



Cimarex

Eddy County, NM (NAD 83)
(Cabrera) SEC 34_T-26-S_R-27-E
Cabrera 34 Federal #1H

OWB
AWB

Anticollision Report

11 February, 2019





Microsoft
Anticollision Report



Company:	Cimarex	Local Co-ordinate Reference:	Well Cabrera 34 Federal #1H
Project:	Eddy County, NM (NAD 83)	TVD Reference:	KB @ 3259.3usft (H&P 393)
Reference Site:	(Cabrera) SEC 34_T-26-S_R-27-E	MD Reference:	KB @ 3259.3usft (H&P 393)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Cabrera 34 Federal #1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore:	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Reference	AWB		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,500.0 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Program		Date	02/11/19		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
299.0	7,145.0	Extreme MWD (OWB)	MWD+IFR1+MS	OWSG MWD + IFR1 + Multi-Station Correction	
7,258.0	12,343.0	Intrepid MWD (OWB)	MWD+IFR1+MS	OWSG MWD + IFR1 + Multi-Station Correction	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
(Cabrera) SEC 34 - T-26-S R-27-E						
Cabrera 34 Federal #4H - OWB - Plan #2	645.3	645.3	17.6	13.8	4.610	CC
Cabrera 34 Federal #4H - OWB - Plan #2	1,500.0	1,500.0	22.7	12.9	2.309	ES
Cabrera 34 Federal #4H - OWB - Plan #2	1,600.0	1,600.0	23.6	13.1	2.239	SF

Offset Design: (Cabrera) SEC 34_T-26-S_R-27-E - Cabrera 34 Federal #4H - OWB - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Reference	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.0	0.0	0.1	0.1	0.0	0.0	-90.14	0.0	-20.0	20.0					
100.0	100.0	100.1	100.1	0.1	0.1	60.43	0.0	-20.0	19.9	19.6	0.27	74.921		
200.0	200.0	200.1	200.1	0.3	0.5	61.74	0.0	-20.0	19.7	18.9	0.80	24.466		
300.0	300.0	300.1	300.1	0.5	0.8	63.99	0.0	-20.0	19.3	17.9	1.34	14.345		
400.0	400.0	400.1	400.1	0.9	1.2	66.49	0.0	-20.0	18.9	16.8	2.06	9.153		
500.0	500.0	500.1	500.1	1.2	1.6	61.99	0.0	-20.0	18.4	15.6	2.78	6.607		
600.0	600.0	600.1	600.1	1.6	1.9	71.18	0.0	-20.0	17.7	14.2	3.49	5.062		
645.3	645.2	645.3	645.3	1.7	2.1	90.00	0.0	-20.0	17.6	13.8	3.82	4.610 CC		
700.0	700.0	700.1	700.1	1.9	2.3	127.72	0.0	-20.0	17.8	13.6	4.21	4.234		
800.0	800.0	800.1	800.1	2.3	2.6	-168.16	0.0	-20.0	18.5	13.6	4.91	3.771		
900.0	900.0	900.1	900.1	2.6	3.0	-146.82	0.0	-20.0	19.6	13.9	5.61	3.486		
1,000.0	999.9	1,000.0	1,000.0	2.9	3.4	-135.59	0.0	-20.0	20.5	14.2	6.31	3.252		
1,100.0	1,099.9	1,100.0	1,100.0	3.3	3.7	-118.24	0.0	-20.0	21.3	14.3	7.01	3.043		
1,200.0	1,199.9	1,200.0	1,200.0	3.6	4.1	-103.99	0.0	-20.0	21.9	14.2	7.71	2.840		
1,300.0	1,299.9	1,300.0	1,300.0	4.0	4.4	-96.42	0.0	-20.0	22.3	13.8	8.41	2.646		
1,400.0	1,399.9	1,400.0	1,400.0	4.3	4.8	-98.39	0.0	-20.0	22.5	13.4	9.12	2.467		
1,500.0	1,499.9	1,500.0	1,500.0	4.7	5.2	-96.31	0.0	-20.0	22.7	12.9	9.82	2.309 ES		
1,600.0	1,599.9	1,600.0	1,600.0	5.0	5.5	-150.48	0.0	-20.0	23.6	13.1	10.53	2.239 SF		
1,700.0	1,699.8	1,699.9	1,699.9	5.4	5.9	-172.24	0.0	-20.0	26.2	15.0	11.24	2.332		
1,800.0	1,799.8	1,799.9	1,799.9	5.7	6.2	-168.32	0.0	-20.0	29.6	17.7	11.95	2.480		
1,900.0	1,899.7	1,899.8	1,899.8	6.1	6.6	-176.84	0.0	-20.0	32.6	19.9	12.66	2.575		
2,000.0	1,999.7	1,999.8	1,999.8	6.4	6.9	173.79	0.0	-20.0	34.8	21.5	13.37	2.604		
2,100.0	2,099.7	2,099.8	2,099.8	6.8	7.3	-176.65	0.0	-20.0	37.2	23.1	14.09	2.639		

