

EXTRACTION OIL & GAS

**WELD COUNTY, COLORADO (NAD 83)
SW NW SEC. 15 T5N R65W 6th P.M.
VETTING 20**

**ORIGINAL WELLBORE
PROPOSAL #2**

Anticollision Report

10 March, 2016



Anticollision Report



Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well VETTING 20
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 20	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	Offset TVD Reference:	Offset Datum

Reference	PROPOSAL #2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 98.4usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0 us	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	10/03/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	15,616.6	PROPOSAL #2 (ORIGINAL WELLBORE)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
SW NW SEC. 15 T5N R65W 6th P.M.						
ABDN VERT LORENZ FARM INC #1 - Wellbore #1 - Design #1	5,243.4	4,600.0	1,467.9	1,337.6	11.272	CC, ES
ABDN VERT LORENZ FARM INC #1 - Wellbore #1 - Design #1	5,400.0	4,600.0	1,476.5	1,345.1	11.237	SF
CARLSON A-15-16HN - Wellbore #1 - Design #1	10,332.9	14,862.7	4,159.0	3,839.1	13.003	CC
CARLSON A-15-16HN - Wellbore #1 - Design #1	10,433.0	14,862.7	4,160.2	3,837.6	12.896	ES
CARLSON A-15-16HN - Wellbore #1 - Design #1	11,811.0	14,862.7	4,413.9	4,053.3	12.242	SF
CARLSON B-15-16HC - Wellbore #1 - Design #1	10,332.2	14,905.1	3,995.5	3,675.9	12.500	CC
CARLSON B-15-16HC - Wellbore #1 - Design #1	10,433.0	14,905.1	3,996.8	3,674.4	12.398	ES
CARLSON B-15-16HC - Wellbore #1 - Design #1	11,712.6	14,905.1	4,227.2	3,869.6	11.821	SF
CARLSON C-15-16HN - Wellbore #1 - Design #1	10,331.5	14,796.3	3,829.4	3,510.0	11.988	CC
CARLSON C-15-16HN - Wellbore #1 - Design #1	10,433.0	14,796.3	3,830.7	3,508.5	11.889	ES
CARLSON C-15-16HN - Wellbore #1 - Design #1	11,600.0	14,796.3	4,034.0	3,679.7	11.385	SF
CARLSON D-15-16HN - Wellbore #1 - Design #1	10,330.1	14,777.6	3,499.3	3,180.2	10.967	CC
CARLSON D-15-16HN - Wellbore #1 - Design #1	10,433.0	14,777.6	3,500.8	3,178.9	10.876	ES
CARLSON D-15-16HN - Wellbore #1 - Design #1	11,400.0	14,777.6	3,659.2	3,310.7	10.501	SF
CARLSON E-15-16HC - Wellbore #1 - Design #1	10,329.4	14,848.6	3,336.1	3,017.0	10.454	CC
CARLSON E-15-16HC - Wellbore #1 - Design #1	10,433.0	14,848.6	3,337.7	3,015.8	10.368	ES
CARLSON E-15-16HC - Wellbore #1 - Design #1	11,300.0	14,848.6	3,474.4	3,128.7	10.049	SF
CARLSON F-15-16HN - Wellbore #1 - Design #1	10,328.9	14,769.7	3,219.2	2,900.4	10.097	CC
CARLSON F-15-16HN - Wellbore #1 - Design #1	10,433.0	14,769.7	3,220.9	2,899.2	10.013	ES
CARLSON F-15-16HN - Wellbore #1 - Design #1	11,220.4	14,769.7	3,340.4	2,997.1	9.730	SF
CARLSON G-15-16HN - Wellbore #1 - Design #1	10,327.1	14,787.6	2,799.1	2,480.6	8.789	CC
CARLSON G-15-16HN - Wellbore #1 - Design #1	10,400.0	14,787.6	2,800.1	2,479.6	8.737	ES
CARLSON G-15-16HN - Wellbore #1 - Design #1	11,000.0	14,787.6	2,878.9	2,541.9	8.544	SF
CARLSON H-15-16HC - Wellbore #1 - Design #1	10,326.5	14,883.6	2,636.4	2,318.1	8.283	CC
CARLSON H-15-16HC - Wellbore #1 - Design #1	10,400.0	14,883.6	2,637.4	2,317.1	8.234	ES
CARLSON H-15-16HC - Wellbore #1 - Design #1	10,925.2	14,883.6	2,703.5	2,368.8	8.078	SF
CARLSON I-15-16HN - Wellbore #1 - Design #1	10,325.5	14,836.2	2,419.2	2,100.9	7.599	CC
CARLSON I-15-16HN - Wellbore #1 - Design #1	10,400.0	14,836.2	2,420.4	2,100.0	7.555	ES
CARLSON I-15-16HN - Wellbore #1 - Design #1	10,826.7	14,836.2	2,470.6	2,138.5	7.440	SF
CARLSON J-15-16HN - Wellbore #1 - Design #1	10,324.1	14,901.4	2,089.2	1,771.0	6.567	CC
CARLSON J-15-16HN - Wellbore #1 - Design #1	10,400.0	14,901.4	2,090.5	1,770.3	6.529	ES
CARLSON J-15-16HN - Wellbore #1 - Design #1	10,700.0	14,901.4	2,122.7	1,794.3	6.464	SF
CARLSON K-15-16HC - Wellbore #1 - Design #1	10,323.5	15,013.6	1,927.2	1,609.4	6.063	CC
CARLSON K-15-16HC - Wellbore #1 - Design #1	10,400.0	15,013.6	1,928.8	1,608.8	6.028	ES
CARLSON K-15-16HC - Wellbore #1 - Design #1	10,629.9	15,013.6	1,951.4	1,625.2	5.982	SF
CARLSON L-15-16HN - Wellbore #1 - Design #1	10,322.7	14,977.0	1,759.1	1,441.1	5.531	CC
CARLSON L-15-16HN - Wellbore #1 - Design #1	10,400.0	14,977.0	1,760.8	1,440.7	5.500	ES

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

Anticollision Report



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Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
SW NW SEC. 15 T5N R65W 6th P.M.						
CARLSON L-15-16HN - Wellbore #1 - Design #1	10,600.0	14,977.0	1,780.8	1,455.2	5.469	SF
EXIST DD BMC #B8 - Wellbore #1 - Wellbore #1	14,577.5	7,085.0	431.7	196.2	1.833	CC
EXIST DD BMC #B8 - Wellbore #1 - Wellbore #1	14,600.0	7,085.0	432.3	196.2	1.831	ES, SF
EXIST DD BUS BARN #A5 - Wellbore #1 - Wellbore #1	11,981.4	7,234.1	337.8	168.0	1.990	CC
EXIST DD BUS BARN #A5 - Wellbore #1 - Wellbore #1	12,000.0	7,233.8	338.3	168.0	1.987	ES, SF
EXIST DD CDOT 2 #D7 - Wellbore #1 - Wellbore #1	15,306.3	7,152.9	935.9	674.0	3.574	CC
EXIST DD CDOT 2 #D7 - Wellbore #1 - Wellbore #1	15,354.3	7,152.9	937.1	673.9	3.560	ES
EXIST DD CDOT 2 #D7 - Wellbore #1 - Wellbore #1	15,400.0	7,152.9	940.6	676.1	3.556	SF
EXIST DD CDOT 3 # D2 - Wellbore #1 - Wellbore #1	13,904.0	6,910.1	951.0	744.3	4.600	CC, ES
EXIST DD CDOT 3 # D2 - Wellbore #1 - Wellbore #1	14,000.0	6,909.6	955.9	746.5	4.565	SF
EXIST DD CLARK #A1 - Wellbore #1 - Wellbore #1	12,790.5	7,258.9	139.6	9.8	1.076	Level 2, CC, ES, SF
EXIST DD CLASSIC LANES #C9 - Wellbore #1 - Wellbo	15,616.6	7,593.8	1,035.0	748.7	3.615	CC, ES, SF
EXIST DD COUNTRYSIDE CENTER C3 - Wellbore #1 -	12,730.1	7,551.5	1,653.0	1,464.4	8.765	CC
EXIST DD COUNTRYSIDE CENTER C3 - Wellbore #1 -	12,795.2	7,555.1	1,654.3	1,463.9	8.688	ES
EXIST DD COUNTRYSIDE CENTER C3 - Wellbore #1 -	13,100.0	7,572.1	1,693.8	1,494.9	8.514	SF
EXIST DD DELTA PARK #A2 - Wellbore #1 - Wellbore #	11,993.2	7,270.9	918.0	749.4	5.444	CC
EXIST DD DELTA PARK #A2 - Wellbore #1 - Wellbore #	12,007.8	7,268.8	918.1	749.2	5.434	ES
EXIST DD DELTA PARK #A2 - Wellbore #1 - Wellbore #	12,106.3	7,254.3	924.8	753.7	5.404	SF
EXIST DD DISTRICT SIX #C6 - Wellbore #1 - Wellbore #	14,670.0	7,862.6	2,255.0	2,011.0	9.241	CC
EXIST DD DISTRICT SIX #C6 - Wellbore #1 - Wellbore #	14,763.7	7,865.7	2,256.9	2,010.3	9.151	ES
EXIST DD DISTRICT SIX #C6 - Wellbore #1 - Wellbore #	15,255.9	7,881.9	2,329.8	2,069.4	8.947	SF
EXIST DD DRIFTWOOD #D1 - Wellbore #1 - Wellbore #	15,151.5	7,292.0	279.2	20.5	1.079	Level 2, CC
EXIST DD DRIFTWOOD #D1 - Wellbore #1 - Wellbore #	15,157.4	7,291.6	279.3	20.4	1.079	Level 2, ES, SF
EXIST DD EHRlich MOTORS #D8 - Wellbore #1 - Well	15,616.6	7,206.4	1,270.5	985.2	4.453	CC, ES, SF
EXIST DD GARDEN CITY #D5 - Wellbore #1 - Wellbore	15,616.6	7,269.2	391.8	111.4	1.397	Level 3, CC, ES, SF
EXIST DD GREELEY IND SOUTH #B9 - Wellbore #1 - V	14,608.9	7,214.7	837.2	599.3	3.518	CC, ES
EXIST DD GREELEY IND SOUTH #B9 - Wellbore #1 - V	14,700.0	7,227.4	842.1	601.1	3.495	SF
EXIST DD HWY 34-1 #A-7 - Wellbore #1 - Wellbore #1	12,563.7	6,957.0	1,051.9	875.8	5.973	CC
EXIST DD HWY 34-1 #A-7 - Wellbore #1 - Wellbore #1	12,598.4	6,957.0	1,052.5	875.4	5.943	ES
EXIST DD HWY 34-1 #A-7 - Wellbore #1 - Wellbore #1	12,700.0	6,957.1	1,060.7	880.8	5.896	SF
EXIST DD HWY 34-2 #A-8 - Wellbore #1 - Wellbore #1	11,342.7	7,299.1	1,046.8	882.1	6.356	CC
EXIST DD HWY 34-2 #A-8 - Wellbore #1 - Wellbore #1	11,400.0	7,298.3	1,048.4	882.1	6.305	ES
EXIST DD HWY 34-2 #A-8 - Wellbore #1 - Wellbore #1	11,515.7	7,296.8	1,061.0	891.5	6.260	SF
EXIST DD HWY 85-1 #B-12 - Wellbore #1 - Wellbore #1	13,192.7	6,984.4	370.7	182.3	1.967	CC
EXIST DD HWY 85-1 #B-12 - Wellbore #1 - Wellbore #1	13,200.0	6,984.4	370.7	182.1	1.966	ES, SF
EXIST DD HWY 85-2 #B11 - Wellbore #1 - Wellbore #1	13,422.5	6,973.2	879.9	687.8	4.580	CC, ES
EXIST DD HWY 85-2 #B11 - Wellbore #1 - Wellbore #1	13,500.0	6,971.9	883.3	689.1	4.550	SF
EXIST DD HWY 85-3 #C4 - Wellbore #1 - Wellbore #1	13,354.6	6,567.4	2,079.7	1,904.7	11.886	CC
EXIST DD HWY 85-3 #C4 - Wellbore #1 - Wellbore #1	13,400.0	6,565.8	2,080.2	1,904.2	11.821	ES
EXIST DD HWY 85-3 #C4 - Wellbore #1 - Wellbore #1	13,976.3	6,505.0	2,171.4	1,984.9	11.643	SF
EXIST DD KUETTEL #11-15 - Wellbore #1 - Wellbore #1	965.8	1,008.7	2,435.1	2,431.6	693.314	CC
EXIST DD KUETTEL #11-15 - Wellbore #1 - Wellbore #1	984.2	1,027.1	2,435.1	2,431.6	678.895	ES
EXIST DD KUETTEL #11-15 - Wellbore #1 - Wellbore #1	15,616.6	7,006.5	9,514.3	9,256.0	36.837	SF
EXIST DD KUETTEL #21-15 - Wellbore #1 - Wellbore #1	1,235.1	1,515.8	2,445.2	2,439.8	453.274	CC, ES
EXIST DD KUETTEL #21-15 - Wellbore #1 - Wellbore #1	14,665.3	7,124.3	9,993.1	9,755.2	42.004	SF
EXIST DD KUETTEL #CNW-15 - Wellbore #1 - Wellbore	2,043.1	2,919.2	2,214.0	2,201.6	178.522	CC, ES
EXIST DD KUETTEL #CNW-15 - Wellbore #1 - Wellbore	15,500.0	7,119.4	9,969.8	9,714.1	39.000	SF
EXIST DD PARKVIEW AOUTH #A3 - Wellbore #1 - Well	10,901.2	7,556.5	1,042.7	885.1	6.616	CC
EXIST DD PARKVIEW AOUTH #A3 - Wellbore #1 - Well	10,925.2	7,550.0	1,043.0	885.0	6.600	ES
EXIST DD PARKVIEW AOUTH #A3 - Wellbore #1 - Well	11,000.0	7,528.8	1,047.1	887.8	6.574	SF
EXIST DD SAM PAK #A6 - Wellbore #1 - Wellbore #1	10,620.7	7,588.0	291.4	133.3	1.843	CC
EXIST DD SAM PAK #A6 - Wellbore #1 - Wellbore #1	10,629.9	7,585.8	291.6	133.1	1.840	ES, SF
EXIST DD SMITH 5 SPOT #A4 - Wellbore #1 - Wellbore	11,454.1	7,339.1	165.6	2.8	1.017	Level 2, CC, ES, SF

