3.00	0.00
4,200.0	27.00	74.33	4,167.1	56.2	200.4	25.5	3.00	3.00	0.00
4,300.0	30.00	74.33	4,254.9	69.1	246.4	31.3	3.00	3.00	0.00
4,312.8	30.38	74.33	4,266.0	70.9	252.5	32.1	3.00	3.00	0.00
4,400.0	30.38	74.33	4,341.2	82.8	295.0	37.5	0.00	0.00	0.00
4,500.0	30.38	74.33	4,427.5	96.4	343.7	43.7	0.00	0.00	0.00
4,600.0	30.38	74.33	4,513.8	110.1	392.4	49.9	0.00	0.00	0.00
4,700.0	30.38	74.33	4,600.0	123.8	441.1	56.1	0.00	0.00	0.00
4,800.0	30.38	74.33	4,686.3	137.4	489.8	62.3	0.00	0.00	0.00
4,900.0	30.38	74.33	4,772.5	151.1	538.5	68.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Schmunk EF 31-361HN
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 31-361HN	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)
5,000.0	30.38	74.33	4,858.8	164.8	587.2	74.7	0.00	0.00	0.00
5,100.0	30.38	74.33	4,945.1	178.4	635.9	80.9	0.00	0.00	0.00
5,200.0	30.38	74.33	5,031.3	192.1	684.6	87.1	0.00	0.00	0.00
5,300.0	30.38	74.33	5,117.6	205.7	733.3	93.3	0.00	0.00	0.00
5,400.0	30.38	74.33	5,203.9	219.4	782.0	99.4	0.00	0.00	0.00
5,500.0	30.38	74.33	5,290.1	233.1	830.7	105.6	0.00	0.00	0.00
5,600.0	30.38	74.33	5,376.4	246.7	879.4	111.8	0.00	0.00	0.00
5,700.0	30.38	74.33	5,462.7	260.4	928.1	118.0	0.00	0.00	0.00
5,800.0	30.38	74.33	5,548.9	274.1	976.8	124.2	0.00	0.00	0.00
5,900.0	30.38	74.33	5,635.2	287.7	1,025.5	130.4	0.00	0.00	0.00
6,000.0	30.38	74.33	5,721.5	301.4	1,074.2	136.6	0.00	0.00	0.00
6,100.0	30.38	74.33	5,807.7	315.1	1,122.9	142.8	0.00	0.00	0.00
6,200.0	30.38	74.33	5,894.0	328.7	1,171.6	149.0	0.00	0.00	0.00
6,300.0	30.38	74.33	5,980.3	342.4	1,220.3	155.2	0.00	0.00	0.00
6,400.0	30.38	74.33	6,066.5	356.0	1,269.0	161.4	0.00	0.00	0.00
6,500.0	30.38	74.33	6,152.8	369.7	1,317.7	167.6	0.00	0.00	0.00
6,600.0	30.38	74.33	6,239.1	383.4	1,366.4	173.8	0.00	0.00	0.00
6,700.0	30.38	74.33	6,325.3	397.0	1,415.1	180.0	0.00	0.00	0.00
6,800.0	30.38	74.33	6,411.6	410.7	1,463.8	186.1	0.00	0.00	0.00
6,900.0	30.38	74.33	6,497.9	424.4	1,512.5	192.3	0.00	0.00	0.00
7,000.0	30.38	74.33	6,584.1	438.0	1,561.1	198.5	0.00	0.00	0.00
7,098.2	30.38	74.33	6,668.9	451.4	1,609.0	204.6	0.00	0.00	0.00
Start DLS 13.00 TFO 103.99									
7,100.0	30.33	74.77	6,670.4	451.7	1,609.8	204.7	12.76	-3.04	24.52
7,200.0	29.80	100.87	6,757.3	453.6	1,658.8	221.8	13.00	-0.53	26.10
7,300.0	34.12	124.20	6,842.5	433.1	1,706.6	259.2	13.00	4.32	23.33
7,400.0	41.79	141.38	6,921.5	391.1	1,750.8	315.0	13.00	7.67	17.18
7,500.0	51.31	153.63	6,990.3	329.9	1,789.1	386.3	13.00	9.52	12.25
7,600.0	61.80	162.86	7,045.4	252.5	1,819.6	469.5	13.00	10.49	9.23
7,700.0	72.80	170.40	7,084.0	162.9	1,840.6	560.2	13.00	11.00	7.53
7,800.0	84.04	177.07	7,104.1	65.7	1,851.2	654.0	13.00	11.24	6.67
7,852.6	90.00	180.44	7,106.8	13.2	1,852.3	702.8	13.00	11.32	6.40
7" - Entry Pt. 460'FNL & 1'FEL									
7,853.9	90.00	180.45	7,106.8	11.9	1,852.3	704.0	1.08	0.12	1.07
7,900.0	90.00	180.45	7,106.8	-34.2	1,851.9	746.4	0.00	0.00	0.00
8,000.0	90.00	180.45	7,106.8	-134.2	1,851.1	838.3	0.00	0.00	0.00
8,100.0	90.00	180.45	7,106.8	-234.2	1,850.3	930.3	0.00	0.00	0.00
8,200.0	90.00	180.45	7,106.8	-334.2	1,849.5	1,022.2	0.00	0.00	0.00
8,300.0	90.00	180.45	7,106.8	-434.2	1,848.8	1,114.2	0.00	0.00	0.00
8,400.0	90.00	180.45	7,106.8	-534.2	1,848.0	1,206.1	0.00	0.00	0.00
8,500.0	90.00	180.45	7,106.8	-634.2	1,847.2	1,298.0	0.00	0.00	0.00
8,600.0	90.00	180.45	7,106.8	-734.2	1,846.4	1,390.0	0.00	0.00	0.00
8,700.0	90.00	180.45	7,106.8	-834.2	1,845.6	1,481.9	0.00	0.00	0.00
8,800.0	90.00	180.45	7,106.8	-934.2	1,844.8	1,573.9	0.00	0.00	0.00
8,900.0	90.00	180.45	7,106.8	-1,034.2	1,844.0	1,665.8	0.00	0.00	0.00
9,000.0	90.00	180.45	7,106.8	-1,134.2	1,843.2	1,757.8	0.00	0.00	0.00
9,100.0	90.00	180.45	7,106.8	-1,234.2	1,842.4	1,849.7	0.00	0.00	0.00
9,200.0	90.00	180.45	7,106.8	-1,334.2	1,841.6	1,941.6	0.00	0.00	0.00
9,300.0	90.00	180.45	7,106.8	-1,434.1	1,840.9	2,033.6	0.00	0.00	0.00
9,400.0	90.00	180.45	7,106.8	-1,534.1	1,840.1	2,125.5	0.00	0.00	0.00
9,500.0	90.00	180.45	7,106.8	-1,634.1	1,839.3	2,217.5	0.00	0.00	0.00
9,600.0	90.00	180.45	7,106.8	-1,734.1	1,838.5	2,309.4	0.00	0.00	0.00
9,700.0	90.00	180.45	7,106.8	-1,834.1	1,837.7	2,401.3	0.00	0.00	0.00
9,800.0	90.00	180.45	7,106.8	-1,934.1	1,836.9	2,493.3	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Schmunk EF 31-361HN
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 31-361HN	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)
9,900.0	90.00	180.45	7,106.8	-2,034.1	1,836.1	2,585.2	0.00	0.00	0.00
10,000.0	90.00	180.45	7,106.8	-2,134.1	1,835.3	2,677.2	0.00	0.00	0.00
10,100.0	90.00	180.45	7,106.8	-2,234.1	1,834.5	2,769.1	0.00	0.00	0.00
10,200.0	90.00	180.45	7,106.8	-2,334.1	1,833.7	2,861.1	0.00	0.00	0.00
10,300.0	90.00	180.45	7,106.8	-2,434.1	1,833.0	2,953.0	0.00	0.00	0.00
10,400.0	90.00	180.45	7,106.8	-2,534.1	1,832.2	3,044.9	0.00	0.00	0.00
10,500.0	90.00	180.45	7,106.8	-2,634.1	1,831.4	3,136.9	0.00	0.00	0.00
10,600.0	90.00	180.45	7,106.8	-2,734.1	1,830.6	3,228.8	0.00	0.00	0.00
10,700.0	90.00	180.45	7,106.8	-2,834.1	1,829.8	3,320.8	0.00	0.00	0.00
10,800.0	90.00	180.45	7,106.8	-2,934.1	1,829.0	3,412.7	0.00	0.00	0.00
10,900.0	90.00	180.45	7,106.8	-3,034.1	1,828.2	3,504.6	0.00	0.00	0.00
11,000.0	90.00	180.45	7,106.8	-3,134.1	1,827.4	3,596.6	0.00	0.00	0.00
11,100.0	90.00	180.45	7,106.8	-3,234.1	1,826.6	3,688.5	0.00	0.00	0.00
11,200.0	90.00	180.45	7,106.8	-3,334.1	1,825.8	3,780.5	0.00	0.00	0.00
11,300.0	90.00	180.45	7,106.8	-3,434.1	1,825.1	3,872.4	0.00	0.00	0.00
11,400.0	90.00	180.45	7,106.8	-3,534.1	1,824.3	3,964.4	0.00	0.00	0.00
11,500.0	90.00	180.45	7,106.8	-3,634.1	1,823.5	4,056.3	0.00	0.00	0.00
11,600.0	90.00	180.45	7,106.8	-3,734.1	1,822.7	4,148.2	0.00	0.00	0.00
11,700.0	90.00	180.45	7,106.8	-3,834.1	1,821.9	4,240.2	0.00	0.00	0.00
11,800.0	90.00	180.45	7,106.8	-3,934.1	1,821.1	4,332.1	0.00	0.00	0.00
11,900.0	90.00	180.45	7,106.8	-4,034.1	1,820.3	4,424.1	0.00	0.00	0.00
12,000.0	90.00	180.45	7,106.8	-4,134.1	1,819.5	4,516.0	0.00	0.00	0.00
12,100.0	90.00	180.45	7,106.8	-4,234.1	1,818.7	4,607.9	0.00	0.00	0.00
12,200.0	90.00	180.45	7,106.8	-4,334.1	1,817.9	4,699.9	0.00	0.00	0.00
12,210.4	90.00	180.45	7,106.8	-4,344.4	1,817.9	4,709.4	0.00	0.00	0.00
BHL 470'FSL & 1'FEL									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,852.6	7,106.8	7"	7	7-1/2

