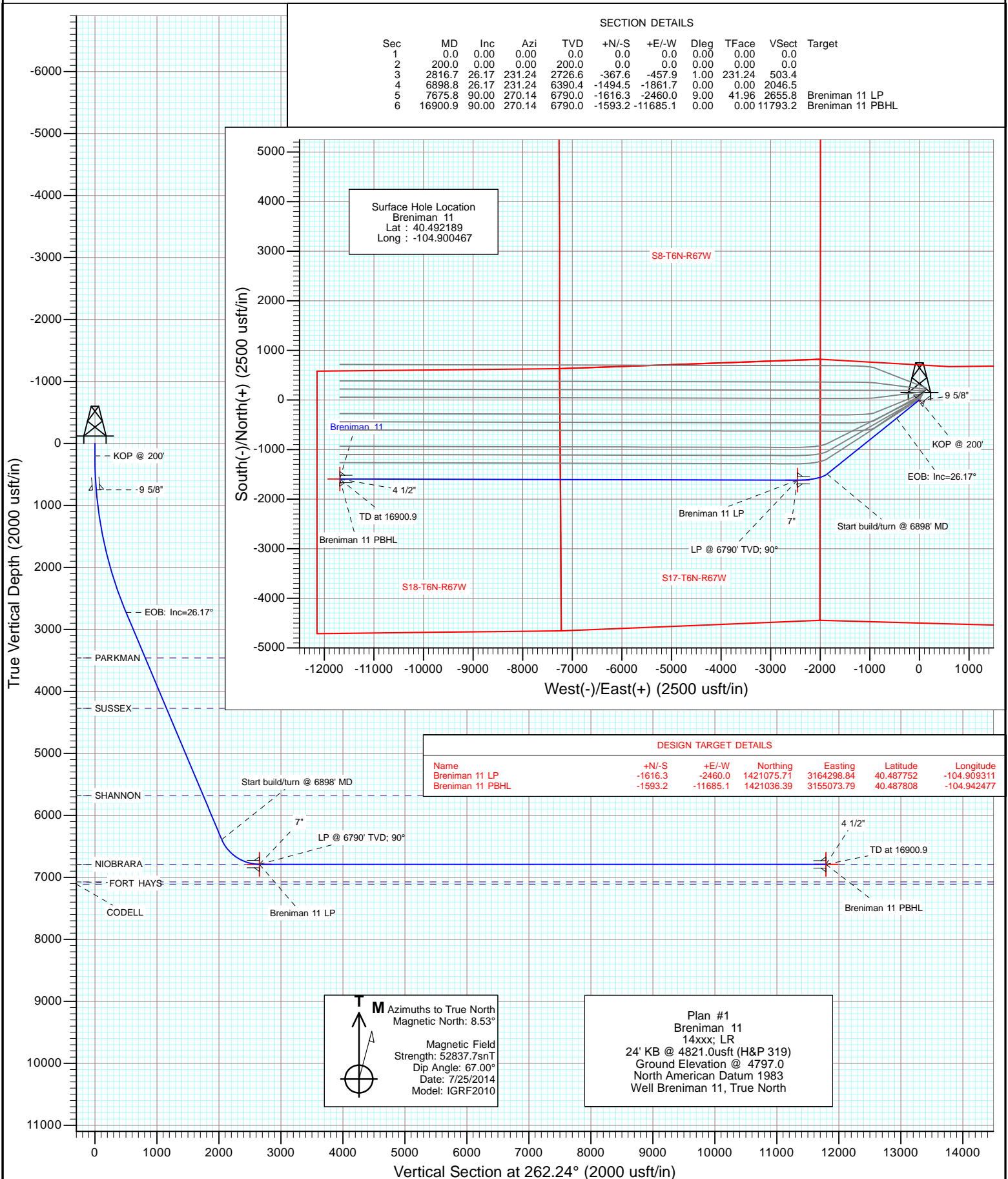




Project: WELD COUNTY, CO
Site: S16-T6N-R67W
Well: Breniman 11
Wellbore: Hz
Design: Plan #1



Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Breniman 11
Company:	Extraction Oil & Gas	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Project:	WELD COUNTY, CO	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site:	S16-T6N-R67W	North Reference:	True
Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Project	WELD COUNTY, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		S16-T6N-R67W			
Site Position:		Northing:	1,422,877.59 usft	Latitude:	40.492651
From:	Lat/Long	Easting:	3,166,847.63 usft	Longitude:	-104.900104
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.39 °

Well	Breniman 11					
Well Position	+N/-S	0.0 usft	Northing:	1,422,708.60 usft	Latitude:	40.492189
	+E/-W	0.0 usft	Easting:	3,166,747.81 usft	Longitude:	-104.900467
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	4,797.0 usft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/25/2014	8.53	67.00	52,838

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	262.24	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	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	
2,816.7	26.17	231.24	2,726.6	-367.6	-457.9	1.00	1.00	0.00	231.24	
6,898.8	26.17	231.24	6,390.4	-1,494.5	-1,861.7	0.00	0.00	0.00	0.00	
7,675.8	90.00	270.14	6,790.0	-1,616.3	-2,460.0	9.00	8.22	5.01	41.96	Breniman 11 LP
16,900.9	90.00	270.14	6,790.0	-1,593.2	-11,685.1	0.00	0.00	0.00	0.00	Breniman 11 PBHL

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Breniman 11
Company:	Extraction Oil & Gas	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Project:	WELD COUNTY, CO	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site:	S16-T6N-R67W	North Reference:	True
Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 200'
300.0	1.00	231.24	300.0	-0.5	-0.7	0.7	1.00	1.00	
400.0	2.00	231.24	400.0	-2.2	-2.7	3.0	1.00	1.00	
500.0	3.00	231.24	499.9	-4.9	-6.1	6.7	1.00	1.00	
600.0	4.00	231.24	599.7	-8.7	-10.9	12.0	1.00	1.00	
700.0	5.00	231.24	699.4	-13.6	-17.0	18.7	1.00	1.00	
750.0	5.50	231.24	749.2	-16.5	-20.6	22.6	1.00	1.00	9 5/8"
800.0	6.00	231.24	798.9	-19.6	-24.5	26.9	1.00	1.00	
900.0	7.00	231.24	898.3	-26.7	-33.3	36.6	1.00	1.00	
1,000.0	8.00	231.24	997.4	-34.9	-43.5	47.8	1.00	1.00	
1,100.0	9.00	231.24	1,096.3	-44.2	-55.0	60.5	1.00	1.00	
1,200.0	10.00	231.24	1,194.9	-54.5	-67.9	74.6	1.00	1.00	
1,300.0	11.00	231.24	1,293.3	-65.9	-82.1	90.2	1.00	1.00	
1,400.0	12.00	231.24	1,391.2	-78.4	-97.6	107.3	1.00	1.00	
1,500.0	13.00	231.24	1,488.9	-91.9	-114.5	125.9	1.00	1.00	
1,600.0	14.00	231.24	1,586.1	-106.5	-132.7	145.9	1.00	1.00	
1,700.0	15.00	231.24	1,682.9	-122.2	-152.2	167.4	1.00	1.00	
1,800.0	16.00	231.24	1,779.3	-138.9	-173.1	190.3	1.00	1.00	
1,900.0	17.00	231.24	1,875.2	-156.7	-195.2	214.6	1.00	1.00	
2,000.0	18.00	231.24	1,970.5	-175.5	-218.7	240.4	1.00	1.00	
2,100.0	19.00	231.24	2,065.4	-195.4	-243.4	267.6	1.00	1.00	
2,200.0	20.00	231.24	2,159.6	-216.3	-269.5	296.2	1.00	1.00	
2,300.0	21.00	231.24	2,253.3	-238.2	-296.8	326.2	1.00	1.00	
2,400.0	22.00	231.24	2,346.3	-261.2	-325.3	357.6	1.00	1.00	
2,500.0	23.00	231.24	2,438.7	-285.1	-355.2	390.4	1.00	1.00	
2,600.0	24.00	231.24	2,530.4	-310.1	-386.3	424.6	1.00	1.00	
2,700.0	25.00	231.24	2,621.4	-336.1	-418.6	460.2	1.00	1.00	
2,800.0	26.00	231.24	2,711.7	-363.0	-452.2	497.1	1.00	1.00	
2,816.7	26.17	231.24	2,726.6	-367.6	-457.9	503.4	1.00	1.00	EOB: Inc=26.17°
2,900.0	26.17	231.24	2,801.4	-390.6	-486.6	534.9	0.00	0.00	
3,000.0	26.17	231.24	2,891.2	-418.2	-520.9	572.7	0.00	0.00	
3,100.0	26.17	231.24	2,980.9	-445.8	-555.3	610.5	0.00	0.00	
3,200.0	26.17	231.24	3,070.7	-473.4	-589.7	648.3	0.00	0.00	
3,300.0	26.17	231.24	3,160.4	-501.0	-624.1	686.1	0.00	0.00	
3,400.0	26.17	231.24	3,250.2	-528.6	-658.5	723.9	0.00	0.00	
3,500.0	26.17	231.24	3,339.9	-556.2	-692.9	761.7	0.00	0.00	
3,600.0	26.17	231.24	3,429.7	-583.8	-727.3	799.5	0.00	0.00	
3,633.8	26.17	231.24	3,460.0	-593.2	-738.9	812.2	0.00	0.00	PARKMAN
3,700.0	26.17	231.24	3,519.4	-611.4	-761.7	837.3	0.00	0.00	
3,800.0	26.17	231.24	3,609.2	-639.0	-796.1	875.1	0.00	0.00	
3,900.0	26.17	231.24	3,699.0	-666.7	-830.4	912.9	0.00	0.00	
4,000.0	26.17	231.24	3,788.7	-694.3	-864.8	950.7	0.00	0.00	
4,100.0	26.17	231.24	3,878.5	-721.9	-899.2	988.5	0.00	0.00	
4,200.0	26.17	231.24	3,968.2	-749.5	-933.6	1,026.3	0.00	0.00	
4,300.0	26.17	231.24	4,058.0	-777.1	-968.0	1,064.1	0.00	0.00	
4,400.0	26.17	231.24	4,147.7	-804.7	-1,002.4	1,101.9	0.00	0.00	
4,500.0	26.17	231.24	4,237.5	-832.3	-1,036.8	1,139.7	0.00	0.00	
4,541.8	26.17	231.24	4,275.0	-843.8	-1,051.2	1,155.5	0.00	0.00	SUSSEX
4,600.0	26.17	231.24	4,327.2	-859.9	-1,071.2	1,177.5	0.00	0.00	
4,700.0	26.17	231.24	4,417.0	-887.5	-1,105.6	1,215.3	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Breniman 11
Company:	Extraction Oil & Gas	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Project:	WELD COUNTY, CO	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site:	S16-T6N-R67W	North Reference:	True
Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
4,800.0	26.17	231.24	4,506.7	-915.1	-1,139.9	1,253.1	0.00	0.00	
4,900.0	26.17	231.24	4,596.5	-942.7	-1,174.3	1,290.9	0.00	0.00	
5,000.0	26.17	231.24	4,686.2	-970.3	-1,208.7	1,328.7	0.00	0.00	
5,100.0	26.17	231.24	4,776.0	-997.9	-1,243.1	1,366.5	0.00	0.00	
5,200.0	26.17	231.24	4,865.7	-1,025.5	-1,277.5	1,404.3	0.00	0.00	
5,300.0	26.17	231.24	4,955.5	-1,053.1	-1,311.9	1,442.1	0.00	0.00	
5,400.0	26.17	231.24	5,045.2	-1,080.7	-1,346.3	1,479.9	0.00	0.00	
5,500.0	26.17	231.24	5,135.0	-1,108.3	-1,380.7	1,517.7	0.00	0.00	
5,600.0	26.17	231.24	5,224.7	-1,136.0	-1,415.0	1,555.5	0.00	0.00	
5,700.0	26.17	231.24	5,314.5	-1,163.6	-1,449.4	1,593.3	0.00	0.00	
5,800.0	26.17	231.24	5,404.2	-1,191.2	-1,483.8	1,631.1	0.00	0.00	
5,900.0	26.17	231.24	5,494.0	-1,218.8	-1,518.2	1,668.9	0.00	0.00	
6,000.0	26.17	231.24	5,583.7	-1,246.4	-1,552.6	1,706.8	0.00	0.00	
6,100.0	26.17	231.24	5,673.5	-1,274.0	-1,587.0	1,744.6	0.00	0.00	
6,107.2	26.17	231.24	5,680.0	-1,276.0	-1,589.5	1,747.3	0.00	0.00	SHANNON
6,200.0	26.17	231.24	5,763.2	-1,301.6	-1,621.4	1,782.4	0.00	0.00	
6,300.0	26.17	231.24	5,853.0	-1,329.2	-1,655.8	1,820.2	0.00	0.00	
6,400.0	26.17	231.24	5,942.7	-1,356.8	-1,690.2	1,858.0	0.00	0.00	
6,500.0	26.17	231.24	6,032.5	-1,384.4	-1,724.5	1,895.8	0.00	0.00	
6,600.0	26.17	231.24	6,122.2	-1,412.0	-1,758.9	1,933.6	0.00	0.00	
6,700.0	26.17	231.24	6,212.0	-1,439.6	-1,793.3	1,971.4	0.00	0.00	
6,800.0	26.17	231.24	6,301.7	-1,467.2	-1,827.7	2,009.2	0.00	0.00	
6,898.8	26.17	231.24	6,390.4	-1,494.5	-1,861.7	2,046.5	0.00	0.00	Start build/turn @ 6898' MD
6,900.0	26.24	231.40	6,391.5	-1,494.8	-1,862.1	2,047.0	9.00	6.70	
7,000.0	33.46	242.31	6,478.2	-1,521.5	-1,903.9	2,092.0	9.00	7.21	
7,100.0	41.31	249.59	6,557.7	-1,545.9	-1,959.3	2,150.2	9.00	7.85	
7,200.0	49.49	254.86	6,627.9	-1,567.3	-2,027.1	2,220.3	9.00	8.19	
7,300.0	57.87	258.97	6,687.0	-1,585.4	-2,105.5	2,300.4	9.00	8.37	
7,400.0	66.35	262.38	6,733.8	-1,599.6	-2,192.6	2,388.6	9.00	8.48	
7,500.0	74.90	265.37	6,766.9	-1,609.6	-2,286.3	2,482.8	9.00	8.55	
7,600.0	83.48	268.12	6,785.7	-1,615.1	-2,384.3	2,580.7	9.00	8.58	
7,675.8	90.00	270.14	6,790.0	-1,616.3	-2,460.0	2,655.8	9.00	8.60	LP @ 6790' TVD; 90° - NIOBRARA - 7"
7,700.0	90.00	270.14	6,790.0	-1,616.2	-2,484.1	2,679.7	0.00	0.00	
7,800.0	90.00	270.14	6,790.0	-1,616.0	-2,584.1	2,778.8	0.00	0.00	
7,900.0	90.00	270.14	6,790.0	-1,615.7	-2,684.1	2,877.8	0.00	0.00	
8,000.0	90.00	270.14	6,790.0	-1,615.5	-2,784.1	2,976.9	0.00	0.00	
8,100.0	90.00	270.14	6,790.0	-1,615.2	-2,884.1	3,075.9	0.00	0.00	
8,200.0	90.00	270.14	6,790.0	-1,615.0	-2,984.1	3,175.0	0.00	0.00	
8,300.0	90.00	270.14	6,790.0	-1,614.7	-3,084.1	3,274.0	0.00	0.00	
8,400.0	90.00	270.14	6,790.0	-1,614.5	-3,184.1	3,373.1	0.00	0.00	
8,500.0	90.00	270.14	6,790.0	-1,614.2	-3,284.1	3,472.1	0.00	0.00	
8,600.0	90.00	270.14	6,790.0	-1,614.0	-3,384.1	3,571.2	0.00	0.00	
8,700.0	90.00	270.14	6,790.0	-1,613.7	-3,484.1	3,670.2	0.00	0.00	
8,800.0	90.00	270.14	6,790.0	-1,613.5	-3,584.1	3,769.3	0.00	0.00	
8,900.0	90.00	270.14	6,790.0	-1,613.2	-3,684.1	3,868.3	0.00	0.00	
9,000.0	90.00	270.14	6,790.0	-1,613.0	-3,784.1	3,967.3	0.00	0.00	
9,100.0	90.00	270.14	6,790.0	-1,612.7	-3,884.1	4,066.4	0.00	0.00	
9,200.0	90.00	270.14	6,790.0	-1,612.5	-3,984.1	4,165.4	0.00	0.00	
9,300.0	90.00	270.14	6,790.0	-1,612.2	-4,084.1	4,264.5	0.00	0.00	
9,400.0	90.00	270.14	6,790.0	-1,612.0	-4,184.1	4,363.5	0.00	0.00	
9,500.0	90.00	270.14	6,790.0	-1,611.7	-4,284.1	4,462.6	0.00	0.00	
9,600.0	90.00	270.14	6,790.0	-1,611.5	-4,384.1	4,561.6	0.00	0.00	

Planning Report

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Company:	Extraction Oil & Gas	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Project:	WELD COUNTY, CO	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site:	S16-T6N-R67W	North Reference:	True
Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
9,700.0	90.00	270.14	6,790.0	-1,611.2	-4,484.1	4,660.7	0.00	0.00	
9,800.0	90.00	270.14	6,790.0	-1,611.0	-4,584.1	4,759.7	0.00	0.00	
9,900.0	90.00	270.14	6,790.0	-1,610.7	-4,684.1	4,858.8	0.00	0.00	
10,000.0	90.00	270.14	6,790.0	-1,610.5	-4,784.1	4,957.8	0.00	0.00	
10,100.0	90.00	270.14	6,790.0	-1,610.2	-4,884.1	5,056.9	0.00	0.00	
10,200.0	90.00	270.14	6,790.0	-1,610.0	-4,984.1	5,155.9	0.00	0.00	
10,300.0	90.00	270.14	6,790.0	-1,609.7	-5,084.1	5,255.0	0.00	0.00	
10,400.0	90.00	270.14	6,790.0	-1,609.5	-5,184.1	5,354.0	0.00	0.00	
10,500.0	90.00	270.14	6,790.0	-1,609.2	-5,284.1	5,453.1	0.00	0.00	
10,600.0	90.00	270.14	6,790.0	-1,609.0	-5,384.1	5,552.1	0.00	0.00	
10,700.0	90.00	270.14	6,790.0	-1,608.7	-5,484.1	5,651.2	0.00	0.00	
10,800.0	90.00	270.14	6,790.0	-1,608.5	-5,584.1	5,750.2	0.00	0.00	
10,900.0	90.00	270.14	6,790.0	-1,608.2	-5,684.1	5,849.3	0.00	0.00	
11,000.0	90.00	270.14	6,790.0	-1,608.0	-5,784.1	5,948.3	0.00	0.00	
11,100.0	90.00	270.14	6,790.0	-1,607.7	-5,884.1	6,047.4	0.00	0.00	
11,200.0	90.00	270.14	6,790.0	-1,607.5	-5,984.1	6,146.4	0.00	0.00	
11,300.0	90.00	270.14	6,790.0	-1,607.2	-6,084.1	6,245.5	0.00	0.00	
11,400.0	90.00	270.14	6,790.0	-1,607.0	-6,184.1	6,344.5	0.00	0.00	
11,500.0	90.00	270.14	6,790.0	-1,606.7	-6,284.1	6,443.6	0.00	0.00	
11,600.0	90.00	270.14	6,790.0	-1,606.5	-6,384.1	6,542.6	0.00	0.00	
11,700.0	90.00	270.14	6,790.0	-1,606.2	-6,484.1	6,641.7	0.00	0.00	
11,800.0	90.00	270.14	6,790.0	-1,606.0	-6,584.1	6,740.7	0.00	0.00	
11,900.0	90.00	270.14	6,790.0	-1,605.7	-6,684.1	6,839.8	0.00	0.00	
12,000.0	90.00	270.14	6,790.0	-1,605.5	-6,784.1	6,938.8	0.00	0.00	
12,100.0	90.00	270.14	6,790.0	-1,605.2	-6,884.1	7,037.9	0.00	0.00	
12,200.0	90.00	270.14	6,790.0	-1,605.0	-6,984.1	7,136.9	0.00	0.00	
12,300.0	90.00	270.14	6,790.0	-1,604.7	-7,084.1	7,236.0	0.00	0.00	
12,400.0	90.00	270.14	6,790.0	-1,604.5	-7,184.1	7,335.0	0.00	0.00	
12,500.0	90.00	270.14	6,790.0	-1,604.2	-7,284.1	7,434.1	0.00	0.00	
12,600.0	90.00	270.14	6,790.0	-1,604.0	-7,384.1	7,533.1	0.00	0.00	
12,700.0	90.00	270.14	6,790.0	-1,603.7	-7,484.1	7,632.2	0.00	0.00	
12,800.0	90.00	270.14	6,790.0	-1,603.5	-7,584.1	7,731.2	0.00	0.00	
12,900.0	90.00	270.14	6,790.0	-1,603.2	-7,684.1	7,830.3	0.00	0.00	
13,000.0	90.00	270.14	6,790.0	-1,603.0	-7,784.1	7,929.3	0.00	0.00	
13,100.0	90.00	270.14	6,790.0	-1,602.7	-7,884.1	8,028.4	0.00	0.00	
13,200.0	90.00	270.14	6,790.0	-1,602.5	-7,984.1	8,127.4	0.00	0.00	
13,300.0	90.00	270.14	6,790.0	-1,602.2	-8,084.1	8,226.5	0.00	0.00	
13,400.0	90.00	270.14	6,790.0	-1,602.0	-8,184.1	8,325.5	0.00	0.00	
13,500.0	90.00	270.14	6,790.0	-1,601.7	-8,284.1	8,424.6	0.00	0.00	
13,600.0	90.00	270.14	6,790.0	-1,601.5	-8,384.1	8,523.6	0.00	0.00	
13,700.0	90.00	270.14	6,790.0	-1,601.2	-8,484.1	8,622.7	0.00	0.00	
13,800.0	90.00	270.14	6,790.0	-1,601.0	-8,584.1	8,721.7	0.00	0.00	
13,900.0	90.00	270.14	6,790.0	-1,600.7	-8,684.1	8,820.7	0.00	0.00	
14,000.0	90.00	270.14	6,790.0	-1,600.5	-8,784.1	8,919.8	0.00	0.00	
14,100.0	90.00	270.14	6,790.0	-1,600.2	-8,884.1	9,018.8	0.00	0.00	
14,200.0	90.00	270.14	6,790.0	-1,600.0	-8,984.1	9,117.9	0.00	0.00	
14,300.0	90.00	270.14	6,790.0	-1,599.7	-9,084.1	9,216.9	0.00	0.00	
14,400.0	90.00	270.14	6,790.0	-1,599.5	-9,184.1	9,316.0	0.00	0.00	
14,500.0	90.00	270.14	6,790.0	-1,599.2	-9,284.1	9,415.0	0.00	0.00	
14,600.0	90.00	270.14	6,790.0	-1,599.0	-9,384.1	9,514.1	0.00	0.00	
14,700.0	90.00	270.14	6,790.0	-1,598.7	-9,484.1	9,613.1	0.00	0.00	
14,800.0	90.00	270.14	6,790.0	-1,598.5	-9,584.1	9,712.2	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Breniman 11
Company:	Extraction Oil & Gas	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Project:	WELD COUNTY, CO	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site:	S16-T6N-R67W	North Reference:	True
Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
14,900.0	90.00	270.14	6,790.0	-1,598.2	-9,684.1	9,811.2	0.00	0.00	
15,000.0	90.00	270.14	6,790.0	-1,598.0	-9,784.1	9,910.3	0.00	0.00	
15,100.0	90.00	270.14	6,790.0	-1,597.7	-9,884.1	10,009.3	0.00	0.00	
15,200.0	90.00	270.14	6,790.0	-1,597.5	-9,984.1	10,108.4	0.00	0.00	
15,300.0	90.00	270.14	6,790.0	-1,597.2	-10,084.1	10,207.4	0.00	0.00	
15,400.0	90.00	270.14	6,790.0	-1,597.0	-10,184.1	10,306.5	0.00	0.00	
15,500.0	90.00	270.14	6,790.0	-1,596.7	-10,284.1	10,405.5	0.00	0.00	
15,600.0	90.00	270.14	6,790.0	-1,596.5	-10,384.1	10,504.6	0.00	0.00	
15,700.0	90.00	270.14	6,790.0	-1,596.2	-10,484.1	10,603.6	0.00	0.00	
15,800.0	90.00	270.14	6,790.0	-1,596.0	-10,584.1	10,702.7	0.00	0.00	
15,900.0	90.00	270.14	6,790.0	-1,595.7	-10,684.1	10,801.7	0.00	0.00	
16,000.0	90.00	270.14	6,790.0	-1,595.5	-10,784.1	10,900.8	0.00	0.00	
16,100.0	90.00	270.14	6,790.0	-1,595.2	-10,884.1	10,999.8	0.00	0.00	
16,200.0	90.00	270.14	6,790.0	-1,595.0	-10,984.1	11,098.9	0.00	0.00	
16,300.0	90.00	270.14	6,790.0	-1,594.7	-11,084.1	11,197.9	0.00	0.00	
16,400.0	90.00	270.14	6,790.0	-1,594.5	-11,184.1	11,297.0	0.00	0.00	
16,500.0	90.00	270.14	6,790.0	-1,594.2	-11,284.1	11,396.0	0.00	0.00	
16,600.0	90.00	270.14	6,790.0	-1,594.0	-11,384.1	11,495.1	0.00	0.00	
16,700.0	90.00	270.14	6,790.0	-1,593.7	-11,484.1	11,594.1	0.00	0.00	
16,800.0	90.00	270.14	6,790.0	-1,593.5	-11,584.1	11,693.2	0.00	0.00	
16,900.0	90.00	270.14	6,790.0	-1,593.2	-11,684.1	11,792.2	0.00	0.00	
16,900.9	90.00	270.14	6,790.0	-1,593.2	-11,685.0	11,793.1	0.00	0.00	TD at 16900.9 - 4 1/2"