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Reference Design:	PROPOSAL #2	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
SW NW SEC. 15 T5N R65W 6th P.M.						
EXIST DD STATE #16-6B - Wellbore #1 - Wellbore #1	10,605.8	7,147.8	2,223.9	2,093.8	17.093	CC
EXIST DD STATE #16-6B - Wellbore #1 - Wellbore #1	10,700.0	7,148.4	2,225.9	2,093.2	16.775	ES
EXIST DD STATE #16-6B - Wellbore #1 - Wellbore #1	11,700.0	7,155.4	2,478.5	2,318.2	15.462	SF
EXIST DD UNION PACIFIC #C5 - Wellbore #1 - Wellbore #1	13,977.3	7,516.7	1,628.5	1,410.6	7.475	CC
EXIST DD UNION PACIFIC #C5 - Wellbore #1 - Wellbore #1	14,000.0	7,517.2	1,628.6	1,410.2	7.454	ES
EXIST DD UNION PACIFIC #C5 - Wellbore #1 - Wellbore #1	14,300.0	7,523.7	1,660.1	1,433.3	7.318	SF
EXIST DD UNIVERSITY 5 SPOT #D4 - Wellbore #1 - V	15,616.6	7,631.1	971.2	678.9	3.322	CC, ES, SF
EXIST DD UNIVERSITY SQUARE #D6 - Wellbore #1 - V	15,616.6	7,036.9	1,565.6	1,390.3	8.932	CC, ES, SF
EXIST DD VOLK #C7 - Wellbore #1 - Wellbore #1	15,240.4	7,735.1	1,602.6	1,336.9	6.030	CC
EXIST DD VOLK #C7 - Wellbore #1 - Wellbore #1	15,300.0	7,735.1	1,603.8	1,336.3	5.997	ES
EXIST DD VOLK #C7 - Wellbore #1 - Wellbore #1	15,500.0	7,735.1	1,623.5	1,350.5	5.946	SF
EXIST DD WHEELER #D3 - Wellbore #1 - Wellbore #1	15,616.6	7,940.5	1,780.2	1,469.2	5.723	CC, ES, SF
EXIST VERT EISENMAN #22-15 - Wellbore #1 - Wellbore #1	1,024.8	1,015.1	1,510.5	1,507.7	545.460	CC
EXIST VERT EISENMAN #22-15 - Wellbore #1 - Wellbore #1	1,082.7	1,071.2	1,510.6	1,507.7	522.366	ES
EXIST VERT EISENMAN #22-15 - Wellbore #1 - Wellbore #1	14,900.0	6,600.0	9,942.4	9,721.9	45.085	SF
EXIST VERT FAY #1 - Wellbore #1 - Design #1	9,348.5	6,864.0	2,325.6	2,121.2	11.382	CC
EXIST VERT FAY #1 - Wellbore #1 - Design #1	9,400.0	6,864.0	2,326.1	2,120.4	11.309	ES
EXIST VERT FAY #1 - Wellbore #1 - Design #1	10,039.3	6,864.0	2,426.0	2,203.1	10.885	SF
EXIST VERT HARRINGTON #1 - Wellbore #1 - Design #1	3,832.6	3,494.7	165.2	72.1	1.775	CC
EXIST VERT HARRINGTON #1 - Wellbore #1 - Design #1	3,838.6	3,499.7	165.3	72.0	1.772	ES, SF
EXIST VERT SANDUSKY #1 - Wellbore #1 - Wellbore #1	473.9	455.9	64.8	63.4	48.914	CC
EXIST VERT SANDUSKY #1 - Wellbore #1 - Wellbore #1	800.0	781.9	65.3	63.1	29.589	ES
EXIST VERT SANDUSKY #1 - Wellbore #1 - Wellbore #1	1,200.0	1,180.8	73.2	70.1	23.248	SF
VETTING 12 - ORIGINAL WELLBORE - PROPOSAL #2	100.0	100.0	191.1	190.9	1,012.170	CC, ES
VETTING 12 - ORIGINAL WELLBORE - PROPOSAL #2	15,616.6	15,065.5	1,664.9	1,187.1	3.485	SF
VETTING 13 - ORIGINAL WELLBORE - PROPOSAL #2	200.0	200.0	165.8	165.1	259.695	CC, ES
VETTING 13 - ORIGINAL WELLBORE - PROPOSAL #2	15,616.6	15,277.3	1,495.5	1,020.7	3.149	SF
VETTING 14 - ORIGINAL WELLBORE - PROPOSAL #2	300.0	300.0	143.2	142.1	131.640	CC, ES
VETTING 14 - ORIGINAL WELLBORE - PROPOSAL #2	15,616.6	15,096.3	1,318.8	840.6	2.758	SF
VETTING 15 - ORIGINAL WELLBORE - PROPOSAL #2	400.0	400.0	117.9	116.3	76.676	CC, ES
VETTING 15 - ORIGINAL WELLBORE - PROPOSAL #2	15,616.6	15,169.7	987.3	507.8	2.059	SF
VETTING 16 - ORIGINAL WELLBORE - PROPOSAL #2	500.0	500.0	95.8	93.8	48.220	CC, ES
VETTING 16 - ORIGINAL WELLBORE - PROPOSAL #2	15,616.6	15,407.9	846.1	376.7	1.803	SF
VETTING 17 - ORIGINAL WELLBORE - PROPOSAL #2	600.0	600.0	70.5	68.0	28.928	CC, ES
VETTING 17 - ORIGINAL WELLBORE - PROPOSAL #2	15,616.6	15,282.7	659.4	179.3	1.373	Level 3, SF
VETTING 18 - ORIGINAL WELLBORE - PROPOSAL #2	700.0	700.0	47.9	45.0	16.599	CC
VETTING 18 - ORIGINAL WELLBORE - PROPOSAL #2	15,616.6	15,420.3	327.9	-152.4	0.683	Level 1, ES, SF
VETTING 19 - ORIGINAL WELLBORE - PROPOSAL #2	800.0	800.0	22.6	19.2	6.771	CC
VETTING 19 - ORIGINAL WELLBORE - PROPOSAL #2	15,616.6	15,682.9	254.8	-77.5	0.767	Level 1, ES, SF
VETTING 21 - ORIGINAL WELLBORE - PROPOSAL #2	900.0	900.0	25.3	21.5	6.692	CC
VETTING 21 - ORIGINAL WELLBORE - PROPOSAL #2	15,616.6	15,843.4	331.5	-149.7	0.689	Level 1, ES, SF
VETTING 22 - ORIGINAL WELLBORE - PROPOSAL #2	900.0	900.0	47.9	44.1	12.656	CC
VETTING 22 - ORIGINAL WELLBORE - PROPOSAL #2	3,800.0	3,855.0	72.8	26.6	1.575	ES
VETTING 22 - ORIGINAL WELLBORE - PROPOSAL #2	15,616.6	16,129.6	532.5	84.6	1.189	Level 2, SF
VETTING 23 - ORIGINAL WELLBORE - PROPOSAL #2	900.0	900.0	73.2	69.4	19.348	CC
VETTING 23 - ORIGINAL WELLBORE - PROPOSAL #2	3,543.3	3,614.5	96.1	55.3	2.354	ES
VETTING 23 - ORIGINAL WELLBORE - PROPOSAL #2	15,616.6	16,069.4	659.4	177.5	1.368	Level 3, SF
VETTING 24 - ORIGINAL WELLBORE - PROPOSAL #2	900.0	900.0	95.3	91.5	25.184	CC
VETTING 24 - ORIGINAL WELLBORE - PROPOSAL #2	3,346.4	3,430.6	126.9	90.3	3.464	ES
VETTING 24 - ORIGINAL WELLBORE - PROPOSAL #2	15,616.6	16,281.8	990.9	508.9	2.056	SF
VT-ALLES 1-16-18 - ORIGINAL WELLBORE - PROPOSAL #2	100.0	99.0	216.0	215.8	1,149.681	CC, ES
VT-ALLES 1-16-18 - ORIGINAL WELLBORE - PROPOSAL #2	15,616.6	13,065.0	1,982.4	1,524.1	4.326	SF
VT-GLENMERE 3-16-18 - ORIGINAL WELLBORE - PROPOSAL #2	900.0	899.0	102.6	98.8	27.126	CC, ES

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 VETTING 20
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 20	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-INC												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)	Minimum Separation (usft)	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-174.98	-1,164.7	-102.2	1,169.8				
98.4	98.4	59.4	59.4	0.1	0.6	-174.98	-1,164.7	-102.2	1,169.2	1,168.5	0.69	1,704.341	
100.0	100.0	61.0	61.0	0.1	0.6	-174.98	-1,164.7	-102.2	1,169.2	1,168.5	0.70	1,661.952	
196.8	196.8	157.8	157.8	0.3	2.3	-174.98	-1,164.7	-102.2	1,169.2	1,166.5	2.66	439.200	
200.0	200.0	161.0	161.0	0.3	2.4	-174.98	-1,164.7	-102.2	1,169.2	1,166.4	2.74	426.283	
295.3	295.3	256.3	256.3	0.5	4.5	-174.98	-1,164.7	-102.2	1,169.2	1,164.1	5.04	232.020	
300.0	300.0	261.0	261.0	0.5	4.6	-174.98	-1,164.7	-102.2	1,169.2	1,164.0	5.15	227.110	
393.7	393.7	354.7	354.7	0.8	6.5	-174.98	-1,164.7	-102.2	1,169.2	1,161.9	7.29	160.432	
400.0	400.0	361.0	361.0	0.8	6.7	-174.98	-1,164.7	-102.2	1,169.2	1,161.7	7.43	157.348	
492.1	492.1	453.1	453.1	1.0	8.5	-174.98	-1,164.7	-102.2	1,169.2	1,159.7	9.51	122.913	
500.0	500.0	461.0	461.0	1.0	8.7	-174.98	-1,164.7	-102.2	1,169.2	1,159.5	9.69	120.662	
590.5	590.5	551.5	551.5	1.2	10.5	-174.98	-1,164.7	-102.2	1,169.2	1,157.5	11.73	99.697	
600.0	600.0	561.0	561.0	1.2	10.7	-174.98	-1,164.7	-102.2	1,169.2	1,157.2	11.94	97.923	
689.0	689.0	650.0	650.0	1.4	12.5	-174.98	-1,164.7	-102.2	1,169.2	1,155.2	13.94	83.886	
700.0	700.0	661.0	661.0	1.4	12.7	-174.98	-1,164.7	-102.2	1,169.2	1,155.0	14.19	82.423	
787.4	787.4	748.4	748.4	1.6	14.5	-174.98	-1,164.7	-102.2	1,169.2	1,153.0	16.15	72.416	
800.0	800.0	761.0	761.0	1.7	14.8	-174.98	-1,164.7	-102.2	1,169.2	1,152.8	16.43	71.171	
885.8	885.8	846.8	846.8	1.9	16.5	-174.98	-1,164.7	-102.2	1,169.2	1,150.8	18.35	63.711	
900.0	900.0	861.0	861.0	1.9	16.8	-174.98	-1,164.7	-102.2	1,169.2	1,150.5	18.67	62.628	
984.2	984.2	945.2	945.2	2.1	18.5	-8.14	-1,164.7	-102.2	1,168.0	1,147.4	20.52	56.905	
1,000.0	1,000.0	961.0	961.0	2.1	18.8	-8.14	-1,164.7	-102.2	1,167.5	1,146.6	20.87	55.942	
1,082.7	1,082.6	1,043.6	1,043.6	2.2	20.5	-8.18	-1,164.7	-102.2	1,163.4	1,140.8	22.65	51.370	
1,100.0	1,099.8	1,060.8	1,060.8	2.3	20.8	-8.19	-1,164.7	-102.2	1,162.3	1,139.3	23.02	50.496	
1,181.1	1,180.6	1,141.6	1,141.6	2.4	22.4	-8.26	-1,164.7	-102.2	1,155.5	1,130.8	24.74	46.714	
1,200.0	1,199.5	1,160.5	1,160.5	2.5	22.8	-8.28	-1,164.7	-102.2	1,153.6	1,128.5	25.13	45.903	
1,279.5	1,278.4	1,239.4	1,239.4	2.6	24.4	-8.37	-1,164.7	-102.2	1,144.3	1,117.5	26.79	42.722	
1,300.0	1,298.7	1,259.7	1,259.7	2.7	24.8	-8.40	-1,164.7	-102.2	1,141.6	1,114.4	27.20	41.963	
1,377.9	1,375.7	1,336.7	1,336.7	2.9	26.4	-8.53	-1,164.7	-102.2	1,129.8	1,101.0	28.79	39.248	
1,400.0	1,397.5	1,358.5	1,358.5	2.9	26.8	-8.57	-1,164.7	-102.2	1,126.1	1,096.9	29.23	38.530	
1,476.4	1,472.5	1,433.5	1,433.5	3.2	28.3	-8.72	-1,164.7	-102.2	1,112.0	1,081.3	30.73	36.183	
1,500.0	1,495.6	1,456.6	1,456.6	3.2	28.8	-8.77	-1,164.7	-102.2	1,107.2	1,076.1	31.19	35.501	
1,574.8	1,568.6	1,529.6	1,529.6	3.5	30.2	-8.95	-1,164.7	-102.2	1,090.9	1,058.3	32.62	33.447	
1,607.2	1,600.0	1,561.0	1,561.0	3.6	30.9	-9.04	-1,164.7	-102.2	1,083.3	1,050.1	33.22	32.610	
1,672.2	1,663.0	1,624.0	1,624.0	3.9	32.1	-9.18	-1,164.7	-102.2	1,067.6	1,033.0	34.61	30.850	
1,673.2	1,664.1	1,625.1	1,625.1	3.9	32.2	-9.18	-1,164.7	-102.2	1,067.3	1,032.7	34.63	30.825	
1,700.0	1,690.0	1,651.0	1,651.0	4.0	32.7	-9.26	-1,164.7	-102.2	1,060.7	1,025.6	35.12	30.205	
1,771.6	1,759.1	1,720.1	1,720.1	4.3	34.1	-9.49	-1,164.7	-102.2	1,041.9	1,005.5	36.41	28.615	
1,800.0	1,786.3	1,747.3	1,747.3	4.5	34.6	-9.59	-1,164.7	-102.2	1,034.0	997.1	36.91	28.014	
1,870.1	1,853.1	1,814.1	1,814.1	4.8	36.0	-9.86	-1,164.7	-102.2	1,013.3	975.2	38.12	26.580	
1,900.0	1,881.5	1,842.5	1,842.5	5.0	36.5	-9.99	-1,164.7	-102.2	1,004.0	965.4	38.62	25.996	
1,968.5	1,946.1	1,907.1	1,907.1	5.4	37.8	-10.30	-1,164.7	-102.2	981.6	941.9	39.74	24.699	
2,000.0	1,975.7	1,936.7	1,936.7	5.6	38.4	-10.46	-1,164.7	-102.2	970.8	930.5	40.25	24.119	
2,066.9	2,038.0	1,999.0	1,999.0	6.0	39.7	-10.82	-1,164.7	-102.2	946.8	905.5	41.29	22.929	
2,100.0	2,068.6	2,029.6	2,029.6	6.2	40.3	-11.02	-1,164.7	-102.2	934.4	892.6	41.79	22.358	
2,165.3	2,128.6	2,089.6	2,089.6	6.7	41.5	-11.44	-1,164.7	-102.2	908.9	866.1	42.75	21.259	
2,200.0	2,160.1	2,121.1	2,121.1	6.9	42.1	-11.68	-1,164.7	-102.2	894.8	851.6	43.25	20.692	
2,263.8	2,217.8	2,178.8	2,178.8	7.4	43.3	-12.17	-1,164.7	-102.2	868.0	823.9	44.13	19.669	
2,300.0	2,250.2	2,211.2	2,211.2	7.7	44.0	-12.47	-1,164.7	-102.2	852.3	807.6	44.62	19.102	
2,362.2	2,305.5	2,266.5	2,266.5	8.2	45.1	-13.04	-1,164.7	-102.2	824.3	778.8	45.43	18.142	
2,400.0	2,338.8	2,299.8	2,299.8	8.5	45.7	-13.42	-1,164.7	-102.2	806.7	760.8	45.91	17.570	
2,460.6	2,391.6	2,352.6	2,352.6	9.1	46.8	-14.08	-1,164.7	-102.2	777.7	731.0	46.67	16.663	
2,500.0	2,425.6	2,386.6	2,386.6	9.4	47.5	-14.56	-1,164.7	-102.2	758.3	711.1	47.15	16.082	

