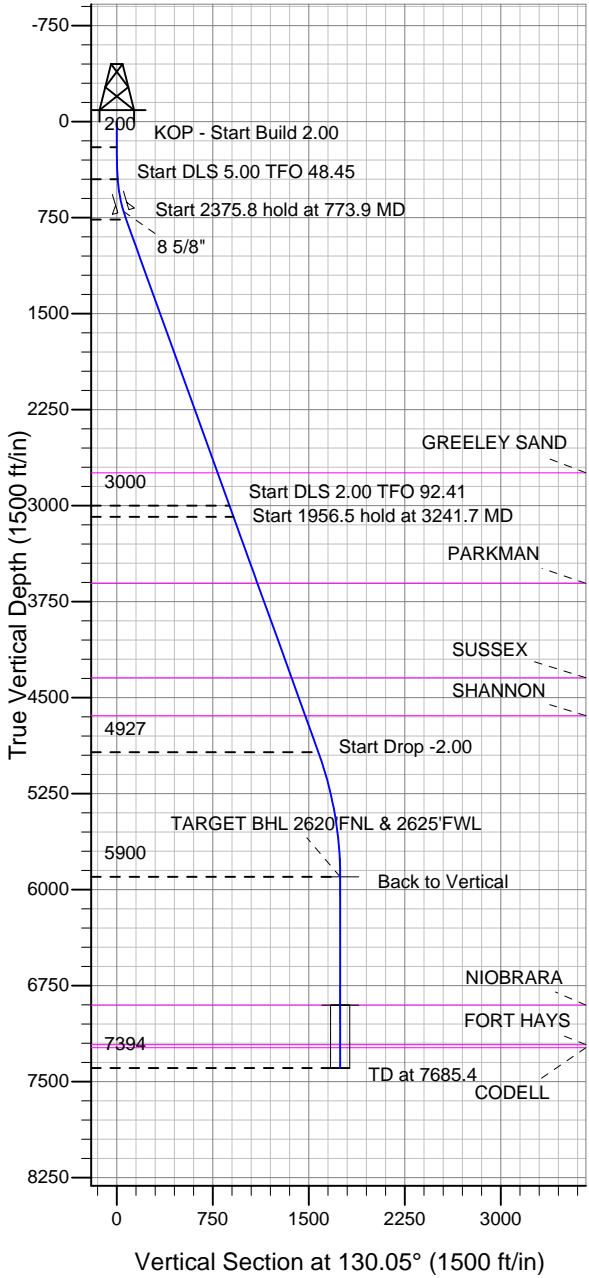


Well Name: Strohd HD 22-13D

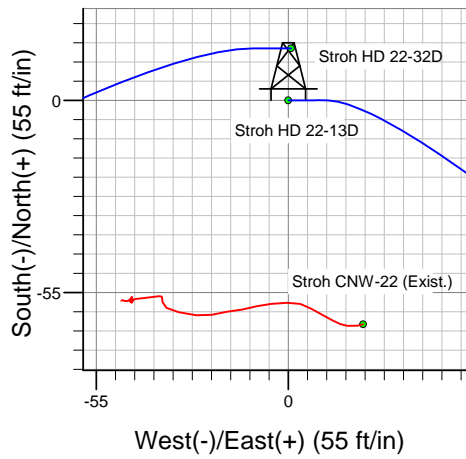
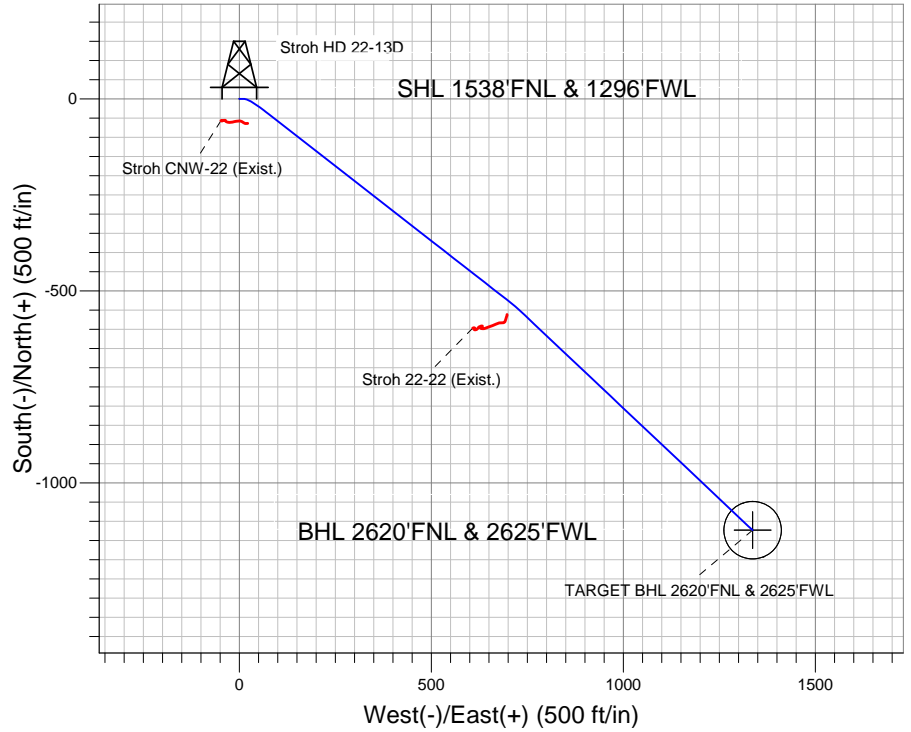
Surface Location: Strohd HD 22-32D Pad Sec.22-T4N-R67W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4868.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1353116.96	3172448.14	40.301056	-104.881717	
Original Well Elev WELL @ 4882.0ft (Original Well Elev)						



Great Western



Strohd HD 22-32D Pad Sec.22-T4N-R67W
 Strohd HD 22-13D
 Plan #1 (11-09-12)



Azimuths to True North
 Magnetic North: 8.73°

Magnetic Field
 Strength: 52917.8snT
 Dip Angle: 66.90°
 Date: 11/12/2012
 Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 2620'FNL & 2625'FWL	5900.0	-1123.5	1336.7	40.297972	-104.876925	Point
TARGET CIRCLE 2620'FSL & 2625'FWL	6902.0	-1123.5	1336.7	40.297972	-104.876925	Circle (Radius: 75.0)

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	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	450.0	5.00	90.00	449.7	0.0	10.9	2.00	90.00	8.3	
4	773.9	19.86	127.92	765.5	-34.0	68.8	5.00	48.45	74.6	
5	3149.7	19.86	127.92	3000.0	-530.0	705.5	0.00	0.00	881.1	
6	3241.7	19.86	133.33	3086.5	-550.3	729.2	2.00	92.41	912.3	
7	5198.2	19.86	133.33	4926.6	-1006.5	1212.7	0.00	0.00	1576.0	
8	6191.4	0.00	0.00	5900.0	-1123.5	1336.7	2.00	180.00	1746.1	TARGET BHL 2620'FNL & 2625'FWL
9	7685.4	0.00	0.00	7394.0	-1123.5	1336.7	0.00	0.00	1746.1	



Directional

Great Western

SEC.22-T4N-R67W

Stroh HD 22-32D Pad Sec.22-T4N-R67W

Stroh HD 22-13D

Wellbore #1

Plan: Plan #1 (11-09-12)

Standard Planning Report

12 November, 2012

Database:	Landmark	Local Co-ordinate Reference:	Well Strohd HD 22-13D
Company:	Great Western	TVD Reference:	WELL @ 4882.0ft (Original Well Elev)
Project:	SEC.22-T4N-R67W	MD Reference:	WELL @ 4882.0ft (Original Well Elev)
Site:	Strohd HD 22-32D Pad Sec.22-T4N-R67W	North Reference:	True
Well:	Strohd HD 22-13D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-09-12)		

Project	SEC.22-T4N-R67W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Strohd HD 22-32D Pad Sec.22-T4N-R67W				
Site Position:		Northing:	1,353,131.91 ft	Latitude:	40.301097
From:	Lat/Long	Easting:	3,172,448.87 ft	Longitude:	-104.881714
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.40 °

Well	Strohd HD 22-13D					
Well Position	+N-S	-14.9 ft	Northing:	1,353,116.96 ft	Latitude:	40.301056
	+E-W	-0.8 ft	Easting:	3,172,448.14 ft	Longitude:	-104.881717
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,868.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/12/2012	8.73	66.90	52,918

Design	Plan #1 (11-09-12)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N-S (ft)	+E-W (ft)	Direction (°)
	0.0	0.0	0.0	130.05

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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
450.0	5.00	90.00	449.7	0.0	10.9	2.00	2.00	0.00	90.00	
773.9	19.86	127.92	765.5	-34.0	68.8	5.00	4.59	11.71	48.45	
3,149.7	19.86	127.92	3,000.0	-530.0	705.5	0.00	0.00	0.00	0.00	
3,241.7	19.86	133.33	3,086.5	-550.3	729.2	2.00	0.00	5.89	92.41	
5,198.2	19.86	133.33	4,926.6	-1,006.5	1,212.7	0.00	0.00	0.00	0.00	
6,191.4	0.00	0.00	5,900.0	-1,123.5	1,336.7	2.00	-2.00	0.00	180.00	TARGET BHL 262C
7,685.4	0.00	0.00	7,394.0	-1,123.5	1,336.7	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Stroh HD 22-13D
Company:	Great Western	TVD Reference:	WELL @ 4882.0ft (Original Well Elev)
Project:	SEC.22-T4N-R67W	MD Reference:	WELL @ 4882.0ft (Original Well Elev)
Site:	Stroh HD 22-32D Pad Sec.22-T4N-R67W	North Reference:	True
Well:	Stroh HD 22-13D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-09-12)		

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
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	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
KOP - Start Build 2.00									
240.0	0.80	90.00	240.0	0.0	0.3	0.2	2.00	2.00	0.00
280.0	1.60	90.00	280.0	0.0	1.1	0.9	2.00	2.00	0.00
320.0	2.40	90.00	320.0	0.0	2.5	1.9	2.00	2.00	0.00
360.0	3.20	90.00	359.9	0.0	4.5	3.4	2.00	2.00	0.00
400.0	4.00	90.00	399.8	0.0	7.0	5.3	2.00	2.00	0.00
440.0	4.80	90.00	439.7	0.0	10.0	7.7	2.00	2.00	0.00
450.0	5.00	90.00	449.7	0.0	10.9	8.3	2.00	2.00	0.00
Start DLS 5.00 TFO 48.45									
480.0	6.10	100.63	479.5	-0.3	13.8	10.7	5.00	3.66	35.42
520.0	7.77	109.74	519.2	-1.6	18.4	15.1	5.00	4.19	22.78
560.0	9.58	115.55	558.8	-3.9	24.0	20.9	5.00	4.50	14.52
600.0	11.44	119.50	598.1	-7.3	30.4	28.0	5.00	4.67	9.89
640.0	13.35	122.35	637.2	-11.8	37.8	36.5	5.00	4.76	7.12
680.0	15.28	124.50	675.9	-17.2	46.0	46.3	5.00	4.82	5.36
705.0	16.49	125.59	700.0	-21.1	51.6	53.1	5.00	4.86	4.36
8 5/8"									
720.0	17.22	126.17	714.3	-23.7	55.1	57.5	5.00	4.87	3.88
760.0	19.18	127.51	752.3	-31.2	65.1	69.9	5.00	4.89	3.35
773.9	19.86	127.92	765.5	-34.0	68.8	74.6	5.00	4.90	2.92
Start 2375.8 hold at 773.9 MD									
800.0	19.86	127.92	790.0	-39.5	75.8	83.4	0.00	0.00	0.00
840.0	19.86	127.92	827.6	-47.8	86.5	97.0	0.00	0.00	0.00
880.0	19.86	127.92	865.2	-56.2	97.2	110.6	0.00	0.00	0.00
920.0	19.86	127.92	902.9	-64.5	108.0	124.2	0.00	0.00	0.00
960.0	19.86	127.92	940.5	-72.9	118.7	137.7	0.00	0.00	0.00
1,000.0	19.86	127.92	978.1	-81.2	129.4	151.3	0.00	0.00	0.00
1,040.0	19.86	127.92	1,015.7	-89.6	140.1	164.9	0.00	0.00	0.00
1,080.0	19.86	127.92	1,053.3	-97.9	150.8	178.5	0.00	0.00	0.00
1,120.0	19.86	127.92	1,091.0	-106.3	161.6	192.1	0.00	0.00	0.00
1,160.0	19.86	127.92	1,128.6	-114.6	172.3	205.6	0.00	0.00	0.00
1,200.0	19.86	127.92	1,166.2	-123.0	183.0	219.2	0.00	0.00	0.00
1,240.0	19.86	127.92	1,203.8	-131.3	193.7	232.8	0.00	0.00	0.00
1,280.0	19.86	127.92	1,241.4	-139.7	204.4	246.4	0.00	0.00	0.00
1,320.0	19.86	127.92	1,279.1	-148.0	215.1	259.9	0.00	0.00	0.00
1,360.0	19.86	127.92	1,316.7	-156.4	225.9	273.5	0.00	0.00	0.00
1,400.0	19.86	127.92	1,354.3	-164.7	236.6	287.1	0.00	0.00	0.00
1,440.0	19.86	127.92	1,391.9	-173.1	247.3	300.7	0.00	0.00	0.00
1,480.0	19.86	127.92	1,429.6	-181.4	258.0	314.3	0.00	0.00	0.00
1,520.0	19.86	127.92	1,467.2	-189.8	268.7	327.8	0.00	0.00	0.00
1,560.0	19.86	127.92	1,504.8	-198.1	279.5	341.4	0.00	0.00	0.00
1,600.0	19.86	127.92	1,542.4	-206.5	290.2	355.0	0.00	0.00	0.00
1,640.0	19.86	127.92	1,580.0	-214.8	300.9	368.6	0.00	0.00	0.00
1,680.0	19.86	127.92	1,617.7	-223.2	311.6	382.2	0.00	0.00	0.00
1,720.0	19.86	127.92	1,655.3	-231.5	322.3	395.7	0.00	0.00	0.00
1,760.0	19.86	127.92	1,692.9	-239.9	333.1	409.3	0.00	0.00	0.00
1,800.0	19.86	127.92	1,730.5	-248.2	343.8	422.9	0.00	0.00	0.00
1,840.0	19.86	127.92	1,768.1	-256.6	354.5	436.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Stroh HD 22-13D
Company:	Great Western	TVD Reference:	WELL @ 4882.0ft (Original Well Elev)
Project:	SEC.22-T4N-R67W	MD Reference:	WELL @ 4882.0ft (Original Well Elev)
Site:	Stroh HD 22-32D Pad Sec.22-T4N-R67W	North Reference:	True
Well:	Stroh HD 22-13D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-09-12)		