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Breniman 11 LP	0.00	0.00	6,790.0	-1,616.3	-2,460.0	1,421,075.71	3,164,298.84	40.487752	-104.909311
- plan hits target center									
- Point									
Breniman 11 PBHL	0.00	0.00	6,790.0	-1,593.2	-11,685.1	1,421,036.39	3,155,073.79	40.487808	-104.942477
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
750.0	749.2	9 5/8"	0	0	
7,675.8	6,790.0	7"	0	0	
16,900.9	6,790.0	4 1/2"	0	0	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Breniman 11
Company:	Extraction Oil & Gas	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Project:	WELD COUNTY, CO	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site:	S16-T6N-R67W	North Reference:	True
Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,633.8	3,460.0	PARKMAN				
4,541.8	4,275.0	SUSSEX				
6,107.2	5,680.0	SHANNON				
7,675.8	6,790.0	NIOBRARA				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
200.0	200.0	0.0	0.0	KOP @ 200'	
2,816.7	2,726.6	-367.6	-457.9	EOB: Inc=26.17°	
6,898.8	6,390.4	-1,494.5	-1,861.7	Start build/turn @ 6898' MD	
7,675.8	6,790.0	-1,616.3	-2,460.0	LP @ 6790' TVD; 90°	
16,900.9	6,790.0	-1,593.2	-11,685.1	TD at 16900.9	

Extraction Oil & Gas

WELD COUNTY, CO

S16-T6N-R67W

Breniman 11

Hz

Plan #1

Anticollision Report

28 July, 2014

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,215.7usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	7/28/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	16,900.9	Plan #1 (Hz)	Geolink MWD	Geolink MWD	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
Offset Well - Wellbore - Design	Depth (usft)	Depth (usft)	Between Centres (usft)	Between Ellipses (usft)		
S16-T6N-R67W						
Breniman 1 - Hz - Plan #1	200.0	200.0	279.8	279.2	455.510	CC, ES
Breniman 1 - Hz - Plan #1	2,800.0	2,735.9	780.6	764.5	48.381	SF
Breniman 10 - Hz - Plan #1	200.0	200.0	28.1	27.4	45.672	CC
Breniman 10 - Hz - Plan #1	16,900.9	16,828.9	330.1	-218.6	0.602	Level 1, ES, SF
Breniman 2 - Hz - Plan #1	200.0	200.0	251.9	251.3	410.071	CC, ES
Breniman 2 - Hz - Plan #1	2,500.0	2,483.7	565.9	552.3	41.625	SF
Breniman 3 - Hz - Plan #1	200.0	200.0	223.9	223.3	364.399	CC, ES
Breniman 3 - Hz - Plan #1	2,300.0	2,298.2	452.7	441.0	38.695	SF
Breniman 4 - Hz - Plan #1	200.0	199.0	196.3	195.7	320.385	CC
Breniman 4 - Hz - Plan #1	300.0	301.1	196.6	195.6	203.451	ES
Breniman 4 - Hz - Plan #1	2,200.0	2,207.2	367.2	356.1	33.072	SF
Breniman 5 - Hz - Plan #1	200.0	200.0	168.1	167.5	273.565	CC
Breniman 5 - Hz - Plan #1	400.0	404.8	168.5	167.2	127.258	ES
Breniman 5 - Hz - Plan #1	2,100.0	2,120.7	257.9	248.2	26.411	SF
Breniman 6 - Hz - Plan #1	200.0	200.0	140.2	139.5	228.126	CC
Breniman 6 - Hz - Plan #1	600.0	608.6	141.0	138.9	68.964	ES
Breniman 6 - Hz - Plan #1	16,900.9	17,727.5	1,199.7	665.0	2.244	SF
Breniman 7 - Hz - Plan #1	200.0	200.0	111.8	111.2	181.946	CC
Breniman 7 - Hz - Plan #1	1,400.0	1,421.3	113.8	108.5	21.398	ES
Breniman 7 - Hz - Plan #1	16,900.9	17,421.5	989.8	434.9	1.784	SF
Breniman 8 - Hz - Plan #1	200.0	200.0	84.2	83.6	137.015	CC
Breniman 8 - Hz - Plan #1	400.0	402.5	84.5	83.2	64.023	ES
Breniman 8 - Hz - Plan #1	16,900.9	16,782.3	659.8	110.5	1.201	Level 2, SF
Breniman 9 - Hz - Plan #1	200.0	200.0	55.8	55.2	90.836	CC
Breniman 9 - Hz - Plan #1	500.0	502.6	56.3	54.6	33.623	ES
Breniman 9 - Hz - Plan #1	16,900.9	17,103.5	592.2	132.3	1.288	Level 3, SF

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 1 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.0	0.0	0.0	0.0	0.0	0.0	30.92	240.1	143.8	279.8					
100.0	100.0	100.0	100.0	0.1	0.1	30.92	240.1	143.8	279.8	0.27	1,054.864			
200.0	200.0	200.0	200.0	0.3	0.3	30.92	240.1	143.8	279.8	0.61	455.510 CC, ES			
300.0	300.0	300.8	300.8	0.5	0.5	159.56	240.4	143.0	280.5	0.97	290.431			
400.0	400.0	401.6	401.5	0.7	0.7	159.20	241.4	140.5	282.5	1.32	213.709			
500.0	499.9	502.3	502.1	0.9	0.9	158.63	243.0	136.4	285.9	1.69	169.469			
600.0	599.7	602.8	602.5	1.1	1.1	157.85	245.2	130.6	290.7	2.07	140.749			
700.0	699.4	703.2	702.5	1.3	1.3	156.88	248.1	123.2	297.0	2.46	120.648			
800.0	798.9	803.3	802.2	1.5	1.5	155.75	251.6	114.2	304.7	2.88	105.834			
900.0	898.3	903.1	901.4	1.8	1.8	154.49	255.7	103.6	313.9	3.32	94.501			
1,000.0	997.4	1,002.6	1,000.0	2.0	2.0	153.12	260.5	91.5	324.7	3.79	85.584			
1,100.0	1,096.3	1,101.8	1,098.1	2.3	2.3	151.68	265.8	77.8	337.2	4.30	78.414			
1,200.0	1,194.9	1,200.6	1,195.5	2.7	2.7	150.19	271.7	62.6	351.3	4.84	72.549			
1,300.0	1,293.3	1,298.9	1,292.2	3.0	3.0	148.67	278.2	45.9	367.1	5.42	67.682			
1,400.0	1,391.2	1,396.8	1,388.1	3.4	3.4	147.16	285.3	27.8	384.7	6.04	63.671			
1,500.0	1,488.9	1,494.6	1,483.9	3.8	3.7	145.85	292.4	9.4	403.9	6.68	60.465			
1,600.0	1,586.1	1,592.2	1,579.5	4.2	4.1	144.76	299.6	-9.0	424.6	7.34	57.889			
1,700.0	1,682.9	1,689.5	1,674.8	4.7	4.5	143.89	306.7	-27.3	446.9	8.01	55.807			
1,800.0	1,779.3	1,786.6	1,769.9	5.2	4.9	143.20	313.9	-45.6	470.5	8.69	54.116			
1,900.0	1,875.2	1,883.4	1,864.6	5.7	5.2	142.69	321.0	-63.9	495.5	9.40	52.741			
2,000.0	1,970.5	1,979.8	1,959.1	6.3	5.6	142.31	328.1	-82.0	521.9	10.11	51.627			
2,100.0	2,065.4	2,075.9	2,053.2	6.9	6.0	142.06	335.1	-100.1	549.7	10.84	50.728			
2,200.0	2,159.6	2,171.6	2,146.9	7.5	6.4	141.92	342.1	-118.2	578.7	11.57	50.013			
2,300.0	2,253.3	2,266.8	2,240.2	8.1	6.7	141.88	349.1	-136.1	609.1	12.32	49.454			
2,400.0	2,346.3	2,361.6	2,333.0	8.8	7.1	141.91	356.1	-154.0	640.7	13.07	49.029			
2,500.0	2,438.7	2,456.0	2,425.4	9.5	7.5	142.00	363.0	-171.8	673.7	13.83	48.723			
2,600.0	2,530.4	2,549.8	2,517.3	10.2	7.9	142.15	369.9	-189.5	708.0	14.59	48.520			
2,700.0	2,621.4	2,643.1	2,608.7	11.0	8.2	142.34	376.8	-207.0	743.7	15.36	48.410			
2,800.0	2,711.7	2,735.9	2,699.5	11.8	8.6	142.56	383.6	-224.5	780.6	16.13	48.381 SF			
2,900.0	2,801.4	2,828.2	2,790.0	12.6	9.0	143.00	390.3	-241.9	818.4	16.92	48.385			
3,000.0	2,891.2	2,920.6	2,880.4	13.5	9.3	143.44	397.1	-259.3	856.3	17.70	48.391			
3,100.0	2,980.9	3,012.9	2,970.9	14.3	9.7	143.84	403.9	-276.7	894.3	18.48	48.403			
3,200.0	3,070.7	3,105.3	3,061.3	15.1	10.1	144.21	410.7	-294.1	932.3	19.25	48.420			
3,300.0	3,160.5	3,197.6	3,151.7	15.9	10.4	144.54	417.5	-311.5	970.3	20.03	48.441			
3,400.0	3,250.2	3,290.0	3,242.2	16.7	10.8	144.86	424.2	-328.9	1,008.3	20.80	48.465			
3,500.0	3,340.0	3,382.3	3,332.6	17.5	11.2	145.15	431.0	-346.3	1,046.3	21.58	48.492			
3,600.0	3,429.7	3,474.7	3,423.1	18.4	11.5	145.42	437.8	-363.7	1,084.4	22.35	48.520			
3,700.0	3,519.5	3,567.0	3,513.5	19.2	11.9	145.67	444.6	-381.1	1,122.5	23.12	48.549			
3,800.0	3,609.2	3,659.4	3,604.0	20.0	12.3	145.91	451.4	-398.5	1,160.6	23.89	48.579			
3,900.0	3,699.0	3,751.7	3,694.4	20.8	12.6	146.13	458.1	-415.9	1,198.7	24.66	48.610			

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 10 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: O-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	31.03	24.0	14.5	28.1					
100.0	100.0	100.0	100.0	0.1	0.1	31.03	24.0	14.5	28.1	27.8	0.27	105.766		
200.0	200.0	200.0	200.0	0.3	0.3	31.03	24.0	14.5	28.1	27.4	0.61	45.672 CC		
300.0	300.0	300.4	300.4	0.5	0.5	159.61	23.6	13.7	28.1	27.1	0.96	29.126		
400.0	400.0	400.9	400.8	0.7	0.7	159.10	22.1	11.5	28.2	26.9	1.32	21.421		
500.0	499.9	501.3	501.2	0.9	0.9	158.25	19.7	7.8	28.4	26.7	1.67	16.975		
600.0	599.7	601.8	601.4	1.1	1.1	157.07	16.4	2.6	28.6	26.6	2.03	14.086		
700.0	699.4	702.2	701.6	1.3	1.3	155.60	12.1	-4.0	28.9	26.5	2.40	12.058		
800.0	798.9	802.6	801.5	1.5	1.5	153.84	6.9	-12.1	29.4	26.6	2.78	10.553		
900.0	898.3	903.1	901.3	1.8	1.8	151.83	0.7	-21.7	29.9	26.7	3.19	9.387		
1,000.0	997.4	1,003.5	1,000.8	2.0	2.0	149.60	-6.5	-32.8	30.6	27.0	3.62	8.451		
1,100.0	1,096.3	1,103.9	1,100.2	2.3	2.3	147.20	-14.6	-45.3	31.4	27.3	4.09	7.677		
1,200.0	1,194.9	1,204.3	1,199.2	2.7	2.7	144.66	-23.6	-59.3	32.3	27.7	4.61	7.023		
1,300.0	1,293.3	1,304.7	1,297.9	3.0	3.0	142.04	-33.6	-74.7	33.5	28.3	5.18	6.462		
1,400.0	1,391.2	1,405.1	1,396.3	3.4	3.4	139.37	-44.5	-91.6	34.8	29.0	5.82	5.976		
1,500.0	1,488.9	1,505.5	1,494.2	3.8	3.8	136.70	-56.3	-109.9	36.3	29.8	6.54	5.553		
1,600.0	1,586.1	1,605.9	1,591.8	4.2	4.3	134.06	-69.1	-129.7	38.0	30.7	7.33	5.185		
1,700.0	1,682.9	1,706.3	1,689.0	4.7	4.7	131.48	-82.8	-150.9	39.9	31.7	8.20	4.866		
1,800.0	1,779.3	1,806.6	1,785.7	5.2	5.2	128.99	-97.4	-173.5	42.0	32.9	9.16	4.591		
1,900.0	1,875.2	1,907.0	1,881.9	5.7	5.8	126.61	-112.9	-197.5	44.4	34.2	10.19	4.354		
2,000.0	1,970.5	2,007.4	1,977.5	6.3	6.3	124.35	-129.4	-223.0	46.9	35.6	11.30	4.150		
2,100.0	2,065.4	2,107.7	2,072.6	6.9	6.9	122.22	-146.7	-249.8	49.7	37.2	12.49	3.976		
2,200.0	2,159.6	2,208.0	2,167.2	7.5	7.5	120.22	-165.0	-278.1	52.6	38.9	13.75	3.826		
2,300.0	2,253.3	2,308.3	2,261.1	8.1	8.2	118.35	-184.1	-307.7	55.8	40.7	15.08	3.698		
2,400.0	2,346.3	2,408.6	2,354.4	8.8	8.9	116.60	-204.1	-338.7	59.1	42.7	16.49	3.587		
2,500.0	2,438.7	2,508.9	2,446.9	9.5	9.6	114.98	-225.0	-371.0	62.7	44.7	17.96	3.492		
2,600.0	2,530.4	2,609.2	2,538.8	10.2	10.3	113.47	-246.8	-404.8	66.5	47.0	19.49	3.410		
2,700.0	2,621.4	2,709.2	2,630.0	11.0	11.1	112.53	-269.1	-439.3	70.6	49.6	21.02	3.358		
2,800.0	2,711.7	2,809.1	2,721.0	11.8	11.9	112.89	-291.4	-473.8	75.4	52.9	22.44	3.359		
2,900.0	2,801.4	2,908.9	2,812.1	12.6	12.6	113.99	-313.7	-508.2	80.6	56.9	23.77	3.392		
3,000.0	2,891.2	3,008.8	2,903.1	13.5	13.4	114.97	-335.9	-542.7	85.9	60.8	25.10	3.424		
3,100.0	2,980.9	3,108.6	2,994.1	14.3	14.2	115.84	-358.2	-577.2	91.2	64.8	26.42	3.453		
3,200.0	3,070.7	3,208.5	3,085.1	15.1	14.9	116.62	-380.5	-611.7	96.6	68.8	27.74	3.481		
3,300.0	3,160.5	3,308.3	3,176.1	15.9	15.7	117.31	-402.8	-646.2	101.9	72.8	29.05	3.507		
3,400.0	3,250.2	3,408.2	3,267.2	16.7	16.5	117.93	-425.1	-680.7	107.3	76.9	30.37	3.532		
3,500.0	3,340.0	3,508.0	3,358.2	17.5	17.2	118.49	-447.3	-715.1	112.6	80.9	31.68	3.555		
3,600.0	3,429.7	3,607.9	3,449.2	18.4	18.0	119.01	-469.6	-749.6	118.0	85.0	32.99	3.577		
3,700.0	3,519.5	3,707.7	3,540.2	19.2	18.8	119.47	-491.9	-784.1	123.4	89.1	34.30	3.597		
3,800.0	3,609.2	3,807.6	3,631.2	20.0	19.5	119.90	-514.2	-818.6	128.8	93.2	35.61	3.616		
3,900.0	3,699.0	3,907.4	3,722.3	20.8	20.3	120.30	-536.5	-853.1	134.2	97.3	36.92	3.635		
4,000.0	3,788.7	4,007.3	3,813.3	21.7	21.1	120.66	-558.7	-887.5	139.6	101.4	38.23	3.652		
4,100.0	3,878.5	4,107.1	3,904.3	22.5	21.9	121.00	-581.0	-922.0	145.0	105.5	39.54	3.668		
4,200.0	3,968.2	4,207.0	3,995.3	23.3	22.6	121.31	-603.3	-956.5	150.4	109.6	40.84	3.683		
4,300.0	4,058.0	4,306.8	4,086.3	24.1	23.4	121.60	-625.6	-991.0	155.9	113.7	42.15	3.698		
4,400.0	4,147.7	4,406.7	4,177.4	25.0	24.2	121.87	-647.8	-1,025.5	161.3	117.8	43.46	3.711		
4,500.0	4,237.5	4,506.5	4,268.4	25.8	24.9	122.12	-670.1	-1,060.0	166.7	121.9	44.76	3.724		
4,600.0	4,327.2	4,606.4	4,359.4	26.6	25.7	122.36	-692.4	-1,094.4	172.1	126.1	46.07	3.737		
4,700.0	4,417.0	4,706.2	4,450.4	27.5	26.5	122.58	-714.7	-1,128.9	177.6	130.2	47.37	3.749		
4,800.0	4,506.7	4,806.1	4,541.4	28.3	27.3	122.79	-737.0	-1,163.4	183.0	134.3	48.67	3.760		
4,900.0	4,596.5	4,905.9	4,632.5	29.1	28.0	122.99	-759.2	-1,197.9	188.4	138.5	49.98	3.771		
5,000.0	4,686.2	5,005.8	4,723.5	29.9	28.8	123.18	-781.5	-1,232.4	193.9	142.6	51.28	3.781		
5,100.0	4,776.0	5,105.6	4,814.5	30.8	29.6	123.35	-803.8	-1,266.9	199.3	146.7	52.59	3.791		

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

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 10 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: O-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis			
5,200.0	4,865.7	5,205.5	4,905.5	31.6	30.4	123.52	-826.1	-1,301.3	204.8	150.9	53.89	3.800		
5,300.0	4,955.5	5,305.3	4,996.5	32.4	31.1	123.68	-848.4	-1,335.8	210.2	155.0	55.19	3.809		
5,400.0	5,045.2	5,405.2	5,087.6	33.3	31.9	123.83	-870.6	-1,370.3	215.7	159.2	56.50	3.817		
5,500.0	5,135.0	5,505.0	5,178.6	34.1	32.7	123.97	-892.9	-1,404.8	221.1	163.3	57.80	3.826		
5,600.0	5,224.7	5,604.9	5,269.6	34.9	33.5	124.11	-915.2	-1,439.3	226.6	167.5	59.10	3.833		
5,700.0	5,314.5	5,704.7	5,360.6	35.8	34.2	124.24	-937.5	-1,473.8	232.0	171.6	60.41	3.841		
5,800.0	5,404.2	5,804.6	5,451.6	36.6	35.0	124.36	-959.7	-1,508.2	237.5	175.8	61.71	3.848		
5,900.0	5,494.0	5,904.4	5,542.7	37.4	35.8	124.48	-982.0	-1,542.7	242.9	179.9	63.01	3.855		
6,000.0	5,583.7	6,004.3	5,633.7	38.2	36.6	124.59	-1,004.3	-1,577.2	248.4	184.1	64.31	3.862		
6,100.0	5,673.5	6,104.1	5,724.7	39.1	37.4	124.70	-1,026.6	-1,611.7	253.8	188.2	65.62	3.869		
6,200.0	5,763.2	6,204.0	5,815.7	39.9	38.1	124.80	-1,048.9	-1,646.2	259.3	192.4	66.92	3.875		
6,300.0	5,853.0	6,303.8	5,906.7	40.7	38.9	124.90	-1,071.1	-1,680.7	264.8	196.5	68.22	3.881		
6,400.0	5,942.7	6,403.7	5,997.8	41.6	39.7	125.00	-1,093.4	-1,715.1	270.2	200.7	69.52	3.887		
6,500.0	6,032.5	6,503.5	6,088.8	42.4	40.5	125.09	-1,115.7	-1,749.6	275.7	204.9	70.83	3.892		
6,600.0	6,122.3	6,603.4	6,179.8	43.2	41.2	125.18	-1,138.0	-1,784.1	281.1	209.0	72.13	3.898		
6,700.0	6,212.0	6,703.2	6,270.8	44.1	42.0	125.26	-1,160.3	-1,818.6	286.6	213.2	73.43	3.903		
6,800.0	6,301.8	6,803.1	6,361.8	44.9	42.8	125.34	-1,182.5	-1,853.1	292.1	217.3	74.73	3.908		
6,900.0	6,391.5	6,900.0	6,448.7	45.7	43.6	124.50	-1,203.8	-1,890.3	297.9	221.2	76.72	3.883		
7,000.0	6,478.2	6,993.3	6,526.4	46.7	44.7	112.68	-1,222.8	-1,938.0	304.5	224.2	80.31	3.792		
7,100.0	6,557.7	7,085.8	6,596.0	47.9	45.9	104.82	-1,239.7	-1,996.5	310.8	226.9	83.85	3.706		
7,200.0	6,627.9	7,177.3	6,656.1	49.3	47.3	99.38	-1,254.3	-2,063.8	316.4	229.3	87.18	3.630		
7,300.0	6,687.1	7,267.9	6,705.7	50.9	48.8	95.53	-1,266.3	-2,138.6	321.4	231.1	90.23	3.561		
7,400.0	6,733.8	7,357.8	6,744.2	52.6	50.4	92.86	-1,275.6	-2,219.2	325.3	232.3	92.96	3.499		
7,500.0	6,767.0	7,447.3	6,771.3	54.4	52.2	91.13	-1,282.0	-2,304.2	328.1	232.7	95.37	3.440		
7,600.0	6,785.7	7,536.4	6,786.5	56.3	53.9	90.20	-1,285.5	-2,391.8	329.7	232.2	97.50	3.382		
7,700.0	6,790.0	7,628.0	6,790.0	58.2	55.8	90.00	-1,286.2	-2,483.3	330.1	230.0	100.05	3.299		
7,800.0	6,790.0	7,728.0	6,790.0	60.2	57.8	90.00	-1,285.9	-2,583.3	330.1	225.4	104.62	3.155		
7,900.0	6,790.0	7,828.0	6,790.0	62.2	59.9	90.00	-1,285.7	-2,683.3	330.1	220.8	109.22	3.022		
8,000.0	6,790.0	7,928.0	6,790.0	64.2	62.0	90.00	-1,285.4	-2,783.3	330.1	216.2	113.84	2.899		
8,100.0	6,790.0	8,028.0	6,790.0	66.2	64.1	90.00	-1,285.2	-2,883.3	330.1	211.6	118.50	2.785		
8,200.0	6,790.0	8,128.0	6,790.0	68.3	66.3	90.00	-1,284.9	-2,983.3	330.1	206.9	123.17	2.680		
8,300.0	6,790.0	8,228.0	6,790.0	70.4	68.5	90.00	-1,284.7	-3,083.3	330.1	202.2	127.87	2.581		
8,400.0	6,790.0	8,328.0	6,790.0	72.5	70.7	90.00	-1,284.4	-3,183.3	330.1	197.5	132.58	2.489		
8,500.0	6,790.0	8,428.0	6,790.0	74.7	72.9	90.00	-1,284.2	-3,283.3	330.1	192.7	137.31	2.404		
8,600.0	6,790.0	8,528.0	6,790.0	76.8	75.1	90.00	-1,283.9	-3,383.3	330.1	188.0	142.06	2.323		
8,700.0	6,790.0	8,628.0	6,790.0	79.0	77.4	90.00	-1,283.7	-3,483.3	330.1	183.2	146.82	2.248		
8,800.0	6,790.0	8,728.0	6,790.0	81.2	79.6	90.00	-1,283.4	-3,583.3	330.1	178.5	151.59	2.177		
8,900.0	6,790.0	8,828.0	6,790.0	83.4	81.9	90.00	-1,283.2	-3,683.3	330.1	173.7	156.37	2.111		
9,000.0	6,790.0	8,928.0	6,790.0	85.6	84.2	90.00	-1,282.9	-3,783.3	330.1	168.9	161.17	2.048		
9,100.0	6,790.0	9,028.0	6,790.0	87.9	86.5	90.00	-1,282.7	-3,883.3	330.1	164.1	165.97	1.989		
9,200.0	6,790.0	9,128.0	6,790.0	90.1	88.8	90.00	-1,282.4	-3,983.3	330.1	159.3	170.78	1.933		
9,300.0	6,790.0	9,228.0	6,790.0	92.4	91.1	90.00	-1,282.2	-4,083.3	330.1	154.5	175.60	1.880		
9,400.0	6,790.0	9,328.0	6,790.0	94.7	93.4	90.00	-1,281.9	-4,183.3	330.1	149.6	180.42	1.829		
9,500.0	6,790.0	9,428.0	6,790.0	97.0	95.7	90.00	-1,281.7	-4,283.3	330.1	144.8	185.25	1.782		
9,600.0	6,790.0	9,528.0	6,790.0	99.3	98.1	90.00	-1,281.4	-4,383.3	330.1	140.0	190.09	1.736		
9,700.0	6,790.0	9,628.0	6,790.0	101.6	100.4	90.00	-1,281.2	-4,483.3	330.1	135.1	194.93	1.693		
9,800.0	6,790.0	9,728.0	6,790.0	103.9	102.8	90.00	-1,280.9	-4,583.3	330.1	130.3	199.78	1.652		
9,900.0	6,790.0	9,828.0	6,790.0	106.2	105.1	90.00	-1,280.7	-4,683.3	330.1	125.4	204.64	1.613		
10,000.0	6,790.0	9,928.0	6,790.0	108.5	107.5	90.00	-1,280.4	-4,783.3	330.1	120.6	209.49	1.576		
10,100.0	6,790.0	10,028.0	6,790.0	110.9	109.9	90.00	-1,280.2	-4,883.3	330.1	115.7	214.36	1.540		
10,200.0	6,790.0	10,128.0	6,790.0	113.2	112.2	90.00	-1,279.9	-4,983.3	330.1	110.8	219.22	1.506		
10,300.0	6,790.0	10,228.0	6,790.0	115.6	114.6	90.00	-1,279.7	-5,083.3	330.1	106.0	224.09	1.473 Level 3		