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 VETTING 20
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 20	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-INC												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)	Minimum Separation (usft)	Separation Factor	Warning
2,559.0	2,476.1	2,437.1	2,437.1	10.0	48.5	-15.34	-1,164.7	-102.2	728.4	680.5	47.87	15.217	
2,600.0	2,510.7	2,471.7	2,471.7	10.4	49.2	-15.94	-1,164.7	-102.2	707.1	658.7	48.36	14.623	
2,657.5	2,558.8	2,519.8	2,519.8	10.9	50.2	-16.87	-1,164.7	-102.2	676.5	627.4	49.05	13.792	
2,661.7	2,562.3	2,523.3	2,523.3	11.0	50.2	-16.94	-1,164.7	-102.2	674.2	625.1	49.10	13.731	
2,700.0	2,594.0	2,555.0	2,555.0	11.4	50.9	-17.48	-1,164.7	-102.2	653.5	603.6	49.91	13.094	
2,755.9	2,640.4	2,601.4	2,601.4	12.0	51.8	-18.33	-1,164.7	-102.2	623.3	572.2	51.11	12.196	
2,800.0	2,677.0	2,638.0	2,638.0	12.4	52.5	-19.06	-1,164.7	-102.2	599.6	547.6	52.09	11.513	
2,854.3	2,722.1	2,683.1	2,683.1	13.0	53.4	-20.03	-1,164.7	-102.2	570.6	517.2	53.32	10.701	
2,900.0	2,760.0	2,721.0	2,721.0	13.4	54.2	-20.93	-1,164.7	-102.2	546.2	491.8	54.39	10.042	
2,952.7	2,803.7	2,764.7	2,764.7	14.0	55.1	-22.07	-1,164.7	-102.2	518.2	462.5	55.67	9.308	
3,000.0	2,842.9	2,803.9	2,803.9	14.5	55.9	-23.19	-1,164.7	-102.2	493.3	436.4	56.87	8.674	
3,051.2	2,885.4	2,846.4	2,846.4	15.0	56.7	-24.54	-1,164.7	-102.2	466.5	408.2	58.22	8.012	
3,100.0	2,925.9	2,886.9	2,886.9	15.5	57.5	-25.96	-1,164.7	-102.2	441.1	381.5	59.58	7.403	
3,149.6	2,967.1	2,928.1	2,928.1	16.1	58.4	-27.58	-1,164.7	-102.2	415.5	354.5	61.04	6.807	
3,200.0	3,008.9	2,969.9	2,969.9	16.6	59.2	-29.42	-1,164.7	-102.2	389.9	327.3	62.63	6.225	
3,248.0	3,048.7	3,009.7	3,009.7	17.1	60.0	-31.39	-1,164.7	-102.2	365.8	301.5	64.25	5.693	
3,300.0	3,091.8	3,052.8	3,052.8	17.7	60.9	-33.81	-1,164.7	-102.2	340.1	274.0	66.14	5.143	
3,346.4	3,130.4	3,091.4	3,091.4	18.2	61.7	-36.27	-1,164.7	-102.2	317.7	249.7	67.98	4.674	
3,400.0	3,174.8	3,135.8	3,135.8	18.7	62.5	-39.51	-1,164.7	-102.2	292.6	222.3	70.29	4.163	
3,444.9	3,212.0	3,173.0	3,173.0	19.2	63.3	-42.62	-1,164.7	-102.2	272.3	199.9	72.41	3.761	
3,500.0	3,257.8	3,218.8	3,218.8	19.8	64.2	-47.01	-1,164.7	-102.2	248.5	173.3	75.25	3.303	
3,543.3	3,293.7	3,254.7	3,254.7	20.2	64.9	-50.96	-1,164.7	-102.2	231.0	153.4	77.67	2.974	
3,600.0	3,340.8	3,301.8	3,301.8	20.9	65.9	-56.90	-1,164.7	-102.2	210.1	129.1	81.05	2.593	
3,641.7	3,375.4	3,336.4	3,336.4	21.3	66.6	-61.85	-1,164.7	-102.2	196.6	113.0	83.61	2.351	
3,700.0	3,423.7	3,384.7	3,384.7	21.9	67.6	-69.61	-1,164.7	-102.2	181.0	93.9	87.13	2.078	
3,740.1	3,457.0	3,418.0	3,418.0	22.3	68.2	-75.47	-1,164.7	-102.2	173.1	83.7	89.35	1.937	
3,800.0	3,506.7	3,467.7	3,467.7	23.0	69.2	-84.78	-1,164.7	-102.2	166.2	74.2	92.05	1.806	
3,832.6	3,533.7	3,494.7	3,494.7	23.3	69.8	-90.00	-1,164.7	-102.2	165.2	72.1	93.11	1.775 CC	
3,838.6	3,538.7	3,499.7	3,499.7	23.4	69.9	-90.96	-1,164.7	-102.2	165.3	72.0	93.26	1.772 ES, SF	
3,900.0	3,589.7	3,550.7	3,550.7	24.1	70.9	-100.70	-1,164.7	-102.2	169.5	75.2	94.25	1.798	
3,937.0	3,620.4	3,581.4	3,581.4	24.5	71.5	-106.31	-1,164.7	-102.2	175.2	80.9	94.32	1.858	
4,000.0	3,672.6	3,633.6	3,633.6	25.1	72.6	-115.14	-1,164.7	-102.2	189.8	96.0	93.79	2.024	
4,035.4	3,702.0	3,663.0	3,663.0	25.5	73.2	-119.62	-1,164.7	-102.2	200.3	107.0	93.26	2.148	
4,100.0	3,755.6	3,716.6	3,716.6	26.2	74.2	-126.85	-1,164.7	-102.2	222.7	130.5	92.16	2.416	
4,133.8	3,783.7	3,744.7	3,744.7	26.6	74.8	-130.18	-1,164.7	-102.2	235.8	144.2	91.59	2.574	
4,200.0	3,838.6	3,799.6	3,799.6	27.3	75.9	-135.84	-1,164.7	-102.2	263.4	172.8	90.61	2.907	
4,232.3	3,865.3	3,826.3	3,826.3	27.6	76.4	-138.25	-1,164.7	-102.2	277.6	187.4	90.22	3.077	
4,300.0	3,921.5	3,882.5	3,882.5	28.4	77.6	-142.65	-1,164.7	-102.2	308.8	219.2	89.62	3.446	
4,330.7	3,947.0	3,908.0	3,908.0	28.7	78.1	-144.39	-1,164.7	-102.2	323.4	234.0	89.44	3.616	
4,400.0	4,004.5	3,965.5	3,965.5	29.4	79.2	-147.84	-1,164.7	-102.2	357.3	268.0	89.24	4.003	
4,429.1	4,028.7	3,989.7	3,989.7	29.7	79.7	-149.12	-1,164.7	-102.2	371.7	282.5	89.23	4.166	
4,500.0	4,087.5	4,048.5	4,048.5	30.5	80.9	-151.87	-1,164.7	-102.2	407.6	318.2	89.36	4.561	
4,527.5	4,110.3	4,071.3	4,071.3	30.8	81.4	-152.83	-1,164.7	-102.2	421.7	332.2	89.47	4.713	
4,600.0	4,170.4	4,131.4	4,131.4	31.6	82.6	-155.07	-1,164.7	-102.2	459.2	369.3	89.87	5.109	
4,626.0	4,192.0	4,153.0	4,153.0	31.9	83.0	-155.79	-1,164.7	-102.2	472.7	382.7	90.06	5.249	
4,700.0	4,253.4	4,214.4	4,214.4	32.7	84.2	-157.64	-1,164.7	-102.2	511.6	421.0	90.67	5.643	
4,724.4	4,273.6	4,234.6	4,234.6	32.9	84.6	-158.20	-1,164.7	-102.2	524.5	433.6	90.90	5.770	
4,800.0	4,336.4	4,297.4	4,297.4	33.7	85.9	-159.76	-1,164.7	-102.2	564.8	473.1	91.69	6.159	
4,822.8	4,355.3	4,316.3	4,316.3	34.0	86.3	-160.19	-1,164.7	-102.2	576.9	485.0	91.95	6.275	
4,900.0	4,419.3	4,380.3	4,380.3	34.8	87.6	-161.52	-1,164.7	-102.2	618.3	525.5	92.87	6.658	
4,921.2	4,437.0	4,398.0	4,398.0	35.0	87.9	-161.86	-1,164.7	-102.2	629.8	536.6	93.14	6.762	
5,000.0	4,502.3	4,463.3	4,463.3	35.9	89.2	-163.01	-1,164.7	-102.2	672.3	578.1	94.17	7.139	

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 VETTING 20
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 20	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-INC												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)	Minimum Separation (usft)	Separation Factor	Warning
5,019.7	4,518.6	4,479.6	4,479.6	36.1	89.6	-163.27	-1,164.7	-102.2	683.0	588.5	94.44	7.232	
5,100.0	4,585.3	4,546.3	4,546.3	37.0	90.9	-164.28	-1,164.7	-102.2	726.5	631.0	95.57	7.602	
5,118.1	4,600.3	4,561.3	4,561.3	37.2	91.2	-164.49	-1,164.7	-102.2	736.4	640.6	95.83	7.684	
5,193.4	4,662.8	4,623.8	4,623.8	38.0	92.5	-165.31	-1,164.7	-102.2	777.4	680.5	96.94	8.019	
5,200.0	4,668.2	4,629.2	4,629.2	38.0	92.6	-165.40	-1,164.7	-102.2	781.0	683.9	97.14	8.040	
5,216.5	4,682.0	4,643.0	4,643.0	38.2	92.9	-165.62	-1,164.7	-102.2	790.0	692.3	97.64	8.090	
5,300.0	4,752.3	4,713.3	4,713.3	38.8	94.3	-166.62	-1,164.7	-102.2	834.0	733.8	100.23	8.321	
5,314.9	4,765.0	4,726.0	4,726.0	38.9	94.5	-166.79	-1,164.7	-102.2	841.7	741.0	100.71	8.358	
5,400.0	4,838.2	4,799.2	4,799.2	39.5	96.0	-167.64	-1,164.7	-102.2	884.3	780.9	103.42	8.550	
5,413.4	4,849.8	4,810.8	4,810.8	39.6	96.2	-167.76	-1,164.7	-102.2	890.8	786.9	103.85	8.577	
5,500.0	4,925.8	4,886.8	4,886.8	40.2	97.8	-168.49	-1,164.7	-102.2	931.6	825.0	106.66	8.735	
5,511.8	4,936.3	4,897.3	4,897.3	40.3	98.0	-168.58	-1,164.7	-102.2	937.0	830.0	107.05	8.754	
5,600.0	5,015.1	4,976.1	4,976.1	40.9	99.6	-169.20	-1,164.7	-102.2	976.1	866.1	109.92	8.880	
5,610.2	5,024.3	4,985.3	4,985.3	40.9	99.7	-169.27	-1,164.7	-102.2	980.4	870.2	110.25	8.893	
5,700.0	5,105.8	5,066.8	5,066.8	41.5	101.4	-169.80	-1,164.7	-102.2	1,017.4	904.3	113.16	8.991	
5,708.6	5,113.8	5,074.8	5,074.8	41.5	101.5	-169.85	-1,164.7	-102.2	1,020.9	907.4	113.44	8.999	
5,800.0	5,198.0	5,159.0	5,159.0	42.1	103.2	-170.31	-1,164.7	-102.2	1,055.7	939.3	116.37	9.071	
5,807.1	5,204.6	5,165.6	5,165.6	42.1	103.4	-170.35	-1,164.7	-102.2	1,058.3	941.7	116.60	9.076	
5,900.0	5,291.5	5,252.5	5,252.5	42.6	105.1	-170.75	-1,164.7	-102.2	1,090.8	971.2	119.53	9.125	
5,905.5	5,296.7	5,257.7	5,257.7	42.7	105.2	-170.77	-1,164.7	-102.2	1,092.6	972.9	119.71	9.127	
6,000.0	5,386.2	5,347.2	5,347.2	43.1	107.0	-171.12	-1,164.7	-102.2	1,122.6	1,000.0	122.63	9.155	
6,003.9	5,389.9	5,350.9	5,350.9	43.2	107.1	-171.13	-1,164.7	-102.2	1,123.8	1,001.1	122.75	9.156	
6,100.0	5,481.9	5,442.9	5,442.9	43.6	108.9	-171.43	-1,164.7	-102.2	1,151.2	1,025.6	125.63	9.163	
6,102.3	5,484.1	5,445.1	5,445.1	43.6	109.0	-171.44	-1,164.7	-102.2	1,151.9	1,026.2	125.70	9.163	
6,200.0	5,578.6	5,539.6	5,539.6	44.0	110.9	-171.69	-1,164.7	-102.2	1,176.5	1,048.0	128.55	9.152	
6,200.8	5,579.3	5,540.3	5,540.3	44.0	110.9	-171.69	-1,164.7	-102.2	1,176.7	1,048.1	128.57	9.152	
6,299.2	5,675.3	5,636.3	5,636.3	44.4	112.8	-171.91	-1,164.7	-102.2	1,198.3	1,067.0	131.33	9.125	
6,300.0	5,676.1	5,637.1	5,637.1	44.4	112.9	-171.91	-1,164.7	-102.2	1,198.5	1,067.1	131.35	9.124	
6,397.6	5,771.9	5,732.9	5,732.9	44.7	114.8	-172.08	-1,164.7	-102.2	1,216.6	1,082.7	133.97	9.082	
6,400.0	5,774.3	5,735.3	5,735.3	44.7	114.8	-172.08	-1,164.7	-102.2	1,217.0	1,083.0	134.03	9.080	
6,496.0	5,869.2	5,830.2	5,830.2	45.0	116.7	-172.22	-1,164.7	-102.2	1,231.7	1,095.2	136.48	9.025	
6,500.0	5,873.1	5,834.1	5,834.1	45.0	116.8	-172.22	-1,164.7	-102.2	1,232.2	1,095.6	136.58	9.022	
6,594.5	5,966.9	5,927.9	5,927.9	45.2	118.7	-172.32	-1,164.7	-102.2	1,243.4	1,104.5	138.85	8.955	
6,600.0	5,972.4	5,933.4	5,933.4	45.2	118.8	-172.33	-1,164.7	-102.2	1,243.9	1,104.9	138.98	8.950	
6,692.9	6,065.0	6,026.0	6,026.0	45.4	120.7	-172.40	-1,164.7	-102.2	1,251.7	1,110.7	141.08	8.873	
6,700.0	6,072.0	6,033.0	6,033.0	45.4	120.8	-172.40	-1,164.7	-102.2	1,252.2	1,111.0	141.23	8.866	
6,791.3	6,163.2	6,124.2	6,124.2	45.5	122.6	-172.44	-1,164.7	-102.2	1,256.8	1,113.6	143.14	8.780	
6,800.0	6,171.9	6,132.9	6,132.9	45.5	122.8	-172.44	-1,164.7	-102.2	1,257.1	1,113.8	143.32	8.771	
6,889.7	6,261.7	6,222.7	6,222.7	45.6	124.6	-172.46	-1,164.7	-102.2	1,258.5	1,113.4	145.05	8.676	
6,890.1	6,262.0	6,223.0	6,223.0	45.6	124.6	20.68	-1,164.7	-102.2	1,258.5	1,088.6	169.90	7.407	
6,900.0	6,271.9	6,232.9	6,232.9	45.6	124.8	20.68	-1,164.7	-102.2	1,258.5	1,088.4	170.10	7.398	
6,920.1	6,292.0	6,253.0	6,253.0	45.6	125.2	20.68	-1,164.7	-102.2	1,258.5	1,088.0	170.52	7.380	
6,950.0	6,321.9	6,282.9	6,282.9	45.6	125.8	110.73	-1,164.7	-102.2	1,258.7	1,112.3	146.45	8.595	
6,988.2	6,359.9	6,320.9	6,320.9	45.7	126.6	110.76	-1,164.7	-102.2	1,259.9	1,112.6	147.33	8.551	
7,000.0	6,371.6	6,332.6	6,332.6	45.7	126.8	110.78	-1,164.7	-102.2	1,260.5	1,112.9	147.59	8.540	
7,050.0	6,420.8	6,381.8	6,381.8	45.7	127.8	110.85	-1,164.7	-102.2	1,263.7	1,115.2	148.54	8.508	
7,086.6	6,456.2	6,417.2	6,417.2	45.8	128.5	110.91	-1,164.7	-102.2	1,267.2	1,118.0	149.12	8.497	
7,100.0	6,469.0	6,430.0	6,430.0	45.8	128.8	110.93	-1,164.7	-102.2	1,268.7	1,119.3	149.32	8.497	
7,150.0	6,515.8	6,476.8	6,476.8	45.9	129.7	111.00	-1,164.7	-102.2	1,275.3	1,125.4	149.92	8.507	
7,185.0	6,547.6	6,508.6	6,508.6	46.0	130.4	111.03	-1,164.7	-102.2	1,281.0	1,130.8	150.25	8.526	
7,200.0	6,560.9	6,521.9	6,521.9	46.1	130.6	111.03	-1,164.7	-102.2	1,283.7	1,133.4	150.37	8.537	
7,250.0	6,604.0	6,565.0	6,565.0	46.2	131.5	110.97	-1,164.7	-102.2	1,294.1	1,143.3	150.71	8.586	

