

Great Western

Well Name: **Bruegman EG 34-021HN**

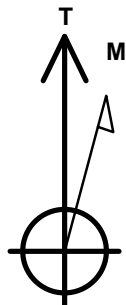
Surface Location: Bruegman Pad Sec.34-T7N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4844.8

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1435046.62	3265632.14	40.523675	-104.544478	
RKB - 16.5' WELL @ 4861.3ft (RKB - 16.5')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 440'FSL & 343'FWL	1.0	0.0	0.0	Point
BHL 470'FNL & 1'FWL	6957.3	4364.9	-375.2	Point
Entry Pt. 460'FSL & 1'FWL	6957.3	18.2	-342.0	Point



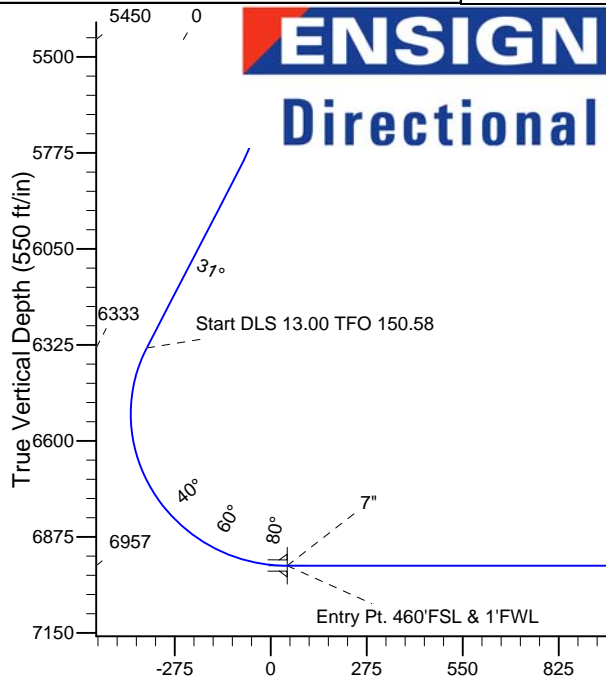
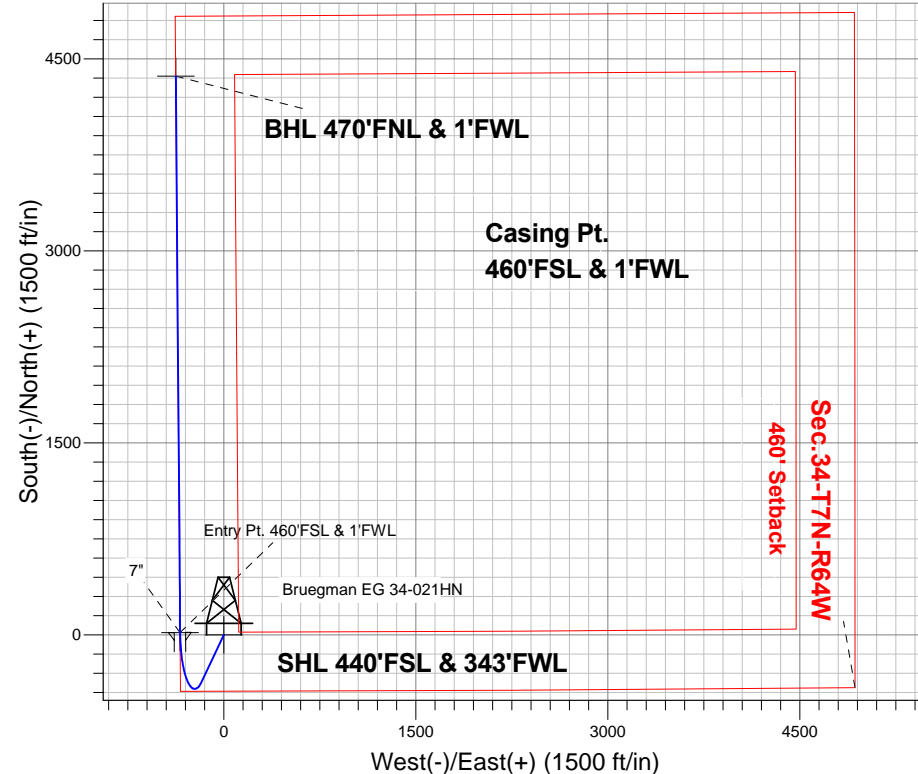
Azimuths to True North
Magnetic North: 8.43°

Magnetic Field
Strength: 52967.8snT
Dip Angle: 67.10°
Date: 11/1/2013
Model: IGRF2010

Bruegman Pad Sec.34-T7N-R64W
Bruegman EG 34-021HN
Plan #1 (11-1-13)
12:56, November 04 2013

ANNOTATIONS

TVD	MD	Annotation
5450.0	5450.0	KOP - Start Build 8.00
6333.4	6437.5	Start DLS 13.00 TFO 150.58
6957.3	11688.8	TD at 11688.8



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	5450.0	0.00	0.00	5450.0	0.0	0.0	0.00	0.00	0.0	
3	5836.9	30.95	205.38	5818.3	-92.1	-43.7	8.00	205.38	-88.0	
4	6437.5	30.95	205.38	6333.4	-371.2	-176.1	0.00	0.00	-354.7	
5	7341.9	90.00	359.57	6957.3	18.2	-342.0	13.00	150.58	47.5	Entry Pt. 460'FSL & 1'FWL
6	7342.8	90.00	359.56	6957.3	19.1	-342.0	1.00	-90.00	48.3	
7	11688.8	90.00	359.56	6957.3	4364.9	-375.2	0.00	0.00	4381.0	BHL 470'FNL & 1'FWL

Vertical Section at 355.09° (550 ft/in)