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
3,300.0	3,300.0	0.0	0.0	KOP - Start Build 3.00
7,098.2	6,668.9	451.4	1,609.0	Start DLS 13.00 TFO 103.99
12,210.4	7,106.8	-4,344.5	1,817.9	TD at 12210.4



Great Western

SEC.31-T7N-R65W

Schmunk Pad Sec.31-T7N-R65W

Schmunk EF 31-361HN

Wellbore #1

Plan #1 (11-13-13)

Anticollision Report

14 November, 2013

Company:	Great Western	Local Co-ordinate Reference:	Well Schmunk EF 31-361HN
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 31-361HN	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	Plan #1 (11-13-13)		
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 11/13/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	12,210.4	Plan #1 (11-13-13) (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						
Schmunk Pad Sec.31-T7N-R65W						
Schmunk EF 31-362HN - Wellbore #1 - Plan #1 (11-13-1	3,300.0	3,300.0	30.0	15.4	2.056	CC, ES, SF
Schmunk EF 31-363HC - Wellbore #1 - Plan #1 (11-13-1	3,300.0	3,300.0	60.0	45.4	4.110	CC, ES, SF
Schmunk EF 31-365HN - Wellbore #1 - Plan #1 (11-13-1	3,300.0	3,300.0	89.5	74.9	6.127	CC, ES
Schmunk EF 31-365HN - Wellbore #1 - Plan #1 (11-13-1	3,400.0	3,400.0	92.0	77.0	6.122	SF

Offset Design Schmunk Pad Sec.31-T7N-R65W - Schmunk EF 31-362HN - Wellbore #1 - Plan #1 (11-13-13)												Offset Site Error: 0.0 ft	
Survey Program: 0-MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-87.96	1.1	-30.0	30.0				
100.0	100.0	100.0	100.0	0.1	0.1	-87.96	1.1	-30.0	30.0	29.8	0.22	133.642	
200.0	200.0	200.0	200.0	0.3	0.3	-87.96	1.1	-30.0	30.0	29.4	0.67	44.547	
300.0	300.0	300.0	300.0	0.6	0.6	-87.96	1.1	-30.0	30.0	28.9	1.12	26.728	
400.0	400.0	400.0	400.0	0.8	0.8	-87.96	1.1	-30.0	30.0	28.5	1.57	19.092	
500.0	500.0	500.0	500.0	1.0	1.0	-87.96	1.1	-30.0	30.0	28.0	2.02	14.849	
600.0	600.0	600.0	600.0	1.2	1.2	-87.96	1.1	-30.0	30.0	27.6	2.47	12.149	
700.0	700.0	700.0	700.0	1.5	1.5	-87.96	1.1	-30.0	30.0	27.1	2.92	10.280	
800.0	800.0	800.0	800.0	1.7	1.7	-87.96	1.1	-30.0	30.0	26.7	3.37	8.909	
900.0	900.0	900.0	900.0	1.9	1.9	-87.96	1.1	-30.0	30.0	26.2	3.82	7.861	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-87.96	1.1	-30.0	30.0	25.8	4.27	7.034	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-87.96	1.1	-30.0	30.0	25.3	4.72	6.364	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-87.96	1.1	-30.0	30.0	24.9	5.17	5.811	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-87.96	1.1	-30.0	30.0	24.4	5.62	5.346	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-87.96	1.1	-30.0	30.0	24.0	6.07	4.950	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	-87.96	1.1	-30.0	30.0	23.5	6.52	4.608	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-87.96	1.1	-30.0	30.0	23.1	6.97	4.311	
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	-87.96	1.1	-30.0	30.0	22.6	7.42	4.050	
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	-87.96	1.1	-30.0	30.0	22.2	7.87	3.818	
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	-87.96	1.1	-30.0	30.0	21.7	8.32	3.612	
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	-87.96	1.1	-30.0	30.0	21.3	8.77	3.427	
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	-87.96	1.1	-30.0	30.0	20.8	9.22	3.260	
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	-87.96	1.1	-30.0	30.0	20.4	9.66	3.108	