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 VETTING 20
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 20	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-INC												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)	Minimum Separation (usft)	Separation Factor	Warning
7,283.4	6,631.5	6,592.5	6,592.5	46.3	132.1	110.86	-1,164.7	-102.2	1,302.1	1,151.1	150.93	8.627	
7,300.0	6,644.7	6,605.7	6,605.7	46.4	132.3	110.78	-1,164.7	-102.2	1,306.4	1,155.3	151.03	8.650	
7,350.0	6,682.7	6,643.7	6,643.7	46.5	133.1	110.43	-1,164.7	-102.2	1,320.8	1,169.4	151.42	8.723	
7,381.9	6,705.4	6,666.4	6,666.4	46.7	133.6	110.09	-1,164.7	-102.2	1,331.1	1,179.3	151.75	8.771	
7,400.0	6,717.7	6,678.7	6,678.7	46.7	133.8	109.85	-1,164.7	-102.2	1,337.3	1,185.3	151.99	8.799	
7,450.0	6,749.5	6,710.5	6,710.5	47.0	134.4	109.01	-1,164.7	-102.2	1,356.1	1,203.2	152.86	8.871	
7,480.3	6,767.1	6,728.1	6,728.1	47.1	134.8	108.34	-1,164.7	-102.2	1,368.5	1,214.9	153.59	8.910	
7,500.0	6,777.9	6,738.9	6,738.9	47.2	135.0	107.84	-1,164.7	-102.2	1,377.0	1,222.8	154.14	8.933	
7,550.0	6,802.5	6,763.5	6,763.5	47.5	135.5	106.31	-1,164.7	-102.2	1,400.0	1,244.2	155.89	8.981	
7,578.7	6,814.9	6,775.9	6,775.9	47.7	135.8	105.24	-1,164.7	-102.2	1,414.2	1,257.1	157.11	9.002	
7,600.0	6,823.2	6,784.2	6,784.2	47.8	135.9	104.36	-1,164.7	-102.2	1,425.2	1,267.1	158.08	9.016	
7,650.0	6,839.9	6,800.9	6,800.9	48.2	136.3	101.94	-1,164.7	-102.2	1,452.3	1,291.7	160.56	9.045	
7,677.1	6,847.2	6,808.2	6,808.2	48.4	136.4	100.43	-1,164.7	-102.2	1,467.7	1,305.8	161.96	9.062	
7,700.0	6,852.4	6,813.4	6,813.4	48.5	136.5	99.04	-1,164.7	-102.2	1,481.1	1,318.0	163.10	9.081	
7,750.0	6,860.7	6,821.7	6,821.7	48.9	136.7	95.62	-1,164.7	-102.2	1,511.6	1,346.2	165.32	9.143	
7,775.6	6,863.3	6,824.3	6,824.3	49.1	136.7	93.68	-1,164.7	-102.2	1,527.7	1,361.5	166.20	9.192	
7,800.0	6,864.6	6,825.6	6,825.6	49.3	136.8	91.71	-1,164.7	-102.2	1,543.3	1,376.5	166.78	9.253	
7,820.2	6,865.0	6,826.0	6,826.0	49.5	136.8	90.00	-1,164.7	-102.2	1,556.4	1,389.4	167.05	9.317	
7,874.0	6,865.0	6,826.0	6,826.0	50.0	136.8	90.00	-1,164.7	-102.2	1,592.2	1,424.1	168.10	9.472	
7,900.0	6,865.0	6,826.0	6,826.0	50.3	136.8	90.00	-1,164.7	-102.2	1,609.8	1,441.2	168.61	9.548	
7,972.4	6,865.0	6,826.0	6,826.0	51.0	136.8	90.00	-1,164.7	-102.2	1,660.1	1,490.0	170.09	9.760	
8,000.0	6,865.0	6,826.0	6,826.0	51.3	136.8	90.00	-1,164.7	-102.2	1,679.6	1,509.0	170.65	9.842	
8,070.8	6,865.0	6,826.0	6,826.0	52.1	136.8	90.00	-1,164.7	-102.2	1,730.9	1,558.7	172.18	10.053	
8,100.0	6,865.0	6,826.0	6,826.0	52.4	136.8	90.00	-1,164.7	-102.2	1,752.4	1,579.6	172.80	10.141	
8,169.3	6,865.0	6,826.0	6,826.0	53.3	136.8	90.00	-1,164.7	-102.2	1,804.3	1,629.9	174.36	10.348	
8,200.0	6,865.0	6,826.0	6,826.0	53.7	136.8	90.00	-1,164.7	-102.2	1,827.7	1,652.6	175.05	10.441	
8,267.7	6,865.0	6,826.0	6,826.0	54.6	136.8	90.00	-1,164.7	-102.2	1,880.0	1,703.4	176.61	10.645	
8,300.0	6,865.0	6,826.0	6,826.0	55.0	136.8	90.00	-1,164.7	-102.2	1,905.3	1,727.9	177.36	10.742	
8,366.1	6,865.0	6,826.0	6,826.0	56.0	136.8	90.00	-1,164.7	-102.2	1,957.7	1,778.8	178.93	10.941	
8,400.0	6,865.0	6,826.0	6,826.0	56.5	136.8	90.00	-1,164.7	-102.2	1,984.9	1,805.1	179.73	11.044	
8,464.5	6,865.0	6,826.0	6,826.0	57.5	136.8	90.00	-1,164.7	-102.2	2,037.2	1,855.9	181.29	11.237	
8,500.0	6,865.0	6,826.0	6,826.0	58.1	136.8	90.00	-1,164.7	-102.2	2,066.2	1,884.1	182.15	11.343	
8,563.0	6,865.0	6,826.0	6,826.0	59.1	136.8	90.00	-1,164.7	-102.2	2,118.3	1,934.6	183.71	11.531	
8,600.0	6,865.0	6,826.0	6,826.0	59.8	136.8	90.00	-1,164.7	-102.2	2,149.2	1,964.6	184.62	11.641	
8,661.4	6,865.0	6,826.0	6,826.0	60.8	136.8	90.00	-1,164.7	-102.2	2,200.8	2,014.7	186.15	11.823	
8,700.0	6,865.0	6,826.0	6,826.0	61.5	136.8	90.00	-1,164.7	-102.2	2,233.5	2,046.4	187.12	11.936	
8,759.8	6,865.0	6,826.0	6,826.0	62.7	136.8	90.00	-1,164.7	-102.2	2,284.6	2,096.0	188.63	12.111	
8,800.0	6,865.0	6,826.0	6,826.0	63.4	136.8	90.00	-1,164.7	-102.2	2,319.1	2,129.5	189.65	12.228	
8,858.2	6,865.0	6,826.0	6,826.0	64.5	136.8	90.00	-1,164.7	-102.2	2,369.5	2,178.3	191.14	12.396	
8,900.0	6,865.0	6,826.0	6,826.0	65.4	136.8	90.00	-1,164.7	-102.2	2,405.8	2,213.6	192.21	12.517	
8,956.7	6,865.0	6,826.0	6,826.0	66.5	136.8	90.00	-1,164.7	-102.2	2,455.4	2,261.7	193.67	12.678	
9,000.0	6,865.0	6,826.0	6,826.0	67.4	136.8	90.00	-1,164.7	-102.2	2,493.5	2,298.7	194.79	12.801	
9,055.1	6,865.0	6,826.0	6,826.0	68.5	136.8	90.00	-1,164.7	-102.2	2,542.2	2,346.0	196.23	12.955	
9,100.0	6,865.0	6,826.0	6,826.0	69.5	136.8	90.00	-1,164.7	-102.2	2,582.1	2,384.7	197.40	13.081	
9,153.5	6,865.0	6,826.0	6,826.0	70.6	136.8	90.00	-1,164.7	-102.2	2,629.8	2,431.1	198.80	13.229	
9,200.0	6,865.0	6,826.0	6,826.0	71.6	136.8	90.00	-1,164.7	-102.2	2,671.5	2,471.5	200.02	13.356	
9,251.9	6,865.0	6,826.0	6,826.0	72.8	136.8	90.00	-1,164.7	-102.2	2,718.2	2,516.8	201.39	13.498	
9,300.0	6,865.0	6,826.0	6,826.0	73.8	136.8	90.00	-1,164.7	-102.2	2,761.6	2,559.0	202.65	13.627	
9,350.4	6,865.0	6,826.0	6,826.0	75.0	136.8	90.00	-1,164.7	-102.2	2,807.3	2,603.3	203.99	13.762	
9,400.0	6,865.0	6,826.0	6,826.0	76.1	136.8	90.00	-1,164.7	-102.2	2,852.4	2,647.1	205.30	13.894	
9,448.8	6,865.0	6,826.0	6,826.0	77.2	136.8	90.00	-1,164.7	-102.2	2,896.9	2,690.3	206.60	14.022	
9,500.0	6,865.0	6,826.0	6,826.0	78.4	136.8	90.00	-1,164.7	-102.2	2,943.8	2,735.8	207.96	14.155	

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 VETTING 20
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 20	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-INC												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)	Minimum Separation (usft)	Separation Factor	
9,547.2	6,865.0	6,826.0	6,826.0	79.5	136.8	90.00	-1,164.7	-102.2	2,987.1	2,777.9	209.23	14.277	
9,600.0	6,865.0	6,826.0	6,826.0	80.7	136.8	90.00	-1,164.7	-102.2	3,035.7	2,825.1	210.64	14.412	
9,645.6	6,865.0	6,826.0	6,826.0	81.8	136.8	90.00	-1,164.7	-102.2	3,077.8	2,866.0	211.86	14.528	
9,700.0	6,865.0	6,826.0	6,826.0	83.1	136.8	90.00	-1,164.7	-102.2	3,128.1	2,914.8	213.32	14.664	
9,744.1	6,865.0	6,826.0	6,826.0	84.2	136.8	90.00	-1,164.7	-102.2	3,169.0	2,954.5	214.51	14.773	
9,800.0	6,865.0	6,826.0	6,826.0	85.5	136.8	90.00	-1,164.7	-102.2	3,221.0	3,005.0	216.01	14.911	
9,842.5	6,865.0	6,826.0	6,826.0	86.6	136.8	90.00	-1,164.7	-102.2	3,260.6	3,043.4	217.16	15.015	
9,900.0	6,865.0	6,826.0	6,826.0	88.0	136.8	90.00	-1,164.7	-102.2	3,314.3	3,095.6	218.71	15.154	
9,940.9	6,865.0	6,826.0	6,826.0	89.0	136.8	90.00	-1,164.7	-102.2	3,352.6	3,132.7	219.82	15.252	
10,000.0	6,865.0	6,826.0	6,826.0	90.4	136.8	90.00	-1,164.7	-102.2	3,407.9	3,186.5	221.42	15.391	
10,039.3	6,865.0	6,826.0	6,826.0	91.4	136.8	90.00	-1,164.7	-102.2	3,444.9	3,222.4	222.48	15.484	
10,100.0	6,865.0	6,826.0	6,826.0	92.9	136.8	90.00	-1,164.7	-102.2	3,501.9	3,277.8	224.13	15.625	
10,137.8	6,865.0	6,826.0	6,826.0	93.9	136.8	90.00	-1,164.7	-102.2	3,537.6	3,312.4	225.16	15.711	
10,200.0	6,865.0	6,826.0	6,826.0	95.4	136.8	90.00	-1,164.7	-102.2	3,596.3	3,369.4	226.85	15.853	
10,236.2	6,865.0	6,826.0	6,826.0	96.4	136.8	90.00	-1,164.7	-102.2	3,630.5	3,402.7	227.84	15.935	
10,300.0	6,865.0	6,826.0	6,826.0	98.0	136.8	90.00	-1,164.7	-102.2	3,690.9	3,461.4	229.57	16.077	
10,334.6	6,865.0	6,826.0	6,826.0	98.9	136.8	90.00	-1,164.7	-102.2	3,723.8	3,493.2	230.52	16.154	
10,400.0	6,865.0	6,826.0	6,826.0	100.5	136.8	90.00	-1,164.7	-102.2	3,785.8	3,553.5	232.30	16.297	
10,433.0	6,865.0	6,826.0	6,826.0	101.4	136.8	90.00	-1,164.7	-102.2	3,817.3	3,584.1	233.21	16.369	
10,500.0	6,865.0	6,826.0	6,826.0	103.1	136.8	90.00	-1,164.7	-102.2	3,881.0	3,646.0	235.04	16.512	
10,531.5	6,865.0	6,826.0	6,826.0	103.9	136.8	90.00	-1,164.7	-102.2	3,911.0	3,675.1	235.90	16.579	
10,600.0	6,865.0	6,826.0	6,826.0	105.7	136.8	90.00	-1,164.7	-102.2	3,976.4	3,738.6	237.78	16.723	
10,629.9	6,865.0	6,826.0	6,826.0	106.4	136.8	90.00	-1,164.7	-102.2	4,005.0	3,766.4	238.60	16.786	
10,700.0	6,865.0	6,826.0	6,826.0	108.3	136.8	90.00	-1,164.7	-102.2	4,072.0	3,831.5	240.52	16.930	
10,728.3	6,865.0	6,826.0	6,826.0	109.0	136.8	90.00	-1,164.7	-102.2	4,099.2	3,857.9	241.30	16.988	
10,800.0	6,865.0	6,826.0	6,826.0	110.9	136.8	90.00	-1,164.7	-102.2	4,167.9	3,924.6	243.26	17.133	
10,826.7	6,865.0	6,826.0	6,826.0	111.6	136.8	90.00	-1,164.7	-102.2	4,193.5	3,949.5	244.00	17.187	
10,900.0	6,865.0	6,826.0	6,826.0	113.5	136.8	90.00	-1,164.7	-102.2	4,263.9	4,017.9	246.01	17.332	
10,925.2	6,865.0	6,826.0	6,826.0	114.1	136.8	90.00	-1,164.7	-102.2	4,288.1	4,041.4	246.71	17.381	
11,000.0	6,865.0	6,826.0	6,826.0	116.1	136.8	90.00	-1,164.7	-102.2	4,360.1	4,111.3	248.76	17.527	
11,023.6	6,865.0	6,826.0	6,826.0	116.7	136.8	90.00	-1,164.7	-102.2	4,382.8	4,133.4	249.41	17.572	
11,100.0	6,865.0	6,826.0	6,826.0	118.8	136.8	90.00	-1,164.7	-102.2	4,456.5	4,204.9	251.52	17.718	
11,122.0	6,865.0	6,826.0	6,826.0	119.3	136.8	90.00	-1,164.7	-102.2	4,477.7	4,225.6	252.13	17.760	
11,200.0	6,865.0	6,826.0	6,826.0	121.4	136.8	90.00	-1,164.7	-102.2	4,553.0	4,298.7	254.28	17.906	
11,220.4	6,865.0	6,826.0	6,826.0	121.9	136.8	90.00	-1,164.7	-102.2	4,572.7	4,317.9	254.84	17.944	
11,300.0	6,865.0	6,826.0	6,826.0	124.1	136.8	90.00	-1,164.7	-102.2	4,649.7	4,392.6	257.04	18.090	
11,318.9	6,865.0	6,826.0	6,826.0	124.6	136.8	90.00	-1,164.7	-102.2	4,667.9	4,410.4	257.56	18.124	
11,400.0	6,865.0	6,826.0	6,826.0	126.7	136.8	90.00	-1,164.7	-102.2	4,746.5	4,486.7	259.80	18.270	
11,417.3	6,865.0	6,826.0	6,826.0	127.2	136.8	90.00	-1,164.7	-102.2	4,763.2	4,503.0	260.28	18.301	
11,500.0	6,865.0	6,826.0	6,826.0	129.4	136.8	90.00	-1,164.7	-102.2	4,843.4	4,580.8	262.56	18.447	
11,515.7	6,865.0	6,826.0	6,826.0	129.8	136.8	90.00	-1,164.7	-102.2	4,858.7	4,595.7	263.00	18.474	
11,600.0	6,865.0	6,826.0	6,826.0	132.1	136.8	90.00	-1,164.7	-102.2	4,940.5	4,675.1	265.33	18.620	
11,614.1	6,865.0	6,826.0	6,826.0	132.4	136.8	90.00	-1,164.7	-102.2	4,954.2	4,688.5	265.72	18.644	
11,700.0	6,865.0	6,826.0	6,826.0	134.7	136.8	90.00	-1,164.7	-102.2	5,037.7	4,769.6	268.10	18.790	
11,712.6	6,865.0	6,826.0	6,826.0	135.1	136.8	90.00	-1,164.7	-102.2	5,049.9	4,781.4	268.45	18.812	
11,800.0	6,865.0	6,826.0	6,826.0	137.4	136.8	90.00	-1,164.7	-102.2	5,134.9	4,864.1	270.87	18.957	
11,811.0	6,865.0	6,826.0	6,826.0	137.7	136.8	90.00	-1,164.7	-102.2	5,145.6	4,874.5	271.17	18.976	
11,900.0	6,865.0	6,826.0	6,826.0	140.1	136.8	90.00	-1,164.7	-102.2	5,232.3	4,958.7	273.64	19.121	
11,909.4	6,865.0	6,826.0	6,826.0	140.4	136.8	90.00	-1,164.7	-102.2	5,241.5	4,967.6	273.90	19.137	
12,000.0	6,865.0	6,826.0	6,826.0	142.8	136.8	90.00	-1,164.7	-102.2	5,329.8	5,053.4	276.41	19.282	
12,007.8	6,865.0	6,826.0	6,826.0	143.0	136.8	90.00	-1,164.7	-102.2	5,337.5	5,060.8	276.63	19.295	
12,100.0	6,865.0	6,826.0	6,826.0	145.5	136.8	90.00	-1,164.7	-102.2	5,427.4	5,148.2	279.19	19.440	