Great Western

SEC.34-T7N-R64W

Bruegman Pad Sec.34-T7N-R64W

Bruegman EG 34-021HN

Wellbore #1

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

Standard Planning Report

04 November, 2013

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,450.0	0.00	0.00	5,450.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,836.9	30.95	205.38	5,818.3	-92.1	-43.7	8.00	8.00	0.00	205.38	
6,437.5	30.95	205.38	6,333.4	-371.2	-176.1	0.00	0.00	0.00	0.00	
7,341.9	90.00	359.57	6,957.3	18.2	-342.0	13.00	6.53	17.05	150.58	Entry Pt. 460'FSL &
7,342.8	90.00	359.56	6,957.3	19.1	-342.0	1.00	0.00	-1.00	-90.00	
11,688.8	90.00	359.56	6,957.3	4,364.9	-375.2	0.00	0.00	0.00	0.00	BHL 470'FNL & 1'F

Database:	Landmark	Local Co-ordinate Reference:	Well Bruegman EG 34-021HN
Company:	Great Western	TVD Reference:	WELL @ 4861.3ft (RKB - 16.5')
Project:	SEC.34-T7N-R64W	MD Reference:	WELL @ 4861.3ft (RKB - 16.5')
Site:	Bruegman Pad Sec.34-T7N-R64W	North Reference:	True
Well:	Bruegman EG 34-021HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-1-13)		

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 440'FSL & 343'FWL									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Bruegman EG 34-021HN
Company:	Great Western	TVD Reference:	WELL @ 4861.3ft (RKB - 16.5')
Project:	SEC.34-T7N-R64W	MD Reference:	WELL @ 4861.3ft (RKB - 16.5')
Site:	Bruegman Pad Sec.34-T7N-R64W	North Reference:	True
Well:	Bruegman EG 34-021HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-1-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,450.0	0.00	0.00	5,450.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 8.00									
5,500.0	4.00	205.38	5,500.0	-1.6	-0.7	-1.5	8.00	8.00	0.00
5,600.0	12.00	205.38	5,598.9	-14.1	-6.7	-13.5	8.00	8.00	0.00
5,700.0	20.00	205.38	5,695.0	-39.0	-18.5	-37.3	8.00	8.00	0.00
5,800.0	28.00	205.38	5,786.2	-75.7	-35.9	-72.4	8.00	8.00	0.00
5,836.9	30.95	205.38	5,818.3	-92.1	-43.7	-88.0	8.00	8.00	0.00
5,900.0	30.95	205.38	5,872.5	-121.5	-57.6	-116.1	0.00	0.00	0.00
6,000.0	30.95	205.38	5,958.2	-167.9	-79.7	-160.5	0.00	0.00	0.00
6,100.0	30.95	205.38	6,044.0	-214.4	-101.7	-204.9	0.00	0.00	0.00
6,200.0	30.95	205.38	6,129.8	-260.8	-123.8	-249.3	0.00	0.00	0.00
6,300.0	30.95	205.38	6,215.5	-307.3	-145.8	-293.7	0.00	0.00	0.00
6,400.0	30.95	205.38	6,301.3	-353.8	-167.9	-338.1	0.00	0.00	0.00
6,437.5	30.95	205.38	6,333.4	-371.2	-176.1	-354.7	0.00	0.00	0.00
Start DLS 13.00 TFO 150.58									
6,500.0	24.17	215.15	6,388.8	-396.2	-190.4	-378.5	13.00	-10.85	15.62
6,600.0	15.97	245.45	6,482.9	-418.8	-214.8	-398.8	13.00	-8.21	30.31
6,700.0	16.00	294.00	6,579.5	-418.9	-240.0	-396.8	13.00	0.04	48.55
6,800.0	24.25	324.14	6,673.5	-396.5	-264.7	-372.4	13.00	8.24	30.13
6,900.0	35.35	337.97	6,760.3	-352.9	-287.7	-326.9	13.00	11.11	13.84
7,000.0	47.34	345.65	6,835.3	-290.2	-307.8	-262.7	13.00	11.99	7.68
7,100.0	59.68	350.79	6,894.6	-211.6	-323.9	-183.1	13.00	12.33	5.14
7,200.0	72.17	354.75	6,935.4	-121.2	-335.2	-92.1	13.00	12.49	3.97
7,300.0	84.72	358.19	6,955.4	-23.6	-341.1	5.7	13.00	12.56	3.44
7,341.9	89.99	359.57	6,957.3	18.2	-342.0	47.5	12.99	12.56	3.29
7" - Entry Pt. 460'FSL & 1'FWL									
7,342.8	90.00	359.56	6,957.3	19.1	-342.0	48.3	1.04	0.61	-0.84
7,400.0	90.00	359.56	6,957.3	76.3	-342.4	105.3	0.00	0.00	0.00
7,500.0	90.00	359.56	6,957.3	176.3	-343.2	205.0	0.00	0.00	0.00
7,600.0	90.00	359.56	6,957.3	276.3	-343.9	304.7	0.00	0.00	0.00
7,700.0	90.00	359.56	6,957.3	376.3	-344.7	404.4	0.00	0.00	0.00
7,800.0	90.00	359.56	6,957.3	476.3	-345.5	504.1	0.00	0.00	0.00
7,900.0	90.00	359.56	6,957.3	576.3	-346.2	603.8	0.00	0.00	0.00
8,000.0	90.00	359.56	6,957.3	676.3	-347.0	703.5	0.00	0.00	0.00
8,100.0	90.00	359.56	6,957.3	776.3	-347.8	803.2	0.00	0.00	0.00
8,200.0	90.00	359.56	6,957.3	876.3	-348.5	902.9	0.00	0.00	0.00
8,300.0	90.00	359.56	6,957.3	976.3	-349.3	1,002.6	0.00	0.00	0.00
8,400.0	90.00	359.56	6,957.3	1,076.3	-350.1	1,102.3	0.00	0.00	0.00
8,500.0	90.00	359.56	6,957.3	1,176.3	-350.8	1,202.0	0.00	0.00	0.00
8,600.0	90.00	359.56	6,957.3	1,276.3	-351.6	1,301.7	0.00	0.00	0.00
8,700.0	90.00	359.56	6,957.3	1,376.2	-352.4	1,401.4	0.00	0.00	0.00
8,800.0	90.00	359.56	6,957.3	1,476.2	-353.1	1,501.1	0.00	0.00	0.00
8,900.0	90.00	359.56	6,957.3	1,576.2	-353.9	1,600.8	0.00	0.00	0.00
9,000.0	90.00	359.56	6,957.3	1,676.2	-354.7	1,700.5	0.00	0.00	0.00
9,100.0	90.00	359.56	6,957.3	1,776.2	-355.4	1,800.2	0.00	0.00	0.00
9,200.0	90.00	359.56	6,957.3	1,876.2	-356.2	1,899.8	0.00	0.00	0.00
9,300.0	90.00	359.56	6,957.3	1,976.2	-357.0	1,999.5	0.00	0.00	0.00
9,400.0	90.00	359.56	6,957.3	2,076.2	-357.7	2,099.2	0.00	0.00	0.00
9,500.0	90.00	359.56	6,957.3	2,176.2	-358.5	2,198.9	0.00	0.00	0.00
9,600.0	90.00	359.56	6,957.3	2,276.2	-359.2	2,298.6	0.00	0.00	0.00