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 31-361HN
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 31-361HN	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
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	-87.96	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	-87.96	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	-87.96	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	-87.96	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	-87.96	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	-87.96	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	-87.96	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	-87.96	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	-87.96	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	-87.96	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	-87.96	1.1	-30.0	30.0	15.4	14.61	2.056 CC, ES, SF	
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	-163.67	1.1	-30.0	32.5	17.5	15.03	2.165	
3,500.0	3,499.6	3,499.6	3,499.6	7.7	7.8	-166.77	1.1	-30.0	40.1	24.7	15.41	2.604	
3,600.0	3,598.8	3,598.8	3,598.8	8.0	8.0	-169.94	1.1	-30.0	52.9	37.2	15.75	3.361	
3,700.0	3,697.1	3,697.1	3,697.1	8.2	8.2	-172.44	1.1	-30.0	70.9	54.9	16.04	4.423	
3,800.0	3,794.3	3,794.3	3,794.3	8.5	8.4	-174.23	1.1	-30.0	94.1	77.8	16.29	5.777	
3,900.0	3,890.2	3,890.2	3,890.2	8.8	8.6	-175.50	1.1	-30.0	122.4	105.9	16.51	7.417	
4,000.0	3,984.4	3,984.4	3,984.4	9.1	8.8	-176.40	1.1	-30.0	155.7	139.1	16.68	9.338	
4,100.0	4,076.8	4,085.3	4,085.3	9.6	9.1	-177.01	1.8	-28.2	192.2	175.4	16.82	11.431	
4,200.0	4,167.1	4,189.8	4,189.5	10.1	9.3	-177.28	4.5	-21.3	228.7	211.8	16.92	13.519	
4,300.0	4,254.9	4,296.7	4,295.5	10.7	9.5	-177.34	9.5	-8.6	265.0	248.0	17.00	15.592	
4,400.0	4,341.2	4,406.8	4,403.8	11.4	9.8	-177.27	16.9	10.1	299.0	281.6	17.42	17.168	
4,500.0	4,427.5	4,521.3	4,514.8	12.2	10.1	-177.04	27.0	35.7	327.6	309.6	17.92	18.279	
4,600.0	4,513.8	4,639.4	4,627.5	13.1	10.4	-176.67	40.0	68.6	350.3	331.8	18.45	18.989	
4,700.0	4,600.0	4,760.4	4,740.5	13.9	10.9	-176.15	55.9	108.9	367.0	348.0	19.01	19.303	
4,800.0	4,686.3	4,883.4	4,852.3	14.8	11.5	-175.49	74.7	156.7	377.4	357.8	19.61	19.246	
4,900.0	4,772.5	5,007.6	4,961.5	15.8	12.2	-174.64	96.4	211.5	381.6	361.3	20.25	18.841	
5,000.0	4,858.8	5,109.3	5,049.1	16.7	12.8	-173.85	115.3	259.6	382.1	361.2	20.88	18.303	
5,100.0	4,945.1	5,209.2	5,135.2	17.7	13.6	-173.08	133.9	306.7	382.7	361.2	21.53	17.776	
5,200.0	5,031.3	5,309.1	5,221.2	18.7	14.3	-172.31	152.6	353.9	383.4	361.1	22.22	17.256	
5,300.0	5,117.6	5,408.9	5,307.2	19.7	15.2	-171.55	171.2	401.1	384.1	361.1	22.94	16.743	
5,400.0	5,203.9	5,508.8	5,393.3	20.7	16.0	-170.79	189.8	448.3	384.9	361.2	23.70	16.239	
5,500.0	5,290.1	5,608.6	5,479.3	21.7	16.9	-170.03	208.4	495.4	385.7	361.2	24.50	15.745	
5,600.0	5,376.4	5,708.5	5,565.3	22.8	17.8	-169.27	227.0	542.6	386.7	361.3	25.34	15.262	
5,700.0	5,462.7	5,808.4	5,651.4	23.8	18.7	-168.52	245.6	589.8	387.7	361.5	26.21	14.789	
5,800.0	5,548.9	5,908.2	5,737.4	24.8	19.7	-167.77	264.2	636.9	388.7	361.6	27.13	14.328	
5,900.0	5,635.2	6,008.1	5,823.4	25.9	20.6	-167.03	282.8	684.1	389.9	361.8	28.09	13.879	
6,000.0	5,721.5	6,108.0	5,909.5	26.9	21.6	-166.29	301.4	731.3	391.1	362.0	29.09	13.443	
6,100.0	5,807.7	6,207.8	5,995.5	28.0	22.6	-165.55	320.1	778.4	392.3	362.2	30.13	13.021	
6,200.0	5,894.0	6,307.7	6,081.5	29.1	23.6	-164.82	338.7	825.6	393.6	362.4	31.21	12.611	
6,300.0	5,980.3	6,407.6	6,167.6	30.1	24.6	-164.10	357.3	872.8	395.0	362.7	32.34	12.215	
6,400.0	6,066.5	6,507.4	6,253.6	31.2	25.6	-163.38	375.9	920.0	396.5	363.0	33.50	11.833	
6,500.0	6,152.8	6,607.3	6,339.6	32.3	26.6	-162.66	394.5	967.1	398.0	363.3	34.71	11.465	
6,600.0	6,239.1	6,707.2	6,425.7	33.4	27.6	-161.96	413.1	1,014.3	399.6	363.6	35.96	11.111	
6,700.0	6,325.3	6,807.0	6,511.7	34.4	28.7	-161.25	431.7	1,061.5	401.2	363.9	37.25	10.770	
6,800.0	6,411.6	6,906.9	6,597.7	35.5	29.7	-160.56	450.3	1,108.6	402.9	364.3	38.58	10.443	
6,900.0	6,497.9	7,011.2	6,687.9	36.6	30.7	-160.20	467.2	1,158.1	404.4	364.6	39.77	10.169	
7,000.0	6,584.1	7,117.4	6,780.8	37.7	31.6	-162.86	462.9	1,208.8	404.3	365.0	39.28	10.293	
7,023.9	6,604.8	7,141.0	6,801.2	37.9	31.8	-164.02	458.5	1,219.9	404.2	365.3	38.93	10.382	
7,100.0	6,670.4	7,210.1	6,859.2	38.8	32.2	-168.40	438.5	1,251.5	405.3	367.6	37.66	10.761	
7,200.0	6,757.3	7,291.1	6,922.9	39.7	32.7	162.87	402.3	1,286.0	411.1	374.5	36.60	11.234	
7,300.0	6,842.5	7,367.1	6,976.4	40.5	33.0	137.39	356.9	1,314.9	420.9	384.1	36.87	11.415	