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 VETTING 20
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 20	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-INC												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)	Minimum Separation (usft)	Separation Factor	Warning
12,106.3	6,865.0	6,826.0	6,826.0	145.7	136.8	90.00	-1,164.7	-102.2	5,433.5	5,154.1	279.36	19.450	
12,200.0	6,865.0	6,826.0	6,826.0	148.2	136.8	90.00	-1,164.7	-102.2	5,525.0	5,243.1	281.96	19.595	
12,204.7	6,865.0	6,826.0	6,826.0	148.4	136.8	90.00	-1,164.7	-102.2	5,529.6	5,247.5	282.09	19.602	
12,300.0	6,865.0	6,826.0	6,826.0	150.9	136.8	90.00	-1,164.7	-102.2	5,622.8	5,338.1	284.74	19.747	
12,303.1	6,865.0	6,826.0	6,826.0	151.0	136.8	90.00	-1,164.7	-102.2	5,625.8	5,341.0	284.83	19.752	
12,400.0	6,865.0	6,826.0	6,826.0	153.7	136.8	90.00	-1,164.7	-102.2	5,720.6	5,433.1	287.52	19.897	
12,401.5	6,865.0	6,826.0	6,826.0	153.7	136.8	90.00	-1,164.7	-102.2	5,722.1	5,434.6	287.56	19.899	
12,500.0	6,865.0	6,826.0	6,826.0	156.4	136.8	90.00	-1,164.7	-102.2	5,818.5	5,528.2	290.30	20.043	
12,598.4	6,865.0	6,826.0	6,826.0	159.1	136.8	90.00	-1,164.7	-102.2	5,914.9	5,621.9	293.03	20.185	
12,600.0	6,865.0	6,826.0	6,826.0	159.1	136.8	90.00	-1,164.7	-102.2	5,916.5	5,623.4	293.08	20.187	
12,696.8	6,865.0	6,826.0	6,826.0	161.7	136.8	90.00	-1,164.7	-102.2	6,011.4	5,715.6	295.77	20.325	
12,700.0	6,865.0	6,826.0	6,826.0	161.8	136.8	90.00	-1,164.7	-102.2	6,014.5	5,718.7	295.86	20.329	
12,795.2	6,865.0	6,826.0	6,826.0	164.4	136.8	90.00	-1,164.7	-102.2	6,107.9	5,809.4	298.51	20.461	
12,800.0	6,865.0	6,826.0	6,826.0	164.6	136.8	90.00	-1,164.7	-102.2	6,112.6	5,814.0	298.64	20.468	
12,893.7	6,865.0	6,826.0	6,826.0	167.1	136.8	90.00	-1,164.7	-102.2	6,204.6	5,903.3	301.25	20.596	
12,900.0	6,865.0	6,826.0	6,826.0	167.3	136.8	90.00	-1,164.7	-102.2	6,210.8	5,909.3	301.43	20.605	
12,992.1	6,865.0	6,826.0	6,826.0	169.8	136.8	90.00	-1,164.7	-102.2	6,301.2	5,997.2	303.99	20.728	
13,000.0	6,865.0	6,826.0	6,826.0	170.0	136.8	90.00	-1,164.7	-102.2	6,309.0	6,004.8	304.21	20.739	
13,090.5	6,865.0	6,826.0	6,826.0	172.5	136.8	90.00	-1,164.7	-102.2	6,397.9	6,091.2	306.73	20.858	
13,100.0	6,865.0	6,826.0	6,826.0	172.8	136.8	90.00	-1,164.7	-102.2	6,407.3	6,100.3	307.00	20.871	
13,188.9	6,865.0	6,826.0	6,826.0	175.2	136.8	90.00	-1,164.7	-102.2	6,494.7	6,185.2	309.47	20.986	
13,200.0	6,865.0	6,826.0	6,826.0	175.5	136.8	90.00	-1,164.7	-102.2	6,505.6	6,195.8	309.78	21.001	
13,287.4	6,865.0	6,826.0	6,826.0	177.9	136.8	90.00	-1,164.7	-102.2	6,591.5	6,279.3	312.22	21.112	
13,300.0	6,865.0	6,826.0	6,826.0	178.3	136.8	90.00	-1,164.7	-102.2	6,604.0	6,291.4	312.57	21.128	
13,385.8	6,865.0	6,826.0	6,826.0	180.6	136.8	90.00	-1,164.7	-102.2	6,688.4	6,373.4	314.96	21.236	
13,400.0	6,865.0	6,826.0	6,826.0	181.0	136.8	90.00	-1,164.7	-102.2	6,702.4	6,387.0	315.36	21.253	
13,484.2	6,865.0	6,826.0	6,826.0	183.3	136.8	90.00	-1,164.7	-102.2	6,785.3	6,467.6	317.70	21.357	
13,500.0	6,865.0	6,826.0	6,826.0	183.7	136.8	90.00	-1,164.7	-102.2	6,800.8	6,482.7	318.14	21.377	
13,582.6	6,865.0	6,826.0	6,826.0	186.0	136.8	90.00	-1,164.7	-102.2	6,882.3	6,561.8	320.45	21.477	
13,600.0	6,865.0	6,826.0	6,826.0	186.5	136.8	90.00	-1,164.7	-102.2	6,899.4	6,578.4	320.93	21.498	
13,681.1	6,865.0	6,826.0	6,826.0	188.7	136.8	90.00	-1,164.7	-102.2	6,979.3	6,656.1	323.19	21.595	
13,700.0	6,865.0	6,826.0	6,826.0	189.2	136.8	90.00	-1,164.7	-102.2	6,997.9	6,674.2	323.72	21.617	
13,779.5	6,865.0	6,826.0	6,826.0	191.4	136.8	90.00	-1,164.7	-102.2	7,076.3	6,750.3	325.94	21.710	
13,800.0	6,865.0	6,826.0	6,826.0	192.0	136.8	90.00	-1,164.7	-102.2	7,096.5	6,770.0	326.51	21.734	
13,877.9	6,865.0	6,826.0	6,826.0	194.1	136.8	90.00	-1,164.7	-102.2	7,173.4	6,844.7	328.69	21.824	
13,900.0	6,865.0	6,826.0	6,826.0	194.8	136.8	90.00	-1,164.7	-102.2	7,195.1	6,865.8	329.30	21.850	
13,976.3	6,865.0	6,826.0	6,826.0	196.9	136.8	90.00	-1,164.7	-102.2	7,270.5	6,939.0	331.43	21.936	
14,000.0	6,865.0	6,826.0	6,826.0	197.5	136.8	90.01	-1,164.7	-102.2	7,293.8	6,961.7	332.09	21.963	
14,074.8	6,865.0	6,826.0	6,826.0	199.6	136.8	90.01	-1,164.7	-102.2	7,367.6	7,033.4	334.18	22.047	
14,100.0	6,865.0	6,826.0	6,826.0	200.3	136.8	90.01	-1,164.7	-102.2	7,392.5	7,057.6	334.89	22.075	
14,173.2	6,865.0	6,826.0	6,826.0	202.3	136.8	90.01	-1,164.7	-102.2	7,464.8	7,127.9	336.93	22.155	
14,200.0	6,865.0	6,826.0	6,826.0	203.0	136.8	90.01	-1,164.7	-102.2	7,491.3	7,153.6	337.68	22.185	
14,271.6	6,865.0	6,826.0	6,826.0	205.0	136.8	90.01	-1,164.7	-102.2	7,562.0	7,222.3	339.68	22.262	
14,300.0	6,865.0	6,826.0	6,826.0	205.8	136.8	90.01	-1,164.7	-102.2	7,590.0	7,249.6	340.47	22.293	
14,370.0	6,865.0	6,826.0	6,826.0	207.7	136.8	90.01	-1,164.7	-102.2	7,659.2	7,316.8	342.43	22.367	
14,400.0	6,865.0	6,826.0	6,826.0	208.5	136.8	90.01	-1,164.7	-102.2	7,688.8	7,345.6	343.27	22.399	
14,468.5	6,865.0	6,826.0	6,826.0	210.4	136.8	90.01	-1,164.7	-102.2	7,756.5	7,411.3	345.18	22.471	
14,500.0	6,865.0	6,826.0	6,826.0	211.3	136.8	90.01	-1,164.7	-102.2	7,787.7	7,441.6	346.06	22.504	
14,566.9	6,865.0	6,826.0	6,826.0	213.2	136.8	90.01	-1,164.7	-102.2	7,853.8	7,505.9	347.93	22.573	
14,600.0	6,865.0	6,826.0	6,826.0	214.1	136.8	90.01	-1,164.7	-102.2	7,886.5	7,537.7	348.85	22.607	
14,665.3	6,865.0	6,826.0	6,826.0	215.9	136.8	90.01	-1,164.7	-102.2	7,951.1	7,600.5	350.68	22.674	
14,700.0	6,865.0	6,826.0	6,826.0	216.8	136.8	90.01	-1,164.7	-102.2	7,985.4	7,633.8	351.65	22.709	

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 VETTING 20
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 20	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	Offset TVD Reference:	Offset Datum

Offset Design SW NW SEC. 15 T5N R65W 6th P.M. - EXIST VERT HARRINGTON #1 - Wellbore #1 - Design #1												Offset Site Error:	0.0 usft
Survey Program: 0-INC												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)	Minimum Separation (usft)	Separation Factor	Warning
14,763.7	6,865.0	6,826.0	6,826.0	218.6	136.8	90.01	-1,164.7	-102.2	8,048.5	7,695.1	353.43	22.773	
14,800.0	6,865.0	6,826.0	6,826.0	219.6	136.8	90.01	-1,164.7	-102.2	8,084.4	7,729.9	354.44	22.809	
14,862.2	6,865.0	6,826.0	6,826.0	221.3	136.8	90.01	-1,164.7	-102.2	8,145.9	7,789.7	356.18	22.870	
14,900.0	6,865.0	6,826.0	6,826.0	222.4	136.8	90.01	-1,164.7	-102.2	8,183.3	7,826.1	357.24	22.907	
14,960.6	6,865.0	6,826.0	6,826.0	224.1	136.8	90.01	-1,164.7	-102.2	8,243.3	7,884.3	358.93	22.966	
15,000.0	6,865.0	6,826.0	6,826.0	225.2	136.8	90.01	-1,164.7	-102.2	8,282.3	7,922.2	360.03	23.004	
15,059.0	6,865.0	6,826.0	6,826.0	226.8	136.8	90.01	-1,164.7	-102.2	8,340.7	7,979.0	361.68	23.061	
15,100.0	6,865.0	6,826.0	6,826.0	227.9	136.8	90.01	-1,164.7	-102.2	8,381.3	8,018.4	362.83	23.100	
15,157.4	6,865.0	6,826.0	6,826.0	229.5	136.8	90.01	-1,164.7	-102.2	8,438.2	8,073.7	364.44	23.154	
15,200.0	6,865.0	6,826.0	6,826.0	230.7	136.8	90.01	-1,164.7	-102.2	8,480.3	8,114.7	365.63	23.194	
15,255.9	6,865.0	6,826.0	6,826.0	232.2	136.8	90.01	-1,164.7	-102.2	8,535.6	8,168.4	367.19	23.246	
15,300.0	6,865.0	6,826.0	6,826.0	233.5	136.8	90.01	-1,164.7	-102.2	8,579.3	8,210.9	368.42	23.287	
15,354.3	6,865.0	6,826.0	6,826.0	235.0	136.8	90.01	-1,164.7	-102.2	8,633.1	8,263.2	369.94	23.336	
15,400.0	6,865.0	6,826.0	6,826.0	236.2	136.8	90.01	-1,164.7	-102.2	8,678.4	8,307.2	371.22	23.378	
15,452.7	6,865.0	6,826.0	6,826.0	237.7	136.8	90.01	-1,164.7	-102.2	8,730.6	8,357.9	372.70	23.426	
15,500.0	6,865.0	6,826.0	6,826.0	239.0	136.8	90.01	-1,164.7	-102.2	8,777.5	8,403.5	374.02	23.468	
15,551.1	6,865.0	6,826.0	6,826.0	240.4	136.8	90.01	-1,164.7	-102.2	8,828.2	8,452.7	375.45	23.514	
15,600.0	6,865.0	6,826.0	6,826.0	241.8	136.8	90.01	-1,164.7	-102.2	8,876.6	8,499.8	376.82	23.557	
15,616.6	6,865.0	6,826.0	6,826.0	242.3	136.8	90.01	-1,164.7	-102.2	8,893.1	8,515.8	377.28	23.571	

Anticollision Report



Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well VETTING 20
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 20	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 100-GYD_CT												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)	Minimum Separation (usft)	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-57.21	36.1	-56.0	69.0				
98.4	98.4	80.8	80.8	0.1	0.0	-57.19	36.0	-55.8	66.4	66.2	0.14	471.952	
100.0	100.0	82.4	82.4	0.1	0.0	-57.19	36.0	-55.8	66.4	66.2	0.14	462.967	
196.8	196.8	179.3	179.3	0.3	0.2	-57.16	35.6	-55.2	65.7	65.2	0.50	131.397	
200.0	200.0	182.5	182.5	0.3	0.2	-57.16	35.6	-55.2	65.7	65.1	0.51	128.226	
295.3	295.3	277.6	277.6	0.5	0.3	-57.25	35.2	-54.7	65.1	64.3	0.81	80.034	
300.0	300.0	282.3	282.3	0.5	0.3	-57.27	35.2	-54.7	65.1	64.2	0.83	78.638	
393.7	393.7	375.8	375.8	0.8	0.3	-57.66	34.7	-54.8	64.8	63.7	1.10	59.016	
400.0	400.0	382.1	382.1	0.8	0.4	-57.70	34.6	-54.8	64.8	63.7	1.12	58.055	
473.9	473.9	455.9	455.9	0.9	0.4	-58.16	34.2	-55.0	64.8	63.4	1.32	48.914 CC	
492.1	492.1	474.1	474.1	1.0	0.4	-58.28	34.1	-55.1	64.8	63.4	1.38	47.098	
500.0	500.0	482.0	482.0	1.0	0.4	-58.33	34.0	-55.1	64.8	63.4	1.40	46.357	
590.5	590.5	572.4	572.4	1.2	0.5	-58.89	33.5	-55.5	64.9	63.2	1.64	39.435	
600.0	600.0	581.9	581.9	1.2	0.5	-58.95	33.5	-55.6	64.9	63.2	1.67	38.838	
689.0	689.0	670.9	670.9	1.4	0.5	-59.50	33.0	-56.1	65.1	63.2	1.91	34.055	
700.0	700.0	681.9	681.9	1.4	0.5	-59.57	33.0	-56.1	65.1	63.2	1.94	33.546	
787.4	787.4	769.3	769.2	1.6	0.6	-60.15	32.5	-56.6	65.2	63.1	2.17	30.030	
800.0	800.0	781.9	781.8	1.7	0.6	-60.24	32.4	-56.7	65.3	63.1	2.21	29.589 ES	
885.8	885.8	867.6	867.6	1.9	0.6	-60.78	32.0	-57.2	65.5	63.1	2.43	26.935	
900.0	900.0	881.8	881.8	1.9	0.6	-60.86	31.9	-57.3	65.6	63.1	2.47	26.546	
984.2	984.2	965.9	965.9	2.1	0.6	106.61	31.7	-57.8	66.2	63.6	2.67	24.842	
1,000.0	1,000.0	981.6	981.6	2.1	0.7	106.95	31.6	-57.9	66.5	63.8	2.70	24.592	
1,082.7	1,082.6	1,064.1	1,064.0	2.2	0.7	109.84	31.6	-58.6	68.3	65.4	2.88	23.718	
1,100.0	1,099.8	1,081.3	1,081.3	2.3	0.7	110.66	31.6	-58.7	68.8	65.9	2.92	23.598	
1,181.1	1,180.6	1,162.0	1,162.0	2.4	0.7	115.35	31.7	-59.5	72.2	69.1	3.11	23.251	
1,200.0	1,199.5	1,180.8	1,180.7	2.5	0.7	116.60	31.7	-59.7	73.2	70.1	3.15	23.248 SF	
1,279.5	1,278.4	1,259.5	1,259.5	2.6	0.8	122.36	32.0	-60.6	78.8	75.4	3.35	23.483	
1,300.0	1,298.7	1,279.7	1,279.7	2.7	0.8	123.92	32.1	-60.8	80.5	77.1	3.41	23.642	
1,377.9	1,375.7	1,356.3	1,356.2	2.9	0.8	129.99	32.9	-61.7	88.9	85.3	3.63	24.514	
1,400.0	1,397.5	1,377.8	1,377.7	2.9	0.8	131.70	33.2	-62.0	91.8	88.1	3.69	24.878	
1,476.4	1,472.5	1,452.2	1,452.2	3.2	0.8	137.51	34.6	-62.7	103.5	99.6	3.92	26.400	
1,500.0	1,495.6	1,475.1	1,475.1	3.2	0.8	139.23	35.1	-62.8	107.7	103.7	3.99	26.982	
1,574.8	1,568.6	1,547.6	1,547.5	3.5	0.8	144.39	37.0	-62.9	122.6	118.4	4.22	29.031	
1,607.2	1,600.0	1,578.9	1,578.8	3.6	0.8	146.43	37.8	-62.9	129.8	125.5	4.32	30.042	
1,672.2	1,663.0	1,641.4	1,641.3	3.9	0.8	150.18	39.5	-62.7	145.0	140.5	4.51	32.184	
1,673.2	1,664.1	1,642.4	1,642.3	3.9	0.8	150.23	39.6	-62.7	145.3	140.8	4.51	32.217	
1,700.0	1,690.0	1,668.1	1,667.9	4.0	0.9	151.54	40.3	-62.5	151.9	147.3	4.59	33.073	
1,771.6	1,759.1	1,736.5	1,736.4	4.3	0.9	154.76	42.4	-62.0	170.9	166.1	4.82	35.494	
1,800.0	1,786.3	1,763.6	1,763.4	4.5	0.9	155.93	43.2	-61.7	179.0	174.1	4.90	36.523	
1,870.1	1,853.1	1,830.2	1,829.9	4.8	0.9	158.56	45.1	-60.8	200.2	195.1	5.12	39.077	
1,900.0	1,881.5	1,858.5	1,858.2	5.0	0.9	159.59	45.9	-60.3	209.9	204.6	5.21	40.256	
1,968.5	1,946.1	1,922.5	1,922.3	5.4	0.9	161.74	47.6	-59.1	233.1	227.6	5.43	42.950	
2,000.0	1,975.7	1,951.5	1,951.2	5.6	0.9	162.65	48.3	-58.4	244.3	238.8	5.53	44.168	
2,066.9	2,038.0	2,012.9	2,012.6	6.0	0.9	164.42	50.1	-56.8	269.6	263.8	5.75	46.870	
2,100.0	2,068.6	2,043.6	2,043.3	6.2	0.9	165.25	50.9	-55.9	282.6	276.7	5.86	48.236	
2,165.3	2,128.6	2,104.0	2,103.6	6.7	0.9	166.77	52.4	-53.8	309.3	303.2	6.08	50.898	
2,200.0	2,160.1	2,135.6	2,135.2	6.9	0.9	167.51	53.0	-52.6	324.0	317.8	6.19	52.337	
2,263.8	2,217.8	2,193.5	2,193.0	7.4	1.0	168.75	54.1	-50.4	352.0	345.6	6.41	54.931	
2,300.0	2,250.2	2,226.1	2,225.6	7.7	1.0	169.39	54.6	-49.1	368.4	361.9	6.53	56.411	
2,362.2	2,305.5	2,281.6	2,281.1	8.2	1.0	170.40	55.4	-46.9	397.6	390.8	6.75	58.884	
2,400.0	2,338.8	2,315.1	2,314.5	8.5	1.0	170.95	55.8	-45.5	415.8	408.9	6.89	60.393	
2,460.6	2,391.6	2,368.5	2,367.8	9.1	1.0	171.78	56.4	-43.3	446.0	438.9	7.11	62.739	

