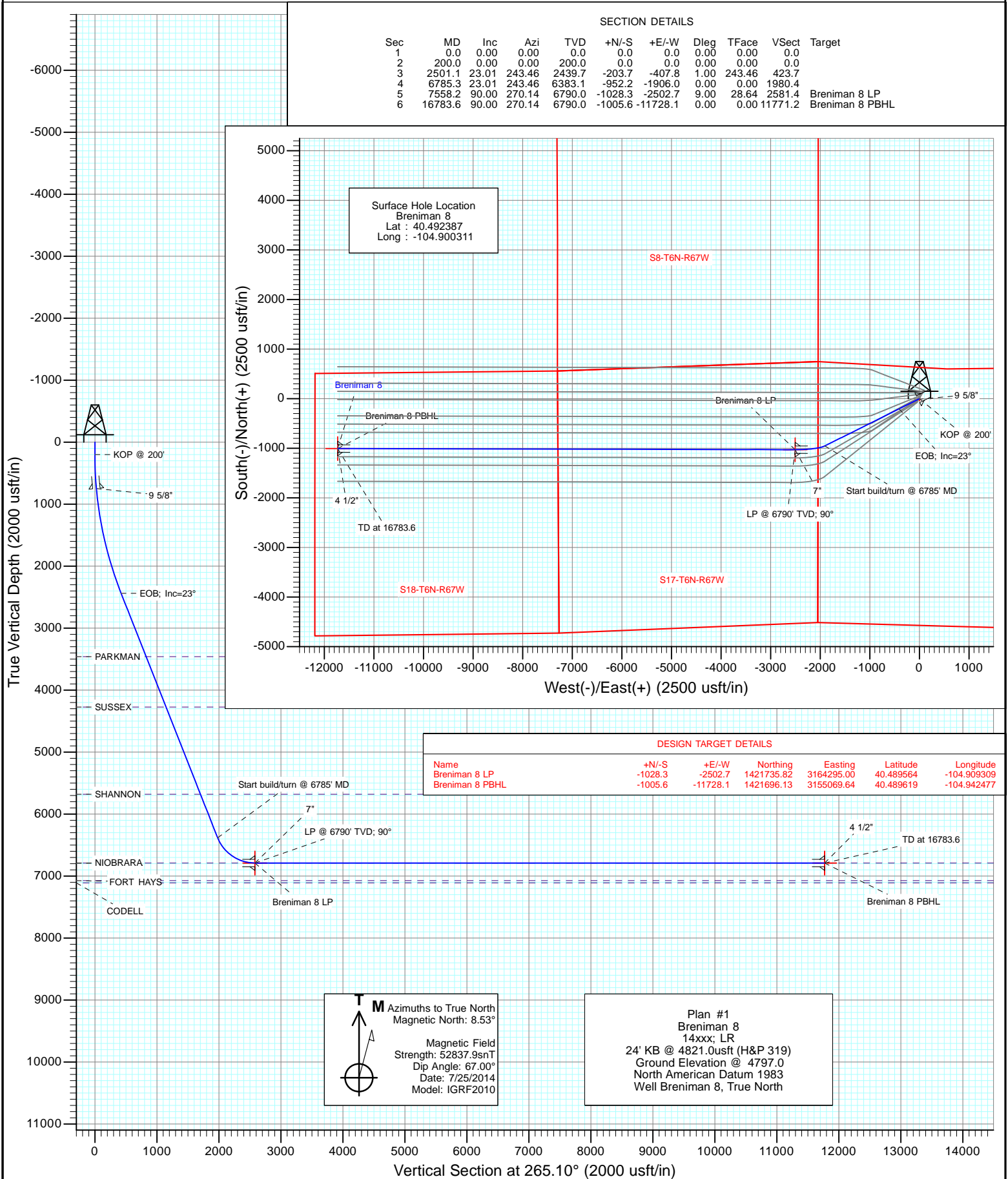




Project: WELD COUNTY, CO
Site: S16-T6N-R67W
Well: Breniman 8
Wellbore: Hz
Design: Plan #1



Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Breniman 8
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 8	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 8					
Well Position	+N/-S	0.0 usft	Northing:	1,422,781.02 usft	Latitude:	40.492387
	+E/-W	0.0 usft	Easting:	3,166,790.71 usft	Longitude:	-104.900311
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	265.10	

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	
2,501.1	23.01	243.46	2,439.7	-203.7	-407.8	1.00	1.00	0.00	243.46	
6,785.3	23.01	243.46	6,383.1	-952.2	-1,906.0	0.00	0.00	0.00	0.00	
7,558.2	90.00	270.14	6,790.0	-1,028.3	-2,502.7	9.00	8.67	3.45	28.64	Breniman 8 LP
16,783.6	90.00	270.14	6,790.0	-1,005.6	-11,728.1	0.00	0.00	0.00	0.00	Breniman 8 PBHL

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Breniman 8
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 8	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	243.46	300.0	-0.4	-0.8	0.8	1.00	1.00	
400.0	2.00	243.46	400.0	-1.6	-3.1	3.2	1.00	1.00	
500.0	3.00	243.46	499.9	-3.5	-7.0	7.3	1.00	1.00	
600.0	4.00	243.46	599.7	-6.2	-12.5	13.0	1.00	1.00	
700.0	5.00	243.46	699.4	-9.7	-19.5	20.3	1.00	1.00	
750.0	5.50	243.46	749.2	-11.8	-23.6	24.5	1.00	1.00	9 5/8"
800.0	6.00	243.46	798.9	-14.0	-28.1	29.2	1.00	1.00	
900.0	7.00	243.46	898.3	-19.1	-38.2	39.7	1.00	1.00	
1,000.0	8.00	243.46	997.4	-24.9	-49.9	51.8	1.00	1.00	
1,100.0	9.00	243.46	1,096.3	-31.5	-63.1	65.6	1.00	1.00	
1,200.0	10.00	243.46	1,194.9	-38.9	-77.9	80.9	1.00	1.00	
1,300.0	11.00	243.46	1,293.3	-47.0	-94.2	97.8	1.00	1.00	
1,400.0	12.00	243.46	1,391.2	-56.0	-112.0	116.4	1.00	1.00	
1,500.0	13.00	243.46	1,488.9	-65.6	-131.4	136.5	1.00	1.00	
1,600.0	14.00	243.46	1,586.1	-76.1	-152.3	158.2	1.00	1.00	
1,700.0	15.00	243.46	1,682.9	-87.2	-174.7	181.5	1.00	1.00	
1,800.0	16.00	243.46	1,779.3	-99.2	-198.6	206.3	1.00	1.00	
1,900.0	17.00	243.46	1,875.2	-111.9	-224.0	232.7	1.00	1.00	
2,000.0	18.00	243.46	1,970.5	-125.3	-250.9	260.7	1.00	1.00	
2,100.0	19.00	243.46	2,065.4	-139.5	-279.2	290.1	1.00	1.00	
2,200.0	20.00	243.46	2,159.6	-154.4	-309.1	321.2	1.00	1.00	
2,300.0	21.00	243.46	2,253.3	-170.1	-340.4	353.7	1.00	1.00	
2,400.0	22.00	243.46	2,346.3	-186.4	-373.2	387.8	1.00	1.00	
2,500.0	23.00	243.46	2,438.7	-203.5	-407.5	423.4	1.00	1.00	
2,501.1	23.01	243.46	2,439.7	-203.7	-407.8	423.7	1.00	1.00	EOB; Inc=23°
2,600.0	23.01	243.46	2,530.8	-221.0	-442.4	459.7	0.00	0.00	
2,700.0	23.01	243.46	2,622.8	-238.5	-477.4	496.0	0.00	0.00	
2,800.0	23.01	243.46	2,714.8	-256.0	-512.4	532.4	0.00	0.00	
2,900.0	23.01	243.46	2,806.9	-273.4	-547.3	568.7	0.00	0.00	
3,000.0	23.01	243.46	2,898.9	-290.9	-582.3	605.0	0.00	0.00	
3,100.0	23.01	243.46	2,991.0	-308.4	-617.3	641.4	0.00	0.00	
3,200.0	23.01	243.46	3,083.0	-325.8	-652.2	677.7	0.00	0.00	
3,300.0	23.01	243.46	3,175.1	-343.3	-687.2	714.0	0.00	0.00	
3,400.0	23.01	243.46	3,267.1	-360.8	-722.2	750.4	0.00	0.00	
3,500.0	23.01	243.46	3,359.2	-378.2	-757.2	786.7	0.00	0.00	
3,600.0	23.01	243.46	3,451.2	-395.7	-792.1	823.0	0.00	0.00	
3,609.6	23.01	243.46	3,460.0	-397.4	-795.5	826.5	0.00	0.00	PARKMAN
3,700.0	23.01	243.46	3,543.2	-413.2	-827.1	859.4	0.00	0.00	
3,800.0	23.01	243.46	3,635.3	-430.6	-862.1	895.7	0.00	0.00	
3,900.0	23.01	243.46	3,727.3	-448.1	-897.0	932.0	0.00	0.00	
4,000.0	23.01	243.46	3,819.4	-465.6	-932.0	968.4	0.00	0.00	
4,100.0	23.01	243.46	3,911.4	-483.1	-967.0	1,004.7	0.00	0.00	
4,200.0	23.01	243.46	4,003.5	-500.5	-1,001.9	1,041.0	0.00	0.00	
4,300.0	23.01	243.46	4,095.5	-518.0	-1,036.9	1,077.4	0.00	0.00	
4,400.0	23.01	243.46	4,187.5	-535.5	-1,071.9	1,113.7	0.00	0.00	
4,495.0	23.01	243.46	4,275.0	-552.1	-1,105.1	1,148.2	0.00	0.00	SUSSEX
4,500.0	23.01	243.46	4,279.6	-552.9	-1,106.8	1,150.0	0.00	0.00	
4,600.0	23.01	243.46	4,371.6	-570.4	-1,141.8	1,186.4	0.00	0.00	
4,700.0	23.01	243.46	4,463.7	-587.9	-1,176.8	1,222.7	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Breniman 8
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 8	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	23.01	243.46	4,555.7	-605.3	-1,211.8	1,259.0	0.00	0.00	
4,900.0	23.01	243.46	4,647.8	-622.8	-1,246.7	1,295.4	0.00	0.00	
5,000.0	23.01	243.46	4,739.8	-640.3	-1,281.7	1,331.7	0.00	0.00	
5,100.0	23.01	243.46	4,831.8	-657.7	-1,316.7	1,368.0	0.00	0.00	
5,200.0	23.01	243.46	4,923.9	-675.2	-1,351.6	1,404.4	0.00	0.00	
5,300.0	23.01	243.46	5,015.9	-692.7	-1,386.6	1,440.7	0.00	0.00	
5,400.0	23.01	243.46	5,108.0	-710.1	-1,421.6	1,477.0	0.00	0.00	
5,500.0	23.01	243.46	5,200.0	-727.6	-1,456.5	1,513.4	0.00	0.00	
5,600.0	23.01	243.46	5,292.1	-745.1	-1,491.5	1,549.7	0.00	0.00	
5,700.0	23.01	243.46	5,384.1	-762.6	-1,526.5	1,586.0	0.00	0.00	
5,800.0	23.01	243.46	5,476.1	-780.0	-1,561.4	1,622.4	0.00	0.00	
5,900.0	23.01	243.46	5,568.2	-797.5	-1,596.4	1,658.7	0.00	0.00	
6,000.0	23.01	243.46	5,660.2	-815.0	-1,631.4	1,695.0	0.00	0.00	
6,021.5	23.01	243.46	5,680.0	-818.7	-1,638.9	1,702.8	0.00	0.00	SHANNON
6,100.0	23.01	243.46	5,752.3	-832.4	-1,666.4	1,731.4	0.00	0.00	
6,200.0	23.01	243.46	5,844.3	-849.9	-1,701.3	1,767.7	0.00	0.00	
6,300.0	23.01	243.46	5,936.4	-867.4	-1,736.3	1,804.0	0.00	0.00	
6,400.0	23.01	243.46	6,028.4	-884.8	-1,771.3	1,840.4	0.00	0.00	
6,500.0	23.01	243.46	6,120.4	-902.3	-1,806.2	1,876.7	0.00	0.00	
6,600.0	23.01	243.46	6,212.5	-919.8	-1,841.2	1,913.0	0.00	0.00	
6,700.0	23.01	243.46	6,304.5	-937.2	-1,876.2	1,949.4	0.00	0.00	
6,785.3	23.01	243.46	6,383.1	-952.2	-1,906.0	1,980.4	0.00	0.00	Start build/turn @ 6785' MD
6,800.0	24.18	245.00	6,396.5	-954.7	-1,911.3	1,985.9	9.00	7.95	
6,900.0	32.43	252.67	6,484.5	-971.4	-1,955.5	2,031.4	9.00	8.25	
7,000.0	40.97	257.45	6,564.6	-986.5	-2,013.3	2,090.2	9.00	8.54	
7,100.0	49.65	260.81	6,634.9	-999.7	-2,083.0	2,160.8	9.00	8.68	
7,200.0	58.40	263.40	6,693.6	-1,010.7	-2,163.1	2,241.5	9.00	8.75	
7,300.0	67.20	265.54	6,739.3	-1,019.2	-2,251.5	2,330.4	9.00	8.80	
7,400.0	76.02	267.42	6,770.8	-1,025.0	-2,346.2	2,425.1	9.00	8.82	
7,500.0	84.86	269.16	6,787.4	-1,027.9	-2,444.6	2,523.5	9.00	8.84	
7,558.2	90.00	270.14	6,790.0	-1,028.3	-2,502.8	2,581.5	9.00	8.84	LP @ 6790' TVD; 90° - NIOBRARA - 7"
7,600.0	90.00	270.14	6,790.0	-1,028.2	-2,544.5	2,623.1	0.00	0.00	
7,700.0	90.00	270.14	6,790.0	-1,027.9	-2,644.5	2,722.7	0.00	0.00	
7,800.0	90.00	270.14	6,790.0	-1,027.7	-2,744.5	2,822.3	0.00	0.00	
7,900.0	90.00	270.14	6,790.0	-1,027.5	-2,844.5	2,921.9	0.00	0.00	
8,000.0	90.00	270.14	6,790.0	-1,027.2	-2,944.5	3,021.5	0.00	0.00	
8,100.0	90.00	270.14	6,790.0	-1,027.0	-3,044.5	3,121.1	0.00	0.00	
8,200.0	90.00	270.14	6,790.0	-1,026.7	-3,144.5	3,220.8	0.00	0.00	
8,300.0	90.00	270.14	6,790.0	-1,026.5	-3,244.5	3,320.4	0.00	0.00	
8,400.0	90.00	270.14	6,790.0	-1,026.2	-3,344.5	3,420.0	0.00	0.00	
8,500.0	90.00	270.14	6,790.0	-1,026.0	-3,444.5	3,519.6	0.00	0.00	
8,600.0	90.00	270.14	6,790.0	-1,025.7	-3,544.5	3,619.2	0.00	0.00	
8,700.0	90.00	270.14	6,790.0	-1,025.5	-3,644.5	3,718.8	0.00	0.00	
8,800.0	90.00	270.14	6,790.0	-1,025.2	-3,744.5	3,818.4	0.00	0.00	
8,900.0	90.00	270.14	6,790.0	-1,025.0	-3,844.5	3,918.0	0.00	0.00	
9,000.0	90.00	270.14	6,790.0	-1,024.7	-3,944.5	4,017.7	0.00	0.00	
9,100.0	90.00	270.14	6,790.0	-1,024.5	-4,044.5	4,117.3	0.00	0.00	
9,200.0	90.00	270.14	6,790.0	-1,024.3	-4,144.5	4,216.9	0.00	0.00	
9,300.0	90.00	270.14	6,790.0	-1,024.0	-4,244.5	4,316.5	0.00	0.00	
9,400.0	90.00	270.14	6,790.0	-1,023.8	-4,344.5	4,416.1	0.00	0.00	
9,500.0	90.00	270.14	6,790.0	-1,023.5	-4,444.5	4,515.7	0.00	0.00	
9,600.0	90.00	270.14	6,790.0	-1,023.3	-4,544.5	4,615.3	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 8	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	-1,023.0	-4,644.5	4,714.9	0.00	0.00	
9,800.0	90.00	270.14	6,790.0	-1,022.8	-4,744.5	4,814.6	0.00	0.00	
9,900.0	90.00	270.14	6,790.0	-1,022.5	-4,844.5	4,914.2	0.00	0.00	
10,000.0	90.00	270.14	6,790.0	-1,022.3	-4,944.5	5,013.8	0.00	0.00	
10,100.0	90.00	270.14	6,790.0	-1,022.0	-5,044.5	5,113.4	0.00	0.00	
10,200.0	90.00	270.14	6,790.0	-1,021.8	-5,144.5	5,213.0	0.00	0.00	
10,300.0	90.00	270.14	6,790.0	-1,021.6	-5,244.5	5,312.6	0.00	0.00	
10,400.0	90.00	270.14	6,790.0	-1,021.3	-5,344.5	5,412.2	0.00	0.00	
10,500.0	90.00	270.14	6,790.0	-1,021.1	-5,444.5	5,511.8	0.00	0.00	
10,600.0	90.00	270.14	6,790.0	-1,020.8	-5,544.5	5,611.5	0.00	0.00	
10,700.0	90.00	270.14	6,790.0	-1,020.6	-5,644.5	5,711.1	0.00	0.00	
10,800.0	90.00	270.14	6,790.0	-1,020.3	-5,744.5	5,810.7	0.00	0.00	
10,900.0	90.00	270.14	6,790.0	-1,020.1	-5,844.5	5,910.3	0.00	0.00	
11,000.0	90.00	270.14	6,790.0	-1,019.8	-5,944.5	6,009.9	0.00	0.00	
11,100.0	90.00	270.14	6,790.0	-1,019.6	-6,044.5	6,109.5	0.00	0.00	
11,200.0	90.00	270.14	6,790.0	-1,019.3	-6,144.5	6,209.1	0.00	0.00	
11,300.0	90.00	270.14	6,790.0	-1,019.1	-6,244.5	6,308.8	0.00	0.00	
11,400.0	90.00	270.14	6,790.0	-1,018.8	-6,344.5	6,408.4	0.00	0.00	
11,500.0	90.00	270.14	6,790.0	-1,018.6	-6,444.5	6,508.0	0.00	0.00	
11,600.0	90.00	270.14	6,790.0	-1,018.4	-6,544.5	6,607.6	0.00	0.00	
11,700.0	90.00	270.14	6,790.0	-1,018.1	-6,644.5	6,707.2	0.00	0.00	
11,800.0	90.00	270.14	6,790.0	-1,017.9	-6,744.5	6,806.8	0.00	0.00	
11,900.0	90.00	270.14	6,790.0	-1,017.6	-6,844.5	6,906.4	0.00	0.00	
12,000.0	90.00	270.14	6,790.0	-1,017.4	-6,944.5	7,006.0	0.00	0.00	
12,100.0	90.00	270.14	6,790.0	-1,017.1	-7,044.5	7,105.7	0.00	0.00	
12,200.0	90.00	270.14	6,790.0	-1,016.9	-7,144.5	7,205.3	0.00	0.00	
12,300.0	90.00	270.14	6,790.0	-1,016.6	-7,244.5	7,304.9	0.00	0.00	
12,400.0	90.00	270.14	6,790.0	-1,016.4	-7,344.5	7,404.5	0.00	0.00	
12,500.0	90.00	270.14	6,790.0	-1,016.1	-7,444.5	7,504.1	0.00	0.00	
12,600.0	90.00	270.14	6,790.0	-1,015.9	-7,544.5	7,603.7	0.00	0.00	
12,700.0	90.00	270.14	6,790.0	-1,015.6	-7,644.5	7,703.3	0.00	0.00	
12,800.0	90.00	270.14	6,790.0	-1,015.4	-7,744.5	7,802.9	0.00	0.00	
12,900.0	90.00	270.14	6,790.0	-1,015.2	-7,844.5	7,902.6	0.00	0.00	
13,000.0	90.00	270.14	6,790.0	-1,014.9	-7,944.5	8,002.2	0.00	0.00	
13,100.0	90.00	270.14	6,790.0	-1,014.7	-8,044.5	8,101.8	0.00	0.00	
13,200.0	90.00	270.14	6,790.0	-1,014.4	-8,144.5	8,201.4	0.00	0.00	
13,300.0	90.00	270.14	6,790.0	-1,014.2	-8,244.5	8,301.0	0.00	0.00	
13,400.0	90.00	270.14	6,790.0	-1,013.9	-8,344.5	8,400.6	0.00	0.00	
13,500.0	90.00	270.14	6,790.0	-1,013.7	-8,444.5	8,500.2	0.00	0.00	
13,600.0	90.00	270.14	6,790.0	-1,013.4	-8,544.5	8,599.8	0.00	0.00	
13,700.0	90.00	270.14	6,790.0	-1,013.2	-8,644.5	8,699.5	0.00	0.00	
13,800.0	90.00	270.14	6,790.0	-1,012.9	-8,744.5	8,799.1	0.00	0.00	
13,900.0	90.00	270.14	6,790.0	-1,012.7	-8,844.5	8,898.7	0.00	0.00	
14,000.0	90.00	270.14	6,790.0	-1,012.4	-8,944.5	8,998.3	0.00	0.00	
14,100.0	90.00	270.14	6,790.0	-1,012.2	-9,044.5	9,097.9	0.00	0.00	
14,200.0	90.00	270.14	6,790.0	-1,012.0	-9,144.5	9,197.5	0.00	0.00	
14,300.0	90.00	270.14	6,790.0	-1,011.7	-9,244.5	9,297.1	0.00	0.00	
14,400.0	90.00	270.14	6,790.0	-1,011.5	-9,344.5	9,396.8	0.00	0.00	
14,500.0	90.00	270.14	6,790.0	-1,011.2	-9,444.5	9,496.4	0.00	0.00	
14,600.0	90.00	270.14	6,790.0	-1,011.0	-9,544.5	9,596.0	0.00	0.00	
14,700.0	90.00	270.14	6,790.0	-1,010.7	-9,644.5	9,695.6	0.00	0.00	
14,800.0	90.00	270.14	6,790.0	-1,010.5	-9,744.5	9,795.2	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Breniman 8
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 8	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	-1,010.2	-9,844.5	9,894.8	0.00	0.00	
15,000.0	90.00	270.14	6,790.0	-1,010.0	-9,944.5	9,994.4	0.00	0.00	
15,100.0	90.00	270.14	6,790.0	-1,009.7	-10,044.5	10,094.0	0.00	0.00	
15,200.0	90.00	270.14	6,790.0	-1,009.5	-10,144.5	10,193.7	0.00	0.00	
15,300.0	90.00	270.14	6,790.0	-1,009.2	-10,244.5	10,293.3	0.00	0.00	
15,400.0	90.00	270.14	6,790.0	-1,009.0	-10,344.5	10,392.9	0.00	0.00	
15,500.0	90.00	270.14	6,790.0	-1,008.8	-10,444.5	10,492.5	0.00	0.00	
15,600.0	90.00	270.14	6,790.0	-1,008.5	-10,544.5	10,592.1	0.00	0.00	
15,700.0	90.00	270.14	6,790.0	-1,008.3	-10,644.5	10,691.7	0.00	0.00	
15,800.0	90.00	270.14	6,790.0	-1,008.0	-10,744.5	10,791.3	0.00	0.00	
15,900.0	90.00	270.14	6,790.0	-1,007.8	-10,844.5	10,890.9	0.00	0.00	
16,000.0	90.00	270.14	6,790.0	-1,007.5	-10,944.5	10,990.6	0.00	0.00	
16,100.0	90.00	270.14	6,790.0	-1,007.3	-11,044.5	11,090.2	0.00	0.00	
16,200.0	90.00	270.14	6,790.0	-1,007.0	-11,144.5	11,189.8	0.00	0.00	
16,300.0	90.00	270.14	6,790.0	-1,006.8	-11,244.5	11,289.4	0.00	0.00	
16,400.0	90.00	270.14	6,790.0	-1,006.5	-11,344.5	11,389.0	0.00	0.00	
16,500.0	90.00	270.14	6,790.0	-1,006.3	-11,444.5	11,488.6	0.00	0.00	
16,600.0	90.00	270.14	6,790.0	-1,006.1	-11,544.5	11,588.2	0.00	0.00	
16,700.0	90.00	270.14	6,790.0	-1,005.8	-11,644.5	11,687.8	0.00	0.00	
16,783.6	90.00	270.14	6,790.0	-1,005.6	-11,728.1	11,771.2	0.00	0.00	TD at 16783.6 - 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 8 LP	0.00	0.00	6,790.0	-1,028.3	-2,502.7	1,421,735.82	3,164,295.00	40.489564	-104.909309
- plan hits target center									
- Point									
Breniman 8 PBHL	0.00	0.00	6,790.0	-1,005.6	-11,728.1	1,421,696.13	3,155,069.64	40.489619	-104.942477
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
16,783.6	6,790.0	4 1/2"	0	0	
7,558.2	6,790.0	7"	0	0	
750.0	749.2	9 5/8"	0	0	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Breniman 8
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 8	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,609.6	3,460.0	PARKMAN				
4,495.0	4,275.0	SUSSEX				
6,021.5	5,680.0	SHANNON				
7,558.2	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'	
2,501.1	2,439.7	-203.7	-407.8	EOB; Inc=23°	
6,785.3	6,383.1	-952.2	-1,906.0	Start build/turn @ 6785' MD	
7,558.2	6,790.0	-1,028.3	-2,502.7	LP @ 6790' TVD; 90°	
16,783.6	6,790.0	-1,005.6	-11,728.1	TD at 16783.6	

Extraction Oil & Gas

WELD COUNTY, CO

S16-T6N-R67W

Breniman 8

Hz

Plan #1

Anticollision Report

28 July, 2014

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 8
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 8	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	16,783.6	Plan #1 (Hz)	Geolink MWD	Geolink MWD

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S16-T6N-R67W						
Breniman 1 - Hz - Plan #1	200.0	200.0	195.7	195.1	318.495	CC, ES
Breniman 1 - Hz - Plan #1	2,600.0	2,564.4	559.5	544.0	36.214	SF
Breniman 10 - Hz - Plan #1	200.0	200.0	56.1	55.8	182.568	CC
Breniman 10 - Hz - Plan #1	16,783.6	16,829.6	329.7	54.6	1.198	Level 2, ES, SF
Breniman 11 - Hz - Plan #1	200.0	200.0	84.2	83.9	273.852	CC
Breniman 11 - Hz - Plan #1	300.0	298.6	84.2	83.8	174.728	ES
Breniman 11 - Hz - Plan #1	16,783.6	16,900.9	659.8	384.6	2.398	SF
Breniman 2 - Hz - Plan #1	200.0	200.0	167.8	167.1	273.056	CC, ES
Breniman 2 - Hz - Plan #1	2,200.0	2,197.7	355.6	343.6	29.848	SF
Breniman 3 - Hz - Plan #1	200.0	200.0	139.7	139.1	227.384	CC
Breniman 3 - Hz - Plan #1	300.0	301.3	140.0	139.0	144.814	ES
Breniman 3 - Hz - Plan #1	16,783.6	17,708.3	1,200.1	663.8	2.238	SF
Breniman 4 - Hz - Plan #1	200.0	199.0	112.1	111.5	182.979	CC
Breniman 4 - Hz - Plan #1	300.0	300.2	112.3	111.3	116.417	ES
Breniman 4 - Hz - Plan #1	16,783.6	17,387.8	990.2	433.6	1.779	SF
Breniman 5 - Hz - Plan #1	200.0	200.0	83.9	83.3	136.551	CC
Breniman 5 - Hz - Plan #1	800.0	807.1	85.0	82.2	30.078	ES
Breniman 5 - Hz - Plan #1	16,783.6	17,400.3	660.1	103.7	1.186	Level 2, SF
Breniman 6 - Hz - Plan #1	1,306.1	1,315.1	53.3	48.4	10.901	CC, ES
Breniman 6 - Hz - Plan #1	16,783.6	17,728.8	592.2	126.1	1.271	Level 3, SF
Breniman 7 - Hz - Plan #1	1,281.2	1,285.8	23.8	19.4	5.421	CC
Breniman 7 - Hz - Plan #1	16,783.6	17,422.8	330.1	-225.9	0.594	Level 1, ES, SF
Breniman 9 - Hz - Plan #1	200.0	200.0	28.4	28.1	92.302	CC
Breniman 9 - Hz - Plan #1	600.0	598.3	28.8	27.7	28.200	ES
Breniman 9 - Hz - Plan #1	16,783.6	17,104.5	364.3	237.4	2.870	SF

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 8
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 8	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: 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	30.87	167.9	100.4	195.7					
100.0	100.0	100.0	100.0	0.1	0.1	30.87	167.9	100.4	195.7	195.4	0.27	737.567		
200.0	200.0	200.0	200.0	0.3	0.3	30.87	167.9	100.4	195.7	195.1	0.61	318.495 CC, ES		
300.0	300.0	300.6	300.6	0.5	0.5	147.30	168.3	99.6	196.3	195.3	0.97	203.252		
400.0	400.0	401.1	401.1	0.7	0.7	146.94	169.2	97.1	198.0	196.7	1.32	149.759		
500.0	499.9	501.6	501.4	0.9	0.9	146.37	170.8	93.0	201.0	199.3	1.69	118.969		
600.0	599.7	602.0	601.6	1.1	1.1	145.59	173.1	87.3	205.2	203.1	2.07	99.016		
700.0	699.4	702.2	701.6	1.3	1.3	144.64	175.9	79.9	210.6	208.1	2.48	85.075		
800.0	798.9	802.3	801.2	1.5	1.5	143.54	179.4	70.9	217.3	214.4	2.90	74.813		
900.0	898.3	902.3	900.5	1.8	1.8	142.32	183.5	60.4	225.3	222.0	3.36	66.968		
1,000.0	997.4	1,002.0	999.4	2.0	2.0	141.01	188.3	48.2	234.7	230.8	3.86	60.797		
1,100.0	1,096.3	1,101.5	1,097.8	2.3	2.3	139.66	193.6	34.5	245.4	241.0	4.39	55.837		
1,200.0	1,194.9	1,200.7	1,195.6	2.7	2.7	138.27	199.6	19.2	257.5	252.5	4.97	51.780		
1,300.0	1,293.3	1,299.6	1,292.9	3.0	3.0	136.88	206.1	2.4	271.0	265.4	5.60	48.417		
1,400.0	1,391.2	1,398.3	1,389.6	3.4	3.4	135.52	213.2	-15.8	285.9	279.6	6.26	45.651		
1,500.0	1,488.9	1,496.8	1,486.1	3.8	3.7	134.44	220.5	-34.4	302.1	295.1	6.95	43.459		
1,600.0	1,586.1	1,595.2	1,582.4	4.2	4.1	133.67	227.7	-53.0	319.6	311.9	7.66	41.717		
1,700.0	1,682.9	1,693.4	1,678.6	4.7	4.5	133.17	234.9	-71.5	338.3	329.9	8.39	40.325		
1,800.0	1,779.3	1,791.4	1,774.6	5.2	4.9	132.92	242.1	-89.9	358.2	349.1	9.13	39.214		
1,900.0	1,875.2	1,889.2	1,870.3	5.7	5.3	132.86	249.3	-108.4	379.2	369.3	9.89	38.333		
2,000.0	1,970.5	1,986.7	1,965.8	6.3	5.6	132.97	256.4	-126.7	401.5	390.8	10.67	37.642		
2,100.0	2,065.4	2,083.8	2,061.0	6.9	6.0	133.21	263.6	-145.0	424.8	413.4	11.45	37.112		
2,200.0	2,159.6	2,180.7	2,155.8	7.5	6.4	133.57	270.7	-163.3	449.4	437.2	12.24	36.722		
2,300.0	2,253.3	2,277.2	2,250.3	8.2	6.8	134.02	277.8	-181.5	475.2	462.2	13.04	36.453		
2,400.0	2,346.3	2,373.3	2,344.4	8.8	7.2	134.55	284.8	-199.6	502.2	488.4	13.84	36.291		
2,500.0	2,438.7	2,468.9	2,438.1	9.6	7.5	135.13	291.8	-217.6	530.5	515.9	14.65	36.225		
2,600.0	2,530.8	2,564.4	2,531.6	10.3	7.9	135.90	298.8	-235.6	559.5	544.0	15.45	36.214 SF		
2,700.0	2,622.8	2,659.8	2,625.1	11.0	8.3	136.59	305.9	-253.6	588.6	572.3	16.25	36.217		
2,800.0	2,714.9	2,755.3	2,718.5	11.7	8.7	137.23	312.9	-271.6	617.7	600.6	17.05	36.230		
2,900.0	2,806.9	2,850.7	2,812.0	12.5	9.0	137.80	319.9	-289.5	646.9	629.1	17.84	36.252		
3,000.0	2,898.9	2,946.2	2,905.5	13.2	9.4	138.33	326.9	-307.5	676.2	657.5	18.64	36.280		
3,100.0	2,991.0	3,041.6	2,999.0	13.9	9.8	138.81	333.9	-325.5	705.5	686.0	19.43	36.313		
3,200.0	3,083.0	3,137.1	3,092.5	14.7	10.2	139.25	340.9	-343.5	734.8	714.6	20.22	36.348		
3,300.0	3,175.1	3,232.5	3,185.9	15.4	10.6	139.66	347.9	-361.5	764.2	743.2	21.00	36.386		
3,400.0	3,267.1	3,328.0	3,279.4	16.1	10.9	140.04	354.9	-379.5	793.6	771.8	21.79	36.426		
3,500.0	3,359.2	3,423.4	3,372.9	16.9	11.3	140.40	361.9	-397.5	823.0	800.5	22.57	36.467		
3,600.0	3,451.2	3,518.9	3,466.4	17.6	11.7	140.72	368.9	-415.4	852.5	829.2	23.35	36.509		
3,700.0	3,543.2	3,614.3	3,559.8	18.3	12.1	141.03	375.9	-433.4	882.0	857.9	24.13	36.550		
3,800.0	3,635.3	3,709.8	3,653.3	19.1	12.5	141.32	382.9	-451.4	911.5	886.6	24.91	36.592		
3,900.0	3,727.3	3,805.2	3,746.8	19.8	12.8	141.59	389.9	-469.4	941.0	915.4	25.69	36.634		
4,000.0	3,819.4	3,900.7	3,840.3	20.5	13.2	141.84	396.9	-487.4	970.6	944.1	26.47	36.675		
4,100.0	3,911.4	3,996.1	3,933.7	21.3	13.6	142.08	404.0	-505.4	1,000.2	972.9	27.24	36.715		
4,200.0	4,003.5	4,091.6	4,027.2	22.0	14.0	142.30	411.0	-523.4	1,029.8	1,001.7	28.02	36.755		
4,300.0	4,095.5	4,187.0	4,120.7	22.8	14.4	142.51	418.0	-541.4	1,059.4	1,030.6	28.79	36.795		
4,400.0	4,187.5	4,282.5	4,214.2	23.5	14.7	142.71	425.0	-559.3	1,089.0	1,059.4	29.56	36.833		
4,500.0	4,279.6	4,377.9	4,307.6	24.2	15.1	142.90	432.0	-577.3	1,118.6	1,088.2	30.34	36.871		
4,600.0	4,371.6	4,473.4	4,401.1	25.0	15.5	143.08	439.0	-595.3	1,148.2	1,117.1	31.11	36.908		
4,700.0	4,463.7	4,568.8	4,494.6	25.7	15.9	143.25	446.0	-613.3	1,177.9	1,146.0	31.88	36.944		
4,800.0	4,555.7	4,664.3	4,588.1	26.5	16.3	143.41	453.0	-631.3	1,207.5	1,174.9	32.65	36.980		