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 31-361HN
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 31-361HN	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
7,400.0	6,921.5	7,439.6	7,020.3	41.2	33.2	118.85	304.4	1,338.5	432.7	395.0	37.72	11.473	
7,500.0	6,990.3	7,509.6	7,055.1	41.7	33.3	106.29	246.7	1,357.1	444.7	406.5	38.19	11.645	
7,600.0	7,045.4	7,575.0	7,080.0	42.0	33.3	98.09	187.7	1,370.2	455.3	417.4	37.93	12.003	
7,700.0	7,084.0	7,645.1	7,097.8	42.2	33.4	92.93	120.6	1,379.5	463.3	425.9	37.36	12.399	
7,800.0	7,104.1	7,711.6	7,106.0	42.2	33.3	90.40	54.8	1,383.4	467.9	430.7	37.19	12.579	
7,900.0	7,106.8	7,796.9	7,106.8	42.2	33.3	90.00	-30.5	1,383.2	468.7	431.1	37.59	12.471	
8,000.0	7,106.8	7,896.9	7,106.8	42.2	33.3	90.00	-130.5	1,382.4	468.7	430.6	38.08	12.309	
8,100.0	7,106.8	7,996.9	7,106.8	42.2	33.4	90.00	-230.5	1,381.6	468.7	429.8	38.94	12.036	
8,200.0	7,106.8	8,096.9	7,106.8	42.3	33.5	90.00	-330.5	1,380.8	468.7	428.6	40.16	11.672	
8,300.0	7,106.8	8,196.9	7,106.8	42.5	33.8	90.00	-430.5	1,380.0	468.7	427.0	41.69	11.242	
8,400.0	7,106.8	8,296.9	7,106.8	42.8	34.1	90.00	-530.5	1,379.2	468.7	425.2	43.52	10.772	
8,500.0	7,106.8	8,396.9	7,106.8	43.1	34.6	90.00	-630.5	1,378.5	468.7	423.1	45.59	10.282	
8,600.0	7,106.8	8,496.9	7,106.8	43.5	35.1	90.00	-730.5	1,377.7	468.7	420.9	47.88	9.790	
8,700.0	7,106.8	8,596.9	7,106.8	44.0	35.8	90.00	-830.5	1,376.9	468.7	418.4	50.36	9.307	
8,800.0	7,106.8	8,696.9	7,106.8	44.5	36.6	90.00	-930.5	1,376.1	468.7	415.7	53.01	8.843	
8,900.0	7,106.8	8,796.9	7,106.8	45.2	37.4	90.00	-1,030.4	1,375.3	468.7	413.0	55.79	8.402	
9,000.0	7,106.8	8,896.9	7,106.8	45.9	38.4	90.00	-1,130.4	1,374.5	468.7	410.1	58.69	7.987	
9,100.0	7,106.8	8,996.9	7,106.8	46.7	39.4	90.00	-1,230.4	1,373.7	468.7	407.1	61.70	7.598	
9,200.0	7,106.8	9,096.9	7,106.8	47.5	40.5	90.00	-1,330.4	1,372.9	468.8	404.0	64.79	7.235	
9,300.0	7,106.8	9,196.9	7,106.8	48.4	41.7	90.00	-1,430.4	1,372.1	468.8	400.8	67.96	6.897	
9,400.0	7,106.8	9,296.9	7,106.8	49.4	42.9	90.00	-1,530.4	1,371.3	468.8	397.6	71.20	6.584	
9,500.0	7,106.8	9,396.9	7,106.8	50.5	44.3	90.00	-1,630.4	1,370.5	468.8	394.3	74.49	6.293	
9,600.0	7,106.8	9,496.9	7,106.8	51.6	45.6	90.00	-1,730.4	1,369.7	468.8	390.9	77.83	6.023	
9,700.0	7,106.8	9,596.9	7,106.8	52.8	47.0	90.00	-1,830.4	1,368.9	468.8	387.5	81.22	5.771	
9,800.0	7,106.8	9,696.9	7,106.8	54.0	48.5	90.00	-1,930.4	1,368.2	468.8	384.1	84.65	5.538	
9,900.0	7,106.8	9,796.9	7,106.8	55.2	50.0	90.00	-2,030.4	1,367.4	468.8	380.7	88.11	5.320	
10,000.0	7,106.8	9,896.9	7,106.8	56.6	51.5	90.00	-2,130.4	1,366.6	468.8	377.2	91.60	5.118	
10,100.0	7,106.8	9,996.9	7,106.8	57.9	53.0	90.00	-2,230.4	1,365.8	468.8	373.7	95.12	4.928	
10,200.0	7,106.8	10,096.9	7,106.8	59.3	54.6	90.00	-2,330.4	1,365.0	468.8	370.1	98.66	4.751	
10,300.0	7,106.8	10,196.9	7,106.8	60.7	56.2	90.00	-2,430.4	1,364.2	468.8	366.5	102.23	4.586	
10,400.0	7,106.8	10,296.9	7,106.8	62.2	57.8	90.00	-2,530.4	1,363.4	468.8	363.0	105.81	4.430	
10,500.0	7,106.8	10,396.9	7,106.8	63.7	59.5	90.00	-2,630.4	1,362.6	468.8	359.4	109.41	4.285	
10,600.0	7,106.8	10,496.9	7,106.8	65.2	61.1	90.00	-2,730.4	1,361.8	468.8	355.8	113.03	4.148	
10,700.0	7,106.8	10,596.9	7,106.8	66.8	62.8	90.00	-2,830.4	1,361.0	468.8	352.1	116.66	4.018	
10,800.0	7,106.8	10,696.9	7,106.8	68.3	64.5	90.00	-2,930.4	1,360.2	468.8	348.5	120.30	3.897	
10,900.0	7,106.8	10,796.9	7,106.8	69.9	66.2	90.00	-3,030.4	1,359.4	468.8	344.8	123.96	3.782	
11,000.0	7,106.8	10,896.9	7,106.8	71.5	67.9	90.00	-3,130.4	1,358.7	468.8	341.2	127.63	3.673	
11,100.0	7,106.8	10,996.9	7,106.8	73.1	69.6	90.00	-3,230.4	1,357.9	468.8	337.5	131.30	3.570	
11,200.0	7,106.8	11,096.9	7,106.8	74.8	71.4	90.00	-3,330.4	1,357.1	468.8	333.8	134.99	3.473	
11,300.0	7,106.8	11,196.9	7,106.8	76.4	73.1	90.00	-3,430.4	1,356.3	468.8	330.1	138.68	3.380	
11,400.0	7,106.8	11,296.9	7,106.8	78.1	74.9	90.00	-3,530.4	1,355.5	468.8	326.4	142.39	3.292	
11,500.0	7,106.8	11,396.9	7,106.8	79.8	76.6	90.00	-3,630.4	1,354.7	468.8	322.7	146.10	3.209	
11,600.0	7,106.8	11,496.9	7,106.8	81.5	78.4	90.00	-3,730.4	1,353.9	468.8	319.0	149.81	3.129	
11,700.0	7,106.8	11,596.9	7,106.8	83.2	80.2	90.00	-3,830.4	1,353.1	468.8	315.3	153.54	3.053	
11,800.0	7,106.8	11,696.9	7,106.8	84.9	82.0	90.00	-3,930.4	1,352.3	468.8	311.5	157.26	2.981	
11,900.0	7,106.8	11,796.9	7,106.8	86.6	83.8	90.00	-4,030.4	1,351.5	468.8	307.8	161.00	2.912	
12,000.0	7,106.8	11,896.9	7,106.8	88.3	85.6	90.00	-4,130.4	1,350.7	468.8	304.1	164.74	2.846	
12,100.0	7,106.8	11,996.9	7,106.8	90.1	87.4	90.00	-4,230.3	1,349.9	468.8	300.3	168.48	2.783	
12,160.3	7,106.8	12,057.2	7,106.8	91.1	88.5	90.00	-4,290.6	1,349.5	468.8	298.1	170.74	2.746	
12,200.0	7,106.8	12,095.8	7,106.8	91.8	89.2	90.00	-4,329.2	1,349.2	468.8	296.6	172.20	2.722	
12,210.4	7,106.8	12,095.8	7,106.8	92.0	89.2	90.00	-4,329.2	1,349.2	469.0	296.6	172.40	2.720	