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

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 10 - Hz - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-Geolink MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
10,400.0	6,790.0	10,328.0	6,790.0	117.9	117.0	90.00	-1,279.4	-5,183.3	330.1	101.1	228.96	1.442	Level 3	
10,500.0	6,790.0	10,428.0	6,790.0	120.3	119.4	90.00	-1,279.2	-5,283.3	330.1	96.2	233.84	1.411	Level 3	
10,600.0	6,790.0	10,528.0	6,790.0	122.6	121.8	90.00	-1,278.9	-5,383.3	330.1	91.3	238.72	1.383	Level 3	
10,700.0	6,790.0	10,628.0	6,790.0	125.0	124.2	90.00	-1,278.7	-5,483.3	330.1	86.5	243.60	1.355	Level 3	
10,800.0	6,790.0	10,728.0	6,790.0	127.4	126.6	90.00	-1,278.4	-5,583.3	330.1	81.6	248.49	1.328	Level 3	
10,900.0	6,790.0	10,828.0	6,790.0	129.8	129.0	90.00	-1,278.2	-5,683.3	330.1	76.7	253.37	1.303	Level 3	
11,000.0	6,790.0	10,928.0	6,790.0	132.1	131.4	90.00	-1,277.9	-5,783.3	330.1	71.8	258.26	1.278	Level 3	
11,100.0	6,790.0	11,028.0	6,790.0	134.5	133.8	90.00	-1,277.7	-5,883.3	330.1	66.9	263.15	1.254	Level 3	
11,200.0	6,790.0	11,128.0	6,790.0	136.9	136.2	90.00	-1,277.4	-5,983.3	330.1	62.0	268.05	1.231	Level 2	
11,300.0	6,790.0	11,228.0	6,790.0	139.3	138.6	90.00	-1,277.2	-6,083.3	330.1	57.1	272.94	1.209	Level 2	
11,400.0	6,790.0	11,328.0	6,790.0	141.7	141.0	90.00	-1,276.9	-6,183.3	330.1	52.2	277.84	1.188	Level 2	
11,500.0	6,790.0	11,428.0	6,790.0	144.1	143.4	90.00	-1,276.7	-6,283.3	330.1	47.3	282.74	1.167	Level 2	
11,600.0	6,790.0	11,528.0	6,790.0	146.5	145.8	90.00	-1,276.4	-6,383.3	330.1	42.4	287.64	1.147	Level 2	
11,700.0	6,790.0	11,628.0	6,790.0	148.9	148.2	90.00	-1,276.2	-6,483.3	330.1	37.5	292.54	1.128	Level 2	
11,800.0	6,790.0	11,728.0	6,790.0	151.3	150.7	90.00	-1,275.9	-6,583.3	330.1	32.6	297.45	1.110	Level 2	
11,900.0	6,790.0	11,828.0	6,790.0	153.7	153.1	90.00	-1,275.7	-6,683.3	330.1	27.7	302.35	1.092	Level 2	
12,000.0	6,790.0	11,928.0	6,790.0	156.1	155.5	90.00	-1,275.4	-6,783.3	330.1	22.8	307.26	1.074	Level 2	
12,100.0	6,790.0	12,028.0	6,790.0	158.5	157.9	90.00	-1,275.2	-6,883.3	330.1	17.9	312.17	1.057	Level 2	
12,200.0	6,790.0	12,128.0	6,790.0	160.9	160.4	90.00	-1,274.9	-6,983.3	330.1	13.0	317.08	1.041	Level 2	
12,300.0	6,790.0	12,228.0	6,790.0	163.3	162.8	90.00	-1,274.7	-7,083.3	330.1	8.1	321.99	1.025	Level 2	
12,400.0	6,790.0	12,328.0	6,790.0	165.8	165.2	90.00	-1,274.4	-7,183.3	330.1	3.2	326.90	1.010	Level 2	
12,500.0	6,790.0	12,428.0	6,790.0	168.2	167.6	90.00	-1,274.2	-7,283.3	330.1	-1.8	331.81	0.995	Level 1	
12,600.0	6,790.0	12,528.0	6,790.0	170.6	170.1	90.00	-1,273.9	-7,383.3	330.1	-6.7	336.73	0.980	Level 1	
12,700.0	6,790.0	12,628.0	6,790.0	173.0	172.5	90.00	-1,273.7	-7,483.3	330.1	-11.6	341.64	0.966	Level 1	
12,800.0	6,790.0	12,728.0	6,790.0	175.4	174.9	90.00	-1,273.4	-7,583.3	330.1	-16.5	346.56	0.952	Level 1	
12,900.0	6,790.0	12,828.0	6,790.0	177.9	177.4	90.00	-1,273.2	-7,683.3	330.1	-21.4	351.48	0.939	Level 1	
13,000.0	6,790.0	12,928.0	6,790.0	180.3	179.8	90.00	-1,272.9	-7,783.3	330.1	-26.3	356.39	0.926	Level 1	
13,100.0	6,790.0	13,028.0	6,790.0	182.7	182.3	90.00	-1,272.7	-7,883.3	330.1	-31.3	361.31	0.914	Level 1	
13,200.0	6,790.0	13,128.0	6,790.0	185.1	184.7	90.00	-1,272.4	-7,983.3	330.1	-36.2	366.23	0.901	Level 1	
13,300.0	6,790.0	13,228.0	6,790.0	187.6	187.1	90.00	-1,272.2	-8,083.3	330.1	-41.1	371.15	0.889	Level 1	
13,400.0	6,790.0	13,328.0	6,790.0	190.0	189.6	90.00	-1,271.9	-8,183.3	330.1	-46.0	376.07	0.878	Level 1	
13,500.0	6,790.0	13,428.0	6,790.0	192.4	192.0	90.00	-1,271.7	-8,283.3	330.1	-50.9	380.99	0.866	Level 1	
13,600.0	6,790.0	13,528.0	6,790.0	194.9	194.5	90.00	-1,271.4	-8,383.3	330.1	-55.9	385.92	0.855	Level 1	
13,700.0	6,790.0	13,628.0	6,790.0	197.3	196.9	90.00	-1,271.2	-8,483.3	330.1	-60.8	390.84	0.844	Level 1	
13,800.0	6,790.0	13,728.0	6,790.0	199.7	199.3	90.00	-1,270.9	-8,583.3	330.1	-65.7	395.76	0.834	Level 1	
13,900.0	6,790.0	13,828.0	6,790.0	202.2	201.8	90.00	-1,270.7	-8,683.3	330.1	-70.6	400.69	0.824	Level 1	
14,000.0	6,790.0	13,928.0	6,790.0	204.6	204.2	90.00	-1,270.4	-8,783.3	330.1	-75.6	405.61	0.814	Level 1	
14,100.0	6,790.0	14,028.0	6,790.0	207.0	206.7	90.00	-1,270.2	-8,883.3	330.1	-80.5	410.54	0.804	Level 1	
14,200.0	6,790.0	14,128.0	6,790.0	209.5	209.1	90.00	-1,269.9	-8,983.3	330.1	-85.4	415.47	0.794	Level 1	
14,300.0	6,790.0	14,228.0	6,790.0	211.9	211.6	90.00	-1,269.7	-9,083.3	330.1	-90.3	420.39	0.785	Level 1	
14,400.0	6,790.0	14,328.0	6,790.0	214.4	214.0	90.00	-1,269.4	-9,183.3	330.1	-95.3	425.32	0.776	Level 1	
14,500.0	6,790.0	14,428.0	6,790.0	216.8	216.5	90.00	-1,269.2	-9,283.3	330.1	-100.2	430.25	0.767	Level 1	
14,600.0	6,790.0	14,528.0	6,790.0	219.2	218.9	90.00	-1,268.9	-9,383.3	330.1	-105.1	435.17	0.758	Level 1	
14,700.0	6,790.0	14,628.0	6,790.0	221.7	221.4	90.00	-1,268.7	-9,483.3	330.1	-110.0	440.10	0.750	Level 1	
14,800.0	6,790.0	14,728.0	6,790.0	224.1	223.8	90.00	-1,268.4	-9,583.3	330.1	-115.0	445.03	0.742	Level 1	
14,900.0	6,790.0	14,828.0	6,790.0	226.6	226.3	90.00	-1,268.2	-9,683.3	330.1	-119.9	449.96	0.734	Level 1	
15,000.0	6,790.0	14,928.0	6,790.0	229.0	228.7	90.00	-1,267.9	-9,783.3	330.1	-124.8	454.89	0.726	Level 1	
15,100.0	6,790.0	15,028.0	6,790.0	231.5	231.2	90.00	-1,267.7	-9,883.3	330.1	-129.8	459.82	0.718	Level 1	
15,200.0	6,790.0	15,128.0	6,790.0	233.9	233.6	90.00	-1,267.4	-9,983.3	330.1	-134.7	464.75	0.710	Level 1	
15,300.0	6,790.0	15,228.0	6,790.0	236.4	236.1	90.00	-1,267.2	-10,083.3	330.1	-139.6	469.68	0.703	Level 1	
15,400.0	6,790.0	15,328.0	6,790.0	238.8	238.5	90.00	-1,266.9	-10,183.3	330.1	-144.6	474.62	0.695	Level 1	
15,500.0	6,790.0	15,428.0	6,790.0	241.3	241.0	90.00	-1,266.7	-10,283.3	330.1	-149.5	479.55	0.688	Level 1	

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

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 10 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis			
15,600.0	6,790.0	15,528.0	6,790.0	243.7	243.4	90.00	-1,266.4	-10,383.3	330.1	-154.4	484.48	0.681 Level 1		
15,700.0	6,790.0	15,628.0	6,790.0	246.2	245.9	90.00	-1,266.2	-10,483.3	330.1	-159.4	489.41	0.674 Level 1		
15,800.0	6,790.0	15,728.0	6,790.0	248.6	248.4	90.00	-1,265.9	-10,583.3	330.1	-164.3	494.34	0.668 Level 1		
15,900.0	6,790.0	15,828.0	6,790.0	251.1	250.8	90.00	-1,265.7	-10,683.3	330.1	-169.2	499.28	0.661 Level 1		
16,000.0	6,790.0	15,928.0	6,790.0	253.5	253.3	90.00	-1,265.4	-10,783.3	330.1	-174.2	504.21	0.655 Level 1		
16,100.0	6,790.0	16,028.0	6,790.0	256.0	255.7	90.00	-1,265.2	-10,883.3	330.1	-179.1	509.14	0.648 Level 1		
16,200.0	6,790.0	16,128.0	6,790.0	258.4	258.2	90.00	-1,264.9	-10,983.3	330.1	-184.0	514.08	0.642 Level 1		
16,300.0	6,790.0	16,228.0	6,790.0	260.9	260.6	90.00	-1,264.7	-11,083.3	330.1	-189.0	519.01	0.636 Level 1		
16,400.0	6,790.0	16,328.0	6,790.0	263.3	263.1	90.00	-1,264.4	-11,183.3	330.1	-193.9	523.95	0.630 Level 1		
16,500.0	6,790.0	16,428.0	6,790.0	265.8	265.6	90.00	-1,264.2	-11,283.3	330.1	-198.8	528.88	0.624 Level 1		
16,600.0	6,790.0	16,528.0	6,790.0	268.2	268.0	90.00	-1,263.9	-11,383.3	330.1	-203.8	533.82	0.618 Level 1		
16,700.0	6,790.0	16,628.0	6,790.0	270.7	270.5	90.00	-1,263.7	-11,483.3	330.1	-208.7	538.75	0.613 Level 1		
16,800.0	6,790.0	16,728.0	6,790.0	273.1	272.9	90.00	-1,263.4	-11,583.3	330.1	-213.6	543.69	0.607 Level 1		
16,900.0	6,790.0	16,828.0	6,790.0	275.6	275.4	90.00	-1,263.2	-11,683.3	330.1	-218.6	548.62	0.602 Level 1		
16,900.9	6,790.0	16,828.9	6,790.0	275.6	275.4	90.00	-1,263.2	-11,684.2	330.1	-218.6	548.67	0.602 Level 1, ES, SF		

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 2 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: O-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.0	0.0	0.0	0.0	0.0	0.0	30.96	216.0	129.6	251.9					
100.0	100.0	100.0	100.0	0.1	0.1	30.96	216.0	129.6	251.9	0.27	949.637			
200.0	200.0	200.0	200.0	0.3	0.3	30.96	216.0	129.6	251.9	0.61	410.071 CC, ES			
300.0	300.0	301.8	301.8	0.5	0.5	159.60	216.1	128.7	252.4	0.97	260.872			
400.0	400.0	403.6	403.5	0.7	0.7	159.24	216.5	126.0	253.8	1.32	191.543			
500.0	499.9	505.3	505.1	0.9	0.9	158.66	217.1	121.5	256.1	1.69	151.491			
600.0	599.7	606.9	606.6	1.1	1.1	157.86	217.8	115.3	259.4	2.07	125.396			
700.0	699.4	708.4	707.7	1.3	1.3	156.86	218.9	107.2	263.8	2.46	107.039			
800.0	798.9	809.8	808.6	1.5	1.5	155.68	220.1	97.4	269.1	2.88	93.416			
900.0	898.3	910.9	909.1	1.8	1.8	154.35	221.6	85.9	275.6	3.32	82.904			
1,000.0	997.4	1,011.9	1,009.2	2.0	2.1	152.90	223.2	72.6	283.3	3.80	74.548			
1,100.0	1,096.3	1,112.7	1,108.8	2.3	2.4	151.34	225.1	57.6	292.2	4.31	67.754			
1,200.0	1,194.9	1,213.2	1,207.9	2.7	2.7	149.72	227.2	41.0	302.3	4.87	62.140			
1,300.0	1,293.3	1,312.9	1,306.0	3.0	3.0	148.07	229.5	22.8	313.8	5.45	57.531			
1,400.0	1,391.2	1,411.8	1,403.1	3.4	3.4	146.65	231.9	4.6	326.8	6.06	53.912			
1,500.0	1,488.9	1,510.5	1,500.1	3.8	3.8	145.49	234.2	-13.7	341.5	6.69	51.045			
1,600.0	1,586.1	1,609.1	1,596.9	4.2	4.1	144.56	236.5	-31.9	357.7	7.34	48.762			
1,700.0	1,682.9	1,707.4	1,693.6	4.7	4.5	143.86	238.8	-50.1	375.3	7.99	46.943			
1,800.0	1,779.3	1,805.6	1,790.0	5.2	4.8	143.36	241.1	-68.3	394.3	8.67	45.495			
1,900.0	1,875.2	1,903.4	1,886.1	5.7	5.2	143.03	243.4	-86.4	414.8	9.35	44.351			
2,000.0	1,970.5	2,001.0	1,982.0	6.3	5.5	142.85	245.6	-104.4	436.6	10.05	43.458			
2,100.0	2,065.4	2,098.3	2,077.6	6.9	5.9	142.80	247.9	-122.4	459.7	10.75	42.776			
2,200.0	2,159.6	2,195.3	2,172.8	7.5	6.3	142.86	250.2	-140.3	484.2	11.45	42.275			
2,300.0	2,253.3	2,291.8	2,267.7	8.1	6.6	143.01	252.4	-158.2	510.1	12.17	41.929			
2,400.0	2,346.3	2,388.0	2,362.2	8.8	7.0	143.24	254.7	-176.0	537.3	12.88	41.717			
2,500.0	2,438.7	2,483.7	2,456.2	9.5	7.3	143.53	256.9	-193.7	565.9	13.59	41.625 SF			
2,600.0	2,530.4	2,579.0	2,549.8	10.2	7.7	143.87	259.2	-211.3	595.9	14.31	41.637			
2,700.0	2,621.4	2,673.7	2,642.9	11.0	8.0	144.25	261.4	-228.8	627.2	15.03	41.743			
2,800.0	2,711.7	2,768.0	2,735.5	11.8	8.4	144.66	263.6	-246.3	660.0	15.74	41.933			
2,900.0	2,801.4	2,861.9	2,827.8	12.6	8.7	145.24	265.8	-263.6	693.7	16.45	42.168			
3,000.0	2,891.2	2,955.8	2,920.0	13.5	9.1	145.79	268.0	-281.0	727.5	17.16	42.391			
3,100.0	2,980.9	3,049.7	3,012.3	14.3	9.4	146.30	270.2	-298.4	761.3	17.87	42.607			
3,200.0	3,070.7	3,143.6	3,104.5	15.1	9.8	146.76	272.4	-315.7	795.2	18.57	42.814			
3,300.0	3,160.5	3,237.5	3,196.8	15.9	10.1	147.19	274.6	-333.1	829.2	19.28	43.014			
3,400.0	3,250.2	3,331.4	3,289.0	16.7	10.5	147.58	276.8	-350.5	863.2	19.98	43.206			
3,500.0	3,340.0	3,425.2	3,381.3	17.5	10.8	147.94	279.0	-367.8	897.2	20.68	43.390			
3,600.0	3,429.7	3,519.1	3,473.5	18.4	11.2	148.28	281.2	-385.2	931.2	21.37	43.566			
3,700.0	3,519.5	3,613.0	3,565.8	19.2	11.5	148.59	283.4	-402.5	965.3	22.07	43.736			
3,800.0	3,609.2	3,706.9	3,658.0	20.0	11.9	148.88	285.5	-419.9	999.4	22.77	43.899			
3,900.0	3,699.0	3,800.8	3,750.2	20.8	12.2	149.15	287.7	-437.3	1,033.5	23.46	44.056			
4,000.0	3,788.7	3,894.7	3,842.5	21.7	12.6	149.41	289.9	-454.6	1,067.6	24.15	44.206			
4,100.0	3,878.5	3,988.6	3,934.7	22.5	12.9	149.65	292.1	-472.0	1,101.8	24.84	44.351			
4,200.0	3,968.2	4,082.5	4,027.0	23.3	13.3	149.87	294.3	-489.4	1,135.9	25.53	44.490			
4,300.0	4,058.0	4,176.4	4,119.2	24.1	13.6	150.08	296.5	-506.7	1,170.1	26.22	44.623			
4,400.0	4,147.7	4,270.3	4,211.5	25.0	14.0	150.28	298.7	-524.1	1,204.3	26.91	44.752			

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 3 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.0	0.0	0.0	0.0	0.0	0.0	30.95	192.0	115.1	223.9					
100.0	100.0	100.0	100.0	0.1	0.1	30.95	192.0	115.1	223.9	0.27	843.872			
200.0	200.0	200.0	200.0	0.3	0.3	30.95	192.0	115.1	223.9	0.61	364.399 CC, ES			
300.0	300.0	302.0	302.0	0.5	0.5	159.59	192.0	114.2	224.2	0.97	231.690			
400.0	400.0	404.1	404.0	0.7	0.7	159.22	192.0	111.5	225.3	1.33	170.036			
500.0	499.9	506.0	505.9	0.9	0.9	158.63	192.0	107.0	227.2	1.69	134.411			
600.0	599.7	607.9	607.6	1.1	1.1	157.81	192.0	100.6	229.8	2.07	111.187			
700.0	699.4	709.8	709.1	1.3	1.3	156.78	192.1	92.5	233.2	2.46	94.830			
800.0	798.9	811.5	810.3	1.5	1.5	155.57	192.1	82.5	237.5	2.87	82.667			
900.0	898.3	913.1	911.2	1.8	1.8	154.20	192.1	70.8	242.7	3.31	73.254			
1,000.0	997.4	1,014.5	1,011.7	2.0	2.1	152.69	192.1	57.4	248.9	3.79	65.744			
1,100.0	1,096.3	1,115.7	1,111.9	2.3	2.4	151.06	192.2	42.1	256.0	4.29	59.614			
1,200.0	1,194.9	1,216.3	1,211.0	2.7	2.7	149.38	192.2	25.3	264.2	4.84	54.597			
1,300.0	1,293.3	1,315.6	1,308.9	3.0	3.0	147.91	192.3	8.3	274.0	5.40	50.703			
1,400.0	1,391.2	1,414.8	1,406.6	3.4	3.4	146.72	192.3	-8.7	285.4	5.99	47.664			
1,500.0	1,488.9	1,513.9	1,504.2	3.8	3.7	145.79	192.4	-25.7	298.2	6.59	45.284			
1,600.0	1,586.1	1,612.8	1,601.6	4.2	4.0	145.11	192.4	-42.7	312.6	7.20	43.422			
1,700.0	1,682.9	1,711.5	1,698.9	4.7	4.4	144.65	192.5	-59.6	328.4	7.82	41.973			
1,800.0	1,779.3	1,810.0	1,795.9	5.2	4.7	144.39	192.5	-76.5	345.7	8.46	40.861			
1,900.0	1,875.2	1,908.3	1,892.7	5.7	5.0	144.30	192.6	-93.3	364.3	9.10	40.026			
2,000.0	1,970.5	2,006.3	1,989.3	6.3	5.4	144.35	192.6	-110.1	384.3	9.75	39.424			
2,100.0	2,065.4	2,103.9	2,085.5	6.9	5.7	144.52	192.7	-126.9	405.7	10.40	39.018			
2,200.0	2,159.6	2,201.2	2,181.3	7.5	6.1	144.79	192.7	-143.5	428.5	11.05	38.783			
2,300.0	2,253.3	2,298.2	2,276.9	8.1	6.4	145.14	192.8	-160.2	452.7	11.70	38.695 SF			
2,400.0	2,346.3	2,394.7	2,372.0	8.8	6.7	145.56	192.8	-176.7	478.4	12.35	38.737			
2,500.0	2,438.7	2,490.9	2,466.7	9.5	7.1	146.02	192.8	-193.2	505.4	13.00	38.894			
2,600.0	2,530.4	2,586.5	2,560.9	10.2	7.4	146.53	192.9	-209.6	534.0	13.64	39.153			
2,700.0	2,621.4	2,681.7	2,654.7	11.0	7.7	147.05	192.9	-225.9	564.0	14.28	39.503			
2,800.0	2,711.7	2,776.4	2,748.0	11.8	8.1	147.60	193.0	-242.1	595.4	14.91	39.937			
2,900.0	2,801.4	2,870.7	2,840.9	12.6	8.4	148.27	193.0	-258.3	627.9	15.54	40.411			
3,000.0	2,891.2	2,965.0	2,933.8	13.5	8.7	148.91	193.1	-274.5	660.5	16.16	40.860			
3,100.0	2,980.9	3,059.3	3,026.7	14.3	9.0	149.49	193.1	-290.7	693.1	16.79	41.287			
3,200.0	3,070.7	3,153.6	3,119.6	15.1	9.4	150.02	193.2	-306.8	725.8	17.41	41.692			
3,300.0	3,160.5	3,247.9	3,212.5	15.9	9.7	150.50	193.2	-323.0	758.5	18.03	42.078			
3,400.0	3,250.2	3,342.2	3,305.4	16.7	10.0	150.95	193.2	-339.2	791.3	18.64	42.445			
3,500.0	3,340.0	3,436.5	3,398.3	17.5	10.4	151.35	193.3	-355.3	824.1	19.26	42.795			
3,600.0	3,429.7	3,530.8	3,491.2	18.4	10.7	151.73	193.3	-371.5	857.0	19.87	43.129			
3,700.0	3,519.5	3,625.1	3,584.2	19.2	11.0	152.08	193.4	-387.7	889.8	20.48	43.446			
3,800.0	3,609.2	3,719.4	3,677.1	20.0	11.3	152.40	193.4	-403.8	922.7	21.09	43.750			
3,900.0	3,699.0	3,813.7	3,770.0	20.8	11.7	152.70	193.5	-420.0	955.7	21.70	44.040			
4,000.0	3,788.7	3,908.0	3,862.9	21.7	12.0	152.99	193.5	-436.2	988.6	22.31	44.317			
4,100.0	3,878.5	4,002.4	3,955.8	22.5	12.3	153.25	193.6	-452.3	1,021.6	22.92	44.582			
4,200.0	3,968.2	4,096.7	4,048.7	23.3	12.7	153.50	193.6	-468.5	1,054.6	23.52	44.836			
4,300.0	4,058.0	4,191.0	4,141.6	24.1	13.0	153.73	193.6	-484.7	1,087.6	24.13	45.079			
4,400.0	4,147.7	4,285.3	4,234.5	25.0	13.3	153.95	193.7	-500.8	1,120.6	24.73	45.312			
4,500.0	4,237.5	4,379.6	4,327.4	25.8	13.6	154.15	193.7	-517.0	1,153.7	25.34	45.536			
4,600.0	4,327.2	4,473.9	4,420.3	26.6	14.0	154.35	193.8	-533.2	1,186.7	25.94	45.751			