Plan Annotations					
	Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
			+N/-S	+E/-W	
			(ft)	(ft)	
	5,450.0	5,450.0	0.0	0.0	KOP - Start Build 8.00
	6,437.5	6,333.4	-371.2	-176.1	Start DLS 13.00 TFO 150.58
	11,688.8	6,957.3	4,365.0	-375.2	TD at 11688.8



Great Western

SEC.34-T7N-R64W

Bruegman Pad Sec.34-T7N-R64W

Bruegman EG 34-021HN

Wellbore #1

Plan #1 (11-1-13)

Anticollision Report

04 November, 2013

Company:	Great Western	Local Co-ordinate Reference:	Well Bruegman EG 34-021HN
Project:	SEC.34-T7N-R64W	TVD Reference:	WELL @ 4861.3ft (RKB - 16.5')
Reference Site:	Bruegman Pad Sec.34-T7N-R64W	MD Reference:	WELL @ 4861.3ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bruegman EG 34-021HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-1-13)	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
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	127.30	-18.2	23.9	30.1	19.5	10.56	2.845	
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	127.30	-18.2	23.9	30.1	19.0	11.01	2.729	
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	127.30	-18.2	23.9	30.1	18.6	11.46	2.622	
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	127.30	-18.2	23.9	30.1	18.1	11.91	2.523	
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	127.30	-18.2	23.9	30.1	17.7	12.36	2.431	
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	127.30	-18.2	23.9	30.1	17.2	12.81	2.346	
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	127.30	-18.2	23.9	30.1	16.8	13.26	2.266	
3,100.0	3,100.0	3,100.0	3,100.0	6.9	6.9	127.30	-18.2	23.9	30.1	16.3	13.71	2.192	
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	127.30	-18.2	23.9	30.1	15.9	14.16	2.123	
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	127.30	-18.2	23.9	30.1	15.4	14.61	2.057	
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	127.30	-18.2	23.9	30.1	15.0	15.06	1.996	
3,500.0	3,500.0	3,500.0	3,500.0	7.8	7.8	127.30	-18.2	23.9	30.1	14.5	15.51	1.938	
3,600.0	3,600.0	3,600.0	3,600.0	8.0	8.0	127.30	-18.2	23.9	30.1	14.1	15.96	1.883	
3,700.0	3,700.0	3,700.0	3,700.0	8.2	8.2	127.30	-18.2	23.9	30.1	13.6	16.41	1.832	
3,800.0	3,800.0	3,800.0	3,800.0	8.4	8.4	127.30	-18.2	23.9	30.1	13.2	16.86	1.783	
3,900.0	3,900.0	3,900.0	3,900.0	8.7	8.7	127.30	-18.2	23.9	30.1	12.7	17.31	1.737	
4,000.0	4,000.0	4,000.0	4,000.0	8.9	8.9	127.30	-18.2	23.9	30.1	12.3	17.76	1.693	
4,100.0	4,100.0	4,100.0	4,100.0	9.1	9.1	127.30	-18.2	23.9	30.1	11.8	18.21	1.651	
4,200.0	4,200.0	4,200.0	4,200.0	9.3	9.3	127.30	-18.2	23.9	30.1	11.4	18.66	1.611	
4,300.0	4,300.0	4,300.0	4,300.0	9.6	9.6	127.30	-18.2	23.9	30.1	11.0	19.11	1.573	
4,400.0	4,400.0	4,400.0	4,400.0	9.8	9.8	127.30	-18.2	23.9	30.1	10.5	19.55	1.537	