Company:	Great Western	Local Co-ordinate Reference:	Well Schmunk EF 31-361HN
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 31-361HN	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	-88.97	1.1	-60.0	60.0					
100.0	100.0	100.0	100.0	0.1	0.1	-88.97	1.1	-60.0	60.0	59.8	0.22	267.158		
200.0	200.0	200.0	200.0	0.3	0.3	-88.97	1.1	-60.0	60.0	59.4	0.67	89.053		
300.0	300.0	300.0	300.0	0.6	0.6	-88.97	1.1	-60.0	60.0	58.9	1.12	53.432		
400.0	400.0	400.0	400.0	0.8	0.8	-88.97	1.1	-60.0	60.0	58.5	1.57	38.165		
500.0	500.0	500.0	500.0	1.0	1.0	-88.97	1.1	-60.0	60.0	58.0	2.02	29.684		
600.0	600.0	600.0	600.0	1.2	1.2	-88.97	1.1	-60.0	60.0	57.6	2.47	24.287		
700.0	700.0	700.0	700.0	1.5	1.5	-88.97	1.1	-60.0	60.0	57.1	2.92	20.551		
800.0	800.0	800.0	800.0	1.7	1.7	-88.97	1.1	-60.0	60.0	56.7	3.37	17.811		
900.0	900.0	900.0	900.0	1.9	1.9	-88.97	1.1	-60.0	60.0	56.2	3.82	15.715		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-88.97	1.1	-60.0	60.0	55.8	4.27	14.061		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-88.97	1.1	-60.0	60.0	55.3	4.72	12.722		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-88.97	1.1	-60.0	60.0	54.9	5.17	11.616		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-88.97	1.1	-60.0	60.0	54.4	5.62	10.686		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-88.97	1.1	-60.0	60.0	54.0	6.07	9.895		
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	-88.97	1.1	-60.0	60.0	53.5	6.52	9.212		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-88.97	1.1	-60.0	60.0	53.1	6.97	8.618		
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	-88.97	1.1	-60.0	60.0	52.6	7.42	8.096		
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	-88.97	1.1	-60.0	60.0	52.2	7.87	7.633		
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	-88.97	1.1	-60.0	60.0	51.7	8.32	7.220		
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	-88.97	1.1	-60.0	60.0	51.3	8.77	6.850		
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	-88.97	1.1	-60.0	60.0	50.8	9.22	6.516		
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	-88.97	1.1	-60.0	60.0	50.4	9.66	6.213		
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	-88.97	1.1	-60.0	60.0	49.9	10.11	5.937		
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	-88.97	1.1	-60.0	60.0	49.5	10.56	5.684		
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	-88.97	1.1	-60.0	60.0	49.0	11.01	5.452		
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	-88.97	1.1	-60.0	60.0	48.6	11.46	5.238		
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	-88.97	1.1	-60.0	60.0	48.1	11.91	5.041		
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	-88.97	1.1	-60.0	60.0	47.7	12.36	4.857		
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	-88.97	1.1	-60.0	60.0	47.2	12.81	4.687		
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	-88.97	1.1	-60.0	60.0	46.8	13.26	4.528		
3,100.0	3,100.0	3,100.0	3,100.0	6.9	6.9	-88.97	1.1	-60.0	60.0	46.3	13.71	4.380		
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	-88.97	1.1	-60.0	60.0	45.9	14.16	4.241		
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	-88.97	1.1	-60.0	60.0	45.4	14.61	4.110 CC, ES, SF		
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	-163.96	1.1	-60.0	62.6	47.5	15.03	4.162		
3,500.0	3,499.6	3,499.6	3,499.6	7.7	7.8	-165.68	1.1	-60.0	70.1	54.7	15.41	4.551		
3,600.0	3,598.8	3,598.8	3,598.8	8.0	8.0	-167.83	1.1	-60.0	82.8	67.1	15.75	5.261		
3,700.0	3,697.1	3,697.1	3,697.1	8.2	8.2	-169.92	1.1	-60.0	100.7	84.7	16.04	6.279		
3,800.0	3,794.3	3,794.3	3,794.3	8.5	8.4	-171.71	1.1	-60.0	123.8	107.5	16.30	7.595		
3,900.0	3,890.2	3,890.2	3,890.2	8.8	8.6	-173.15	1.1	-60.0	152.0	135.5	16.51	9.204		
4,000.0	3,984.4	3,984.4	3,984.4	9.1	8.8	-174.27	1.1	-60.0	185.2	168.5	16.68	11.099		
4,100.0	4,076.8	4,076.8	4,076.8	9.6	9.1	-175.15	1.1	-60.0	223.3	206.5	16.82	13.279		
4,200.0	4,167.1	4,167.1	4,167.1	10.1	9.3	-175.83	1.1	-60.0	266.2	249.3	16.91	15.744		
4,300.0	4,254.9	4,254.9	4,254.9	10.7	9.5	-176.36	1.1	-60.0	313.9	296.9	16.97	18.497		
4,400.0	4,341.2	4,341.2	4,341.2	11.4	9.6	-176.85	1.1	-60.0	364.3	347.0	17.35	20.995		
4,500.0	4,427.5	4,427.5	4,427.5	12.2	9.8	-177.24	1.1	-60.0	414.9	397.1	17.80	23.306		
4,600.0	4,513.8	4,513.8	4,513.8	13.1	10.0	-177.54	1.1	-60.0	465.4	447.1	18.26	25.487		
4,700.0	4,600.0	4,600.0	4,600.0	13.9	10.2	-177.78	1.1	-60.0	515.9	497.2	18.73	27.547		
4,800.0	4,686.3	4,721.0	4,720.9	14.8	10.5	-177.94	2.9	-56.6	563.8	544.6	19.26	29.269		
4,900.0	4,772.5	4,850.0	4,849.3	15.8	10.8	-177.87	8.7	-45.6	606.1	586.3	19.82	30.584		
5,000.0	4,858.8	4,986.6	4,984.0	16.7	11.1	-177.59	19.3	-25.5	642.1	621.7	20.40	31.475		
5,100.0	4,945.1	5,129.9	5,123.2	17.7	11.4	-177.12	35.2	4.6	671.4	650.4	21.02	31.946		