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 4 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: O-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	30.96	168.3	101.0	196.3					
100.0	100.0	99.0	99.0	0.1	0.1	30.96	168.3	101.0	196.3	196.0	0.26	743.553		
200.0	200.0	199.0	199.0	0.3	0.3	30.96	168.3	101.0	196.3	195.7	0.61	320.385 CC		
300.0	300.0	301.1	301.1	0.5	0.5	159.60	168.2	100.1	196.6	195.6	0.97	203.451 ES		
400.0	400.0	403.3	403.2	0.7	0.7	159.24	167.9	97.4	197.4	196.1	1.32	149.190		
500.0	499.9	505.4	505.2	0.9	0.9	158.66	167.3	92.9	198.8	197.1	1.69	117.852		
600.0	599.7	607.5	607.1	1.1	1.1	157.85	166.5	86.6	200.7	198.7	2.06	97.419		
700.0	699.4	709.5	708.8	1.3	1.3	156.84	165.5	78.5	203.3	200.8	2.45	83.016		
800.0	798.9	811.4	810.2	1.5	1.5	155.63	164.3	68.6	206.5	203.7	2.86	72.289		
900.0	898.3	913.2	911.4	1.8	1.8	154.26	162.8	57.0	210.4	207.1	3.29	63.965		
1,000.0	997.4	1,015.0	1,012.2	2.0	2.1	152.73	161.1	43.5	215.1	211.3	3.75	57.298		
1,100.0	1,096.3	1,116.6	1,112.7	2.3	2.4	151.09	159.3	28.4	220.5	216.3	4.25	51.826		
1,200.0	1,194.9	1,218.1	1,212.8	2.7	2.7	149.34	157.1	11.4	226.8	222.0	4.80	47.269		
1,300.0	1,293.3	1,318.1	1,311.1	3.0	3.1	147.66	154.9	-6.5	234.2	228.8	5.37	43.595		
1,400.0	1,391.2	1,417.5	1,408.9	3.4	3.4	146.29	152.7	-24.3	243.1	237.2	5.96	40.761		
1,500.0	1,488.9	1,516.9	1,506.6	3.8	3.8	145.23	150.4	-42.2	253.6	247.1	6.58	38.567		
1,600.0	1,586.1	1,616.1	1,604.2	4.2	4.1	144.47	148.2	-60.0	265.6	258.4	7.20	36.876		
1,700.0	1,682.9	1,715.2	1,701.6	4.7	4.5	143.96	146.0	-77.8	279.1	271.2	7.84	35.588		
1,800.0	1,779.3	1,814.1	1,798.9	5.2	4.8	143.69	143.8	-95.5	293.9	285.4	8.49	34.625		
1,900.0	1,875.2	1,912.7	1,895.9	5.7	5.2	143.62	141.6	-113.2	310.1	301.0	9.14	33.931		
2,000.0	1,970.5	2,011.2	1,992.7	6.3	5.5	143.73	139.4	-130.9	327.8	318.0	9.79	33.462		
2,100.0	2,065.4	2,109.3	2,089.3	6.9	5.9	143.98	137.2	-148.5	346.8	336.3	10.45	33.185		
2,200.0	2,159.6	2,207.2	2,185.5	7.5	6.2	144.34	135.0	-166.1	367.2	356.1	11.10	33.072 SF		
2,300.0	2,253.3	2,304.7	2,281.4	8.1	6.6	144.80	132.8	-183.6	389.0	377.2	11.75	33.102		
2,400.0	2,346.3	2,401.8	2,377.0	8.8	6.9	145.32	130.6	-201.0	412.3	399.9	12.40	33.259		
2,500.0	2,438.7	2,498.6	2,472.1	9.5	7.3	145.91	128.4	-218.4	437.0	423.9	13.03	33.528		
2,600.0	2,530.4	2,594.9	2,566.9	10.2	7.6	146.52	126.3	-235.7	463.1	449.5	13.66	33.898		
2,700.0	2,621.4	2,690.8	2,661.2	11.0	8.0	147.17	124.1	-252.9	490.8	476.5	14.29	34.358		
2,800.0	2,711.7	2,786.2	2,755.0	11.8	8.3	147.83	122.0	-270.0	520.0	505.1	14.90	34.900		
2,900.0	2,801.4	2,881.3	2,848.5	12.6	8.7	148.60	119.9	-287.1	550.2	534.6	15.50	35.484		
3,000.0	2,891.2	2,976.3	2,942.0	13.5	9.0	149.32	117.7	-304.2	580.4	564.3	16.11	36.037		
3,100.0	2,980.9	3,071.4	3,035.5	14.3	9.3	149.97	115.6	-321.2	610.8	594.1	16.71	36.560		
3,200.0	3,070.7	3,166.5	3,129.0	15.1	9.7	150.55	113.5	-338.3	641.2	623.9	17.30	37.056		
3,300.0	3,160.5	3,261.5	3,222.5	15.9	10.0	151.08	111.4	-355.4	671.7	653.8	17.90	37.527		
3,400.0	3,250.2	3,356.6	3,316.0	16.7	10.4	151.57	109.2	-372.4	702.2	683.7	18.49	37.973		
3,500.0	3,340.0	3,451.7	3,409.4	17.5	10.7	152.02	107.1	-389.5	732.8	713.7	19.09	38.397		
3,600.0	3,429.7	3,546.7	3,502.9	18.4	11.1	152.43	105.0	-406.6	763.4	743.7	19.68	38.800		
3,700.0	3,519.5	3,641.8	3,596.4	19.2	11.4	152.81	102.8	-423.6	794.1	773.8	20.27	39.183		
3,800.0	3,609.2	3,736.8	3,689.9	20.0	11.8	153.16	100.7	-440.7	824.7	803.9	20.85	39.548		
3,900.0	3,699.0	3,831.9	3,783.4	20.8	12.1	153.49	98.6	-457.8	855.4	834.0	21.44	39.896		
4,000.0	3,788.7	3,927.0	3,876.9	21.7	12.5	153.79	96.4	-474.8	886.1	864.1	22.03	40.229		
4,100.0	3,878.5	4,022.0	3,970.4	22.5	12.8	154.07	94.3	-491.9	916.9	894.3	22.61	40.546		
4,200.0	3,968.2	4,117.1	4,063.9	23.3	13.1	154.34	92.2	-509.0	947.6	924.5	23.20	40.849		
4,300.0	4,058.0	4,212.2	4,157.4	24.1	13.5	154.58	90.0	-526.0	978.4	954.6	23.78	41.139		
4,400.0	4,147.7	4,307.2	4,250.9	25.0	13.8	154.82	87.9	-543.1	1,009.2	984.9	24.37	41.417		
4,500.0	4,237.5	4,402.3	4,344.4	25.8	14.2	155.04	85.8	-560.2	1,040.0	1,015.1	24.95	41.683		
4,600.0	4,327.2	4,497.3	4,437.9	26.6	14.5	155.24	83.7	-577.2	1,070.8	1,045.3	25.53	41.939		
4,700.0	4,417.0	4,592.4	4,531.4	27.5	14.9	155.44	81.5	-594.3	1,101.7	1,075.6	26.12	42.184		
4,800.0	4,506.7	4,687.5	4,624.9	28.3	15.2	155.62	79.4	-611.4	1,132.5	1,105.8	26.70	42.419		
4,900.0	4,596.5	4,782.5	4,718.4	29.1	15.6	155.80	77.3	-628.4	1,163.4	1,136.1	27.28	42.646		
5,000.0	4,686.2	4,877.6	4,811.9	29.9	15.9	155.96	75.1	-645.5	1,194.2	1,166.4	27.86	42.863		

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

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 5 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.0	0.0	0.0	0.0	0.0	0.0	30.86	144.3	86.2	168.1					
100.0	100.0	100.0	100.0	0.1	0.1	30.86	144.3	86.2	168.1	167.8	0.27	633.518		
200.0	200.0	200.0	200.0	0.3	0.3	30.86	144.3	86.2	168.1	167.5	0.61	273.565 CC		
300.0	300.0	302.4	302.4	0.5	0.5	159.54	143.9	85.4	168.2	167.2	0.97	173.718		
400.0	400.0	404.8	404.7	0.7	0.7	159.29	142.9	82.8	168.5	167.2	1.32	127.258 ES		
500.0	499.9	507.2	507.0	0.9	0.9	158.89	141.2	78.6	169.0	167.3	1.68	100.352		
600.0	599.7	609.5	609.2	1.1	1.1	158.32	138.8	72.7	169.8	167.7	2.05	82.759		
700.0	699.4	711.9	711.2	1.3	1.3	157.61	135.7	65.1	170.8	168.3	2.43	70.317		
800.0	798.9	814.2	813.0	1.5	1.5	156.74	131.9	55.8	172.0	169.2	2.82	61.015		
900.0	898.3	916.5	914.7	1.8	1.8	155.73	127.4	44.8	173.6	170.3	3.23	53.763		
1,000.0	997.4	1,018.8	1,016.0	2.0	2.1	154.60	122.3	32.1	175.4	171.7	3.66	47.917		
1,100.0	1,096.3	1,121.0	1,117.1	2.3	2.4	153.34	116.4	17.8	177.5	173.4	4.12	43.080		
1,200.0	1,194.9	1,223.2	1,217.8	2.7	2.7	151.97	109.9	1.8	180.0	175.4	4.62	38.989		
1,300.0	1,293.3	1,324.9	1,317.7	3.0	3.1	150.51	102.8	-15.7	182.9	177.8	5.15	35.508		
1,400.0	1,391.2	1,424.7	1,415.7	3.4	3.5	149.27	95.6	-33.4	187.0	181.3	5.71	32.784		
1,500.0	1,488.9	1,524.5	1,513.6	3.8	3.8	148.34	88.4	-51.1	192.7	186.4	6.28	30.709		
1,600.0	1,586.1	1,624.2	1,611.5	4.2	4.2	147.73	81.2	-68.8	199.9	193.0	6.86	29.152		
1,700.0	1,682.9	1,723.9	1,709.3	4.7	4.6	147.41	74.0	-86.5	208.6	201.1	7.44	28.016		
1,800.0	1,779.3	1,823.3	1,806.9	5.2	4.9	147.35	66.8	-104.2	218.7	210.7	8.03	27.225		
1,900.0	1,875.2	1,922.7	1,904.4	5.7	5.3	147.51	59.6	-121.8	230.3	221.7	8.62	26.721		
2,000.0	1,970.5	2,021.8	2,001.7	6.3	5.7	147.87	52.4	-139.4	243.4	234.2	9.20	26.461		
2,100.0	2,065.4	2,120.7	2,098.7	6.9	6.0	148.39	45.3	-157.0	257.9	248.2	9.77	26.411 SF		
2,200.0	2,159.6	2,219.3	2,195.5	7.5	6.4	149.02	38.2	-174.5	274.0	263.7	10.32	26.542		
2,300.0	2,253.3	2,317.7	2,292.1	8.1	6.8	149.75	31.1	-192.0	291.6	280.7	10.87	26.833		
2,400.0	2,346.3	2,415.7	2,388.3	8.8	7.2	150.53	24.0	-209.4	310.7	299.3	11.39	27.266		
2,500.0	2,438.7	2,513.4	2,484.2	9.5	7.5	151.36	16.9	-226.7	331.4	319.5	11.91	27.827		
2,600.0	2,530.4	2,610.8	2,579.7	10.2	7.9	152.21	9.9	-244.0	353.7	341.2	12.41	28.502		
2,700.0	2,621.4	2,707.7	2,674.8	11.0	8.3	153.06	2.9	-261.2	377.5	364.6	12.89	29.281		
2,800.0	2,711.7	2,804.2	2,769.6	11.8	8.6	153.90	-4.1	-278.3	403.0	389.6	13.36	30.154		
2,900.0	2,801.4	2,900.4	2,864.0	12.6	9.0	154.79	-11.0	-295.4	429.6	415.7	13.83	31.067		
3,000.0	2,891.2	2,996.6	2,958.4	13.5	9.4	155.60	-18.0	-312.5	456.2	441.9	14.29	31.927		
3,100.0	2,980.9	3,092.8	3,052.8	14.3	9.7	156.32	-24.9	-329.6	483.0	468.2	14.75	32.741		
3,200.0	3,070.7	3,188.9	3,147.2	15.1	10.1	156.97	-31.9	-346.6	509.8	494.6	15.21	33.510		
3,300.0	3,160.5	3,285.1	3,241.6	15.9	10.4	157.55	-38.8	-363.7	536.7	521.0	15.67	34.238		
3,400.0	3,250.2	3,381.3	3,336.0	16.7	10.8	158.07	-45.8	-380.8	563.6	547.5	16.14	34.927		
3,500.0	3,340.0	3,477.5	3,430.4	17.5	11.2	158.55	-52.7	-397.9	590.5	573.9	16.60	35.581		
3,600.0	3,429.7	3,573.7	3,524.8	18.4	11.5	158.98	-59.7	-415.0	617.5	600.5	17.06	36.202		
3,700.0	3,519.5	3,669.9	3,619.2	19.2	11.9	159.38	-66.6	-432.0	644.6	627.0	17.52	36.792		
3,800.0	3,609.2	3,766.1	3,713.6	20.0	12.3	159.75	-73.6	-449.1	671.6	653.6	17.98	37.354		
3,900.0	3,699.0	3,862.2	3,808.0	20.8	12.6	160.09	-80.5	-466.2	698.7	680.2	18.44	37.889		
4,000.0	3,788.7	3,958.4	3,902.4	21.7	13.0	160.40	-87.5	-483.3	725.8	706.9	18.90	38.399		
4,100.0	3,878.5	4,054.6	3,996.8	22.5	13.4	160.69	-94.4	-500.3	752.9	733.5	19.36	38.886		
4,200.0	3,968.2	4,150.8	4,091.2	23.3	13.7	160.96	-101.4	-517.4	780.0	760.2	19.82	39.352		
4,300.0	4,058.0	4,247.0	4,185.6	24.1	14.1	161.22	-108.3	-534.5	807.1	786.9	20.28	39.796		
4,400.0	4,147.7	4,343.2	4,280.0	25.0	14.5	161.45	-115.3	-551.6	834.3	813.6	20.74	40.222		
4,500.0	4,237.5	4,439.4	4,374.4	25.8	14.8	161.67	-122.2	-568.6	861.5	840.3	21.20	40.630		
4,600.0	4,327.2	4,535.6	4,468.8	26.6	15.2	161.88	-129.2	-585.7	888.6	867.0	21.66	41.021		
4,700.0	4,417.0	4,631.7	4,563.2	27.5	15.6	162.08	-136.1	-602.8	915.8	893.7	22.12	41.396		
4,800.0	4,506.7	4,727.9	4,657.6	28.3	15.9	162.26	-143.0	-619.9	943.0	920.5	22.58	41.757		
4,900.0	4,596.5	4,824.1	4,752.0	29.1	16.3	162.43	-150.0	-637.0	970.2	947.2	23.04	42.103		
5,000.0	4,686.2	4,920.3	4,846.4	29.9	16.7	162.60	-156.9	-654.0	997.5	974.0	23.50	42.436		
5,100.0	4,776.0	5,016.5	4,940.8	30.8	17.0	162.75	-163.9	-671.1	1,024.7	1,000.7	23.97	42.757		

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

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 5 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	4,865.7	5,112.7	5,035.2	31.6	17.4	162.90	-170.8	-688.2	1,051.9	1,027.5	24.43	43.066		
5,300.0	4,955.5	5,208.9	5,129.6	32.4	17.8	163.04	-177.8	-705.3	1,079.1	1,054.3	24.89	43.363		
5,400.0	5,045.2	5,305.1	5,224.1	33.3	18.1	163.18	-184.7	-722.3	1,106.4	1,081.0	25.35	43.650		
5,500.0	5,135.0	5,401.2	5,318.5	34.1	18.5	163.30	-191.7	-739.4	1,133.6	1,107.8	25.81	43.927		
5,600.0	5,224.7	5,497.4	5,412.9	34.9	18.9	163.42	-198.6	-756.5	1,160.9	1,134.6	26.27	44.194		
5,700.0	5,314.5	5,593.6	5,507.3	35.8	19.2	163.54	-205.6	-773.6	1,188.1	1,161.4	26.73	44.453		
5,800.0	5,404.2	5,689.8	5,601.7	36.6	19.6	163.65	-212.5	-790.6	1,215.4	1,188.2	27.19	44.702		

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 6 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: O-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	30.93	120.2	72.0	140.2					
100.0	100.0	100.0	100.0	0.1	0.1	30.93	120.2	72.0	140.2	139.9	0.27	528.291		
200.0	200.0	200.0	200.0	0.3	0.3	30.93	120.2	72.0	140.2	139.5	0.61	228.126 CC		
300.0	300.0	302.2	302.1	0.5	0.5	159.62	119.8	71.2	140.2	139.2	0.97	144.906		
400.0	400.0	404.3	404.3	0.7	0.7	159.44	118.5	68.8	140.4	139.0	1.32	106.136		
500.0	499.9	506.5	506.3	0.9	0.9	159.13	116.3	64.8	140.6	138.9	1.68	83.665		
600.0	599.7	608.6	608.3	1.1	1.1	158.70	113.2	59.3	141.0	138.9	2.04	68.964 ES		
700.0	699.4	710.7	710.1	1.3	1.3	158.15	109.3	52.1	141.4	139.0	2.42	58.564		
800.0	798.9	812.9	811.7	1.5	1.5	157.48	104.5	43.3	142.0	139.2	2.80	50.788		
900.0	898.3	915.0	913.1	1.8	1.8	156.70	98.9	32.9	142.8	139.6	3.19	44.725		
1,000.0	997.4	1,017.1	1,014.3	2.0	2.1	155.81	92.3	21.0	143.6	140.0	3.61	39.839		
1,100.0	1,096.3	1,119.1	1,115.2	2.3	2.4	154.82	84.9	7.5	144.7	140.6	4.04	35.795		
1,200.0	1,194.9	1,221.2	1,215.8	2.7	2.7	153.72	76.7	-7.6	145.9	141.4	4.51	32.376		
1,300.0	1,293.3	1,322.4	1,315.3	3.0	3.1	152.58	67.7	-24.0	147.3	142.4	5.00	29.487		
1,400.0	1,391.2	1,422.4	1,413.4	3.4	3.4	151.70	58.7	-40.5	150.2	144.7	5.50	27.291		
1,500.0	1,488.9	1,522.3	1,511.5	3.8	3.8	151.16	49.7	-57.0	154.5	148.5	6.02	25.684		
1,600.0	1,586.1	1,622.1	1,609.6	4.2	4.2	150.95	40.7	-73.5	160.4	153.9	6.53	24.552		
1,700.0	1,682.9	1,721.8	1,707.5	4.7	4.5	151.03	31.7	-89.9	167.8	160.8	7.05	23.811		
1,800.0	1,779.3	1,821.4	1,805.3	5.2	4.9	151.37	22.7	-106.4	176.8	169.2	7.56	23.395		
1,900.0	1,875.2	1,920.8	1,903.0	5.7	5.3	151.93	13.7	-122.8	187.3	179.2	8.05	23.255		
2,000.0	1,970.5	2,020.1	2,000.5	6.3	5.6	152.64	4.8	-139.2	199.3	190.8	8.54	23.352		
2,100.0	2,065.4	2,119.1	2,097.7	6.9	6.0	153.47	-4.2	-155.5	213.0	204.0	9.00	23.656		
2,200.0	2,159.6	2,217.8	2,194.7	7.5	6.3	154.38	-13.1	-171.8	228.2	218.7	9.45	24.140		
2,300.0	2,253.3	2,316.3	2,291.4	8.1	6.7	155.34	-22.0	-188.1	245.0	235.2	9.89	24.785		
2,400.0	2,346.3	2,414.5	2,387.8	8.8	7.1	156.32	-30.8	-204.3	263.5	253.2	10.30	25.573		
2,500.0	2,438.7	2,512.3	2,483.9	9.5	7.4	157.29	-39.6	-220.4	283.7	273.0	10.71	26.491		
2,600.0	2,530.4	2,609.8	2,579.6	10.2	7.8	158.24	-48.4	-236.5	305.5	294.4	11.10	27.524		
2,700.0	2,621.4	2,706.8	2,675.0	11.0	8.2	159.16	-57.2	-252.5	329.0	317.5	11.48	28.663		
2,800.0	2,711.7	2,803.4	2,769.8	11.8	8.5	160.05	-65.9	-268.5	354.1	342.3	11.84	29.898		
2,900.0	2,801.4	2,899.8	2,864.5	12.6	8.9	160.94	-74.6	-284.4	380.4	368.2	12.21	31.147		
3,000.0	2,891.2	2,996.1	2,959.0	13.5	9.2	161.72	-83.3	-300.3	406.8	394.2	12.59	32.320		
3,100.0	2,980.9	3,092.4	3,053.6	14.3	9.6	162.41	-92.0	-316.2	433.2	420.3	12.96	33.426		
3,200.0	3,070.7	3,188.7	3,148.2	15.1	10.0	163.03	-100.7	-332.1	459.7	446.4	13.34	34.468		
3,300.0	3,160.5	3,285.0	3,242.8	15.9	10.3	163.57	-109.3	-348.0	486.3	472.5	13.72	35.452		
3,400.0	3,250.2	3,381.3	3,337.4	16.7	10.7	164.06	-118.0	-363.9	512.8	498.7	14.10	36.383		
3,500.0	3,340.0	3,477.7	3,432.0	17.5	11.0	164.50	-126.7	-379.8	539.4	525.0	14.48	37.264		
3,600.0	3,429.7	3,574.0	3,526.6	18.4	11.4	164.90	-135.4	-395.7	566.1	551.2	14.86	38.099		
3,700.0	3,519.5	3,670.3	3,621.2	19.2	11.8	165.27	-144.1	-411.6	592.7	577.5	15.24	38.892		
3,800.0	3,609.2	3,766.6	3,715.8	20.0	12.1	165.60	-152.8	-427.5	619.4	603.8	15.62	39.645		
3,900.0	3,699.0	3,862.9	3,810.4	20.8	12.5	165.91	-161.5	-443.4	646.1	630.1	16.01	40.362		
4,000.0	3,788.7	3,959.2	3,905.0	21.7	12.8	166.19	-170.2	-459.3	672.8	656.4	16.39	41.045		
4,100.0	3,878.5	4,055.5	3,999.6	22.5	13.2	166.45	-178.9	-475.2	699.5	682.8	16.78	41.695		
4,200.0	3,968.2	4,151.9	4,094.2	23.3	13.6	166.69	-187.6	-491.1	726.3	709.1	17.16	42.316		
4,300.0	4,058.0	4,248.2	4,188.8	24.1	13.9	166.91	-196.2	-507.0	753.0	735.5	17.55	42.910		
4,400.0	4,147.7	4,344.5	4,283.4	25.0	14.3	167.12	-204.9	-522.9	779.8	761.8	17.94	43.477		
4,500.0	4,237.5	4,440.8	4,378.0	25.8	14.7	167.31	-213.6	-538.8	806.5	788.2	18.32	44.021		
4,600.0	4,327.2	4,537.1	4,472.6	26.6	15.0	167.49	-222.3	-554.7	833.3	814.6	18.71	44.541		
4,700.0	4,417.0	4,633.4	4,567.2	27.5	15.4	167.66	-231.0	-570.6	860.1	841.0	19.10	45.040		
4,800.0	4,506.7	4,729.8	4,661.8	28.3	15.7	167.82	-239.7	-586.5	886.9	867.4	19.48	45.519		
4,900.0	4,596.5	4,826.1	4,756.4	29.1	16.1	167.98	-248.4	-602.4	913.7	893.8	19.87	45.979		
5,000.0	4,686.2	4,922.4	4,851.0	29.9	16.5	168.12	-257.1	-618.3	940.5	920.2	20.26	46.421		
5,100.0	4,776.0	5,018.7	4,945.6	30.8	16.8	168.25	-265.8	-634.2	967.3	946.6	20.65	46.847		