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



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Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Cabrera 34 Federal #1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore:	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design: (Cabrera) SEC 34_T-26-S_R-27-E - Cabrera 34 Federal #4H - OWB - Plan #2														Offset Site Error:	0.0 usft
Survey Program: 0-MWD														Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Reference (usft)	Major Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)							
2,200.0	2,199.6	2,199.7	2,199.7	7.1	7.7	-176.84	0.0	-20.0	39.4	24.6	14.80	2.660			
2,300.0	2,299.6	2,299.7	2,299.7	7.5	8.0	143.48	0.0	-20.0	41.5	26.0	15.51	2.676			
2,400.0	2,399.6	2,399.7	2,399.7	7.8	8.4	88.54	0.0	-20.0	42.2	26.0	16.22	2.603			
2,500.0	2,499.4	2,499.5	2,499.5	8.2	8.7	85.06	0.0	-20.0	41.7	24.8	16.92	2.464			
2,552.9	2,552.2	2,552.2	2,552.2	8.4	8.9	89.34	0.4	-20.0	41.5	24.2	17.29	2.400			
2,600.0	2,599.1	2,599.0	2,599.0	8.5	9.1	95.51	1.7	-20.0	41.8	24.2	17.62	2.373			
2,700.0	2,698.5	2,697.1	2,696.9	8.9	9.4	113.35	6.7	-20.0	46.6	28.3	18.31	2.546			
2,800.0	2,797.2	2,793.0	2,792.5	9.2	9.8	133.80	14.9	-20.0	61.1	42.1	18.96	3.221			
2,900.0	2,895.5	2,886.3	2,885.1	9.6	10.1	146.68	26.0	-20.0	85.7	66.2	19.56	4.383			
3,000.0	2,993.4	2,977.2	2,975.0	9.9	10.4	155.32	39.6	-20.0	117.1	96.9	20.13	5.814			
3,100.0	3,091.4	3,065.7	3,062.1	10.3	10.8	162.20	55.6	-20.0	153.0	132.4	20.67	7.403			
3,200.0	3,189.3	3,156.8	3,151.3	10.6	11.1	166.23	73.9	-20.0	191.6	170.3	21.31	8.994			
3,300.0	3,286.9	3,248.0	3,240.7	11.0	11.5	169.13	92.3	-20.0	232.0	210.0	21.96	10.565			
3,400.0	3,384.1	3,338.6	3,329.4	11.4	11.8	172.00	110.5	-20.0	274.0	251.4	22.62	12.117			
3,500.0	3,481.0	3,428.5	3,417.4	11.7	12.2	173.98	128.6	-20.0	317.7	294.4	23.27	13.651			
3,600.0	3,577.7	3,518.2	3,505.3	12.1	12.5	174.25	146.6	-20.0	361.7	337.7	23.93	15.114			
3,700.0	3,674.6	3,608.1	3,593.3	12.5	12.9	174.73	164.7	-20.0	405.4	380.8	24.59	16.487			
3,800.0	3,771.6	3,698.2	3,681.6	12.8	13.3	175.99	182.8	-20.0	448.5	423.3	25.25	17.762			
3,900.0	3,868.8	3,788.7	3,770.3	13.2	13.6	176.99	201.0	-20.0	491.1	465.1	25.92	18.945			
4,000.0	3,966.0	3,879.2	3,858.9	13.6	14.0	177.62	219.2	-20.0	533.5	506.9	26.59	20.062			
4,100.0	4,063.2	3,969.7	3,947.5	14.0	14.4	177.18	237.4	-20.0	576.1	548.8	27.27	21.130			
4,200.0	4,160.1	4,059.6	4,035.6	14.3	14.8	175.86	255.5	-20.0	619.8	591.9	27.94	22.184			
4,300.0	4,256.7	4,149.1	4,123.3	14.7	15.1	175.91	273.5	-20.0	664.4	635.8	28.61	23.221			
4,400.0	4,353.4	4,238.7	4,211.1	15.1	15.5	176.73	291.5	-20.0	708.7	679.4	29.29	24.197			