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 31-361HN
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 31-361HN	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	5,031.3	5,278.8	5,264.6	18.7	11.9	-176.44	56.8	45.5	693.6	672.0	21.67	32.006	
5,300.0	5,117.6	5,431.6	5,405.5	19.7	12.5	-175.54	84.3	97.6	708.4	686.0	22.38	31.656	
5,400.0	5,203.9	5,586.5	5,543.2	20.7	13.2	-174.41	117.4	160.3	715.6	692.4	23.15	30.912	
5,500.0	5,290.1	5,700.4	5,641.2	21.7	13.9	-173.44	144.4	211.6	717.2	693.4	23.87	30.053	
5,600.0	5,376.4	5,799.8	5,726.6	22.8	14.6	-172.60	168.2	256.6	718.8	694.2	24.58	29.242	
5,700.0	5,462.7	5,899.2	5,812.0	23.8	15.3	-171.75	191.9	301.6	720.5	695.2	25.34	28.436	
5,800.0	5,548.9	5,998.6	5,897.4	24.8	16.1	-170.92	215.7	346.6	722.4	696.3	26.14	27.637	
5,900.0	5,635.2	6,098.1	5,982.8	25.9	16.9	-170.08	239.5	391.7	724.5	697.5	26.99	26.847	
6,000.0	5,721.5	6,197.5	6,068.2	26.9	17.7	-169.25	263.2	436.7	726.7	698.8	27.88	26.068	
6,100.0	5,807.7	6,296.9	6,153.6	28.0	18.6	-168.43	287.0	481.7	729.0	700.2	28.81	25.302	
6,200.0	5,894.0	6,396.3	6,239.0	29.1	19.5	-167.61	310.8	526.7	731.5	701.7	29.80	24.550	
6,300.0	5,980.3	6,495.7	6,324.4	30.1	20.4	-166.80	334.5	571.8	734.2	703.4	30.83	23.814	
6,400.0	6,066.5	6,595.1	6,409.8	31.2	21.3	-165.99	358.3	616.8	737.0	705.1	31.91	23.096	
6,500.0	6,152.8	6,694.6	6,495.2	32.3	22.2	-165.19	382.0	661.8	739.9	706.9	33.04	22.397	
6,600.0	6,239.1	6,794.0	6,580.6	33.4	23.2	-164.40	405.8	706.8	743.0	708.8	34.21	21.717	
6,700.0	6,325.3	6,893.4	6,666.0	34.4	24.1	-163.61	429.6	751.9	746.3	710.8	35.44	21.059	
6,800.0	6,411.6	6,992.8	6,751.4	35.5	25.1	-162.83	453.3	796.9	749.6	712.9	36.71	20.423	
6,900.0	6,497.9	7,098.3	6,842.6	36.6	26.0	-162.29	474.9	845.0	752.9	715.0	37.90	19.865	
7,000.0	6,584.1	7,206.8	6,938.5	37.7	26.8	-163.52	473.7	895.3	755.1	716.9	38.16	19.785	
7,100.0	6,670.4	7,302.5	7,020.6	38.8	27.4	-166.59	450.8	938.2	757.4	719.8	37.64	20.124	
7,200.0	6,757.3	7,386.2	7,087.4	39.7	27.8	-167.28	414.7	973.1	762.1	725.1	36.91	20.644	
7,300.0	6,842.5	7,464.5	7,143.5	40.5	28.0	-144.12	368.6	1,002.2	768.8	732.1	36.65	20.974	
7,400.0	6,921.5	7,538.9	7,189.4	41.2	28.1	-127.54	315.1	1,025.8	776.6	739.8	36.84	21.082	
7,500.0	6,990.3	7,610.7	7,225.5	41.7	28.2	-116.50	256.0	1,044.3	784.5	747.3	37.24	21.067	
7,600.0	7,045.4	7,680.5	7,252.1	42.0	28.2	-109.31	192.9	1,057.8	791.5	753.9	37.64	21.028	
7,700.0	7,084.0	7,750.0	7,269.4	42.2	28.2	-104.89	126.3	1,066.4	796.9	758.9	38.01	20.966	
7,800.0	7,104.1	7,816.9	7,277.2	42.2	28.1	-102.69	60.0	1,070.0	800.1	761.7	38.45	20.810	
7,900.0	7,106.8	7,904.9	7,277.8	42.2	28.1	-102.33	-28.0	1,069.6	800.8	761.9	38.93	20.569	
8,000.0	7,106.8	8,004.9	7,277.8	42.2	28.1	-102.33	-128.0	1,068.8	800.8	761.2	39.57	20.238	
8,100.0	7,106.8	8,104.9	7,277.8	42.2	28.2	-102.33	-228.0	1,068.0	800.8	760.2	40.55	19.749	
8,200.0	7,106.8	8,204.9	7,277.8	42.3	28.4	-102.33	-328.0	1,067.2	800.8	759.0	41.85	19.137	
8,300.0	7,106.8	8,304.9	7,277.8	42.5	28.7	-102.33	-428.0	1,066.4	800.8	757.4	43.43	18.438	
8,400.0	7,106.8	8,404.9	7,277.8	42.8	29.2	-102.33	-528.0	1,065.7	800.8	755.5	45.28	17.686	
8,500.0	7,106.8	8,504.9	7,277.8	43.1	29.8	-102.33	-628.0	1,064.9	800.8	753.5	47.35	16.912	
8,600.0	7,106.8	8,604.9	7,277.8	43.5	30.5	-102.33	-728.0	1,064.1	800.8	751.2	49.63	16.137	
8,700.0	7,106.8	8,704.9	7,277.8	44.0	31.4	-102.33	-828.0	1,063.3	800.8	748.7	52.07	15.379	
8,800.0	7,106.8	8,804.9	7,277.8	44.5	32.3	-102.33	-928.0	1,062.5	800.8	746.1	54.67	14.648	
8,900.0	7,106.8	8,904.9	7,277.8	45.2	33.4	-102.33	-1,028.0	1,061.7	800.8	743.4	57.40	13.952	
9,000.0	7,106.8	9,004.9	7,277.8	45.9	34.6	-102.33	-1,127.9	1,060.9	800.8	740.6	60.24	13.295	
9,100.0	7,106.8	9,104.9	7,277.8	46.7	35.8	-102.33	-1,227.9	1,060.1	800.8	737.7	63.17	12.677	
9,200.0	7,106.8	9,204.9	7,277.8	47.5	37.1	-102.33	-1,327.9	1,059.3	800.8	734.6	66.19	12.099	
9,300.0	7,106.8	9,304.9	7,277.8	48.4	38.5	-102.33	-1,427.9	1,058.5	800.8	731.6	69.28	11.559	
9,400.0	7,106.8	9,404.9	7,277.8	49.4	39.9	-102.33	-1,527.9	1,057.7	800.8	728.4	72.44	11.055	
9,500.0	7,106.8	9,504.9	7,277.8	50.5	41.3	-102.33	-1,627.9	1,056.9	800.8	725.2	75.65	10.586	
9,600.0	7,106.8	9,604.9	7,277.8	51.6	42.8	-102.33	-1,727.9	1,056.1	800.8	721.9	78.91	10.148	
9,700.0	7,106.8	9,704.9	7,277.8	52.8	44.4	-102.33	-1,827.9	1,055.3	800.9	718.6	82.22	9.741	
9,800.0	7,106.8	9,804.9	7,277.8	54.0	45.9	-102.33	-1,927.9	1,054.5	800.9	715.3	85.56	9.360	
9,900.0	7,106.8	9,904.9	7,277.8	55.2	47.5	-102.33	-2,027.9	1,053.8	800.9	711.9	88.94	9.005	
10,000.0	7,106.8	10,004.9	7,277.8	56.6	49.2	-102.33	-2,127.9	1,053.0	800.9	708.5	92.34	8.673	
10,100.0	7,106.8	10,104.9	7,277.8	57.9	50.8	-102.33	-2,227.9	1,052.2	800.9	705.1	95.78	8.362	
10,200.0	7,106.8	10,204.9	7,277.8	59.3	52.5	-102.33	-2,327.9	1,051.4	800.9	701.6	99.23	8.070	
10,300.0	7,106.8	10,304.9	7,277.8	60.7	54.2	-102.33	-2,427.9	1,050.6	800.9	698.2	102.71	7.797	

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 31-361HN
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 31-361HN	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 31-363HC - 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						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	
10,400.0	7,106.8	10,404.9	7,277.8	62.2	55.9	102.33	-2,527.9	1,049.8	800.9	694.7	106.21	7.540	
10,500.0	7,106.8	10,504.9	7,277.8	63.7	57.6	102.33	-2,627.9	1,049.0	800.9	691.1	109.73	7.299	
10,600.0	7,106.8	10,604.9	7,277.8	65.2	59.3	102.33	-2,727.9	1,048.2	800.9	687.6	113.26	7.071	
10,700.0	7,106.8	10,704.9	7,277.8	66.8	61.0	102.33	-2,827.9	1,047.4	800.9	684.1	116.81	6.856	
10,800.0	7,106.8	10,804.9	7,277.8	68.3	62.8	102.33	-2,927.9	1,046.6	800.9	680.5	120.37	6.654	
10,900.0	7,106.8	10,904.9	7,277.8	69.9	64.5	102.33	-3,027.9	1,045.8	800.9	676.9	123.94	6.462	
11,000.0	7,106.8	11,004.9	7,277.8	71.5	66.3	102.33	-3,127.9	1,045.0	800.9	673.4	127.53	6.280	
11,100.0	7,106.8	11,104.9	7,277.8	73.1	68.1	102.33	-3,227.9	1,044.2	800.9	669.8	131.12	6.108	
11,200.0	7,106.8	11,204.9	7,277.8	74.8	69.9	102.33	-3,327.9	1,043.4	800.9	666.2	134.73	5.945	
11,300.0	7,106.8	11,304.9	7,277.8	76.4	71.7	102.33	-3,427.9	1,042.6	800.9	662.6	138.34	5.790	
11,400.0	7,106.8	11,404.9	7,277.8	78.1	73.5	102.33	-3,527.9	1,041.9	800.9	659.0	141.96	5.642	
11,500.0	7,106.8	11,504.9	7,277.8	79.8	75.3	102.33	-3,627.9	1,041.1	800.9	655.3	145.59	5.501	
11,600.0	7,106.8	11,604.9	7,277.8	81.5	77.1	102.33	-3,727.9	1,040.3	800.9	651.7	149.22	5.367	
11,700.0	7,106.8	11,704.9	7,277.8	83.2	78.9	102.33	-3,827.9	1,039.5	800.9	648.1	152.86	5.240	
11,800.0	7,106.8	11,804.9	7,277.8	84.9	80.7	102.33	-3,927.9	1,038.7	800.9	644.4	156.51	5.117	
11,900.0	7,106.8	11,904.9	7,277.8	86.6	82.5	102.33	-4,027.9	1,037.9	800.9	640.8	160.16	5.001	
12,000.0	7,106.8	12,004.9	7,277.8	88.3	84.4	102.33	-4,127.9	1,037.1	800.9	637.1	163.82	4.889	
12,100.0	7,106.8	12,104.9	7,277.8	90.1	86.2	102.33	-4,227.9	1,036.3	800.9	633.5	167.48	4.782	
12,157.7	7,106.8	12,162.6	7,277.8	91.1	87.3	102.33	-4,285.5	1,035.8	800.9	631.3	169.60	4.723	
12,200.0	7,106.8	12,196.0	7,277.8	91.8	87.9	102.33	-4,319.0	1,035.6	801.0	630.0	170.99	4.685	
12,210.4	7,106.8	12,196.0	7,277.8	92.0	87.9	102.33	-4,319.0	1,035.6	801.2	630.0	171.18	4.680	