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

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 6 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: O-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	4,865.7	5,115.0	5,040.2	31.6	17.2	168.38	-274.5	-650.1	994.1	973.1	21.04	47.256		
5,300.0	4,955.5	5,211.3	5,134.8	32.4	17.5	168.50	-283.1	-666.0	1,020.9	999.5	21.42	47.651		
5,400.0	5,045.2	5,307.7	5,229.4	33.3	17.9	168.61	-291.8	-681.9	1,047.7	1,025.9	21.81	48.031		
5,500.0	5,135.0	5,404.0	5,324.0	34.1	18.3	168.72	-300.5	-697.8	1,074.5	1,052.3	22.20	48.398		
5,600.0	5,224.7	5,500.3	5,418.6	34.9	18.6	168.83	-309.2	-713.7	1,101.4	1,078.8	22.59	48.752		
5,700.0	5,314.5	5,596.6	5,513.2	35.8	19.0	168.92	-317.9	-729.6	1,128.2	1,105.2	22.98	49.094		
5,800.0	5,404.2	5,692.9	5,607.8	36.6	19.3	169.02	-326.6	-745.5	1,155.0	1,131.7	23.37	49.424		
5,900.0	5,494.0	5,789.2	5,702.4	37.4	19.7	169.11	-335.3	-761.4	1,181.9	1,158.1	23.76	49.744		
6,000.0	5,583.7	5,885.6	5,797.0	38.2	20.1	169.19	-344.0	-777.3	1,208.7	1,184.6	24.15	50.053		
7,200.0	6,627.9	8,069.6	7,115.0	49.3	45.7	117.70	-462.5	-2,024.3	1,207.5	1,130.3	77.18	15.645		
7,300.0	6,687.1	8,148.0	7,115.0	50.9	47.4	113.46	-462.3	-2,102.7	1,201.9	1,119.9	82.03	14.652		
7,400.0	6,733.8	8,235.1	7,115.0	52.6	49.4	110.03	-462.1	-2,189.8	1,199.7	1,112.5	87.20	13.758		
7,479.8	6,761.4	8,309.4	7,115.0	54.1	51.1	107.94	-461.9	-2,264.2	1,199.4	1,108.1	91.30	13.136		
7,500.0	6,767.0	8,328.8	7,115.0	54.4	51.6	107.51	-461.8	-2,283.5	1,199.4	1,107.1	92.30	12.994		
7,600.0	6,785.7	8,426.7	7,115.0	56.3	53.8	106.06	-461.6	-2,381.5	1,199.6	1,102.5	97.09	12.356		
7,700.0	6,790.0	8,526.5	7,115.0	58.2	56.1	105.72	-461.4	-2,481.3	1,199.7	1,098.2	101.53	11.816		
7,800.0	6,790.0	8,626.5	7,115.0	60.2	58.4	105.72	-461.1	-2,581.3	1,199.7	1,093.7	106.00	11.318		
7,900.0	6,790.0	8,726.5	7,115.0	62.2	60.8	105.72	-460.9	-2,681.3	1,199.7	1,089.2	110.50	10.857		
8,000.0	6,790.0	8,826.5	7,115.0	64.2	63.1	105.72	-460.6	-2,781.3	1,199.7	1,084.7	115.02	10.431		
8,100.0	6,790.0	8,926.5	7,115.0	66.2	65.5	105.72	-460.4	-2,881.3	1,199.7	1,080.2	119.56	10.035		
8,200.0	6,790.0	9,026.5	7,115.0	68.3	67.9	105.72	-460.1	-2,981.3	1,199.7	1,075.6	124.11	9.667		
8,300.0	6,790.0	9,126.5	7,115.0	70.4	70.2	105.72	-459.9	-3,081.3	1,199.7	1,071.1	128.68	9.323		
8,400.0	6,790.0	9,226.5	7,115.0	72.5	72.6	105.72	-459.6	-3,181.3	1,199.7	1,066.5	133.27	9.003		
8,500.0	6,790.0	9,326.5	7,115.0	74.7	75.0	105.72	-459.4	-3,281.3	1,199.7	1,061.9	137.86	8.702		
8,600.0	6,790.0	9,426.5	7,115.0	76.8	77.4	105.72	-459.1	-3,381.3	1,199.7	1,057.3	142.47	8.421		
8,700.0	6,790.0	9,526.5	7,115.0	79.0	79.8	105.72	-458.9	-3,481.3	1,199.7	1,052.6	147.09	8.157		
8,800.0	6,790.0	9,626.5	7,115.0	81.2	82.2	105.72	-458.6	-3,581.3	1,199.7	1,048.0	151.71	7.908		
8,900.0	6,790.0	9,726.5	7,115.0	83.4	84.6	105.72	-458.4	-3,681.3	1,199.7	1,043.4	156.35	7.673		
9,000.0	6,790.0	9,826.5	7,115.0	85.6	87.0	105.72	-458.1	-3,781.3	1,199.7	1,038.7	160.99	7.452		
9,100.0	6,790.0	9,926.5	7,115.0	87.9	89.4	105.72	-457.9	-3,881.3	1,199.7	1,034.1	165.64	7.243		
9,200.0	6,790.0	10,026.5	7,115.0	90.1	91.9	105.72	-457.6	-3,981.3	1,199.7	1,029.4	170.30	7.045		
9,300.0	6,790.0	10,126.5	7,115.0	92.4	94.3	105.72	-457.4	-4,081.3	1,199.7	1,024.8	174.96	6.857		
9,400.0	6,790.0	10,226.5	7,115.0	94.7	96.7	105.72	-457.1	-4,181.3	1,199.7	1,020.1	179.63	6.679		
9,500.0	6,790.0	10,326.5	7,115.0	97.0	99.1	105.72	-456.9	-4,281.3	1,199.7	1,015.4	184.30	6.510		
9,600.0	6,790.0	10,426.5	7,115.0	99.3	101.6	105.72	-456.6	-4,381.3	1,199.7	1,010.8	188.98	6.348		
9,700.0	6,790.0	10,526.5	7,115.0	101.6	104.0	105.72	-456.4	-4,481.3	1,199.7	1,006.1	193.66	6.195		
9,800.0	6,790.0	10,626.5	7,115.0	103.9	106.4	105.72	-456.1	-4,581.3	1,199.7	1,001.4	198.35	6.049		
9,900.0	6,790.0	10,726.5	7,115.0	106.2	108.9	105.72	-455.9	-4,681.3	1,199.7	996.7	203.04	5.909		
10,000.0	6,790.0	10,826.5	7,115.0	108.5	111.3	105.72	-455.6	-4,781.3	1,199.7	992.0	207.73	5.775		
10,100.0	6,790.0	10,926.5	7,115.0	110.9	113.7	105.72	-455.4	-4,881.3	1,199.7	987.3	212.42	5.648		
10,200.0	6,790.0	11,026.5	7,115.0	113.2	116.2	105.72	-455.1	-4,981.3	1,199.7	982.6	217.12	5.526		
10,300.0	6,790.0	11,126.5	7,115.0	115.6	118.6	105.72	-454.9	-5,081.3	1,199.7	977.9	221.83	5.408		
10,400.0	6,790.0	11,226.5	7,115.0	117.9	121.1	105.72	-454.6	-5,181.3	1,199.7	973.2	226.53	5.296		
10,500.0	6,790.0	11,326.5	7,115.0	120.3	123.5	105.72	-454.4	-5,281.3	1,199.7	968.5	231.24	5.188		
10,600.0	6,790.0	11,426.5	7,115.0	122.6	126.0	105.72	-454.1	-5,381.3	1,199.7	963.8	235.95	5.085		
10,700.0	6,790.0	11,526.5	7,115.0	125.0	128.4	105.72	-453.9	-5,481.3	1,199.7	959.1	240.66	4.985		
10,800.0	6,790.0	11,626.5	7,115.0	127.4	130.9	105.72	-453.6	-5,581.3	1,199.7	954.4	245.37	4.889		
10,900.0	6,790.0	11,726.5	7,115.0	129.8	133.3	105.72	-453.4	-5,681.3	1,199.7	949.6	250.09	4.797		
11,000.0	6,790.0	11,826.5	7,115.0	132.1	135.8	105.72	-453.1	-5,781.3	1,199.7	944.9	254.81	4.708		
11,100.0	6,790.0	11,926.5	7,115.0	134.5	138.2	105.72	-452.9	-5,881.3	1,199.7	940.2	259.52	4.623		
11,200.0	6,790.0	12,026.5	7,115.0	136.9	140.7	105.72	-452.6	-5,981.3	1,199.7	935.5	264.25	4.540		
11,300.0	6,790.0	12,126.5	7,115.0	139.3	143.1	105.72	-452.4	-6,081.3	1,199.7	930.8	268.97	4.460		

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

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 6 - Hz - Plan #1												Offset Site Error:	0.0 usft
Survey Program: 0-Geolink MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
11,400.0	6,790.0	12,226.5	7,115.0	141.7	145.6	105.72	-452.1	-6,181.3	1,199.7	926.0	273.69	4.383	
11,500.0	6,790.0	12,326.5	7,115.0	144.1	148.0	105.72	-451.9	-6,281.3	1,199.7	921.3	278.42	4.309	
11,600.0	6,790.0	12,426.5	7,115.0	146.5	150.5	105.72	-451.6	-6,381.3	1,199.7	916.6	283.14	4.237	
11,700.0	6,790.0	12,526.5	7,115.0	148.9	152.9	105.72	-451.4	-6,481.3	1,199.7	911.8	287.87	4.168	
11,800.0	6,790.0	12,626.5	7,115.0	151.3	155.4	105.72	-451.1	-6,581.3	1,199.7	907.1	292.60	4.100	
11,900.0	6,790.0	12,726.5	7,115.0	153.7	157.8	105.72	-450.9	-6,681.3	1,199.7	902.4	297.33	4.035	
12,000.0	6,790.0	12,826.5	7,115.0	156.1	160.3	105.72	-450.6	-6,781.3	1,199.7	897.7	302.06	3.972	
12,100.0	6,790.0	12,926.5	7,115.0	158.5	162.8	105.72	-450.4	-6,881.3	1,199.7	892.9	306.80	3.910	
12,200.0	6,790.0	13,026.5	7,115.0	160.9	165.2	105.72	-450.1	-6,981.3	1,199.7	888.2	311.53	3.851	
12,300.0	6,790.0	13,126.5	7,115.0	163.3	167.7	105.72	-449.9	-7,081.3	1,199.7	883.5	316.26	3.793	
12,400.0	6,790.0	13,226.5	7,115.0	165.8	170.1	105.72	-449.6	-7,181.3	1,199.7	878.7	321.00	3.737	
12,500.0	6,790.0	13,326.5	7,115.0	168.2	172.6	105.72	-449.4	-7,281.3	1,199.7	874.0	325.73	3.683	
12,600.0	6,790.0	13,426.5	7,115.0	170.6	175.1	105.72	-449.1	-7,381.3	1,199.7	869.2	330.47	3.630	
12,700.0	6,790.0	13,526.5	7,115.0	173.0	177.5	105.72	-448.9	-7,481.3	1,199.7	864.5	335.21	3.579	
12,800.0	6,790.0	13,626.5	7,115.0	175.4	180.0	105.72	-448.6	-7,581.3	1,199.7	859.8	339.95	3.529	
12,900.0	6,790.0	13,726.5	7,115.0	177.9	182.4	105.72	-448.4	-7,681.3	1,199.7	855.0	344.69	3.481	
13,000.0	6,790.0	13,826.5	7,115.0	180.3	184.9	105.72	-448.1	-7,781.3	1,199.7	850.3	349.43	3.433	
13,100.0	6,790.0	13,926.5	7,115.0	182.7	187.4	105.72	-447.9	-7,881.3	1,199.7	845.5	354.17	3.387	
13,200.0	6,790.0	14,026.5	7,115.0	185.1	189.8	105.72	-447.6	-7,981.3	1,199.7	840.8	358.91	3.343	
13,300.0	6,790.0	14,126.5	7,115.0	187.6	192.3	105.72	-447.4	-8,081.3	1,199.7	836.1	363.65	3.299	
13,400.0	6,790.0	14,226.5	7,115.0	190.0	194.7	105.72	-447.1	-8,181.3	1,199.7	831.3	368.39	3.257	
13,500.0	6,790.0	14,326.5	7,115.0	192.4	197.2	105.72	-446.9	-8,281.3	1,199.7	826.6	373.14	3.215	
13,600.0	6,790.0	14,426.5	7,115.0	194.9	199.7	105.72	-446.6	-8,381.3	1,199.7	821.8	377.88	3.175	
13,700.0	6,790.0	14,526.5	7,115.0	197.3	202.1	105.72	-446.4	-8,481.3	1,199.7	817.1	382.63	3.135	
13,800.0	6,790.0	14,626.5	7,115.0	199.7	204.6	105.72	-446.1	-8,581.3	1,199.7	812.3	387.37	3.097	
13,900.0	6,790.0	14,726.5	7,115.0	202.2	207.1	105.72	-445.9	-8,681.3	1,199.7	807.6	392.12	3.060	
14,000.0	6,790.0	14,826.5	7,115.0	204.6	209.5	105.72	-445.6	-8,781.3	1,199.7	802.9	396.86	3.023	
14,100.0	6,790.0	14,926.5	7,115.0	207.0	212.0	105.72	-445.4	-8,881.3	1,199.7	798.1	401.61	2.987	
14,200.0	6,790.0	15,026.5	7,115.0	209.5	214.5	105.72	-445.1	-8,981.3	1,199.7	793.4	406.35	2.952	
14,300.0	6,790.0	15,126.5	7,115.0	211.9	216.9	105.72	-444.9	-9,081.3	1,199.7	788.6	411.10	2.918	
14,400.0	6,790.0	15,226.5	7,115.0	214.4	219.4	105.72	-444.6	-9,181.3	1,199.7	783.9	415.85	2.885	
14,500.0	6,790.0	15,326.5	7,115.0	216.8	221.9	105.72	-444.4	-9,281.3	1,199.7	779.1	420.60	2.852	
14,600.0	6,790.0	15,426.5	7,115.0	219.2	224.3	105.72	-444.1	-9,381.3	1,199.7	774.4	425.34	2.821	
14,700.0	6,790.0	15,526.5	7,115.0	221.7	226.8	105.72	-443.9	-9,481.2	1,199.7	769.6	430.09	2.789	
14,800.0	6,790.0	15,626.5	7,115.0	224.1	229.3	105.72	-443.6	-9,581.2	1,199.7	764.9	434.84	2.759	
14,900.0	6,790.0	15,726.5	7,115.0	226.6	231.7	105.72	-443.4	-9,681.2	1,199.7	760.1	439.59	2.729	
15,000.0	6,790.0	15,826.5	7,115.0	229.0	234.2	105.72	-443.1	-9,781.2	1,199.7	755.4	444.34	2.700	
15,100.0	6,790.0	15,926.5	7,115.0	231.5	236.7	105.72	-442.9	-9,881.2	1,199.7	750.6	449.09	2.671	
15,200.0	6,790.0	16,026.5	7,115.0	233.9	239.1	105.72	-442.6	-9,981.2	1,199.7	745.9	453.84	2.643	
15,300.0	6,790.0	16,126.5	7,115.0	236.4	241.6	105.72	-442.4	-10,081.2	1,199.7	741.1	458.59	2.616	
15,400.0	6,790.0	16,226.5	7,115.0	238.8	244.1	105.72	-442.1	-10,181.2	1,199.7	736.4	463.34	2.589	
15,500.0	6,790.0	16,326.5	7,115.0	241.3	246.5	105.72	-441.9	-10,281.2	1,199.7	731.6	468.09	2.563	
15,600.0	6,790.0	16,426.5	7,115.0	243.7	249.0	105.72	-441.6	-10,381.2	1,199.7	726.9	472.84	2.537	
15,700.0	6,790.0	16,526.5	7,115.0	246.2	251.5	105.72	-441.4	-10,481.2	1,199.7	722.1	477.60	2.512	
15,800.0	6,790.0	16,626.5	7,115.0	248.6	253.9	105.72	-441.1	-10,581.2	1,199.7	717.4	482.35	2.487	
15,900.0	6,790.0	16,726.5	7,115.0	251.1	256.4	105.72	-440.9	-10,681.2	1,199.7	712.6	487.10	2.463	
16,000.0	6,790.0	16,826.5	7,115.0	253.5	258.9	105.72	-440.7	-10,781.2	1,199.7	707.9	491.85	2.439	
16,100.0	6,790.0	16,926.5	7,115.0	256.0	261.3	105.72	-440.4	-10,881.2	1,199.7	703.1	496.61	2.416	
16,200.0	6,790.0	17,026.5	7,115.0	258.4	263.8	105.72	-440.2	-10,981.2	1,199.7	698.3	501.36	2.393	
16,300.0	6,790.0	17,126.5	7,115.0	260.9	266.3	105.72	-439.9	-11,081.2	1,199.7	693.6	506.11	2.370	
16,400.0	6,790.0	17,226.5	7,115.0	263.3	268.7	105.72	-439.7	-11,181.2	1,199.7	688.8	510.87	2.348	
16,500.0	6,790.0	17,326.5	7,115.0	265.8	271.2	105.72	-439.4	-11,281.2	1,199.7	684.1	515.62	2.327	

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

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 6 - Hz - Plan #1													Offset Site Error: 0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
16,600.0	6,790.0	17,426.5	7,115.0	268.2	273.7	105.72	-439.2	-11,381.2	1,199.7	679.3	520.37	2.305	
16,700.0	6,790.0	17,526.5	7,115.0	270.7	276.1	105.72	-438.9	-11,481.2	1,199.7	674.6	525.13	2.285	
16,800.0	6,790.0	17,626.5	7,115.0	273.1	278.6	105.72	-438.7	-11,581.2	1,199.7	669.8	529.88	2.264	
16,900.0	6,790.0	17,726.5	7,115.0	275.6	281.1	105.72	-438.4	-11,681.2	1,199.7	665.1	534.63	2.244	
16,900.9	6,790.0	17,727.5	7,115.0	275.6	281.1	105.72	-438.4	-11,682.2	1,199.7	665.0	534.68	2.244 SF	

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 7 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	31.00	95.8	57.6	111.8					
100.0	100.0	100.0	100.0	0.1	0.1	31.00	95.8	57.6	111.8	111.5	0.27	421.347		
200.0	200.0	200.0	200.0	0.3	0.3	31.00	95.8	57.6	111.8	111.2	0.61	181.946	CC	
300.0	300.0	301.8	301.8	0.5	0.5	159.72	95.3	56.8	111.8	110.8	0.97	115.627		
400.0	400.0	403.6	403.6	0.7	0.7	159.62	93.8	54.6	111.8	110.5	1.32	84.681		
500.0	499.9	505.4	505.3	0.9	0.9	159.44	91.2	50.9	111.9	110.2	1.68	66.726		
600.0	599.7	607.2	606.9	1.1	1.1	159.19	87.6	45.6	112.0	109.9	2.04	54.969		
700.0	699.4	709.0	708.3	1.3	1.3	158.87	83.1	38.9	112.1	109.7	2.40	46.649		
800.0	798.9	810.8	809.6	1.5	1.5	158.48	77.4	30.7	112.2	109.4	2.78	40.430		
900.0	898.3	912.6	910.8	1.8	1.8	158.02	70.8	21.0	112.4	109.2	3.16	35.585		
1,000.0	997.4	1,014.4	1,011.6	2.0	2.1	157.50	63.2	9.9	112.6	109.0	3.55	31.689		
1,100.0	1,096.3	1,116.1	1,112.2	2.3	2.4	156.90	54.5	-2.7	112.8	108.9	3.96	28.471		
1,200.0	1,194.9	1,217.9	1,212.6	2.7	2.7	156.24	44.9	-16.9	113.1	108.7	4.39	25.757		
1,300.0	1,293.3	1,319.7	1,312.6	3.0	3.1	155.52	34.2	-32.4	113.4	108.6	4.84	23.424		
1,400.0	1,391.2	1,421.3	1,412.1	3.4	3.5	154.73	22.6	-49.4	113.8	108.5	5.32	21.398	ES	
1,500.0	1,488.9	1,521.3	1,509.8	3.8	3.9	154.16	10.7	-66.8	115.1	109.3	5.81	19.832		
1,600.0	1,586.1	1,621.2	1,607.5	4.2	4.2	153.96	-1.1	-84.1	118.0	111.7	6.29	18.758		
1,700.0	1,682.9	1,721.1	1,705.2	4.7	4.6	154.13	-13.0	-101.4	122.5	115.7	6.77	18.088		
1,800.0	1,779.3	1,820.9	1,802.8	5.2	5.0	154.62	-24.8	-118.8	128.6	121.3	7.24	17.758		
1,900.0	1,875.2	1,920.6	1,900.2	5.7	5.4	155.36	-36.6	-136.0	136.2	128.5	7.69	17.718		
2,000.0	1,970.5	2,020.2	1,997.6	6.3	5.8	156.29	-48.5	-153.3	145.5	137.3	8.11	17.928		
2,100.0	2,065.4	2,119.5	2,094.7	6.9	6.2	157.36	-60.2	-170.5	156.3	147.8	8.52	18.356		
2,200.0	2,159.6	2,218.7	2,191.6	7.5	6.6	158.49	-72.0	-187.7	168.9	160.0	8.90	18.976		
2,300.0	2,253.3	2,317.6	2,288.3	8.1	7.0	159.65	-83.7	-204.9	183.1	173.9	9.26	19.767		
2,400.0	2,346.3	2,416.2	2,384.8	8.8	7.4	160.80	-95.5	-222.0	199.1	189.4	9.61	20.709		
2,500.0	2,438.7	2,514.6	2,480.9	9.5	7.8	161.91	-107.1	-239.0	216.7	206.7	9.95	21.787		
2,600.0	2,530.4	2,612.6	2,576.8	10.2	8.2	162.98	-118.7	-256.0	236.0	225.8	10.27	22.987		
2,700.0	2,621.4	2,710.2	2,672.2	11.0	8.6	163.97	-130.3	-273.0	257.1	246.5	10.58	24.296		
2,800.0	2,711.7	2,807.5	2,767.3	11.8	9.0	164.91	-141.9	-289.9	279.9	269.0	10.89	25.705		
2,900.0	2,801.4	2,904.5	2,862.1	12.6	9.4	165.80	-153.4	-306.7	303.8	292.6	11.21	27.112		
3,000.0	2,891.2	3,001.5	2,957.0	13.5	9.8	166.57	-164.9	-323.5	327.8	316.3	11.53	28.427		
3,100.0	2,980.9	3,098.5	3,051.8	14.3	10.2	167.23	-176.4	-340.3	351.9	340.0	11.86	29.662		
3,200.0	3,070.7	3,195.4	3,146.6	15.1	10.6	167.81	-187.9	-357.1	376.0	363.8	12.20	30.823		
3,300.0	3,160.5	3,292.4	3,241.4	15.9	11.0	168.32	-199.4	-374.0	400.1	387.6	12.54	31.917		
3,400.0	3,250.2	3,389.4	3,336.3	16.7	11.4	168.77	-210.9	-390.8	424.3	411.4	12.88	32.948		
3,500.0	3,340.0	3,486.4	3,431.1	17.5	11.8	169.18	-222.4	-407.6	448.5	435.2	13.22	33.923		
3,600.0	3,429.7	3,583.4	3,525.9	18.4	12.2	169.54	-233.9	-424.4	472.7	459.1	13.56	34.845		
3,700.0	3,519.5	3,680.4	3,620.7	19.2	12.6	169.87	-245.4	-441.2	496.9	483.0	13.91	35.718		
3,800.0	3,609.2	3,777.4	3,715.5	20.0	13.0	170.16	-257.0	-458.1	521.1	506.8	14.26	36.546		
3,900.0	3,699.0	3,874.4	3,810.4	20.8	13.4	170.43	-268.5	-474.9	545.3	530.7	14.61	37.333		
4,000.0	3,788.7	3,971.3	3,905.2	21.7	13.8	170.68	-280.0	-491.7	569.6	554.6	14.96	38.081		
4,100.0	3,878.5	4,068.3	4,000.0	22.5	14.2	170.91	-291.5	-508.5	593.9	578.5	15.31	38.793		
4,200.0	3,968.2	4,165.3	4,094.8	23.3	14.6	171.12	-303.0	-525.3	618.1	602.5	15.66	39.472		
4,300.0	4,058.0	4,262.3	4,189.6	24.1	15.0	171.31	-314.5	-542.2	642.4	626.4	16.01	40.120		
4,400.0	4,147.7	4,359.3	4,284.5	25.0	15.4	171.49	-326.0	-559.0	666.7	650.3	16.36	40.739		
4,500.0	4,237.5	4,456.3	4,379.3	25.8	15.8	171.66	-337.5	-575.8	691.0	674.2	16.72	41.330		
4,600.0	4,327.2	4,553.3	4,474.1	26.6	16.2	171.81	-349.0	-592.6	715.3	698.2	17.07	41.897		
4,700.0	4,417.0	4,650.3	4,568.9	27.5	16.6	171.96	-360.5	-609.4	739.5	722.1	17.43	42.439		
4,800.0	4,506.7	4,747.2	4,663.8	28.3	17.0	172.09	-372.0	-626.3	763.8	746.1	17.78	42.960		
4,900.0	4,596.5	4,844.2	4,758.6	29.1	17.4	172.22	-383.5	-643.1	788.2	770.0	18.14	43.459		
5,000.0	4,686.2	4,941.2	4,853.4	29.9	17.8	172.34	-395.0	-659.9	812.5	794.0	18.49	43.938		
5,100.0	4,776.0	5,038.2	4,948.2	30.8	18.2	172.45	-406.6	-676.7	836.8	817.9	18.85	44.399		