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)
1,880.0	19.86	127.92	1,805.8	-264.9	365.2	450.0	0.00	0.00	0.00
1,920.0	19.86	127.92	1,843.4	-273.3	375.9	463.6	0.00	0.00	0.00
1,960.0	19.86	127.92	1,881.0	-281.6	386.7	477.2	0.00	0.00	0.00
2,000.0	19.86	127.92	1,918.6	-290.0	397.4	490.8	0.00	0.00	0.00
2,040.0	19.86	127.92	1,956.3	-298.3	408.1	504.4	0.00	0.00	0.00
2,080.0	19.86	127.92	1,993.9	-306.7	418.8	517.9	0.00	0.00	0.00
2,120.0	19.86	127.92	2,031.5	-315.0	429.5	531.5	0.00	0.00	0.00
2,160.0	19.86	127.92	2,069.1	-323.4	440.3	545.1	0.00	0.00	0.00
2,200.0	19.86	127.92	2,106.7	-331.7	451.0	558.7	0.00	0.00	0.00
2,240.0	19.86	127.92	2,144.4	-340.1	461.7	572.3	0.00	0.00	0.00
2,280.0	19.86	127.92	2,182.0	-348.4	472.4	585.8	0.00	0.00	0.00
2,320.0	19.86	127.92	2,219.6	-356.8	483.1	599.4	0.00	0.00	0.00
2,360.0	19.86	127.92	2,257.2	-365.1	493.9	613.0	0.00	0.00	0.00
2,400.0	19.86	127.92	2,294.8	-373.5	504.6	626.6	0.00	0.00	0.00
2,440.0	19.86	127.92	2,332.5	-381.8	515.3	640.1	0.00	0.00	0.00
2,480.0	19.86	127.92	2,370.1	-390.2	526.0	653.7	0.00	0.00	0.00
2,520.0	19.86	127.92	2,407.7	-398.5	536.7	667.3	0.00	0.00	0.00
2,560.0	19.86	127.92	2,445.3	-406.9	547.5	680.9	0.00	0.00	0.00
2,600.0	19.86	127.92	2,483.0	-415.2	558.2	694.5	0.00	0.00	0.00
2,640.0	19.86	127.92	2,520.6	-423.6	568.9	708.0	0.00	0.00	0.00
2,680.0	19.86	127.92	2,558.2	-431.9	579.6	721.6	0.00	0.00	0.00
2,720.0	19.86	127.92	2,595.8	-440.3	590.3	735.2	0.00	0.00	0.00
2,760.0	19.86	127.92	2,633.4	-448.6	601.1	748.8	0.00	0.00	0.00
2,800.0	19.86	127.92	2,671.1	-457.0	611.8	762.4	0.00	0.00	0.00
2,840.0	19.86	127.92	2,708.7	-465.3	622.5	775.9	0.00	0.00	0.00
2,876.5	19.86	127.92	2,743.0	-473.0	632.3	788.3	0.00	0.00	0.00
GREELEY SAND									
2,880.0	19.86	127.92	2,746.3	-473.7	633.2	789.5	0.00	0.00	0.00
2,920.0	19.86	127.92	2,783.9	-482.0	643.9	803.1	0.00	0.00	0.00
2,960.0	19.86	127.92	2,821.5	-490.4	654.7	816.7	0.00	0.00	0.00
3,000.0	19.86	127.92	2,859.2	-498.7	665.4	830.3	0.00	0.00	0.00
3,040.0	19.86	127.92	2,896.8	-507.1	676.1	843.8	0.00	0.00	0.00
3,080.0	19.86	127.92	2,934.4	-515.4	686.8	857.4	0.00	0.00	0.00
3,120.0	19.86	127.92	2,972.0	-523.8	697.5	871.0	0.00	0.00	0.00
3,149.7	19.86	127.92	3,000.0	-530.0	705.5	881.1	0.00	0.00	0.00
Start DLS 2.00 TFO 92.41									
3,160.0	19.85	128.52	3,009.6	-532.2	708.2	884.6	2.00	-0.07	5.88
3,200.0	19.84	130.88	3,047.3	-540.8	718.7	898.1	2.00	-0.03	5.89
3,240.0	19.86	133.23	3,084.9	-549.9	728.8	911.7	2.00	0.05	5.89
3,241.7	19.86	133.33	3,086.5	-550.3	729.2	912.3	2.00	0.09	5.88
Start 1956.5 hold at 3241.7 MD									
3,280.0	19.86	133.33	3,122.5	-559.3	738.7	925.3	0.00	0.00	0.00
3,320.0	19.86	133.33	3,160.1	-568.6	748.5	938.9	0.00	0.00	0.00
3,360.0	19.86	133.33	3,197.8	-577.9	758.4	952.4	0.00	0.00	0.00
3,400.0	19.86	133.33	3,235.4	-587.2	768.3	966.0	0.00	0.00	0.00
3,440.0	19.86	133.33	3,273.0	-596.6	778.2	979.6	0.00	0.00	0.00
3,480.0	19.86	133.33	3,310.6	-605.9	788.1	993.1	0.00	0.00	0.00
3,520.0	19.86	133.33	3,348.2	-615.2	798.0	1,006.7	0.00	0.00	0.00
3,560.0	19.86	133.33	3,385.9	-624.5	807.9	1,020.3	0.00	0.00	0.00
3,600.0	19.86	133.33	3,423.5	-633.9	817.7	1,033.8	0.00	0.00	0.00
3,640.0	19.86	133.33	3,461.1	-643.2	827.6	1,047.4	0.00	0.00	0.00
3,680.0	19.86	133.33	3,498.7	-652.5	837.5	1,061.0	0.00	0.00	0.00
3,720.0	19.86	133.33	3,536.3	-661.8	847.4	1,074.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Stroh HD 22-13D
Company:	Great Western	TVD Reference:	WELL @ 4882.0ft (Original Well Elev)
Project:	SEC.22-T4N-R67W	MD Reference:	WELL @ 4882.0ft (Original Well Elev)
Site:	Stroh HD 22-32D Pad Sec.22-T4N-R67W	North Reference:	True
Well:	Stroh HD 22-13D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-09-12)		

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)	
3,760.0	19.86	133.33	3,574.0	-671.2	857.3	1,088.1	0.00	0.00	0.00	
3,796.2	19.86	133.33	3,608.0	-679.6	866.2	1,100.4	0.00	0.00	0.00	
PARKMAN										
3,800.0	19.86	133.33	3,611.6	-680.5	867.2	1,101.7	0.00	0.00	0.00	
3,840.0	19.86	133.33	3,649.2	-689.8	877.1	1,115.2	0.00	0.00	0.00	
3,880.0	19.86	133.33	3,686.8	-699.2	886.9	1,128.8	0.00	0.00	0.00	
3,920.0	19.86	133.33	3,724.4	-708.5	896.8	1,142.4	0.00	0.00	0.00	
3,960.0	19.86	133.33	3,762.1	-717.8	906.7	1,155.9	0.00	0.00	0.00	
4,000.0	19.86	133.33	3,799.7	-727.1	916.6	1,169.5	0.00	0.00	0.00	
4,040.0	19.86	133.33	3,837.3	-736.5	926.5	1,183.1	0.00	0.00	0.00	
4,080.0	19.86	133.33	3,874.9	-745.8	936.4	1,196.7	0.00	0.00	0.00	
4,120.0	19.86	133.33	3,912.5	-755.1	946.3	1,210.2	0.00	0.00	0.00	
4,160.0	19.86	133.33	3,950.2	-764.4	956.1	1,223.8	0.00	0.00	0.00	
4,200.0	19.86	133.33	3,987.8	-773.8	966.0	1,237.4	0.00	0.00	0.00	
4,240.0	19.86	133.33	4,025.4	-783.1	975.9	1,250.9	0.00	0.00	0.00	
4,280.0	19.86	133.33	4,063.0	-792.4	985.8	1,264.5	0.00	0.00	0.00	
4,320.0	19.86	133.33	4,100.6	-801.7	995.7	1,278.1	0.00	0.00	0.00	
4,360.0	19.86	133.33	4,138.3	-811.1	1,005.6	1,291.6	0.00	0.00	0.00	
4,400.0	19.86	133.33	4,175.9	-820.4	1,015.4	1,305.2	0.00	0.00	0.00	
4,440.0	19.86	133.33	4,213.5	-829.7	1,025.3	1,318.8	0.00	0.00	0.00	
4,480.0	19.86	133.33	4,251.1	-839.1	1,035.2	1,332.3	0.00	0.00	0.00	
4,520.0	19.86	133.33	4,288.7	-848.4	1,045.1	1,345.9	0.00	0.00	0.00	
4,560.0	19.86	133.33	4,326.4	-857.7	1,055.0	1,359.5	0.00	0.00	0.00	
4,578.7	19.86	133.33	4,344.0	-862.1	1,059.6	1,365.8	0.00	0.00	0.00	
SUSSEX										
4,600.0	19.86	133.33	4,364.0	-867.0	1,064.9	1,373.0	0.00	0.00	0.00	
4,640.0	19.86	133.33	4,401.6	-876.4	1,074.8	1,386.6	0.00	0.00	0.00	
4,680.0	19.86	133.33	4,439.2	-885.7	1,084.6	1,400.2	0.00	0.00	0.00	
4,720.0	19.86	133.33	4,476.9	-895.0	1,094.5	1,413.7	0.00	0.00	0.00	
4,760.0	19.86	133.33	4,514.5	-904.3	1,104.4	1,427.3	0.00	0.00	0.00	
4,800.0	19.86	133.33	4,552.1	-913.7	1,114.3	1,440.9	0.00	0.00	0.00	
4,840.0	19.86	133.33	4,589.7	-923.0	1,124.2	1,454.5	0.00	0.00	0.00	
4,880.0	19.86	133.33	4,627.3	-932.3	1,134.1	1,468.0	0.00	0.00	0.00	
4,894.5	19.86	133.33	4,641.0	-935.7	1,137.7	1,473.0	0.00	0.00	0.00	
SHANNON										
4,920.0	19.86	133.33	4,665.0	-941.6	1,144.0	1,481.6	0.00	0.00	0.00	
4,960.0	19.86	133.33	4,702.6	-951.0	1,153.8	1,495.2	0.00	0.00	0.00	
5,000.0	19.86	133.33	4,740.2	-960.3	1,163.7	1,508.7	0.00	0.00	0.00	
5,040.0	19.86	133.33	4,777.8	-969.6	1,173.6	1,522.3	0.00	0.00	0.00	
5,080.0	19.86	133.33	4,815.4	-979.0	1,183.5	1,535.9	0.00	0.00	0.00	
5,120.0	19.86	133.33	4,853.1	-988.3	1,193.4	1,549.4	0.00	0.00	0.00	
5,160.0	19.86	133.33	4,890.7	-997.6	1,203.3	1,563.0	0.00	0.00	0.00	
5,198.2	19.86	133.33	4,926.6	-1,006.5	1,212.7	1,576.0	0.00	0.00	0.00	
Start Drop -2.00										
5,200.0	19.83	133.33	4,928.3	-1,006.9	1,213.2	1,576.6	2.00	-2.00	0.00	
5,240.0	19.03	133.33	4,966.0	-1,016.1	1,222.8	1,589.9	2.00	-2.00	0.00	
5,280.0	18.23	133.33	5,003.9	-1,024.8	1,232.1	1,602.6	2.00	-2.00	0.00	
5,320.0	17.43	133.33	5,042.0	-1,033.2	1,241.0	1,614.8	2.00	-2.00	0.00	
5,360.0	16.63	133.33	5,080.2	-1,041.3	1,249.6	1,626.5	2.00	-2.00	0.00	
5,400.0	15.83	133.33	5,118.7	-1,048.9	1,257.7	1,637.7	2.00	-2.00	0.00	
5,440.0	15.03	133.33	5,157.2	-1,056.2	1,265.4	1,648.3	2.00	-2.00	0.00	
5,480.0	14.23	133.33	5,195.9	-1,063.2	1,272.8	1,658.4	2.00	-2.00	0.00	
5,520.0	13.43	133.33	5,234.8	-1,069.7	1,279.7	1,667.9	2.00	-2.00	0.00	
5,560.0	12.63	133.33	5,273.7	-1,075.9	1,286.3	1,676.9	2.00	-2.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Stroh HD 22-13D
Company:	Great Western	TVD Reference:	WELL @ 4882.0ft (Original Well Elev)
Project:	SEC.22-T4N-R67W	MD Reference:	WELL @ 4882.0ft (Original Well Elev)
Site:	Stroh HD 22-32D Pad Sec.22-T4N-R67W	North Reference:	True
Well:	Stroh HD 22-13D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-09-12)		