Company:	Great Western	Local Co-ordinate Reference:	Well Schmunk EF 31-361HN
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 31-361HN	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	-89.30	1.1	-89.5	89.5					
100.0	100.0	100.0	100.0	0.1	0.1	-89.30	1.1	-89.5	89.5	89.3	0.22	398.228		
200.0	200.0	200.0	200.0	0.3	0.3	-89.30	1.1	-89.5	89.5	88.8	0.67	132.743		
300.0	300.0	300.0	300.0	0.6	0.6	-89.30	1.1	-89.5	89.5	88.4	1.12	79.646		
400.0	400.0	400.0	400.0	0.8	0.8	-89.30	1.1	-89.5	89.5	87.9	1.57	56.890		
500.0	500.0	500.0	500.0	1.0	1.0	-89.30	1.1	-89.5	89.5	87.5	2.02	44.248		
600.0	600.0	600.0	600.0	1.2	1.2	-89.30	1.1	-89.5	89.5	87.0	2.47	36.203		
700.0	700.0	700.0	700.0	1.5	1.5	-89.30	1.1	-89.5	89.5	86.6	2.92	30.633		
800.0	800.0	800.0	800.0	1.7	1.7	-89.30	1.1	-89.5	89.5	86.1	3.37	26.549		
900.0	900.0	900.0	900.0	1.9	1.9	-89.30	1.1	-89.5	89.5	85.7	3.82	23.425		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-89.30	1.1	-89.5	89.5	85.2	4.27	20.959		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-89.30	1.1	-89.5	89.5	84.8	4.72	18.963		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-89.30	1.1	-89.5	89.5	84.3	5.17	17.314		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-89.30	1.1	-89.5	89.5	83.9	5.62	15.929		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-89.30	1.1	-89.5	89.5	83.4	6.07	14.749		
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	-89.30	1.1	-89.5	89.5	83.0	6.52	13.732		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-89.30	1.1	-89.5	89.5	82.5	6.97	12.846		
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	-89.30	1.1	-89.5	89.5	82.1	7.42	12.068		
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	-89.30	1.1	-89.5	89.5	81.6	7.87	11.378		
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	-89.30	1.1	-89.5	89.5	81.2	8.32	10.763		
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	-89.30	1.1	-89.5	89.5	80.7	8.77	10.211		
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	-89.30	1.1	-89.5	89.5	80.3	9.22	9.713		
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	-89.30	1.1	-89.5	89.5	79.8	9.66	9.261		
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	-89.30	1.1	-89.5	89.5	79.4	10.11	8.850		
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	-89.30	1.1	-89.5	89.5	78.9	10.56	8.473		
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	-89.30	1.1	-89.5	89.5	78.5	11.01	8.127		
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	-89.30	1.1	-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	-89.30	1.1	-89.5	89.5	77.6	11.91	7.514		
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	-89.30	1.1	-89.5	89.5	77.1	12.36	7.241		
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	-89.30	1.1	-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	-89.30	1.1	-89.5	89.5	76.2	13.26	6.750		
3,100.0	3,100.0	3,100.0	3,100.0	6.9	6.9	-89.30	1.1	-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	-89.30	1.1	-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	-89.30	1.1	-89.5	89.5	74.9	14.61	6.127 CC, ES		
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	-164.07	1.1	-89.5	92.0	77.0	15.03	6.122 SF		
3,500.0	3,499.6	3,499.6	3,499.6	7.7	7.8	-165.25	1.1	-89.5	99.6	84.2	15.41	6.463		
3,600.0	3,598.8	3,598.8	3,598.8	8.0	8.0	-166.86	1.1	-89.5	112.3	96.5	15.75	7.128		
3,700.0	3,697.1	3,697.1	3,697.1	8.2	8.2	-168.57	1.1	-89.5	130.1	114.0	16.05	8.106		
3,800.0	3,794.3	3,794.3	3,794.3	8.5	8.4	-170.18	1.1	-89.5	153.0	136.7	16.30	9.388		
3,900.0	3,890.2	3,890.2	3,890.2	8.8	8.6	-171.59	1.1	-89.5	181.1	164.6	16.52	10.965		
4,000.0	3,984.4	3,984.4	3,984.4	9.1	8.8	-172.76	1.1	-89.5	214.2	197.5	16.69	12.835		
4,100.0	4,076.8	4,076.8	4,076.8	9.6	9.1	-173.72	1.1	-89.5	252.3	235.4	16.82	14.995		
4,200.0	4,167.1	4,167.1	4,167.1	10.1	9.3	-174.50	1.1	-89.5	295.1	278.2	16.92	17.445		
4,300.0	4,254.9	4,254.9	4,254.9	10.7	9.5	-175.13	1.1	-89.5	342.7	325.7	16.98	20.185		
4,400.0	4,341.2	4,341.2	4,341.2	11.4	9.6	-175.74	1.1	-89.5	393.1	375.7	17.36	22.644		
4,500.0	4,427.5	4,427.5	4,427.5	12.2	9.8	-176.22	1.1	-89.5	443.6	425.8	17.81	24.911		
4,600.0	4,513.8	4,513.8	4,513.8	13.1	10.0	-176.61	1.1	-89.5	494.1	475.8	18.27	27.050		
4,700.0	4,600.0	4,600.0	4,600.0	13.9	10.2	-176.92	1.1	-89.5	544.6	525.9	18.73	29.069		
4,800.0	4,686.3	4,686.3	4,686.3	14.8	10.4	-177.18	1.1	-89.5	595.1	575.9	19.21	30.975		
4,900.0	4,772.5	4,782.6	4,782.6	15.8	10.6	-177.42	1.3	-89.3	645.5	625.8	19.72	32.735		
5,000.0	4,858.8	4,912.9	4,912.7	16.7	10.9	-177.44	5.3	-84.0	692.0	671.7	20.29	34.111		
5,100.0	4,945.1	5,051.5	5,050.3	17.7	11.2	-177.13	15.5	-70.6	732.6	711.8	20.88	35.086		