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

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 7 - Hz - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-Geolink MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	4,865.7	5,135.2	5,043.0	31.6	18.6	172.56	-418.1	-693.5	861.1	841.9	19.20	44.842		
5,300.0	4,955.5	5,232.2	5,137.9	32.4	19.0	172.66	-429.6	-710.4	885.4	865.8	19.56	45.269		
5,400.0	5,045.2	5,329.2	5,232.7	33.3	19.4	172.76	-441.1	-727.2	909.7	889.8	19.91	45.680		
5,500.0	5,135.0	5,426.1	5,327.5	34.1	19.8	172.85	-452.6	-744.0	934.0	913.8	20.27	46.077		
5,600.0	5,224.7	5,523.1	5,422.3	34.9	20.2	172.93	-464.1	-760.8	958.4	937.7	20.63	46.459		
5,700.0	5,314.5	5,620.1	5,517.1	35.8	20.6	173.01	-475.6	-777.6	982.7	961.7	20.99	46.828		
5,800.0	5,404.2	5,717.1	5,612.0	36.6	21.0	173.09	-487.1	-794.5	1,007.0	985.7	21.34	47.184		
5,900.0	5,494.0	5,814.1	5,706.8	37.4	21.4	173.17	-498.6	-811.3	1,031.3	1,009.6	21.70	47.529		
6,000.0	5,583.7	5,911.1	5,801.6	38.2	21.8	173.24	-510.1	-828.1	1,055.7	1,033.6	22.06	47.862		
6,100.0	5,673.5	6,008.1	5,896.4	39.1	22.1	173.30	-521.6	-844.9	1,080.0	1,057.6	22.41	48.184		
6,200.0	5,763.2	6,105.1	5,991.3	39.9	22.5	173.37	-533.1	-861.7	1,104.3	1,081.6	22.77	48.496		
6,300.0	5,853.0	6,202.0	6,086.1	40.7	22.9	173.43	-544.6	-878.6	1,128.7	1,105.5	23.13	48.798		
6,400.0	5,942.7	7,427.2	6,790.0	41.6	38.7	144.14	-628.4	-1,688.3	1,117.3	1,059.9	57.45	19.448		
6,500.0	6,032.5	7,461.5	6,790.0	42.4	39.4	142.26	-628.3	-1,722.7	1,070.3	1,010.0	60.28	17.756		
6,600.0	6,122.3	7,495.9	6,790.0	43.2	40.2	140.36	-628.2	-1,757.0	1,029.7	966.6	63.13	16.310		
6,700.0	6,212.0	7,530.2	6,790.0	44.1	40.9	138.44	-628.1	-1,791.3	996.3	930.3	66.01	15.093		
6,800.0	6,301.8	7,564.5	6,790.0	44.9	41.6	136.50	-628.0	-1,825.6	970.9	902.0	68.90	14.092		
6,900.0	6,391.5	7,598.8	6,790.0	45.7	42.4	134.43	-627.9	-1,859.9	954.1	882.3	71.77	13.294		
7,000.0	6,478.2	7,640.5	6,790.0	46.7	43.3	123.35	-627.8	-1,901.6	946.5	871.8	74.73	12.666		
7,040.2	6,511.1	7,661.2	6,790.0	47.2	43.7	119.67	-627.8	-1,922.3	945.9	869.4	76.41	12.379		
7,100.0	6,557.7	7,695.9	6,790.0	47.9	44.5	114.70	-627.7	-1,957.0	947.1	867.9	79.19	11.961		
7,200.0	6,627.9	7,763.6	6,790.0	49.3	46.0	107.40	-627.5	-2,024.8	953.7	869.3	84.44	11.295		
7,300.0	6,687.1	7,842.0	6,790.0	50.9	47.7	101.19	-627.3	-2,103.1	963.6	873.9	89.71	10.741		
7,400.0	6,733.8	7,929.1	6,790.0	52.6	49.7	96.17	-627.1	-2,190.2	974.1	879.7	94.42	10.317		
7,500.0	6,767.0	8,022.8	6,790.0	54.4	51.8	92.55	-626.9	-2,283.9	983.0	884.7	98.34	9.997		
7,600.0	6,785.7	8,120.8	6,790.0	56.3	54.0	90.48	-626.6	-2,381.9	988.5	887.0	101.56	9.733		
7,700.0	6,790.0	8,220.6	6,790.0	58.2	56.3	90.00	-626.4	-2,481.7	989.8	885.0	104.84	9.442		
7,800.0	6,790.0	8,320.6	6,790.0	60.2	58.6	90.00	-626.1	-2,581.7	989.8	880.4	109.50	9.040		
7,900.0	6,790.0	8,420.6	6,790.0	62.2	60.9	90.00	-625.9	-2,681.7	989.8	875.7	114.18	8.669		
8,000.0	6,790.0	8,520.6	6,790.0	64.2	63.3	90.00	-625.6	-2,781.7	989.8	871.0	118.88	8.326		
8,100.0	6,790.0	8,620.6	6,790.0	66.2	65.6	90.00	-625.4	-2,881.7	989.8	866.2	123.60	8.008		
8,200.0	6,790.0	8,720.6	6,790.0	68.3	68.0	90.00	-625.1	-2,981.7	989.8	861.5	128.34	7.712		
8,300.0	6,790.0	8,820.6	6,790.0	70.4	70.3	90.00	-624.9	-3,081.7	989.8	856.7	133.10	7.437		
8,400.0	6,790.0	8,920.6	6,790.0	72.5	72.7	90.00	-624.6	-3,181.7	989.8	852.0	137.87	7.180		
8,500.0	6,790.0	9,020.6	6,790.0	74.7	75.1	90.00	-624.4	-3,281.7	989.8	847.2	142.65	6.939		
8,600.0	6,790.0	9,120.6	6,790.0	76.8	77.5	90.00	-624.1	-3,381.7	989.8	842.4	147.44	6.713		
8,700.0	6,790.0	9,220.6	6,790.0	79.0	79.9	90.00	-623.9	-3,481.7	989.8	837.6	152.25	6.502		
8,800.0	6,790.0	9,320.6	6,790.0	81.2	82.3	90.00	-623.6	-3,581.7	989.8	832.8	157.06	6.302		
8,900.0	6,790.0	9,420.6	6,790.0	83.4	84.7	90.00	-623.4	-3,681.7	989.8	828.0	161.88	6.115		
9,000.0	6,790.0	9,520.6	6,790.0	85.6	87.1	90.00	-623.1	-3,781.7	989.8	823.1	166.71	5.938		
9,100.0	6,790.0	9,620.6	6,790.0	87.9	89.5	90.00	-622.9	-3,881.7	989.8	818.3	171.54	5.770		
9,200.0	6,790.0	9,720.6	6,790.0	90.1	91.9	90.00	-622.6	-3,981.7	989.8	813.5	176.38	5.612		
9,300.0	6,790.0	9,820.6	6,790.0	92.4	94.3	90.00	-622.4	-4,081.7	989.8	808.6	181.23	5.462		
9,400.0	6,790.0	9,920.6	6,790.0	94.7	96.7	90.00	-622.1	-4,181.7	989.8	803.8	186.08	5.319		
9,500.0	6,790.0	10,020.6	6,790.0	97.0	99.2	90.00	-621.9	-4,281.7	989.8	798.9	190.94	5.184		
9,600.0	6,790.0	10,120.6	6,790.0	99.3	101.6	90.00	-621.6	-4,381.7	989.8	794.0	195.80	5.055		
9,700.0	6,790.0	10,220.6	6,790.0	101.6	104.0	90.00	-621.4	-4,481.7	989.8	789.2	200.67	4.933		
9,800.0	6,790.0	10,320.6	6,790.0	103.9	106.4	90.00	-621.1	-4,581.7	989.8	784.3	205.54	4.816		
9,900.0	6,790.0	10,420.6	6,790.0	106.2	108.9	90.00	-620.9	-4,681.7	989.8	779.4	210.42	4.704		
10,000.0	6,790.0	10,520.6	6,790.0	108.5	111.3	90.00	-620.6	-4,781.7	989.8	774.5	215.29	4.598		
10,100.0	6,790.0	10,620.6	6,790.0	110.9	113.7	90.00	-620.4	-4,881.7	989.8	769.7	220.17	4.496		
10,200.0	6,790.0	10,720.6	6,790.0	113.2	116.2	90.00	-620.1	-4,981.7	989.8	764.8	225.06	4.398		

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

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 7 - Hz - Plan #1												Offset Site Error:	0.0 usft
Survey Program: 0-Geolink MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
10,300.0	6,790.0	10,820.6	6,790.0	115.6	118.6	90.00	-619.9	-5,081.7	989.8	759.9	229.95	4.305	
10,400.0	6,790.0	10,920.6	6,790.0	117.9	121.0	90.00	-619.6	-5,181.7	989.8	755.0	234.83	4.215	
10,500.0	6,790.0	11,020.6	6,790.0	120.3	123.5	90.00	-619.4	-5,281.7	989.8	750.1	239.73	4.129	
10,600.0	6,790.0	11,120.6	6,790.0	122.6	125.9	90.00	-619.1	-5,381.7	989.8	745.2	244.62	4.046	
10,700.0	6,790.0	11,220.6	6,790.0	125.0	128.4	90.00	-618.9	-5,481.7	989.8	740.3	249.52	3.967	
10,800.0	6,790.0	11,320.6	6,790.0	127.4	130.8	90.00	-618.6	-5,581.7	989.8	735.4	254.42	3.891	
10,900.0	6,790.0	11,420.6	6,790.0	129.8	133.3	90.00	-618.4	-5,681.7	989.8	730.5	259.32	3.817	
11,000.0	6,790.0	11,520.6	6,790.0	132.1	135.7	90.00	-618.2	-5,781.7	989.8	725.6	264.22	3.746	
11,100.0	6,790.0	11,620.6	6,790.0	134.5	138.2	90.00	-617.9	-5,881.7	989.8	720.7	269.12	3.678	
11,200.0	6,790.0	11,720.6	6,790.0	136.9	140.6	90.00	-617.7	-5,981.7	989.8	715.8	274.03	3.612	
11,300.0	6,790.0	11,820.6	6,790.0	139.3	143.1	90.00	-617.4	-6,081.7	989.8	710.9	278.93	3.549	
11,400.0	6,790.0	11,920.6	6,790.0	141.7	145.5	90.00	-617.2	-6,181.7	989.8	706.0	283.84	3.487	
11,500.0	6,790.0	12,020.6	6,790.0	144.1	148.0	90.00	-616.9	-6,281.7	989.8	701.1	288.75	3.428	
11,600.0	6,790.0	12,120.6	6,790.0	146.5	150.4	90.00	-616.7	-6,381.7	989.8	696.2	293.66	3.371	
11,700.0	6,790.0	12,220.6	6,790.0	148.9	152.9	90.00	-616.4	-6,481.7	989.8	691.3	298.58	3.315	
11,800.0	6,790.0	12,320.6	6,790.0	151.3	155.3	90.00	-616.2	-6,581.7	989.8	686.3	303.49	3.262	
11,900.0	6,790.0	12,420.6	6,790.0	153.7	157.8	90.00	-615.9	-6,681.7	989.8	681.4	308.40	3.210	
12,000.0	6,790.0	12,520.6	6,790.0	156.1	160.2	90.00	-615.7	-6,781.7	989.8	676.5	313.32	3.159	
12,100.0	6,790.0	12,620.6	6,790.0	158.5	162.7	90.00	-615.4	-6,881.7	989.8	671.6	318.24	3.110	
12,200.0	6,790.0	12,720.6	6,790.0	160.9	165.2	90.00	-615.2	-6,981.7	989.8	666.7	323.15	3.063	
12,300.0	6,790.0	12,820.6	6,790.0	163.3	167.6	90.00	-614.9	-7,081.7	989.8	661.8	328.07	3.017	
12,400.0	6,790.0	12,920.6	6,790.0	165.8	170.1	90.00	-614.7	-7,181.7	989.8	656.8	332.99	2.973	
12,500.0	6,790.0	13,020.6	6,790.0	168.2	172.5	90.00	-614.4	-7,281.7	989.8	651.9	337.91	2.929	
12,600.0	6,790.0	13,120.6	6,790.0	170.6	175.0	90.00	-614.2	-7,381.7	989.8	647.0	342.83	2.887	
12,700.0	6,790.0	13,220.6	6,790.0	173.0	177.4	90.00	-613.9	-7,481.7	989.8	642.1	347.76	2.846	
12,800.0	6,790.0	13,320.6	6,790.0	175.4	179.9	90.00	-613.7	-7,581.7	989.8	637.1	352.68	2.807	
12,900.0	6,790.0	13,420.6	6,790.0	177.9	182.4	90.00	-613.4	-7,681.7	989.8	632.2	357.60	2.768	
13,000.0	6,790.0	13,520.6	6,790.0	180.3	184.8	90.00	-613.2	-7,781.7	989.8	627.3	362.53	2.730	
13,100.0	6,790.0	13,620.6	6,790.0	182.7	187.3	90.00	-612.9	-7,881.7	989.8	622.4	367.45	2.694	
13,200.0	6,790.0	13,720.6	6,790.0	185.1	189.7	90.00	-612.7	-7,981.7	989.8	617.4	372.38	2.658	
13,300.0	6,790.0	13,820.6	6,790.0	187.6	192.2	90.00	-612.4	-8,081.7	989.8	612.5	377.30	2.623	
13,400.0	6,790.0	13,920.6	6,790.0	190.0	194.7	90.00	-612.2	-8,181.7	989.8	607.6	382.23	2.590	
13,500.0	6,790.0	14,020.6	6,790.0	192.4	197.1	90.00	-611.9	-8,281.7	989.8	602.7	387.16	2.557	
13,600.0	6,790.0	14,120.6	6,790.0	194.9	199.6	90.00	-611.7	-8,381.7	989.8	597.7	392.09	2.525	
13,700.0	6,790.0	14,220.6	6,790.0	197.3	202.1	90.00	-611.4	-8,481.7	989.8	592.8	397.01	2.493	
13,800.0	6,790.0	14,320.6	6,790.0	199.7	204.5	90.00	-611.2	-8,581.7	989.8	587.9	401.94	2.463	
13,900.0	6,790.0	14,420.6	6,790.0	202.2	207.0	90.00	-610.9	-8,681.7	989.8	583.0	406.87	2.433	
14,000.0	6,790.0	14,520.6	6,790.0	204.6	209.4	90.00	-610.7	-8,781.7	989.8	578.0	411.80	2.404	
14,100.0	6,790.0	14,620.6	6,790.0	207.0	211.9	90.00	-610.4	-8,881.7	989.8	573.1	416.73	2.375	
14,200.0	6,790.0	14,720.6	6,790.0	209.5	214.4	90.00	-610.2	-8,981.7	989.8	568.2	421.66	2.347	
14,300.0	6,790.0	14,820.6	6,790.0	211.9	216.8	90.00	-609.9	-9,081.7	989.8	563.2	426.59	2.320	
14,400.0	6,790.0	14,920.6	6,790.0	214.4	219.3	90.00	-609.7	-9,181.7	989.8	558.3	431.53	2.294	
14,500.0	6,790.0	15,020.6	6,790.0	216.8	221.8	90.00	-609.4	-9,281.7	989.8	553.4	436.46	2.268	
14,600.0	6,790.0	15,120.6	6,790.0	219.2	224.2	90.00	-609.2	-9,381.7	989.8	548.4	441.39	2.243	
14,700.0	6,790.0	15,220.6	6,790.0	221.7	226.7	90.00	-608.9	-9,481.7	989.8	543.5	446.32	2.218	
14,800.0	6,790.0	15,320.6	6,790.0	224.1	229.2	90.00	-608.7	-9,581.7	989.8	538.6	451.26	2.193	
14,900.0	6,790.0	15,420.6	6,790.0	226.6	231.6	90.00	-608.4	-9,681.7	989.8	533.6	456.19	2.170	
15,000.0	6,790.0	15,520.6	6,790.0	229.0	234.1	90.00	-608.2	-9,781.7	989.8	528.7	461.12	2.147	
15,100.0	6,790.0	15,620.6	6,790.0	231.5	236.6	90.00	-607.9	-9,881.7	989.8	523.8	466.06	2.124	
15,200.0	6,790.0	15,720.6	6,790.0	233.9	239.0	90.00	-607.7	-9,981.7	989.8	518.8	470.99	2.102	
15,300.0	6,790.0	15,820.6	6,790.0	236.4	241.5	90.00	-607.4	-10,081.7	989.8	513.9	475.93	2.080	
15,400.0	6,790.0	15,920.6	6,790.0	238.8	244.0	90.00	-607.2	-10,181.7	989.8	509.0	480.86	2.058	

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

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 7 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
15,500.0	6,790.0	16,020.6	6,790.0	241.3	246.4	90.00	-606.9	-10,281.7	989.8	504.0	485.80	2.038		
15,600.0	6,790.0	16,120.6	6,790.0	243.7	248.9	90.00	-606.7	-10,381.7	989.8	499.1	490.73	2.017		
15,700.0	6,790.0	16,220.6	6,790.0	246.2	251.4	90.00	-606.4	-10,481.7	989.8	494.1	495.67	1.997		
15,800.0	6,790.0	16,320.6	6,790.0	248.6	253.8	90.00	-606.2	-10,581.7	989.8	489.2	500.60	1.977		
15,900.0	6,790.0	16,420.6	6,790.0	251.1	256.3	90.00	-605.9	-10,681.7	989.8	484.3	505.54	1.958		
16,000.0	6,790.0	16,520.6	6,790.0	253.5	258.8	90.00	-605.7	-10,781.7	989.8	479.3	510.48	1.939		
16,100.0	6,790.0	16,620.6	6,790.0	256.0	261.2	90.00	-605.4	-10,881.7	989.8	474.4	515.41	1.920		
16,200.0	6,790.0	16,720.6	6,790.0	258.4	263.7	90.00	-605.2	-10,981.7	989.8	469.5	520.35	1.902		
16,300.0	6,790.0	16,820.6	6,790.0	260.9	266.2	90.00	-604.9	-11,081.7	989.8	464.5	525.29	1.884		
16,400.0	6,790.0	16,920.6	6,790.0	263.3	268.6	90.00	-604.7	-11,181.7	989.8	459.6	530.23	1.867		
16,500.0	6,790.0	17,020.6	6,790.0	265.8	271.1	90.00	-604.4	-11,281.7	989.8	454.7	535.16	1.850		
16,600.0	6,790.0	17,120.6	6,790.0	268.2	273.6	90.00	-604.2	-11,381.7	989.8	449.7	540.10	1.833		
16,700.0	6,790.0	17,220.6	6,790.0	270.7	276.0	90.00	-603.9	-11,481.7	989.8	444.8	545.04	1.816		
16,800.0	6,790.0	17,320.6	6,790.0	273.1	278.5	90.00	-603.7	-11,581.7	989.8	439.8	549.98	1.800		
16,900.0	6,790.0	17,420.5	6,790.0	275.6	281.0	90.00	-603.4	-11,681.6	989.8	434.9	554.91	1.784		
16,900.9	6,790.0	17,421.5	6,790.0	275.6	281.0	90.00	-603.4	-11,682.6	989.8	434.9	554.96	1.784 SF		

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 8 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: O-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	31.03	72.1	43.4	84.2					
100.0	100.0	100.0	100.0	0.1	0.1	31.03	72.1	43.4	84.2	83.9	0.27	317.298		
200.0	200.0	200.0	200.0	0.3	0.3	31.03	72.1	43.4	84.2	83.6	0.61	137.015 CC		
300.0	300.0	301.3	301.2	0.5	0.5	159.66	71.7	42.6	84.2	83.3	0.97	87.218		
400.0	400.0	402.5	402.5	0.7	0.7	159.31	70.5	40.2	84.5	83.2	1.32	64.023 ES		
500.0	499.9	503.8	503.6	0.9	0.9	158.72	68.5	36.2	84.8	83.2	1.68	50.609		
600.0	599.7	605.0	604.7	1.1	1.1	157.91	65.7	30.6	85.4	83.4	2.04	41.860		
700.0	699.4	706.2	705.6	1.3	1.3	156.88	62.1	23.4	86.1	83.7	2.41	35.691		
800.0	798.9	807.4	806.3	1.5	1.5	155.64	57.8	14.6	87.0	84.2	2.80	31.092		
900.0	898.3	908.6	906.8	1.8	1.8	154.22	52.6	4.2	88.2	85.0	3.20	27.513		
1,000.0	997.4	1,009.8	1,007.1	2.0	2.1	152.62	46.6	-7.7	89.5	85.9	3.63	24.632		
1,100.0	1,096.3	1,111.0	1,107.2	2.3	2.4	150.87	39.8	-21.3	91.2	87.1	4.10	22.247		
1,200.0	1,194.9	1,212.1	1,206.9	2.7	2.7	148.99	32.3	-36.4	93.1	88.5	4.60	20.228		
1,300.0	1,293.3	1,313.3	1,306.3	3.0	3.1	147.00	24.0	-53.1	95.3	90.2	5.15	18.490		
1,400.0	1,391.2	1,414.4	1,405.3	3.4	3.4	144.94	14.8	-71.3	97.9	92.1	5.77	16.977		
1,500.0	1,488.9	1,515.4	1,503.9	3.8	3.9	142.81	4.9	-91.1	100.8	94.4	6.44	15.650		
1,600.0	1,586.1	1,616.4	1,602.1	4.2	4.3	140.66	-5.7	-112.4	104.1	96.9	7.19	14.482		
1,700.0	1,682.9	1,717.4	1,699.8	4.7	4.8	138.50	-17.1	-135.3	107.7	99.7	8.01	13.453		
1,800.0	1,779.3	1,818.4	1,797.0	5.2	5.3	136.35	-29.3	-159.7	111.8	102.9	8.91	12.549		
1,900.0	1,875.2	1,919.3	1,893.6	5.7	5.8	134.23	-42.3	-185.7	116.3	106.4	9.89	11.756		
2,000.0	1,970.5	2,020.2	1,989.7	6.3	6.4	132.16	-56.0	-213.1	121.2	110.3	10.96	11.061		
2,100.0	2,065.4	2,121.1	2,085.3	6.9	7.0	130.15	-70.4	-242.0	126.5	114.4	12.10	10.454		
2,200.0	2,159.6	2,221.9	2,180.2	7.5	7.6	128.21	-85.6	-272.4	132.3	119.0	13.33	9.924		
2,300.0	2,253.3	2,322.6	2,274.4	8.1	8.3	126.35	-101.6	-304.3	138.5	123.8	14.64	9.462		
2,400.0	2,346.3	2,423.3	2,367.9	8.8	9.0	124.57	-118.2	-337.7	145.1	129.1	16.02	9.058		
2,500.0	2,438.7	2,523.7	2,460.6	9.5	9.7	122.89	-135.6	-372.4	152.1	134.7	17.46	8.712		
2,600.0	2,530.4	2,623.4	2,552.3	10.2	10.4	121.72	-153.0	-407.2	160.0	141.1	18.90	8.468		
2,700.0	2,621.4	2,723.0	2,644.0	11.0	11.2	121.15	-170.4	-442.0	168.8	148.5	20.30	8.318		
2,800.0	2,711.7	2,822.5	2,735.6	11.8	11.9	121.11	-187.8	-476.9	178.6	156.9	21.66	8.244		
2,900.0	2,801.4	2,922.0	2,827.1	12.6	12.6	121.43	-205.1	-511.6	188.9	165.9	22.99	8.218		
3,000.0	2,891.2	3,021.4	2,918.7	13.5	13.3	121.74	-222.5	-546.4	199.2	174.9	24.31	8.195		
3,100.0	2,980.9	3,120.9	3,010.2	14.3	14.1	122.01	-239.9	-581.2	209.6	184.0	25.64	8.175		
3,200.0	3,070.7	3,220.3	3,101.8	15.1	14.8	122.26	-257.3	-616.0	219.9	193.0	26.97	8.156		
3,300.0	3,160.5	3,319.8	3,193.3	15.9	15.5	122.49	-274.6	-650.8	230.3	202.0	28.30	8.139		
3,400.0	3,250.2	3,419.3	3,284.8	16.7	16.3	122.70	-292.0	-685.5	240.7	211.0	29.63	8.123		
3,500.0	3,340.0	3,518.7	3,376.4	17.5	17.0	122.89	-309.4	-720.3	251.0	220.1	30.96	8.109		
3,600.0	3,429.7	3,618.2	3,467.9	18.4	17.7	123.06	-326.8	-755.1	261.4	229.1	32.29	8.096		
3,700.0	3,519.5	3,717.6	3,559.5	19.2	18.5	123.22	-344.1	-789.9	271.8	238.1	33.62	8.083		
3,800.0	3,609.2	3,817.1	3,651.0	20.0	19.2	123.37	-361.5	-824.7	282.1	247.2	34.95	8.072		
3,900.0	3,699.0	3,916.6	3,742.6	20.8	19.9	123.51	-378.9	-859.4	292.5	256.2	36.28	8.061		
4,000.0	3,788.7	4,016.0	3,834.1	21.7	20.7	123.64	-396.3	-894.2	302.9	265.3	37.62	8.051		
4,100.0	3,878.5	4,115.5	3,925.7	22.5	21.4	123.77	-413.6	-929.0	313.3	274.3	38.95	8.042		
4,200.0	3,968.2	4,214.9	4,017.2	23.3	22.1	123.88	-431.0	-963.8	323.6	283.3	40.28	8.034		
4,300.0	4,058.0	4,314.4	4,108.7	24.1	22.9	123.99	-448.4	-998.6	334.0	292.4	41.62	8.026		
4,400.0	4,147.7	4,413.8	4,200.3	25.0	23.6	124.09	-465.7	-1,033.3	344.4	301.4	42.95	8.018		
4,500.0	4,237.5	4,513.3	4,291.8	25.8	24.3	124.18	-483.1	-1,068.1	354.8	310.5	44.28	8.011		
4,600.0	4,327.2	4,612.8	4,383.4	26.6	25.1	124.27	-500.5	-1,102.9	365.1	319.5	45.62	8.004		
4,700.0	4,417.0	4,712.2	4,474.9	27.5	25.8	124.35	-517.9	-1,137.7	375.5	328.6	46.95	7.998		
4,800.0	4,506.7	4,811.7	4,566.5	28.3	26.6	124.43	-535.2	-1,172.5	385.9	337.6	48.29	7.992		
4,900.0	4,596.5	4,911.1	4,658.0	29.1	27.3	124.51	-552.6	-1,207.2	396.3	346.7	49.62	7.986		
5,000.0	4,686.2	5,010.6	4,749.6	29.9	28.0	124.58	-570.0	-1,242.0	406.7	355.7	50.95	7.981		
5,100.0	4,776.0	5,110.1	4,841.1	30.8	28.8	124.65	-587.4	-1,276.8	417.1	364.8	52.29	7.976		