4,500.0	4,500.0	4,500.0	4,500.0	10.0	10.0	127.30	-18.2	23.9	30.1	10.1	20.00	1.502	
4,600.0	4,600.0	4,600.0	4,600.0	10.2	10.2	127.30	-18.2	23.9	30.1	9.6	20.45	1.469 Level 3	
4,700.0	4,700.0	4,700.0	4,700.0	10.5	10.5	127.30	-18.2	23.9	30.1	9.2	20.90	1.438 Level 3	
4,800.0	4,800.0	4,800.0	4,800.0	10.7	10.7	127.30	-18.2	23.9	30.1	8.7	21.35	1.408 Level 3	
4,900.0	4,900.0	4,900.0	4,900.0	10.9	10.9	127.30	-18.2	23.9	30.1	8.3	21.80	1.379 Level 3	
5,000.0	5,000.0	5,000.0	5,000.0	11.1	11.1	127.30	-18.2	23.9	30.1	7.8	22.25	1.351 Level 3	
5,100.0	5,100.0	5,100.0	5,100.0	11.4	11.4	127.30	-18.2	23.9	30.1	7.4	22.70	1.324 Level 3	
5,200.0	5,200.0	5,200.0	5,200.0	11.6	11.6	127.30	-18.2	23.9	30.1	6.9	23.15	1.298 Level 3	
5,300.0	5,300.0	5,300.0	5,300.0	11.8	11.8	127.30	-18.2	23.9	30.1	6.5	23.60	1.274 Level 3, CC, ES, SF	
5,400.0	5,400.0	5,398.4	5,398.3	12.0	12.0	131.42	-21.5	24.4	32.6	8.6	24.02	1.358 Level 3	
5,500.0	5,500.0	5,495.9	5,495.3	12.2	12.2	-66.82	-31.4	26.0	40.3	15.9	24.38	1.654	
5,600.0	5,598.9	5,592.9	5,590.9	12.4	12.3	-70.26	-47.7	28.5	49.3	24.6	24.67	1.998	
5,700.0	5,695.0	5,689.0	5,684.2	12.6	12.5	-80.65	-70.1	32.0	60.2	35.2	25.03	2.407	
5,800.0	5,786.2	5,783.7	5,774.6	12.8	12.7	-93.05	-98.2	36.3	76.5	51.1	25.45	3.008	
5,900.0	5,872.5	5,877.2	5,861.7	13.1	12.9	-103.80	-131.6	41.5	100.2	74.4	25.79	3.886	
6,000.0	5,958.2	5,971.2	5,946.9	13.4	13.2	-108.44	-170.8	47.6	127.8	101.5	26.27	4.865	
6,100.0	6,044.0	6,065.9	6,030.3	13.9	13.5	-109.35	-215.3	54.5	156.8	129.9	26.95	5.818	
6,200.0	6,129.8	6,161.6	6,113.9	14.3	13.9	-109.67	-261.0	61.6	186.0	158.3	27.77	6.700	
6,300.0	6,215.5	6,257.2	6,197.6	14.9	14.4	-109.91	-306.8	68.7	215.3	186.6	28.68	7.507	
6,400.0	6,301.3	6,352.8	6,281.3	15.5	14.9	-110.09	-352.5	75.8	244.5	214.8	29.67	8.240	
6,500.0	6,388.8	6,448.3	6,366.9	16.0	15.4	-121.56	-393.8	83.0	274.3	243.9	30.45	9.010	
6,600.0	6,482.9	6,542.9	6,458.3	16.5	15.7	-154.46	-416.5	90.6	306.4	275.5	30.93	9.907	
6,700.0	6,579.5	6,637.6	6,552.4	16.8	15.9	154.64	-419.2	98.2	339.3	308.0	31.26	10.856	
6,800.0	6,673.5	6,733.3	6,646.0	16.9	16.0	122.60	-401.4	105.6	371.4	340.0	31.43	11.818	
6,900.0	6,760.3	6,831.1	6,735.3	16.9	15.9	107.44	-362.7	112.6	401.2	369.7	31.43	12.763	
7,000.0	6,835.3	6,931.7	6,816.1	16.8	15.8	99.17	-303.4	118.6	427.0	395.7	31.29	13.647	
7,100.0	6,894.6	7,035.5	6,883.1	16.6	15.6	94.26	-224.7	123.5	447.7	416.5	31.12	14.387	
7,200.0	6,935.4	7,142.2	6,931.1	16.4	15.5	91.42	-129.7	126.6	461.9	430.8	31.07	14.866	
7,300.0	6,955.4	7,250.9	6,955.1	16.3	15.6	90.13	-23.9	127.8	468.9	437.6	31.33	14.969	
7,400.0	6,957.3	7,354.8	6,957.3	16.4	16.0	90.00	79.9	127.2	469.6	437.7	31.89	14.725	
7,500.0	6,957.3	7,454.8	6,957.3	17.0	16.5	90.00	179.9	126.4	469.6	436.7	32.90	14.273	