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

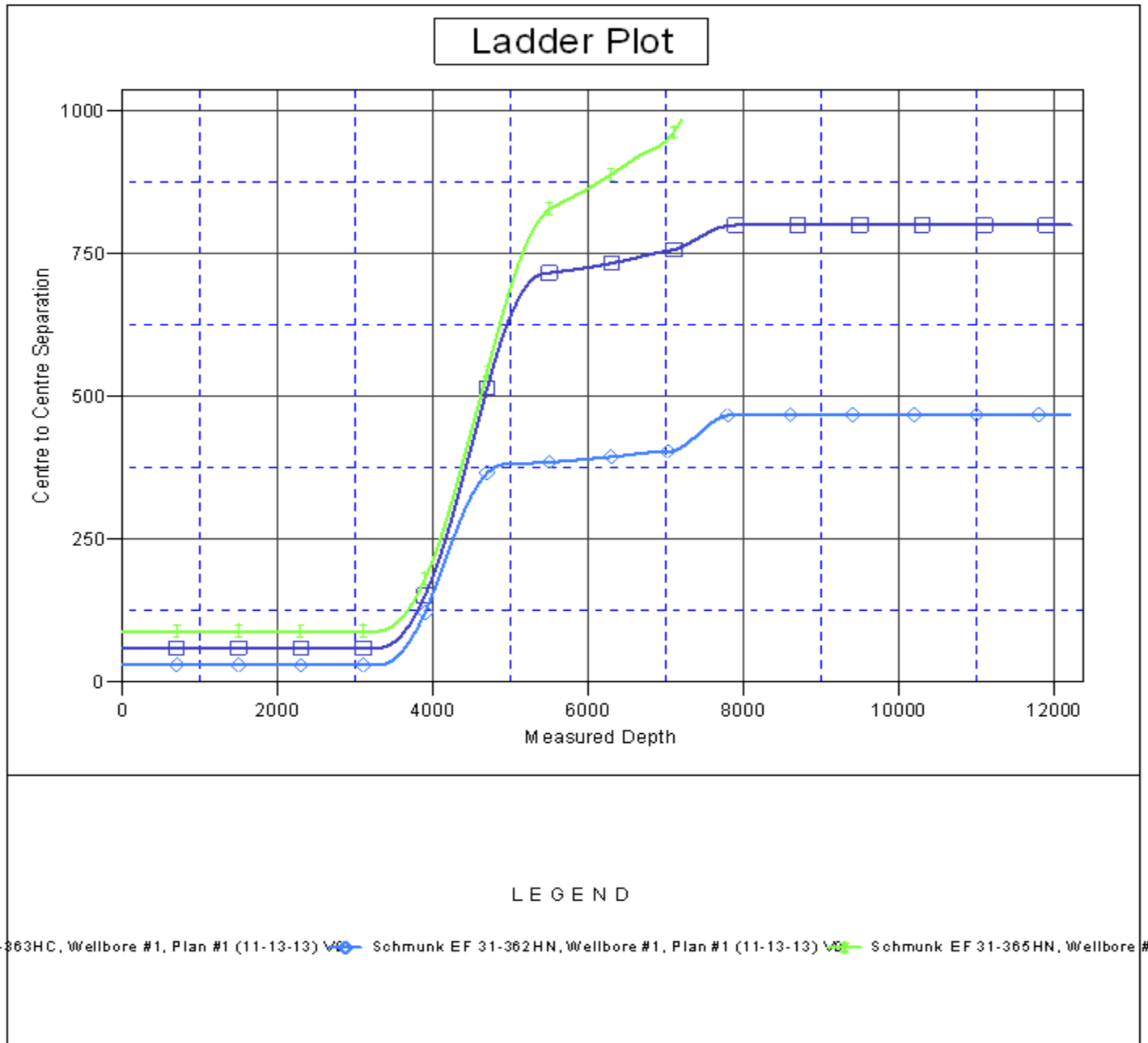
Company:	Great Western	Local Co-ordinate Reference:	Well Schmunk EF 31-361HN
Project:	SEC.31-T7N-R65W	TVD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	MD Reference:	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schmunk EF 31-361HN	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
5,200.0	5,031.3	5,197.6	5,193.5	18.7	11.6	-176.50	32.7	-48.0	767.0	745.5	21.51	35.657	
5,300.0	5,117.6	5,350.0	5,340.2	19.7	12.0	-175.56	57.8	-15.2	794.7	772.6	22.19	35.815	
5,400.0	5,203.9	5,507.0	5,487.4	20.7	12.5	-174.30	90.9	28.3	815.5	792.5	22.94	35.554	
5,500.0	5,290.1	5,666.8	5,632.0	21.7	13.2	-172.70	132.0	82.2	829.1	805.3	23.79	34.857	
5,600.0	5,376.4	5,799.3	5,747.5	22.8	13.9	-171.13	171.2	133.7	836.4	811.7	24.66	33.918	
5,700.0	5,462.7	5,897.5	5,832.5	23.8	14.5	-169.94	201.1	172.9	842.9	817.5	25.48	33.081	
5,800.0	5,548.9	5,995.7	5,917.4	24.8	15.1	-168.77	231.0	212.1	849.9	823.5	26.37	32.233	
5,900.0	5,635.2	6,093.9	6,002.3	25.9	15.8	-167.61	260.9	251.4	857.2	829.8	27.32	31.378	
6,000.0	5,721.5	6,192.1	6,087.2	26.9	16.5	-166.48	290.8	290.6	864.8	836.5	28.33	30.523	
6,100.0	5,807.7	6,290.3	6,172.1	28.0	17.3	-165.37	320.8	329.8	872.8	843.4	29.41	29.672	
6,200.0	5,894.0	6,388.5	6,257.0	29.1	18.0	-164.28	350.7	369.1	881.1	850.5	30.56	28.832	
6,300.0	5,980.3	6,486.7	6,342.0	30.1	18.8	-163.20	380.6	408.3	889.7	857.9	31.77	28.006	
6,400.0	6,066.5	6,584.9	6,426.9	31.2	19.7	-162.15	410.5	447.5	898.6	865.6	33.04	27.200	
6,500.0	6,152.8	6,683.1	6,511.8	32.3	20.5	-161.12	440.4	486.8	907.9	873.5	34.37	26.416	
6,600.0	6,239.1	6,785.1	6,600.0	33.4	21.4	-160.09	471.0	527.5	917.4	881.6	35.77	25.649	
6,700.0	6,325.3	6,908.7	6,711.1	34.4	22.2	-160.25	486.4	578.7	925.4	888.7	36.66	25.240	
6,800.0	6,411.6	7,022.7	6,813.3	35.5	22.7	-162.24	470.1	625.5	931.4	894.8	36.57	25.471	
6,900.0	6,497.9	7,116.0	6,892.0	36.6	23.0	-165.08	435.6	661.5	937.9	901.9	35.99	26.061	
7,000.0	6,584.1	7,187.7	6,947.1	37.7	23.1	-167.91	397.2	686.5	947.9	912.4	35.46	26.733	
7,100.0	6,670.4	7,241.9	6,984.5	38.8	23.2	-170.78	361.9	703.4	963.5	928.3	35.16	27.406	
7,200.0	6,757.3	7,289.5	7,013.9	39.7	23.2	161.63	327.0	716.7	984.6	949.8	34.85	28.256	

Company:	Great Western	Local Co-ordinate Reference:	Well Schmunk EF 31-361HN
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 31-361HN	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 31-361HN
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.51°



Company: Great Western
Project: SEC.31-T7N-R65W
Reference Site: Schmunk Pad Sec.31-T7N-R65W
Site Error: 0.0ft
Reference Well: Schmunk EF 31-361HN
Well Error: 0.0ft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1 (11-13-13)

Local Co-ordinate Reference: Well Schmunk EF 31-361HN
TVD Reference: WELL @ 4866.8ft (RKB - 16.5')
MD Reference: WELL @ 4866.8ft (RKB - 16.5')
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Landmark
Offset TVD Reference: Offset Datum

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

Coordinates are relative to: Schmunk EF 31-361HN
Coordinate System is US State Plane 1983, Colorado Northern Zone
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