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 8
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 8	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-														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	-148.97	-48.1	-28.9	56.1						
100.0	100.0	100.0	100.0	0.1	0.0	-148.97	-48.1	-28.9	56.1	56.0	0.13	422.427			
200.0	200.0	200.0	200.0	0.3	0.0	-148.97	-48.1	-28.9	56.1	55.8	0.31	182.568	CC		
300.0	300.0	299.1	299.1	0.5	0.0	-32.52	-48.6	-29.6	56.2	55.7	0.48	116.470			
400.0	400.0	398.3	398.2	0.7	0.0	-32.78	-49.9	-31.8	56.3	55.6	0.66	85.505			
500.0	499.9	497.4	497.2	0.9	0.0	-33.22	-52.3	-35.4	56.5	55.6	0.84	67.505			
600.0	599.7	596.5	596.2	1.1	0.0	-33.82	-55.5	-40.4	56.8	55.8	1.02	55.704			
700.0	699.4	695.6	695.0	1.3	0.0	-34.59	-59.7	-46.9	57.2	56.0	1.21	47.339			
800.0	798.9	794.8	793.7	1.5	0.0	-35.51	-64.8	-54.8	57.6	56.2	1.40	41.070			
900.0	898.3	893.9	892.2	1.8	0.0	-36.59	-70.9	-64.2	58.2	56.6	1.61	36.170			
1,000.0	897.4	893.0	890.5	2.0	0.0	-37.80	-77.8	-74.9	58.9	57.1	1.83	32.212			
1,100.0	1,096.3	1,092.1	1,088.5	2.3	0.0	-39.13	-85.7	-87.1	59.8	57.7	2.07	28.931			
1,200.0	1,194.9	1,191.2	1,186.3	2.7	0.0	-40.57	-94.5	-100.8	60.7	58.4	2.32	26.154			
1,300.0	1,293.3	1,290.3	1,283.8	3.0	0.0	-42.11	-104.2	-115.8	61.9	59.3	2.60	23.768			
1,400.0	1,391.2	1,389.5	1,380.9	3.4	0.0	-43.73	-114.8	-132.3	63.1	60.2	2.91	21.694			
1,500.0	1,488.9	1,488.6	1,477.7	3.8	0.0	-45.42	-126.4	-150.1	64.6	61.3	3.25	19.878			
1,600.0	1,586.1	1,587.7	1,574.1	4.2	0.0	-47.15	-138.8	-169.4	66.2	62.5	3.62	18.282			
1,700.0	1,682.9	1,686.8	1,670.1	4.7	0.0	-48.92	-152.2	-190.0	67.9	63.9	4.03	16.877			
1,800.0	1,779.3	1,785.9	1,765.7	5.2	0.0	-50.70	-166.4	-212.1	69.9	65.5	4.47	15.638			
1,900.0	1,875.2	1,885.0	1,860.8	5.7	0.0	-52.49	-181.6	-235.5	72.1	67.1	4.96	14.546			
2,000.0	1,970.5	1,984.0	1,955.4	6.3	0.0	-54.26	-197.6	-260.3	74.5	69.0	5.48	13.586			
2,100.0	2,065.4	2,083.1	2,049.4	6.9	0.0	-56.02	-214.5	-286.5	77.0	71.0	6.05	12.741			
2,200.0	2,159.6	2,182.2	2,142.9	7.5	0.0	-57.73	-232.3	-314.1	79.8	73.2	6.65	11.999			
2,300.0	2,253.3	2,281.3	2,235.8	8.2	0.0	-59.41	-251.0	-343.0	82.8	75.5	7.30	11.346			
2,400.0	2,346.3	2,380.3	2,328.1	8.8	0.0	-61.03	-270.5	-373.2	86.0	78.0	7.99	10.772			
2,500.0	2,438.7	2,479.4	2,419.7	9.6	0.0	-62.60	-290.9	-404.8	89.4	80.7	8.71	10.267			
2,600.0	2,530.8	2,578.5	2,510.7	10.3	0.0	-63.68	-312.2	-437.7	93.4	84.0	9.42	9.916			
2,700.0	2,622.8	2,677.9	2,601.5	11.0	0.0	-63.91	-334.2	-471.8	98.3	88.2	10.09	9.737			
2,800.0	2,714.9	2,777.8	2,692.5	11.7	0.0	-64.03	-356.5	-506.3	103.2	92.4	10.76	9.595			
2,900.0	2,806.9	2,877.7	2,783.6	12.5	0.0	-64.14	-378.8	-540.8	108.1	96.7	11.42	9.467			
3,000.0	2,898.9	2,977.5	2,874.6	13.2	0.0	-64.24	-401.1	-575.3	113.1	101.0	12.09	9.352			
3,100.0	2,991.0	3,077.4	2,965.7	13.9	0.0	-64.33	-423.4	-609.8	118.0	105.3	12.76	9.248			
3,200.0	3,083.0	3,177.3	3,056.7	14.7	0.0	-64.41	-445.7	-644.3	123.0	109.5	13.43	9.153			
3,300.0	3,175.1	3,277.2	3,147.7	15.4	0.0	-64.48	-468.0	-678.8	127.9	113.8	14.11	9.066			
3,400.0	3,267.1	3,377.1	3,238.8	16.1	0.0	-64.55	-490.2	-713.3	132.8	118.1	14.78	8.987			
3,500.0	3,359.2	3,476.9	3,329.8	16.9	0.0	-64.62	-512.5	-747.8	137.8	122.3	15.46	8.914			
3,600.0	3,451.2	3,576.8	3,420.9	17.6	0.0	-64.68	-534.8	-782.3	142.7	126.6	16.13	8.847			
3,700.0	3,543.2	3,676.7	3,511.9	18.3	0.0	-64.74	-557.1	-816.8	147.7	130.8	16.81	8.785			
3,800.0	3,635.3	3,776.6	3,603.0	19.1	0.0	-64.79	-579.4	-851.3	152.6	135.1	17.48	8.727			
3,900.0	3,727.3	3,876.4	3,694.0	19.8	0.0	-64.84	-601.7	-885.8	157.5	139.4	18.16	8.674			
4,000.0	3,819.4	3,976.3	3,785.1	20.5	0.0	-64.88	-624.0	-920.2	162.5	143.6	18.84	8.624			
4,100.0	3,911.4	4,076.2	3,876.1	21.3	0.0	-64.93	-646.2	-954.7	167.4	147.9	19.52	8.577			
4,200.0	4,003.5	4,176.1	3,967.2	22.0	0.0	-64.97	-668.5	-989.2	172.3	152.2	20.20	8.533			
4,300.0	4,095.5	4,276.0	4,058.2	22.8	0.0	-65.01	-690.8	-1,023.7	177.3	156.4	20.88	8.492			
4,400.0	4,187.5	4,375.8	4,149.2	23.5	0.0	-65.04	-713.1	-1,058.2	182.2	160.7	21.56	8.453			
4,500.0	4,279.6	4,475.7	4,240.3	24.2	0.0	-65.08	-735.4	-1,092.7	187.2	164.9	22.24	8.417			
4,600.0	4,371.6	4,575.6	4,331.3	25.0	0.0	-65.11	-757.7	-1,127.2	192.1	169.2	22.92	8.383			
4,700.0	4,463.7	4,675.5	4,422.4	25.7	0.0	-65.14	-779.9	-1,161.7	197.0	173.5	23.60	8.350			
4,800.0	4,555.7	4,775.3	4,513.4	26.5	0.0	-65.17	-802.2	-1,196.2	202.0	177.7	24.28	8.320			
4,900.0	4,647.8	4,875.2	4,604.5	27.2	0.0	-65.20	-824.5	-1,230.7	206.9	182.0	24.96	8.291			
5,000.0	4,739.8	4,975.1	4,695.5	27.9	0.0	-65.23	-846.8	-1,265.2	211.9	186.2	25.64	8.263			
5,100.0	4,831.9	5,075.0	4,786.6	28.7	0.0	-65.26	-869.1	-1,299.7	216.8	190.5	26.32	8.237			

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 8
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 8	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-													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	4,923.9	5,174.9	4,877.6	29.4	0.0	-65.28	-891.4	-1,334.2	221.8	194.7	27.00	8.212		
5,300.0	5,015.9	5,274.7	4,968.7	30.2	0.0	-65.30	-913.7	-1,368.7	226.7	199.0	27.69	8.188		
5,400.0	5,108.0	5,374.6	5,059.7	30.9	0.0	-65.33	-935.9	-1,403.1	231.6	203.3	28.37	8.165		
5,500.0	5,200.0	5,474.5	5,150.7	31.7	0.0	-65.35	-958.2	-1,437.6	236.6	207.5	29.05	8.144		
5,600.0	5,292.1	5,574.4	5,241.8	32.4	0.0	-65.37	-980.5	-1,472.1	241.5	211.8	29.73	8.123		
5,700.0	5,384.1	5,674.2	5,332.8	33.1	0.0	-65.39	-1,002.8	-1,506.6	246.5	216.0	30.41	8.103		
5,800.0	5,476.2	5,774.1	5,423.9	33.9	0.0	-65.41	-1,025.1	-1,541.1	251.4	220.3	31.10	8.084		
5,900.0	5,568.2	5,874.0	5,514.9	34.6	0.0	-65.43	-1,047.4	-1,575.6	256.3	224.6	31.78	8.066		
6,000.0	5,660.2	5,973.9	5,606.0	35.4	0.0	-65.44	-1,069.7	-1,610.1	261.3	228.8	32.46	8.049		
6,100.0	5,752.3	6,073.8	5,697.0	36.1	0.0	-65.46	-1,091.9	-1,644.6	266.2	233.1	33.14	8.032		
6,200.0	5,844.3	6,173.6	5,788.1	36.8	0.0	-65.48	-1,114.2	-1,679.1	271.2	237.3	33.83	8.016		
6,300.0	5,936.4	6,273.5	5,879.1	37.6	0.0	-65.49	-1,136.5	-1,713.6	276.1	241.6	34.51	8.001		
6,400.0	6,028.4	6,373.4	5,970.1	38.3	0.0	-65.51	-1,158.8	-1,748.1	281.0	245.8	35.19	7.986		
6,500.0	6,120.5	6,473.3	6,061.2	39.1	0.0	-65.52	-1,181.1	-1,782.6	286.0	250.1	35.88	7.971		
6,600.0	6,212.5	6,573.1	6,152.2	39.8	0.0	-65.54	-1,203.4	-1,817.1	290.9	254.4	36.56	7.958		
6,700.0	6,304.5	6,673.0	6,243.3	40.6	0.0	-65.55	-1,225.6	-1,851.5	295.9	258.6	37.24	7.944		
6,800.0	6,396.5	6,772.9	6,334.3	41.3	0.0	-66.95	-1,247.9	-1,886.0	300.8	262.9	37.92	7.933		
6,900.0	6,484.5	6,874.8	6,426.6	42.3	0.0	-74.87	-1,270.5	-1,922.8	306.4	267.3	39.14	7.830		
7,000.0	6,564.6	6,981.2	6,516.8	43.5	0.0	-80.19	-1,292.5	-1,974.6	312.1	271.5	40.64	7.680		
7,100.0	6,634.9	7,089.6	6,598.7	44.9	0.0	-83.84	-1,312.5	-2,042.5	317.4	275.2	42.26	7.511		
7,200.0	6,693.6	7,199.9	6,669.4	46.6	0.0	-86.42	-1,329.7	-2,125.2	322.1	278.1	43.95	7.327		
7,300.0	6,739.3	7,311.7	6,725.8	48.5	0.0	-88.21	-1,343.3	-2,220.6	325.8	280.1	45.69	7.131		
7,400.0	6,770.8	7,424.7	6,765.6	50.4	0.0	-89.35	-1,352.8	-2,325.8	328.4	281.0	47.44	6.923		
7,500.0	6,787.4	7,538.5	6,786.7	52.5	0.0	-89.92	-1,357.7	-2,437.4	329.8	280.7	49.19	6.705		
7,600.0	6,790.0	7,646.7	6,790.0	54.6	0.0	-90.00	-1,358.3	-2,545.4	330.1	278.9	51.16	6.452		
7,700.0	6,790.0	7,746.7	6,790.0	56.8	0.0	-90.00	-1,358.0	-2,645.4	330.1	276.6	53.44	6.176		
7,800.0	6,790.0	7,846.7	6,790.0	58.9	0.0	-90.00	-1,357.8	-2,745.4	330.0	274.3	55.75	5.920		
7,900.0	6,790.0	7,946.7	6,790.0	61.1	0.0	-90.00	-1,357.5	-2,845.4	330.0	272.0	58.07	5.684		
8,000.0	6,790.0	8,046.7	6,790.0	63.3	0.0	-90.00	-1,357.3	-2,945.4	330.0	269.6	60.40	5.464		
8,100.0	6,790.0	8,146.7	6,790.0	65.6	0.0	-90.00	-1,357.0	-3,045.4	330.0	267.3	62.74	5.260		
8,200.0	6,790.0	8,246.7	6,790.0	67.8	0.0	-90.00	-1,356.8	-3,145.4	330.0	264.9	65.09	5.070		
8,300.0	6,790.0	8,346.7	6,790.0	70.1	0.0	-90.00	-1,356.5	-3,245.4	330.0	262.6	67.46	4.893		
8,400.0	6,790.0	8,446.7	6,790.0	72.3	0.0	-90.00	-1,356.3	-3,345.4	330.0	260.2	69.82	4.727		
8,500.0	6,790.0	8,546.7	6,790.0	74.6	0.0	-90.00	-1,356.0	-3,445.4	330.0	257.8	72.20	4.571		
8,600.0	6,790.0	8,646.7	6,790.0	76.9	0.0	-90.00	-1,355.8	-3,545.4	330.0	255.4	74.58	4.425		
8,700.0	6,790.0	8,746.7	6,790.0	79.2	0.0	-90.00	-1,355.5	-3,645.4	330.0	253.0	76.97	4.288		
8,800.0	6,790.0	8,846.7	6,790.0	81.6	0.0	-90.00	-1,355.3	-3,745.4	330.0	250.6	79.36	4.158		
8,900.0	6,790.0	8,946.7	6,790.0	83.9	0.0	-90.00	-1,355.0	-3,845.4	330.0	248.2	81.76	4.036		
9,000.0	6,790.0	9,046.7	6,790.0	86.2	0.0	-90.00	-1,354.8	-3,945.4	330.0	245.8	84.16	3.921		
9,100.0	6,790.0	9,146.7	6,790.0	88.6	0.0	-90.00	-1,354.5	-4,045.4	330.0	243.4	86.57	3.812		
9,200.0	6,790.0	9,246.7	6,790.0	90.9	0.0	-90.00	-1,354.3	-4,145.4	330.0	241.0	88.98	3.709		
9,300.0	6,790.0	9,346.7	6,790.0	93.3	0.0	-90.00	-1,354.0	-4,245.4	330.0	238.6	91.40	3.611		
9,400.0	6,790.0	9,446.7	6,790.0	95.6	0.0	-90.00	-1,353.8	-4,345.4	330.0	236.2	93.81	3.518		
9,500.0	6,790.0	9,546.7	6,790.0	98.0	0.0	-90.00	-1,353.5	-4,445.4	330.0	233.8	96.23	3.429		
9,600.0	6,790.0	9,646.7	6,790.0	100.4	0.0	-90.00	-1,353.3	-4,545.4	330.0	231.3	98.65	3.345		
9,700.0	6,790.0	9,746.7	6,790.0	102.8	0.0	-90.00	-1,353.0	-4,645.4	330.0	228.9	101.08	3.264		
9,800.0	6,790.0	9,846.7	6,790.0	105.2	0.0	-90.00	-1,352.8	-4,745.4	330.0	226.5	103.51	3.188		
9,900.0	6,790.0	9,946.7	6,790.0	107.5	0.0	-90.00	-1,352.5	-4,845.4	330.0	224.0	105.94	3.115		
10,000.0	6,790.0	10,046.7	6,790.0	109.9	0.0	-90.00	-1,352.3	-4,945.4	330.0	221.6	108.37	3.045		
10,100.0	6,790.0	10,146.7	6,790.0	112.3	0.0	-90.00	-1,352.0	-5,045.4	330.0	219.2	110.80	2.978		
10,200.0	6,790.0	10,246.7	6,790.0	114.7	0.0	-90.00	-1,351.8	-5,145.4	330.0	216.7	113.24	2.914		
10,300.0	6,790.0	10,346.7	6,790.0	117.1	0.0	-90.00	-1,351.5	-5,245.4	330.0	214.3	115.67	2.852		

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 8
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 8	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-												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
10,400.0	6,790.0	10,446.7	6,790.0	119.5	0.0	-90.00	-1,351.3	-5,345.4	329.9	211.8	118.11	2.793	
10,500.0	6,790.0	10,546.7	6,790.0	122.0	0.0	-90.00	-1,351.0	-5,445.4	329.9	209.4	120.55	2.737	
10,600.0	6,790.0	10,646.7	6,790.0	124.4	0.0	-90.00	-1,350.8	-5,545.4	329.9	206.9	122.99	2.683	
10,700.0	6,790.0	10,746.7	6,790.0	126.8	0.0	-90.00	-1,350.5	-5,645.4	329.9	204.5	125.44	2.630	
10,800.0	6,790.0	10,846.7	6,790.0	129.2	0.0	-90.00	-1,350.3	-5,745.4	329.9	202.1	127.88	2.580	
10,900.0	6,790.0	10,946.7	6,790.0	131.6	0.0	-90.00	-1,350.0	-5,845.4	329.9	199.6	130.33	2.532	
11,000.0	6,790.0	11,046.7	6,790.0	134.0	0.0	-90.00	-1,349.8	-5,945.4	329.9	197.2	132.77	2.485	
11,100.0	6,790.0	11,146.7	6,790.0	136.5	0.0	-90.00	-1,349.5	-6,045.4	329.9	194.7	135.22	2.440	
11,200.0	6,790.0	11,246.7	6,790.0	138.9	0.0	-90.00	-1,349.3	-6,145.4	329.9	192.2	137.67	2.396	
11,300.0	6,790.0	11,346.7	6,790.0	141.3	0.0	-90.00	-1,349.0	-6,245.4	329.9	189.8	140.12	2.355	
11,400.0	6,790.0	11,446.7	6,790.0	143.7	0.0	-90.00	-1,348.8	-6,345.4	329.9	187.3	142.57	2.314	
11,500.0	6,790.0	11,546.7	6,790.0	146.2	0.0	-90.00	-1,348.5	-6,445.4	329.9	184.9	145.02	2.275	
11,600.0	6,790.0	11,646.7	6,790.0	148.6	0.0	-90.00	-1,348.3	-6,545.4	329.9	182.4	147.47	2.237	
11,700.0	6,790.0	11,746.7	6,790.0	151.0	0.0	-90.00	-1,348.0	-6,645.4	329.9	180.0	149.92	2.200	
11,800.0	6,790.0	11,846.7	6,790.0	153.5	0.0	-90.00	-1,347.8	-6,745.4	329.9	177.5	152.37	2.165	
11,900.0	6,790.0	11,946.7	6,790.0	155.9	0.0	-90.00	-1,347.5	-6,845.4	329.9	175.1	154.83	2.131	
12,000.0	6,790.0	12,046.7	6,790.0	158.3	0.0	-90.00	-1,347.3	-6,945.4	329.9	172.6	157.28	2.097	
12,100.0	6,790.0	12,146.7	6,790.0	160.8	0.0	-90.00	-1,347.0	-7,045.4	329.9	170.1	159.74	2.065	
12,200.0	6,790.0	12,246.7	6,790.0	163.2	0.0	-90.00	-1,346.8	-7,145.4	329.9	167.7	162.19	2.034	
12,300.0	6,790.0	12,346.7	6,790.0	165.6	0.0	-90.00	-1,346.5	-7,245.4	329.9	165.2	164.65	2.003	
12,400.0	6,790.0	12,446.7	6,790.0	168.1	0.0	-90.00	-1,346.3	-7,345.4	329.9	162.8	167.10	1.974	
12,500.0	6,790.0	12,546.7	6,790.0	170.5	0.0	-90.00	-1,346.0	-7,445.4	329.9	160.3	169.56	1.945	
12,600.0	6,790.0	12,646.7	6,790.0	173.0	0.0	-90.00	-1,345.8	-7,545.4	329.9	157.8	172.02	1.918	
12,700.0	6,790.0	12,746.7	6,790.0	175.4	0.0	-90.00	-1,345.5	-7,645.4	329.9	155.4	174.48	1.891	
12,800.0	6,790.0	12,846.7	6,790.0	177.9	0.0	-90.00	-1,345.3	-7,745.4	329.9	152.9	176.94	1.864	
12,900.0	6,790.0	12,946.7	6,790.0	180.3	0.0	-90.00	-1,345.0	-7,845.4	329.8	150.5	179.40	1.839	
13,000.0	6,790.0	13,046.7	6,790.0	182.8	0.0	-90.00	-1,344.8	-7,945.4	329.8	148.0	181.86	1.814	
13,100.0	6,790.0	13,146.7	6,790.0	185.2	0.0	-90.00	-1,344.5	-8,045.4	329.8	145.5	184.31	1.790	
13,200.0	6,790.0	13,246.7	6,790.0	187.6	0.0	-90.00	-1,344.3	-8,145.4	329.8	143.1	186.78	1.766	
13,300.0	6,790.0	13,346.7	6,790.0	190.1	0.0	-90.00	-1,344.0	-8,245.4	329.8	140.6	189.24	1.743	
13,400.0	6,790.0	13,446.7	6,790.0	192.5	0.0	-90.00	-1,343.8	-8,345.4	329.8	138.1	191.70	1.721	
13,500.0	6,790.0	13,546.7	6,790.0	195.0	0.0	-90.00	-1,343.5	-8,445.4	329.8	135.7	194.16	1.699	
13,600.0	6,790.0	13,646.7	6,790.0	197.4	0.0	-90.00	-1,343.3	-8,545.4	329.8	133.2	196.62	1.677	
13,700.0	6,790.0	13,746.7	6,790.0	199.9	0.0	-90.00	-1,343.0	-8,645.4	329.8	130.7	199.08	1.657	
13,800.0	6,790.0	13,846.7	6,790.0	202.3	0.0	-90.00	-1,342.8	-8,745.4	329.8	128.3	201.54	1.636	
13,900.0	6,790.0	13,946.7	6,790.0	204.8	0.0	-90.00	-1,342.5	-8,845.4	329.8	125.8	204.01	1.617	
14,000.0	6,790.0	14,046.7	6,790.0	207.3	0.0	-90.00	-1,342.3	-8,945.4	329.8	123.3	206.47	1.597	
14,100.0	6,790.0	14,146.7	6,790.0	209.7	0.0	-90.00	-1,342.0	-9,045.4	329.8	120.9	208.93	1.579	
14,200.0	6,790.0	14,246.7	6,790.0	212.2	0.0	-90.00	-1,341.8	-9,145.4	329.8	118.4	211.40	1.560	
14,300.0	6,790.0	14,346.7	6,790.0	214.6	0.0	-90.00	-1,341.5	-9,245.4	329.8	115.9	213.86	1.542	
14,400.0	6,790.0	14,446.7	6,790.0	217.1	0.0	-90.00	-1,341.3	-9,345.4	329.8	113.5	216.32	1.525	
14,500.0	6,790.0	14,546.7	6,790.0	219.5	0.0	-90.00	-1,341.0	-9,445.4	329.8	111.0	218.79	1.507	
14,600.0	6,790.0	14,646.7	6,790.0	222.0	0.0	-90.00	-1,340.8	-9,545.4	329.8	108.5	221.25	1.491 Level 3	
14,700.0	6,790.0	14,746.7	6,790.0	224.4	0.0	-90.00	-1,340.5	-9,645.4	329.8	106.1	223.72	1.474 Level 3	
14,800.0	6,790.0	14,846.7	6,790.0	226.9	0.0	-90.00	-1,340.3	-9,745.4	329.8	103.6	226.18	1.458 Level 3	
14,900.0	6,790.0	14,946.7	6,790.0	229.4	0.0	-90.00	-1,340.0	-9,845.4	329.8	101.1	228.65	1.442 Level 3	
15,000.0	6,790.0	15,046.7	6,790.0	231.8	0.0	-90.00	-1,339.8	-9,945.4	329.8	98.7	231.11	1.427 Level 3	
15,100.0	6,790.0	15,146.7	6,790.0	234.3	0.0	-90.00	-1,339.5	-10,045.4	329.8	96.2	233.58	1.412 Level 3	
15,200.0	6,790.0	15,246.7	6,790.0	236.7	0.0	-90.00	-1,339.3	-10,145.4	329.8	93.7	236.04	1.397 Level 3	
15,300.0	6,790.0	15,346.7	6,790.0	239.2	0.0	-90.00	-1,339.0	-10,245.4	329.8	91.2	238.51	1.383 Level 3	
15,400.0	6,790.0	15,446.7	6,790.0	241.6	0.0	-90.00	-1,338.8	-10,345.4	329.7	88.8	240.97	1.368 Level 3	
15,500.0	6,790.0	15,546.7	6,790.0	244.1	0.0	-90.00	-1,338.5	-10,445.4	329.7	86.3	243.44	1.355 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 8
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 8	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-													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	15,646.7	6,790.0	246.6	0.0	-90.00	-1,338.3	-10,545.4	329.7	83.8	245.91	1.341 Level 3		
15,700.0	6,790.0	15,746.7	6,790.0	249.0	0.0	-90.00	-1,338.0	-10,645.4	329.7	81.4	248.37	1.328 Level 3		
15,800.0	6,790.0	15,846.7	6,790.0	251.5	0.0	-90.00	-1,337.8	-10,745.4	329.7	78.9	250.84	1.315 Level 3		
15,900.0	6,790.0	15,946.7	6,790.0	253.9	0.0	-90.00	-1,337.5	-10,845.4	329.7	76.4	253.31	1.302 Level 3		
16,000.0	6,790.0	16,046.7	6,790.0	256.4	0.0	-90.00	-1,337.3	-10,945.4	329.7	74.0	255.77	1.289 Level 3		
16,100.0	6,790.0	16,146.7	6,790.0	258.9	0.0	-90.00	-1,337.0	-11,045.4	329.7	71.5	258.24	1.277 Level 3		
16,200.0	6,790.0	16,246.7	6,790.0	261.3	0.0	-90.00	-1,336.8	-11,145.4	329.7	69.0	260.71	1.265 Level 3		
16,300.0	6,790.0	16,346.7	6,790.0	263.8	0.0	-90.00	-1,336.5	-11,245.4	329.7	66.5	263.17	1.253 Level 3		
16,400.0	6,790.0	16,446.7	6,790.0	266.2	0.0	-90.00	-1,336.3	-11,345.4	329.7	64.1	265.64	1.241 Level 2		
16,500.0	6,790.0	16,546.7	6,790.0	268.7	0.0	-90.00	-1,336.0	-11,445.4	329.7	61.6	268.11	1.230 Level 2		
16,600.0	6,790.0	16,646.7	6,790.0	271.2	0.0	-90.00	-1,335.8	-11,545.4	329.7	59.1	270.58	1.219 Level 2		
16,700.0	6,790.0	16,746.7	6,790.0	273.6	0.0	-90.00	-1,335.5	-11,645.4	329.7	56.7	273.05	1.207 Level 2		
16,756.3	6,790.0	16,803.0	6,790.0	275.0	0.0	-90.00	-1,335.4	-11,701.7	329.7	55.3	274.44	1.201 Level 2		
16,783.6	6,790.0	16,829.6	6,790.0	275.7	0.0	-90.00	-1,335.3	-11,728.3	329.7	54.6	275.11	1.198 Level 2, ES, SF		