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 Bruegman EG 34-021HN
Project:	SEC.34-T7N-R64W	TVD Reference:	WELL @ 4861.3ft (RKB - 16.5')
Reference Site:	Bruegman Pad Sec.34-T7N-R64W	MD Reference:	WELL @ 4861.3ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bruegman EG 34-021HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-1-13)	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		
7,600.0	6,957.3	7,554.8	6,957.3	17.7	17.2	90.00	279.9	125.6	469.6	435.2	34.31	13.685		
7,700.0	6,957.3	7,654.8	6,957.3	18.6	18.2	90.00	379.9	124.8	469.6	433.5	36.08	13.013		
7,800.0	6,957.3	7,754.8	6,957.3	19.6	19.2	90.00	479.9	124.1	469.6	431.4	38.16	12.304		
7,900.0	6,957.3	7,854.8	6,957.3	20.7	20.4	90.00	579.9	123.3	469.6	429.0	40.50	11.593		
8,000.0	6,957.3	7,954.8	6,957.3	22.0	21.7	90.00	679.9	122.5	469.6	426.5	43.06	10.904		
8,100.0	6,957.3	8,054.8	6,957.3	23.3	23.1	90.00	779.9	121.8	469.6	423.7	45.80	10.252		
8,200.0	6,957.3	8,154.8	6,957.3	24.7	24.5	90.00	879.9	121.0	469.5	420.9	48.69	9.643		
8,300.0	6,957.3	8,254.8	6,957.3	26.2	26.1	90.00	979.9	120.2	469.5	417.8	51.71	9.080		
8,400.0	6,957.3	8,354.8	6,957.3	27.8	27.6	90.00	1,079.9	119.5	469.5	414.7	54.83	8.563		
8,500.0	6,957.3	8,454.8	6,957.3	29.3	29.2	90.00	1,179.9	118.7	469.5	411.5	58.04	8.090		
8,600.0	6,957.3	8,554.8	6,957.3	30.9	30.9	90.00	1,279.9	117.9	469.5	408.2	61.32	7.657		
8,700.0	6,957.3	8,654.8	6,957.3	32.6	32.6	90.00	1,379.9	117.2	469.5	404.9	64.67	7.260		
8,800.0	6,957.3	8,754.8	6,957.3	34.3	34.3	90.00	1,479.8	116.4	469.5	401.5	68.07	6.898		
8,900.0	6,957.3	8,854.8	6,957.3	36.0	36.0	90.00	1,579.8	115.6	469.5	398.0	71.52	6.565		
9,000.0	6,957.3	8,954.8	6,957.3	37.7	37.7	90.00	1,679.8	114.9	469.5	394.5	75.00	6.260		
9,100.0	6,957.3	9,054.8	6,957.3	39.4	39.5	90.00	1,779.8	114.1	469.5	391.0	78.52	5.980		
9,200.0	6,957.3	9,154.8	6,957.3	41.2	41.3	90.00	1,879.8	113.3	469.5	387.5	82.07	5.721		
9,300.0	6,957.3	9,254.8	6,957.3	43.0	43.1	90.00	1,979.8	112.6	469.5	383.9	85.65	5.482		
9,400.0	6,957.3	9,354.8	6,957.3	44.8	44.9	90.00	2,079.8	111.8	469.5	380.3	89.25	5.261		
9,500.0	6,957.3	9,454.8	6,957.3	46.6	46.7	90.00	2,179.8	111.0	469.5	376.7	92.87	5.056		
9,600.0	6,957.3	9,554.8	6,957.3	48.4	48.5	90.00	2,279.8	110.3	469.5	373.0	96.50	4.865		
9,700.0	6,957.3	9,654.8	6,957.3	50.2	50.3	90.00	2,379.8	109.5	469.5	369.4	100.16	4.688		
9,800.0	6,957.3	9,754.8	6,957.3	52.0	52.1	90.00	2,479.8	108.7	469.5	365.7	103.82	4.522		
9,900.0	6,957.3	9,854.8	6,957.3	53.8	54.0	90.00	2,579.8	108.0	469.5	362.0	107.50	4.367		
10,000.0	6,957.3	9,954.8	6,957.3	55.7	55.8	90.00	2,679.8	107.2	469.5	358.3	111.20	4.222		
10,100.0	6,957.3	10,054.8	6,957.3	57.5	57.7	90.00	2,779.8	106.4	469.5	354.6	114.90	4.086		
10,200.0	6,957.3	10,154.8	6,957.3	59.3	59.5	90.00	2,879.8	105.7	469.5	350.9	118.61	3.958		
10,300.0	6,957.3	10,254.8	6,957.3	61.2	61.4	90.00	2,979.8	104.9	469.5	347.2	122.33	3.838		
10,400.0	6,957.3	10,354.8	6,957.3	63.1	63.3	90.00	3,079.8	104.1	469.5	343.4	126.06	3.724		
10,500.0	6,957.3	10,454.8	6,957.3	64.9	65.1	90.00	3,179.8	103.3	469.5	339.7	129.80	3.617		
10,600.0	6,957.3	10,554.8	6,957.3	66.8	67.0	90.00	3,279.8	102.6	469.5	336.0	133.54	3.516		
10,700.0	6,957.3	10,654.8	6,957.3	68.7	68.9	90.00	3,379.8	101.8	469.5	332.2	137.29	3.420		
10,800.0	6,957.3	10,754.8	6,957.3	70.5	70.8	90.00	3,479.8	101.0	469.5	328.5	141.04	3.329		
10,900.0	6,957.3	10,854.8	6,957.3	72.4	72.6	90.00	3,579.8	100.3	469.5	324.7	144.80	3.242		
11,000.0	6,957.3	10,954.8	6,957.3	74.3	74.5	90.00	3,679.8	99.5	469.5	320.9	148.57	3.160		
11,100.0	6,957.3	11,054.8	6,957.3	76.1	76.4	90.00	3,779.8	98.7	469.5	317.2	152.33	3.082		
11,200.0	6,957.3	11,154.8	6,957.3	78.0	78.3	90.00	3,879.8	98.0	469.5	313.4	156.11	3.007		
11,300.0	6,957.3	11,254.8	6,957.3	79.9	80.2	90.00	3,979.8	97.2	469.5	309.6	159.88	2.936		
11,400.0	6,957.3	11,354.8	6,957.3	81.8	82.1	90.00	4,079.8	96.4	469.5	305.8	163.66	2.869		
11,500.0	6,957.3	11,454.8	6,957.3	83.7	84.0	90.00	4,179.8	95.7	469.5	302.0	167.45	2.804		
11,600.0	6,957.3	11,554.8	6,957.3	85.6	85.9	90.00	4,279.8	94.9	469.5	298.3	171.23	2.742		
11,663.8	6,957.3	11,618.6	6,957.3	86.8	87.1	90.00	4,343.6	94.4	469.5	295.8	173.65	2.704		
11,688.8	6,957.3	11,641.8	6,957.3	87.3	87.5	90.00	4,366.8	94.2	469.5	294.9	174.56	2.689		