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)
5,600.0	11.83	133.33	5,312.8	-1,081.7	1,292.5	1,685.4	2.00	-2.00	0.00
5,640.0	11.03	133.33	5,352.0	-1,087.2	1,298.2	1,693.3	2.00	-2.00	0.00
5,680.0	10.23	133.33	5,391.3	-1,092.2	1,303.6	1,700.7	2.00	-2.00	0.00
5,720.0	9.43	133.33	5,430.7	-1,096.9	1,308.5	1,707.5	2.00	-2.00	0.00
5,760.0	8.63	133.33	5,470.3	-1,101.2	1,313.1	1,713.8	2.00	-2.00	0.00
5,800.0	7.83	133.33	5,509.8	-1,105.2	1,317.3	1,719.5	2.00	-2.00	0.00
5,840.0	7.03	133.33	5,549.5	-1,108.7	1,321.0	1,724.6	2.00	-2.00	0.00
5,880.0	6.23	133.33	5,589.2	-1,111.9	1,324.4	1,729.2	2.00	-2.00	0.00
5,920.0	5.43	133.33	5,629.0	-1,114.7	1,327.3	1,733.3	2.00	-2.00	0.00
5,960.0	4.63	133.33	5,668.9	-1,117.1	1,329.9	1,736.8	2.00	-2.00	0.00
6,000.0	3.83	133.33	5,708.8	-1,119.1	1,332.0	1,739.7	2.00	-2.00	0.00
6,040.0	3.03	133.33	5,748.7	-1,120.7	1,333.8	1,742.1	2.00	-2.00	0.00
6,080.0	2.23	133.33	5,788.7	-1,122.0	1,335.1	1,744.0	2.00	-2.00	0.00
6,120.0	1.43	133.33	5,828.6	-1,122.9	1,336.0	1,745.2	2.00	-2.00	0.00
6,160.0	0.63	133.33	5,868.6	-1,123.4	1,336.6	1,745.9	2.00	-2.00	0.00
6,191.4	0.00	0.00	5,900.0	-1,123.5	1,336.7	1,746.1	2.00	-2.00	0.00
Back to Vertical									
6,200.0	0.00	0.00	5,908.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
6,240.0	0.00	0.00	5,948.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
6,280.0	0.00	0.00	5,988.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
6,320.0	0.00	0.00	6,028.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
6,360.0	0.00	0.00	6,068.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
6,400.0	0.00	0.00	6,108.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
6,440.0	0.00	0.00	6,148.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
6,480.0	0.00	0.00	6,188.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
6,520.0	0.00	0.00	6,228.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
6,560.0	0.00	0.00	6,268.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
6,600.0	0.00	0.00	6,308.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
6,640.0	0.00	0.00	6,348.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
6,680.0	0.00	0.00	6,388.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
6,720.0	0.00	0.00	6,428.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
6,760.0	0.00	0.00	6,468.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
6,800.0	0.00	0.00	6,508.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
6,840.0	0.00	0.00	6,548.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
6,880.0	0.00	0.00	6,588.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
6,920.0	0.00	0.00	6,628.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
6,960.0	0.00	0.00	6,668.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
7,000.0	0.00	0.00	6,708.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
7,040.0	0.00	0.00	6,748.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
7,080.0	0.00	0.00	6,788.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
7,120.0	0.00	0.00	6,828.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
7,160.0	0.00	0.00	6,868.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
7,193.4	0.00	0.00	6,902.0	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
NIORARA									
7,200.0	0.00	0.00	6,908.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
7,240.0	0.00	0.00	6,948.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
7,280.0	0.00	0.00	6,988.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
7,320.0	0.00	0.00	7,028.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
7,360.0	0.00	0.00	7,068.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
7,400.0	0.00	0.00	7,108.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
7,440.0	0.00	0.00	7,148.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
7,480.0	0.00	0.00	7,188.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00
7,502.4	0.00	0.00	7,211.0	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Stroh HD 22-13D
Company:	Great Western	TVD Reference:	WELL @ 4882.0ft (Original Well Elev)
Project:	SEC.22-T4N-R67W	MD Reference:	WELL @ 4882.0ft (Original Well Elev)
Site:	Stroh HD 22-32D Pad Sec.22-T4N-R67W	North Reference:	True
Well:	Stroh HD 22-13D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-09-12)		

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)	
FORT HAYS										
7,520.0	0.00	0.00	7,228.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00	
7,525.4	0.00	0.00	7,234.0	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00	
CODELL										
7,560.0	0.00	0.00	7,268.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00	
7,600.0	0.00	0.00	7,308.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00	
7,640.0	0.00	0.00	7,348.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00	
7,680.0	0.00	0.00	7,388.6	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00	
7,685.4	0.00	0.00	7,394.0	-1,123.5	1,336.7	1,746.1	0.00	0.00	0.00	
TD at 7685.4										

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")		
705.0	700.0	8 5/8"	8-5/8	12-1/4		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,876.5	2,743.0	GREELEY SAND		0.00		
3,796.2	3,608.0	PARKMAN		0.00		
4,578.7	4,344.0	SUSSEX		0.00		
4,894.5	4,641.0	SHANNON		0.00		
7,193.4	6,902.0	NIOBRARA		0.00		
7,502.4	7,211.0	FORT HAYS		0.00		
7,525.4	7,234.0	CODELL		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
200.0	200.0	0.0	0.0	KOP - Start Build 2.00	
450.0	449.7	0.0	10.9	Start DLS 5.00 TFO 48.45	
773.9	765.5	-34.0	68.8	Start 2375.8 hold at 773.9 MD	
3,149.7	3,000.0	-530.0	705.5	Start DLS 2.00 TFO 92.41	
3,241.7	3,086.5	-550.3	729.2	Start 1956.5 hold at 3241.7 MD	
5,198.2	4,926.6	-1,006.5	1,212.7	Start Drop -2.00	
6,191.4	5,900.0	-1,123.5	1,336.7	Back to Vertical	
7,685.4	7,394.0	-1,123.5	1,336.7	TD at 7685.4	



Directional

Great Western

SEC.22-T4N-R67W

Stroh HD 22-32D Pad Sec.22-T4N-R67W

Stroh HD 22-13D

Wellbore #1

Plan #1 (11-09-12)

Anticollision Report

12 November, 2012

Company:	Great Western	Local Co-ordinate Reference:	Well Stroh HD 22-13D
Project:	SEC.22-T4N-R67W	TVD Reference:	WELL @ 4882.0ft (Original Well Elev)
Reference Site:	Stroh HD 22-32D Pad Sec.22-T4N-R67W	MD Reference:	WELL @ 4882.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh HD 22-13D	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 (11-09-12)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (11-09-12)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	11/12/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	7,685.3	Plan #1 (11-09-12) (Wellbore #1)	MWD	MWD - Standard

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						
Dutton HD 22-30D Pad Sec.22-T4N-R67W						
Stroh 12-22 (Exist.) - Wellbore #1 - Wellbore #1	0.0	3.0	728.5			
Stroh 12-22 (Exist.) - Wellbore #1 - Wellbore #1	200.0	200.0	728.7	728.1	1,209.175	ES
Stroh 12-22 (Exist.) - Wellbore #1 - Wellbore #1	7,200.0	6,800.0	2,113.2	2,077.4	58.980	SF
Stroh 22-22 (Exist.) - Wellbore #1 - Wellbore #1	3,093.5	2,951.0	100.0	74.2	3.887	CC
Stroh 22-22 (Exist.) - Wellbore #1 - Wellbore #1	3,100.0	2,957.1	100.0	74.2	3.879	ES, SF
Stroh CNW-22 (Exist.) - Wellbore #1 - Wellbore #1	679.6	678.5	56.3	53.2	17.811	CC, ES
Stroh CNW-22 (Exist.) - Wellbore #1 - Wellbore #1	773.9	767.9	62.8	59.0	16.707	SF
Stroh HD 22-32D Pad Sec.22-T4N-R67W						
Stroh HD 22-32D - Wellbore #1 - Plan #1 (11-09-12)	269.2	269.2	14.9	14.0	15.264	CC
Stroh HD 22-32D - Wellbore #1 - Plan #1 (11-09-12)	300.0	300.0	15.0	13.9	13.437	ES
Stroh HD 22-32D - Wellbore #1 - Plan #1 (11-09-12)	450.0	449.5	18.3	16.5	10.217	SF