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 8
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 8	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 11 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-													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	-148.97	-72.1	-43.4	84.2					
100.0	100.0	100.0	100.0	0.1	0.0	-148.97	-72.1	-43.4	84.2	84.0	0.13	633.641		
200.0	200.0	200.0	200.0	0.3	0.0	-148.97	-72.1	-43.4	84.2	83.9	0.31	273.852 CC		
300.0	300.0	298.6	298.6	0.5	0.0	-32.54	-72.7	-44.1	84.2	83.8	0.48	174.728 ES		
400.0	400.0	397.3	397.2	0.7	0.0	-32.88	-74.3	-46.0	84.5	83.8	0.66	128.323		
500.0	499.9	495.9	495.8	0.9	0.0	-33.45	-76.9	-49.3	84.8	84.0	0.84	101.372		
600.0	599.7	594.5	594.2	1.1	0.0	-34.23	-80.6	-54.0	85.4	84.3	1.02	83.719		
700.0	699.4	693.2	692.6	1.3	0.0	-35.22	-85.4	-59.9	86.1	84.8	1.21	71.215		
800.0	798.9	791.8	790.7	1.5	0.0	-36.40	-91.2	-67.2	86.9	85.5	1.41	61.848		
900.0	898.3	890.4	888.7	1.8	0.0	-37.77	-98.1	-75.8	88.0	86.4	1.61	54.528		
1,000.0	997.4	989.0	986.5	2.0	0.0	-39.30	-106.1	-85.7	89.4	87.5	1.84	48.615		
1,100.0	1,096.3	1,087.6	1,084.0	2.3	0.0	-40.99	-115.1	-96.9	91.0	88.9	2.08	43.711		
1,200.0	1,194.9	1,186.1	1,181.3	2.7	0.0	-42.79	-125.1	-109.4	92.8	90.5	2.35	39.563		
1,300.0	1,293.3	1,284.7	1,278.2	3.0	0.0	-44.70	-136.2	-123.2	95.0	92.3	2.64	36.004		
1,400.0	1,391.2	1,383.2	1,374.8	3.4	0.0	-46.69	-148.3	-138.3	97.5	94.5	2.96	32.921		
1,500.0	1,488.9	1,481.7	1,471.1	3.8	0.0	-48.73	-161.5	-154.7	100.3	97.0	3.32	30.237		
1,600.0	1,586.1	1,580.2	1,566.9	4.2	0.0	-50.81	-175.7	-172.4	103.5	99.7	3.71	27.895		
1,700.0	1,682.9	1,678.7	1,662.4	4.7	0.0	-52.89	-190.9	-191.4	107.0	102.9	4.14	25.852		
1,800.0	1,779.3	1,777.2	1,757.3	5.2	0.0	-54.96	-207.2	-211.6	111.0	106.3	4.61	24.071		
1,900.0	1,875.2	1,875.6	1,851.8	5.7	0.0	-57.00	-224.4	-233.1	115.3	110.2	5.12	22.521		
2,000.0	1,970.5	1,974.0	1,945.8	6.3	0.0	-58.99	-242.7	-255.8	120.0	114.4	5.67	21.173		
2,100.0	2,065.4	2,072.4	2,039.2	6.9	0.0	-60.93	-262.0	-279.8	125.2	119.0	6.26	20.003		
2,200.0	2,159.6	2,170.7	2,132.1	7.5	0.0	-62.79	-282.2	-305.1	130.8	123.9	6.89	18.986		
2,300.0	2,253.3	2,269.0	2,224.4	8.2	0.0	-64.58	-303.5	-331.6	136.8	129.2	7.56	18.104		
2,400.0	2,346.3	2,367.3	2,316.0	8.8	0.0	-66.28	-325.7	-359.3	143.2	134.9	8.26	17.336		
2,500.0	2,438.7	2,465.6	2,407.0	9.6	0.0	-67.90	-348.9	-388.2	150.0	141.0	9.00	16.667		
2,600.0	2,530.8	2,563.8	2,497.3	10.3	0.0	-69.22	-373.1	-418.3	157.6	147.8	9.74	16.175		
2,700.0	2,622.8	2,662.0	2,586.9	11.0	0.0	-69.91	-398.2	-449.6	166.0	155.6	10.46	15.878		
2,800.0	2,714.9	2,760.1	2,675.7	11.7	0.0	-70.06	-424.2	-482.0	175.4	164.3	11.15	15.733		
2,900.0	2,806.9	2,858.6	2,764.3	12.5	0.0	-69.79	-451.3	-515.7	185.6	173.8	11.82	15.703		
3,000.0	2,898.9	2,958.1	2,853.6	13.2	0.0	-69.47	-478.8	-549.9	196.0	183.5	12.49	15.693		
3,100.0	2,991.0	3,057.5	2,942.8	13.9	0.0	-69.19	-506.2	-584.1	206.3	193.2	13.15	15.684		
3,200.0	3,083.0	3,157.0	3,032.1	14.7	0.0	-68.93	-533.7	-618.3	216.7	202.8	13.82	15.676		
3,300.0	3,175.1	3,256.4	3,121.4	15.4	0.0	-68.70	-561.1	-652.5	227.0	212.5	14.49	15.668		
3,400.0	3,267.1	3,355.9	3,210.6	16.1	0.0	-68.48	-588.6	-686.7	237.4	222.2	15.16	15.660		
3,500.0	3,359.2	3,455.4	3,299.9	16.9	0.0	-68.29	-616.0	-720.9	247.7	231.9	15.83	15.653		
3,600.0	3,451.2	3,554.8	3,389.2	17.6	0.0	-68.11	-643.5	-755.1	258.1	241.6	16.50	15.647		
3,700.0	3,543.2	3,654.3	3,478.4	18.3	0.0	-67.94	-671.0	-789.3	268.5	251.3	17.16	15.641		
3,800.0	3,635.3	3,753.7	3,567.7	19.1	0.0	-67.79	-698.4	-823.5	278.8	261.0	17.83	15.635		
3,900.0	3,727.3	3,853.2	3,657.0	19.8	0.0	-67.64	-725.9	-857.7	289.2	270.7	18.50	15.630		
4,000.0	3,819.4	3,952.7	3,746.2	20.5	0.0	-67.51	-753.3	-891.9	299.6	280.4	19.17	15.625		
4,100.0	3,911.4	4,052.1	3,835.5	21.3	0.0	-67.39	-780.8	-926.1	310.0	290.1	19.84	15.620		
4,200.0	4,003.5	4,151.6	3,924.8	22.0	0.0	-67.27	-808.2	-960.3	320.3	299.8	20.51	15.616		
4,300.0	4,095.5	4,251.0	4,014.0	22.8	0.0	-67.16	-835.7	-994.6	330.7	309.5	21.18	15.612		
4,400.0	4,187.5	4,350.5	4,103.3	23.5	0.0	-67.06	-863.1	-1,028.8	341.1	319.2	21.85	15.608		
4,500.0	4,279.6	4,449.9	4,192.5	24.2	0.0	-66.97	-890.6	-1,063.0	351.5	328.9	22.52	15.604		
4,600.0	4,371.6	4,549.4	4,281.8	25.0	0.0	-66.87	-918.1	-1,097.2	361.8	338.6	23.19	15.600		
4,700.0	4,463.7	4,648.9	4,371.1	25.7	0.0	-66.79	-945.5	-1,131.4	372.2	348.4	23.87	15.597		
4,800.0	4,555.7	4,748.3	4,460.3	26.5	0.0	-66.71	-973.0	-1,165.6	382.6	358.1	24.54	15.594		
4,900.0	4,647.8	4,847.8	4,549.6	27.2	0.0	-66.63	-1,000.4	-1,199.8	393.0	367.8	25.21	15.591		
5,000.0	4,739.8	4,947.2	4,638.9	27.9	0.0	-66.56	-1,027.9	-1,234.0	403.4	377.5	25.88	15.588		
5,100.0	4,831.9	5,046.7	4,728.1	28.7	0.0	-66.49	-1,055.3	-1,268.2	413.8	387.2	26.55	15.585		

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 8
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 8	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 11 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-													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	4,923.9	5,146.2	4,817.4	29.4	0.0	-66.42	-1,082.8	-1,302.4	424.1	396.9	27.22	15.582		
5,300.0	5,015.9	5,245.6	4,906.7	30.2	0.0	-66.36	-1,110.3	-1,336.6	434.5	406.6	27.89	15.580		
5,400.0	5,108.0	5,345.1	4,995.9	30.9	0.0	-66.30	-1,137.7	-1,370.8	444.9	416.3	28.56	15.577		
5,500.0	5,200.0	5,444.5	5,085.2	31.7	0.0	-66.25	-1,165.2	-1,405.0	455.3	426.1	29.23	15.575		
5,600.0	5,292.1	5,544.0	5,174.5	32.4	0.0	-66.19	-1,192.6	-1,439.2	465.7	435.8	29.90	15.573		
5,700.0	5,384.1	5,643.4	5,263.7	33.1	0.0	-66.14	-1,220.1	-1,473.4	476.1	445.5	30.57	15.571		
5,800.0	5,476.2	5,742.9	5,353.0	33.9	0.0	-66.09	-1,247.5	-1,507.6	486.4	455.2	31.25	15.569		
5,900.0	5,568.2	5,842.4	5,442.3	34.6	0.0	-66.04	-1,275.0	-1,541.8	496.8	464.9	31.92	15.567		
6,000.0	5,660.2	5,941.8	5,531.5	35.4	0.0	-66.00	-1,302.4	-1,576.0	507.2	474.6	32.59	15.565		
6,100.0	5,752.3	6,041.3	5,620.8	36.1	0.0	-65.95	-1,329.9	-1,610.2	517.6	484.4	33.26	15.563		
6,200.0	5,844.3	6,140.7	5,710.1	36.8	0.0	-65.91	-1,357.4	-1,644.4	528.0	494.1	33.93	15.561		
6,300.0	5,936.4	6,240.2	5,799.3	37.6	0.0	-65.87	-1,384.8	-1,678.6	538.4	503.8	34.60	15.560		
6,400.0	6,028.4	6,339.7	5,888.6	38.3	0.0	-65.83	-1,412.3	-1,712.8	548.8	513.5	35.27	15.558		
6,500.0	6,120.5	6,439.1	5,977.9	39.1	0.0	-65.79	-1,439.7	-1,747.0	559.2	523.2	35.94	15.556		
6,600.0	6,212.5	6,538.6	6,067.1	39.8	0.0	-65.76	-1,467.2	-1,781.2	569.6	532.9	36.62	15.555		
6,700.0	6,304.5	6,638.0	6,156.4	40.6	0.0	-65.72	-1,494.6	-1,815.4	579.9	542.7	37.29	15.554		
6,800.0	6,396.5	6,737.5	6,245.6	41.3	0.0	-66.99	-1,522.1	-1,849.6	590.3	552.4	37.93	15.564		
6,900.0	6,484.5	6,836.3	6,334.3	42.3	0.0	-73.68	-1,549.4	-1,883.6	601.5	562.7	38.82	15.495		
7,000.0	6,564.6	6,938.7	6,425.8	43.5	0.0	-78.71	-1,577.5	-1,920.0	614.2	573.9	40.28	15.246		
7,100.0	6,634.9	7,056.4	6,524.1	44.9	0.0	-82.66	-1,607.7	-1,977.0	627.0	585.0	42.01	14.923		
7,200.0	6,693.6	7,181.3	6,615.5	46.6	0.0	-85.59	-1,635.7	-2,057.0	638.7	594.9	43.81	14.578		
7,300.0	6,739.3	7,313.3	6,694.0	48.5	0.0	-87.72	-1,659.7	-2,160.0	648.5	602.9	45.63	14.212		
7,400.0	6,770.8	7,451.3	6,752.6	50.4	0.0	-89.16	-1,677.4	-2,283.4	655.7	608.2	47.43	13.824		
7,500.0	6,787.4	7,593.6	6,784.9	52.5	0.0	-89.89	-1,687.1	-2,421.4	659.5	610.3	49.19	13.407		
7,600.0	6,790.0	7,718.7	6,790.0	54.6	0.0	-90.00	-1,688.3	-2,546.2	660.1	609.0	51.16	12.904		
7,700.0	6,790.0	7,818.7	6,790.0	56.8	0.0	-90.00	-1,688.1	-2,646.2	660.1	606.7	53.44	12.351		
7,800.0	6,790.0	7,918.7	6,790.0	58.9	0.0	-90.00	-1,687.8	-2,746.2	660.1	604.4	55.75	11.841		
7,900.0	6,790.0	8,018.7	6,790.0	61.1	0.0	-90.00	-1,687.6	-2,846.2	660.1	602.0	58.07	11.368		
8,000.0	6,790.0	8,118.7	6,790.0	63.3	0.0	-90.00	-1,687.3	-2,946.2	660.1	599.7	60.40	10.929		
8,100.0	6,790.0	8,218.7	6,790.0	65.6	0.0	-90.00	-1,687.1	-3,046.2	660.1	597.4	62.74	10.521		
8,200.0	6,790.0	8,318.7	6,790.0	67.8	0.0	-90.00	-1,686.8	-3,146.2	660.1	595.0	65.09	10.141		
8,300.0	6,790.0	8,418.7	6,790.0	70.1	0.0	-90.00	-1,686.6	-3,246.2	660.1	592.6	67.46	9.786		
8,400.0	6,790.0	8,518.7	6,790.0	72.3	0.0	-90.00	-1,686.3	-3,346.2	660.1	590.3	69.82	9.454		
8,500.0	6,790.0	8,618.7	6,790.0	74.6	0.0	-90.00	-1,686.1	-3,446.2	660.1	587.9	72.20	9.142		
8,600.0	6,790.0	8,718.7	6,790.0	76.9	0.0	-90.00	-1,685.8	-3,546.2	660.1	585.5	74.58	8.850		
8,700.0	6,790.0	8,818.7	6,790.0	79.2	0.0	-90.00	-1,685.6	-3,646.2	660.1	583.1	76.97	8.576		
8,800.0	6,790.0	8,918.7	6,790.0	81.6	0.0	-90.00	-1,685.3	-3,746.2	660.1	580.7	79.36	8.317		
8,900.0	6,790.0	9,018.7	6,790.0	83.9	0.0	-90.00	-1,685.1	-3,846.2	660.1	578.3	81.76	8.073		
9,000.0	6,790.0	9,118.7	6,790.0	86.2	0.0	-90.00	-1,684.8	-3,946.2	660.1	575.9	84.16	7.843		
9,100.0	6,790.0	9,218.7	6,790.0	88.6	0.0	-90.00	-1,684.6	-4,046.2	660.1	573.5	86.57	7.624		
9,200.0	6,790.0	9,318.7	6,790.0	90.9	0.0	-90.00	-1,684.3	-4,146.2	660.1	571.1	88.98	7.418		
9,300.0	6,790.0	9,418.7	6,790.0	93.3	0.0	-90.00	-1,684.1	-4,246.2	660.1	568.7	91.40	7.222		
9,400.0	6,790.0	9,518.7	6,790.0	95.6	0.0	-90.00	-1,683.8	-4,346.2	660.0	566.2	93.81	7.036		
9,500.0	6,790.0	9,618.7	6,790.0	98.0	0.0	-90.00	-1,683.6	-4,446.2	660.0	563.8	96.23	6.859		
9,600.0	6,790.0	9,718.7	6,790.0	100.4	0.0	-90.00	-1,683.3	-4,546.2	660.0	561.4	98.65	6.690		
9,700.0	6,790.0	9,818.7	6,790.0	102.8	0.0	-90.00	-1,683.1	-4,646.2	660.0	559.0	101.08	6.530		
9,800.0	6,790.0	9,918.7	6,790.0	105.2	0.0	-90.00	-1,682.8	-4,746.2	660.0	556.5	103.51	6.377		
9,900.0	6,790.0	10,018.7	6,790.0	107.5	0.0	-90.00	-1,682.6	-4,846.2	660.0	554.1	105.94	6.230		
10,000.0	6,790.0	10,118.7	6,790.0	109.9	0.0	-90.00	-1,682.3	-4,946.2	660.0	551.7	108.37	6.091		
10,100.0	6,790.0	10,218.7	6,790.0	112.3	0.0	-90.00	-1,682.1	-5,046.2	660.0	549.2	110.80	5.957		
10,200.0	6,790.0	10,318.7	6,790.0	114.7	0.0	-90.00	-1,681.8	-5,146.2	660.0	546.8	113.24	5.829		
10,300.0	6,790.0	10,418.7	6,790.0	117.1	0.0	-90.00	-1,681.6	-5,246.2	660.0	544.3	115.67	5.706		

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 8
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 8	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 11 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-													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			
10,400.0	6,790.0	10,518.7	6,790.0	119.5	0.0	-90.00	-1,681.3	-5,346.2	660.0	541.9	118.11	5.588		
10,500.0	6,790.0	10,618.7	6,790.0	122.0	0.0	-90.00	-1,681.1	-5,446.2	660.0	539.4	120.55	5.475		
10,600.0	6,790.0	10,718.7	6,790.0	124.4	0.0	-90.00	-1,680.8	-5,546.2	660.0	537.0	122.99	5.366		
10,700.0	6,790.0	10,818.7	6,790.0	126.8	0.0	-90.00	-1,680.6	-5,646.2	660.0	534.6	125.44	5.262		
10,800.0	6,790.0	10,918.7	6,790.0	129.2	0.0	-90.00	-1,680.3	-5,746.2	660.0	532.1	127.88	5.161		
10,900.0	6,790.0	11,018.7	6,790.0	131.6	0.0	-90.00	-1,680.1	-5,846.2	660.0	529.7	130.33	5.064		
11,000.0	6,790.0	11,118.7	6,790.0	134.0	0.0	-90.00	-1,679.8	-5,946.2	660.0	527.2	132.77	4.971		
11,100.0	6,790.0	11,218.7	6,790.0	136.5	0.0	-90.00	-1,679.6	-6,046.2	660.0	524.8	135.22	4.881		
11,200.0	6,790.0	11,318.7	6,790.0	138.9	0.0	-90.00	-1,679.3	-6,146.2	660.0	522.3	137.67	4.794		
11,300.0	6,790.0	11,418.7	6,790.0	141.3	0.0	-90.00	-1,679.1	-6,246.2	660.0	519.9	140.12	4.710		
11,400.0	6,790.0	11,518.7	6,790.0	143.7	0.0	-90.00	-1,678.8	-6,346.2	660.0	517.4	142.57	4.629		
11,500.0	6,790.0	11,618.7	6,790.0	146.2	0.0	-90.00	-1,678.6	-6,446.2	660.0	514.9	145.02	4.551		
11,600.0	6,790.0	11,718.7	6,790.0	148.6	0.0	-90.00	-1,678.3	-6,546.2	660.0	512.5	147.47	4.475		
11,700.0	6,790.0	11,818.7	6,790.0	151.0	0.0	-90.00	-1,678.1	-6,646.2	660.0	510.0	149.92	4.402		
11,800.0	6,790.0	11,918.7	6,790.0	153.5	0.0	-90.00	-1,677.8	-6,746.2	660.0	507.6	152.37	4.331		
11,900.0	6,790.0	12,018.7	6,790.0	155.9	0.0	-90.00	-1,677.6	-6,846.2	659.9	505.1	154.83	4.262		
12,000.0	6,790.0	12,118.7	6,790.0	158.3	0.0	-90.00	-1,677.3	-6,946.2	659.9	502.7	157.28	4.196		
12,100.0	6,790.0	12,218.7	6,790.0	160.8	0.0	-90.00	-1,677.1	-7,046.2	659.9	500.2	159.74	4.131		
12,200.0	6,790.0	12,318.7	6,790.0	163.2	0.0	-90.00	-1,676.8	-7,146.2	659.9	497.7	162.19	4.069		
12,300.0	6,790.0	12,418.7	6,790.0	165.6	0.0	-90.00	-1,676.6	-7,246.2	659.9	495.3	164.65	4.008		
12,400.0	6,790.0	12,518.7	6,790.0	168.1	0.0	-90.00	-1,676.3	-7,346.2	659.9	492.8	167.10	3.949		
12,500.0	6,790.0	12,618.7	6,790.0	170.5	0.0	-90.00	-1,676.1	-7,446.2	659.9	490.4	169.56	3.892		
12,600.0	6,790.0	12,718.7	6,790.0	173.0	0.0	-90.00	-1,675.8	-7,546.2	659.9	487.9	172.02	3.836		
12,700.0	6,790.0	12,818.7	6,790.0	175.4	0.0	-90.00	-1,675.6	-7,646.2	659.9	485.4	174.48	3.782		
12,800.0	6,790.0	12,918.7	6,790.0	177.9	0.0	-90.00	-1,675.3	-7,746.2	659.9	483.0	176.94	3.730		
12,900.0	6,790.0	13,018.7	6,790.0	180.3	0.0	-90.00	-1,675.1	-7,846.2	659.9	480.5	179.40	3.679		
13,000.0	6,790.0	13,118.7	6,790.0	182.8	0.0	-90.00	-1,674.8	-7,946.2	659.9	478.0	181.86	3.629		
13,100.0	6,790.0	13,218.7	6,790.0	185.2	0.0	-90.00	-1,674.6	-8,046.2	659.9	475.6	184.31	3.580		
13,200.0	6,790.0	13,318.7	6,790.0	187.6	0.0	-90.00	-1,674.3	-8,146.2	659.9	473.1	186.78	3.533		
13,300.0	6,790.0	13,418.7	6,790.0	190.1	0.0	-90.00	-1,674.1	-8,246.2	659.9	470.7	189.24	3.487		
13,400.0	6,790.0	13,518.7	6,790.0	192.5	0.0	-90.00	-1,673.8	-8,346.2	659.9	468.2	191.70	3.442		
13,500.0	6,790.0	13,618.7	6,790.0	195.0	0.0	-90.00	-1,673.6	-8,446.2	659.9	465.7	194.16	3.399		
13,600.0	6,790.0	13,718.7	6,790.0	197.4	0.0	-90.00	-1,673.3	-8,546.2	659.9	463.3	196.62	3.356		
13,700.0	6,790.0	13,818.7	6,790.0	199.9	0.0	-90.00	-1,673.1	-8,646.2	659.9	460.8	199.08	3.315		
13,800.0	6,790.0	13,918.7	6,790.0	202.3	0.0	-90.00	-1,672.8	-8,746.2	659.9	458.3	201.54	3.274		
13,900.0	6,790.0	14,018.7	6,790.0	204.8	0.0	-90.00	-1,672.6	-8,846.2	659.9	455.9	204.01	3.235		
14,000.0	6,790.0	14,118.7	6,790.0	207.3	0.0	-90.00	-1,672.3	-8,946.2	659.9	453.4	206.47	3.196		
14,100.0	6,790.0	14,218.7	6,790.0	209.7	0.0	-90.00	-1,672.1	-9,046.2	659.9	450.9	208.93	3.158		
14,200.0	6,790.0	14,318.7	6,790.0	212.2	0.0	-90.00	-1,671.8	-9,146.2	659.9	448.5	211.40	3.121		
14,300.0	6,790.0	14,418.7	6,790.0	214.6	0.0	-90.00	-1,671.6	-9,246.2	659.9	446.0	213.86	3.085		
14,400.0	6,790.0	14,518.7	6,790.0	217.1	0.0	-90.00	-1,671.3	-9,346.2	659.8	443.5	216.32	3.050		
14,500.0	6,790.0	14,618.7	6,790.0	219.5	0.0	-90.00	-1,671.1	-9,446.2	659.8	441.1	218.79	3.016		
14,600.0	6,790.0	14,718.7	6,790.0	222.0	0.0	-90.00	-1,670.8	-9,546.2	659.8	438.6	221.25	2.982		
14,700.0	6,790.0	14,818.7	6,790.0	224.4	0.0	-90.00	-1,670.6	-9,646.2	659.8	436.1	223.72	2.949		
14,800.0	6,790.0	14,918.7	6,790.0	226.9	0.0	-90.00	-1,670.3	-9,746.2	659.8	433.7	226.18	2.917		
14,900.0	6,790.0	15,018.7	6,790.0	229.4	0.0	-90.00	-1,670.1	-9,846.2	659.8	431.2	228.65	2.886		
15,000.0	6,790.0	15,118.7	6,790.0	231.8	0.0	-90.00	-1,669.8	-9,946.2	659.8	428.7	231.11	2.855		
15,100.0	6,790.0	15,218.7	6,790.0	234.3	0.0	-90.00	-1,669.6	-10,046.2	659.8	426.2	233.58	2.825		
15,200.0	6,790.0	15,318.7	6,790.0	236.7	0.0	-90.00	-1,669.3	-10,146.2	659.8	423.8	236.04	2.795		
15,300.0	6,790.0	15,418.7	6,790.0	239.2	0.0	-90.00	-1,669.1	-10,246.2	659.8	421.3	238.51	2.766		
15,400.0	6,790.0	15,518.7	6,790.0	241.6	0.0	-90.00	-1,668.8	-10,346.2	659.8	418.8	240.97	2.738		
15,500.0	6,790.0	15,618.7	6,790.0	244.1	0.0	-90.00	-1,668.6	-10,446.2	659.8	416.4	243.44	2.710		

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 8
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 8	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 11 - Hz - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-													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		
15,600.0	6,790.0	15,718.7	6,790.0	246.6	0.0	-90.00	-1,668.3	-10,546.2	659.8	413.9	245.91	2.683		
15,700.0	6,790.0	15,818.7	6,790.0	249.0	0.0	-90.00	-1,668.1	-10,646.2	659.8	411.4	248.37	2.656		
15,800.0	6,790.0	15,918.7	6,790.0	251.5	0.0	-90.00	-1,667.8	-10,746.2	659.8	409.0	250.84	2.630		
15,900.0	6,790.0	16,018.7	6,790.0	253.9	0.0	-90.00	-1,667.6	-10,846.2	659.8	406.5	253.31	2.605		
16,000.0	6,790.0	16,118.7	6,790.0	256.4	0.0	-90.00	-1,667.3	-10,946.2	659.8	404.0	255.77	2.580		
16,100.0	6,790.0	16,218.7	6,790.0	258.9	0.0	-90.00	-1,667.1	-11,046.2	659.8	401.5	258.24	2.555		
16,200.0	6,790.0	16,318.7	6,790.0	261.3	0.0	-90.00	-1,666.8	-11,146.2	659.8	399.1	260.71	2.531		
16,300.0	6,790.0	16,418.7	6,790.0	263.8	0.0	-90.00	-1,666.6	-11,246.2	659.8	396.6	263.17	2.507		
16,400.0	6,790.0	16,518.7	6,790.0	266.2	0.0	-90.00	-1,666.3	-11,346.2	659.8	394.1	265.64	2.484		
16,500.0	6,790.0	16,618.7	6,790.0	268.7	0.0	-90.00	-1,666.1	-11,446.2	659.8	391.7	268.11	2.461		
16,600.0	6,790.0	16,718.7	6,790.0	271.2	0.0	-90.00	-1,665.8	-11,546.2	659.8	389.2	270.58	2.438		
16,700.0	6,790.0	16,818.7	6,790.0	273.6	0.0	-90.00	-1,665.6	-11,646.2	659.8	386.7	273.05	2.416		
16,761.2	6,790.0	16,879.8	6,790.0	275.1	0.0	-90.00	-1,665.4	-11,707.3	659.8	385.2	274.55	2.403		
16,783.6	6,790.0	16,900.9	6,790.0	275.7	0.0	-90.00	-1,665.4	-11,728.5	659.8	384.6	275.11	2.398 SF		

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 8
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 8	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		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	30.93	143.9	86.2	167.8					
100.0	100.0	100.0	100.0	0.1	0.1	30.93	143.9	86.2	167.8	167.5	0.27	632.339		
200.0	200.0	200.0	200.0	0.3	0.3	30.93	143.9	86.2	167.8	167.1	0.61	273.056 CC, ES		
300.0	300.0	301.2	301.2	0.5	0.5	147.35	144.0	85.3	168.1	167.2	0.97	173.948		
400.0	400.0	402.4	402.3	0.7	0.7	147.00	144.3	82.7	169.3	168.0	1.32	127.870		
500.0	499.9	503.5	503.4	0.9	0.9	146.42	144.9	78.2	171.2	169.5	1.69	101.255		
600.0	599.7	604.6	604.3	1.1	1.1	145.63	145.7	72.1	173.9	171.9	2.07	83.919		
700.0	699.4	705.6	705.0	1.3	1.3	144.65	146.7	64.1	177.5	175.0	2.47	71.724		
800.0	798.9	806.6	805.4	1.5	1.5	143.51	147.9	54.4	181.9	179.0	2.90	62.672		
900.0	898.3	907.4	905.6	1.8	1.8	142.23	149.4	42.9	187.1	183.8	3.36	55.685		
1,000.0	997.4	1,008.2	1,005.5	2.0	2.1	140.84	151.0	29.8	193.3	189.5	3.86	50.128		
1,100.0	1,096.3	1,108.8	1,105.0	2.3	2.4	139.36	152.9	14.9	200.4	196.0	4.39	45.610		
1,200.0	1,194.9	1,209.3	1,204.0	2.7	2.7	137.84	155.0	-1.7	208.5	203.6	4.98	41.877		
1,300.0	1,293.3	1,309.3	1,302.4	3.0	3.0	136.31	157.3	-19.9	217.6	212.0	5.61	38.809		
1,400.0	1,391.2	1,408.6	1,400.0	3.4	3.4	135.12	159.6	-38.3	228.0	221.8	6.26	36.431		
1,500.0	1,488.9	1,507.9	1,497.5	3.8	3.7	134.32	162.0	-56.6	239.7	232.8	6.93	34.588		
1,600.0	1,586.1	1,607.1	1,594.9	4.2	4.1	133.87	164.3	-74.9	252.6	245.0	7.62	33.161		
1,700.0	1,682.9	1,706.1	1,692.2	4.7	4.5	133.71	166.6	-93.3	266.7	258.4	8.32	32.065		
1,800.0	1,779.3	1,804.9	1,789.3	5.2	4.8	133.81	168.9	-111.5	282.1	273.0	9.03	31.237		
1,900.0	1,875.2	1,903.5	1,886.2	5.7	5.2	134.12	171.2	-129.8	298.6	288.8	9.75	30.632		
2,000.0	1,970.5	2,001.8	1,982.8	6.3	5.5	134.61	173.5	-148.0	316.3	305.8	10.47	30.215		
2,100.0	2,065.4	2,099.9	2,079.2	6.9	5.9	135.24	175.8	-166.1	335.3	324.1	11.19	29.961		
2,200.0	2,159.6	2,197.7	2,175.2	7.5	6.3	135.97	178.1	-184.2	355.6	343.6	11.91	29.848 SF		
2,300.0	2,253.3	2,295.2	2,271.0	8.2	6.6	136.79	180.4	-202.2	377.1	364.5	12.63	29.860		
2,400.0	2,346.3	2,392.2	2,366.4	8.8	7.0	137.67	182.7	-220.2	400.1	386.7	13.34	29.983		
2,500.0	2,438.7	2,488.9	2,461.4	9.6	7.3	138.59	184.9	-238.0	424.4	410.4	14.05	30.207		
2,600.0	2,530.8	2,585.4	2,556.2	10.3	7.7	139.63	187.2	-255.9	449.5	434.8	14.74	30.488		
2,700.0	2,622.8	2,681.9	2,651.0	11.0	8.1	140.56	189.4	-273.7	474.8	459.3	15.43	30.763		
2,800.0	2,714.9	2,778.4	2,745.8	11.7	8.4	141.40	191.7	-291.6	500.1	484.0	16.12	31.031		
2,900.0	2,806.9	2,874.9	2,840.6	12.5	8.8	142.16	194.0	-309.4	525.5	508.7	16.80	31.290		
3,000.0	2,898.9	2,971.4	2,935.4	13.2	9.1	142.84	196.2	-327.3	551.0	533.6	17.47	31.540		
3,100.0	2,991.0	3,067.9	3,030.1	13.9	9.5	143.47	198.5	-345.1	576.6	558.5	18.14	31.781		
3,200.0	3,083.0	3,164.4	3,124.9	14.7	9.8	144.05	200.7	-363.0	602.3	583.4	18.81	32.013		
3,300.0	3,175.1	3,260.8	3,219.7	15.4	10.2	144.57	203.0	-380.8	627.9	608.5	19.48	32.236		
3,400.0	3,267.1	3,357.3	3,314.5	16.1	10.6	145.06	205.2	-398.6	653.7	633.5	20.14	32.450		
3,500.0	3,359.2	3,453.8	3,409.3	16.9	10.9	145.51	207.5	-416.5	679.5	658.6	20.81	32.655		
3,600.0	3,451.2	3,550.3	3,504.1	17.6	11.3	145.92	209.8	-434.3	705.3	683.8	21.47	32.852		
3,700.0	3,543.2	3,646.8	3,598.9	18.3	11.6	146.31	212.0	-452.2	731.1	709.0	22.13	33.041		
3,800.0	3,635.3	3,743.3	3,693.7	19.1	12.0	146.67	214.3	-470.0	757.0	734.2	22.78	33.223		
3,900.0	3,727.3	3,839.8	3,788.5	19.8	12.4	147.01	216.5	-487.9	782.9	759.4	23.44	33.397		
4,000.0	3,819.4	3,936.3	3,883.3	20.5	12.7	147.32	218.8	-505.7	808.8	784.7	24.10	33.565		
4,100.0	3,911.4	4,032.8	3,978.1	21.3	13.1	147.62	221.0	-523.6	834.8	810.0	24.75	33.725		
4,200.0	4,003.5	4,129.2	4,072.9	22.0	13.4	147.90	223.3	-541.4	860.7	835.3	25.40	33.880		
4,300.0	4,095.5	4,225.7	4,167.7	22.8	13.8	148.16	225.6	-559.2	886.7	860.6	26.06	34.029		
4,400.0	4,187.5	4,322.2	4,262.5	23.5	14.2	148.41	227.8	-577.1	912.7	886.0	26.71	34.172		
4,500.0	4,279.6	4,418.7	4,357.3	24.2	14.5	148.64	230.1	-594.9	938.7	911.4	27.36	34.309		
4,600.0	4,371.6	4,515.2	4,452.1	25.0	14.9	148.86	232.3	-612.8	964.7	936.7	28.01	34.442		
4,700.0	4,463.7	4,611.7	4,546.9	25.7	15.2	149.07	234.6	-630.6	990.8	962.1	28.66	34.570		
4,800.0	4,555.7	4,708.2	4,641.7	26.5	15.6	149.27	236.8	-648.5	1,016.8	987.5	29.31	34.693		
4,900.0	4,647.8	4,804.7	4,736.5	27.2	16.0	149.46	239.1	-666.3	1,042.9	1,012.9	29.96	34.812		
5,000.0	4,739.8	4,901.2	4,831.3	27.9	16.3	149.64	241.4	-684.2	1,069.0	1,038.4	30.61	34.926		
5,100.0	4,831.9	4,997.6	4,926.1	28.7	16.7	149.81	243.6	-702.0	1,095.0	1,063.8	31.25	35.037		