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 VETTING 20
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 20	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 100-GYD_CT												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)	Minimum Separation (usft)	Separation Factor	
2,500.0	2,425.6	2,402.8	2,402.1	9.4	1.0	172.27	56.6	-41.9	466.1	458.9	7.25	64.265	
2,559.0	2,476.1	2,452.6	2,451.9	10.0	1.0	172.94	57.0	-39.7	497.2	489.7	7.48	66.469	
2,600.0	2,510.7	2,486.8	2,486.0	10.4	1.0	173.37	57.2	-38.2	519.4	511.8	7.64	68.007	
2,657.5	2,558.8	2,533.9	2,533.1	10.9	1.0	173.91	57.6	-36.1	551.5	543.6	7.87	70.098	
2,661.7	2,562.3	2,537.4	2,536.5	11.0	1.0	173.95	57.6	-35.9	553.9	546.0	7.88	70.251	
2,700.0	2,594.0	2,568.4	2,567.6	11.4	1.0	174.33	57.8	-34.6	575.6	567.6	8.04	71.589	
2,755.9	2,640.4	2,614.0	2,613.1	12.0	1.0	174.84	58.2	-32.5	607.4	599.2	8.27	73.429	
2,800.0	2,677.0	2,650.4	2,649.5	12.4	1.1	175.21	58.5	-30.9	632.5	624.1	8.46	74.803	
2,854.3	2,722.1	2,695.3	2,694.3	13.0	1.1	175.64	58.9	-28.9	663.5	654.8	8.69	76.387	
2,900.0	2,760.0	2,732.7	2,731.6	13.4	1.1	175.97	59.1	-27.1	689.5	680.6	8.88	77.648	
2,952.7	2,803.7	2,775.7	2,774.6	14.0	1.1	176.31	59.4	-25.2	719.5	710.4	9.11	79.015	
3,000.0	2,842.9	2,814.2	2,813.1	14.5	1.1	176.59	59.7	-23.5	746.5	737.2	9.31	80.175	
3,051.2	2,885.4	2,856.0	2,854.8	15.0	1.1	176.86	60.1	-21.7	775.7	766.2	9.54	81.352	
3,100.0	2,925.9	2,895.8	2,894.7	15.5	1.1	177.10	60.5	-20.1	803.6	793.8	9.75	82.420	
3,149.6	2,967.1	2,937.9	2,936.7	16.1	1.1	177.34	60.8	-18.4	831.9	821.9	9.97	83.443	
3,200.0	3,008.9	2,981.0	2,979.7	16.6	1.1	177.56	61.1	-16.7	860.6	850.4	10.19	84.426	
3,248.0	3,048.7	3,020.7	3,019.4	17.1	1.1	177.75	61.3	-15.2	887.9	877.5	10.41	85.303	
3,300.0	3,091.8	3,062.4	3,061.1	17.7	1.2	177.93	61.5	-13.6	917.5	906.8	10.64	86.210	
3,346.4	3,130.4	3,100.0	3,098.7	18.2	1.2	178.08	61.8	-12.3	943.9	933.1	10.85	86.979	
3,400.0	3,174.8	3,144.9	3,143.5	18.7	1.2	178.24	62.2	-10.8	974.4	963.3	11.10	87.813	
3,444.9	3,212.0	3,182.9	3,181.5	19.2	1.2	178.36	62.4	-9.6	1,000.0	988.7	11.30	88.470	
3,500.0	3,257.8	3,231.2	3,229.8	19.8	1.2	178.50	62.7	-8.3	1,031.3	1,019.7	11.56	89.245	
3,543.3	3,293.7	3,270.0	3,268.6	20.2	1.2	178.60	62.8	-7.2	1,055.7	1,044.0	11.75	89.816	
3,600.0	3,340.8	3,320.0	3,318.6	20.9	1.2	178.73	62.8	-5.9	1,087.6	1,075.6	12.01	90.522	
3,641.7	3,375.4	3,356.0	3,354.5	21.3	1.2	178.81	62.7	-5.0	1,111.0	1,098.8	12.21	91.012	
3,700.0	3,423.7	3,406.1	3,404.6	21.9	1.2	178.91	62.6	-3.9	1,143.6	1,131.1	12.48	91.659	
3,740.1	3,457.0	3,440.0	3,438.6	22.3	1.2	178.98	62.4	-3.1	1,166.0	1,153.4	12.66	92.074	
3,800.0	3,506.7	3,490.7	3,489.2	23.0	1.3	179.07	62.2	-2.0	1,199.4	1,186.5	12.94	92.664	
3,838.6	3,538.7	3,522.7	3,521.2	23.4	1.3	179.13	62.0	-1.3	1,221.0	1,207.8	13.13	93.022	
3,900.0	3,589.7	3,573.4	3,571.9	24.1	1.3	179.21	61.8	-0.3	1,255.2	1,241.8	13.42	93.569	
3,937.0	3,620.4	3,604.2	3,602.7	24.5	1.3	179.26	61.6	0.4	1,275.9	1,262.3	13.59	93.884	
4,000.0	3,672.6	3,659.7	3,658.2	25.1	1.3	179.35	61.2	1.6	1,311.0	1,297.1	13.89	94.387	
4,035.4	3,702.0	3,691.0	3,689.4	25.5	1.3	179.40	61.0	2.4	1,330.6	1,316.6	14.06	94.654	
4,100.0	3,755.6	3,744.1	3,742.6	26.2	1.3	179.49	60.4	3.7	1,366.5	1,352.1	14.36	95.126	
4,133.8	3,783.7	3,771.6	3,770.0	26.6	1.3	179.53	60.2	4.4	1,385.3	1,370.8	14.53	95.365	
4,200.0	3,838.6	3,825.2	3,823.6	27.3	1.3	179.62	59.7	5.9	1,422.1	1,407.2	14.84	95.811	
4,232.3	3,865.3	3,851.3	3,849.7	27.6	1.4	179.66	59.5	6.6	1,440.0	1,425.0	15.00	96.016	
4,300.0	3,921.5	3,905.9	3,904.3	28.4	1.4	179.74	59.1	8.1	1,477.8	1,462.4	15.32	96.435	
4,330.7	3,947.0	3,929.8	3,928.1	28.7	1.4	179.77	58.9	8.7	1,494.9	1,479.4	15.47	96.617	
4,400.0	4,004.5	3,983.6	3,981.9	29.4	1.4	179.83	58.8	9.9	1,533.7	1,517.9	15.81	97.029	
4,429.1	4,028.7	4,006.1	4,004.5	29.7	1.4	179.85	58.8	10.3	1,550.0	1,534.1	15.95	97.191	
4,500.0	4,087.5	4,060.9	4,059.3	30.5	1.4	179.88	58.9	10.9	1,589.9	1,573.6	16.29	97.587	
4,527.5	4,110.3	4,082.2	4,080.5	30.8	1.4	179.89	59.0	11.1	1,605.4	1,589.0	16.43	97.735	
4,600.0	4,170.4	4,141.7	4,140.0	31.6	1.4	179.89	59.5	11.3	1,646.4	1,629.6	16.78	98.109	
4,626.0	4,192.0	4,163.6	4,161.9	31.9	1.4	179.89	59.6	11.3	1,661.0	1,644.1	16.91	98.236	
4,700.0	4,253.4	4,225.4	4,223.7	32.7	1.4	179.88	60.1	11.0	1,702.8	1,685.5	17.27	98.588	
4,724.4	4,273.6	4,245.3	4,243.7	32.9	1.4	179.88	60.3	11.0	1,716.5	1,699.1	17.39	98.701	
4,800.0	4,336.4	4,307.3	4,305.6	33.7	1.4	179.86	60.8	10.6	1,759.2	1,741.4	17.76	99.041	
4,822.8	4,355.3	4,326.0	4,324.3	34.0	1.4	179.86	61.0	10.5	1,772.0	1,754.2	17.87	99.138	
4,900.0	4,419.3	4,389.3	4,387.6	34.8	1.4	179.84	61.5	10.2	1,815.6	1,797.3	18.26	99.457	
4,921.2	4,437.0	4,407.0	4,405.3	35.0	1.5	179.84	61.7	10.1	1,827.6	1,809.2	18.36	99.541	
5,000.0	4,502.3	4,473.8	4,472.1	35.9	1.5	179.82	62.3	9.7	1,872.0	1,853.3	18.75	99.837	

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 VETTING 20
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 20	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft
Survey Program: 100-GYD_CT													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)	Minimum Separation (usft)	Separation Factor		
5,019.7	4,518.6	4,490.5	4,488.8	36.1	1.5	179.82	62.4	9.6	1,883.1	1,864.3	18.85	99.908		
5,100.0	4,585.3	4,559.2	4,557.6	37.0	1.5	179.80	62.9	9.1	1,928.3	1,909.1	19.25	100.185		
5,118.1	4,600.3	4,574.7	4,573.1	37.2	1.5	179.80	63.0	9.0	1,938.5	1,919.2	19.34	100.245		
5,193.4	4,662.8	4,639.1	4,637.4	38.0	1.5	179.79	63.4	8.6	1,980.8	1,961.1	19.71	100.484		
5,200.0	4,668.2	4,644.7	4,643.0	38.0	1.5	179.79	63.4	8.6	1,984.5	1,964.8	19.74	100.522		
5,216.5	4,682.0	4,658.9	4,657.2	38.2	1.5	179.79	63.5	8.5	1,993.7	1,973.9	19.81	100.631		
5,300.0	4,752.3	4,730.2	4,728.5	38.8	1.5	179.78	63.8	8.1	2,038.9	2,018.8	20.16	101.157		
5,314.9	4,765.0	4,742.9	4,741.2	38.9	1.5	179.78	63.8	8.0	2,046.8	2,026.6	20.21	101.259		
5,400.0	4,838.2	4,815.5	4,813.8	39.5	1.5	179.78	64.1	7.7	2,090.4	2,069.8	20.53	101.817		
5,413.4	4,849.8	4,826.9	4,825.2	39.6	1.5	179.78	64.2	7.7	2,097.0	2,076.5	20.58	101.912		
5,500.0	4,925.8	4,901.6	4,899.9	40.2	1.5	179.78	64.5	7.5	2,138.8	2,118.0	20.87	102.507		
5,511.8	4,936.3	4,912.0	4,910.4	40.3	1.5	179.78	64.5	7.5	2,144.4	2,123.5	20.90	102.593		
5,600.0	5,015.1	4,991.2	4,989.5	40.9	1.5	179.78	64.8	7.4	2,184.3	2,163.1	21.16	103.223		
5,610.2	5,024.3	5,000.4	4,998.7	40.9	1.5	179.78	64.8	7.5	2,188.7	2,167.5	21.19	103.303		
5,700.0	5,105.8	5,085.3	5,083.6	41.5	1.5	179.80	65.0	7.7	2,226.5	2,205.0	21.41	103.980		
5,708.6	5,113.8	5,093.5	5,091.8	41.5	1.5	179.80	65.0	7.8	2,229.9	2,208.5	21.43	104.050		
5,800.0	5,198.0	5,179.9	5,178.2	42.1	1.6	179.82	65.0	8.2	2,265.3	2,243.7	21.62	104.777		
5,807.1	5,204.6	5,186.6	5,184.9	42.1	1.6	179.82	65.0	8.3	2,267.9	2,246.3	21.63	104.838		
5,900.0	5,291.5	5,272.5	5,270.8	42.6	1.6	179.84	65.0	8.9	2,300.9	2,279.1	21.78	105.622		
5,905.5	5,296.7	5,277.5	5,275.9	42.7	1.6	179.84	64.9	9.0	2,302.8	2,281.0	21.79	105.673		
6,000.0	5,386.2	5,362.1	5,360.5	43.1	1.6	179.87	64.9	9.8	2,333.3	2,311.4	21.91	106.518		
6,003.9	5,389.9	5,365.6	5,363.9	43.2	1.6	179.87	64.9	9.8	2,334.5	2,312.6	21.91	106.556		
6,100.0	5,481.9	5,450.8	5,449.1	43.6	1.6	179.89	65.2	10.6	2,362.7	2,340.7	21.99	107.464		
6,102.3	5,484.1	5,452.9	5,451.2	43.6	1.6	179.89	65.2	10.7	2,363.3	2,341.4	21.99	107.488		
6,200.0	5,578.6	5,543.5	5,541.9	44.0	1.7	179.91	65.7	11.4	2,389.0	2,366.9	22.03	108.449		
6,200.8	5,579.3	5,544.3	5,542.6	44.0	1.7	179.91	65.7	11.4	2,389.2	2,367.1	22.03	108.458		
6,299.2	5,675.3	5,644.3	5,642.6	44.4	1.7	179.92	66.3	12.3	2,411.7	2,389.6	22.03	109.460		
6,300.0	5,676.1	5,645.1	5,643.4	44.4	1.7	179.93	66.3	12.3	2,411.8	2,389.8	22.03	109.468		
6,397.6	5,771.9	5,747.5	5,745.8	44.7	1.7	179.97	66.3	14.0	2,430.6	2,408.6	22.00	110.497		
6,400.0	5,774.3	5,749.9	5,748.2	44.7	1.7	179.97	66.3	14.1	2,431.0	2,409.0	22.00	110.522		
6,496.0	5,869.2	5,854.4	5,852.6	45.0	1.7	-179.99	66.1	15.9	2,446.0	2,424.0	21.93	111.555		
6,500.0	5,873.1	5,858.9	5,857.2	45.0	1.7	-179.99	66.1	16.0	2,446.5	2,424.6	21.92	111.595		
6,594.5	5,966.9	5,956.5	5,954.8	45.2	1.7	-179.95	65.5	17.5	2,457.5	2,435.7	21.82	112.613		
6,600.0	5,972.4	5,961.9	5,960.1	45.2	1.8	-179.95	65.5	17.5	2,458.1	2,436.3	21.82	112.671		
6,692.9	6,065.0	6,056.5	6,054.8	45.4	1.8	-179.92	64.9	18.8	2,465.8	2,444.1	21.69	113.664		
6,700.0	6,072.0	6,064.1	6,062.3	45.4	1.8	-179.92	64.9	18.9	2,466.2	2,444.5	21.68	113.734		
6,791.3	6,163.2	6,154.8	6,153.0	45.5	1.8	-179.89	64.3	20.0	2,470.5	2,448.9	21.54	114.673		
6,800.0	6,171.9	6,163.0	6,161.3	45.5	1.8	-179.89	64.2	20.1	2,470.8	2,449.2	21.53	114.756		
6,889.7	6,261.7	6,246.9	6,245.1	45.6	1.8	-179.86	63.9	20.9	2,472.0	2,450.6	21.38	115.607		
6,890.1	6,262.0	6,247.2	6,245.4	45.6	1.8	13.28	63.9	20.9	2,472.0	2,424.7	47.33	52.227		
6,900.0	6,271.9	6,256.3	6,254.5	45.6	1.8	13.28	63.9	21.0	2,472.0	2,424.7	47.34	52.218		
6,907.4	6,279.3	6,263.1	6,261.3	45.6	1.8	13.28	63.8	21.1	2,472.0	2,424.6	47.35	52.212		
6,920.1	6,292.0	6,274.8	6,273.0	45.6	1.8	13.28	63.8	21.2	2,472.0	2,424.6	47.36	52.201		
6,950.0	6,321.9	6,302.4	6,300.7	45.6	1.8	103.33	63.8	21.5	2,472.2	2,450.6	21.57	114.607		
6,988.2	6,359.9	6,340.9	6,339.1	45.7	1.8	103.33	63.7	21.9	2,473.0	2,451.2	21.77	113.617		
7,000.0	6,371.6	6,352.7	6,351.0	45.7	1.8	103.34	63.7	22.1	2,473.4	2,451.5	21.83	113.318		
7,050.0	6,420.8	6,402.4	6,400.6	45.7	1.8	103.34	63.6	22.6	2,475.6	2,453.5	22.09	112.064		
7,086.6	6,456.2	6,437.9	6,436.1	45.8	1.9	103.33	63.6	22.9	2,477.8	2,455.5	22.29	111.153		
7,100.0	6,469.0	6,450.8	6,449.0	45.8	1.9	103.32	63.5	23.0	2,478.8	2,456.4	22.37	110.827		
7,150.0	6,515.8	6,497.8	6,496.0	45.9	1.9	103.28	63.5	23.5	2,483.1	2,460.5	22.66	109.575		
7,185.0	6,547.6	6,530.3	6,528.5	46.0	1.9	103.23	63.4	23.7	2,486.8	2,463.9	22.89	108.657		
7,200.0	6,560.9	6,544.0	6,542.2	46.1	1.9	103.20	63.4	23.8	2,488.6	2,465.6	22.99	108.265		