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

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 8 - Hz - Plan #1												Offset Site Error:	0.0 usft
Survey Program: O-Geolink MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	4,865.7	5,209.5	4,932.6	31.6	29.5	124.71	-604.7	-1,311.6	427.4	373.8	53.62	7.971	
5,300.0	4,955.5	5,309.0	5,024.2	32.4	30.2	124.77	-622.1	-1,346.4	437.8	382.9	54.96	7.966	
5,400.0	5,045.2	5,408.4	5,115.7	33.3	31.0	124.83	-639.5	-1,381.1	448.2	391.9	56.29	7.962	
5,500.0	5,135.0	5,507.9	5,207.3	34.1	31.7	124.89	-656.9	-1,415.9	458.6	401.0	57.63	7.958	
5,600.0	5,224.7	5,607.3	5,298.8	34.9	32.5	124.94	-674.2	-1,450.7	469.0	410.0	58.96	7.954	
5,700.0	5,314.5	5,706.8	5,390.4	35.8	33.2	124.99	-691.6	-1,485.5	479.4	419.1	60.30	7.950	
5,800.0	5,404.2	5,806.3	5,481.9	36.6	33.9	125.04	-709.0	-1,520.3	489.7	428.1	61.63	7.946	
5,900.0	5,494.0	5,905.7	5,573.5	37.4	34.7	125.09	-726.4	-1,555.0	500.1	437.2	62.97	7.943	
6,000.0	5,583.7	6,005.2	5,665.0	38.2	35.4	125.13	-743.7	-1,589.8	510.5	446.2	64.30	7.939	
6,100.0	5,673.5	6,104.6	5,756.5	39.1	36.1	125.18	-761.1	-1,624.6	520.9	455.3	65.64	7.936	
6,200.0	5,763.2	6,204.1	5,848.1	39.9	36.9	125.22	-778.5	-1,659.4	531.3	464.3	66.97	7.933	
6,300.0	5,853.0	6,303.6	5,939.6	40.7	37.6	125.26	-795.9	-1,694.2	541.7	473.4	68.31	7.930	
6,400.0	5,942.7	6,403.0	6,031.2	41.6	38.4	125.30	-813.2	-1,728.9	552.1	482.4	69.64	7.927	
6,500.0	6,032.5	6,502.5	6,122.7	42.4	39.1	125.33	-830.6	-1,763.7	562.5	491.5	70.98	7.925	
6,600.0	6,122.3	6,601.9	6,214.3	43.2	39.8	125.37	-848.0	-1,798.5	572.9	500.5	72.31	7.922	
6,700.0	6,212.0	6,701.4	6,305.8	44.1	40.6	125.40	-865.4	-1,833.3	583.2	509.6	73.65	7.919	
6,800.0	6,301.8	6,800.0	6,396.5	44.9	41.3	125.42	-882.6	-1,867.9	593.6	518.6	74.99	7.916	
6,900.0	6,391.5	6,891.7	6,477.5	45.7	42.2	124.47	-897.9	-1,908.0	604.8	527.7	77.08	7.847	
7,000.0	6,478.2	6,981.1	6,550.2	46.7	43.3	112.68	-911.7	-1,958.0	616.4	535.9	80.57	7.651	
7,100.0	6,557.7	7,068.9	6,614.2	47.9	44.5	104.85	-923.7	-2,016.8	627.3	543.3	84.03	7.465	
7,200.0	6,627.9	7,155.5	6,669.0	49.3	45.8	99.41	-934.0	-2,082.9	637.1	549.8	87.35	7.294	
7,300.0	6,687.1	7,241.0	6,714.0	50.9	47.4	95.56	-942.4	-2,155.1	645.5	555.0	90.44	7.137	
7,400.0	6,733.8	7,325.7	6,748.8	52.6	49.0	92.88	-948.9	-2,232.0	652.1	558.9	93.24	6.994	
7,500.0	6,767.0	7,410.0	6,773.1	54.4	50.7	91.13	-953.3	-2,312.5	656.8	561.1	95.74	6.860	
7,600.0	6,785.7	7,493.8	6,786.8	56.3	52.4	90.20	-955.7	-2,395.1	659.5	561.5	97.98	6.731	
7,700.0	6,790.0	7,581.4	6,790.0	58.2	54.2	90.00	-956.1	-2,482.5	660.1	559.5	100.62	6.560	
7,800.0	6,790.0	7,681.4	6,790.0	60.2	56.4	90.00	-955.9	-2,582.5	660.1	554.9	105.19	6.275	
7,900.0	6,790.0	7,781.4	6,790.0	62.2	58.5	90.00	-955.6	-2,682.5	660.1	550.3	109.79	6.012	
8,000.0	6,790.0	7,881.4	6,790.0	64.2	60.7	90.00	-955.4	-2,782.5	660.1	545.7	114.42	5.769	
8,100.0	6,790.0	7,981.4	6,790.0	66.2	62.9	90.00	-955.1	-2,882.5	660.1	541.0	119.08	5.544	
8,200.0	6,790.0	8,081.4	6,790.0	68.3	65.1	90.00	-954.9	-2,982.5	660.1	536.3	123.75	5.334	
8,300.0	6,790.0	8,181.4	6,790.0	70.4	67.4	90.00	-954.6	-3,082.5	660.1	531.6	128.45	5.139	
8,400.0	6,790.0	8,281.4	6,790.0	72.5	69.6	90.00	-954.4	-3,182.5	660.1	526.9	133.17	4.957	
8,500.0	6,790.0	8,381.4	6,790.0	74.7	71.9	90.00	-954.1	-3,282.5	660.1	522.2	137.90	4.787	
8,600.0	6,790.0	8,481.4	6,790.0	76.8	74.2	90.00	-953.9	-3,382.5	660.1	517.4	142.65	4.627	
8,700.0	6,790.0	8,581.4	6,790.0	79.0	76.5	90.00	-953.7	-3,482.5	660.1	512.7	147.41	4.478	
8,800.0	6,790.0	8,681.4	6,790.0	81.2	78.8	90.00	-953.4	-3,582.5	660.1	507.9	152.18	4.337	
8,900.0	6,790.0	8,781.4	6,790.0	83.4	81.1	90.00	-953.2	-3,682.5	660.1	503.1	156.96	4.205	
9,000.0	6,790.0	8,881.4	6,790.0	85.6	83.5	90.00	-952.9	-3,782.5	660.1	498.3	161.76	4.081	
9,100.0	6,790.0	8,981.4	6,790.0	87.9	85.8	90.00	-952.7	-3,882.5	660.1	493.5	166.56	3.963	
9,200.0	6,790.0	9,081.4	6,790.0	90.1	88.1	90.00	-952.4	-3,982.5	660.1	488.7	171.37	3.852	
9,300.0	6,790.0	9,181.4	6,790.0	92.4	90.5	90.00	-952.2	-4,082.5	660.1	483.9	176.19	3.746	
9,400.0	6,790.0	9,281.4	6,790.0	94.7	92.8	90.00	-951.9	-4,182.5	660.1	479.0	181.01	3.646	
9,500.0	6,790.0	9,381.4	6,790.0	97.0	95.2	90.00	-951.7	-4,282.5	660.0	474.2	185.85	3.552	
9,600.0	6,790.0	9,481.4	6,790.0	99.3	97.6	90.00	-951.4	-4,382.5	660.0	469.4	190.68	3.461	
9,700.0	6,790.0	9,581.4	6,790.0	101.6	99.9	90.00	-951.2	-4,482.5	660.0	464.5	195.53	3.376	
9,800.0	6,790.0	9,681.4	6,790.0	103.9	102.3	90.00	-950.9	-4,582.5	660.0	459.7	200.38	3.294	
9,900.0	6,790.0	9,781.4	6,790.0	106.2	104.7	90.00	-950.7	-4,682.5	660.0	454.8	205.23	3.216	
10,000.0	6,790.0	9,881.4	6,790.0	108.5	107.1	90.00	-950.5	-4,782.5	660.0	449.9	210.09	3.142	
10,100.0	6,790.0	9,981.4	6,790.0	110.9	109.5	90.00	-950.2	-4,882.5	660.0	445.1	214.95	3.071	
10,200.0	6,790.0	10,081.4	6,790.0	113.2	111.9	90.00	-950.0	-4,982.5	660.0	440.2	219.82	3.003	
10,300.0	6,790.0	10,181.4	6,790.0	115.6	114.3	90.00	-949.7	-5,082.5	660.0	435.3	224.69	2.938	

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

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 8 - Hz - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-Geolink MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
10,400.0	6,790.0	10,281.4	6,790.0	117.9	116.7	90.00	-949.5	-5,182.5	660.0	430.5	229.56	2.875		
10,500.0	6,790.0	10,381.4	6,790.0	120.3	119.1	90.00	-949.2	-5,282.5	660.0	425.6	234.43	2.815		
10,600.0	6,790.0	10,481.4	6,790.0	122.6	121.5	90.00	-949.0	-5,382.5	660.0	420.7	239.31	2.758		
10,700.0	6,790.0	10,581.4	6,790.0	125.0	123.9	90.00	-948.7	-5,482.5	660.0	415.8	244.20	2.703		
10,800.0	6,790.0	10,681.4	6,790.0	127.4	126.3	90.00	-948.5	-5,582.5	660.0	410.9	249.08	2.650		
10,900.0	6,790.0	10,781.4	6,790.0	129.8	128.7	90.00	-948.2	-5,682.5	660.0	406.0	253.97	2.599		
11,000.0	6,790.0	10,881.4	6,790.0	132.1	131.2	90.00	-948.0	-5,782.5	660.0	401.1	258.86	2.550		
11,100.0	6,790.0	10,981.4	6,790.0	134.5	133.6	90.00	-947.8	-5,882.5	660.0	396.2	263.75	2.502		
11,200.0	6,790.0	11,081.4	6,790.0	136.9	136.0	90.00	-947.5	-5,982.5	660.0	391.3	268.64	2.457		
11,300.0	6,790.0	11,181.4	6,790.0	139.3	138.4	90.00	-947.3	-6,082.5	660.0	386.4	273.54	2.413		
11,400.0	6,790.0	11,281.4	6,790.0	141.7	140.9	90.00	-947.0	-6,182.5	660.0	381.5	278.44	2.370		
11,500.0	6,790.0	11,381.4	6,790.0	144.1	143.3	90.00	-946.8	-6,282.5	660.0	376.6	283.33	2.329		
11,600.0	6,790.0	11,481.4	6,790.0	146.5	145.7	90.00	-946.5	-6,382.5	660.0	371.7	288.24	2.290		
11,700.0	6,790.0	11,581.4	6,790.0	148.9	148.1	90.00	-946.3	-6,482.5	660.0	366.8	293.14	2.251		
11,800.0	6,790.0	11,681.4	6,790.0	151.3	150.6	90.00	-946.0	-6,582.5	660.0	361.9	298.04	2.214		
11,900.0	6,790.0	11,781.4	6,790.0	153.7	153.0	90.00	-945.8	-6,682.5	660.0	357.0	302.95	2.178		
12,000.0	6,790.0	11,881.4	6,790.0	156.1	155.4	90.00	-945.5	-6,782.5	659.9	352.1	307.86	2.144		
12,100.0	6,790.0	11,981.4	6,790.0	158.5	157.9	90.00	-945.3	-6,882.5	659.9	347.2	312.76	2.110		
12,200.0	6,790.0	12,081.4	6,790.0	160.9	160.3	90.00	-945.0	-6,982.5	659.9	342.3	317.67	2.077		
12,300.0	6,790.0	12,181.4	6,790.0	163.3	162.8	90.00	-944.8	-7,082.5	659.9	337.4	322.58	2.046		
12,400.0	6,790.0	12,281.4	6,790.0	165.8	165.2	90.00	-944.6	-7,182.5	659.9	332.4	327.50	2.015		
12,500.0	6,790.0	12,381.4	6,790.0	168.2	167.6	90.00	-944.3	-7,282.5	659.9	327.5	332.41	1.985		
12,600.0	6,790.0	12,481.4	6,790.0	170.6	170.1	90.00	-944.1	-7,382.5	659.9	322.6	337.32	1.956		
12,700.0	6,790.0	12,581.4	6,790.0	173.0	172.5	90.00	-943.8	-7,482.5	659.9	317.7	342.24	1.928		
12,800.0	6,790.0	12,681.4	6,790.0	175.4	175.0	90.00	-943.6	-7,582.5	659.9	312.8	347.15	1.901		
12,900.0	6,790.0	12,781.4	6,790.0	177.9	177.4	90.00	-943.3	-7,682.5	659.9	307.8	352.07	1.874		
13,000.0	6,790.0	12,881.4	6,790.0	180.3	179.9	90.00	-943.1	-7,782.5	659.9	302.9	356.99	1.849		
13,100.0	6,790.0	12,981.4	6,790.0	182.7	182.3	90.00	-942.8	-7,882.5	659.9	298.0	361.91	1.823		
13,200.0	6,790.0	13,081.4	6,790.0	185.1	184.7	90.00	-942.6	-7,982.5	659.9	293.1	366.83	1.799		
13,300.0	6,790.0	13,181.4	6,790.0	187.6	187.2	90.00	-942.3	-8,082.5	659.9	288.1	371.75	1.775		
13,400.0	6,790.0	13,281.4	6,790.0	190.0	189.6	90.00	-942.1	-8,182.5	659.9	283.2	376.67	1.752		
13,500.0	6,790.0	13,381.4	6,790.0	192.4	192.1	90.00	-941.9	-8,282.5	659.9	278.3	381.59	1.729		
13,600.0	6,790.0	13,481.4	6,790.0	194.9	194.5	90.00	-941.6	-8,382.5	659.9	273.4	386.51	1.707		
13,700.0	6,790.0	13,581.4	6,790.0	197.3	197.0	90.00	-941.4	-8,482.5	659.9	268.4	391.44	1.686		
13,800.0	6,790.0	13,681.4	6,790.0	199.7	199.4	90.00	-941.1	-8,582.5	659.9	263.5	396.36	1.665		
13,900.0	6,790.0	13,781.4	6,790.0	202.2	201.9	90.00	-940.9	-8,682.5	659.9	258.6	401.28	1.644		
14,000.0	6,790.0	13,881.4	6,790.0	204.6	204.3	90.00	-940.6	-8,782.5	659.9	253.7	406.21	1.624		
14,100.0	6,790.0	13,981.4	6,790.0	207.0	206.8	90.00	-940.4	-8,882.5	659.9	248.7	411.13	1.605		
14,200.0	6,790.0	14,081.4	6,790.0	209.5	209.3	90.00	-940.1	-8,982.5	659.9	243.8	416.06	1.586		
14,300.0	6,790.0	14,181.4	6,790.0	211.9	211.7	90.00	-939.9	-9,082.5	659.9	238.9	420.99	1.567		
14,400.0	6,790.0	14,281.4	6,790.0	214.4	214.2	90.00	-939.6	-9,182.5	659.9	233.9	425.91	1.549		
14,500.0	6,790.0	14,381.4	6,790.0	216.8	216.6	90.00	-939.4	-9,282.5	659.8	229.0	430.84	1.532		
14,600.0	6,790.0	14,481.4	6,790.0	219.2	219.1	90.00	-939.1	-9,382.5	659.8	224.1	435.77	1.514		
14,700.0	6,790.0	14,581.4	6,790.0	221.7	221.5	90.00	-938.9	-9,482.5	659.8	219.1	440.70	1.497 Level 3		
14,800.0	6,790.0	14,681.4	6,790.0	224.1	224.0	90.00	-938.7	-9,582.5	659.8	214.2	445.63	1.481 Level 3		
14,900.0	6,790.0	14,781.4	6,790.0	226.6	226.4	90.00	-938.4	-9,682.5	659.8	209.3	450.56	1.464 Level 3		
15,000.0	6,790.0	14,881.4	6,790.0	229.0	228.9	90.00	-938.2	-9,782.5	659.8	204.3	455.49	1.449 Level 3		
15,100.0	6,790.0	14,981.4	6,790.0	231.5	231.3	90.00	-937.9	-9,882.5	659.8	199.4	460.42	1.433 Level 3		
15,200.0	6,790.0	15,081.4	6,790.0	233.9	233.8	90.00	-937.7	-9,982.5	659.8	194.5	465.35	1.418 Level 3		
15,300.0	6,790.0	15,181.4	6,790.0	236.4	236.3	90.00	-937.4	-10,082.5	659.8	189.5	470.28	1.403 Level 3		
15,400.0	6,790.0	15,281.4	6,790.0	238.8	238.7	90.00	-937.2	-10,182.5	659.8	184.6	475.21	1.388 Level 3		
15,500.0	6,790.0	15,381.4	6,790.0	241.3	241.2	90.00	-936.9	-10,282.5	659.8	179.7	480.14	1.374 Level 3		

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

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 8 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis			
15,600.0	6,790.0	15,481.4	6,790.0	243.7	243.6	90.00	-936.7	-10,382.5	659.8	174.7	485.07	1.360 Level 3		
15,700.0	6,790.0	15,581.4	6,790.0	246.2	246.1	90.00	-936.4	-10,482.5	659.8	169.8	490.01	1.347 Level 3		
15,800.0	6,790.0	15,681.4	6,790.0	248.6	248.6	90.00	-936.2	-10,582.5	659.8	164.9	494.94	1.333 Level 3		
15,900.0	6,790.0	15,781.4	6,790.0	251.1	251.0	90.00	-936.0	-10,682.5	659.8	159.9	499.87	1.320 Level 3		
16,000.0	6,790.0	15,881.4	6,790.0	253.5	253.5	90.00	-935.7	-10,782.5	659.8	155.0	504.81	1.307 Level 3		
16,100.0	6,790.0	15,981.4	6,790.0	256.0	255.9	90.00	-935.5	-10,882.5	659.8	150.0	509.74	1.294 Level 3		
16,200.0	6,790.0	16,081.4	6,790.0	258.4	258.4	90.00	-935.2	-10,982.5	659.8	145.1	514.67	1.282 Level 3		
16,300.0	6,790.0	16,181.4	6,790.0	260.9	260.9	90.00	-935.0	-11,082.5	659.8	140.2	519.61	1.270 Level 3		
16,400.0	6,790.0	16,281.4	6,790.0	263.3	263.3	90.00	-934.7	-11,182.5	659.8	135.2	524.54	1.258 Level 3		
16,500.0	6,790.0	16,381.4	6,790.0	265.8	265.8	90.00	-934.5	-11,282.5	659.8	130.3	529.48	1.246 Level 2		
16,600.0	6,790.0	16,481.4	6,790.0	268.2	268.2	90.00	-934.2	-11,382.5	659.8	125.4	534.41	1.235 Level 2		
16,700.0	6,790.0	16,581.4	6,790.0	270.7	270.7	90.00	-934.0	-11,482.5	659.8	120.4	539.35	1.223 Level 2		
16,800.0	6,790.0	16,681.4	6,790.0	273.1	273.2	90.00	-933.7	-11,582.5	659.8	115.5	544.28	1.212 Level 2		
16,900.0	6,790.0	16,781.3	6,790.0	275.6	275.6	90.00	-933.5	-11,682.5	659.8	110.5	549.22	1.201 Level 2		
16,900.9	6,790.0	16,782.3	6,790.0	275.6	275.7	90.00	-933.5	-11,683.4	659.8	110.5	549.27	1.201 Level 2, SF		