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 8
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 8	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: 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
5,200.0	4,923.9	5,094.1	5,020.9	29.4	17.0	149.97	245.9	-719.8	1,121.1	1,089.2	31.90	35.144	
5,300.0	5,015.9	5,190.6	5,115.7	30.2	17.4	150.12	248.1	-737.7	1,147.2	1,114.7	32.55	35.247	
5,400.0	5,108.0	5,287.1	5,210.5	30.9	17.8	150.27	250.4	-755.5	1,173.3	1,140.2	33.19	35.347	
5,500.0	5,200.0	5,383.6	5,305.3	31.7	18.1	150.42	252.6	-773.4	1,199.5	1,165.6	33.84	35.444	

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 8
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 8	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			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	30.91	119.9	71.8	139.7					
100.0	100.0	100.0	100.0	0.1	0.1	30.91	119.9	71.8	139.7	139.4	0.27	526.574		
200.0	200.0	200.0	200.0	0.3	0.3	30.91	119.9	71.8	139.7	139.1	0.61	227.384	CC	
300.0	300.0	301.3	301.3	0.5	0.5	147.33	119.9	70.9	140.0	139.0	0.97	144.814	ES	
400.0	400.0	402.5	402.5	0.7	0.7	146.97	119.9	68.2	140.8	139.5	1.32	106.411		
500.0	499.9	503.7	503.6	0.9	0.9	146.38	119.9	63.7	142.3	140.6	1.69	84.216		
600.0	599.7	604.9	604.6	1.1	1.1	145.56	119.9	57.5	144.3	142.2	2.07	69.746		
700.0	699.4	706.1	705.4	1.3	1.3	144.56	119.9	49.4	147.0	144.5	2.47	59.552		
800.0	798.9	807.2	806.1	1.5	1.5	143.37	119.9	39.6	150.3	147.4	2.89	51.970		
900.0	898.3	908.2	906.4	1.8	1.8	142.04	120.0	28.0	154.3	150.9	3.35	46.099		
1,000.0	997.4	1,009.2	1,006.5	2.0	2.1	140.58	120.0	14.7	158.9	155.1	3.84	41.414		
1,100.0	1,096.3	1,110.1	1,106.3	2.3	2.4	139.04	120.1	-0.4	164.4	160.0	4.37	37.590		
1,200.0	1,194.9	1,210.7	1,205.4	2.7	2.7	137.44	120.1	-17.1	170.5	165.6	4.95	34.451		
1,300.0	1,293.3	1,310.3	1,303.6	3.0	3.0	136.20	120.1	-34.2	177.9	172.4	5.55	32.053		
1,400.0	1,391.2	1,409.9	1,401.7	3.4	3.3	135.41	120.2	-51.3	186.6	180.5	6.17	30.246		
1,500.0	1,488.9	1,509.4	1,499.8	3.8	3.7	135.05	120.2	-68.3	196.6	189.8	6.80	28.894		
1,600.0	1,586.1	1,608.8	1,597.7	4.2	4.0	135.05	120.3	-85.4	207.8	200.3	7.45	27.902		
1,700.0	1,682.9	1,708.0	1,695.4	4.7	4.4	135.35	120.3	-102.4	220.2	212.1	8.09	27.202		
1,800.0	1,779.3	1,807.0	1,793.0	5.2	4.7	135.91	120.4	-119.3	233.8	225.1	8.74	26.743		
1,900.0	1,875.2	1,905.8	1,890.3	5.7	5.0	136.66	120.4	-136.3	248.8	239.4	9.39	26.490		
2,000.0	1,970.5	2,004.4	1,987.4	6.3	5.4	137.57	120.5	-153.2	265.0	255.0	10.03	26.414		
2,100.0	2,065.4	2,102.7	2,084.2	6.9	5.7	138.59	120.5	-170.0	282.7	272.0	10.67	26.494		
2,200.0	2,159.6	2,200.7	2,180.8	7.5	6.1	139.68	120.6	-186.8	301.7	290.4	11.29	26.712		
2,300.0	2,253.3	2,298.3	2,277.0	8.2	6.4	140.83	120.6	-203.6	322.2	310.3	11.91	27.053		
2,400.0	2,346.3	2,395.6	2,372.8	8.8	6.7	141.99	120.7	-220.3	344.1	331.6	12.51	27.507		
2,500.0	2,438.7	2,492.5	2,468.3	9.6	7.1	143.16	120.7	-236.9	367.6	354.5	13.10	28.060		
2,600.0	2,530.8	2,589.1	2,563.5	10.3	7.4	144.39	120.8	-253.4	391.9	378.2	13.67	28.661		
2,700.0	2,622.8	2,685.8	2,658.7	11.0	7.7	145.48	120.8	-270.0	416.4	402.2	14.24	29.234		
2,800.0	2,714.9	2,782.5	2,754.0	11.7	8.1	146.45	120.8	-286.6	441.0	426.2	14.81	29.780		
2,900.0	2,806.9	2,879.1	2,849.2	12.5	8.4	147.32	120.9	-303.2	465.7	450.4	15.37	30.300		
3,000.0	2,898.9	2,975.8	2,944.4	13.2	8.7	148.10	120.9	-319.7	490.5	474.6	15.93	30.795		
3,100.0	2,991.0	3,072.5	3,039.7	13.9	9.1	148.81	121.0	-336.3	515.4	498.9	16.49	31.266		
3,200.0	3,083.0	3,169.1	3,134.9	14.7	9.4	149.45	121.0	-352.9	540.4	523.3	17.04	31.714		
3,300.0	3,175.1	3,265.8	3,230.1	15.4	9.8	150.03	121.1	-369.4	565.4	547.8	17.59	32.141		
3,400.0	3,267.1	3,362.5	3,325.4	16.1	10.1	150.57	121.1	-386.0	590.4	572.3	18.14	32.547		
3,500.0	3,359.2	3,459.1	3,420.6	16.9	10.4	151.06	121.2	-402.6	615.5	596.9	18.69	32.934		
3,600.0	3,451.2	3,555.8	3,515.9	17.6	10.8	151.51	121.2	-419.2	640.7	621.5	19.24	33.303		
3,700.0	3,543.2	3,652.5	3,611.1	18.3	11.1	151.93	121.3	-435.7	665.9	646.1	19.79	33.655		
3,800.0	3,635.3	3,749.1	3,706.3	19.1	11.4	152.32	121.3	-452.3	691.1	670.7	20.33	33.991		
3,900.0	3,727.3	3,845.8	3,801.6	19.8	11.8	152.68	121.4	-468.9	716.3	695.4	20.88	34.313		
4,000.0	3,819.4	3,942.5	3,896.8	20.5	12.1	153.02	121.4	-485.5	741.6	720.2	21.42	34.620		
4,100.0	3,911.4	4,039.1	3,992.0	21.3	12.5	153.33	121.4	-502.0	766.9	744.9	21.96	34.914		
4,200.0	4,003.5	4,135.8	4,087.3	22.0	12.8	153.63	121.5	-518.6	792.2	769.7	22.51	35.196		
4,300.0	4,095.5	4,232.5	4,182.5	22.8	13.1	153.90	121.5	-535.2	817.5	794.4	23.05	35.466		
4,400.0	4,187.5	4,329.1	4,277.7	23.5	13.5	154.16	121.6	-551.8	842.8	819.2	23.59	35.724		
4,500.0	4,279.6	4,425.8	4,373.0	24.2	13.8	154.41	121.6	-568.3	868.2	844.1	24.13	35.973		
4,600.0	4,371.6	4,522.5	4,468.2	25.0	14.1	154.64	121.7	-584.9	893.6	868.9	24.68	36.212		
4,700.0	4,463.7	4,619.1	4,563.5	25.7	14.5	154.85	121.7	-601.5	918.9	893.7	25.22	36.441		
4,800.0	4,555.7	4,715.8	4,658.7	26.5	14.8	155.06	121.8	-618.0	944.3	918.6	25.76	36.662		
4,900.0	4,647.8	4,812.5	4,753.9	27.2	15.2	155.26	121.8	-634.6	969.7	943.4	26.30	36.874		
5,000.0	4,739.8	4,909.1	4,849.2	27.9	15.5	155.44	121.9	-651.2	995.2	968.3	26.84	37.079		
5,100.0	4,831.9	5,005.8	4,944.4	28.7	15.8	155.62	121.9	-667.8	1,020.6	993.2	27.38	37.276		

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 8
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 8	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		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	4,923.9	5,102.5	5,039.6	29.4	16.2	155.79	121.9	-684.3	1,046.0	1,018.1	27.92	37.466	
5,300.0	5,015.9	5,199.2	5,134.9	30.2	16.5	155.94	122.0	-700.9	1,071.5	1,043.0	28.46	37.650	
5,400.0	5,108.0	5,295.8	5,230.1	30.9	16.8	156.10	122.0	-717.5	1,096.9	1,067.9	29.00	37.827	
5,500.0	5,200.0	5,392.5	5,325.3	31.7	17.2	156.24	122.1	-734.1	1,122.4	1,092.8	29.54	37.998	
5,600.0	5,292.1	5,489.2	5,420.6	32.4	17.5	156.38	122.1	-750.6	1,147.8	1,117.7	30.08	38.164	
5,700.0	5,384.1	5,585.8	5,515.8	33.1	17.9	156.51	122.2	-767.2	1,173.3	1,142.7	30.62	38.324	
5,800.0	5,476.2	5,682.5	5,611.1	33.9	18.2	156.64	122.2	-783.8	1,198.8	1,167.6	31.15	38.478	
7,200.0	6,693.6	8,143.3	7,115.0	46.6	47.5	110.80	125.7	-2,160.3	1,212.1	1,127.5	84.56	14.334	
7,300.0	6,739.3	8,231.7	7,115.0	48.5	49.5	108.50	126.0	-2,248.7	1,205.3	1,116.0	89.28	13.499	
7,400.0	6,770.8	8,326.3	7,115.0	50.4	51.7	106.80	126.2	-2,343.3	1,201.6	1,107.4	94.22	12.753	
7,500.0	6,787.4	8,424.8	7,115.0	52.5	54.0	105.87	126.4	-2,441.8	1,200.0	1,100.8	99.12	12.106	
7,582.0	6,791.7	8,506.7	7,115.0	54.3	56.0	105.63	126.6	-2,523.6	1,199.6	1,096.6	102.97	11.650	
7,600.0	6,790.0	8,524.7	7,115.0	54.6	56.4	105.72	126.7	-2,541.7	1,199.7	1,096.0	103.76	11.562	
7,700.0	6,790.0	8,624.7	7,115.0	56.8	58.8	105.72	126.9	-2,641.7	1,199.7	1,091.5	108.25	11.083	
7,800.0	6,790.0	8,724.7	7,115.0	58.9	61.2	105.72	127.2	-2,741.7	1,199.7	1,087.0	112.75	10.640	
7,900.0	6,790.0	8,824.7	7,115.0	61.1	63.5	105.72	127.4	-2,841.7	1,199.7	1,082.5	117.28	10.230	
8,000.0	6,790.0	8,924.7	7,115.0	63.3	65.9	105.72	127.7	-2,941.7	1,199.8	1,077.9	121.83	9.848	
8,100.0	6,790.0	9,024.7	7,115.0	65.6	68.3	105.72	127.9	-3,041.7	1,199.8	1,073.4	126.39	9.492	
8,200.0	6,790.0	9,124.7	7,115.0	67.8	70.7	105.72	128.2	-3,141.7	1,199.8	1,068.8	130.97	9.161	
8,300.0	6,790.0	9,224.7	7,115.0	70.1	73.1	105.72	128.4	-3,241.7	1,199.8	1,064.2	135.56	8.850	
8,400.0	6,790.0	9,324.7	7,115.0	72.3	75.6	105.72	128.7	-3,341.7	1,199.8	1,059.6	140.16	8.560	
8,500.0	6,790.0	9,424.7	7,115.0	74.6	78.0	105.72	128.9	-3,441.7	1,199.8	1,055.0	144.78	8.287	
8,600.0	6,790.0	9,524.7	7,115.0	76.9	80.4	105.72	129.2	-3,541.7	1,199.8	1,050.4	149.40	8.031	
8,700.0	6,790.0	9,624.7	7,115.0	79.2	82.8	105.72	129.4	-3,641.7	1,199.8	1,045.7	154.03	7.789	
8,800.0	6,790.0	9,724.7	7,115.0	81.6	85.3	105.72	129.7	-3,741.7	1,199.8	1,041.1	158.67	7.562	
8,900.0	6,790.0	9,824.7	7,115.0	83.9	87.7	105.72	129.9	-3,841.7	1,199.8	1,036.5	163.32	7.346	
9,000.0	6,790.0	9,924.7	7,115.0	86.2	90.1	105.72	130.2	-3,941.7	1,199.8	1,031.8	167.97	7.143	
9,100.0	6,790.0	10,024.7	7,115.0	88.6	92.5	105.72	130.4	-4,041.7	1,199.8	1,027.2	172.63	6.950	
9,200.0	6,790.0	10,124.7	7,115.0	90.9	95.0	105.72	130.7	-4,141.7	1,199.8	1,022.5	177.29	6.767	
9,300.0	6,790.0	10,224.7	7,115.0	93.3	97.4	105.72	130.9	-4,241.7	1,199.8	1,017.8	181.96	6.594	
9,400.0	6,790.0	10,324.7	7,115.0	95.6	99.9	105.72	131.2	-4,341.7	1,199.8	1,013.2	186.64	6.428	
9,500.0	6,790.0	10,424.7	7,115.0	98.0	102.3	105.72	131.4	-4,441.7	1,199.8	1,008.5	191.32	6.271	
9,600.0	6,790.0	10,524.7	7,115.0	100.4	104.7	105.72	131.7	-4,541.7	1,199.8	1,003.8	196.00	6.121	
9,700.0	6,790.0	10,624.7	7,115.0	102.8	107.2	105.72	131.9	-4,641.7	1,199.8	999.1	200.69	5.978	
9,800.0	6,790.0	10,724.7	7,115.0	105.2	109.6	105.72	132.2	-4,741.7	1,199.8	994.4	205.38	5.842	
9,900.0	6,790.0	10,824.7	7,115.0	107.5	112.1	105.72	132.4	-4,841.7	1,199.8	989.7	210.08	5.711	
10,000.0	6,790.0	10,924.7	7,115.0	109.9	114.5	105.72	132.7	-4,941.7	1,199.8	985.0	214.77	5.586	
10,100.0	6,790.0	11,024.7	7,115.0	112.3	117.0	105.72	132.9	-5,041.7	1,199.8	980.4	219.48	5.467	
10,200.0	6,790.0	11,124.7	7,115.0	114.7	119.4	105.72	133.2	-5,141.7	1,199.8	975.7	224.18	5.352	
10,300.0	6,790.0	11,224.7	7,115.0	117.1	121.9	105.72	133.4	-5,241.7	1,199.8	970.9	228.88	5.242	
10,400.0	6,790.0	11,324.7	7,115.0	119.5	124.3	105.72	133.7	-5,341.7	1,199.8	966.2	233.59	5.136	
10,500.0	6,790.0	11,424.7	7,115.0	122.0	126.8	105.72	133.9	-5,441.7	1,199.8	961.5	238.30	5.035	
10,600.0	6,790.0	11,524.7	7,115.0	124.4	129.2	105.72	134.2	-5,541.7	1,199.8	956.8	243.02	4.937	
10,700.0	6,790.0	11,624.7	7,115.0	126.8	131.7	105.72	134.4	-5,641.7	1,199.8	952.1	247.73	4.843	
10,800.0	6,790.0	11,724.7	7,115.0	129.2	134.1	105.72	134.7	-5,741.7	1,199.8	947.4	252.45	4.753	
10,900.0	6,790.0	11,824.7	7,115.0	131.6	136.6	105.72	134.9	-5,841.7	1,199.9	942.7	257.17	4.666	
11,000.0	6,790.0	11,924.7	7,115.0	134.0	139.1	105.72	135.2	-5,941.7	1,199.9	938.0	261.89	4.582	
11,100.0	6,790.0	12,024.7	7,115.0	136.5	141.5	105.72	135.4	-6,041.7	1,199.9	933.3	266.61	4.500	
11,200.0	6,790.0	12,124.7	7,115.0	138.9	144.0	105.72	135.7	-6,141.7	1,199.9	928.5	271.33	4.422	
11,300.0	6,790.0	12,224.7	7,115.0	141.3	146.4	105.72	135.9	-6,241.7	1,199.9	923.8	276.06	4.346	
11,400.0	6,790.0	12,324.7	7,115.0	143.7	148.9	105.72	136.2	-6,341.7	1,199.9	919.1	280.78	4.273	
11,500.0	6,790.0	12,424.7	7,115.0	146.2	151.4	105.72	136.4	-6,441.7	1,199.9	914.4	285.51	4.203	

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 8
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 8	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		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
11,600.0	6,790.0	12,524.7	7,115.0	148.6	153.8	105.72	136.7	-6,541.7	1,199.9	909.6	290.24	4.134	
11,700.0	6,790.0	12,624.7	7,115.0	151.0	156.3	105.72	136.9	-6,641.7	1,199.9	904.9	294.97	4.068	
11,800.0	6,790.0	12,724.7	7,115.0	153.5	158.7	105.72	137.2	-6,741.7	1,199.9	900.2	299.70	4.004	
11,900.0	6,790.0	12,824.7	7,115.0	155.9	161.2	105.72	137.4	-6,841.7	1,199.9	895.5	304.43	3.941	
12,000.0	6,790.0	12,924.7	7,115.0	158.3	163.7	105.72	137.7	-6,941.7	1,199.9	890.7	309.17	3.881	
12,100.0	6,790.0	13,024.7	7,115.0	160.8	166.1	105.72	137.9	-7,041.7	1,199.9	886.0	313.90	3.823	
12,200.0	6,790.0	13,124.7	7,115.0	163.2	168.6	105.72	138.2	-7,141.7	1,199.9	881.3	318.63	3.766	
12,300.0	6,790.0	13,224.7	7,115.0	165.6	171.0	105.72	138.4	-7,241.7	1,199.9	876.5	323.37	3.711	
12,400.0	6,790.0	13,324.7	7,115.0	168.1	173.5	105.72	138.7	-7,341.7	1,199.9	871.8	328.11	3.657	
12,500.0	6,790.0	13,424.7	7,115.0	170.5	176.0	105.72	138.9	-7,441.7	1,199.9	867.1	332.84	3.605	
12,600.0	6,790.0	13,524.7	7,115.0	173.0	178.4	105.72	139.2	-7,541.7	1,199.9	862.3	337.58	3.554	
12,700.0	6,790.0	13,624.7	7,115.0	175.4	180.9	105.72	139.4	-7,641.7	1,199.9	857.6	342.32	3.505	
12,800.0	6,790.0	13,724.7	7,115.0	177.9	183.4	105.71	139.7	-7,741.7	1,199.9	852.9	347.06	3.457	
12,900.0	6,790.0	13,824.7	7,115.0	180.3	185.8	105.71	139.9	-7,841.7	1,199.9	848.1	351.80	3.411	
13,000.0	6,790.0	13,924.7	7,115.0	182.8	188.3	105.71	140.2	-7,941.7	1,199.9	843.4	356.54	3.365	
13,100.0	6,790.0	14,024.7	7,115.0	185.2	190.8	105.71	140.4	-8,041.7	1,199.9	838.6	361.29	3.321	
13,200.0	6,790.0	14,124.7	7,115.0	187.6	193.2	105.71	140.7	-8,141.7	1,199.9	833.9	366.03	3.278	
13,300.0	6,790.0	14,224.7	7,115.0	190.1	195.7	105.71	140.9	-8,241.7	1,199.9	829.2	370.77	3.236	
13,400.0	6,790.0	14,324.7	7,115.0	192.5	198.2	105.71	141.2	-8,341.7	1,199.9	824.4	375.51	3.195	
13,500.0	6,790.0	14,424.7	7,115.0	195.0	200.6	105.71	141.4	-8,441.7	1,199.9	819.7	380.26	3.156	
13,600.0	6,790.0	14,524.7	7,115.0	197.4	203.1	105.71	141.7	-8,541.7	1,199.9	814.9	385.00	3.117	
13,700.0	6,790.0	14,624.7	7,115.0	199.9	205.6	105.71	141.9	-8,641.7	1,199.9	810.2	389.75	3.079	
13,800.0	6,790.0	14,724.7	7,115.0	202.3	208.0	105.71	142.2	-8,741.7	1,200.0	805.5	394.49	3.042	
13,900.0	6,790.0	14,824.7	7,115.0	204.8	210.5	105.71	142.4	-8,841.7	1,200.0	800.7	399.24	3.006	
14,000.0	6,790.0	14,924.7	7,115.0	207.3	213.0	105.71	142.7	-8,941.7	1,200.0	796.0	403.99	2.970	
14,100.0	6,790.0	15,024.7	7,115.0	209.7	215.4	105.71	142.9	-9,041.7	1,200.0	791.2	408.73	2.936	
14,200.0	6,790.0	15,124.7	7,115.0	212.2	217.9	105.71	143.2	-9,141.7	1,200.0	786.5	413.48	2.902	
14,300.0	6,790.0	15,224.7	7,115.0	214.6	220.4	105.71	143.4	-9,241.7	1,200.0	781.7	418.23	2.869	
14,400.0	6,790.0	15,324.7	7,115.0	217.1	222.8	105.71	143.7	-9,341.7	1,200.0	777.0	422.98	2.837	
14,500.0	6,790.0	15,424.7	7,115.0	219.5	225.3	105.71	143.9	-9,441.6	1,200.0	772.3	427.73	2.805	
14,600.0	6,790.0	15,524.7	7,115.0	222.0	227.8	105.71	144.2	-9,541.6	1,200.0	767.5	432.47	2.775	
14,700.0	6,790.0	15,624.7	7,115.0	224.4	230.2	105.71	144.4	-9,641.6	1,200.0	762.8	437.22	2.745	
14,800.0	6,790.0	15,724.7	7,115.0	226.9	232.7	105.71	144.7	-9,741.6	1,200.0	758.0	441.97	2.715	
14,900.0	6,790.0	15,824.7	7,115.0	229.4	235.2	105.71	144.9	-9,841.6	1,200.0	753.3	446.72	2.686	
15,000.0	6,790.0	15,924.7	7,115.0	231.8	237.6	105.71	145.2	-9,941.6	1,200.0	748.5	451.47	2.658	
15,100.0	6,790.0	16,024.7	7,115.0	234.3	240.1	105.71	145.4	-10,041.6	1,200.0	743.8	456.22	2.630	
15,200.0	6,790.0	16,124.7	7,115.0	236.7	242.6	105.71	145.7	-10,141.6	1,200.0	739.0	460.98	2.603	
15,300.0	6,790.0	16,224.7	7,115.0	239.2	245.0	105.71	145.9	-10,241.6	1,200.0	734.3	465.73	2.577	
15,400.0	6,790.0	16,324.7	7,115.0	241.6	247.5	105.71	146.2	-10,341.6	1,200.0	729.5	470.48	2.551	
15,500.0	6,790.0	16,424.7	7,115.0	244.1	250.0	105.71	146.4	-10,441.6	1,200.0	724.8	475.23	2.525	
15,600.0	6,790.0	16,524.7	7,115.0	246.6	252.4	105.71	146.7	-10,541.6	1,200.0	720.0	479.98	2.500	
15,700.0	6,790.0	16,624.7	7,115.0	249.0	254.9	105.71	146.9	-10,641.6	1,200.0	715.3	484.73	2.476	
15,800.0	6,790.0	16,724.7	7,115.0	251.5	257.4	105.71	147.1	-10,741.6	1,200.0	710.5	489.49	2.452	
15,900.0	6,790.0	16,824.7	7,115.0	253.9	259.9	105.71	147.4	-10,841.6	1,200.0	705.8	494.24	2.428	
16,000.0	6,790.0	16,924.7	7,115.0	256.4	262.3	105.71	147.6	-10,941.6	1,200.0	701.0	498.99	2.405	
16,100.0	6,790.0	17,024.7	7,115.0	258.9	264.8	105.71	147.9	-11,041.6	1,200.0	696.3	503.75	2.382	
16,200.0	6,790.0	17,124.7	7,115.0	261.3	267.3	105.71	148.1	-11,141.6	1,200.0	691.5	508.50	2.360	
16,300.0	6,790.0	17,224.7	7,115.0	263.8	269.7	105.71	148.4	-11,241.6	1,200.0	686.8	513.25	2.338	
16,400.0	6,790.0	17,324.7	7,115.0	266.2	272.2	105.71	148.6	-11,341.6	1,200.0	682.0	518.01	2.317	
16,500.0	6,790.0	17,424.7	7,115.0	268.7	274.7	105.71	148.9	-11,441.6	1,200.0	677.3	522.76	2.296	
16,600.0	6,790.0	17,524.7	7,115.0	271.2	277.1	105.71	149.1	-11,541.6	1,200.0	672.5	527.52	2.275	
16,700.0	6,790.0	17,624.7	7,115.0	273.6	279.6	105.71	149.4	-11,641.6	1,200.1	667.8	532.27	2.255	

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 8
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 8	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		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
16,783.6	6,790.0	17,708.3	7,115.0	275.7	281.7	105.71	149.6	-11,725.3	1,200.1	663.8	536.25	2.238 SF	

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 8
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 8	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			
0.0	0.0	0.0	0.0	0.0	0.0	30.90	96.2	57.6	112.1					
100.0	100.0	99.0	99.0	0.1	0.1	30.90	96.2	57.6	112.1	111.8	0.26	424.661		
200.0	200.0	199.0	199.0	0.3	0.3	30.90	96.2	57.6	112.1	111.5	0.61	182.979 CC		
300.0	300.0	300.2	300.2	0.5	0.5	147.34	96.1	56.7	112.3	111.3	0.96	116.417 ES		
400.0	400.0	401.4	401.4	0.7	0.7	146.99	95.7	54.1	112.9	111.6	1.32	85.473		
500.0	499.9	502.6	502.5	0.9	0.9	146.42	95.2	49.6	113.9	112.2	1.68	67.584		
600.0	599.7	603.8	603.5	1.1	1.1	145.64	94.4	43.5	115.3	113.2	2.06	55.911		
700.0	699.4	705.0	704.3	1.3	1.3	144.66	93.4	35.5	117.1	114.6	2.46	47.676		
800.0	798.9	806.1	805.0	1.5	1.5	143.49	92.2	25.8	119.3	116.5	2.87	41.537		
900.0	898.3	907.2	905.4	1.8	1.8	142.18	90.8	14.3	122.0	118.7	3.32	36.770		
1,000.0	997.4	1,008.3	1,005.6	2.0	2.1	140.73	89.1	1.1	125.3	121.5	3.80	32.949		
1,100.0	1,096.3	1,109.3	1,105.5	2.3	2.4	139.17	87.3	-13.9	129.0	124.7	4.33	29.814		
1,200.0	1,194.9	1,210.3	1,205.0	2.7	2.7	137.54	85.2	-30.6	133.2	128.3	4.90	27.201		
1,300.0	1,293.3	1,310.4	1,303.6	3.0	3.0	136.01	82.9	-48.5	138.2	132.7	5.51	25.099		
1,400.0	1,391.2	1,410.2	1,401.7	3.4	3.4	135.05	80.7	-66.4	144.5	138.4	6.14	23.555		
1,500.0	1,488.9	1,509.9	1,499.8	3.8	3.7	134.62	78.5	-84.3	152.1	145.3	6.78	22.443		
1,600.0	1,586.1	1,609.5	1,597.7	4.2	4.1	134.67	76.2	-102.2	160.8	153.4	7.42	21.672		
1,700.0	1,682.9	1,709.0	1,695.6	4.7	4.4	135.12	74.0	-120.0	170.8	162.7	8.07	21.177		
1,800.0	1,779.3	1,808.3	1,793.3	5.2	4.8	135.88	71.8	-137.9	182.0	173.3	8.70	20.914		
1,900.0	1,875.2	1,907.5	1,890.8	5.7	5.1	136.90	69.6	-155.7	194.6	185.3	9.33	20.848		
2,000.0	1,970.5	2,006.4	1,988.1	6.3	5.5	138.09	67.3	-173.4	208.5	198.5	9.95	20.955		
2,100.0	2,065.4	2,105.1	2,085.1	6.9	5.8	139.42	65.1	-191.1	223.8	213.2	10.55	21.215		
2,200.0	2,159.6	2,203.5	2,181.9	7.5	6.2	140.82	62.9	-208.8	240.5	229.4	11.13	21.612		
2,300.0	2,253.3	2,301.6	2,278.4	8.2	6.6	142.25	60.7	-226.4	258.7	247.1	11.69	22.135		
2,400.0	2,346.3	2,399.3	2,374.5	8.8	6.9	143.69	58.5	-244.0	278.5	266.3	12.23	22.771		
2,500.0	2,438.7	2,496.7	2,470.3	9.6	7.3	145.11	56.4	-261.5	299.9	287.1	12.75	23.511		
2,600.0	2,530.8	2,593.9	2,565.9	10.3	7.6	146.54	54.2	-278.9	322.1	308.9	13.26	24.292		
2,700.0	2,622.8	2,691.1	2,661.5	11.0	8.0	147.79	52.0	-296.4	344.6	330.8	13.76	25.033		
2,800.0	2,714.9	2,788.3	2,757.1	11.7	8.3	148.88	49.8	-313.8	367.1	352.9	14.27	25.736		
2,900.0	2,806.9	2,885.5	2,852.7	12.5	8.7	149.85	47.6	-331.3	389.8	375.1	14.76	26.403		
3,000.0	2,898.9	2,982.7	2,948.2	13.2	9.0	150.71	45.5	-348.7	412.6	397.3	15.26	27.035		
3,100.0	2,991.0	3,079.9	3,043.8	13.9	9.4	151.49	43.3	-366.2	435.5	419.7	15.76	27.633		
3,200.0	3,083.0	3,177.1	3,139.4	14.7	9.7	152.18	41.1	-383.6	458.4	442.1	16.25	28.201		
3,300.0	3,175.1	3,274.3	3,235.0	15.4	10.1	152.81	38.9	-401.1	481.4	464.6	16.75	28.740		
3,400.0	3,267.1	3,371.5	3,330.6	16.1	10.4	153.38	36.8	-418.5	504.4	487.1	17.24	29.251		
3,500.0	3,359.2	3,468.7	3,426.2	16.9	10.8	153.90	34.6	-436.0	527.5	509.7	17.74	29.738		
3,600.0	3,451.2	3,565.9	3,521.8	17.6	11.1	154.38	32.4	-453.4	550.6	532.3	18.23	30.200		
3,700.0	3,543.2	3,663.1	3,617.4	18.3	11.5	154.82	30.2	-470.9	573.7	555.0	18.72	30.641		
3,800.0	3,635.3	3,760.3	3,713.0	19.1	11.9	155.23	28.0	-488.3	596.9	577.7	19.22	31.060		
3,900.0	3,727.3	3,857.5	3,808.6	19.8	12.2	155.60	25.9	-505.8	620.1	600.4	19.71	31.460		
4,000.0	3,819.4	3,954.6	3,904.1	20.5	12.6	155.95	23.7	-523.2	643.3	623.1	20.20	31.843		
4,100.0	3,911.4	4,051.8	3,999.7	21.3	12.9	156.27	21.5	-540.6	666.6	645.9	20.70	32.208		
4,200.0	4,003.5	4,149.0	4,095.3	22.0	13.3	156.58	19.3	-558.1	689.8	668.6	21.19	32.557		
4,300.0	4,095.5	4,246.2	4,190.9	22.8	13.6	156.86	17.2	-575.5	713.1	691.4	21.68	32.891		
4,400.0	4,187.5	4,343.4	4,286.5	23.5	14.0	157.12	15.0	-593.0	736.4	714.2	22.17	33.211		
4,500.0	4,279.6	4,440.6	4,382.1	24.2	14.3	157.37	12.8	-610.4	759.7	737.1	22.67	33.518		
4,600.0	4,371.6	4,537.8	4,477.7	25.0	14.7	157.60	10.6	-627.9	783.0	759.9	23.16	33.812		
4,700.0	4,463.7	4,635.0	4,573.3	25.7	15.0	157.82	8.4	-645.3	806.4	782.7	23.65	34.095		
4,800.0	4,555.7	4,732.2	4,668.9	26.5	15.4	158.03	6.3	-662.8	829.7	805.6	24.14	34.366		
4,900.0	4,647.8	4,829.4	4,764.5	27.2	15.7	158.23	4.1	-680.2	853.1	828.4	24.64	34.627		
5,000.0	4,739.8	4,926.6	4,860.0	27.9	16.1	158.41	1.9	-697.7	876.4	851.3	25.13	34.878		
5,100.0	4,831.9	5,023.8	4,955.6	28.7	16.5	158.59	-0.3	-715.1	899.8	874.2	25.62	35.120		