4,500.0	4,450.4	4,328.7	4,299.3	15.5	15.9	177.45	309.6	-20.0	752.2	722.2	29.97	25.100			
4,600.0	4,547.8	4,419.6	4,388.2	15.9	16.3	178.18	327.9	-20.0	793.9	763.3	30.65	25.904			
4,700.0	4,645.3	4,510.8	4,477.6	16.2	16.7	178.33	346.3	-20.0	835.0	803.6	31.34	26.645			
4,800.0	4,742.8	4,601.7	4,566.6	16.6	17.1	179.72	364.5	-20.0	876.6	844.5	32.03	27.371			
4,900.0	4,840.3	4,692.8	4,655.9	17.0	17.5	179.64	382.9	-20.0	917.7	885.0	32.72	28.051			
5,000.0	4,938.1	4,784.3	4,745.5	17.4	17.9	-179.70	401.3	-20.0	958.1	924.7	33.41	28.678			
5,100.0	5,035.9	4,876.1	4,835.4	17.8	18.3	-178.96	419.7	-20.0	997.9	963.8	34.10	29.260			
5,200.0	5,133.7	4,967.7	4,925.1	18.2	18.7	-178.09	438.2	-20.0	1,037.9	1,003.1	34.80	29.825			
5,300.0	5,231.5	5,059.3	5,014.9	18.5	19.1	-178.49	456.6	-20.0	1,078.1	1,042.6	35.50	30.371			
5,400.0	5,329.4	5,150.9	5,104.7	18.9	19.5	-179.12	475.0	-20.0	1,118.0	1,081.8	36.20	30.888			
5,500.0	5,427.3	5,242.8	5,194.7	19.3	19.9	-179.91	493.5	-20.0	1,157.5	1,120.6	36.90	31.372			
5,600.0	5,525.4	5,335.0	5,285.0	19.7	20.3	179.91	512.0	-20.0	1,196.2	1,158.6	37.60	31.818			
5,700.0	5,624.0	5,428.2	5,376.3	20.1	20.7	178.66	530.8	-20.0	1,232.4	1,194.1	38.30	32.178			
5,800.0	5,723.2	5,559.2	5,504.8	20.4	21.3	175.40	556.0	-20.0	1,264.3	1,225.0	39.33	32.146			
5,900.0	5,822.7	5,734.2	5,678.0	20.8	22.0	173.08	580.9	-20.0	1,288.2	1,247.6	40.65	31.692			
6,000.0	5,922.4	5,914.7	5,857.9	21.1	22.7	167.02	595.6	-20.0	1,303.1	1,261.3	41.85	31.137			
6,100.0	6,022.3	6,079.3	6,022.4	21.5	23.3	154.11	599.1	-20.0	1,309.4	1,266.6	42.84	30.562			
6,200.0	6,122.2	6,179.2	6,122.3	21.9	23.6	145.88	599.1	-20.0	1,313.1	1,269.6	43.54	30.157			
6,300.0	6,222.1	6,279.1	6,222.2	22.2	23.9	132.81	599.1	-20.0	1,316.0	1,271.8	44.24	29.748			
6,400.0	6,322.1	6,379.1	6,322.2	22.5	24.3	108.12	599.1	-20.0	1,317.8	1,272.9	44.93	29.331			
6,500.0	6,422.0	6,479.0	6,422.1	22.9	24.6	86.05	599.1	-20.0	1,318.2	1,272.6	45.61	28.899			
6,531.4	6,453.4	6,510.4	6,453.5	23.0	24.7	89.99	599.1	-20.0	1,318.2	1,272.3	45.83	28.762			
6,600.0	6,521.9	6,578.9	6,522.0	23.2	24.9	97.02	599.1	-20.0	1,318.3	1,272.0	46.30	28.474			
6,700.0	6,621.8	6,678.8	6,621.9	23.5	25.3	77.45	599.1	-20.0	1,318.0	1,271.1	46.98	28.054			
6,800.0	6,721.7	6,778.7	6,721.8	23.9	25.6	85.21	599.1	-20.0	1,317.4	1,269.7	47.67	27.638			
6,849.0	6,770.7	6,827.7	6,770.8	24.0	25.7	90.00	599.1	-20.0	1,317.3	1,269.3	48.00	27.443			
6,900.0	6,821.7	6,878.7	6,821.8	24.2	25.9	95.80	599.1	-20.0	1,317.4	1,269.0	48.35	27.246			
7,000.0	6,921.6	6,978.6	6,921.7	24.5	26.3	108.17	599.1	-20.0	1,318.0	1,269.0	49.04	26.875			