Offset Design												Dutton HD 22-30D Pad Sec.22-T4N-R67W - Stroh 12-22 (Exist.) - Wellbore #1 - Wellbore #1		Offset Site Error:	0.0 ft
Survey Program: 200-NS-GYRO-MS														Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
0.0	0.0	3.0	3.0	0.0	0.0	-128.36	-452.1	-571.3	728.5						
100.0	100.0	102.4	102.4	0.1	0.1	-128.35	-452.0	-571.4	728.6	728.3	0.25	2,933.534			
200.0	200.0	200.0	200.0	0.3	0.3	-128.31	-451.7	-571.8	728.7	728.1	0.60	1,209.175	ES		
300.0	300.0	294.9	294.9	0.6	0.5	141.83	-451.2	-572.9	730.7	729.6	1.07	683.401			
400.0	399.8	387.9	387.9	0.8	0.8	142.16	-450.5	-575.4	736.4	734.9	1.53	479.884			
450.0	449.7	434.1	434.0	0.9	0.9	142.39	-450.0	-577.1	740.6	738.9	1.77	418.263			
500.0	499.4	480.0	479.9	1.0	1.0	126.87	-449.6	-578.9	745.6	743.5	2.01	371.424			
600.0	598.1	570.8	570.5	1.3	1.2	113.89	-449.1	-583.3	756.8	754.3	2.52	300.067			
700.0	695.2	664.7	664.4	1.8	1.5	109.33	-449.0	-588.3	770.0	766.9	3.15	244.158			
773.9	765.5	734.6	734.1	2.2	1.7	108.03	-449.1	-591.9	781.0	777.3	3.72	210.188			
800.0	790.0	759.0	758.5	2.3	1.7	108.65	-449.2	-593.1	785.2	781.2	3.93	199.832			
900.0	884.0	853.9	853.3	3.0	2.0	111.00	-449.7	-597.6	801.9	797.1	4.77	168.126			
1,000.0	978.1	949.8	949.2	3.7	2.2	113.28	-450.1	-601.8	819.6	814.0	5.62	145.831			
1,100.0	1,072.2	1,044.3	1,043.6	4.4	2.5	115.44	-450.2	-605.7	838.2	831.8	6.46	129.690			
1,200.0	1,166.2	1,137.2	1,136.3	5.1	2.7	117.48	-450.4	-609.5	858.1	850.8	7.29	117.632			
1,300.0	1,260.3	1,231.3	1,230.4	5.8	3.0	119.45	-450.6	-613.3	879.0	870.9	8.11	108.346			

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 Stroh HD 22-13D
Project:	SEC.22-T4N-R67W	TVD Reference:	WELL @ 4882.0ft (Original Well Elev)
Reference Site:	Stroh HD 22-32D Pad Sec.22-T4N-R67W	MD Reference:	WELL @ 4882.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh HD 22-13D	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 (11-09-12)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 200-NS-GYRO-MS													Offset Well Error:		0.0 ft
Dutton HD 22-30D Pad Sec.22-T4N-R67W - Stroh 12-22 (Exist.) - Wellbore #1 - Wellbore #1															
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
1,400.0	1,354.3	1,328.3	1,327.3	6.5	3.2	121.38	-451.0	-616.8	900.6	891.7	8.92	100.976			
1,500.0	1,448.4	1,424.3	1,423.2	7.2	3.5	123.17	-451.6	-619.7	922.7	913.0	9.71	95.051			
1,600.0	1,542.4	1,516.5	1,515.4	7.9	3.7	124.82	-452.2	-622.5	945.7	935.2	10.48	90.281			
1,700.0	1,636.5	1,609.0	1,607.9	8.7	4.0	126.41	-452.7	-625.5	969.6	958.3	11.23	86.361			
1,800.0	1,730.5	1,706.8	1,705.6	9.4	4.2	128.04	-452.7	-628.5	994.0	982.0	11.97	83.037			
1,900.0	1,824.6	1,804.4	1,803.2	10.1	4.5	129.62	-452.2	-631.2	1,018.7	1,006.0	12.70	80.241			
2,000.0	1,918.6	1,899.2	1,898.0	10.8	4.7	131.08	-451.6	-633.6	1,043.8	1,030.4	13.40	77.878			
2,100.0	2,012.7	1,994.4	1,993.1	11.5	5.0	132.46	-451.4	-635.7	1,069.4	1,055.3	14.10	75.846			
2,200.0	2,106.7	2,089.9	2,088.6	12.3	5.2	133.77	-451.5	-637.6	1,095.4	1,080.6	14.78	74.090			
2,300.0	2,200.8	2,185.6	2,184.3	13.0	5.5	135.01	-451.8	-639.4	1,121.7	1,106.2	15.46	72.562			
2,400.0	2,294.8	2,279.9	2,278.6	13.7	5.7	136.16	-452.4	-640.9	1,148.4	1,132.3	16.10	71.318			
2,500.0	2,388.9	2,374.2	2,372.8	14.4	5.9	137.23	-453.6	-642.4	1,175.4	1,158.7	16.74	70.234			
2,600.0	2,483.0	2,466.2	2,464.8	15.2	6.1	138.21	-455.2	-643.9	1,202.9	1,185.5	17.35	69.315			
2,700.0	2,577.0	2,557.2	2,555.8	15.9	6.3	139.13	-456.9	-645.5	1,230.9	1,213.0	17.96	68.533			
2,800.0	2,671.1	2,648.5	2,647.1	16.6	6.5	140.01	-458.7	-647.4	1,259.5	1,240.9	18.57	67.835			
2,900.0	2,765.1	2,740.1	2,738.7	17.3	6.8	140.86	-460.5	-649.4	1,288.5	1,269.3	19.17	67.208			
3,000.0	2,859.2	2,834.2	2,832.7	18.1	7.0	141.69	-462.5	-651.7	1,317.9	1,298.1	19.78	66.635			
3,100.0	2,953.2	2,932.9	2,931.4	18.8	7.2	142.55	-463.8	-653.7	1,347.3	1,326.9	20.39	66.088			
3,149.7	3,000.0	2,981.9	2,980.4	19.1	7.4	142.99	-464.1	-654.6	1,361.9	1,341.2	20.68	65.843			
3,200.0	3,047.3	3,032.3	3,030.8	19.5	7.5	140.43	-464.1	-655.4	1,376.3	1,355.3	21.02	65.486			
3,241.7	3,086.5	3,074.6	3,073.0	19.7	7.6	138.34	-464.0	-655.9	1,387.9	1,366.6	21.27	65.251			
3,300.0	3,141.3	3,133.7	3,132.1	20.1	7.7	138.91	-463.8	-656.5	1,403.7	1,382.2	21.58	65.056			
3,400.0	3,235.4	3,236.3	3,234.7	20.8	7.9	139.89	-463.0	-657.0	1,430.8	1,408.7	22.10	64.737			
3,500.0	3,329.4	3,341.2	3,339.7	21.5	8.0	140.89	-461.5	-656.8	1,457.5	1,434.9	22.55	64.647			
3,600.0	3,423.5	3,438.4	3,436.8	22.3	8.1	141.80	-459.6	-655.8	1,483.9	1,460.9	22.98	64.583			
3,700.0	3,517.5	3,525.6	3,524.0	23.0	8.2	142.59	-458.0	-655.2	1,510.9	1,487.5	23.40	64.559			
3,800.0	3,611.6	3,613.4	3,611.7	23.7	8.3	143.34	-456.8	-655.1	1,538.6	1,514.8	23.84	64.549			
3,900.0	3,705.6	3,705.0	3,703.4	24.4	8.4	144.09	-455.7	-655.1	1,566.8	1,542.5	24.32	64.435			
4,000.0	3,799.7	3,796.7	3,795.1	25.1	8.6	144.80	-454.8	-655.4	1,595.4	1,570.6	24.79	64.347			
4,100.0	3,893.7	3,901.1	3,899.5	25.9	8.7	145.58	-454.0	-655.4	1,624.0	1,598.8	25.22	64.406			
4,200.0	3,987.8	4,000.0	3,998.3	26.6	8.8	146.29	-453.5	-654.8	1,652.2	1,626.6	25.64	64.446			
4,300.0	4,081.8	4,086.6	4,085.0	27.3	8.9	146.90	-452.8	-654.3	1,680.7	1,654.6	26.06	64.498			
4,400.0	4,175.9	4,167.6	4,166.0	28.0	9.0	147.48	-451.2	-654.3	1,710.1	1,683.6	26.47	64.596			
4,500.0	4,269.9	4,256.2	4,254.5	28.7	9.1	148.12	-448.8	-654.7	1,740.3	1,713.4	26.92	64.650			
4,600.0	4,364.0	4,350.3	4,348.5	29.5	9.3	148.77	-446.4	-655.1	1,770.8	1,743.4	27.39	64.658			
4,700.0	4,458.0	4,441.2	4,439.4	30.2	9.5	149.37	-444.2	-655.6	1,801.4	1,773.5	27.86	64.654			
4,800.0	4,552.1	4,528.8	4,527.0	30.9	9.7	149.88	-443.5	-656.6	1,832.5	1,804.1	28.36	64.620			
4,900.0	4,646.1	4,618.5	4,616.7	31.6	9.8	150.34	-444.1	-658.3	1,864.0	1,835.1	28.87	64.563			
5,000.0	4,740.2	4,715.5	4,713.7	32.4	10.1	150.82	-445.1	-660.3	1,895.6	1,866.2	29.41	64.460			
5,100.0	4,834.2	4,812.6	4,810.7	33.1	10.3	151.29	-445.8	-661.9	1,927.1	1,897.2	29.94	64.367			
5,198.2	4,926.6	4,907.8	4,905.9	33.8	10.5	151.74	-446.3	-663.4	1,958.1	1,927.6	30.47	64.268			
5,200.0	4,928.3	4,909.5	4,907.7	33.8	10.5	151.75	-446.3	-663.4	1,958.7	1,928.2	30.48	64.268			
5,300.0	5,022.9	5,007.4	5,005.6	34.3	10.8	152.47	-446.7	-664.7	1,988.6	1,957.7	30.91	64.337			
5,400.0	5,118.7	5,110.1	5,108.3	34.8	11.0	153.11	-447.3	-665.7	2,015.4	1,984.1	31.32	64.345			
5,500.0	5,215.3	5,212.1	5,210.2	35.2	11.2	153.64	-447.8	-666.4	2,038.9	2,007.2	31.72	64.279			
5,600.0	5,312.8	5,302.6	5,300.8	35.6	11.4	154.06	-448.4	-667.2	2,059.5	2,027.4	32.08	64.193			
5,700.0	5,411.0	5,400.0	5,398.1	35.9	11.6	154.41	-449.1	-668.3	2,077.3	2,044.9	32.44	64.046			
5,800.0	5,509.8	5,557.6	5,555.6	36.2	11.9	154.72	-452.4	-668.6	2,090.9	2,058.1	32.79	63.767			
5,900.0	5,609.1	5,661.0	5,659.0	36.4	12.0	154.86	-456.1	-667.1	2,099.1	2,066.1	33.01	63.591			
6,000.0	5,708.8	5,742.2	5,740.1	36.6	12.1	154.95	-457.9	-666.2	2,104.9	2,071.8	33.14	63.513			
6,100.0	5,808.6	5,826.3	5,824.2	36.7	12.1	155.01	-458.6	-665.6	2,108.5	2,075.2	33.25	63.405			
6,191.4	5,900.0	5,909.5	5,907.4	36.8	12.2	-71.64	-458.9	-665.3	2,109.4	2,076.1	33.38	63.189			

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 Stroh HD 22-13D
Project:	SEC.22-T4N-R67W	TVD Reference:	WELL @ 4882.0ft (Original Well Elev)
Reference Site:	Stroh HD 22-32D Pad Sec.22-T4N-R67W	MD Reference:	WELL @ 4882.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh HD 22-13D	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 (11-09-12)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 200-NS-GYRO-MS													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			
6,200.0	5,908.6	5,917.3	5,915.3	36.8	12.3	-71.64	-458.9	-665.3	2,109.4	2,076.0	33.40	63.149			
6,241.4	5,950.0	5,955.0	5,953.0	36.8	12.3	-71.64	-458.9	-665.3	2,109.4	2,075.9	33.50	62.966			
6,300.0	6,008.6	6,009.5	6,007.5	36.9	12.4	-71.63	-458.8	-665.3	2,109.5	2,075.8	33.64	62.706			
6,400.0	6,108.6	6,112.5	6,110.4	36.9	12.5	-71.63	-458.6	-665.4	2,109.6	2,075.7	33.91	62.206			
6,500.0	6,208.6	6,215.2	6,213.1	37.0	12.7	-71.62	-458.3	-665.3	2,109.6	2,075.4	34.17	61.732			
6,600.0	6,308.6	6,316.6	6,314.5	37.1	12.8	-71.62	-458.2	-665.1	2,109.5	2,075.1	34.36	61.390			
6,700.0	6,408.6	6,416.4	6,414.4	37.1	12.9	-71.62	-458.2	-665.0	2,109.3	2,074.7	34.56	61.027			
6,738.9	6,447.6	6,452.6	6,450.6	37.2	12.9	-71.62	-458.3	-664.9	2,109.3	2,074.6	34.66	60.855			
6,800.0	6,508.6	6,509.3	6,507.3	37.2	13.0	-71.62	-458.4	-665.1	2,109.3	2,074.5	34.81	60.589			
6,900.0	6,608.6	6,602.5	6,600.5	37.3	13.1	-71.63	-458.8	-665.5	2,109.7	2,074.6	35.07	60.157			
7,000.0	6,708.6	6,709.1	6,707.0	37.4	13.3	-71.65	-459.2	-666.1	2,110.1	2,074.7	35.40	59.601			
7,100.0	6,808.6	6,800.0	6,798.0	37.5	13.5	-71.66	-459.5	-666.3	2,110.2	2,074.5	35.71	59.100			
7,200.0	6,908.6	6,800.0	6,798.0	37.5	13.5	-71.66	-459.5	-666.3	2,113.2	2,077.4	35.83	58.980 SF			
7,300.0	7,008.6	6,800.0	6,798.0	37.6	13.5	-71.66	-459.5	-666.3	2,120.9	2,085.0	35.95	58.990			
7,400.0	7,108.6	6,800.0	6,798.0	37.7	13.5	-71.66	-459.5	-666.3	2,133.3	2,097.3	36.08	59.127			
7,500.0	7,208.6	6,800.0	6,798.0	37.8	13.5	-71.66	-459.5	-666.3	2,150.3	2,114.1	36.21	59.386			
7,600.0	7,308.6	6,800.0	6,798.0	37.9	13.5	-71.66	-459.5	-666.3	2,171.8	2,135.4	36.34	59.765			
7,685.4	7,394.0	6,800.0	6,798.0	37.9	13.5	-71.66	-459.5	-666.3	2,193.5	2,157.1	36.45	60.179			