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 8
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 8	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			
5,200.0	4,923.9	5,121.0	5,051.2	29.4	16.8	158.76	-2.5	-732.6	923.2	897.1	26.11	35.353		
5,300.0	5,015.9	5,218.2	5,146.8	30.2	17.2	158.92	-4.6	-750.0	946.6	920.0	26.61	35.578		
5,400.0	5,108.0	5,315.4	5,242.4	30.9	17.5	159.07	-6.8	-767.5	970.0	942.9	27.10	35.795		
5,500.0	5,200.0	5,412.6	5,338.0	31.7	17.9	159.21	-9.0	-784.9	993.4	965.8	27.59	36.004		
5,600.0	5,292.1	5,509.8	5,433.6	32.4	18.2	159.35	-11.2	-802.4	1,016.8	988.7	28.08	36.206		
5,700.0	5,384.1	5,606.9	5,529.2	33.1	18.6	159.48	-13.3	-819.8	1,040.2	1,011.6	28.58	36.402		
5,800.0	5,476.2	5,704.1	5,624.8	33.9	18.9	159.61	-15.5	-837.3	1,063.6	1,034.5	29.07	36.591		
5,900.0	5,568.2	5,801.3	5,720.4	34.6	19.3	159.73	-17.7	-854.7	1,087.0	1,057.5	29.56	36.774		
6,000.0	5,660.2	5,898.5	5,815.9	35.4	19.6	159.84	-19.9	-872.2	1,110.5	1,080.4	30.05	36.950		
6,100.0	5,752.3	5,995.7	5,911.5	36.1	20.0	159.95	-22.1	-889.6	1,133.9	1,103.3	30.54	37.122		
6,200.0	5,844.3	6,092.9	6,007.1	36.8	20.4	160.06	-24.2	-907.1	1,157.3	1,126.3	31.04	37.288		
6,300.0	5,936.4	6,190.1	6,102.7	37.6	20.7	160.16	-26.4	-924.5	1,180.8	1,149.2	31.53	37.449		
6,400.0	6,028.4	6,287.2	6,190.0	38.3	21.0	160.26	-28.6	-941.9	1,204.2	1,173.6	32.02	37.610		
6,500.0	6,120.5	6,384.2	6,287.0	39.1	21.3	160.36	-30.8	-959.3	1,228.6	1,197.9	32.51	37.771		
6,600.0	6,212.5	6,481.1	6,384.0	39.8	21.6	160.46	-33.0	-976.7	1,253.0	1,222.2	33.00	37.932		
6,700.0	6,304.5	6,578.0	6,481.0	40.6	21.9	160.56	-35.2	-994.1	1,277.4	1,246.6	33.49	38.093		
6,800.0	6,396.5	6,674.9	6,578.0	41.3	22.2	160.66	-37.4	-1,011.5	1,301.8	1,271.0	33.98	38.254		
6,900.0	6,488.5	6,771.8	6,675.0	42.1	22.5	160.76	-39.6	-1,028.9	1,326.2	1,295.4	34.47	38.415		
7,000.0	6,580.5	6,868.7	6,772.0	42.8	22.8	160.86	-41.8	-1,046.3	1,350.6	1,319.8	34.96	38.576		
7,100.0	6,672.5	6,965.6	6,869.0	43.6	23.1	160.96	-44.0	-1,063.7	1,375.0	1,344.2	35.45	38.737		
7,200.0	6,764.5	7,062.5	6,969.0	44.3	23.4	161.06	-46.2	-1,081.1	1,399.4	1,368.6	35.94	38.898		
7,300.0	6,856.5	7,159.4	7,069.0	45.1	23.7	161.16	-48.4	-1,098.5	1,423.8	1,393.0	36.43	39.059		
7,400.0	6,948.5	7,256.3	7,169.0	45.8	24.0	161.26	-50.6	-1,115.9	1,448.2	1,417.4	36.92	39.220		
7,500.0	7,040.5	7,353.2	7,269.0	46.6	24.3	161.36	-52.8	-1,133.3	1,472.6	1,441.8	37.41	39.381		
7,600.0	7,132.5	7,450.1	7,369.0	47.3	24.6	161.46	-55.0	-1,150.7	1,497.0	1,466.2	37.90	39.542		
7,700.0	7,224.5	7,547.0	7,469.0	48.1	24.9	161.56	-57.2	-1,168.1	1,521.4	1,490.6	38.39	39.703		
7,800.0	7,316.5	7,643.9	7,569.0	48.8	25.2	161.66	-59.4	-1,185.5	1,545.8	1,515.0	38.88	39.864		
7,900.0	7,408.5	7,740.8	7,669.0	49.6	25.5	161.76	-61.6	-1,202.9	1,570.2	1,539.4	39.37	40.025		
8,000.0	7,500.5	7,837.7	7,769.0	50.3	25.8	161.86	-63.8	-1,220.3	1,594.6	1,563.8	39.86	40.186		
8,100.0	7,592.5	7,934.6	7,869.0	51.1	26.1	161.96	-66.0	-1,237.7	1,619.0	1,588.2	40.35	40.347		
8,200.0	7,684.5	8,031.5	7,969.0	51.8	26.4	162.06	-68.2	-1,255.1	1,643.4	1,612.6	40.84	40.508		
8,300.0	7,776.5	8,128.4	8,069.0	52.6	26.7	162.16	-70.4	-1,272.5	1,667.8	1,637.0	41.33	40.669		
8,400.0	7,868.5	8,225.3	8,169.0	53.3	27.0	162.26	-72.6	-1,289.9	1,692.2	1,661.4	41.82	40.830		
8,500.0	7,960.5	8,322.2	8,269.0	54.1	27.3	162.36	-74.8	-1,307.3	1,716.6	1,685.8	42.31	40.991		
8,600.0	8,052.5	8,419.1	8,369.0	54.8	27.6	162.46	-77.0	-1,324.7	1,741.0	1,710.2	42.80	41.152		
8,700.0	8,144.5	8,516.0	8,469.0	55.6	27.9	162.56	-79.2	-1,342.1	1,765.4	1,734.6	43.29	41.313		
8,800.0	8,236.5	8,612.9	8,569.0	56.3	28.2	162.66	-81.4	-1,359.5	1,789.8	1,759.0	43.78	41.474		
8,900.0	8,328.5	8,709.8	8,669.0	57.1	28.5	162.76	-83.6	-1,376.9	1,814.2	1,783.4	44.27	41.635		
9,000.0	8,420.5	8,806.7	8,769.0	57.8	28.8	162.86	-85.8	-1,394.3	1,838.6	1,807.8	44.76	41.796		
9,100.0	8,512.5	8,903.6	8,869.0	58.6	29.1	162.96	-88.0	-1,411.7	1,863.0	1,832.2	45.25	41.957		
9,200.0	8,604.5	9,000.5	8,969.0	59.3	29.4	163.06	-90.2	-1,429.1	1,887.4	1,856.6	45.74	42.118		
9,300.0	8,696.5	9,097.4	9,069.0	60.1	29.7	163.16	-92.4	-1,446.5	1,911.8	1,881.0	46.23	42.279		
9,400.0	8,788.5	9,194.3	9,169.0	60.8	30.0	163.26	-94.6	-1,463.9	1,936.2	1,905.4	46.72	42.440		
9,500.0	8,880.5	9,291.2	9,269.0	61.6	30.3	163.36	-96.8	-1,481.3	1,960.6	1,929.8	47.21	42.601		
9,600.0	8,972.5	9,388.1	9,369.0	62.3	30.6	163.46	-99.0	-1,498.7	1,985.0	1,954.2	47.70	42.762		
9,700.0	9,064.5	9,485.0	9,469.0	63.1	30.9	163.56	-101.2	-1,516.1	2,009.4	1,978.6	48.19	42.923		
9,800.0	9,156.5	9,581.9	9,569.0	63.8	31.2	163.66	-103.4	-1,533.5	2,033.8	2,003.0	48.68	43.084		
9,900.0	9,248.5	9,678.8	9,669.0	64.6	31.5	163.76	-105.6	-1,550.9	2,058.2	2,027.4	49.17	43.245		
10,000.0	9,340.5	9,775.7	9,769.0	65.3	31.8	163.86	-107.8	-1,568.3	2,082.6	2,051.8	49.66	43.406		
10,100.0	9,432.5	9,872.6	9,869.0	66.1	32.1	163.96	-110.0	-1,585.7	2,107.0	2,076.2	50.15	43.567		
10,200.0	9,524.5	9,969.5	9,969.0	66.8	32.4	164.06	-112.2	-1,603.1	2,131.4	2,100.6	50.64	43.728		

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 8
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 8	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: 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	10,904.2	6,790.0	117.1	121.7	90.06	-31.6	-5,242.1	989.9	752.6	237.34	4.171	
10,400.0	6,790.0	11,004.2	6,790.0	119.5	124.1	90.06	-31.4	-5,342.1	990.0	747.7	242.23	4.087	
10,500.0	6,790.0	11,104.2	6,790.0	122.0	126.6	90.06	-31.1	-5,442.1	990.0	742.8	247.13	4.006	
10,600.0	6,790.0	11,204.2	6,790.0	124.4	129.0	90.06	-30.9	-5,542.1	990.0	737.9	252.02	3.928	
10,700.0	6,790.0	11,304.2	6,790.0	126.8	131.5	90.06	-30.6	-5,642.1	990.0	733.0	256.92	3.853	
10,800.0	6,790.0	11,404.2	6,790.0	129.2	134.0	90.06	-30.4	-5,742.1	990.0	728.1	261.82	3.781	
10,900.0	6,790.0	11,504.2	6,790.0	131.6	136.4	90.06	-30.1	-5,842.1	990.0	723.2	266.72	3.712	
11,000.0	6,790.0	11,604.2	6,790.0	134.0	138.9	90.06	-29.9	-5,942.1	990.0	718.3	271.63	3.645	
11,100.0	6,790.0	11,704.2	6,790.0	136.5	141.3	90.06	-29.6	-6,042.1	990.0	713.4	276.53	3.580	
11,200.0	6,790.0	11,804.2	6,790.0	138.9	143.8	90.06	-29.4	-6,142.1	990.0	708.5	281.44	3.518	
11,300.0	6,790.0	11,904.2	6,790.0	141.3	146.3	90.06	-29.1	-6,242.1	990.0	703.6	286.35	3.457	
11,400.0	6,790.0	12,004.2	6,790.0	143.7	148.7	90.06	-28.9	-6,342.1	990.0	698.7	291.26	3.399	
11,500.0	6,790.0	12,104.2	6,790.0	146.2	151.2	90.06	-28.6	-6,442.1	990.0	693.8	296.17	3.343	
11,600.0	6,790.0	12,204.2	6,790.0	148.6	153.6	90.06	-28.4	-6,542.1	990.0	688.9	301.08	3.288	
11,700.0	6,790.0	12,304.2	6,790.0	151.0	156.1	90.06	-28.1	-6,642.1	990.0	684.0	306.00	3.235	
11,800.0	6,790.0	12,404.2	6,790.0	153.5	158.6	90.06	-27.9	-6,742.1	990.0	679.1	310.91	3.184	
11,900.0	6,790.0	12,504.2	6,790.0	155.9	161.0	90.06	-27.6	-6,842.1	990.0	674.2	315.83	3.135	
12,000.0	6,790.0	12,604.2	6,790.0	158.3	163.5	90.06	-27.4	-6,942.1	990.0	669.3	320.74	3.087	
12,100.0	6,790.0	12,704.2	6,790.0	160.8	165.9	90.06	-27.1	-7,042.1	990.0	664.3	325.66	3.040	
12,200.0	6,790.0	12,804.2	6,790.0	163.2	168.4	90.06	-26.9	-7,142.1	990.0	659.4	330.58	2.995	
12,300.0	6,790.0	12,904.2	6,790.0	165.6	170.9	90.06	-26.6	-7,242.1	990.0	654.5	335.50	2.951	
12,400.0	6,790.0	13,004.2	6,790.0	168.1	173.3	90.06	-26.4	-7,342.1	990.0	649.6	340.42	2.908	
12,500.0	6,790.0	13,104.2	6,790.0	170.5	175.8	90.06	-26.1	-7,442.1	990.0	644.7	345.34	2.867	
12,600.0	6,790.0	13,204.2	6,790.0	173.0	178.3	90.06	-25.9	-7,542.1	990.0	639.8	350.26	2.827	
12,700.0	6,790.0	13,304.2	6,790.0	175.4	180.7	90.06	-25.6	-7,642.1	990.0	634.8	355.19	2.787	
12,800.0	6,790.0	13,404.2	6,790.0	177.9	183.2	90.06	-25.4	-7,742.1	990.0	629.9	360.11	2.749	
12,900.0	6,790.0	13,504.2	6,790.0	180.3	185.7	90.06	-25.1	-7,842.1	990.0	625.0	365.04	2.712	
13,000.0	6,790.0	13,604.2	6,790.0	182.8	188.1	90.06	-24.9	-7,942.1	990.0	620.1	369.96	2.676	
13,100.0	6,790.0	13,704.2	6,790.0	185.2	190.6	90.06	-24.6	-8,042.1	990.0	615.2	374.89	2.641	
13,200.0	6,790.0	13,804.2	6,790.0	187.6	193.0	90.06	-24.4	-8,142.1	990.1	610.2	379.81	2.607	
13,300.0	6,790.0	13,904.2	6,790.0	190.1	195.5	90.06	-24.1	-8,242.1	990.1	605.3	384.74	2.573	
13,400.0	6,790.0	14,004.2	6,790.0	192.5	198.0	90.06	-23.9	-8,342.1	990.1	600.4	389.67	2.541	
13,500.0	6,790.0	14,104.2	6,790.0	195.0	200.4	90.06	-23.6	-8,442.1	990.1	595.5	394.59	2.509	
13,600.0	6,790.0	14,204.2	6,790.0	197.4	202.9	90.06	-23.4	-8,542.1	990.1	590.5	399.52	2.478	
13,700.0	6,790.0	14,304.2	6,790.0	199.9	205.4	90.06	-23.1	-8,642.1	990.1	585.6	404.45	2.448	
13,800.0	6,790.0	14,404.2	6,790.0	202.3	207.8	90.06	-22.9	-8,742.1	990.1	580.7	409.38	2.418	
13,900.0	6,790.0	14,504.2	6,790.0	204.8	210.3	90.06	-22.6	-8,842.1	990.1	575.8	414.31	2.390	
14,000.0	6,790.0	14,604.2	6,790.0	207.3	212.8	90.06	-22.4	-8,942.1	990.1	570.8	419.24	2.362	
14,100.0	6,790.0	14,704.2	6,790.0	209.7	215.3	90.06	-22.1	-9,042.1	990.1	565.9	424.17	2.334	
14,200.0	6,790.0	14,804.2	6,790.0	212.2	217.7	90.06	-21.9	-9,142.1	990.1	561.0	429.10	2.307	
14,300.0	6,790.0	14,904.2	6,790.0	214.6	220.2	90.06	-21.6	-9,242.1	990.1	556.1	434.03	2.281	
14,400.0	6,790.0	15,004.2	6,790.0	217.1	222.7	90.06	-21.4	-9,342.1	990.1	551.1	438.97	2.256	
14,500.0	6,790.0	15,104.2	6,790.0	219.5	225.1	90.06	-21.1	-9,442.1	990.1	546.2	443.90	2.230	
14,600.0	6,790.0	15,204.2	6,790.0	222.0	227.6	90.06	-20.9	-9,542.1	990.1	541.3	448.83	2.206	
14,700.0	6,790.0	15,304.2	6,790.0	224.4	230.1	90.06	-20.6	-9,642.1	990.1	536.3	453.76	2.182	
14,800.0	6,790.0	15,404.2	6,790.0	226.9	232.5	90.06	-20.4	-9,742.1	990.1	531.4	458.70	2.159	
14,900.0	6,790.0	15,504.2	6,790.0	229.4	235.0	90.06	-20.1	-9,842.1	990.1	526.5	463.63	2.136	
15,000.0	6,790.0	15,604.2	6,790.0	231.8	237.5	90.06	-19.9	-9,942.1	990.1	521.5	468.56	2.113	
15,100.0	6,790.0	15,704.2	6,790.0	234.3	239.9	90.06	-19.6	-10,042.1	990.1	516.6	473.50	2.091	
15,200.0	6,790.0	15,804.2	6,790.0	236.7	242.4	90.06	-19.4	-10,142.1	990.1	511.7	478.43	2.070	
15,300.0	6,790.0	15,904.2	6,790.0	239.2	244.9	90.06	-19.1	-10,242.1	990.1	506.8	483.37	2.048	
15,400.0	6,790.0	16,004.2	6,790.0	241.6	247.3	90.06	-18.9	-10,342.1	990.1	501.8	488.30	2.028	

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 8
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 8	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: 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			
15,500.0	6,790.0	16,104.2	6,790.0	244.1	249.8	90.06	-18.6	-10,442.1	990.1	496.9	493.24	2.007		
15,600.0	6,790.0	16,204.2	6,790.0	246.6	252.3	90.06	-18.4	-10,542.1	990.1	492.0	498.17	1.988		
15,700.0	6,790.0	16,304.2	6,790.0	249.0	254.7	90.06	-18.1	-10,642.1	990.1	487.0	503.11	1.968		
15,800.0	6,790.0	16,404.2	6,790.0	251.5	257.2	90.06	-17.9	-10,742.1	990.1	482.1	508.05	1.949		
15,900.0	6,790.0	16,504.2	6,790.0	253.9	259.7	90.06	-17.6	-10,842.1	990.1	477.2	512.98	1.930		
16,000.0	6,790.0	16,604.2	6,790.0	256.4	262.2	90.06	-17.4	-10,942.1	990.1	472.2	517.92	1.912		
16,100.0	6,790.0	16,704.2	6,790.0	258.9	264.6	90.06	-17.1	-11,042.1	990.2	467.3	522.86	1.894		
16,200.0	6,790.0	16,804.2	6,790.0	261.3	267.1	90.06	-16.9	-11,142.1	990.2	462.4	527.79	1.876		
16,300.0	6,790.0	16,904.2	6,790.0	263.8	269.6	90.06	-16.6	-11,242.1	990.2	457.4	532.73	1.859		
16,400.0	6,790.0	17,004.2	6,790.0	266.2	272.0	90.06	-16.4	-11,342.1	990.2	452.5	537.67	1.842		
16,500.0	6,790.0	17,104.2	6,790.0	268.7	274.5	90.06	-16.1	-11,442.1	990.2	447.6	542.61	1.825		
16,600.0	6,790.0	17,204.2	6,790.0	271.2	277.0	90.06	-15.9	-11,542.1	990.2	442.6	547.55	1.808		
16,700.0	6,790.0	17,304.2	6,790.0	273.6	279.4	90.06	-15.6	-11,642.1	990.2	437.7	552.48	1.792		
16,783.6	6,790.0	17,387.8	6,790.0	275.7	281.5	90.06	-15.4	-11,725.7	990.2	433.6	556.61	1.779 SF		

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 8
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 8	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: 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	30.70	72.1	42.8	83.9					
100.0	100.0	100.0	100.0	0.1	0.1	30.70	72.1	42.8	83.9	83.6	0.27	316.222		
200.0	200.0	200.0	200.0	0.3	0.3	30.70	72.1	42.8	83.9	83.3	0.61	136.551 CC		
300.0	300.0	301.2	301.2	0.5	0.5	147.20	71.8	42.0	83.9	83.0	0.97	86.866		
400.0	400.0	402.4	402.3	0.7	0.7	147.08	70.8	39.5	84.0	82.7	1.32	63.610		
500.0	499.9	503.5	503.4	0.9	0.9	146.87	69.1	35.4	84.2	82.5	1.68	50.068		
600.0	599.7	604.7	604.4	1.1	1.1	146.57	66.7	29.6	84.4	82.3	2.05	41.164		
700.0	699.4	705.9	705.2	1.3	1.3	146.20	63.7	22.2	84.7	82.2	2.43	34.834		
800.0	798.9	807.1	805.9	1.5	1.5	145.74	60.0	13.1	85.0	82.2	2.83	30.078 ES		
900.0	898.3	908.2	906.4	1.8	1.8	145.21	55.7	2.3	85.4	82.2	3.24	26.358		
1,000.0	997.4	1,009.4	1,006.7	2.0	2.1	144.60	50.6	-10.0	85.9	82.2	3.68	23.353		
1,100.0	1,096.3	1,110.5	1,106.7	2.3	2.4	143.92	44.9	-24.0	86.5	82.3	4.14	20.866		
1,200.0	1,194.9	1,211.7	1,206.5	2.7	2.7	143.17	38.6	-39.7	87.1	82.5	4.64	18.767		
1,300.0	1,293.3	1,312.8	1,305.8	3.0	3.1	142.35	31.5	-56.9	87.9	82.7	5.18	16.973		
1,400.0	1,391.2	1,412.7	1,403.9	3.4	3.4	141.93	24.3	-74.7	89.4	83.7	5.72	15.628		
1,500.0	1,488.9	1,512.7	1,502.0	3.8	3.8	142.18	17.1	-92.4	92.4	86.1	6.26	14.750		
1,600.0	1,586.1	1,612.6	1,600.0	4.2	4.1	143.04	9.9	-110.2	96.7	89.9	6.78	14.253		
1,700.0	1,682.9	1,712.4	1,698.0	4.7	4.5	144.39	2.7	-127.9	102.5	95.2	7.28	14.076		
1,800.0	1,779.3	1,812.1	1,795.8	5.2	4.9	146.10	-4.5	-145.6	109.7	102.0	7.74	14.175		
1,900.0	1,875.2	1,911.6	1,893.5	5.7	5.3	148.03	-11.7	-163.3	118.5	110.4	8.17	14.515		
2,000.0	1,970.5	2,011.0	1,991.0	6.3	5.6	150.08	-18.9	-180.9	129.0	120.4	8.56	15.070		
2,100.0	2,065.4	2,110.1	2,088.3	6.9	6.0	152.14	-26.1	-198.5	141.1	132.2	8.92	15.818		
2,200.0	2,159.6	2,209.0	2,185.4	7.5	6.4	154.15	-33.2	-216.1	155.0	145.7	9.26	16.738		
2,300.0	2,253.3	2,307.6	2,282.2	8.2	6.7	156.05	-40.3	-233.6	170.6	161.0	9.58	17.811		
2,400.0	2,346.3	2,405.9	2,378.7	8.8	7.1	157.82	-47.4	-251.0	187.9	178.0	9.88	19.022		
2,500.0	2,438.7	2,503.9	2,474.8	9.6	7.5	159.45	-54.5	-268.4	207.0	196.8	10.17	20.356		
2,600.0	2,530.8	2,601.7	2,570.8	10.3	7.9	160.94	-61.6	-285.8	227.1	216.6	10.47	21.693		
2,700.0	2,622.8	2,699.5	2,666.8	11.0	8.2	162.19	-68.6	-303.1	247.3	236.5	10.78	22.947		
2,800.0	2,714.9	2,797.3	2,762.8	11.7	8.6	163.25	-75.7	-320.5	267.6	256.5	11.09	24.124		
2,900.0	2,806.9	2,895.1	2,858.8	12.5	9.0	164.16	-82.8	-337.9	288.0	276.5	11.41	25.229		
3,000.0	2,898.9	2,992.9	2,954.8	13.2	9.3	164.95	-89.8	-355.2	308.4	296.7	11.74	26.268		
3,100.0	2,991.0	3,090.8	3,050.8	13.9	9.7	165.64	-96.9	-372.6	328.9	316.8	12.07	27.246		
3,200.0	3,083.0	3,188.6	3,146.8	14.7	10.1	166.25	-104.0	-390.0	349.4	337.0	12.40	28.167		
3,300.0	3,175.1	3,286.4	3,242.8	15.4	10.5	166.80	-111.0	-407.3	370.0	357.2	12.74	29.036		
3,400.0	3,267.1	3,384.2	3,338.8	16.1	10.8	167.28	-118.1	-424.7	390.5	377.5	13.08	29.857		
3,500.0	3,359.2	3,482.0	3,434.8	16.9	11.2	167.72	-125.2	-442.1	411.2	397.7	13.42	30.633		
3,600.0	3,451.2	3,579.8	3,530.8	17.6	11.6	168.11	-132.2	-459.4	431.8	418.0	13.76	31.369		
3,700.0	3,543.2	3,677.6	3,626.8	18.3	11.9	168.47	-139.3	-476.8	452.4	438.3	14.11	32.066		
3,800.0	3,635.3	3,775.4	3,722.8	19.1	12.3	168.80	-146.4	-494.2	473.1	458.6	14.46	32.729		
3,900.0	3,727.3	3,873.2	3,818.8	19.8	12.7	169.10	-153.4	-511.5	493.8	479.0	14.80	33.358		
4,000.0	3,819.4	3,971.0	3,914.8	20.5	13.1	169.38	-160.5	-528.9	514.5	499.3	15.15	33.958		
4,100.0	3,911.4	4,068.8	4,010.7	21.3	13.4	169.63	-167.6	-546.2	535.2	519.7	15.50	34.529		
4,200.0	4,003.5	4,166.6	4,106.7	22.0	13.8	169.87	-174.6	-563.6	555.9	540.0	15.85	35.073		
4,300.0	4,095.5	4,264.4	4,202.7	22.8	14.2	170.09	-181.7	-581.0	576.6	560.4	16.20	35.593		
4,400.0	4,187.5	4,362.2	4,298.7	23.5	14.5	170.29	-188.8	-598.3	597.3	580.8	16.55	36.090		
4,500.0	4,279.6	4,460.1	4,394.7	24.2	14.9	170.48	-195.8	-615.7	618.1	601.2	16.90	36.566		
4,600.0	4,371.6	4,557.9	4,490.7	25.0	15.3	170.66	-202.9	-633.1	638.8	621.5	17.26	37.021		
4,700.0	4,463.7	4,655.7	4,586.7	25.7	15.7	170.83	-210.0	-650.4	659.5	641.9	17.61	37.457		
4,800.0	4,555.7	4,753.5	4,682.7	26.5	16.0	170.98	-217.0	-667.8	680.3	662.3	17.96	37.876		
4,900.0	4,647.8	4,851.3	4,778.7	27.2	16.4	171.13	-224.1	-685.2	701.1	682.7	18.31	38.277		
5,000.0	4,739.8	4,949.1	4,874.7	27.9	16.8	171.27	-231.2	-702.5	721.8	703.1	18.67	38.663		
5,100.0	4,831.9	5,046.9	4,970.7	28.7	17.2	171.40	-238.2	-719.9	742.6	723.5	19.02	39.035		