Company:	Great Western	Local Co-ordinate Reference:	Well Bruegman EG 34-021HN
Project:	SEC.34-T7N-R64W	TVD Reference:	WELL @ 4861.3ft (RKB - 16.5')
Reference Site:	Bruegman Pad Sec.34-T7N-R64W	MD Reference:	WELL @ 4861.3ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bruegman EG 34-021HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-1-13)	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	127.31	-36.4	47.8	60.1					
100.0	100.0	100.0	100.0	0.1	0.1	127.31	-36.4	47.8	60.1	59.9	0.22	267.468		
200.0	200.0	200.0	200.0	0.3	0.3	127.31	-36.4	47.8	60.1	59.4	0.67	89.156		
300.0	300.0	300.0	300.0	0.6	0.6	127.31	-36.4	47.8	60.1	59.0	1.12	53.494		
400.0	400.0	400.0	400.0	0.8	0.8	127.31	-36.4	47.8	60.1	58.5	1.57	38.210		
500.0	500.0	500.0	500.0	1.0	1.0	127.31	-36.4	47.8	60.1	58.1	2.02	29.719		
600.0	600.0	600.0	600.0	1.2	1.2	127.31	-36.4	47.8	60.1	57.6	2.47	24.315		
700.0	700.0	700.0	700.0	1.5	1.5	127.31	-36.4	47.8	60.1	57.2	2.92	20.574		
800.0	800.0	800.0	800.0	1.7	1.7	127.31	-36.4	47.8	60.1	56.7	3.37	17.831		
900.0	900.0	900.0	900.0	1.9	1.9	127.31	-36.4	47.8	60.1	56.3	3.82	15.733		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	127.31	-36.4	47.8	60.1	55.8	4.27	14.077		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	127.31	-36.4	47.8	60.1	55.4	4.72	12.737		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	127.31	-36.4	47.8	60.1	54.9	5.17	11.629		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	127.31	-36.4	47.8	60.1	54.5	5.62	10.699		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	127.31	-36.4	47.8	60.1	54.0	6.07	9.906		
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	127.31	-36.4	47.8	60.1	53.6	6.52	9.223		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	127.31	-36.4	47.8	60.1	53.2	6.97	8.628		
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	127.31	-36.4	47.8	60.1	52.7	7.42	8.105		
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	127.31	-36.4	47.8	60.1	52.3	7.87	7.642		
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	127.31	-36.4	47.8	60.1	51.8	8.32	7.229		
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	127.31	-36.4	47.8	60.1	51.4	8.77	6.858		
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	127.31	-36.4	47.8	60.1	50.9	9.22	6.524		
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	127.31	-36.4	47.8	60.1	50.5	9.66	6.220		
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	127.31	-36.4	47.8	60.1	50.0	10.11	5.944		
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	127.31	-36.4	47.8	60.1	49.6	10.56	5.691		
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	127.31	-36.4	47.8	60.1	49.1	11.01	5.459		
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	127.31	-36.4	47.8	60.1	48.7	11.46	5.244		
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	127.31	-36.4	47.8	60.1	48.2	11.91	5.047		
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	127.31	-36.4	47.8	60.1	47.8	12.36	4.863		
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	127.31	-36.4	47.8	60.1	47.3	12.81	4.692		
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	127.31	-36.4	47.8	60.1	46.9	13.26	4.533		
3,100.0	3,100.0	3,100.0	3,100.0	6.9	6.9	127.31	-36.4	47.8	60.1	46.4	13.71	4.385		
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	127.31	-36.4	47.8	60.1	46.0	14.16	4.246		
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	127.31	-36.4	47.8	60.1	45.5	14.61	4.115		
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	127.31	-36.4	47.8	60.1	45.1	15.06	3.992		
3,500.0	3,500.0	3,500.0	3,500.0	7.8	7.8	127.31	-36.4	47.8	60.1	44.6	15.51	3.876		
3,600.0	3,600.0	3,600.0	3,600.0	8.0	8.0	127.31	-36.4	47.8	60.1	44.2	15.96	3.767		
3,700.0	3,700.0	3,700.0	3,700.0	8.2	8.2	127.31	-36.4	47.8	60.1	43.7	16.41	3.664		
3,800.0	3,800.0	3,800.0	3,800.0	8.4	8.4	127.31	-36.4	47.8	60.1	43.3	16.86	3.566		
3,900.0	3,900.0	3,900.0	3,900.0	8.7	8.7	127.31	-36.4	47.8	60.1	42.8	17.31	3.474		
4,000.0	4,000.0	4,000.0	4,000.0	8.9	8.9	127.31	-36.4	47.8	60.1	42.4	17.76	3.386		
4,100.0	4,100.0	4,100.0	4,100.0	9.1	9.1	127.31	-36.4	47.8	60.1	41.9	18.21	3.302		
4,200.0	4,200.0	4,200.0	4,200.0	9.3	9.3	127.31	-36.4	47.8	60.1	41.5	18.66	3.223		
4,300.0	4,300.0	4,300.0	4,300.0	9.6	9.6	127.31	-36.4	47.8	60.1	41.0	19.11	3.147		
4,400.0	4,400.0	4,400.0	4,400.0	9.8	9.8	127.31	-36.4	47.8	60.1	40.6	19.55	3.074		
4,500.0	4,500.0	4,500.0	4,500.0	10.0	10.0	127.31	-36.4	47.8	60.1	40.1	20.00	3.005		
4,600.0	4,600.0	4,600.0	4,600.0	10.2	10.2	127.31	-36.4	47.8	60.1	39.7	20.45	2.939		
4,700.0	4,700.0	4,700.0	4,700.0	10.5	10.5	127.31	-36.4	47.8	60.1	39.2	20.90	2.876		
4,800.0	4,800.0	4,800.0	4,800.0	10.7	10.7	127.31	-36.4	47.8	60.1	38.8	21.35	2.815		
4,900.0	4,900.0	4,900.0	4,900.0	10.9	10.9	127.31	-36.4	47.8	60.1	38.3	21.80	2.757		
5,000.0	5,000.0	5,000.0	5,000.0	11.1	11.1	127.31	-36.4	47.8	60.1	37.9	22.25	2.702		
5,100.0	5,100.0	5,100.0	5,100.0	11.4	11.4	127.31	-36.4	47.8	60.1	37.4	22.70	2.648		