Company:	Great Western	Local Co-ordinate Reference:	Well Stroh HD 22-13D
Project:	SEC.22-T4N-R67W	TVD Reference:	WELL @ 4882.0ft (Original Well Elev)
Reference Site:	Stroh HD 22-32D Pad Sec.22-T4N-R67W	MD Reference:	WELL @ 4882.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh HD 22-13D	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 (11-09-12)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 200-NS-GYRO-MS													Dutton HD 22-30D Pad Sec.22-T4N-R67W - Stroh 22-22 (Exist.) - Wellbore #1 - Wellbore #1		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	128.87	-562.1	697.3	895.7							
100.0	100.0	98.1	98.1	0.1	0.1	128.90	-562.6	697.3	896.0	895.7	0.24	3,689.011				
200.0	200.0	193.3	193.3	0.3	0.3	128.98	-564.1	697.1	896.8	896.2	0.59	1,509.456				
300.0	300.0	295.6	295.6	0.6	0.5	39.18	-566.2	696.6	896.4	895.3	1.07	838.112				
400.0	399.8	398.3	398.2	0.8	0.8	39.60	-568.6	695.6	893.0	891.5	1.56	573.655				
450.0	449.7	446.6	446.5	0.9	0.9	39.87	-569.7	695.0	890.3	888.5	1.80	495.222				
500.0	499.4	494.6	494.5	1.0	1.0	24.43	-570.9	694.6	886.3	884.3	2.04	434.461				
600.0	598.1	590.2	590.1	1.3	1.3	11.14	-573.1	694.0	872.1	869.6	2.52	346.021				
700.0	695.2	690.1	689.9	1.8	1.6	5.63	-575.5	693.5	849.6	846.6	3.01	282.576				
773.9	765.5	762.8	762.6	2.2	1.7	3.29	-577.0	693.0	827.3	824.0	3.36	246.483				
800.0	790.0	788.1	787.9	2.3	1.8	3.36	-577.5	692.8	818.6	815.2	3.49	234.519				
900.0	884.0	883.6	883.4	3.0	2.1	3.65	-579.2	692.0	785.2	781.2	4.01	195.709				
1,000.0	978.1	978.8	978.5	3.7	2.3	3.95	-580.7	691.2	751.7	747.2	4.55	165.331				
1,100.0	1,072.2	1,076.5	1,076.2	4.4	2.6	4.28	-582.0	690.2	717.9	712.9	5.08	141.437				
1,200.0	1,166.2	1,174.6	1,174.3	5.1	2.8	4.63	-582.7	688.9	683.6	678.0	5.61	121.912				
1,300.0	1,260.3	1,269.6	1,269.3	5.8	3.0	5.00	-583.1	687.4	648.9	642.8	6.12	105.957				
1,400.0	1,354.3	1,363.5	1,363.3	6.5	3.2	5.39	-583.4	685.9	614.2	607.6	6.64	92.508				
1,500.0	1,448.4	1,458.0	1,457.8	7.2	3.4	5.84	-583.6	684.4	579.4	572.3	7.15	80.986				
1,600.0	1,542.4	1,552.8	1,552.5	7.9	3.6	6.32	-583.5	682.9	544.5	536.8	7.67	70.976				
1,700.0	1,636.5	1,647.9	1,647.6	8.7	3.8	6.87	-583.3	681.2	509.4	501.2	8.20	62.101				
1,800.0	1,730.5	1,743.1	1,742.8	9.4	4.0	7.62	-583.6	678.6	474.0	465.2	8.75	54.151				
1,900.0	1,824.6	1,836.8	1,836.4	10.1	4.2	8.64	-584.3	675.1	438.4	429.0	9.33	46.987				
2,000.0	1,918.6	1,928.9	1,928.4	10.8	4.4	9.91	-585.7	671.2	403.1	393.1	9.94	40.531				
2,100.0	2,012.7	2,021.4	2,020.8	11.5	4.7	11.52	-587.5	667.1	368.2	357.6	10.60	34.744				
2,200.0	2,106.7	2,115.3	2,114.6	12.3	4.9	13.50	-589.4	662.8	333.6	322.3	11.31	29.501				
2,300.0	2,200.8	2,209.1	2,208.2	13.0	5.2	15.88	-591.0	658.6	299.2	287.1	12.09	24.754				
2,400.0	2,294.8	2,302.2	2,301.3	13.7	5.4	18.86	-592.5	654.3	265.3	252.3	12.97	20.453				
2,500.0	2,388.9	2,395.3	2,394.3	14.4	5.6	22.70	-594.0	649.8	232.2	218.2	14.02	16.559				
2,600.0	2,483.0	2,488.2	2,487.0	15.2	5.9	27.77	-595.6	645.3	200.3	185.0	15.32	13.075				
2,700.0	2,577.0	2,581.1	2,579.8	15.9	6.1	34.58	-597.3	640.8	170.6	153.6	16.99	10.040				
2,800.0	2,671.1	2,675.1	2,673.7	16.6	6.4	43.84	-598.7	636.6	143.8	124.7	19.11	7.527				
2,900.0	2,765.1	2,769.8	2,768.3	17.3	6.6	56.07	-599.0	633.7	121.2	99.6	21.63	5.604				
3,000.0	2,859.2	2,863.5	2,862.0	18.1	6.8	71.75	-598.5	631.8	105.3	81.1	24.14	4.361				
3,093.5	2,947.1	2,951.0	2,949.5	18.7	7.0	88.95	-598.1	630.4	100.0	74.2	25.71	3.887 CC				
3,100.0	2,953.2	2,957.1	2,955.6	18.8	7.0	90.18	-598.1	630.3	100.0	74.2	25.77	3.879 ES, SF				
3,149.7	3,000.0	3,003.8	3,002.2	19.1	7.1	99.45	-598.0	629.7	101.9	75.9	26.01	3.916				
3,200.0	3,047.3	3,051.5	3,050.0	19.5	7.2	105.61	-597.9	629.2	106.1	80.3	25.82	4.109				
3,241.7	3,086.5	3,091.1	3,089.6	19.7	7.2	110.24	-597.6	629.1	110.7	85.3	25.41	4.358				
3,300.0	3,141.3	3,146.6	3,145.1	20.1	7.3	119.10	-597.1	629.1	119.2	94.6	24.65	4.836				
3,400.0	3,235.4	3,241.3	3,239.8	20.8	7.4	131.51	-595.8	629.8	138.8	115.5	23.23	5.973				
3,500.0	3,329.4	3,335.4	3,333.9	21.5	7.4	140.65	-594.7	630.7	163.1	141.1	22.01	7.409				
3,600.0	3,423.5	3,429.6	3,428.0	22.3	7.4	147.33	-593.8	631.7	190.3	169.1	21.17	8.990				
3,700.0	3,517.5	3,523.5	3,521.9	23.0	7.4	152.28	-593.1	632.6	219.5	198.8	20.67	10.619				
3,800.0	3,611.6	3,617.1	3,615.5	23.7	7.5	156.02	-592.6	633.3	249.9	229.4	20.43	12.233				
3,900.0	3,705.6	3,708.9	3,707.4	24.4	7.6	158.83	-592.2	633.4	281.6	261.1	20.45	13.769				
4,000.0	3,799.7	3,800.0	3,798.4	25.1	7.7	160.98	-592.0	632.7	314.5	293.9	20.60	15.269				
4,100.0	3,893.7	3,893.1	3,891.5	25.9	7.9	162.68	-592.0	631.3	348.2	327.3	20.92	16.644				
4,200.0	3,987.8	3,985.7	3,984.1	26.6	8.2	163.99	-592.3	629.4	382.5	361.2	21.31	17.946				
4,300.0	4,081.8	4,081.2	4,079.6	27.3	8.4	165.09	-592.9	627.4	416.8	395.1	21.75	19.165				
4,400.0	4,175.9	4,177.6	4,175.9	28.0	8.7	166.07	-593.4	626.0	450.8	428.6	22.21	20.298				
4,500.0	4,269.9	4,272.2	4,270.6	28.7	8.9	166.93	-594.0	625.1	484.4	461.7	22.68	21.359				
4,600.0	4,364.0	4,366.3	4,364.6	29.5	9.1	167.70	-594.3	624.4	518.1	494.9	23.16	22.368				

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 Stroh HD 22-13D
Project:	SEC.22-T4N-R67W	TVD Reference:	WELL @ 4882.0ft (Original Well Elev)
Reference Site:	Stroh HD 22-32D Pad Sec.22-T4N-R67W	MD Reference:	WELL @ 4882.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh HD 22-13D	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 (11-09-12)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 200-NS-GYRO-MS													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 Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
4,700.0	4,458.0	4,460.8	4,459.1	30.2	9.4	168.37	-594.7	623.6	551.8	528.2	23.66	23.327			
4,800.0	4,552.1	4,555.7	4,554.1	30.9	9.6	168.86	-596.1	622.5	585.4	561.3	24.17	24.222			
4,900.0	4,646.1	4,648.8	4,647.1	31.6	9.8	169.21	-598.2	620.9	619.0	594.3	24.70	25.064			
5,000.0	4,740.2	4,739.8	4,738.1	32.4	10.1	169.54	-599.8	619.2	653.0	627.8	25.22	25.891			
5,100.0	4,834.2	4,831.9	4,830.1	33.1	10.3	169.88	-600.8	617.5	687.4	661.7	25.75	26.698			
5,198.2	4,926.6	4,924.9	4,923.1	33.8	10.5	170.24	-601.4	616.0	721.3	695.0	26.27	27.454			
5,200.0	4,928.3	4,926.6	4,924.8	33.8	10.5	170.24	-601.4	616.0	721.9	695.6	26.28	27.466			
5,300.0	5,022.9	5,021.9	5,020.1	34.3	10.8	170.71	-601.7	614.9	754.5	727.7	26.86	28.090			
5,400.0	5,118.7	5,118.3	5,116.6	34.8	11.0	171.11	-601.7	614.0	783.8	756.4	27.41	28.594			
5,500.0	5,215.3	5,215.2	5,213.5	35.2	11.3	171.43	-601.8	613.2	809.7	781.8	27.93	28.993			
5,600.0	5,312.8	5,310.0	5,308.2	35.6	11.5	171.70	-601.6	612.5	832.4	804.0	28.38	29.328			
5,700.0	5,411.0	5,405.7	5,403.9	35.9	11.7	171.93	-601.1	611.6	852.1	823.3	28.79	29.592			
5,800.0	5,509.8	5,506.8	5,505.0	36.2	11.8	172.15	-600.1	611.0	868.3	839.2	29.09	29.851			
5,900.0	5,609.1	5,608.7	5,606.9	36.4	12.0	172.39	-598.5	611.2	880.8	851.5	29.33	30.034			
6,000.0	5,708.8	5,713.7	5,711.9	36.6	12.0	172.57	-597.2	611.7	889.5	860.0	29.45	30.204			
6,100.0	5,808.6	5,818.0	5,816.2	36.7	12.1	172.67	-596.9	612.4	894.1	864.5	29.54	30.270			
6,191.4	5,900.0	5,908.7	5,906.9	36.8	12.2	-53.98	-597.1	612.8	895.1	865.5	29.61	30.225			
6,200.0	5,908.6	5,917.3	5,915.5	36.8	12.2	-53.98	-597.1	612.8	895.0	865.4	29.63	30.203			
6,300.0	6,008.6	6,016.2	6,014.4	36.9	12.3	-53.99	-597.5	613.0	894.6	864.8	29.88	29.944			
6,391.0	6,099.7	6,104.5	6,102.7	36.9	12.5	-54.01	-597.8	613.0	894.5	864.3	30.18	29.639			
6,400.0	6,108.6	6,113.2	6,111.4	36.9	12.5	-54.01	-597.8	613.0	894.5	864.3	30.21	29.609			
6,500.0	6,208.6	6,210.3	6,208.5	37.0	12.7	-54.04	-598.0	612.5	894.7	864.1	30.55	29.288			
6,600.0	6,308.6	6,308.7	6,306.9	37.1	12.9	-54.06	-598.1	612.0	895.1	864.2	30.92	28.951			
6,700.0	6,408.6	6,407.2	6,405.4	37.1	13.2	-54.07	-597.8	611.4	895.8	864.5	31.29	28.628			
6,800.0	6,508.6	6,506.7	6,504.9	37.2	13.4	-54.07	-597.5	610.8	896.5	864.8	31.65	28.322			
6,900.0	6,608.6	6,606.3	6,604.5	37.3	13.6	-54.08	-597.1	610.1	897.3	865.2	32.02	28.022			
7,000.0	6,708.6	6,706.8	6,705.0	37.4	13.9	-54.11	-597.0	609.2	898.0	865.6	32.41	27.708			
7,100.0	6,808.6	6,800.0	6,798.2	37.5	14.1	-54.16	-597.3	608.1	898.8	866.0	32.79	27.412			
7,200.0	6,908.6	6,800.0	6,798.2	37.5	14.1	-54.16	-597.3	608.1	905.8	872.9	32.94	27.502			
7,300.0	7,008.6	6,800.0	6,798.2	37.6	14.1	-54.16	-597.3	608.1	923.7	890.6	33.09	27.918			
7,400.0	7,108.6	6,800.0	6,798.2	37.7	14.1	-54.16	-597.3	608.1	951.8	918.5	33.24	28.636			
7,500.0	7,208.6	6,800.0	6,798.2	37.8	14.1	-54.16	-597.3	608.1	989.2	955.8	33.39	29.627			
7,600.0	7,308.6	6,800.0	6,798.2	37.9	14.1	-54.16	-597.3	608.1	1,035.0	1,001.5	33.54	30.856			
7,685.4	7,394.0	6,800.0	6,798.2	37.9	14.1	-54.16	-597.3	608.1	1,079.9	1,046.2	33.68	32.067			