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 8
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 8	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	4,923.9	5,144.7	5,066.7	29.4	17.5	171.53	-245.3	-737.3	763.3	744.0	19.38	39.392		
5,300.0	5,015.9	5,242.5	5,162.7	30.2	17.9	171.64	-252.4	-754.6	784.1	764.4	19.73	39.735		
5,400.0	5,108.0	5,340.3	5,258.7	30.9	18.3	171.75	-259.4	-772.0	804.9	784.8	20.09	40.067		
5,500.0	5,200.0	5,438.1	5,354.7	31.7	18.6	171.86	-266.5	-789.4	825.7	805.2	20.44	40.386		
5,600.0	5,292.1	5,535.9	5,450.7	32.4	19.0	171.96	-273.5	-806.7	846.4	825.6	20.80	40.694		
5,700.0	5,384.1	5,633.7	5,546.6	33.1	19.4	172.06	-280.6	-824.1	867.2	846.1	21.16	40.992		
5,800.0	5,476.2	5,731.5	5,642.6	33.9	19.8	172.15	-287.7	-841.4	888.0	866.5	21.51	41.279		
5,900.0	5,568.2	5,829.4	5,738.6	34.6	20.1	172.23	-294.7	-858.8	908.8	886.9	21.87	41.557		
6,000.0	5,660.2	5,927.2	5,834.6	35.4	20.5	172.32	-301.8	-876.2	929.6	907.3	22.22	41.826		
6,100.0	5,752.3	6,025.0	5,930.6	36.1	20.9	172.40	-308.9	-893.5	950.4	927.8	22.58	42.086		
6,200.0	5,844.3	6,122.8	6,026.6	36.8	21.3	172.47	-315.9	-910.9	971.1	948.2	22.94	42.337		
6,300.0	5,936.4	7,408.9	6,790.0	37.6	37.9	140.53	-370.4	-1,735.1	987.7	931.4	56.35	17.530		
6,400.0	6,028.4	7,443.8	6,790.0	38.3	38.7	137.99	-370.3	-1,770.0	919.1	859.6	59.50	15.447		
6,500.0	6,120.5	7,478.7	6,790.0	39.1	39.5	135.38	-370.2	-1,804.9	855.2	792.5	62.71	13.639		
6,600.0	6,212.5	7,513.6	6,790.0	39.8	40.2	132.69	-370.2	-1,839.8	797.2	731.3	65.94	12.091		
6,700.0	6,304.5	7,548.6	6,790.0	40.6	41.0	129.93	-370.1	-1,874.8	746.6	677.4	69.17	10.793		
6,800.0	6,396.5	7,583.6	6,790.0	41.3	41.8	126.23	-370.0	-1,909.8	704.8	632.7	72.04	9.784		
6,900.0	6,484.5	7,627.8	6,790.0	42.3	42.8	118.86	-369.9	-1,954.1	674.6	600.4	74.19	9.093		
7,000.0	6,564.6	7,685.5	6,790.0	43.5	44.1	112.57	-369.7	-2,011.7	656.7	578.5	78.21	8.397		
7,100.0	6,634.9	7,755.2	6,790.0	44.9	45.7	106.51	-369.6	-2,081.5	649.0	565.6	83.39	7.783		
7,154.7	6,668.6	7,797.9	6,790.0	45.9	46.7	103.32	-369.5	-2,124.1	648.1	561.7	86.44	7.497		
7,200.0	6,693.6	7,835.3	6,790.0	46.6	47.5	100.80	-369.4	-2,161.5	648.6	559.7	88.91	7.295		
7,300.0	6,739.3	7,923.7	6,790.0	48.5	49.5	95.90	-369.1	-2,249.9	652.1	558.0	94.10	6.930		
7,400.0	6,770.8	8,018.3	6,790.0	50.4	51.7	92.29	-368.9	-2,344.5	656.4	557.7	98.69	6.651		
7,500.0	6,787.4	8,116.8	6,790.0	52.5	54.0	90.31	-368.7	-2,443.0	659.3	556.5	102.80	6.413		
7,600.0	6,790.0	8,216.7	6,790.0	54.6	56.4	90.00	-368.4	-2,542.9	659.8	552.8	107.02	6.165		
7,700.0	6,790.0	8,316.7	6,790.0	56.8	58.7	90.00	-368.2	-2,642.9	659.8	548.1	111.69	5.907		
7,800.0	6,790.0	8,416.7	6,790.0	58.9	61.1	90.00	-367.9	-2,742.9	659.8	543.4	116.38	5.669		
7,900.0	6,790.0	8,516.7	6,790.0	61.1	63.5	90.00	-367.7	-2,842.9	659.8	538.7	121.09	5.449		
8,000.0	6,790.0	8,616.7	6,790.0	63.3	65.8	90.00	-367.4	-2,942.9	659.8	534.0	125.82	5.244		
8,100.0	6,790.0	8,716.7	6,790.0	65.6	68.2	90.00	-367.2	-3,042.9	659.8	529.2	130.57	5.053		
8,200.0	6,790.0	8,816.7	6,790.0	67.8	70.6	90.00	-366.9	-3,142.9	659.8	524.5	135.33	4.876		
8,300.0	6,790.0	8,916.7	6,790.0	70.1	73.0	90.00	-366.7	-3,242.9	659.8	519.7	140.10	4.710		
8,400.0	6,790.0	9,016.7	6,790.0	72.3	75.4	90.00	-366.4	-3,342.9	659.8	514.9	144.89	4.554		
8,500.0	6,790.0	9,116.7	6,790.0	74.6	77.8	90.00	-366.2	-3,442.9	659.8	510.1	149.68	4.408		
8,600.0	6,790.0	9,216.7	6,790.0	76.9	80.2	90.00	-365.9	-3,542.9	659.8	505.3	154.49	4.271		
8,700.0	6,790.0	9,316.7	6,790.0	79.2	82.7	90.00	-365.7	-3,642.9	659.8	500.5	159.31	4.142		
8,800.0	6,790.0	9,416.7	6,790.0	81.6	85.1	90.00	-365.4	-3,742.9	659.8	495.7	164.13	4.020		
8,900.0	6,790.0	9,516.7	6,790.0	83.9	87.5	90.00	-365.2	-3,842.9	659.8	490.9	168.96	3.905		
9,000.0	6,790.0	9,616.7	6,790.0	86.2	89.9	90.00	-364.9	-3,942.9	659.8	486.0	173.80	3.797		
9,100.0	6,790.0	9,716.7	6,790.0	88.6	92.4	90.00	-364.7	-4,042.9	659.8	481.2	178.64	3.694		
9,200.0	6,790.0	9,816.7	6,790.0	90.9	94.8	90.00	-364.4	-4,142.9	659.8	476.4	183.49	3.596		
9,300.0	6,790.0	9,916.7	6,790.0	93.3	97.2	90.00	-364.2	-4,242.9	659.9	471.5	188.34	3.503		
9,400.0	6,790.0	10,016.7	6,790.0	95.6	99.6	90.00	-363.9	-4,342.9	659.9	466.7	193.20	3.415		
9,500.0	6,790.0	10,116.7	6,790.0	98.0	102.1	90.00	-363.7	-4,442.9	659.9	461.8	198.06	3.332		
9,600.0	6,790.0	10,216.7	6,790.0	100.4	104.5	90.00	-363.4	-4,542.9	659.9	456.9	202.93	3.252		
9,700.0	6,790.0	10,316.7	6,790.0	102.8	107.0	90.00	-363.2	-4,642.9	659.9	452.1	207.80	3.175		
9,800.0	6,790.0	10,416.7	6,790.0	105.2	109.4	90.00	-362.9	-4,742.9	659.9	447.2	212.68	3.103		
9,900.0	6,790.0	10,516.7	6,790.0	107.5	111.8	90.00	-362.7	-4,842.9	659.9	442.3	217.56	3.033		
10,000.0	6,790.0	10,616.7	6,790.0	109.9	114.3	90.00	-362.4	-4,942.9	659.9	437.4	222.44	2.967		
10,100.0	6,790.0	10,716.7	6,790.0	112.3	116.7	90.00	-362.2	-5,042.9	659.9	432.6	227.32	2.903		
10,200.0	6,790.0	10,816.7	6,790.0	114.7	119.2	90.00	-361.9	-5,142.9	659.9	427.7	232.21	2.842		

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 8
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 8	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)				
10,300.0	6,790.0	10,916.7	6,790.0	117.1	121.6	90.00	-361.7	-5,242.9	659.9	422.8	237.10	2.783		
10,400.0	6,790.0	11,016.7	6,790.0	119.5	124.1	90.00	-361.4	-5,342.9	659.9	417.9	241.99	2.727		
10,500.0	6,790.0	11,116.7	6,790.0	122.0	126.5	90.00	-361.2	-5,442.9	659.9	413.0	246.89	2.673		
10,600.0	6,790.0	11,216.7	6,790.0	124.4	129.0	90.00	-360.9	-5,542.9	659.9	408.1	251.78	2.621		
10,700.0	6,790.0	11,316.7	6,790.0	126.8	131.4	90.00	-360.7	-5,642.9	659.9	403.2	256.68	2.571		
10,800.0	6,790.0	11,416.7	6,790.0	129.2	133.9	90.00	-360.4	-5,742.9	659.9	398.3	261.58	2.523		
10,900.0	6,790.0	11,516.7	6,790.0	131.6	136.3	90.00	-360.2	-5,842.9	659.9	393.4	266.49	2.476		
11,000.0	6,790.0	11,616.7	6,790.0	134.0	138.8	90.00	-359.9	-5,942.9	659.9	388.5	271.39	2.432		
11,100.0	6,790.0	11,716.7	6,790.0	136.5	141.3	90.00	-359.7	-6,042.9	659.9	383.6	276.30	2.388		
11,200.0	6,790.0	11,816.7	6,790.0	138.9	143.7	90.00	-359.4	-6,142.9	659.9	378.7	281.20	2.347		
11,300.0	6,790.0	11,916.7	6,790.0	141.3	146.2	90.00	-359.2	-6,242.9	659.9	373.8	286.11	2.307		
11,400.0	6,790.0	12,016.7	6,790.0	143.7	148.6	90.00	-358.9	-6,342.9	659.9	368.9	291.02	2.268		
11,500.0	6,790.0	12,116.7	6,790.0	146.2	151.1	90.00	-358.7	-6,442.9	659.9	364.0	295.93	2.230		
11,600.0	6,790.0	12,216.7	6,790.0	148.6	153.5	90.00	-358.4	-6,542.9	659.9	359.1	300.85	2.194		
11,700.0	6,790.0	12,316.7	6,790.0	151.0	156.0	90.00	-358.2	-6,642.9	659.9	354.2	305.76	2.158		
11,800.0	6,790.0	12,416.7	6,790.0	153.5	158.5	90.00	-357.9	-6,742.9	659.9	349.3	310.67	2.124		
11,900.0	6,790.0	12,516.7	6,790.0	155.9	160.9	90.00	-357.7	-6,842.9	659.9	344.4	315.59	2.091		
12,000.0	6,790.0	12,616.7	6,790.0	158.3	163.4	90.00	-357.4	-6,942.9	659.9	339.4	320.51	2.059		
12,100.0	6,790.0	12,716.7	6,790.0	160.8	165.8	90.00	-357.2	-7,042.9	660.0	334.5	325.42	2.028		
12,200.0	6,790.0	12,816.7	6,790.0	163.2	168.3	90.00	-356.9	-7,142.9	660.0	329.6	330.34	1.998		
12,300.0	6,790.0	12,916.7	6,790.0	165.6	170.8	90.00	-356.7	-7,242.9	660.0	324.7	335.26	1.968		
12,400.0	6,790.0	13,016.7	6,790.0	168.1	173.2	90.00	-356.4	-7,342.9	660.0	319.8	340.18	1.940		
12,500.0	6,790.0	13,116.7	6,790.0	170.5	175.7	90.00	-356.2	-7,442.9	660.0	314.9	345.11	1.912		
12,600.0	6,790.0	13,216.7	6,790.0	173.0	178.1	90.00	-355.9	-7,542.9	660.0	309.9	350.03	1.885		
12,700.0	6,790.0	13,316.7	6,790.0	175.4	180.6	90.00	-355.7	-7,642.9	660.0	305.0	354.95	1.859		
12,800.0	6,790.0	13,416.7	6,790.0	177.9	183.1	90.00	-355.4	-7,742.9	660.0	300.1	359.87	1.834		
12,900.0	6,790.0	13,516.7	6,790.0	180.3	185.5	90.00	-355.2	-7,842.9	660.0	295.2	364.80	1.809		
13,000.0	6,790.0	13,616.7	6,790.0	182.8	188.0	90.00	-354.9	-7,942.9	660.0	290.3	369.72	1.785		
13,100.0	6,790.0	13,716.7	6,790.0	185.2	190.5	90.00	-354.7	-8,042.9	660.0	285.3	374.65	1.762		
13,200.0	6,790.0	13,816.7	6,790.0	187.6	192.9	90.00	-354.4	-8,142.9	660.0	280.4	379.58	1.739		
13,300.0	6,790.0	13,916.7	6,790.0	190.1	195.4	90.00	-354.2	-8,242.9	660.0	275.5	384.50	1.716		
13,400.0	6,790.0	14,016.7	6,790.0	192.5	197.9	90.00	-353.9	-8,342.9	660.0	270.6	389.43	1.695		
13,500.0	6,790.0	14,116.7	6,790.0	195.0	200.3	90.00	-353.7	-8,442.9	660.0	265.6	394.36	1.674		
13,600.0	6,790.0	14,216.7	6,790.0	197.4	202.8	90.00	-353.4	-8,542.9	660.0	260.7	399.29	1.653		
13,700.0	6,790.0	14,316.7	6,790.0	199.9	205.3	90.00	-353.2	-8,642.9	660.0	255.8	404.21	1.633		
13,800.0	6,790.0	14,416.7	6,790.0	202.3	207.7	90.00	-352.9	-8,742.9	660.0	250.9	409.14	1.613		
13,900.0	6,790.0	14,516.7	6,790.0	204.8	210.2	90.00	-352.7	-8,842.9	660.0	245.9	414.07	1.594		
14,000.0	6,790.0	14,616.7	6,790.0	207.3	212.6	90.00	-352.4	-8,942.9	660.0	241.0	419.00	1.575		
14,100.0	6,790.0	14,716.7	6,790.0	209.7	215.1	90.00	-352.2	-9,042.9	660.0	236.1	423.94	1.557		
14,200.0	6,790.0	14,816.7	6,790.0	212.2	217.6	90.00	-351.9	-9,142.9	660.0	231.2	428.87	1.539		
14,300.0	6,790.0	14,916.7	6,790.0	214.6	220.0	90.00	-351.7	-9,242.9	660.0	226.2	433.80	1.522		
14,400.0	6,790.0	15,016.7	6,790.0	217.1	222.5	90.00	-351.4	-9,342.9	660.0	221.3	438.73	1.504		
14,500.0	6,790.0	15,116.7	6,790.0	219.5	225.0	90.00	-351.2	-9,442.9	660.0	216.4	443.66	1.488 Level 3		
14,600.0	6,790.0	15,216.7	6,790.0	222.0	227.4	90.00	-350.9	-9,542.9	660.0	211.4	448.59	1.471 Level 3		
14,700.0	6,790.0	15,316.7	6,790.0	224.4	229.9	90.00	-350.7	-9,642.9	660.0	206.5	453.53	1.455 Level 3		
14,800.0	6,790.0	15,416.7	6,790.0	226.9	232.4	90.00	-350.4	-9,742.9	660.0	201.6	458.46	1.440 Level 3		
14,900.0	6,790.0	15,516.7	6,790.0	229.4	234.9	90.00	-350.2	-9,842.9	660.1	196.7	463.40	1.424 Level 3		
15,000.0	6,790.0	15,616.7	6,790.0	231.8	237.3	90.00	-349.9	-9,942.9	660.1	191.7	468.33	1.409 Level 3		
15,100.0	6,790.0	15,716.7	6,790.0	234.3	239.8	90.00	-349.7	-10,042.9	660.1	186.8	473.26	1.395 Level 3		
15,200.0	6,790.0	15,816.7	6,790.0	236.7	242.3	90.00	-349.4	-10,142.9	660.1	181.9	478.20	1.380 Level 3		
15,300.0	6,790.0	15,916.7	6,790.0	239.2	244.7	90.00	-349.2	-10,242.9	660.1	176.9	483.13	1.366 Level 3		
15,400.0	6,790.0	16,016.7	6,790.0	241.6	247.2	90.00	-348.9	-10,342.9	660.1	172.0	488.07	1.352 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 8
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 8	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		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			
15,500.0	6,790.0	16,116.7	6,790.0	244.1	249.7	90.00	-348.7	-10,442.9	660.1	167.1	493.00	1.339 Level 3		
15,600.0	6,790.0	16,216.7	6,790.0	246.6	252.1	90.00	-348.4	-10,542.9	660.1	162.1	497.94	1.326 Level 3		
15,700.0	6,790.0	16,316.7	6,790.0	249.0	254.6	90.00	-348.2	-10,642.9	660.1	157.2	502.88	1.313 Level 3		
15,800.0	6,790.0	16,416.7	6,790.0	251.5	257.1	90.00	-347.9	-10,742.9	660.1	152.3	507.81	1.300 Level 3		
15,900.0	6,790.0	16,516.7	6,790.0	253.9	259.5	90.00	-347.7	-10,842.9	660.1	147.3	512.75	1.287 Level 3		
16,000.0	6,790.0	16,616.7	6,790.0	256.4	262.0	90.00	-347.4	-10,942.9	660.1	142.4	517.69	1.275 Level 3		
16,100.0	6,790.0	16,716.7	6,790.0	258.9	264.5	90.00	-347.2	-11,042.9	660.1	137.5	522.62	1.263 Level 3		
16,200.0	6,790.0	16,816.7	6,790.0	261.3	266.9	90.00	-346.9	-11,142.9	660.1	132.5	527.56	1.251 Level 3		
16,300.0	6,790.0	16,916.7	6,790.0	263.8	269.4	90.00	-346.7	-11,242.9	660.1	127.6	532.50	1.240 Level 2		
16,400.0	6,790.0	17,016.7	6,790.0	266.2	271.9	90.00	-346.4	-11,342.9	660.1	122.7	537.43	1.228 Level 2		
16,500.0	6,790.0	17,116.7	6,790.0	268.7	274.3	90.00	-346.2	-11,442.9	660.1	117.7	542.37	1.217 Level 2		
16,600.0	6,790.0	17,216.7	6,790.0	271.2	276.8	90.00	-345.9	-11,542.9	660.1	112.8	547.31	1.206 Level 2		
16,700.0	6,790.0	17,316.7	6,790.0	273.6	279.3	90.00	-345.7	-11,642.9	660.1	107.9	552.25	1.195 Level 2		
16,783.6	6,790.0	17,400.3	6,790.0	275.7	281.4	90.00	-345.5	-11,726.5	660.1	103.7	556.38	1.186 Level 2, SF		

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 8
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 8	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	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	30.78	48.1	28.6	56.0					
100.0	100.0	100.0	100.0	0.1	0.1	30.78	48.1	28.6	56.0	55.7	0.27	210.994		
200.0	200.0	200.0	200.0	0.3	0.3	30.78	48.1	28.6	56.0	55.4	0.61	91.111		
300.0	300.0	300.8	300.8	0.5	0.5	147.35	47.7	27.9	56.0	55.0	0.97	57.957		
400.0	400.0	401.7	401.7	0.7	0.7	147.43	46.4	25.5	55.9	54.6	1.32	42.373		
500.0	499.9	502.5	502.4	0.9	0.9	147.55	44.3	21.6	55.8	54.1	1.68	33.262		
600.0	599.7	603.4	603.1	1.1	1.1	147.72	41.3	16.2	55.6	53.6	2.04	27.247		
700.0	699.4	704.2	703.6	1.3	1.3	147.95	37.5	9.2	55.4	53.0	2.41	22.959		
800.0	798.9	805.1	804.0	1.5	1.5	148.22	32.8	0.6	55.1	52.4	2.79	19.734		
900.0	898.3	905.9	904.1	1.8	1.8	148.55	27.3	-9.5	54.8	51.7	3.19	17.213		
1,000.0	997.4	1,006.8	1,004.1	2.0	2.0	148.94	20.9	-21.1	54.5	50.9	3.59	15.185		
1,100.0	1,096.3	1,107.6	1,103.8	2.3	2.4	149.38	13.7	-34.3	54.1	50.1	4.00	13.519		
1,200.0	1,194.9	1,208.4	1,203.2	2.7	2.7	149.88	5.6	-49.0	53.7	49.3	4.43	12.126		
1,300.0	1,293.3	1,309.1	1,302.2	3.0	3.0	150.47	-3.2	-65.2	53.3	48.4	4.86	10.961		
1,306.1	1,299.2	1,315.1	1,308.1	3.0	3.1	150.52	-3.8	-66.2	53.3	48.4	4.89	10.901 CC, ES		
1,400.0	1,391.2	1,409.0	1,400.4	3.4	3.4	151.71	-12.2	-81.7	54.0	48.7	5.28	10.227		
1,500.0	1,488.9	1,509.0	1,498.5	3.8	3.7	153.73	-21.2	-98.2	56.2	50.6	5.66	9.937		
1,600.0	1,586.1	1,608.9	1,596.6	4.2	4.1	156.26	-30.3	-114.7	60.2	54.2	6.00	10.019		
1,700.0	1,682.9	1,708.7	1,694.6	4.7	4.5	159.04	-39.3	-131.2	65.8	59.5	6.32	10.418		
1,800.0	1,779.3	1,808.3	1,792.5	5.2	4.8	161.79	-48.3	-147.6	73.2	66.6	6.61	11.085		
1,900.0	1,875.2	1,907.9	1,890.3	5.7	5.2	164.37	-57.2	-164.0	82.5	75.6	6.89	11.977		
2,000.0	1,970.5	2,007.2	1,987.8	6.3	5.6	166.67	-66.2	-180.4	93.6	86.4	7.17	13.059		
2,100.0	2,065.4	2,106.3	2,085.1	6.9	5.9	168.66	-75.1	-196.8	106.5	99.0	7.45	14.298		
2,200.0	2,159.6	2,205.1	2,182.2	7.5	6.3	170.36	-84.1	-213.1	121.2	113.4	7.73	15.671		
2,300.0	2,253.3	2,303.7	2,279.0	8.2	6.7	171.79	-92.9	-229.4	137.6	129.6	8.02	17.158		
2,400.0	2,346.3	2,402.0	2,375.6	8.8	7.0	172.99	-101.8	-245.6	155.9	147.6	8.32	18.744		
2,500.0	2,438.7	2,499.9	2,471.7	9.6	7.4	173.99	-110.6	-261.8	175.9	167.3	8.62	20.416		
2,600.0	2,530.8	2,597.7	2,567.7	10.3	7.8	174.84	-119.5	-277.9	196.8	187.9	8.94	22.012		
2,700.0	2,622.8	2,695.4	2,663.8	11.0	8.1	175.52	-128.3	-294.0	217.8	208.5	9.27	23.487		
2,800.0	2,714.9	2,793.2	2,759.8	11.7	8.5	176.08	-137.1	-310.2	238.8	229.2	9.61	24.853		
2,900.0	2,806.9	2,890.9	2,855.8	12.5	8.9	176.55	-145.9	-326.3	259.8	249.9	9.95	26.121		
3,000.0	2,898.9	2,988.7	2,951.8	13.2	9.2	176.95	-154.7	-342.5	280.8	270.5	10.29	27.303		
3,100.0	2,991.0	3,086.4	3,047.8	13.9	9.6	177.29	-163.6	-358.6	301.8	291.2	10.63	28.406		
3,200.0	3,083.0	3,184.1	3,143.8	14.7	9.9	177.59	-172.4	-374.7	322.9	311.9	10.97	29.438		
3,300.0	3,175.1	3,281.9	3,239.8	15.4	10.3	177.86	-181.2	-390.9	343.9	332.6	11.31	30.406		
3,400.0	3,267.1	3,379.6	3,335.8	16.1	10.7	178.09	-190.0	-407.0	365.0	353.3	11.66	31.315		
3,500.0	3,359.2	3,477.4	3,431.8	16.9	11.0	178.30	-198.8	-423.1	386.0	374.0	12.00	32.171		
3,600.0	3,451.2	3,575.1	3,527.8	17.6	11.4	178.48	-207.7	-439.3	407.1	394.8	12.34	32.978		
3,700.0	3,543.2	3,672.9	3,623.8	18.3	11.8	178.65	-216.5	-455.4	428.2	415.5	12.69	33.740		
3,800.0	3,635.3	3,770.6	3,719.8	19.1	12.1	178.80	-225.3	-471.5	449.2	436.2	13.04	34.461		
3,900.0	3,727.3	3,868.4	3,815.8	19.8	12.5	178.94	-234.1	-487.7	470.3	456.9	13.38	35.144		
4,000.0	3,819.4	3,966.1	3,911.8	20.5	12.9	179.07	-242.9	-503.8	491.4	477.7	13.73	35.793		
4,100.0	3,911.4	4,063.9	4,007.8	21.3	13.2	179.18	-251.7	-519.9	512.5	498.4	14.08	36.408		
4,200.0	4,003.5	4,161.6	4,103.8	22.0	13.6	179.29	-260.6	-536.1	533.6	519.1	14.42	36.994		
4,300.0	4,095.5	4,259.4	4,199.8	22.8	14.0	179.39	-269.4	-552.2	554.6	539.9	14.77	37.552		
4,400.0	4,187.5	4,357.1	4,295.8	23.5	14.3	179.48	-278.2	-568.3	575.7	560.6	15.12	38.084		
4,500.0	4,279.6	4,454.9	4,391.8	24.2	14.7	179.56	-287.0	-584.5	596.8	581.3	15.46	38.591		
4,600.0	4,371.6	4,552.6	4,487.8	25.0	15.1	179.64	-295.8	-600.6	617.9	602.1	15.81	39.076		
4,700.0	4,463.7	4,650.4	4,583.8	25.7	15.4	179.72	-304.7	-616.8	639.0	622.8	16.16	39.540		
4,800.0	4,555.7	4,748.1	4,679.8	26.5	15.8	179.79	-313.5	-632.9	660.1	643.5	16.51	39.984		
4,900.0	4,647.8	4,845.9	4,775.8	27.2	16.2	179.85	-322.3	-649.0	681.1	664.3	16.86	40.410		
5,000.0	4,739.8	4,943.6	4,871.8	27.9	16.5	179.91	-331.1	-665.2	702.2	685.0	17.20	40.818		

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 8
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 8	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						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		
5,100.0	4,831.9	5,041.4	4,967.8	28.7	16.9	179.97	-339.9	-681.3	723.3	705.8	17.55	41.210		
5,200.0	4,923.9	5,139.1	5,063.8	29.4	17.3	-179.97	-348.8	-697.4	744.4	726.5	17.90	41.587		
5,300.0	5,015.9	5,236.9	5,159.8	30.2	17.6	-179.92	-357.6	-713.6	765.5	747.2	18.25	41.949		
5,400.0	5,108.0	5,334.6	5,255.8	30.9	18.0	-179.88	-366.4	-729.7	786.6	768.0	18.60	42.297		
5,500.0	5,200.0	5,432.4	5,351.8	31.7	18.4	-179.83	-375.2	-745.8	807.7	788.7	18.95	42.633		
5,600.0	5,292.1	5,530.1	5,447.8	32.4	18.7	-179.79	-384.0	-762.0	828.8	809.5	19.29	42.956		
5,700.0	5,384.1	5,627.9	5,543.9	33.1	19.1	-179.74	-392.9	-778.1	849.9	830.2	19.64	43.268		
5,800.0	5,476.2	5,725.6	5,639.9	33.9	19.5	-179.70	-401.7	-794.2	871.0	851.0	19.99	43.568		
5,900.0	5,568.2	5,823.4	5,735.9	34.6	19.8	-179.67	-410.5	-810.4	892.0	871.7	20.34	43.859		
6,000.0	5,660.2	5,921.1	5,831.9	35.4	20.2	-179.63	-419.3	-826.5	913.1	892.5	20.69	44.139		
6,100.0	5,752.3	6,018.9	5,927.9	36.1	20.6	-179.60	-428.1	-842.6	934.2	913.2	21.04	44.410		
6,200.0	5,844.3	6,116.6	6,023.9	36.8	20.9	-179.56	-436.9	-858.8	955.3	933.9	21.39	44.672		
6,300.0	5,936.4	6,214.4	6,119.9	37.6	21.3	-179.53	-445.8	-874.9	976.4	954.7	21.73	44.926		
6,400.0	6,028.4	6,312.1	6,215.9	38.3	21.7	-179.50	-454.6	-891.1	997.5	975.4	22.08	45.172		
6,500.0	6,120.5	6,409.8	6,311.9	39.1	22.0	-179.47	-463.4	-907.2	1,018.6	996.2	22.43	45.410		
6,600.0	6,212.5	7,842.1	7,115.0	39.8	40.7	146.12	-535.2	-1,840.2	981.0	926.8	54.19	18.104		
6,700.0	6,304.5	7,877.0	7,115.0	40.6	41.4	143.36	-535.1	-1,875.2	904.7	846.9	57.80	15.653		
6,800.0	6,396.5	7,912.1	7,115.0	41.3	42.2	140.26	-535.0	-1,910.3	832.1	771.6	60.44	13.767		
6,900.0	6,484.5	7,956.3	7,115.0	42.3	43.2	137.14	-534.9	-1,954.5	766.8	708.3	58.49	13.111		
7,000.0	6,564.6	8,014.0	7,115.0	43.5	44.4	134.68	-534.8	-2,012.1	712.0	652.8	59.25	12.017		
7,100.0	6,634.9	8,083.7	7,115.0	44.9	46.0	132.09	-534.6	-2,081.9	668.5	606.2	62.30	10.730		
7,200.0	6,693.6	8,163.8	7,115.0	46.6	47.8	129.37	-534.4	-2,161.9	636.0	568.9	67.09	9.479		
7,300.0	6,739.3	8,252.2	7,115.0	48.5	49.8	126.78	-534.2	-2,250.3	613.6	540.6	72.97	8.409		
7,400.0	6,770.8	8,346.8	7,115.0	50.4	52.0	124.70	-533.9	-2,344.9	599.7	520.5	79.24	7.569		
7,500.0	6,787.4	8,445.3	7,115.0	52.5	54.2	123.50	-533.7	-2,443.4	593.0	507.7	85.31	6.951		
7,583.9	6,791.8	8,529.1	7,115.0	54.3	56.2	123.14	-533.5	-2,527.2	591.3	501.7	89.61	6.598		
7,600.0	6,790.0	8,545.2	7,115.0	54.6	56.5	123.30	-533.4	-2,543.3	592.0	501.7	90.23	6.561		
7,700.0	6,790.0	8,645.2	7,115.0	56.8	58.9	123.30	-533.2	-2,643.3	592.0	497.8	94.12	6.289		
7,800.0	6,790.0	8,745.2	7,115.0	58.9	61.2	123.30	-532.9	-2,743.3	592.0	493.9	98.03	6.038		
7,900.0	6,790.0	8,845.2	7,115.0	61.1	63.6	123.30	-532.7	-2,843.3	592.0	490.0	101.96	5.806		
8,000.0	6,790.0	8,945.2	7,115.0	63.3	65.9	123.30	-532.4	-2,943.3	592.0	486.1	105.91	5.589		
8,100.0	6,790.0	9,045.2	7,115.0	65.6	68.3	123.30	-532.2	-3,043.3	592.0	482.1	109.87	5.388		
8,200.0	6,790.0	9,145.2	7,115.0	67.8	70.7	123.30	-531.9	-3,143.3	592.0	478.1	113.85	5.200		
8,300.0	6,790.0	9,245.2	7,115.0	70.1	73.1	123.30	-531.7	-3,243.3	592.0	474.1	117.83	5.024		
8,400.0	6,790.0	9,345.2	7,115.0	72.3	75.5	123.30	-531.4	-3,343.3	592.0	470.2	121.83	4.859		
8,500.0	6,790.0	9,445.2	7,115.0	74.6	77.9	123.30	-531.2	-3,443.3	592.0	466.1	125.84	4.704		
8,600.0	6,790.0	9,545.2	7,115.0	76.9	80.3	123.30	-530.9	-3,543.3	592.0	462.1	129.85	4.559		
8,700.0	6,790.0	9,645.2	7,115.0	79.2	82.7	123.30	-530.7	-3,643.3	592.0	458.1	133.87	4.422		
8,800.0	6,790.0	9,745.2	7,115.0	81.6	85.1	123.30	-530.4	-3,743.3	592.0	454.1	137.90	4.293		
8,900.0	6,790.0	9,845.2	7,115.0	83.9	87.5	123.30	-530.2	-3,843.3	592.0	450.1	141.94	4.171		
9,000.0	6,790.0	9,945.2	7,115.0	86.2	89.9	123.30	-529.9	-3,943.3	592.0	446.0	145.98	4.055		
9,100.0	6,790.0	10,045.2	7,115.0	88.6	92.3	123.30	-529.7	-4,043.3	592.0	442.0	150.03	3.946		
9,200.0	6,790.0	10,145.2	7,115.0	90.9	94.7	123.30	-529.4	-4,143.3	592.0	437.9	154.08	3.842		
9,300.0	6,790.0	10,245.2	7,115.0	93.3	97.2	123.30	-529.2	-4,243.3	592.0	433.9	158.14	3.744		
9,400.0	6,790.0	10,345.2	7,115.0	95.6	99.6	123.30	-528.9	-4,343.3	592.0	429.8	162.20	3.650		
9,500.0	6,790.0	10,445.2	7,115.0	98.0	102.0	123.30	-528.7	-4,443.3	592.0	425.7	166.27	3.561		
9,600.0	6,790.0	10,545.2	7,115.0	100.4	104.5	123.30	-528.4	-4,543.3	592.0	421.7	170.34	3.476		
9,700.0	6,790.0	10,645.2	7,115.0	102.8	106.9	123.30	-528.2	-4,643.3	592.0	417.6	174.41	3.394		
9,800.0	6,790.0	10,745.2	7,115.0	105.2	109.3	123.30	-527.9	-4,743.3	592.0	413.5	178.49	3.317		
9,900.0	6,790.0	10,845.2	7,115.0	107.5	111.8	123.30	-527.7	-4,843.3	592.0	409.5	182.57	3.243		
10,000.0	6,790.0	10,945.2	7,115.0	109.9	114.2	123.30	-527.4	-4,943.3	592.0	405.4	186.65	3.172		
10,100.0	6,790.0	11,045.2	7,115.0	112.3	116.6	123.30	-527.2	-5,043.3	592.0	401.3	190.73	3.104		