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 VETTING 20
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 20	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft
Survey Program: 100-GYD_CT													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)	Minimum Separation (usft)	Separation Factor		
7,250.0	6,604.0	6,588.1	6,586.3	46.2	1.9	103.06	63.3	24.2	2,495.2	2,471.9	23.35	106.848		
7,283.4	6,631.5	6,615.6	6,613.8	46.3	1.9	102.91	63.3	24.4	2,500.3	2,476.7	23.63	105.796		
7,300.0	6,644.7	6,628.5	6,626.7	46.4	1.9	102.82	63.2	24.5	2,503.1	2,479.3	23.78	105.270		
7,350.0	6,682.7	6,665.6	6,663.8	46.5	1.9	102.46	63.2	24.7	2,512.3	2,488.0	24.28	103.483		
7,381.9	6,705.4	6,687.7	6,685.9	46.7	1.9	102.16	63.1	24.9	2,518.9	2,494.2	24.65	102.196		
7,400.0	6,717.7	6,700.0	6,698.2	46.7	1.9	101.96	63.1	25.0	2,522.9	2,498.0	24.87	101.459		
7,450.0	6,749.5	6,700.0	6,698.2	47.0	1.9	100.74	63.1	25.0	2,535.0	2,509.5	25.56	99.177		
7,480.3	6,767.1	6,700.0	6,698.2	47.1	1.9	99.90	63.1	25.0	2,543.2	2,517.2	26.04	97.670		
7,500.0	6,777.9	6,700.0	6,698.2	47.2	1.9	99.32	63.1	25.0	2,548.9	2,522.5	26.35	96.714		
7,550.0	6,802.5	6,700.0	6,698.2	47.5	1.9	97.71	63.1	25.0	2,564.3	2,537.1	27.22	94.191		
7,578.7	6,814.9	6,700.0	6,698.2	47.7	1.9	96.71	63.1	25.0	2,573.8	2,546.1	27.75	92.741		
7,600.0	6,823.2	6,700.0	6,698.2	47.8	1.9	95.94	63.1	25.0	2,581.1	2,553.0	28.13	91.744		
7,650.0	6,839.9	6,700.0	6,698.2	48.2	1.9	94.00	63.1	25.0	2,599.3	2,570.2	29.04	89.496		
7,677.1	6,847.2	6,700.0	6,698.2	48.4	1.9	92.89	63.1	25.0	2,609.6	2,580.0	29.53	88.376		
7,700.0	6,852.4	6,700.0	6,698.2	48.5	1.9	91.92	63.1	25.0	2,618.5	2,588.6	29.91	87.550		
7,750.0	6,860.7	6,700.0	6,698.2	48.9	1.9	89.72	63.1	25.0	2,638.7	2,608.0	30.69	85.983		
7,775.6	6,863.3	6,700.0	6,698.2	49.1	1.9	88.55	63.1	25.0	2,649.3	2,618.2	31.05	85.333		
7,800.0	6,864.6	6,700.0	6,698.2	49.3	1.9	87.41	63.1	25.0	2,659.6	2,628.2	31.34	84.852		
7,820.2	6,865.0	6,700.0	6,698.2	49.5	1.9	86.46	63.1	25.0	2,668.2	2,636.6	31.57	84.530		
7,874.0	6,865.0	6,700.0	6,698.2	50.0	1.9	86.46	63.1	25.0	2,691.8	2,659.2	32.61	82.532		
7,900.0	6,865.0	6,700.0	6,698.2	50.3	1.9	86.46	63.1	25.0	2,703.5	2,670.4	33.12	81.623		
7,972.4	6,865.0	6,700.0	6,698.2	51.0	1.9	86.46	63.1	25.0	2,737.1	2,702.5	34.61	79.093		
8,000.0	6,865.0	6,700.0	6,698.2	51.3	1.9	86.46	63.1	25.0	2,750.3	2,715.1	35.17	78.197		
8,070.8	6,865.0	6,700.0	6,698.2	52.1	1.9	86.46	63.1	25.0	2,785.1	2,748.4	36.70	75.897		
8,100.0	6,865.0	6,700.0	6,698.2	52.4	1.9	86.46	63.1	25.0	2,799.9	2,762.6	37.32	75.017		
8,169.3	6,865.0	6,700.0	6,698.2	53.3	1.9	86.46	63.1	25.0	2,835.8	2,796.9	38.88	72.937		
8,200.0	6,865.0	6,700.0	6,698.2	53.7	1.9	86.46	63.1	25.0	2,852.1	2,812.5	39.57	72.078		
8,267.7	6,865.0	6,700.0	6,698.2	54.6	1.9	86.46	63.1	25.0	2,888.9	2,847.8	41.14	70.223		
8,300.0	6,865.0	6,700.0	6,698.2	55.0	1.9	86.46	63.1	25.0	2,906.9	2,865.0	41.89	69.397		
8,366.1	6,865.0	6,700.0	6,698.2	56.0	1.9	86.46	63.1	25.0	2,944.4	2,900.9	43.46	67.751		
8,400.0	6,865.0	6,700.0	6,698.2	56.5	1.9	86.46	63.1	25.0	2,964.0	2,919.7	44.26	66.963		
8,464.5	6,865.0	6,700.0	6,698.2	57.5	1.9	86.46	63.1	25.0	3,002.0	2,956.2	45.83	65.505		
8,500.0	6,865.0	6,700.0	6,698.2	58.1	1.9	86.46	63.1	25.0	3,023.3	2,976.6	46.69	64.755		
8,563.0	6,865.0	6,700.0	6,698.2	59.1	1.9	86.46	63.1	25.0	3,061.8	3,013.5	48.24	63.466		
8,600.0	6,865.0	6,700.0	6,698.2	59.8	1.9	86.46	63.1	25.0	3,084.7	3,035.6	49.16	62.754		
8,661.4	6,865.0	6,700.0	6,698.2	60.8	1.9	86.46	63.1	25.0	3,123.5	3,072.8	50.69	61.615		
8,700.0	6,865.0	6,700.0	6,698.2	61.5	1.9	86.46	63.1	25.0	3,148.2	3,096.5	51.66	60.941		
8,759.8	6,865.0	6,700.0	6,698.2	62.7	1.9	86.46	63.1	25.0	3,187.0	3,133.8	53.18	59.934		
8,800.0	6,865.0	6,700.0	6,698.2	63.4	1.9	86.46	63.1	25.0	3,213.4	3,159.2	54.19	59.296		
8,858.2	6,865.0	6,700.0	6,698.2	64.5	1.9	86.46	63.1	25.0	3,252.3	3,196.6	55.68	58.405		
8,900.0	6,865.0	6,700.0	6,698.2	65.4	1.9	86.46	63.1	25.0	3,280.5	3,223.7	56.75	57.802		
8,956.7	6,865.0	6,700.0	6,698.2	66.5	1.9	86.46	63.1	25.0	3,319.2	3,261.0	58.22	57.014		
9,000.0	6,865.0	6,700.0	6,698.2	67.4	1.9	86.46	63.1	25.0	3,349.1	3,289.8	59.34	56.443		
9,055.1	6,865.0	6,700.0	6,698.2	68.5	1.9	86.46	63.1	25.0	3,387.6	3,326.9	60.77	55.745		
9,100.0	6,865.0	6,700.0	6,698.2	69.5	1.9	86.46	63.1	25.0	3,419.3	3,357.4	61.94	55.205		
9,153.5	6,865.0	6,700.0	6,698.2	70.6	1.9	86.46	63.1	25.0	3,457.5	3,394.2	63.34	54.585		
9,200.0	6,865.0	6,700.0	6,698.2	71.6	1.9	86.46	63.1	25.0	3,491.0	3,426.5	64.56	54.074		
9,251.9	6,865.0	6,700.0	6,698.2	72.8	1.9	86.46	63.1	25.0	3,528.8	3,462.9	65.93	53.524		
9,300.0	6,865.0	6,700.0	6,698.2	73.8	1.9	86.46	63.1	25.0	3,564.1	3,496.9	67.20	53.040		
9,350.4	6,865.0	6,700.0	6,698.2	75.0	1.9	86.46	63.1	25.0	3,601.3	3,532.8	68.53	52.551		
9,400.0	6,865.0	6,700.0	6,698.2	76.1	1.9	86.46	63.1	25.0	3,638.4	3,568.5	69.84	52.092		
9,448.8	6,865.0	6,700.0	6,698.2	77.2	1.9	86.46	63.1	25.0	3,675.1	3,603.9	71.14	51.657		

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 VETTING 20
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 20	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 100-GYD_CT												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)	Minimum Separation (usft)	Separation Factor	Warning
9,500.0	6,865.0	6,700.0	6,698.2	78.4	1.9	86.46	63.1	25.0	3,713.9	3,641.4	72.51	51.222	
9,547.2	6,865.0	6,700.0	6,698.2	79.5	1.9	86.46	63.1	25.0	3,750.0	3,676.2	73.77	50.835	
9,600.0	6,865.0	6,700.0	6,698.2	80.7	1.9	86.46	63.1	25.0	3,790.5	3,715.4	75.18	50.421	
9,645.6	6,865.0	6,700.0	6,698.2	81.8	1.9	86.46	63.1	25.0	3,825.9	3,749.5	76.40	50.076	
9,700.0	6,865.0	6,700.0	6,698.2	83.1	1.9	86.46	63.1	25.0	3,868.3	3,790.4	77.86	49.683	
9,744.1	6,865.0	6,700.0	6,698.2	84.2	1.9	86.46	63.1	25.0	3,902.8	3,823.8	79.05	49.375	
9,800.0	6,865.0	6,700.0	6,698.2	85.5	1.9	86.46	63.1	25.0	3,947.0	3,866.4	80.55	49.001	
9,842.5	6,865.0	6,700.0	6,698.2	86.6	1.9	86.46	63.1	25.0	3,980.7	3,899.0	81.70	48.726	
9,900.0	6,865.0	6,700.0	6,698.2	88.0	1.9	86.46	63.1	25.0	4,026.7	3,943.4	83.25	48.370	
9,940.9	6,865.0	6,700.0	6,698.2	89.0	1.9	86.46	63.1	25.0	4,059.5	3,975.2	84.35	48.124	
10,000.0	6,865.0	6,700.0	6,698.2	90.4	1.9	86.46	63.1	25.0	4,107.2	4,021.3	85.95	47.785	
10,039.3	6,865.0	6,700.0	6,698.2	91.4	1.9	86.46	63.1	25.0	4,139.2	4,052.1	87.02	47.566	
10,100.0	6,865.0	6,700.0	6,698.2	92.9	1.9	86.46	63.1	25.0	4,188.6	4,100.0	88.66	47.241	
10,137.8	6,865.0	6,700.0	6,698.2	93.9	1.9	86.46	63.1	25.0	4,219.6	4,129.9	89.69	47.046	
10,200.0	6,865.0	6,700.0	6,698.2	95.4	1.9	86.46	63.1	25.0	4,270.8	4,179.4	91.38	46.736	
10,236.2	6,865.0	6,700.0	6,698.2	96.4	1.9	86.46	63.1	25.0	4,300.7	4,208.4	92.37	46.562	
10,300.0	6,865.0	6,700.0	6,698.2	98.0	1.9	86.46	63.1	25.0	4,353.7	4,259.6	94.10	46.265	
10,334.6	6,865.0	6,700.0	6,698.2	98.9	1.9	86.46	63.1	25.0	4,382.6	4,287.6	95.05	46.109	
10,400.0	6,865.0	6,700.0	6,698.2	100.5	1.9	86.46	63.1	25.0	4,437.4	4,340.5	96.83	45.826	
10,433.0	6,865.0	6,700.0	6,698.2	101.4	1.9	86.46	63.1	25.0	4,465.2	4,367.4	97.73	45.687	
10,500.0	6,865.0	6,700.0	6,698.2	103.1	1.9	86.46	63.1	25.0	4,521.7	4,422.1	99.56	45.415	
10,531.5	6,865.0	6,700.0	6,698.2	103.9	1.9	86.46	63.1	25.0	4,548.3	4,447.9	100.42	45.291	
10,600.0	6,865.0	6,700.0	6,698.2	105.7	1.9	86.46	63.1	25.0	4,606.6	4,504.3	102.30	45.031	
10,629.9	6,865.0	6,700.0	6,698.2	106.4	1.9	86.46	63.1	25.0	4,632.1	4,529.0	103.12	44.921	
10,700.0	6,865.0	6,700.0	6,698.2	108.3	1.9	86.46	63.1	25.0	4,692.1	4,587.1	105.04	44.671	
10,728.3	6,865.0	6,700.0	6,698.2	109.0	1.9	86.46	63.1	25.0	4,716.5	4,610.6	105.82	44.573	
10,800.0	6,865.0	6,700.0	6,698.2	110.9	1.9	86.46	63.1	25.0	4,778.2	4,670.4	107.78	44.333	
10,826.7	6,865.0	6,700.0	6,698.2	111.6	1.9	86.46	63.1	25.0	4,801.3	4,692.8	108.52	44.246	
10,900.0	6,865.0	6,700.0	6,698.2	113.5	1.9	86.46	63.1	25.0	4,864.8	4,754.3	110.53	44.015	
10,925.2	6,865.0	6,700.0	6,698.2	114.1	1.9	86.46	63.1	25.0	4,886.7	4,775.5	111.22	43.938	
11,000.0	6,865.0	6,700.0	6,698.2	116.1	1.9	86.46	63.1	25.0	4,952.0	4,838.7	113.28	43.716	
11,023.6	6,865.0	6,700.0	6,698.2	116.7	1.9	86.46	63.1	25.0	4,972.6	4,858.7	113.93	43.648	
11,100.0	6,865.0	6,700.0	6,698.2	118.8	1.9	86.46	63.1	25.0	5,039.6	4,923.5	116.03	43.434	
11,122.0	6,865.0	6,700.0	6,698.2	119.3	1.9	86.46	63.1	25.0	5,058.9	4,942.3	116.63	43.374	
11,200.0	6,865.0	6,700.0	6,698.2	121.4	1.9	86.46	63.1	25.0	5,127.6	5,008.8	118.78	43.168	
11,220.4	6,865.0	6,700.0	6,698.2	121.9	1.9	86.46	63.1	25.0	5,145.7	5,026.3	119.35	43.115	
11,300.0	6,865.0	6,700.0	6,698.2	124.1	1.9	86.46	63.1	25.0	5,216.1	5,094.6	121.54	42.917	
11,318.9	6,865.0	6,700.0	6,698.2	124.6	1.9	86.46	63.1	25.0	5,232.8	5,110.8	122.06	42.871	
11,400.0	6,865.0	6,700.0	6,698.2	126.7	1.9	86.46	63.1	25.0	5,305.0	5,180.7	124.30	42.680	
11,417.3	6,865.0	6,700.0	6,698.2	127.2	1.9	86.46	63.1	25.0	5,320.4	5,195.6	124.78	42.640	
11,500.0	6,865.0	6,700.0	6,698.2	129.4	1.9	86.46	63.1	25.0	5,394.3	5,267.2	127.06	42.455	
11,515.7	6,865.0	6,700.0	6,698.2	129.8	1.9	86.46	63.1	25.0	5,408.3	5,280.9	127.49	42.420	
11,600.0	6,865.0	6,700.0	6,698.2	132.1	1.9	86.46	63.1	25.0	5,483.9	5,354.1	129.82	42.242	
11,614.1	6,865.0	6,700.0	6,698.2	132.4	1.9	86.46	63.1	25.0	5,496.6	5,366.4	130.21	42.213	
11,700.0	6,865.0	6,700.0	6,698.2	134.7	1.9	86.46	63.1	25.0	5,573.9	5,441.3	132.59	42.040	
11,712.6	6,865.0	6,700.0	6,698.2	135.1	1.9	86.46	63.1	25.0	5,585.3	5,452.3	132.93	42.015	
11,800.0	6,865.0	6,700.0	6,698.2	137.4	1.9	86.46	63.1	25.0	5,664.3	5,528.9	135.35	41.848	
11,811.0	6,865.0	6,700.0	6,698.2	137.7	1.9	86.46	63.1	25.0	5,674.2	5,538.6	135.66	41.827	
11,900.0	6,865.0	6,700.0	6,698.2	140.1	1.9	86.46	63.1	25.0	5,754.9	5,616.8	138.12	41.666	
11,909.4	6,865.0	6,700.0	6,698.2	140.4	1.9	86.46	63.1	25.0	5,763.5	5,625.1	138.38	41.649	
12,000.0	6,865.0	6,700.0	6,698.2	142.8	1.9	86.46	63.1	25.0	5,845.9	5,705.0	140.89	41.492	
12,007.8	6,865.0	6,700.0	6,698.2	143.0	1.9	86.46	63.1	25.0	5,853.0	5,711.9	141.11	41.479	