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 9 - Hz - Plan #1														Offset Site Error:	0.0 usft
Survey Program: O-Geolink MWD														Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis	Factor			
0.0	0.0	0.0	0.0	0.0	0.0	31.22	47.7	28.9	55.8						
100.0	100.0	100.0	100.0	0.1	0.1	31.22	47.7	28.9	55.8	55.5	0.27	210.357			
200.0	200.0	200.0	200.0	0.3	0.3	31.22	47.7	28.9	55.8	55.2	0.61	90.836 CC			
300.0	300.0	300.9	300.9	0.5	0.5	159.85	47.3	28.2	55.9	54.9	0.97	57.868			
400.0	400.0	401.7	401.7	0.7	0.7	159.46	46.0	25.8	56.0	54.7	1.32	42.505			
500.0	499.9	502.6	502.4	0.9	0.9	158.81	43.7	22.0	56.3	54.6	1.67	33.623 ES			
600.0	599.7	603.4	603.1	1.1	1.1	157.92	40.6	16.6	56.6	54.6	2.03	27.834			
700.0	699.4	704.3	703.6	1.3	1.3	156.78	36.7	9.7	57.1	54.7	2.40	23.757			
800.0	798.9	805.1	804.0	1.5	1.5	155.43	31.8	1.3	57.8	55.0	2.79	20.721			
900.0	898.3	905.9	904.2	1.8	1.8	153.86	26.1	-8.7	58.5	55.3	3.19	18.361			
1,000.0	997.4	1,006.8	1,004.1	2.0	2.0	152.11	19.4	-20.2	59.5	55.9	3.61	16.462			
1,100.0	1,096.3	1,107.6	1,103.8	2.3	2.4	150.20	12.0	-33.2	60.6	56.6	4.07	14.889			
1,200.0	1,194.9	1,208.4	1,203.2	2.7	2.7	148.15	3.6	-47.8	62.0	57.4	4.57	13.557			
1,300.0	1,293.3	1,309.2	1,302.2	3.0	3.0	146.00	-5.6	-63.8	63.6	58.5	5.13	12.408			
1,400.0	1,391.2	1,409.9	1,401.0	3.4	3.4	143.76	-15.7	-81.4	65.4	59.7	5.74	11.407			
1,500.0	1,488.9	1,510.7	1,499.3	3.8	3.8	141.47	-26.7	-100.5	67.5	61.1	6.41	10.528			
1,600.0	1,586.1	1,611.4	1,597.2	4.2	4.3	139.16	-38.5	-121.0	69.9	62.7	7.16	9.755			
1,700.0	1,682.9	1,712.1	1,694.7	4.7	4.8	136.85	-51.2	-143.0	72.6	64.6	7.99	9.076			
1,800.0	1,779.3	1,812.8	1,791.6	5.2	5.3	134.56	-64.7	-166.5	75.5	66.6	8.91	8.480			
1,900.0	1,875.2	1,913.5	1,888.1	5.7	5.8	132.33	-79.1	-191.5	78.8	68.9	9.90	7.958			
2,000.0	1,970.5	2,014.2	1,984.0	6.3	6.4	130.16	-94.3	-218.0	82.3	71.4	10.97	7.503			
2,100.0	2,065.4	2,114.8	2,079.4	6.9	7.0	128.06	-110.4	-245.8	86.2	74.1	12.13	7.108			
2,200.0	2,159.6	2,215.4	2,174.1	7.5	7.6	126.05	-127.2	-275.2	90.4	77.1	13.37	6.764			
2,300.0	2,253.3	2,316.0	2,268.2	8.1	8.3	124.14	-144.9	-305.9	94.9	80.2	14.68	6.465			
2,400.0	2,346.3	2,416.5	2,361.6	8.8	8.9	122.32	-163.4	-338.1	99.8	83.7	16.07	6.208			
2,500.0	2,438.7	2,516.3	2,454.1	9.5	9.6	121.17	-182.1	-370.5	105.3	87.9	17.43	6.041			
2,600.0	2,530.4	2,616.1	2,546.6	10.2	10.3	120.90	-200.7	-402.9	111.8	93.1	18.73	5.968			
2,700.0	2,621.4	2,715.8	2,639.1	11.0	11.0	121.36	-219.4	-435.3	119.2	99.2	19.96	5.969			
2,800.0	2,711.7	2,815.4	2,731.4	11.8	11.7	122.43	-238.0	-467.7	127.5	106.4	21.12	6.038			
2,900.0	2,801.4	2,915.0	2,823.7	12.6	12.4	123.81	-256.6	-500.1	136.5	114.3	22.19	6.149			
3,000.0	2,891.2	3,014.5	2,916.0	13.5	13.1	125.04	-275.3	-532.4	145.5	122.3	23.26	6.256			
3,100.0	2,980.9	3,114.1	3,008.3	14.3	13.8	126.12	-293.9	-564.8	154.7	130.3	24.33	6.358			
3,200.0	3,070.7	3,213.6	3,100.6	15.1	14.5	127.09	-312.5	-597.2	163.8	138.5	25.39	6.454			
3,300.0	3,160.5	3,313.1	3,192.8	15.9	15.2	127.95	-331.1	-629.5	173.1	146.6	26.44	6.545			
3,400.0	3,250.2	3,412.7	3,285.1	16.7	15.9	128.73	-349.7	-661.9	182.3	154.8	27.49	6.631			
3,500.0	3,340.0	3,512.2	3,377.4	17.5	16.6	129.43	-368.3	-694.2	191.6	163.1	28.54	6.712			
3,600.0	3,429.7	3,611.8	3,469.7	18.4	17.3	130.06	-386.9	-726.6	200.9	171.3	29.59	6.789			
3,700.0	3,519.5	3,711.3	3,561.9	19.2	18.0	130.64	-405.6	-758.9	210.2	179.6	30.64	6.862			
3,800.0	3,609.2	3,810.8	3,654.2	20.0	18.7	131.17	-424.2	-791.3	219.6	187.9	31.68	6.931			
3,900.0	3,699.0	3,910.4	3,746.5	20.8	19.4	131.66	-442.8	-823.6	229.0	196.2	32.73	6.996			
4,000.0	3,788.7	4,009.9	3,838.8	21.7	20.1	132.10	-461.4	-856.0	238.3	204.6	33.77	7.057			
4,100.0	3,878.5	4,109.5	3,931.1	22.5	20.8	132.52	-480.0	-888.4	247.7	212.9	34.81	7.116			
4,200.0	3,968.2	4,209.0	4,023.3	23.3	21.5	132.90	-498.6	-920.7	257.1	221.3	35.85	7.172			
4,300.0	4,058.0	4,308.6	4,115.6	24.1	22.2	133.26	-517.3	-953.1	266.6	229.7	36.90	7.225			
4,400.0	4,147.7	4,408.1	4,207.9	25.0	22.9	133.59	-535.9	-985.4	276.0	238.0	37.94	7.275			
4,500.0	4,237.5	4,507.6	4,300.2	25.8	23.6	133.90	-554.5	-1,017.8	285.4	246.4	38.98	7.323			
4,600.0	4,327.2	4,607.2	4,392.5	26.6	24.3	134.19	-573.1	-1,050.1	294.9	254.9	40.02	7.369			
4,700.0	4,417.0	4,706.7	4,484.7	27.5	25.0	134.46	-591.7	-1,082.5	304.3	263.3	41.06	7.412			
4,800.0	4,506.7	4,806.3	4,577.0	28.3	25.7	134.72	-610.3	-1,114.8	313.8	271.7	42.09	7.454			
4,900.0	4,596.5	4,905.8	4,669.3	29.1	26.4	134.96	-629.0	-1,147.2	323.2	280.1	43.13	7.494			
5,000.0	4,686.2	5,005.4	4,761.6	29.9	27.1	135.19	-647.6	-1,179.6	332.7	288.5	44.17	7.532			
5,100.0	4,776.0	5,104.9	4,853.8	30.8	27.8	135.40	-666.2	-1,211.9	342.2	297.0	45.21	7.569			

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

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 9 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance			Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)				Between Ellipses (usft)	
5,200.0	4,865.7	5,204.4	4,946.1	31.6	28.5	135.61	-684.8	-1,244.3	351.7	305.4	46.25	7.604		
5,300.0	4,955.5	5,304.0	5,038.4	32.4	29.2	135.80	-703.4	-1,276.6	361.1	313.9	47.29	7.638		
5,400.0	5,045.2	5,403.5	5,130.7	33.3	30.0	135.98	-722.0	-1,309.0	370.6	322.3	48.32	7.670		
5,500.0	5,135.0	5,503.1	5,223.0	34.1	30.7	136.16	-740.6	-1,341.3	380.1	330.8	49.36	7.701		
5,600.0	5,224.7	5,602.6	5,315.2	34.9	31.4	136.32	-759.3	-1,373.7	389.6	339.2	50.40	7.731		
5,700.0	5,314.5	5,702.2	5,407.5	35.8	32.1	136.48	-777.9	-1,406.0	399.1	347.7	51.44	7.759		
5,800.0	5,404.2	5,801.7	5,499.8	36.6	32.8	136.63	-796.5	-1,438.4	408.6	356.1	52.47	7.787		
5,900.0	5,494.0	5,901.2	5,592.1	37.4	33.5	136.77	-815.1	-1,470.8	418.1	364.6	53.51	7.814		
6,000.0	5,583.7	6,000.8	5,684.3	38.2	34.2	136.91	-833.7	-1,503.1	427.6	373.1	54.55	7.839		
6,100.0	5,673.5	6,100.3	5,776.6	39.1	34.9	137.04	-852.3	-1,535.5	437.1	381.5	55.58	7.864		
6,200.0	5,763.2	6,199.9	5,868.9	39.9	35.6	137.16	-871.0	-1,567.8	446.6	390.0	56.62	7.888		
6,300.0	5,853.0	6,299.4	5,961.2	40.7	36.3	137.28	-889.6	-1,600.2	456.1	398.5	57.66	7.911		
6,400.0	5,942.7	6,398.9	6,053.5	41.6	37.0	137.40	-908.2	-1,632.5	465.7	407.0	58.69	7.934		
6,500.0	6,032.5	6,498.5	6,145.7	42.4	37.7	137.51	-926.8	-1,664.9	475.2	415.4	59.73	7.955		
6,600.0	6,122.3	6,598.0	6,238.0	43.2	38.4	137.62	-945.4	-1,697.3	484.7	423.9	60.77	7.976		
6,700.0	6,212.0	6,697.6	6,330.3	44.1	39.1	137.72	-964.0	-1,729.6	494.2	432.4	61.80	7.996		
6,800.0	6,301.8	6,797.1	6,422.6	44.9	39.8	137.82	-982.6	-1,762.0	503.7	440.9	62.84	8.016		
6,900.0	6,391.5	6,896.7	6,514.8	45.7	40.5	137.96	-1,001.3	-1,794.3	513.2	449.4	63.89	8.034		
7,000.0	6,478.2	6,995.6	6,606.6	46.7	41.2	128.30	-1,019.8	-1,826.5	523.6	458.4	65.19	8.032		
7,100.0	6,557.7	7,092.3	6,696.2	47.9	41.9	123.88	-1,037.9	-1,857.9	536.2	470.7	65.57	8.178		
7,200.0	6,627.9	7,209.4	6,800.5	49.3	43.0	122.55	-1,058.9	-1,906.4	550.4	484.7	65.73	8.373		
7,300.0	6,687.1	7,335.2	6,900.9	50.9	44.5	122.27	-1,079.0	-1,979.2	564.0	497.0	67.01	8.417		
7,400.0	6,733.8	7,469.9	6,990.6	52.6	46.5	122.49	-1,096.9	-2,077.8	576.0	506.4	69.59	8.277		
7,500.0	6,767.0	7,613.0	7,061.3	54.4	49.0	122.88	-1,111.0	-2,201.0	585.3	511.7	73.61	7.952		
7,600.0	6,785.7	7,762.5	7,104.6	56.3	51.9	123.19	-1,119.4	-2,343.5	590.9	511.8	79.04	7.475		
7,700.0	6,790.0	7,902.6	7,115.0	58.2	54.8	123.28	-1,121.1	-2,482.9	592.2	507.4	84.88	6.977		
7,800.0	6,790.0	8,002.6	7,115.0	60.2	56.9	123.28	-1,120.9	-2,582.9	592.2	503.6	88.68	6.679		
7,900.0	6,790.0	8,102.6	7,115.0	62.2	59.0	123.28	-1,120.6	-2,682.9	592.2	499.7	92.50	6.403		
8,000.0	6,790.0	8,202.6	7,115.0	64.2	61.1	123.28	-1,120.4	-2,782.9	592.2	495.9	96.35	6.147		
8,100.0	6,790.0	8,302.6	7,115.0	66.2	63.3	123.28	-1,120.1	-2,882.9	592.2	492.0	100.22	5.909		
8,200.0	6,790.0	8,402.6	7,115.0	68.3	65.5	123.28	-1,119.9	-2,982.9	592.2	488.1	104.12	5.688		
8,300.0	6,790.0	8,502.6	7,115.0	70.4	67.7	123.28	-1,119.6	-3,082.9	592.2	484.2	108.03	5.482		
8,400.0	6,790.0	8,602.6	7,115.0	72.5	69.9	123.28	-1,119.4	-3,182.9	592.2	480.3	111.96	5.290		
8,500.0	6,790.0	8,702.6	7,115.0	74.7	72.1	123.28	-1,119.1	-3,282.9	592.2	476.3	115.91	5.110		
8,600.0	6,790.0	8,802.6	7,115.0	76.8	74.4	123.28	-1,118.9	-3,382.9	592.2	472.4	119.86	4.941		
8,700.0	6,790.0	8,902.6	7,115.0	79.0	76.7	123.28	-1,118.6	-3,482.9	592.2	468.4	123.83	4.782		
8,800.0	6,790.0	9,002.6	7,115.0	81.2	78.9	123.28	-1,118.4	-3,582.9	592.2	464.4	127.82	4.634		
8,900.0	6,790.0	9,102.6	7,115.0	83.4	81.2	123.28	-1,118.1	-3,682.9	592.2	460.4	131.81	4.493		
9,000.0	6,790.0	9,202.6	7,115.0	85.6	83.5	123.28	-1,117.9	-3,782.9	592.2	456.4	135.81	4.361		
9,100.0	6,790.0	9,302.6	7,115.0	87.9	85.8	123.28	-1,117.6	-3,882.9	592.2	452.4	139.81	4.236		
9,200.0	6,790.0	9,402.6	7,115.0	90.1	88.2	123.28	-1,117.4	-3,982.9	592.2	448.4	143.83	4.118		
9,300.0	6,790.0	9,502.6	7,115.0	92.4	90.5	123.28	-1,117.1	-4,082.9	592.2	444.4	147.85	4.006		
9,400.0	6,790.0	9,602.6	7,115.0	94.7	92.8	123.28	-1,116.9	-4,182.9	592.2	440.3	151.88	3.899		
9,500.0	6,790.0	9,702.6	7,115.0	97.0	95.2	123.28	-1,116.6	-4,282.9	592.2	436.3	155.92	3.798		
9,600.0	6,790.0	9,802.6	7,115.0	99.3	97.5	123.28	-1,116.4	-4,382.9	592.2	432.3	159.96	3.702		
9,700.0	6,790.0	9,902.6	7,115.0	101.6	99.9	123.28	-1,116.1	-4,482.9	592.2	428.2	164.00	3.611		
9,800.0	6,790.0	10,002.6	7,115.0	103.9	102.2	123.28	-1,115.9	-4,582.9	592.2	424.2	168.05	3.524		
9,900.0	6,790.0	10,102.6	7,115.0	106.2	104.6	123.28	-1,115.6	-4,682.9	592.2	420.1	172.11	3.441		
10,000.0	6,790.0	10,202.6	7,115.0	108.5	107.0	123.28	-1,115.4	-4,782.9	592.2	416.1	176.17	3.362		
10,100.0	6,790.0	10,302.6	7,115.0	110.9	109.4	123.28	-1,115.1	-4,882.9	592.2	412.0	180.23	3.286		
10,200.0	6,790.0	10,402.6	7,115.0	113.2	111.7	123.28	-1,114.9	-4,982.9	592.2	407.9	184.30	3.213		
10,300.0	6,790.0	10,502.6	7,115.0	115.6	114.1	123.28	-1,114.6	-5,082.9	592.2	403.9	188.37	3.144		

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

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 9 - Hz - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-Geolink MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
10,400.0	6,790.0	10,602.6	7,115.0	117.9	116.5	123.28	-1,114.4	-5,182.9	592.2	399.8	192.44	3.077		
10,500.0	6,790.0	10,702.6	7,115.0	120.3	118.9	123.28	-1,114.1	-5,282.9	592.2	395.7	196.52	3.014		
10,600.0	6,790.0	10,802.6	7,115.0	122.6	121.3	123.28	-1,113.9	-5,382.9	592.2	391.6	200.59	2.952		
10,700.0	6,790.0	10,902.6	7,115.0	125.0	123.7	123.28	-1,113.6	-5,482.9	592.2	387.6	204.68	2.894		
10,800.0	6,790.0	11,002.6	7,115.0	127.4	126.1	123.28	-1,113.4	-5,582.9	592.2	383.5	208.76	2.837		
10,900.0	6,790.0	11,102.6	7,115.0	129.8	128.5	123.28	-1,113.1	-5,682.9	592.2	379.4	212.84	2.782		
11,000.0	6,790.0	11,202.6	7,115.0	132.1	130.9	123.28	-1,112.9	-5,782.9	592.2	375.3	216.93	2.730		
11,100.0	6,790.0	11,302.6	7,115.0	134.5	133.3	123.28	-1,112.6	-5,882.9	592.2	371.2	221.02	2.680		
11,200.0	6,790.0	11,402.6	7,115.0	136.9	135.7	123.28	-1,112.4	-5,982.9	592.2	367.1	225.11	2.631		
11,300.0	6,790.0	11,502.6	7,115.0	139.3	138.2	123.28	-1,112.1	-6,082.9	592.2	363.0	229.21	2.584		
11,400.0	6,790.0	11,602.6	7,115.0	141.7	140.6	123.28	-1,111.9	-6,182.9	592.2	358.9	233.30	2.538		
11,500.0	6,790.0	11,702.6	7,115.0	144.1	143.0	123.28	-1,111.6	-6,282.9	592.2	354.8	237.40	2.495		
11,600.0	6,790.0	11,802.6	7,115.0	146.5	145.4	123.28	-1,111.4	-6,382.9	592.2	350.7	241.50	2.452		
11,700.0	6,790.0	11,902.6	7,115.0	148.9	147.8	123.28	-1,111.1	-6,482.9	592.2	346.6	245.60	2.411		
11,800.0	6,790.0	12,002.6	7,115.0	151.3	150.3	123.28	-1,110.9	-6,582.9	592.2	342.5	249.70	2.372		
11,900.0	6,790.0	12,102.6	7,115.0	153.7	152.7	123.28	-1,110.6	-6,682.9	592.2	338.4	253.80	2.333		
12,000.0	6,790.0	12,202.6	7,115.0	156.1	155.1	123.28	-1,110.4	-6,782.9	592.2	334.3	257.91	2.296		
12,100.0	6,790.0	12,302.6	7,115.0	158.5	157.6	123.28	-1,110.1	-6,882.9	592.2	330.2	262.01	2.260		
12,200.0	6,790.0	12,402.6	7,115.0	160.9	160.0	123.28	-1,109.9	-6,982.9	592.2	326.1	266.12	2.225		
12,300.0	6,790.0	12,502.6	7,115.0	163.3	162.4	123.28	-1,109.6	-7,082.9	592.2	322.0	270.23	2.192		
12,400.0	6,790.0	12,602.6	7,115.0	165.8	164.9	123.28	-1,109.4	-7,182.9	592.2	317.9	274.34	2.159		
12,500.0	6,790.0	12,702.6	7,115.0	168.2	167.3	123.28	-1,109.1	-7,282.9	592.2	313.8	278.45	2.127		
12,600.0	6,790.0	12,802.6	7,115.0	170.6	169.7	123.28	-1,108.9	-7,382.9	592.2	309.7	282.56	2.096		
12,700.0	6,790.0	12,902.6	7,115.0	173.0	172.2	123.28	-1,108.6	-7,482.9	592.2	305.6	286.67	2.066		
12,800.0	6,790.0	13,002.6	7,115.0	175.4	174.6	123.28	-1,108.4	-7,582.9	592.2	301.5	290.78	2.037		
12,900.0	6,790.0	13,102.6	7,115.0	177.9	177.0	123.28	-1,108.1	-7,682.9	592.2	297.3	294.89	2.008		
13,000.0	6,790.0	13,202.6	7,115.0	180.3	179.5	123.28	-1,107.9	-7,782.9	592.2	293.2	299.01	1.981		
13,100.0	6,790.0	13,302.6	7,115.0	182.7	181.9	123.28	-1,107.7	-7,882.9	592.2	289.1	303.12	1.954		
13,200.0	6,790.0	13,402.6	7,115.0	185.1	184.4	123.28	-1,107.4	-7,982.9	592.2	285.0	307.24	1.928		
13,300.0	6,790.0	13,502.6	7,115.0	187.6	186.8	123.28	-1,107.2	-8,082.9	592.2	280.9	311.35	1.902		
13,400.0	6,790.0	13,602.6	7,115.0	190.0	189.3	123.28	-1,106.9	-8,182.9	592.2	276.8	315.47	1.877		
13,500.0	6,790.0	13,702.6	7,115.0	192.4	191.7	123.28	-1,106.7	-8,282.9	592.2	272.6	319.59	1.853		
13,600.0	6,790.0	13,802.6	7,115.0	194.9	194.1	123.28	-1,106.4	-8,382.9	592.2	268.5	323.71	1.830		
13,700.0	6,790.0	13,902.6	7,115.0	197.3	196.6	123.28	-1,106.2	-8,482.9	592.2	264.4	327.83	1.807		
13,800.0	6,790.0	14,002.6	7,115.0	199.7	199.0	123.28	-1,105.9	-8,582.9	592.2	260.3	331.95	1.784		
13,900.0	6,790.0	14,102.6	7,115.0	202.2	201.5	123.28	-1,105.7	-8,682.9	592.2	256.2	336.07	1.762		
14,000.0	6,790.0	14,202.6	7,115.0	204.6	203.9	123.28	-1,105.4	-8,782.9	592.2	252.0	340.19	1.741		
14,100.0	6,790.0	14,302.6	7,115.0	207.0	206.4	123.28	-1,105.2	-8,882.9	592.2	247.9	344.31	1.720		
14,200.0	6,790.0	14,402.6	7,115.0	209.5	208.8	123.28	-1,104.9	-8,982.9	592.2	243.8	348.43	1.700		
14,300.0	6,790.0	14,502.6	7,115.0	211.9	211.3	123.28	-1,104.7	-9,082.9	592.2	239.7	352.55	1.680		
14,400.0	6,790.0	14,602.6	7,115.0	214.4	213.7	123.28	-1,104.4	-9,182.9	592.2	235.6	356.67	1.660		
14,500.0	6,790.0	14,702.6	7,115.0	216.8	216.2	123.28	-1,104.2	-9,282.9	592.2	231.4	360.80	1.641		
14,600.0	6,790.0	14,802.6	7,115.0	219.2	218.6	123.28	-1,103.9	-9,382.9	592.2	227.3	364.92	1.623		
14,700.0	6,790.0	14,902.6	7,115.0	221.7	221.1	123.28	-1,103.7	-9,482.9	592.2	223.2	369.04	1.605		
14,800.0	6,790.0	15,002.6	7,115.0	224.1	223.5	123.28	-1,103.4	-9,582.9	592.2	219.1	373.17	1.587		
14,900.0	6,790.0	15,102.6	7,115.0	226.6	226.0	123.28	-1,103.2	-9,682.9	592.2	214.9	377.29	1.570		
15,000.0	6,790.0	15,202.6	7,115.0	229.0	228.5	123.28	-1,102.9	-9,782.9	592.2	210.8	381.42	1.553		
15,100.0	6,790.0	15,302.6	7,115.0	231.5	230.9	123.28	-1,102.7	-9,882.9	592.2	206.7	385.54	1.536		
15,200.0	6,790.0	15,402.6	7,115.0	233.9	233.4	123.28	-1,102.4	-9,982.9	592.2	202.6	389.67	1.520		
15,300.0	6,790.0	15,502.6	7,115.0	236.4	235.8	123.28	-1,102.2	-10,082.9	592.2	198.4	393.80	1.504		
15,400.0	6,790.0	15,602.6	7,115.0	238.8	238.3	123.28	-1,101.9	-10,182.9	592.2	194.3	397.92	1.488	Level 3	
15,500.0	6,790.0	15,702.6	7,115.0	241.3	240.7	123.28	-1,101.7	-10,282.9	592.2	190.2	402.05	1.473	Level 3	

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

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S16-T6N-R67W - Breniman 9 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis			
15,600.0	6,790.0	15,802.6	7,115.0	243.7	243.2	123.28	-1,101.4	-10,382.9	592.2	186.1	406.18	1.458 Level 3		
15,700.0	6,790.0	15,902.6	7,115.0	246.2	245.6	123.28	-1,101.2	-10,482.9	592.2	181.9	410.31	1.443 Level 3		
15,800.0	6,790.0	16,002.6	7,115.0	248.6	248.1	123.28	-1,100.9	-10,582.9	592.2	177.8	414.43	1.429 Level 3		
15,900.0	6,790.0	16,102.6	7,115.0	251.1	250.6	123.28	-1,100.7	-10,682.9	592.2	173.7	418.56	1.415 Level 3		
16,000.0	6,790.0	16,202.6	7,115.0	253.5	253.0	123.28	-1,100.4	-10,782.9	592.2	169.5	422.69	1.401 Level 3		
16,100.0	6,790.0	16,302.6	7,115.0	256.0	255.5	123.28	-1,100.2	-10,882.9	592.2	165.4	426.82	1.388 Level 3		
16,200.0	6,790.0	16,402.6	7,115.0	258.4	257.9	123.28	-1,099.9	-10,982.9	592.2	161.3	430.95	1.374 Level 3		
16,300.0	6,790.0	16,502.6	7,115.0	260.9	260.4	123.28	-1,099.7	-11,082.9	592.2	157.2	435.08	1.361 Level 3		
16,400.0	6,790.0	16,602.6	7,115.0	263.3	262.8	123.28	-1,099.4	-11,182.9	592.2	153.0	439.21	1.348 Level 3		
16,500.0	6,790.0	16,702.6	7,115.0	265.8	265.3	123.28	-1,099.2	-11,282.9	592.2	148.9	443.34	1.336 Level 3		
16,600.0	6,790.0	16,802.6	7,115.0	268.2	267.8	123.28	-1,098.9	-11,382.9	592.2	144.8	447.47	1.324 Level 3		
16,700.0	6,790.0	16,902.6	7,115.0	270.7	270.2	123.28	-1,098.7	-11,482.9	592.2	140.6	451.60	1.311 Level 3		
16,800.0	6,790.0	17,002.6	7,115.0	273.1	272.7	123.28	-1,098.4	-11,582.9	592.2	136.5	455.73	1.300 Level 3		
16,900.0	6,790.0	17,102.5	7,115.0	275.6	275.1	123.28	-1,098.2	-11,682.9	592.2	132.4	459.86	1.288 Level 3		
16,900.9	6,790.0	17,103.5	7,115.0	275.6	275.2	123.28	-1,098.2	-11,683.8	592.2	132.3	459.90	1.288 Level 3, SF		

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 11
Project:	WELD COUNTY, CO	TVD Reference:	24' KB @ 4821.0usft (H&P 319)
Reference Site:	S16-T6N-R67W	MD Reference:	24' KB @ 4821.0usft (H&P 319)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Breniman 11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 24' KB @ 4821.0usft (H&P 319)

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Breniman 11

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.39°