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 8
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 8	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						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		
10,200.0	6,790.0	11,145.2	7,115.0	114.7	119.1	123.30	-526.9	-5,143.3	592.0	397.2	194.82	3.039		
10,300.0	6,790.0	11,245.2	7,115.0	117.1	121.5	123.30	-526.7	-5,243.3	592.0	393.1	198.91	2.976		
10,400.0	6,790.0	11,345.2	7,115.0	119.5	124.0	123.29	-526.4	-5,343.3	592.0	389.0	203.00	2.916		
10,500.0	6,790.0	11,445.2	7,115.0	122.0	126.4	123.29	-526.2	-5,443.3	592.0	384.9	207.10	2.859		
10,600.0	6,790.0	11,545.2	7,115.0	124.4	128.9	123.29	-525.9	-5,543.3	592.0	380.9	211.19	2.803		
10,700.0	6,790.0	11,645.2	7,115.0	126.8	131.3	123.29	-525.7	-5,643.3	592.0	376.8	215.29	2.750		
10,800.0	6,790.0	11,745.2	7,115.0	129.2	133.8	123.29	-525.4	-5,743.3	592.1	372.7	219.39	2.699		
10,900.0	6,790.0	11,845.2	7,115.0	131.6	136.2	123.29	-525.2	-5,843.3	592.1	368.6	223.49	2.649		
11,000.0	6,790.0	11,945.2	7,115.0	134.0	138.7	123.29	-524.9	-5,943.3	592.1	364.5	227.59	2.601		
11,100.0	6,790.0	12,045.2	7,115.0	136.5	141.1	123.29	-524.7	-6,043.3	592.1	360.4	231.70	2.555		
11,200.0	6,790.0	12,145.2	7,115.0	138.9	143.6	123.29	-524.4	-6,143.3	592.1	356.3	235.80	2.511		
11,300.0	6,790.0	12,245.2	7,115.0	141.3	146.0	123.29	-524.2	-6,243.3	592.1	352.2	239.91	2.468		
11,400.0	6,790.0	12,345.2	7,115.0	143.7	148.5	123.29	-523.9	-6,343.3	592.1	348.1	244.02	2.426		
11,500.0	6,790.0	12,445.2	7,115.0	146.2	150.9	123.29	-523.7	-6,443.3	592.1	343.9	248.13	2.386		
11,600.0	6,790.0	12,545.2	7,115.0	148.6	153.4	123.29	-523.5	-6,543.3	592.1	339.8	252.24	2.347		
11,700.0	6,790.0	12,645.2	7,115.0	151.0	155.8	123.29	-523.2	-6,643.3	592.1	335.7	256.35	2.310		
11,800.0	6,790.0	12,745.2	7,115.0	153.5	158.3	123.29	-523.0	-6,743.3	592.1	331.6	260.46	2.273		
11,900.0	6,790.0	12,845.2	7,115.0	155.9	160.8	123.29	-522.7	-6,843.3	592.1	327.5	264.57	2.238		
12,000.0	6,790.0	12,945.2	7,115.0	158.3	163.2	123.29	-522.5	-6,943.3	592.1	323.4	268.69	2.204		
12,100.0	6,790.0	13,045.2	7,115.0	160.8	165.7	123.29	-522.2	-7,043.3	592.1	319.3	272.80	2.170		
12,200.0	6,790.0	13,145.2	7,115.0	163.2	168.1	123.29	-522.0	-7,143.3	592.1	315.2	276.92	2.138		
12,300.0	6,790.0	13,245.2	7,115.0	165.6	170.6	123.29	-521.7	-7,243.3	592.1	311.1	281.03	2.107		
12,400.0	6,790.0	13,345.2	7,115.0	168.1	173.1	123.29	-521.5	-7,343.3	592.1	306.9	285.15	2.076		
12,500.0	6,790.0	13,445.2	7,115.0	170.5	175.5	123.29	-521.2	-7,443.3	592.1	302.8	289.27	2.047		
12,600.0	6,790.0	13,545.2	7,115.0	173.0	178.0	123.29	-521.0	-7,543.3	592.1	298.7	293.39	2.018		
12,700.0	6,790.0	13,645.2	7,115.0	175.4	180.4	123.29	-520.7	-7,643.3	592.1	294.6	297.51	1.990		
12,800.0	6,790.0	13,745.2	7,115.0	177.9	182.9	123.29	-520.5	-7,743.3	592.1	290.5	301.63	1.963		
12,900.0	6,790.0	13,845.2	7,115.0	180.3	185.4	123.29	-520.2	-7,843.3	592.1	286.4	305.75	1.937		
13,000.0	6,790.0	13,945.2	7,115.0	182.8	187.8	123.29	-520.0	-7,943.3	592.1	282.2	309.87	1.911		
13,100.0	6,790.0	14,045.2	7,115.0	185.2	190.3	123.29	-519.7	-8,043.3	592.1	278.1	313.99	1.886		
13,200.0	6,790.0	14,145.2	7,115.0	187.6	192.7	123.29	-519.5	-8,143.3	592.1	274.0	318.11	1.861		
13,300.0	6,790.0	14,245.2	7,115.0	190.1	195.2	123.29	-519.2	-8,243.3	592.1	269.9	322.24	1.838		
13,400.0	6,790.0	14,345.2	7,115.0	192.5	197.7	123.29	-519.0	-8,343.3	592.1	265.8	326.36	1.814		
13,500.0	6,790.0	14,445.2	7,115.0	195.0	200.1	123.29	-518.7	-8,443.3	592.1	261.6	330.49	1.792		
13,600.0	6,790.0	14,545.2	7,115.0	197.4	202.6	123.29	-518.5	-8,543.3	592.1	257.5	334.61	1.770		
13,700.0	6,790.0	14,645.2	7,115.0	199.9	205.1	123.29	-518.2	-8,643.3	592.1	253.4	338.74	1.748		
13,800.0	6,790.0	14,745.2	7,115.0	202.3	207.5	123.29	-518.0	-8,743.3	592.1	249.3	342.86	1.727		
13,900.0	6,790.0	14,845.2	7,115.0	204.8	210.0	123.29	-517.7	-8,843.3	592.1	245.2	346.99	1.707		
14,000.0	6,790.0	14,945.2	7,115.0	207.3	212.5	123.29	-517.5	-8,943.3	592.1	241.0	351.11	1.686		
14,100.0	6,790.0	15,045.2	7,115.0	209.7	214.9	123.29	-517.2	-9,043.3	592.2	236.9	355.24	1.667		
14,200.0	6,790.0	15,145.2	7,115.0	212.2	217.4	123.29	-517.0	-9,143.3	592.2	232.8	359.37	1.648		
14,300.0	6,790.0	15,245.2	7,115.0	214.6	219.8	123.29	-516.7	-9,243.3	592.2	228.7	363.50	1.629		
14,400.0	6,790.0	15,345.2	7,115.0	217.1	222.3	123.29	-516.5	-9,343.3	592.2	224.5	367.62	1.611		
14,500.0	6,790.0	15,445.2	7,115.0	219.5	224.8	123.29	-516.2	-9,443.3	592.2	220.4	371.75	1.593		
14,600.0	6,790.0	15,545.2	7,115.0	222.0	227.2	123.29	-516.0	-9,543.3	592.2	216.3	375.88	1.575		
14,700.0	6,790.0	15,645.2	7,115.0	224.4	229.7	123.29	-515.7	-9,643.3	592.2	212.2	380.01	1.558		
14,800.0	6,790.0	15,745.2	7,115.0	226.9	232.2	123.29	-515.5	-9,743.3	592.2	208.0	384.14	1.542		
14,900.0	6,790.0	15,845.2	7,115.0	229.4	234.6	123.29	-515.2	-9,843.3	592.2	203.9	388.27	1.525		
15,000.0	6,790.0	15,945.2	7,115.0	231.8	237.1	123.29	-515.0	-9,943.3	592.2	199.8	392.40	1.509		
15,100.0	6,790.0	16,045.2	7,115.0	234.3	239.6	123.29	-514.7	-10,043.3	592.2	195.7	396.53	1.493 Level 3		
15,200.0	6,790.0	16,145.2	7,115.0	236.7	242.0	123.29	-514.5	-10,143.3	592.2	191.5	400.66	1.478 Level 3		
15,300.0	6,790.0	16,245.2	7,115.0	239.2	244.5	123.29	-514.2	-10,243.3	592.2	187.4	404.79	1.463 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 8
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 8	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		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			
15,400.0	6,790.0	16,345.2	7,115.0	241.6	247.0	123.29	-514.0	-10,343.3	592.2	183.3	408.92	1.448 Level 3		
15,500.0	6,790.0	16,445.2	7,115.0	244.1	249.4	123.29	-513.7	-10,443.3	592.2	179.1	413.05	1.434 Level 3		
15,600.0	6,790.0	16,545.2	7,115.0	246.6	251.9	123.29	-513.5	-10,543.3	592.2	175.0	417.18	1.420 Level 3		
15,700.0	6,790.0	16,645.2	7,115.0	249.0	254.4	123.28	-513.2	-10,643.3	592.2	170.9	421.32	1.406 Level 3		
15,800.0	6,790.0	16,745.2	7,115.0	251.5	256.8	123.28	-513.0	-10,743.3	592.2	166.8	425.45	1.392 Level 3		
15,900.0	6,790.0	16,845.2	7,115.0	253.9	259.3	123.28	-512.7	-10,843.3	592.2	162.6	429.58	1.379 Level 3		
16,000.0	6,790.0	16,945.2	7,115.0	256.4	261.8	123.28	-512.5	-10,943.3	592.2	158.5	433.71	1.365 Level 3		
16,100.0	6,790.0	17,045.2	7,115.0	258.9	264.3	123.28	-512.2	-11,043.3	592.2	154.4	437.85	1.353 Level 3		
16,200.0	6,790.0	17,145.2	7,115.0	261.3	266.7	123.28	-512.0	-11,143.3	592.2	150.2	441.98	1.340 Level 3		
16,300.0	6,790.0	17,245.2	7,115.0	263.8	269.2	123.28	-511.7	-11,243.3	592.2	146.1	446.11	1.328 Level 3		
16,400.0	6,790.0	17,345.2	7,115.0	266.2	271.7	123.28	-511.5	-11,343.3	592.2	142.0	450.25	1.315 Level 3		
16,500.0	6,790.0	17,445.2	7,115.0	268.7	274.1	123.28	-511.2	-11,443.3	592.2	137.8	454.38	1.303 Level 3		
16,600.0	6,790.0	17,545.2	7,115.0	271.2	276.6	123.28	-511.0	-11,543.3	592.2	133.7	458.51	1.292 Level 3		
16,700.0	6,790.0	17,645.2	7,115.0	273.6	279.1	123.28	-510.7	-11,643.3	592.2	129.6	462.65	1.280 Level 3		
16,783.6	6,790.0	17,728.8	7,115.0	275.7	281.1	123.28	-510.5	-11,726.9	592.2	126.1	466.10	1.271 Level 3, SF		

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 8
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 8	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				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	30.92	23.7	14.2	27.6					
100.0	100.0	100.0	100.0	0.1	0.1	30.92	23.7	14.2	27.6	27.3	0.27	104.049		
200.0	200.0	200.0	200.0	0.3	0.3	30.92	23.7	14.2	27.6	27.0	0.61	44.930		
300.0	300.0	300.4	300.4	0.5	0.5	147.68	23.2	13.5	27.5	26.6	0.96	28.554		
400.0	400.0	400.9	400.8	0.7	0.7	148.34	21.7	11.3	27.4	26.0	1.32	20.783		
500.0	499.9	501.3	501.2	0.9	0.9	149.44	19.2	7.6	27.1	25.4	1.67	16.197		
600.0	599.7	601.7	601.4	1.1	1.1	151.03	15.7	2.6	26.7	24.7	2.03	13.148		
700.0	699.4	702.2	701.5	1.3	1.3	153.13	11.3	-4.0	26.2	23.8	2.39	10.972		
800.0	798.9	802.6	801.5	1.5	1.5	155.81	5.8	-11.9	25.7	22.9	2.75	9.350		
900.0	898.3	903.0	901.3	1.8	1.8	159.10	-0.6	-21.4	25.2	22.1	3.10	8.109		
1,000.0	997.4	1,003.4	1,000.8	2.0	2.0	163.05	-8.1	-32.2	24.6	21.2	3.45	7.148		
1,100.0	1,096.3	1,103.8	1,100.1	2.3	2.3	167.71	-16.5	-44.5	24.2	20.4	3.78	6.400		
1,200.0	1,194.9	1,204.2	1,199.1	2.7	2.7	173.08	-25.9	-58.3	23.9	19.8	4.11	5.812		
1,281.2	1,274.8	1,285.8	1,279.3	2.9	3.0	177.92	-34.2	-70.5	23.8	19.4	4.39	5.421 CC		
1,300.0	1,293.3	1,304.6	1,297.8	3.0	3.0	179.09	-36.3	-73.4	23.8	19.4	4.46	5.339		
1,400.0	1,391.2	1,405.0	1,396.1	3.4	3.4	-174.36	-47.6	-90.0	24.0	19.2	4.87	4.936		
1,500.0	1,488.9	1,505.0	1,493.9	3.8	3.8	-168.08	-59.5	-107.3	25.3	19.9	5.36	4.716		
1,600.0	1,586.1	1,604.9	1,591.6	4.2	4.2	-163.51	-71.3	-124.7	28.5	22.6	5.92	4.818		
1,700.0	1,682.9	1,704.8	1,689.2	4.7	4.6	-160.90	-83.2	-142.0	33.5	27.0	6.47	5.182		
1,800.0	1,779.3	1,804.5	1,786.8	5.2	5.0	-159.85	-95.0	-159.3	40.2	33.2	6.98	5.759		
1,900.0	1,875.2	1,904.2	1,884.2	5.7	5.4	-159.82	-106.8	-176.6	48.5	41.1	7.44	6.515		
2,000.0	1,970.5	2,003.7	1,981.5	6.3	5.8	-160.39	-118.6	-193.8	58.4	50.6	7.87	7.425		
2,100.0	2,065.4	2,103.0	2,078.6	6.9	6.2	-161.24	-130.4	-211.1	70.0	61.8	8.27	8.471		
2,200.0	2,159.6	2,202.1	2,175.5	7.5	6.6	-162.22	-142.2	-228.3	83.3	74.7	8.64	9.637		
2,300.0	2,253.3	2,301.0	2,272.1	8.2	7.0	-163.21	-153.9	-245.4	98.2	89.2	9.00	10.910		
2,400.0	2,346.3	2,399.6	2,368.5	8.8	7.4	-164.17	-165.6	-262.5	114.8	105.5	9.35	12.280		
2,500.0	2,438.7	2,497.9	2,464.6	9.6	7.8	-165.07	-177.3	-279.5	133.1	123.4	9.69	13.737		
2,600.0	2,530.8	2,596.0	2,560.5	10.3	8.2	-165.88	-188.9	-296.6	152.3	142.3	10.05	15.156		
2,700.0	2,622.8	2,694.1	2,656.5	11.0	8.6	-166.50	-200.6	-313.6	171.5	161.1	10.42	16.462		
2,800.0	2,714.9	2,792.2	2,752.4	11.7	9.0	-167.00	-212.2	-330.6	190.7	179.9	10.79	17.668		
2,900.0	2,806.9	2,890.4	2,848.3	12.5	9.4	-167.41	-223.8	-347.6	209.9	198.7	11.17	18.785		
3,000.0	2,898.9	2,988.5	2,944.3	13.2	9.8	-167.75	-235.5	-364.6	229.1	217.6	11.56	19.822		
3,100.0	2,991.0	3,086.6	3,040.2	13.9	10.2	-168.04	-247.1	-381.6	248.4	236.4	11.95	20.788		
3,200.0	3,083.0	3,184.7	3,136.1	14.7	10.6	-168.28	-258.8	-398.7	267.6	255.3	12.34	21.690		
3,300.0	3,175.1	3,282.9	3,232.1	15.4	11.0	-168.50	-270.4	-415.7	286.9	274.1	12.73	22.533		
3,400.0	3,267.1	3,381.0	3,328.0	16.1	11.4	-168.68	-282.1	-432.7	306.1	293.0	13.12	23.323		
3,500.0	3,359.2	3,479.1	3,424.0	16.9	11.8	-168.85	-293.7	-449.7	325.4	311.8	13.52	24.066		
3,600.0	3,451.2	3,577.3	3,519.9	17.6	12.2	-168.99	-305.3	-466.7	344.6	330.7	13.92	24.764		
3,700.0	3,543.2	3,675.4	3,615.8	18.3	12.6	-169.12	-317.0	-483.8	363.9	349.6	14.31	25.423		
3,800.0	3,635.3	3,773.5	3,711.8	19.1	13.0	-169.24	-328.6	-500.8	383.1	368.4	14.71	26.045		
3,900.0	3,727.3	3,871.6	3,807.7	19.8	13.4	-169.35	-340.3	-517.8	402.4	387.3	15.11	26.633		
4,000.0	3,819.4	3,969.8	3,903.6	20.5	13.8	-169.44	-351.9	-534.8	421.6	406.1	15.51	27.190		
4,100.0	3,911.4	4,067.9	3,999.6	21.3	14.2	-169.53	-363.6	-551.8	440.9	425.0	15.91	27.718		
4,200.0	4,003.5	4,166.0	4,095.5	22.0	14.6	-169.61	-375.2	-568.8	460.2	443.9	16.31	28.220		
4,300.0	4,095.5	4,264.1	4,191.4	22.8	15.0	-169.68	-386.8	-585.9	479.4	462.7	16.71	28.697		
4,400.0	4,187.5	4,362.3	4,287.4	23.5	15.4	-169.75	-398.5	-602.9	498.7	481.6	17.11	29.152		
4,500.0	4,279.6	4,460.4	4,383.3	24.2	15.8	-169.82	-410.1	-619.9	517.9	500.4	17.51	29.585		
4,600.0	4,371.6	4,558.5	4,479.2	25.0	16.2	-169.87	-421.8	-636.9	537.2	519.3	17.91	29.998		
4,700.0	4,463.7	4,656.6	4,575.2	25.7	16.6	-169.93	-433.4	-653.9	556.5	538.2	18.31	30.393		
4,800.0	4,555.7	4,754.8	4,671.1	26.5	17.0	-169.98	-445.1	-671.0	575.7	557.0	18.71	30.771		
4,900.0	4,647.8	4,852.9	4,767.0	27.2	17.4	-170.03	-456.7	-688.0	595.0	575.9	19.11	31.132		
5,000.0	4,739.8	4,951.0	4,863.0	27.9	17.8	-170.07	-468.3	-705.0	614.3	594.8	19.51	31.478		

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 8
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 8	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		
5,100.0	4,831.9	5,049.1	4,958.9	28.7	18.2	-170.11	-480.0	-722.0	633.5	613.6	19.92	31.811		
5,200.0	4,923.9	5,147.3	5,054.8	29.4	18.6	-170.15	-491.6	-739.0	652.8	632.5	20.32	32.129		
5,300.0	5,015.9	5,245.4	5,150.8	30.2	19.0	-170.19	-503.3	-756.0	672.1	651.3	20.72	32.436		
5,400.0	5,108.0	5,343.5	5,246.7	30.9	19.4	-170.23	-514.9	-773.1	691.3	670.2	21.12	32.730		
5,500.0	5,200.0	5,441.6	5,342.6	31.7	19.8	-170.26	-526.5	-790.1	710.6	689.1	21.52	33.013		
5,600.0	5,292.1	5,539.8	5,438.6	32.4	20.2	-170.29	-538.2	-807.1	729.9	707.9	21.93	33.286		
5,700.0	5,384.1	5,637.9	5,534.5	33.1	20.6	-170.32	-549.8	-824.1	749.1	726.8	22.33	33.549		
5,800.0	5,476.2	5,736.0	5,630.5	33.9	21.0	-170.35	-561.5	-841.1	768.4	745.7	22.73	33.802		
5,900.0	5,568.2	5,834.1	5,726.4	34.6	21.4	-170.38	-573.1	-858.2	787.7	764.5	23.13	34.046		
6,000.0	5,660.2	5,932.3	5,822.3	35.4	21.8	-170.40	-584.8	-875.2	806.9	783.4	23.54	34.282		
6,100.0	5,752.3	6,030.4	5,918.3	36.1	22.2	-170.43	-596.4	-892.2	826.2	802.3	23.94	34.510		
6,200.0	5,844.3	6,128.5	6,014.2	36.8	22.6	-170.45	-608.0	-909.2	845.5	821.1	24.34	34.730		
6,300.0	5,936.4	6,226.6	6,110.1	37.6	23.0	-170.47	-619.7	-926.2	864.7	840.0	24.75	34.943		
6,400.0	6,028.4	6,318.3	6,200.0	38.3	23.5	-170.49	-631.3	-943.3	883.9	858.1	25.16	35.156		
6,500.0	6,120.5	6,410.2	6,290.0	39.1	24.0	-170.51	-642.9	-960.4	903.1	877.3	25.57	35.369		
6,600.0	6,212.5	6,502.2	6,380.0	39.8	24.5	-170.53	-654.5	-977.5	922.3	896.5	25.98	35.582		
6,700.0	6,304.5	6,594.1	6,470.0	40.6	25.0	-170.55	-666.1	-994.6	941.5	915.7	26.39	35.795		
6,800.0	6,396.5	6,686.1	6,560.0	41.3	25.5	-170.57	-677.7	-1,011.7	960.7	934.9	26.80	36.008		
6,900.0	6,488.5	6,778.1	6,650.0	42.3	26.0	-170.59	-689.9	-1,028.8	979.9	954.1	27.21	36.221		
7,000.0	6,580.5	6,870.1	6,740.0	43.5	26.5	-170.61	-699.8	-1,045.9	999.1	973.3	27.62	36.434		
7,100.0	6,634.9	6,924.5	6,790.0	44.9	26.3	-170.61	-699.6	-1,042.3	998.7	972.9	27.60	36.416		
7,200.0	6,693.6	6,983.2	6,790.0	46.6	28.1	-108.13	-699.4	-2,162.3	325.9	241.4	84.52	3.856		
7,275.3	6,729.3	7,023.8	6,790.0	48.0	49.5	101.93	-699.3	-2,228.3	323.9	233.3	90.56	3.576		
7,300.0	6,739.3	7,046.2	6,790.0	48.5	50.0	100.08	-699.2	-2,250.8	324.0	231.8	92.28	3.512		
7,400.0	6,770.8	7,040.9	6,790.0	50.4	52.2	93.93	-699.0	-2,345.4	326.6	228.6	98.08	3.330		
7,500.0	6,787.4	7,139.3	6,790.0	52.5	54.4	90.54	-698.7	-2,443.8	329.2	226.9	102.39	3.216		
7,600.0	6,790.0	7,239.2	6,790.0	54.6	56.7	90.00	-698.5	-2,543.7	329.7	223.2	106.54	3.095		
7,700.0	6,790.0	7,339.2	6,790.0	56.8	59.0	90.00	-698.2	-2,643.7	329.7	218.5	111.21	2.965		
7,800.0	6,790.0	7,439.2	6,790.0	58.9	61.4	90.00	-698.0	-2,743.7	329.7	213.8	115.90	2.845		
7,900.0	6,790.0	7,539.2	6,790.0	61.1	63.7	90.00	-697.7	-2,843.7	329.7	209.1	120.61	2.734		
8,000.0	6,790.0	7,639.2	6,790.0	63.3	66.1	90.00	-697.5	-2,943.7	329.7	204.4	125.34	2.631		
8,100.0	6,790.0	7,739.2	6,790.0	65.6	68.4	90.00	-697.2	-3,043.7	329.7	199.7	130.09	2.535		
8,200.0	6,790.0	7,839.2	6,790.0	67.8	70.8	90.00	-697.0	-3,143.7	329.8	194.9	134.85	2.445		
8,300.0	6,790.0	7,939.2	6,790.0	70.1	73.2	90.00	-696.7	-3,243.7	329.8	190.1	139.62	2.362		
8,400.0	6,790.0	8,039.2	6,790.0	72.3	75.5	90.00	-696.5	-3,343.7	329.8	185.4	144.41	2.284		
8,500.0	6,790.0	8,139.2	6,790.0	74.6	77.9	90.00	-696.2	-3,443.7	329.8	180.6	149.21	2.210		
8,600.0	6,790.0	8,239.2	6,790.0	76.9	80.3	90.00	-696.0	-3,543.7	329.8	175.8	154.01	2.141		
8,700.0	6,790.0	8,339.2	6,790.0	79.2	82.7	90.00	-695.7	-3,643.7	329.8	170.9	158.83	2.076		
8,800.0	6,790.0	8,439.2	6,790.0	81.6	85.1	90.00	-695.5	-3,743.7	329.8	166.1	163.65	2.015		
8,900.0	6,790.0	8,539.2	6,790.0	83.9	87.5	90.00	-695.2	-3,843.7	329.8	161.3	168.48	1.957		
9,000.0	6,790.0	8,639.2	6,790.0	86.2	89.9	90.00	-695.0	-3,943.7	329.8	156.5	173.32	1.903		
9,100.0	6,790.0	8,739.2	6,790.0	88.6	92.3	90.00	-694.7	-4,043.7	329.8	151.6	178.16	1.851		
9,200.0	6,790.0	8,839.2	6,790.0	90.9	94.8	90.00	-694.5	-4,143.7	329.8	146.8	183.01	1.802		
9,300.0	6,790.0	8,939.2	6,790.0	93.3	97.2	90.00	-694.2	-4,243.7	329.8	141.9	187.87	1.755		
9,400.0	6,790.0	9,039.2	6,790.0	95.6	99.6	90.00	-694.0	-4,343.7	329.8	137.1	192.73	1.711		
9,500.0	6,790.0	9,139.2	6,790.0	98.0	102.0	90.00	-693.7	-4,443.7	329.8	132.2	197.59	1.669		
9,600.0	6,790.0	9,239.2	6,790.0	100.4	104.5	90.00	-693.5	-4,543.7	329.8	127.3	202.46	1.629		
9,700.0	6,790.0	9,339.2	6,790.0	102.8	106.9	90.00	-693.2	-4,643.7	329.8	122.5	207.33	1.591		
9,800.0	6,790.0	9,439.2	6,790.0	105.2	109.3	90.00	-693.0	-4,743.7	329.8	117.6	212.20	1.554		
9,900.0	6,790.0	9,539.2	6,790.0	107.5	111.8	90.00	-692.7	-4,843.7	329.8	112.7	217.08	1.519		
10,000.0	6,790.0	9,639.2	6,790.0	109.9	114.2	90.00	-692.5	-4,943.7	329.8	107.9	221.97	1.486 Level 3		
10,100.0	6,790.0	9,739.2	6,790.0	112.3	116.6	90.00	-692.2	-5,043.7	329.8	103.0	226.85	1.454 Level 3		

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 8
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 8	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		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		
10,200.0	6,790.0	10,839.2	6,790.0	114.7	119.1	90.00	-692.0	-5,143.7	329.8	98.1	231.74	1.423	Level 3	
10,300.0	6,790.0	10,939.2	6,790.0	117.1	121.5	90.00	-691.7	-5,243.7	329.8	93.2	236.63	1.394	Level 3	
10,400.0	6,790.0	11,039.2	6,790.0	119.5	123.9	90.00	-691.5	-5,343.7	329.8	88.3	241.52	1.366	Level 3	
10,500.0	6,790.0	11,139.2	6,790.0	122.0	126.4	90.00	-691.2	-5,443.7	329.8	83.4	246.41	1.339	Level 3	
10,600.0	6,790.0	11,239.2	6,790.0	124.4	128.8	90.00	-691.0	-5,543.7	329.8	78.5	251.31	1.312	Level 3	
10,700.0	6,790.0	11,339.2	6,790.0	126.8	131.3	90.00	-690.7	-5,643.7	329.8	73.6	256.21	1.287	Level 3	
10,800.0	6,790.0	11,439.2	6,790.0	129.2	133.7	90.00	-690.5	-5,743.7	329.8	68.7	261.11	1.263	Level 3	
10,900.0	6,790.0	11,539.2	6,790.0	131.6	136.2	90.00	-690.2	-5,843.7	329.8	63.8	266.01	1.240	Level 2	
11,000.0	6,790.0	11,639.2	6,790.0	134.0	138.6	90.00	-690.0	-5,943.7	329.9	58.9	270.92	1.218	Level 2	
11,100.0	6,790.0	11,739.2	6,790.0	136.5	141.1	90.00	-689.7	-6,043.7	329.9	54.0	275.82	1.196	Level 2	
11,200.0	6,790.0	11,839.2	6,790.0	138.9	143.5	90.00	-689.5	-6,143.7	329.9	49.1	280.73	1.175	Level 2	
11,300.0	6,790.0	11,939.2	6,790.0	141.3	146.0	90.00	-689.2	-6,243.7	329.9	44.2	285.64	1.155	Level 2	
11,400.0	6,790.0	12,039.2	6,790.0	143.7	148.4	90.00	-689.0	-6,343.7	329.9	39.3	290.55	1.135	Level 2	
11,500.0	6,790.0	12,139.2	6,790.0	146.2	150.9	90.00	-688.7	-6,443.7	329.9	34.4	295.46	1.116	Level 2	
11,600.0	6,790.0	12,239.2	6,790.0	148.6	153.3	90.00	-688.5	-6,543.7	329.9	29.5	300.37	1.098	Level 2	
11,700.0	6,790.0	12,339.2	6,790.0	151.0	155.8	90.00	-688.2	-6,643.7	329.9	24.6	305.29	1.081	Level 2	
11,800.0	6,790.0	12,439.2	6,790.0	153.5	158.2	90.00	-688.0	-6,743.7	329.9	19.7	310.20	1.063	Level 2	
11,900.0	6,790.0	12,539.2	6,790.0	155.9	160.7	90.00	-687.7	-6,843.7	329.9	14.8	315.12	1.047	Level 2	
12,000.0	6,790.0	12,639.2	6,790.0	158.3	163.2	90.00	-687.5	-6,943.7	329.9	9.9	320.04	1.031	Level 2	
12,100.0	6,790.0	12,739.2	6,790.0	160.8	165.6	90.00	-687.2	-7,043.7	329.9	4.9	324.96	1.015	Level 2	
12,200.0	6,790.0	12,839.2	6,790.0	163.2	168.1	90.00	-687.0	-7,143.7	329.9	0.0	329.87	1.000	Level 2	
12,300.0	6,790.0	12,939.2	6,790.0	165.6	170.5	90.00	-686.7	-7,243.7	329.9	-4.9	334.79	0.985	Level 1	
12,400.0	6,790.0	13,039.2	6,790.0	168.1	173.0	90.00	-686.5	-7,343.7	329.9	-9.8	339.71	0.971	Level 1	
12,500.0	6,790.0	13,139.2	6,790.0	170.5	175.4	90.00	-686.2	-7,443.7	329.9	-14.7	344.64	0.957	Level 1	
12,600.0	6,790.0	13,239.2	6,790.0	173.0	177.9	90.00	-686.0	-7,543.7	329.9	-19.6	349.56	0.944	Level 1	
12,700.0	6,790.0	13,339.2	6,790.0	175.4	180.4	90.00	-685.7	-7,643.7	329.9	-24.6	354.48	0.931	Level 1	
12,800.0	6,790.0	13,439.2	6,790.0	177.9	182.8	90.00	-685.5	-7,743.7	329.9	-29.5	359.41	0.918	Level 1	
12,900.0	6,790.0	13,539.2	6,790.0	180.3	185.3	90.00	-685.2	-7,843.7	329.9	-34.4	364.33	0.906	Level 1	
13,000.0	6,790.0	13,639.2	6,790.0	182.8	187.7	90.00	-685.0	-7,943.7	329.9	-39.3	369.25	0.893	Level 1	
13,100.0	6,790.0	13,739.2	6,790.0	185.2	190.2	90.00	-684.7	-8,043.7	329.9	-44.3	374.18	0.882	Level 1	
13,200.0	6,790.0	13,839.2	6,790.0	187.6	192.7	90.00	-684.5	-8,143.7	329.9	-49.2	379.11	0.870	Level 1	
13,300.0	6,790.0	13,939.2	6,790.0	190.1	195.1	90.00	-684.2	-8,243.7	329.9	-54.1	384.03	0.859	Level 1	
13,400.0	6,790.0	14,039.2	6,790.0	192.5	197.6	90.00	-684.0	-8,343.7	329.9	-59.0	388.96	0.848	Level 1	
13,500.0	6,790.0	14,139.2	6,790.0	195.0	200.1	90.00	-683.7	-8,443.7	329.9	-63.9	393.89	0.838	Level 1	
13,600.0	6,790.0	14,239.2	6,790.0	197.4	202.5	90.00	-683.5	-8,543.7	329.9	-68.9	398.82	0.827	Level 1	
13,700.0	6,790.0	14,339.2	6,790.0	199.9	205.0	90.00	-683.2	-8,643.7	329.9	-73.8	403.75	0.817	Level 1	
13,800.0	6,790.0	14,439.2	6,790.0	202.3	207.4	90.00	-683.0	-8,743.7	330.0	-78.7	408.68	0.807	Level 1	
13,900.0	6,790.0	14,539.2	6,790.0	204.8	209.9	90.00	-682.7	-8,843.7	330.0	-83.7	413.61	0.798	Level 1	
14,000.0	6,790.0	14,639.2	6,790.0	207.3	212.4	90.00	-682.5	-8,943.7	330.0	-88.6	418.54	0.788	Level 1	
14,100.0	6,790.0	14,739.2	6,790.0	209.7	214.8	90.00	-682.2	-9,043.7	330.0	-93.5	423.47	0.779	Level 1	
14,200.0	6,790.0	14,839.2	6,790.0	212.2	217.3	90.00	-682.0	-9,143.7	330.0	-98.4	428.40	0.770	Level 1	
14,300.0	6,790.0	14,939.2	6,790.0	214.6	219.8	90.00	-681.7	-9,243.7	330.0	-103.4	433.33	0.761	Level 1	
14,400.0	6,790.0	15,039.2	6,790.0	217.1	222.2	90.00	-681.5	-9,343.7	330.0	-108.3	438.26	0.753	Level 1	
14,500.0	6,790.0	15,139.2	6,790.0	219.5	224.7	90.00	-681.2	-9,443.7	330.0	-113.2	443.20	0.745	Level 1	
14,600.0	6,790.0	15,239.2	6,790.0	222.0	227.2	90.00	-681.0	-9,543.7	330.0	-118.1	448.13	0.736	Level 1	
14,700.0	6,790.0	15,339.2	6,790.0	224.4	229.6	90.00	-680.7	-9,643.7	330.0	-123.1	453.06	0.728	Level 1	
14,800.0	6,790.0	15,439.2	6,790.0	226.9	232.1	90.00	-680.5	-9,743.7	330.0	-128.0	457.99	0.721	Level 1	
14,900.0	6,790.0	15,539.2	6,790.0	229.4	234.6	90.00	-680.2	-9,843.7	330.0	-132.9	462.93	0.713	Level 1	
15,000.0	6,790.0	15,639.2	6,790.0	231.8	237.0	90.00	-680.0	-9,943.7	330.0	-137.9	467.86	0.705	Level 1	
15,100.0	6,790.0	15,739.2	6,790.0	234.3	239.5	90.00	-679.7	-10,043.7	330.0	-142.8	472.80	0.698	Level 1	
15,200.0	6,790.0	15,839.2	6,790.0	236.7	242.0	90.00	-679.5	-10,143.7	330.0	-147.7	477.73	0.691	Level 1	
15,300.0	6,790.0	15,939.2	6,790.0	239.2	244.4	90.00	-679.2	-10,243.7	330.0	-152.7	482.67	0.684	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 8
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 8	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		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			
15,400.0	6,790.0	16,039.2	6,790.0	241.6	246.9	90.00	-679.0	-10,343.7	330.0	-157.6	487.60	0.677 Level 1		
15,500.0	6,790.0	16,139.2	6,790.0	244.1	249.4	90.00	-678.7	-10,443.7	330.0	-162.5	492.54	0.670 Level 1		
15,600.0	6,790.0	16,239.2	6,790.0	246.6	251.8	90.00	-678.5	-10,543.7	330.0	-167.5	497.47	0.663 Level 1		
15,700.0	6,790.0	16,339.2	6,790.0	249.0	254.3	90.00	-678.2	-10,643.7	330.0	-172.4	502.41	0.657 Level 1		
15,800.0	6,790.0	16,439.2	6,790.0	251.5	256.8	90.00	-678.0	-10,743.7	330.0	-177.3	507.35	0.650 Level 1		
15,900.0	6,790.0	16,539.2	6,790.0	253.9	259.2	90.00	-677.7	-10,843.7	330.0	-182.3	512.28	0.644 Level 1		
16,000.0	6,790.0	16,639.2	6,790.0	256.4	261.7	90.00	-677.5	-10,943.7	330.0	-187.2	517.22	0.638 Level 1		
16,100.0	6,790.0	16,739.2	6,790.0	258.9	264.2	90.00	-677.2	-11,043.7	330.0	-192.1	522.16	0.632 Level 1		
16,200.0	6,790.0	16,839.2	6,790.0	261.3	266.6	90.00	-677.0	-11,143.7	330.0	-197.1	527.09	0.626 Level 1		
16,300.0	6,790.0	16,939.2	6,790.0	263.8	269.1	90.00	-676.7	-11,243.7	330.0	-202.0	532.03	0.620 Level 1		
16,400.0	6,790.0	17,039.2	6,790.0	266.2	271.6	90.00	-676.5	-11,343.7	330.0	-206.9	536.97	0.615 Level 1		
16,500.0	6,790.0	17,139.2	6,790.0	268.7	274.0	90.00	-676.2	-11,443.7	330.0	-211.9	541.91	0.609 Level 1		
16,600.0	6,790.0	17,239.2	6,790.0	271.2	276.5	90.00	-676.0	-11,543.7	330.1	-216.8	546.84	0.604 Level 1		
16,700.0	6,790.0	17,339.2	6,790.0	273.6	279.0	90.00	-675.7	-11,643.7	330.1	-221.7	551.78	0.598 Level 1		
16,783.6	6,790.0	17,422.8	6,790.0	275.7	281.0	90.00	-675.5	-11,727.3	330.1	-225.9	555.91	0.594 Level 1, ES, SF		