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 VETTING 20
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 20	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	Offset TVD Reference:	Offset Datum

Offset Design SW NW SEC. 15 T5N R65W 6th P.M. - EXIST VERT SANDUSKY #1 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft
Survey Program: 100-GYD_CT												Offset Well Error:	0.0 usft
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)	Minimum Separation (usft)	Separation Factor	Warning
12,100.0	6,865.0	6,700.0	6,698.2	145.5	1.9	86.46	63.1	25.0	5,937.1	5,793.5	143.66	41.327	
12,106.3	6,865.0	6,700.0	6,698.2	145.7	1.9	86.46	63.1	25.0	5,942.9	5,799.0	143.84	41.317	
12,200.0	6,865.0	6,700.0	6,698.2	148.2	1.9	86.46	63.1	25.0	6,028.7	5,882.2	146.43	41.170	
12,204.7	6,865.0	6,700.0	6,698.2	148.4	1.9	86.46	63.1	25.0	6,033.0	5,886.4	146.56	41.163	
12,300.0	6,865.0	6,700.0	6,698.2	150.9	1.9	86.46	63.1	25.0	6,120.5	5,971.3	149.21	41.020	
12,303.1	6,865.0	6,700.0	6,698.2	151.0	1.9	86.46	63.1	25.0	6,123.3	5,974.1	149.29	41.015	
12,400.0	6,865.0	6,700.0	6,698.2	153.7	1.9	86.46	63.1	25.0	6,212.5	6,060.5	151.98	40.877	
12,401.5	6,865.0	6,700.0	6,698.2	153.7	1.9	86.46	63.1	25.0	6,214.0	6,061.9	152.03	40.874	
12,500.0	6,865.0	6,700.0	6,698.2	156.4	1.9	86.46	63.1	25.0	6,304.8	6,150.1	154.76	40.740	
12,598.4	6,865.0	6,700.0	6,698.2	159.1	1.9	86.46	63.1	25.0	6,395.9	6,238.4	157.49	40.611	
12,600.0	6,865.0	6,700.0	6,698.2	159.1	1.9	86.46	63.1	25.0	6,397.3	6,239.8	157.54	40.609	
12,696.8	6,865.0	6,700.0	6,698.2	161.7	1.9	86.46	63.1	25.0	6,487.1	6,326.9	160.22	40.488	
12,700.0	6,865.0	6,700.0	6,698.2	161.8	1.9	86.46	63.1	25.0	6,490.1	6,329.8	160.31	40.484	
12,795.2	6,865.0	6,700.0	6,698.2	164.4	1.9	86.46	63.1	25.0	6,578.6	6,415.7	162.96	40.370	
12,800.0	6,865.0	6,700.0	6,698.2	164.6	1.9	86.46	63.1	25.0	6,583.0	6,420.0	163.09	40.364	
12,893.7	6,865.0	6,700.0	6,698.2	167.1	1.9	86.46	63.1	25.0	6,670.3	6,504.6	165.70	40.256	
12,900.0	6,865.0	6,700.0	6,698.2	167.3	1.9	86.46	63.1	25.0	6,676.2	6,510.3	165.87	40.249	
12,992.1	6,865.0	6,700.0	6,698.2	169.8	1.9	86.46	63.1	25.0	6,762.2	6,593.7	168.43	40.148	
13,000.0	6,865.0	6,700.0	6,698.2	170.0	1.9	86.46	63.1	25.0	6,769.6	6,600.9	168.65	40.139	
13,090.5	6,865.0	6,700.0	6,698.2	172.5	1.9	86.46	63.1	25.0	6,854.2	6,683.1	171.17	40.043	
13,100.0	6,865.0	6,700.0	6,698.2	172.8	1.9	86.46	63.1	25.0	6,863.1	6,691.7	171.43	40.034	
13,188.9	6,865.0	6,700.0	6,698.2	175.2	1.9	86.46	63.1	25.0	6,946.5	6,772.6	173.91	39.943	
13,200.0	6,865.0	6,700.0	6,698.2	175.5	1.9	86.46	63.1	25.0	6,956.8	6,782.6	174.22	39.932	
13,287.4	6,865.0	6,700.0	6,698.2	177.9	1.9	86.46	63.1	25.0	7,038.9	6,862.2	176.65	39.847	
13,300.0	6,865.0	6,700.0	6,698.2	178.3	1.9	86.46	63.1	25.0	7,050.7	6,873.7	177.00	39.835	
13,385.8	6,865.0	6,700.0	6,698.2	180.6	1.9	86.46	63.1	25.0	7,131.4	6,952.0	179.39	39.754	
13,400.0	6,865.0	6,700.0	6,698.2	181.0	1.9	86.46	63.1	25.0	7,144.8	6,965.0	179.78	39.741	
13,484.2	6,865.0	6,700.0	6,698.2	183.3	1.9	86.46	63.1	25.0	7,224.1	7,042.0	182.13	39.665	
13,500.0	6,865.0	6,700.0	6,698.2	183.7	1.9	86.46	63.1	25.0	7,239.0	7,056.4	182.57	39.651	
13,582.6	6,865.0	6,700.0	6,698.2	186.0	1.9	86.46	63.1	25.0	7,317.0	7,132.1	184.87	39.579	
13,600.0	6,865.0	6,700.0	6,698.2	186.5	1.9	86.46	63.1	25.0	7,333.4	7,148.0	185.35	39.565	
13,681.1	6,865.0	6,700.0	6,698.2	188.7	1.9	86.46	63.1	25.0	7,410.0	7,222.4	187.61	39.497	
13,700.0	6,865.0	6,700.0	6,698.2	189.2	1.9	86.46	63.1	25.0	7,427.9	7,239.8	188.14	39.481	
13,779.5	6,865.0	6,700.0	6,698.2	191.4	1.9	86.46	63.1	25.0	7,503.2	7,312.8	190.35	39.417	
13,800.0	6,865.0	6,700.0	6,698.2	192.0	1.9	86.46	63.1	25.0	7,522.6	7,331.6	190.92	39.401	
13,877.9	6,865.0	6,700.0	6,698.2	194.1	1.9	86.46	63.1	25.0	7,596.4	7,403.3	193.10	39.340	
13,900.0	6,865.0	6,700.0	6,698.2	194.8	1.9	86.46	63.1	25.0	7,617.4	7,423.7	193.71	39.323	
13,976.3	6,865.0	6,700.0	6,698.2	196.9	1.9	86.46	63.1	25.0	7,689.8	7,494.0	195.84	39.266	
14,000.0	6,865.0	6,700.0	6,698.2	197.5	1.9	86.46	63.1	25.0	7,712.3	7,515.8	196.50	39.249	
14,074.8	6,865.0	6,700.0	6,698.2	199.6	1.9	86.46	63.1	25.0	7,783.4	7,584.8	198.58	39.195	
14,100.0	6,865.0	6,700.0	6,698.2	200.3	1.9	86.46	63.1	25.0	7,807.4	7,608.1	199.29	39.177	
14,173.2	6,865.0	6,700.0	6,698.2	202.3	1.9	86.46	63.1	25.0	7,877.0	7,675.7	201.33	39.126	
14,200.0	6,865.0	6,700.0	6,698.2	203.0	1.9	86.46	63.1	25.0	7,902.5	7,700.5	202.07	39.107	
14,271.6	6,865.0	6,700.0	6,698.2	205.0	1.9	86.46	63.1	25.0	7,970.8	7,766.7	204.07	39.059	
14,300.0	6,865.0	6,700.0	6,698.2	205.8	1.9	86.46	63.1	25.0	7,997.8	7,793.0	204.86	39.040	
14,370.0	6,865.0	6,700.0	6,698.2	207.7	1.9	86.46	63.1	25.0	8,064.7	7,857.8	206.82	38.994	
14,400.0	6,865.0	6,700.0	6,698.2	208.5	1.9	86.46	63.1	25.0	8,093.2	7,885.6	207.65	38.975	
14,468.5	6,865.0	6,700.0	6,698.2	210.4	1.9	86.46	63.1	25.0	8,158.6	7,949.1	209.56	38.932	
14,500.0	6,865.0	6,700.0	6,698.2	211.3	1.9	86.46	63.1	25.0	8,188.8	7,978.3	210.44	38.912	
14,566.9	6,865.0	6,700.0	6,698.2	213.2	1.9	86.46	63.1	25.0	8,252.7	8,040.4	212.31	38.871	
14,600.0	6,865.0	6,700.0	6,698.2	214.1	1.9	86.46	63.1	25.0	8,284.4	8,071.2	213.23	38.852	
14,665.3	6,865.0	6,700.0	6,698.2	215.9	1.9	86.46	63.1	25.0	8,346.9	8,131.9	215.05	38.813	

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 VETTING 20
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 20	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	Offset TVD Reference:	Offset Datum

Offset Design SW NW SEC. 15 T5N R65W 6th P.M. - EXIST VERT SANDUSKY #1 - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 usft
Survey Program: 100-GYD_CT													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)	Minimum Separation (usft)	Separation Factor		
14,700.0	6,865.0	6,700.0	6,698.2	216.8	1.9	86.46	63.1	25.0	8,380.1	8,164.1	216.02	38.793		
14,763.7	6,865.0	6,700.0	6,698.2	218.6	1.9	86.46	63.1	25.0	8,441.2	8,223.4	217.80	38.756		
14,800.0	6,865.0	6,700.0	6,698.2	219.6	1.9	86.46	63.1	25.0	8,475.9	8,257.1	218.81	38.736		
14,862.2	6,865.0	6,700.0	6,698.2	221.3	1.9	86.46	63.1	25.0	8,535.6	8,315.0	220.55	38.702		
14,900.0	6,865.0	6,700.0	6,698.2	222.4	1.9	86.46	63.1	25.0	8,571.9	8,350.3	221.60	38.681		
14,960.6	6,865.0	6,700.0	6,698.2	224.1	1.9	86.46	63.1	25.0	8,630.0	8,406.7	223.30	38.648		
15,000.0	6,865.0	6,700.0	6,698.2	225.2	1.9	86.46	63.1	25.0	8,667.9	8,443.5	224.40	38.628		
15,059.0	6,865.0	6,700.0	6,698.2	226.8	1.9	86.46	63.1	25.0	8,724.6	8,498.5	226.04	38.597		
15,100.0	6,865.0	6,700.0	6,698.2	227.9	1.9	86.46	63.1	25.0	8,764.0	8,536.8	227.19	38.576		
15,157.4	6,865.0	6,700.0	6,698.2	229.5	1.9	86.46	63.1	25.0	8,819.2	8,590.4	228.79	38.547		
15,200.0	6,865.0	6,700.0	6,698.2	230.7	1.9	86.46	63.1	25.0	8,860.2	8,630.2	229.98	38.526		
15,255.9	6,865.0	6,700.0	6,698.2	232.2	1.9	86.46	63.1	25.0	8,913.9	8,682.4	231.54	38.498		
15,300.0	6,865.0	6,700.0	6,698.2	233.5	1.9	86.46	63.1	25.0	8,956.4	8,723.7	232.77	38.477		
15,354.3	6,865.0	6,700.0	6,698.2	235.0	1.9	86.46	63.1	25.0	9,008.7	8,774.5	234.29	38.451		
15,400.0	6,865.0	6,700.0	6,698.2	236.2	1.9	86.46	63.1	25.0	9,052.8	8,817.2	235.57	38.430		
15,452.7	6,865.0	6,700.0	6,698.2	237.7	1.9	86.46	63.1	25.0	9,103.6	8,866.6	237.04	38.406		
15,500.0	6,865.0	6,700.0	6,698.2	239.0	1.9	86.46	63.1	25.0	9,149.2	8,910.9	238.36	38.384		
15,551.1	6,865.0	6,700.0	6,698.2	240.4	1.9	86.46	63.1	25.0	9,198.6	8,958.8	239.79	38.361		
15,600.0	6,865.0	6,700.0	6,698.2	241.8	1.9	86.46	63.1	25.0	9,245.7	9,004.6	241.15	38.340		
15,616.6	6,865.0	6,700.0	6,698.2	242.3	1.9	86.46	63.1	25.0	9,261.8	9,020.2	241.62	38.333		

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well VETTING 20
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 20	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB-EST @ 4664.0usft (Original Well ECoordinates are relative to: VETTING 20

Offset Depths are relative to Offset Datum

Coordinate System is US State Plane 1983, Colorado Northern Zone

Central Meridian is -105.500000

Grid Convergence at Surface is: 0.55°

Separation Factor Plot