Company:	Great Western	Local Co-ordinate Reference:	Well Stroh HD 22-13D
Project:	SEC.22-T4N-R67W	TVD Reference:	WELL @ 4882.0ft (Original Well Elev)
Reference Site:	Stroh HD 22-32D Pad Sec.22-T4N-R67W	MD Reference:	WELL @ 4882.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh HD 22-13D	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 (11-09-12)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Dutton HD 22-30D Pad Sec.22-T4N-R67W - Stroh CNW-22 (Exist.) - Wellbore #1 - Wellbore #1													Offset Well Error:	0.0 ft
Survey Program: 200-NS-GYRO-MS														
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	3.0	3.0	0.0	0.0	161.48	-64.1	21.5	67.6	67.6	0.00	N/A		
100.0	100.0	103.0	103.0	0.1	0.1	161.84	-64.2	21.1	67.6	67.3	0.25	271.016		
200.0	200.0	203.1	203.1	0.3	0.3	162.86	-64.5	19.9	67.5	66.9	0.61	110.481		
300.0	300.0	303.2	303.2	0.6	0.5	75.61	-64.7	18.4	66.8	65.7	1.09	61.428		
400.0	399.8	403.2	403.2	0.8	0.8	81.30	-64.5	16.9	65.3	63.7	1.57	41.592		
450.0	449.7	453.0	452.9	0.9	0.9	85.29	-64.4	16.2	64.6	62.8	1.82	35.501		
500.0	499.4	502.6	502.6	1.0	1.1	74.64	-64.3	15.7	63.5	61.4	2.08	30.543		
600.0	598.1	601.2	601.1	1.3	1.3	76.04	-64.1	14.9	58.8	56.2	2.64	22.274		
679.6	675.6	678.5	678.5	1.7	1.5	89.62	-63.8	14.3	56.3	53.2	3.16	17.811 CC, ES		
700.0	695.2	698.1	698.0	1.8	1.6	94.33	-63.7	14.1	56.6	53.3	3.29	17.200		
773.9	765.5	767.9	767.9	2.2	1.7	112.85	-63.3	13.3	62.8	59.0	3.76	16.707 SF		
800.0	790.0	792.3	792.2	2.3	1.8	119.75	-63.1	12.9	67.2	63.3	3.90	17.227		
900.0	884.0	885.7	885.6	3.0	2.0	138.89	-62.3	11.4	91.2	86.8	4.37	20.855		
1,000.0	978.1	979.1	979.1	3.7	2.3	149.77	-61.6	10.0	121.0	116.2	4.83	25.084		
1,100.0	1,072.2	1,072.6	1,072.5	4.4	2.5	156.33	-60.7	8.5	153.4	148.1	5.30	28.940		
1,200.0	1,166.2	1,166.1	1,166.0	5.1	2.8	160.62	-59.9	7.1	186.9	181.1	5.79	32.252		
1,300.0	1,260.3	1,259.6	1,259.5	5.8	3.0	163.59	-59.2	5.7	221.0	214.7	6.31	35.050		
1,400.0	1,354.3	1,353.2	1,353.0	6.5	3.3	165.75	-58.5	4.2	255.5	248.7	6.83	37.416		
1,500.0	1,448.4	1,446.5	1,446.4	7.2	3.5	167.35	-58.0	2.7	290.3	282.9	7.36	39.442		
1,600.0	1,542.4	1,539.6	1,539.5	7.9	3.8	168.54	-57.9	0.9	325.2	317.3	7.89	41.199		
1,700.0	1,636.5	1,632.8	1,632.6	8.7	4.0	169.43	-58.0	-1.1	360.4	352.0	8.43	42.730		
1,800.0	1,730.5	1,726.1	1,725.9	9.4	4.2	170.15	-58.2	-3.2	395.7	386.7	8.98	44.082		
1,900.0	1,824.6	1,819.7	1,819.5	10.1	4.5	170.76	-58.3	-5.4	431.1	421.6	9.52	45.279		
2,000.0	1,918.6	1,914.8	1,914.6	10.8	4.7	171.29	-58.6	-7.4	466.3	456.2	10.07	46.318		
2,100.0	2,012.7	2,009.8	2,009.5	11.5	5.0	171.74	-59.0	-9.1	501.2	490.6	10.61	47.217		
2,200.0	2,106.7	2,101.5	2,101.2	12.3	5.2	172.10	-59.4	-10.8	536.2	525.0	11.16	48.061		
2,300.0	2,200.8	2,192.9	2,192.6	13.0	5.4	172.41	-59.8	-13.0	571.6	559.9	11.70	48.853		
2,400.0	2,294.8	2,287.0	2,286.7	13.7	5.7	172.68	-60.2	-15.3	607.1	594.8	12.25	49.541		
2,500.0	2,388.9	2,381.5	2,381.1	14.4	5.9	172.94	-60.6	-17.4	642.5	629.7	12.81	50.157		
2,600.0	2,483.0	2,476.0	2,475.6	15.2	6.2	173.17	-60.9	-19.4	677.7	664.4	13.36	50.712		
2,700.0	2,577.0	2,570.6	2,570.2	15.9	6.4	173.39	-61.3	-21.3	712.8	698.9	13.92	51.212		
2,800.0	2,671.1	2,662.0	2,661.6	16.6	6.6	173.58	-61.6	-23.1	748.0	733.5	14.47	51.694		
2,900.0	2,765.1	2,751.6	2,751.1	17.3	6.9	173.76	-61.7	-25.1	783.6	768.6	15.02	52.183		
3,000.0	2,859.2	2,843.0	2,842.5	18.1	7.1	173.94	-61.3	-27.4	819.6	804.0	15.57	52.646		
3,100.0	2,953.2	2,936.9	2,936.4	18.8	7.4	174.12	-60.9	-29.8	855.6	839.5	16.13	53.053		
3,149.7	3,000.0	2,983.6	2,983.1	19.1	7.5	174.20	-60.7	-30.9	873.5	857.1	16.41	53.243		
3,200.0	3,047.3	3,032.0	3,031.4	19.5	7.6	171.15	-60.5	-32.1	891.5	874.8	16.71	53.356		
3,241.7	3,086.5	3,072.6	3,072.0	19.7	7.7	168.68	-60.2	-32.9	906.2	889.3	16.95	53.454		
3,300.0	3,141.3	3,129.5	3,128.9	20.1	7.9	168.91	-59.9	-33.9	926.7	909.4	17.27	53.658		
3,400.0	3,235.4	3,227.1	3,226.5	20.8	8.1	169.31	-59.3	-35.1	961.5	943.7	17.81	53.979		
3,500.0	3,329.4	3,324.5	3,323.9	21.5	8.3	169.70	-58.5	-35.8	995.9	977.6	18.31	54.387		
3,600.0	3,423.5	3,421.7	3,421.1	22.3	8.5	170.09	-57.6	-36.0	1,030.1	1,011.3	18.81	54.774		
3,700.0	3,517.5	3,517.6	3,517.1	23.0	8.6	170.44	-56.9	-36.1	1,064.0	1,044.8	19.28	55.184		
3,800.0	3,611.6	3,613.4	3,612.9	23.7	8.8	170.76	-56.6	-36.1	1,097.8	1,078.1	19.76	55.551		
3,900.0	3,705.6	3,707.3	3,706.7	24.4	9.0	171.04	-56.4	-36.2	1,131.6	1,111.3	20.26	55.840		
4,000.0	3,799.7	3,800.0	3,799.4	25.1	9.2	171.30	-56.2	-36.2	1,165.4	1,144.6	20.76	56.122		
4,100.0	3,893.7	3,892.5	3,891.9	25.9	9.4	171.54	-56.1	-36.5	1,199.3	1,178.0	21.29	56.327		
4,200.0	3,987.8	3,983.9	3,983.3	26.6	9.6	171.75	-56.0	-37.0	1,233.4	1,211.6	21.82	56.535		
4,300.0	4,081.8	4,074.6	4,074.0	27.3	9.8	171.93	-56.1	-37.9	1,267.8	1,245.4	22.36	56.704		
4,400.0	4,175.9	4,165.1	4,164.4	28.0	10.1	172.10	-56.3	-39.1	1,302.4	1,279.5	22.90	56.866		
4,500.0	4,269.9	4,255.9	4,255.3	28.7	10.3	172.24	-56.5	-40.7	1,337.2	1,313.8	23.45	57.026		
4,600.0	4,364.0	4,346.9	4,346.3	29.5	10.5	172.37	-56.7	-42.4	1,372.3	1,348.3	24.00	57.183		