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 8
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 8	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-													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	-149.35	-24.4	-14.5	28.4					
100.0	100.0	100.0	100.0	0.1	0.0	-149.35	-24.4	-14.5	28.4	28.2	0.13	213.568		
200.0	200.0	200.0	200.0	0.3	0.0	-149.35	-24.4	-14.5	28.4	28.1	0.31	92.302 CC		
300.0	300.0	299.6	299.6	0.5	0.0	-32.90	-24.8	-15.2	28.4	27.9	0.48	58.890		
400.0	400.0	399.1	399.1	0.7	0.0	-33.17	-26.1	-17.5	28.5	27.8	0.66	43.244		
500.0	499.9	498.7	498.6	0.9	0.0	-33.63	-28.3	-21.2	28.6	27.7	0.84	34.155		
600.0	599.7	598.3	598.0	1.1	0.0	-34.26	-31.3	-26.5	28.8	27.7	1.02	28.200 ES		
700.0	699.4	697.9	697.2	1.3	0.0	-35.06	-35.2	-33.2	29.0	27.8	1.21	23.982		
800.0	798.9	797.4	796.3	1.5	0.0	-36.01	-39.9	-41.4	29.3	27.8	1.40	20.823		
900.0	898.3	897.0	895.3	1.8	0.0	-37.12	-45.5	-51.2	29.6	28.0	1.61	18.356		
1,000.0	997.4	996.6	994.0	2.0	0.0	-38.37	-52.0	-62.4	30.0	28.2	1.83	16.364		
1,100.0	1,096.3	1,096.1	1,092.5	2.3	0.0	-39.74	-59.3	-75.1	30.5	28.4	2.07	14.714		
1,200.0	1,194.9	1,195.7	1,190.7	2.7	0.0	-41.22	-67.4	-89.3	31.0	28.7	2.33	13.319		
1,300.0	1,293.3	1,295.3	1,288.6	3.0	0.0	-42.79	-76.5	-104.9	31.7	29.0	2.61	12.121		
1,400.0	1,391.2	1,394.8	1,386.2	3.4	0.0	-44.44	-86.3	-122.1	32.4	29.5	2.92	11.080		
1,500.0	1,488.9	1,494.4	1,483.4	3.8	0.0	-46.14	-97.0	-140.7	33.2	29.9	3.26	10.171		
1,600.0	1,586.1	1,594.0	1,580.3	4.2	0.0	-47.89	-108.6	-160.7	34.1	30.5	3.64	9.372		
1,700.0	1,682.9	1,693.5	1,676.7	4.7	0.0	-49.66	-120.9	-182.2	35.1	31.0	4.05	8.669		
1,800.0	1,779.3	1,793.1	1,772.7	5.2	0.0	-51.44	-134.2	-205.2	36.2	31.7	4.50	8.051		
1,900.0	1,875.2	1,892.7	1,868.2	5.7	0.0	-53.22	-148.2	-229.6	37.4	32.4	4.98	7.507		
2,000.0	1,970.5	1,992.2	1,963.2	6.3	0.0	-54.97	-163.1	-255.5	38.7	33.2	5.51	7.028		
2,100.0	2,065.4	2,091.8	2,057.6	6.9	0.0	-56.70	-178.8	-282.7	40.2	34.1	6.08	6.607		
2,200.0	2,159.6	2,191.4	2,151.5	7.5	0.0	-58.38	-195.3	-311.4	41.7	35.0	6.68	6.238		
2,300.0	2,253.3	2,290.9	2,244.8	8.2	0.0	-60.02	-212.6	-341.5	43.4	36.0	7.33	5.913		
2,400.0	2,346.3	2,390.5	2,337.5	8.8	0.0	-61.60	-230.7	-373.0	45.1	37.1	8.02	5.627		
2,500.0	2,438.7	2,490.4	2,430.2	9.6	0.0	-63.85	-249.4	-405.5	46.7	37.9	8.78	5.312		
2,600.0	2,530.8	2,590.4	2,522.8	10.3	0.0	-66.92	-268.1	-438.0	47.9	38.3	9.62	4.983		
2,700.0	2,622.8	2,690.4	2,615.5	11.0	0.0	-69.83	-286.8	-470.5	49.3	38.9	10.45	4.718		
2,800.0	2,714.9	2,790.3	2,708.2	11.7	0.0	-72.57	-305.5	-503.0	50.8	39.5	11.29	4.504		
2,900.0	2,806.9	2,890.3	2,800.8	12.5	0.0	-75.14	-324.2	-535.4	52.5	40.3	12.11	4.330		
3,000.0	2,898.9	2,990.2	2,893.5	13.2	0.0	-77.56	-342.8	-567.9	54.2	41.2	12.93	4.190		
3,100.0	2,991.0	3,090.2	2,986.2	13.9	0.0	-79.83	-361.5	-600.4	56.0	42.3	13.74	4.075		
3,200.0	3,083.0	3,190.2	3,078.8	14.7	0.0	-81.95	-380.2	-632.9	57.9	43.3	14.53	3.983		
3,300.0	3,175.1	3,290.1	3,171.5	15.4	0.0	-83.93	-398.9	-665.4	59.9	44.5	15.32	3.907		
3,400.0	3,267.1	3,390.1	3,264.2	16.1	0.0	-85.78	-417.6	-697.9	61.9	45.8	16.09	3.847		
3,500.0	3,359.2	3,490.0	3,356.8	16.9	0.0	-87.52	-436.3	-730.4	64.0	47.1	16.85	3.798		
3,600.0	3,451.2	3,590.0	3,449.5	17.6	0.0	-89.14	-455.0	-762.9	66.1	48.5	17.60	3.758		
3,700.0	3,543.2	3,690.0	3,542.2	18.3	0.0	-90.66	-473.7	-795.4	68.3	50.0	18.34	3.727		
3,800.0	3,635.3	3,789.9	3,634.8	19.1	0.0	-92.09	-492.4	-827.9	70.6	51.5	19.06	3.703		
3,900.0	3,727.3	3,889.9	3,727.5	19.8	0.0	-93.42	-511.1	-860.4	72.9	53.1	19.78	3.684		
4,000.0	3,819.4	3,989.8	3,820.1	20.5	0.0	-94.68	-529.8	-892.9	75.2	54.7	20.49	3.670		
4,100.0	3,911.4	4,089.8	3,912.8	21.3	0.0	-95.85	-548.5	-925.3	77.6	56.4	21.19	3.660		
4,200.0	4,003.5	4,189.8	4,005.5	22.0	0.0	-96.96	-567.2	-957.8	79.9	58.1	21.88	3.653		
4,300.0	4,095.5	4,289.7	4,098.1	22.8	0.0	-98.01	-585.9	-990.3	82.4	59.8	22.57	3.649		
4,400.0	4,187.5	4,389.7	4,190.8	23.5	0.0	-98.99	-604.6	-1,022.8	84.8	61.6	23.25	3.648		
4,500.0	4,279.6	4,489.6	4,283.5	24.2	0.0	-99.92	-623.3	-1,055.3	87.3	63.3	23.92	3.648		
4,600.0	4,371.6	4,589.6	4,376.1	25.0	0.0	-100.80	-641.9	-1,087.8	89.8	65.2	24.59	3.650		
4,700.0	4,463.7	4,689.6	4,468.8	25.7	0.0	-101.63	-660.6	-1,120.3	92.3	67.0	25.25	3.654		
4,800.0	4,555.7	4,789.5	4,561.5	26.5	0.0	-102.41	-679.3	-1,152.8	94.8	68.9	25.91	3.658		
4,900.0	4,647.8	4,889.5	4,654.1	27.2	0.0	-103.16	-698.0	-1,185.3	97.3	70.8	26.57	3.664		
5,000.0	4,739.8	4,989.4	4,746.8	27.9	0.0	-103.86	-716.7	-1,217.8	99.9	72.7	27.22	3.670		
5,100.0	4,831.9	5,089.4	4,839.5	28.7	0.0	-104.53	-735.4	-1,250.3	102.5	74.6	27.86	3.678		

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 8
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 8	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-												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	4,923.9	5,189.4	4,932.1	29.4	0.0	-105.17	-754.1	-1,282.8	105.1	76.5	28.50	3.685	
5,300.0	5,015.9	5,289.3	5,024.8	30.2	0.0	-105.78	-772.8	-1,315.2	107.7	78.5	29.14	3.694	
5,400.0	5,108.0	5,389.3	5,117.5	30.9	0.0	-106.36	-791.5	-1,347.7	110.3	80.5	29.78	3.702	
5,500.0	5,200.0	5,489.2	5,210.1	31.7	0.0	-106.91	-810.2	-1,380.2	112.9	82.5	30.42	3.711	
5,600.0	5,292.1	5,589.2	5,302.8	32.4	0.0	-107.44	-828.9	-1,412.7	115.5	84.5	31.05	3.721	
5,700.0	5,384.1	5,689.1	5,395.5	33.1	0.0	-107.94	-847.6	-1,445.2	118.2	86.5	31.68	3.730	
5,800.0	5,476.2	5,789.1	5,488.1	33.9	0.0	-108.42	-866.3	-1,477.7	120.8	88.5	32.30	3.740	
5,900.0	5,568.2	5,889.1	5,580.8	34.6	0.0	-108.88	-885.0	-1,510.2	123.5	90.5	32.93	3.749	
6,000.0	5,660.2	5,989.0	5,673.5	35.4	0.0	-109.32	-903.7	-1,542.7	126.1	92.6	33.55	3.759	
6,100.0	5,752.3	6,089.0	5,766.1	36.1	0.0	-109.75	-922.3	-1,575.2	128.8	94.6	34.17	3.769	
6,200.0	5,844.3	6,188.9	5,858.8	36.8	0.0	-110.15	-941.0	-1,607.7	131.5	96.7	34.79	3.779	
6,300.0	5,936.4	6,288.9	5,951.4	37.6	0.0	-110.54	-959.7	-1,640.2	134.2	98.8	35.41	3.789	
6,400.0	6,028.4	6,388.9	6,044.1	38.3	0.0	-110.92	-978.4	-1,672.7	136.9	100.8	36.03	3.798	
6,500.0	6,120.5	6,488.8	6,136.8	39.1	0.0	-111.28	-997.1	-1,705.1	139.6	102.9	36.65	3.808	
6,600.0	6,212.5	6,588.8	6,229.4	39.8	0.0	-111.62	-1,015.8	-1,737.6	142.3	105.0	37.26	3.818	
6,700.0	6,304.5	6,688.7	6,322.1	40.6	0.0	-111.96	-1,034.5	-1,770.1	145.0	107.1	37.87	3.828	
6,800.0	6,396.5	6,788.7	6,414.8	41.3	0.0	-113.71	-1,053.2	-1,802.6	147.8	109.3	38.48	3.841	
6,900.0	6,484.5	6,887.8	6,506.6	42.3	0.0	-122.49	-1,071.7	-1,834.8	158.5	120.0	38.54	4.114	
7,000.0	6,564.6	6,983.6	6,595.5	43.5	0.0	-130.13	-1,089.7	-1,866.0	182.4	144.8	37.67	4.842	
7,100.0	6,634.9	7,073.9	6,679.2	44.9	0.0	-136.50	-1,106.5	-1,895.3	220.4	184.3	36.14	6.100	
7,200.0	6,693.6	7,200.1	6,792.6	46.6	0.0	-143.13	-1,129.4	-1,945.2	267.1	233.7	33.37	8.005	
7,300.0	6,739.3	7,356.6	6,916.4	48.5	0.0	-148.01	-1,154.3	-2,036.9	309.3	278.9	30.38	10.181	
7,400.0	6,770.8	7,540.8	7,029.0	50.4	0.0	-151.18	-1,176.7	-2,180.2	342.4	314.9	27.53	12.439	
7,500.0	6,787.4	7,750.8	7,102.4	52.5	0.0	-152.82	-1,191.1	-2,375.4	361.4	336.4	25.02	14.448	
7,600.0	6,790.0	7,921.2	7,115.0	54.6	0.0	-153.08	-1,193.2	-2,545.0	364.5	340.2	24.28	15.014	
7,700.0	6,790.0	8,021.2	7,115.0	56.8	0.0	-153.08	-1,193.0	-2,645.0	364.5	339.2	25.34	14.382	
7,800.0	6,790.0	8,121.2	7,115.0	58.9	0.0	-153.08	-1,192.7	-2,745.0	364.5	338.1	26.41	13.799	
7,900.0	6,790.0	8,221.2	7,115.0	61.1	0.0	-153.08	-1,192.5	-2,845.0	364.5	337.0	27.49	13.259	
8,000.0	6,790.0	8,321.2	7,115.0	63.3	0.0	-153.08	-1,192.2	-2,945.0	364.5	335.9	28.57	12.758	
8,100.0	6,790.0	8,421.2	7,115.0	65.6	0.0	-153.08	-1,192.0	-3,045.0	364.5	334.8	29.66	12.291	
8,200.0	6,790.0	8,521.2	7,115.0	67.8	0.0	-153.08	-1,191.7	-3,145.0	364.5	333.7	30.74	11.856	
8,300.0	6,790.0	8,621.2	7,115.0	70.1	0.0	-153.08	-1,191.5	-3,245.0	364.5	332.7	31.83	11.450	
8,400.0	6,790.0	8,721.2	7,115.0	72.3	0.0	-153.08	-1,191.2	-3,345.0	364.5	331.6	32.93	11.069	
8,500.0	6,790.0	8,821.2	7,115.0	74.6	0.0	-153.08	-1,191.0	-3,445.0	364.5	330.5	34.02	10.713	
8,600.0	6,790.0	8,921.2	7,115.0	76.9	0.0	-153.09	-1,190.7	-3,545.0	364.5	329.4	35.12	10.377	
8,700.0	6,790.0	9,021.2	7,115.0	79.2	0.0	-153.09	-1,190.5	-3,645.0	364.5	328.3	36.22	10.062	
8,800.0	6,790.0	9,121.2	7,115.0	81.6	0.0	-153.09	-1,190.2	-3,745.0	364.5	327.2	37.33	9.765	
8,900.0	6,790.0	9,221.2	7,115.0	83.9	0.0	-153.09	-1,190.0	-3,845.0	364.5	326.0	38.43	9.484	
9,000.0	6,790.0	9,321.2	7,115.0	86.2	0.0	-153.09	-1,189.7	-3,945.0	364.5	324.9	39.54	9.219	
9,100.0	6,790.0	9,421.2	7,115.0	88.6	0.0	-153.09	-1,189.5	-4,045.0	364.5	323.8	40.64	8.968	
9,200.0	6,790.0	9,521.2	7,115.0	90.9	0.0	-153.09	-1,189.2	-4,145.0	364.5	322.7	41.75	8.730	
9,300.0	6,790.0	9,621.2	7,115.0	93.3	0.0	-153.09	-1,189.0	-4,245.0	364.5	321.6	42.86	8.503	
9,400.0	6,790.0	9,721.2	7,115.0	95.6	0.0	-153.09	-1,188.7	-4,345.0	364.5	320.5	43.97	8.289	
9,500.0	6,790.0	9,821.2	7,115.0	98.0	0.0	-153.09	-1,188.5	-4,445.0	364.5	319.4	45.08	8.084	
9,600.0	6,790.0	9,921.2	7,115.0	100.4	0.0	-153.09	-1,188.2	-4,545.0	364.5	318.3	46.20	7.889	
9,700.0	6,790.0	10,021.2	7,115.0	102.8	0.0	-153.09	-1,188.0	-4,645.0	364.5	317.2	47.31	7.704	
9,800.0	6,790.0	10,121.2	7,115.0	105.2	0.0	-153.09	-1,187.7	-4,745.0	364.5	316.0	48.43	7.526	
9,900.0	6,790.0	10,221.2	7,115.0	107.5	0.0	-153.09	-1,187.5	-4,845.0	364.5	314.9	49.54	7.357	
10,000.0	6,790.0	10,321.2	7,115.0	109.9	0.0	-153.09	-1,187.2	-4,945.0	364.5	313.8	50.66	7.195	
10,100.0	6,790.0	10,421.2	7,115.0	112.3	0.0	-153.09	-1,187.0	-5,045.0	364.5	312.7	51.77	7.039	
10,200.0	6,790.0	10,521.2	7,115.0	114.7	0.0	-153.09	-1,186.7	-5,145.0	364.5	311.6	52.89	6.891	
10,300.0	6,790.0	10,621.2	7,115.0	117.1	0.0	-153.09	-1,186.5	-5,245.0	364.5	310.4	54.01	6.748	

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 8
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 8	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-												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
10,400.0	6,790.0	10,721.2	7,115.0	119.5	0.0	-153.10	-1,186.2	-5,345.0	364.4	309.3	55.13	6.611	
10,500.0	6,790.0	10,821.2	7,115.0	122.0	0.0	-153.10	-1,186.0	-5,445.0	364.4	308.2	56.25	6.479	
10,600.0	6,790.0	10,921.2	7,115.0	124.4	0.0	-153.10	-1,185.7	-5,545.0	364.4	307.1	57.37	6.353	
10,700.0	6,790.0	11,021.2	7,115.0	126.8	0.0	-153.10	-1,185.5	-5,645.0	364.4	306.0	58.49	6.231	
10,800.0	6,790.0	11,121.2	7,115.0	129.2	0.0	-153.10	-1,185.2	-5,745.0	364.4	304.8	59.61	6.114	
10,900.0	6,790.0	11,221.2	7,115.0	131.6	0.0	-153.10	-1,185.0	-5,845.0	364.4	303.7	60.73	6.001	
11,000.0	6,790.0	11,321.2	7,115.0	134.0	0.0	-153.10	-1,184.7	-5,945.0	364.4	302.6	61.85	5.892	
11,100.0	6,790.0	11,421.2	7,115.0	136.5	0.0	-153.10	-1,184.5	-6,045.0	364.4	301.5	62.97	5.787	
11,200.0	6,790.0	11,521.2	7,115.0	138.9	0.0	-153.10	-1,184.2	-6,145.0	364.4	300.3	64.09	5.686	
11,300.0	6,790.0	11,621.2	7,115.0	141.3	0.0	-153.10	-1,184.0	-6,245.0	364.4	299.2	65.21	5.588	
11,400.0	6,790.0	11,721.2	7,115.0	143.7	0.0	-153.10	-1,183.7	-6,345.0	364.4	298.1	66.34	5.494	
11,500.0	6,790.0	11,821.2	7,115.0	146.2	0.0	-153.10	-1,183.5	-6,445.0	364.4	297.0	67.46	5.402	
11,600.0	6,790.0	11,921.2	7,115.0	148.6	0.0	-153.10	-1,183.2	-6,545.0	364.4	295.8	68.58	5.314	
11,700.0	6,790.0	12,021.2	7,115.0	151.0	0.0	-153.10	-1,183.0	-6,645.0	364.4	294.7	69.71	5.228	
11,800.0	6,790.0	12,121.2	7,115.0	153.5	0.0	-153.10	-1,182.7	-6,745.0	364.4	293.6	70.83	5.145	
11,900.0	6,790.0	12,221.2	7,115.0	155.9	0.0	-153.10	-1,182.5	-6,845.0	364.4	292.5	71.95	5.065	
12,000.0	6,790.0	12,321.2	7,115.0	158.3	0.0	-153.10	-1,182.2	-6,945.0	364.4	291.3	73.08	4.987	
12,100.0	6,790.0	12,421.2	7,115.0	160.8	0.0	-153.10	-1,182.0	-7,045.0	364.4	290.2	74.20	4.911	
12,200.0	6,790.0	12,521.2	7,115.0	163.2	0.0	-153.11	-1,181.7	-7,145.0	364.4	289.1	75.32	4.838	
12,300.0	6,790.0	12,621.2	7,115.0	165.6	0.0	-153.11	-1,181.5	-7,245.0	364.4	288.0	76.45	4.767	
12,400.0	6,790.0	12,721.2	7,115.0	168.1	0.0	-153.11	-1,181.2	-7,345.0	364.4	286.8	77.57	4.698	
12,500.0	6,790.0	12,821.2	7,115.0	170.5	0.0	-153.11	-1,181.0	-7,445.0	364.4	285.7	78.70	4.630	
12,600.0	6,790.0	12,921.2	7,115.0	173.0	0.0	-153.11	-1,180.7	-7,545.0	364.4	284.6	79.82	4.565	
12,700.0	6,790.0	13,021.2	7,115.0	175.4	0.0	-153.11	-1,180.5	-7,645.0	364.4	283.5	80.95	4.502	
12,800.0	6,790.0	13,121.2	7,115.0	177.9	0.0	-153.11	-1,180.2	-7,745.0	364.4	282.3	82.07	4.440	
12,900.0	6,790.0	13,221.2	7,115.0	180.3	0.0	-153.11	-1,180.0	-7,844.9	364.4	281.2	83.20	4.380	
13,000.0	6,790.0	13,321.2	7,115.0	182.8	0.0	-153.11	-1,179.7	-7,944.9	364.4	280.1	84.32	4.321	
13,100.0	6,790.0	13,421.2	7,115.0	185.2	0.0	-153.11	-1,179.5	-8,044.9	364.4	279.0	85.45	4.265	
13,200.0	6,790.0	13,521.2	7,115.0	187.6	0.0	-153.11	-1,179.2	-8,144.9	364.4	277.8	86.57	4.209	
13,300.0	6,790.0	13,621.2	7,115.0	190.1	0.0	-153.11	-1,179.0	-8,244.9	364.4	276.7	87.70	4.155	
13,400.0	6,790.0	13,721.2	7,115.0	192.5	0.0	-153.11	-1,178.7	-8,344.9	364.4	275.6	88.83	4.102	
13,500.0	6,790.0	13,821.2	7,115.0	195.0	0.0	-153.11	-1,178.5	-8,444.9	364.4	274.4	89.95	4.051	
13,600.0	6,790.0	13,921.2	7,115.0	197.4	0.0	-153.11	-1,178.2	-8,544.9	364.4	273.3	91.08	4.001	
13,700.0	6,790.0	14,021.2	7,115.0	199.9	0.0	-153.11	-1,178.0	-8,644.9	364.4	272.2	92.20	3.952	
13,800.0	6,790.0	14,121.2	7,115.0	202.3	0.0	-153.11	-1,177.7	-8,744.9	364.4	271.1	93.33	3.904	
13,900.0	6,790.0	14,221.2	7,115.0	204.8	0.0	-153.11	-1,177.5	-8,844.9	364.4	269.9	94.46	3.858	
14,000.0	6,790.0	14,321.2	7,115.0	207.3	0.0	-153.11	-1,177.2	-8,944.9	364.4	268.8	95.58	3.812	
14,100.0	6,790.0	14,421.2	7,115.0	209.7	0.0	-153.12	-1,177.0	-9,044.9	364.4	267.7	96.71	3.768	
14,200.0	6,790.0	14,521.2	7,115.0	212.2	0.0	-153.12	-1,176.7	-9,144.9	364.4	266.5	97.83	3.724	
14,300.0	6,790.0	14,621.2	7,115.0	214.6	0.0	-153.12	-1,176.5	-9,244.9	364.4	265.4	98.96	3.682	
14,400.0	6,790.0	14,721.2	7,115.0	217.1	0.0	-153.12	-1,176.2	-9,344.9	364.4	264.3	100.09	3.641	
14,500.0	6,790.0	14,821.2	7,115.0	219.5	0.0	-153.12	-1,176.0	-9,444.9	364.4	263.2	101.21	3.600	
14,600.0	6,790.0	14,921.2	7,115.0	222.0	0.0	-153.12	-1,175.7	-9,544.9	364.4	262.0	102.34	3.560	
14,700.0	6,790.0	15,021.2	7,115.0	224.4	0.0	-153.12	-1,175.5	-9,644.9	364.4	260.9	103.47	3.522	
14,800.0	6,790.0	15,121.2	7,115.0	226.9	0.0	-153.12	-1,175.2	-9,744.9	364.4	259.8	104.59	3.484	
14,900.0	6,790.0	15,221.2	7,115.0	229.4	0.0	-153.12	-1,175.0	-9,844.9	364.4	258.6	105.72	3.447	
15,000.0	6,790.0	15,321.2	7,115.0	231.8	0.0	-153.12	-1,174.7	-9,944.9	364.4	257.5	106.85	3.410	
15,100.0	6,790.0	15,421.2	7,115.0	234.3	0.0	-153.12	-1,174.5	-10,044.9	364.4	256.4	107.97	3.375	
15,200.0	6,790.0	15,521.2	7,115.0	236.7	0.0	-153.12	-1,174.2	-10,144.9	364.4	255.3	109.10	3.340	
15,300.0	6,790.0	15,621.2	7,115.0	239.2	0.0	-153.12	-1,174.0	-10,244.9	364.4	254.1	110.23	3.306	
15,400.0	6,790.0	15,721.2	7,115.0	241.6	0.0	-153.12	-1,173.7	-10,344.9	364.4	253.0	111.35	3.272	
15,500.0	6,790.0	15,821.2	7,115.0	244.1	0.0	-153.12	-1,173.5	-10,444.9	364.4	251.9	112.48	3.239	

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 8
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 8	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-													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		
15,600.0	6,790.0	15,921.2	7,115.0	246.6	0.0	-153.12	-1,173.2	-10,544.9	364.4	250.7	113.61	3.207		
15,700.0	6,790.0	16,021.2	7,115.0	249.0	0.0	-153.12	-1,173.0	-10,644.9	364.4	249.6	114.74	3.176		
15,800.0	6,790.0	16,121.2	7,115.0	251.5	0.0	-153.12	-1,172.7	-10,744.9	364.4	248.5	115.86	3.145		
15,900.0	6,790.0	16,221.2	7,115.0	253.9	0.0	-153.13	-1,172.5	-10,844.9	364.4	247.4	116.99	3.114		
16,000.0	6,790.0	16,321.2	7,115.0	256.4	0.0	-153.13	-1,172.2	-10,944.9	364.3	246.2	118.12	3.085		
16,100.0	6,790.0	16,421.2	7,115.0	258.9	0.0	-153.13	-1,172.0	-11,044.9	364.3	245.1	119.24	3.055		
16,200.0	6,790.0	16,521.2	7,115.0	261.3	0.0	-153.13	-1,171.7	-11,144.9	364.3	244.0	120.37	3.027		
16,300.0	6,790.0	16,621.2	7,115.0	263.8	0.0	-153.13	-1,171.5	-11,244.9	364.3	242.8	121.50	2.999		
16,400.0	6,790.0	16,721.2	7,115.0	266.2	0.0	-153.13	-1,171.2	-11,344.9	364.3	241.7	122.62	2.971		
16,500.0	6,790.0	16,821.2	7,115.0	268.7	0.0	-153.13	-1,171.0	-11,444.9	364.3	240.6	123.75	2.944		
16,600.0	6,790.0	16,921.2	7,115.0	271.2	0.0	-153.13	-1,170.7	-11,544.9	364.3	239.5	124.88	2.918		
16,700.0	6,790.0	17,021.2	7,115.0	273.6	0.0	-153.13	-1,170.5	-11,644.9	364.3	238.3	126.00	2.891		
16,756.4	6,790.0	17,077.7	7,115.0	275.0	0.0	-153.13	-1,170.3	-11,701.4	364.3	237.7	126.64	2.877		
16,783.6	6,790.0	17,104.5	7,115.0	275.7	0.0	-153.13	-1,170.3	-11,728.2	364.3	237.4	126.95	2.870 SF		

Anticollision Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 8
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 8	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 8

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.39°