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 Bruegman EG 34-021HN
Project:	SEC.34-T7N-R64W	TVD Reference:	WELL @ 4861.3ft (RKB - 16.5')
Reference Site:	Bruegman Pad Sec.34-T7N-R64W	MD Reference:	WELL @ 4861.3ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bruegman EG 34-021HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-1-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,133.4	5,133.4	5,133.4	5,133.4	11.4	11.4	127.31	-36.4	47.8	60.1	37.3	22.85	2.631 CC, ES		
5,200.0	5,200.0	5,198.5	5,198.5	11.6	11.6	127.46	-36.9	48.2	60.7	37.6	23.13	2.625 SF		
5,300.0	5,300.0	5,295.3	5,295.2	11.8	11.7	128.55	-40.8	51.2	65.7	42.1	23.53	2.791		
5,400.0	5,400.0	5,391.3	5,390.7	12.0	11.9	130.30	-48.5	57.1	75.5	51.6	23.92	3.157		
5,500.0	5,500.0	5,486.2	5,484.5	12.2	12.1	-73.63	-59.8	65.9	89.8	65.5	24.29	3.698		
5,600.0	5,598.9	5,579.8	5,576.2	12.4	12.3	-77.36	-74.5	77.3	105.9	81.3	24.61	4.305		
5,700.0	5,695.0	5,670.9	5,664.4	12.6	12.5	-84.62	-92.2	91.1	125.6	100.6	24.95	5.032		
5,800.0	5,786.2	5,758.1	5,747.9	12.8	12.7	-92.69	-112.3	106.6	152.1	126.8	25.34	6.002		
5,900.0	5,872.5	5,841.6	5,826.5	13.1	12.9	-101.05	-134.3	123.7	187.5	161.8	25.70	7.295		
6,000.0	5,958.2	5,924.0	5,902.9	13.4	13.2	-107.07	-158.7	142.6	229.2	203.1	26.10	8.782		
6,100.0	6,044.0	6,006.5	5,978.1	13.9	13.5	-110.70	-185.7	163.5	274.8	248.2	26.60	10.328		
6,200.0	6,129.8	6,094.0	6,057.3	14.3	13.9	-113.29	-215.1	186.3	321.7	294.5	27.21	11.823		
6,300.0	6,215.5	6,181.5	6,136.4	14.9	14.3	-115.22	-244.6	209.2	369.1	341.2	27.90	13.226		
6,400.0	6,301.3	6,269.0	6,215.5	15.5	14.7	-116.72	-274.1	232.0	416.7	388.0	28.67	14.533		
6,500.0	6,388.8	6,356.6	6,294.8	16.0	15.2	-130.40	-303.6	254.9	464.5	435.2	29.30	15.854		
6,600.0	6,482.9	6,442.9	6,372.9	16.5	15.6	-163.81	-332.7	277.5	511.7	481.7	30.02	17.047		
6,700.0	6,579.5	6,523.7	6,446.0	16.8	16.1	146.54	-359.9	298.6	558.0	527.2	30.79	18.123		
6,800.0	6,673.5	6,594.8	6,510.3	16.9	16.5	116.08	-383.9	317.1	604.5	573.0	31.43	19.231		
6,900.0	6,760.3	6,656.4	6,566.3	16.9	16.9	101.78	-403.7	333.3	652.6	620.7	31.89	20.464		
7,000.0	6,835.3	6,723.6	6,629.6	16.8	17.2	94.02	-417.0	351.5	702.1	670.0	32.15	21.838		
7,100.0	6,894.6	6,806.4	6,709.0	16.6	17.5	89.98	-419.5	374.2	751.7	719.4	32.25	23.307		
7,200.0	6,935.4	6,934.2	6,828.8	16.4	17.8	90.18	-393.0	408.4	798.8	766.6	32.21	24.798		
7,300.0	6,955.4	7,240.0	7,049.3	16.3	17.7	97.92	-199.8	470.2	835.6	804.0	31.59	26.449		
7,400.0	6,957.3	7,531.6	7,106.3	16.4	17.3	100.21	81.5	484.8	840.5	808.4	32.12	26.169		
7,500.0	6,957.3	7,631.6	7,106.3	17.0	17.7	100.21	181.5	484.1	840.6	807.5	33.11	25.388		
7,600.0	6,957.3	7,731.6	7,106.3	17.7	18.4	100.21	281.5	483.5	840.7	806.3	34.50	24.372		
7,700.0	6,957.3	7,831.6	7,106.3	18.6	19.3	100.21	381.5	482.9	840.9	804.7	36.23	23.210		
7,800.0	6,957.3	7,931.6	7,106.3	19.6	20.4	100.20	481.5	482.2	841.0	802.8	38.26	21.980		
7,900.0	6,957.3	8,031.6	7,106.3	20.7	21.5	100.20	581.5	481.6	841.2	800.6	40.55	20.743		
8,000.0	6,957.3	8,131.6	7,106.3	22.0	22.8	100.20	681.5	481.0	841.3	798.2	43.05	19.541		
8,100.0	6,957.3	8,231.6	7,106.3	23.3	24.2	100.20	781.5	480.4	841.4	795.7	45.73	18.398		
8,200.0	6,957.3	8,331.6	7,106.3	24.7	25.6	100.20	881.5	479.7	841.6	793.0	48.57	17.328		
8,300.0	6,957.3	8,431.6	7,106.3	26.2	27.1	100.20	981.5	479.1	841.7	790.2	51.52	16.337		
8,400.0	6,957.3	8,531.6	7,106.3	27.8	28.6	100.19	1,081.5	478.5	841.8	787.3	54.58	15.423		
8,500.0	6,957.3	8,631.6	7,106.3	29.3	30.2	100.19	1,181.5	477.8	842.0	784.2	57.73	14.584		
8,600.0	6,957.3	8,731.6	7,106.3	30.9	31.8	100.19	1,281.5	477.2	842.1	781.2	60.95	13.815		
8,700.0	6,957.3	8,831.6	7,106.3	32.6	33.4	100.19	1,381.5	476.6	842.2	778.0	64.24	13.111		
8,800.0	6,957.3	8,931.6	7,106.3	34.3	35.1	100.19	1,481.5	476.0	842.4	774.8	67.58	12.465		
8,900.0	6,957.3	9,031.6	7,106.3	36.0	36.8	100.19	1,581.5	475.3	842.5	771.5	70.97	11.872		
9,000.0	6,957.3	9,131.6	7,106.3	37.7	38.5	100.18	1,681.4	474.7	842.6	768.3	74.39	11.327		
9,100.0	6,957.3	9,231.6	7,106.3	39.4	40.3	100.18	1,781.4	474.1	842.8	764.9	77.85	10.825		
9,200.0	6,957.3	9,331.6	7,106.3	41.2	42.0	100.18	1,881.4	473.4	842.9	761.6	81.34	10.362		
9,300.0	6,957.3	9,431.6	7,106.3	43.0	43.8	100.18	1,981.4	472.8	843.1	758.2	84.86	9.934		
9,400.0	6,957.3	9,531.6	7,106.3	44.8	45.6	100.18	2,081.4	472.2	843.2	754.8	88.40	9.538		
9,500.0	6,957.3	9,631.6	7,106.3	46.6	47.4	100.18	2,181.4	471.6	843.3	751.4	91.97	9.170		
9,600.0	6,957.3	9,731.6	7,106.3	48.4	49.2	100.17	2,281.4	470.9	843.5	747.9	95.55	8.828		
9,700.0	6,957.3	9,831.6	7,106.3	50.2	51.0	100.17	2,381.4	470.3	843.6	744.5	99.14	8.509		
9,800.0	6,957.3	9,931.6	7,106.3	52.0	52.8	100.17	2,481.4	469.7	843.7	741.0	102.75	8.211		
9,900.0	6,957.3	10,031.6	7,106.3	53.8	54.6	100.17	2,581.4	469.0	843.9	737.5	106.38	7.933		
10,000.0	6,957.3	10,131.6	7,106.3	55.7	56.4	100.17	2,681.4	468.4	844.0	734.0	110.01	7.672		
10,100.0	6,957.3	10,231.6	7,106.3	57.5	58.3	100.17	2,781.4	467.8	844.1	730.5	113.66	7.427		
10,200.0	6,957.3	10,331.6	7,106.3	59.3	60.1	100.16	2,881.4	467.2	844.3	727.0	117.32	7.196		