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 Stroh HD 22-13D
Project:	SEC.22-T4N-R67W	TVD Reference:	WELL @ 4882.0ft (Original Well Elev)
Reference Site:	Stroh HD 22-32D Pad Sec.22-T4N-R67W	MD Reference:	WELL @ 4882.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh HD 22-13D	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 (11-09-12)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 200-NS-GYRO-MS													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		
4,700.0	4,458.0	4,445.8	4,445.2	30.2	10.7	172.51	-57.0	-44.4	1,407.4	1,382.9	24.52	57.402		
4,800.0	4,552.1	4,556.6	4,556.0	30.9	10.9	172.68	-57.4	-45.4	1,441.6	1,416.6	25.00	57.669		
4,900.0	4,646.1	4,656.1	4,655.4	31.6	11.0	172.84	-57.8	-45.3	1,475.0	1,449.6	25.40	58.064		
5,000.0	4,740.2	4,747.7	4,747.1	32.4	11.0	173.00	-58.0	-45.0	1,508.4	1,482.6	25.76	58.558		
5,100.0	4,834.2	4,839.4	4,838.7	33.1	11.1	173.16	-57.9	-44.7	1,542.0	1,515.9	26.13	59.006		
5,198.2	4,926.6	4,929.5	4,928.9	33.8	11.1	173.31	-57.6	-44.5	1,575.1	1,548.6	26.52	59.384		
5,200.0	4,928.3	4,931.2	4,930.5	33.8	11.1	173.32	-57.6	-44.5	1,575.7	1,549.2	26.53	59.387		
5,300.0	5,022.9	5,024.2	5,023.6	34.3	11.2	173.54	-57.3	-44.4	1,607.9	1,580.9	27.02	59.504		
5,400.0	5,118.7	5,120.7	5,120.0	34.8	11.4	173.72	-57.1	-44.4	1,636.8	1,609.3	27.54	59.440		
5,500.0	5,215.3	5,217.8	5,217.1	35.2	11.6	173.87	-57.2	-44.5	1,662.3	1,634.3	28.02	59.331		
5,600.0	5,312.8	5,314.0	5,313.3	35.6	11.8	174.00	-57.2	-44.7	1,684.5	1,656.1	28.48	59.155		
5,700.0	5,411.0	5,411.0	5,410.3	35.9	12.0	174.11	-57.0	-44.8	1,703.4	1,674.5	28.89	58.964		
5,800.0	5,509.8	5,510.4	5,509.7	36.2	12.2	174.20	-56.7	-44.8	1,718.9	1,689.6	29.23	58.802		
5,900.0	5,609.1	5,610.3	5,609.6	36.4	12.3	174.27	-56.4	-44.8	1,730.9	1,701.3	29.53	58.619		
6,000.0	5,708.8	5,711.4	5,710.7	36.6	12.5	174.32	-56.2	-44.7	1,739.3	1,709.6	29.77	58.432		
6,100.0	5,808.6	5,812.6	5,812.0	36.7	12.6	174.34	-56.3	-44.8	1,744.3	1,714.3	29.96	58.219		
6,191.4	5,900.0	5,904.4	5,903.7	36.8	12.8	-52.32	-56.5	-45.0	1,745.7	1,715.6	30.11	57.974		
6,200.0	5,908.6	5,913.0	5,912.4	36.8	12.8	-52.32	-56.5	-45.0	1,745.7	1,715.5	30.14	57.922		
6,300.0	6,008.6	6,013.0	6,012.3	36.9	13.0	-52.34	-56.9	-45.2	1,745.6	1,715.2	30.45	57.331		
6,322.1	6,030.7	6,034.4	6,033.7	36.9	13.0	-52.34	-57.0	-45.3	1,745.6	1,715.1	30.52	57.191		
6,400.0	6,108.6	6,109.9	6,109.2	36.9	13.2	-52.35	-57.2	-45.5	1,745.7	1,714.9	30.78	56.706		
6,500.0	6,208.6	6,206.9	6,206.2	37.0	13.4	-52.37	-57.4	-46.0	1,745.9	1,714.8	31.13	56.091		
6,600.0	6,308.6	6,306.1	6,305.4	37.1	13.6	-52.38	-57.5	-46.4	1,746.2	1,714.7	31.52	55.410		
6,700.0	6,408.6	6,405.4	6,404.8	37.1	13.9	-52.39	-57.4	-46.9	1,746.6	1,714.7	31.91	54.743		
6,800.0	6,508.6	6,507.1	6,506.4	37.2	14.1	-52.39	-57.3	-47.2	1,747.0	1,714.7	32.31	54.076		
6,900.0	6,608.6	6,608.8	6,608.1	37.3	14.4	-52.39	-57.2	-47.4	1,747.2	1,714.5	32.70	53.424		
7,000.0	6,708.6	6,710.3	6,709.7	37.4	14.6	-52.39	-57.1	-47.6	1,747.4	1,714.3	33.08	52.828		
7,050.5	6,759.1	6,761.6	6,760.9	37.4	14.7	-52.40	-57.2	-47.7	1,747.4	1,714.2	33.27	52.530		
7,100.0	6,808.6	6,800.0	6,799.3	37.5	14.8	-52.40	-57.3	-47.8	1,747.5	1,714.1	33.42	52.282		
7,200.0	6,908.6	6,800.0	6,799.3	37.5	14.8	-52.40	-57.3	-47.8	1,751.0	1,717.5	33.57	52.156		
7,300.0	7,008.6	6,800.0	6,799.3	37.6	14.8	-52.40	-57.3	-47.8	1,760.3	1,726.6	33.72	52.196		
7,400.0	7,108.6	6,800.0	6,799.3	37.7	14.8	-52.40	-57.3	-47.8	1,775.1	1,741.3	33.88	52.400		
7,500.0	7,208.6	6,800.0	6,799.3	37.8	14.8	-52.40	-57.3	-47.8	1,795.4	1,761.4	34.03	52.759		
7,600.0	7,308.6	6,800.0	6,799.3	37.9	14.8	-52.40	-57.3	-47.8	1,821.0	1,786.8	34.19	53.267		
7,685.4	7,394.0	6,800.0	6,799.3	37.9	14.8	-52.40	-57.3	-47.8	1,846.8	1,812.5	34.32	53.813		

Company:	Great Western	Local Co-ordinate Reference:	Well Stroh HD 22-13D
Project:	SEC.22-T4N-R67W	TVD Reference:	WELL @ 4882.0ft (Original Well Elev)
Reference Site:	Stroh HD 22-32D Pad Sec.22-T4N-R67W	MD Reference:	WELL @ 4882.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh HD 22-13D	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 (11-09-12)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0ft	
Survey Program: 0-MWD													Offset Well Error:		0.0ft
Reference				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	3.21	14.9	0.8	15.0	15.0	0.00	N/A			
100.0	100.0	100.0	100.0	0.1	0.1	3.21	14.9	0.8	15.0	14.7	0.22	66.558			
200.0	200.0	200.0	200.0	0.3	0.3	3.21	14.9	0.8	15.0	14.3	0.67	22.186			
269.2	269.2	269.2	269.2	0.5	0.5	-90.00	14.9	0.8	14.9	14.0	0.98	15.264 CC			
300.0	300.0	300.0	300.0	0.6	0.6	-93.48	14.9	0.8	15.0	13.9	1.11	13.437 ES			
400.0	399.8	399.8	399.8	0.8	0.8	-112.30	14.9	0.8	16.1	14.6	1.56	10.347			
450.0	449.7	449.5	449.5	0.9	0.9	-124.94	14.9	0.4	18.3	16.5	1.79	10.217 SF			
500.0	499.4	498.9	498.8	1.0	1.0	-152.40	14.9	-0.9	23.1	21.0	2.03	11.384			
600.0	598.1	595.8	595.6	1.3	1.2	-177.88	14.9	-5.9	42.6	40.1	2.51	16.969			
700.0	695.2	689.7	689.2	1.8	1.4	172.83	14.8	-13.7	73.4	70.4	3.01	24.405			
773.9	765.5	757.0	756.1	2.2	1.6	169.11	13.7	-20.9	102.1	98.7	3.36	30.372			
800.0	790.0	780.3	779.2	2.3	1.7	168.92	13.1	-23.7	113.0	109.6	3.48	32.512			
900.0	884.0	869.0	867.0	3.0	1.9	167.79	9.7	-35.6	155.9	151.9	3.96	39.356			
1,000.0	978.1	956.4	953.2	3.7	2.2	166.37	4.6	-49.4	199.9	195.4	4.49	44.507			
1,100.0	1,072.2	1,042.4	1,037.6	4.4	2.5	164.86	-2.0	-64.9	245.2	240.1	5.07	48.388			
1,200.0	1,166.2	1,126.9	1,119.9	5.1	2.9	163.32	-10.0	-82.1	291.8	286.1	5.69	51.320			
1,300.0	1,260.3	1,209.8	1,200.1	5.8	3.3	161.80	-19.4	-100.7	339.9	333.5	6.35	53.550			
1,400.0	1,354.3	1,291.0	1,278.1	6.5	3.7	160.33	-30.1	-120.7	389.4	382.3	7.05	55.246			
1,500.0	1,448.4	1,370.5	1,353.8	7.2	4.1	158.91	-41.9	-141.9	440.3	432.5	7.79	56.551			
1,600.0	1,542.4	1,448.1	1,427.0	7.9	4.6	157.54	-54.7	-164.1	492.7	484.2	8.55	57.618			
1,700.0	1,636.5	1,528.8	1,502.6	8.7	5.2	156.19	-69.1	-188.6	546.4	537.0	9.37	58.294			
1,800.0	1,730.5	1,612.4	1,580.8	9.4	5.8	155.02	-84.1	-214.0	600.4	590.2	10.21	58.822			
1,900.0	1,824.6	1,696.0	1,659.0	10.1	6.3	154.05	-99.1	-239.4	654.5	643.5	11.05	59.232			
2,000.0	1,918.6	1,779.6	1,737.2	10.8	6.9	153.22	-114.1	-264.8	708.8	696.9	11.90	59.558			
2,100.0	2,012.7	1,863.2	1,815.4	11.5	7.5	152.50	-129.2	-290.2	763.1	750.3	12.75	59.829			
2,200.0	2,106.7	1,946.8	1,893.6	12.3	8.2	151.89	-144.2	-315.7	817.5	803.9	13.61	60.058			
2,300.0	2,200.8	2,030.4	1,971.8	13.0	8.8	151.34	-159.2	-341.1	872.0	857.5	14.47	60.253			
2,400.0	2,294.8	2,114.0	2,050.1	13.7	9.4	150.87	-174.2	-366.5	926.5	911.1	15.33	60.420			
2,500.0	2,388.9	2,197.6	2,128.3	14.4	10.0	150.44	-189.2	-391.9	981.0	964.8	16.20	60.565			
2,600.0	2,483.0	2,281.2	2,206.5	15.2	10.6	150.06	-204.3	-417.3	1,035.6	1,018.6	17.06	60.691			
2,700.0	2,577.0	2,364.8	2,284.7	15.9	11.2	149.72	-219.3	-442.7	1,090.2	1,072.3	17.93	60.802			
2,800.0	2,671.1	2,448.4	2,362.9	16.6	11.8	149.41	-234.3	-468.1	1,144.9	1,126.1	18.80	60.901			
2,900.0	2,765.1	2,532.0	2,441.1	17.3	12.4	149.12	-249.3	-493.6	1,199.6	1,179.9	19.67	60.990			
3,000.0	2,859.2	2,615.6	2,519.3	18.1	13.1	148.87	-264.3	-519.0	1,254.2	1,233.7	20.54	61.069			
3,100.0	2,953.2	2,699.2	2,597.5	18.8	13.7	148.63	-279.4	-544.4	1,308.9	1,287.5	21.41	61.141			
3,149.7	3,000.0	2,740.7	2,636.4	19.1	14.0	148.52	-286.8	-557.0	1,336.1	1,314.3	21.84	61.174			
3,200.0	3,047.3	2,782.9	2,675.9	19.5	14.3	145.11	-294.4	-569.8	1,363.4	1,341.1	22.34	61.018			
3,241.7	3,086.5	2,818.1	2,708.8	19.7	14.6	142.32	-300.7	-580.6	1,385.8	1,363.0	22.75	60.906			
3,300.0	3,141.3	2,867.5	2,755.0	20.1	14.9	142.28	-309.6	-595.6	1,416.8	1,393.5	23.26	60.916			
3,400.0	3,235.4	2,952.1	2,834.2	20.8	15.6	142.21	-324.8	-621.3	1,470.0	1,445.8	24.16	60.834			
3,500.0	3,329.4	3,036.8	2,913.4	21.5	16.2	142.15	-340.0	-647.0	1,523.2	1,498.1	25.07	60.757			
3,600.0	3,423.5	3,121.5	2,992.6	22.3	16.8	142.09	-355.2	-672.8	1,576.4	1,550.4	25.98	60.683			
3,700.0	3,517.5	3,206.1	3,071.8	23.0	17.4	142.03	-370.5	-698.5	1,629.6	1,602.7	26.89	60.612			
3,800.0	3,611.6	3,290.8	3,151.1	23.7	18.1	141.98	-385.7	-724.3	1,682.7	1,655.0	27.79	60.544			
3,900.0	3,705.6	3,402.8	3,255.9	24.4	18.9	141.90	-406.3	-757.9	1,735.7	1,706.9	28.81	60.248			
4,000.0	3,799.7	3,564.2	3,407.2	25.1	19.8	141.63	-441.3	-801.9	1,785.7	1,755.7	30.02	59.493			
4,100.0	3,893.7	3,724.8	3,557.5	25.9	20.7	141.17	-482.9	-839.6	1,832.0	1,800.7	31.30	58.534			
4,200.0	3,987.8	3,813.8	3,640.9	26.6	21.3	140.89	-507.6	-859.0	1,876.7	1,844.4	32.31	58.084			
4,300.0	4,081.8	3,902.9	3,724.2	27.3	21.9	140.62	-532.3	-878.5	1,921.5	1,888.1	33.35	57.607			
4,400.0	4,175.9	3,992.0	3,807.5	28.0	22.5	140.36	-557.0	-897.9	1,966.2	1,931.8	34.40	57.157			
4,500.0	4,269.9	4,081.0	3,890.9	28.7	23.1	140.11	-581.7	-917.4	2,011.0	1,975.6	35.45	56.731			
4,600.0	4,364.0	4,170.1	3,974.2	29.5	23.7	139.88	-606.5	-936.8	2,055.9	2,019.4	36.50	56.328			

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 Stroh HD 22-13D
Project:	SEC.22-T4N-R67W	TVD Reference:	WELL @ 4882.0ft (Original Well Elev)
Reference Site:	Stroh HD 22-32D Pad Sec.22-T4N-R67W	MD Reference:	WELL @ 4882.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh HD 22-13D	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 (11-09-12)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Stroh HD 22-32D Pad Sec.22-T4N-R67W - Stroh HD 22-32D - Wellbore #1 - Plan #1 (11-09-12)													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
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		
4,700.0	4,458.0	4,259.2	4,057.5	30.2	24.3	139.65	-631.2	-956.3	2,100.7	2,063.2	37.55	55.946		
4,800.0	4,552.1	4,348.2	4,140.8	30.9	25.0	139.43	-655.9	-975.7	2,145.6	2,107.0	38.60	55.584		
4,900.0	4,646.1	4,437.3	4,224.2	31.6	25.6	139.23	-680.6	-995.2	2,190.6	2,150.9	39.66	55.239		
5,000.0	4,740.2	4,526.4	4,307.5	32.4	26.2	139.03	-705.4	-1,014.6	2,235.5	2,194.8	40.71	54.912		
5,100.0	4,834.2	4,615.4	4,390.8	33.1	26.8	138.83	-730.1	-1,034.1	2,280.4	2,238.7	41.77	54.600		
5,198.2	4,926.6	4,702.9	4,472.7	33.8	27.4	138.65	-754.4	-1,053.2	2,324.6	2,281.8	42.80	54.308		
5,200.0	4,928.3	4,704.5	4,474.2	33.8	27.4	138.66	-754.8	-1,053.5	2,325.4	2,282.6	42.83	54.299		
5,300.0	5,022.9	4,794.1	4,558.0	34.3	28.0	139.09	-779.7	-1,073.1	2,369.2	2,325.3	43.94	53.918		
5,400.0	5,118.7	4,884.5	4,642.6	34.8	28.7	139.43	-804.8	-1,092.8	2,410.6	2,365.6	45.02	53.541		
5,500.0	5,215.3	4,975.8	4,728.0	35.2	29.3	139.67	-830.1	-1,112.7	2,449.7	2,403.6	46.07	53.173		
5,600.0	5,312.8	5,067.7	4,814.0	35.6	30.0	139.82	-855.6	-1,132.8	2,486.3	2,439.2	47.07	52.817		
5,700.0	5,411.0	5,160.2	4,900.5	35.9	30.6	139.90	-881.3	-1,153.0	2,520.6	2,472.6	48.03	52.477		
5,800.0	5,509.8	5,253.1	4,987.4	36.2	31.3	139.89	-907.1	-1,173.3	2,552.4	2,503.5	48.94	52.154		
5,900.0	5,609.1	5,449.5	5,173.3	36.4	32.3	139.40	-956.7	-1,212.3	2,580.1	2,530.0	50.13	51.473		
6,000.0	5,708.8	5,655.6	5,372.7	36.6	33.1	138.97	-997.8	-1,244.6	2,601.3	2,550.2	51.11	50.891		
6,100.0	5,808.6	5,868.8	5,582.2	36.7	33.8	138.62	-1,028.4	-1,268.7	2,615.8	2,563.9	51.90	50.400		
6,191.4	5,900.0	6,067.8	5,780.0	36.8	34.2	-88.30	-1,045.8	-1,282.4	2,623.0	2,570.5	52.43	50.030		
6,200.0	5,908.6	6,086.8	5,798.9	36.8	34.2	-88.33	-1,046.9	-1,283.2	2,623.3	2,570.9	52.47	49.997		
6,300.0	6,008.6	6,289.0	6,001.0	36.9	34.4	-88.45	-1,052.4	-1,287.6	2,625.3	2,572.4	52.82	49.699		
6,400.0	6,108.6	6,289.0	6,001.0	36.9	34.4	-88.45	-1,052.4	-1,287.6	2,627.5	2,574.5	52.91	49.659		
6,500.0	6,208.6	6,289.0	6,001.0	37.0	34.4	-88.45	-1,052.4	-1,287.6	2,633.4	2,580.4	53.00	49.688		
6,600.0	6,308.6	6,289.0	6,001.0	37.1	34.4	-88.45	-1,052.4	-1,287.6	2,643.2	2,590.1	53.09	49.787		
6,700.0	6,408.6	6,289.0	6,001.0	37.1	34.4	-88.45	-1,052.4	-1,287.6	2,656.7	2,603.5	53.18	49.954		
6,800.0	6,508.6	6,289.0	6,001.0	37.2	34.4	-88.45	-1,052.4	-1,287.6	2,673.9	2,620.6	53.28	50.189		
6,900.0	6,608.6	6,289.0	6,001.0	37.3	34.4	-88.45	-1,052.4	-1,287.6	2,694.7	2,641.3	53.37	50.488		
7,000.0	6,708.6	6,289.0	6,001.0	37.4	34.4	-88.45	-1,052.4	-1,287.6	2,719.0	2,665.5	53.47	50.851		
7,100.0	6,808.6	6,289.0	6,001.0	37.5	34.4	-88.45	-1,052.4	-1,287.6	2,746.7	2,693.1	53.57	51.275		
7,200.0	6,908.6	6,289.0	6,001.0	37.5	34.4	-88.45	-1,052.4	-1,287.6	2,777.7	2,724.1	53.67	51.758		
7,300.0	7,008.6	6,289.0	6,001.0	37.6	34.4	-88.45	-1,052.4	-1,287.6	2,812.0	2,758.2	53.77	52.298		
7,400.0	7,108.6	6,289.0	6,001.0	37.7	34.4	-88.45	-1,052.4	-1,287.6	2,849.4	2,795.5	53.87	52.892		
7,500.0	7,208.6	6,289.0	6,001.0	37.8	34.4	-88.45	-1,052.4	-1,287.6	2,889.7	2,835.7	53.98	53.537		
7,600.0	7,308.6	6,289.0	6,001.0	37.9	34.4	-88.45	-1,052.4	-1,287.6	2,932.9	2,878.8	54.08	54.231		
7,685.4	7,394.0	6,289.0	6,001.0	37.9	34.4	-88.45	-1,052.4	-1,287.6	2,972.0	2,917.8	54.17	54.860		

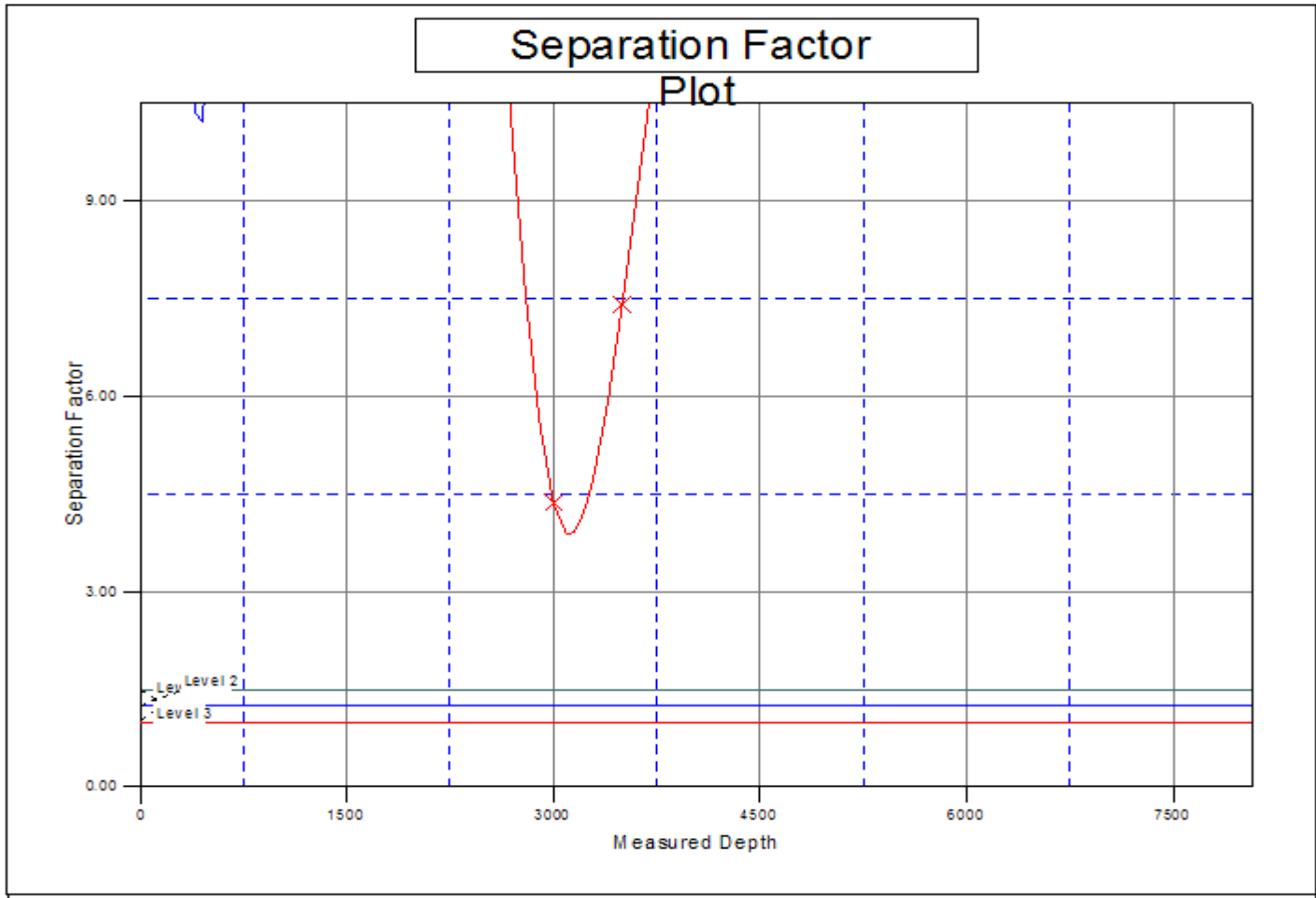
Company:	Great Western	Local Co-ordinate Reference:	Well Stroh HD 22-13D
Project:	SEC.22-T4N-R67W	TVD Reference:	WELL @ 4882.0ft (Original Well Elev)
Reference Site:	Stroh HD 22-32D Pad Sec.22-T4N-R67W	MD Reference:	WELL @ 4882.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh HD 22-13D	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 (11-09-12)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4882.0ft (Original Well Elev) Coordinates are relative to: Stroh HD 22-13D
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
 Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.40°



Company:	Great Western	Local Co-ordinate Reference:	Well Stroh HD 22-13D
Project:	SEC.22-T4N-R67W	TVD Reference:	WELL @ 4882.0ft (Original Well Elev)
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Site Error:	0.0ft	North Reference:	True
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Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-09-12)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4882.0ft (Original Well Elev) Coordinates are relative to: Stroh HD 22-13D
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
 Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.40°



LEGEND

- HD 22-32D, Wellbore #1, Plan #1 (11-09-12) V0 Stroh 12-22 (Exist.), Wellbore #1, Wellbore #1 V0
- CNW-22 (Exist.), Wellbore #1, Wellbore #1 V0 Stroh 22-22 (Exist.), Wellbore #1, Wellbore #1 V0