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 Bruegman EG 34-021HN
Project:	SEC.34-T7N-R64W	TVD Reference:	WELL @ 4861.3ft (RKB - 16.5')
Reference Site:	Bruegman Pad Sec.34-T7N-R64W	MD Reference:	WELL @ 4861.3ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bruegman EG 34-021HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-1-13)	Offset TVD Reference:	Offset Datum

Offset Design												Bruegman Pad Sec.34-T7N-R64W - Bruegman EG 34-024HC - Wellbore #1 - Plan #1 (11-1-13)		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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
10,300.0	6,957.3	10,431.6	7,106.3	61.2	62.0	100.16	2,981.4	466.5	844.4	723.4	120.98	6.979			
10,400.0	6,957.3	10,531.6	7,106.3	63.1	63.8	100.16	3,081.4	465.9	844.5	719.9	124.66	6.775			
10,500.0	6,957.3	10,631.6	7,106.3	64.9	65.7	100.16	3,181.4	465.3	844.7	716.3	128.34	6.582			
10,600.0	6,957.3	10,731.6	7,106.3	66.8	67.5	100.16	3,281.4	464.6	844.8	712.8	132.03	6.399			
10,700.0	6,957.3	10,831.6	7,106.3	68.7	69.4	100.16	3,381.4	464.0	845.0	709.2	135.72	6.226			
10,800.0	6,957.3	10,931.6	7,106.3	70.5	71.3	100.16	3,481.4	463.4	845.1	705.7	139.42	6.061			
10,900.0	6,957.3	11,031.6	7,106.3	72.4	73.1	100.15	3,581.4	462.8	845.2	702.1	143.13	5.905			
11,000.0	6,957.3	11,131.6	7,106.3	74.3	75.0	100.15	3,681.4	462.1	845.4	698.5	146.84	5.757			
11,100.0	6,957.3	11,231.6	7,106.3	76.1	76.9	100.15	3,781.4	461.5	845.5	694.9	150.55	5.616			
11,200.0	6,957.3	11,331.6	7,106.3	78.0	78.8	100.15	3,881.4	460.9	845.6	691.4	154.27	5.481			
11,300.0	6,957.3	11,431.6	7,106.3	79.9	80.6	100.15	3,981.4	460.2	845.8	687.8	157.99	5.353			
11,400.0	6,957.3	11,531.6	7,106.3	81.8	82.5	100.15	4,081.4	459.6	845.9	684.2	161.72	5.231			
11,500.0	6,957.3	11,631.6	7,106.3	83.7	84.4	100.14	4,181.4	459.0	846.0	680.6	165.45	5.114			
11,600.0	6,957.3	11,731.6	7,106.3	85.6	86.3	100.14	4,281.4	458.4	846.2	677.0	169.18	5.002			
11,688.8	6,957.3	11,819.1	7,106.3	87.3	87.9	100.14	4,368.9	457.8	846.3	673.8	172.48	4.907			

Company:	Great Western	Local Co-ordinate Reference:	Well Bruegman EG 34-021HN
Project:	SEC.34-T7N-R64W	TVD Reference:	WELL @ 4861.3ft (RKB - 16.5')
Reference Site:	Bruegman Pad Sec.34-T7N-R64W	MD Reference:	WELL @ 4861.3ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bruegman EG 34-021HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-1-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4861.3ft (RKB - 16.5')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Bruegman EG 34-021HN
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.62°



Company:	Great Western	Local Co-ordinate Reference:	Well Bruegman EG 34-021HN
Project:	SEC.34-T7N-R64W	TVD Reference:	WELL @ 4861.3ft (RKB - 16.5')
Reference Site:	Bruegman Pad Sec.34-T7N-R64W	MD Reference:	WELL @ 4861.3ft (RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Bruegman EG 34-021HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-1-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4861.3ft (RKB - 16.5')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Bruegman EG 34-021HN
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.62°