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



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Reference Well:	Cabrera 34 Federal #1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore:	OWB	Database:	EDM 10-13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design: (Cabrera) SEC 34 T-26-S R-27-E - Cabrera 34 Federal #4H - OWB - Plan #2														Offset Site Error:	0.0 usft
Survey Program: 0-MWD		Rule Assigned:												Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Semi Major Axis (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning:	
7,100.0	7,021.6	7,078.6	7,021.7	24.9	26.6	117.97		599.1	-20.0	1,319.3	1,269.6	49.74	26.526		
7,200.0	7,121.5	7,178.5	7,121.6	25.1	26.9	76.58		599.1	-20.0	1,319.6	1,269.3	50.34	26.214		
7,300.0	7,220.1	7,280.0	7,222.9	25.3	27.2	67.43		599.1	-23.8	1,314.3	1,263.5	50.80	25.873		
7,400.0	7,312.5	7,384.0	7,323.9	25.3	27.6	70.84		599.0	-48.1	1,298.7	1,247.6	51.16	25.383		
7,500.0	7,395.1	7,490.7	7,419.4	25.3	27.9	83.38		598.9	-95.0	1,282.6	1,231.1	51.56	24.877		
7,600.0	7,466.4	7,601.4	7,505.1	25.4	28.2	89.89		598.8	-164.8	1,274.2	1,222.2	52.02	24.497		
7,626.7	7,483.0	7,631.5	7,525.4	25.4	28.3	92.38		598.7	-187.0	1,273.5	1,221.4	52.16	24.416		
7,700.0	7,523.6	7,714.4	7,573.5	25.4	28.5	96.94		598.5	-254.4	1,278.1	1,225.5	52.60	24.299		
7,800.0	7,562.9	7,827.2	7,619.0	25.5	29.0	94.87		598.3	-357.3	1,292.6	1,239.2	53.37	24.221		
7,900.0	7,593.0	7,938.6	7,639.1	25.6	29.7	92.38		598.0	-466.6	1,299.0	1,244.7	54.35	23.901		
8,000.0	7,617.0	8,038.3	7,641.1	25.8	30.5	90.74		597.8	-566.2	1,297.5	1,242.0	55.47	23.389		
8,100.0	7,624.4	8,137.9	7,642.5	26.0	31.5	90.74		597.6	-665.8	1,292.7	1,235.9	56.78	22.765		
8,200.0	7,625.4	8,237.7	7,643.9	26.3	32.6	90.79		597.3	-765.7	1,288.8	1,230.5	58.29	22.111		
8,300.0	7,629.1	8,337.7	7,645.3	26.6	33.9	90.68		597.1	-865.7	1,287.2	1,227.2	59.98	21.461		
8,373.9	7,634.3	8,411.5	7,646.3	26.9	35.0	90.54		596.9	-939.4	1,286.8	1,225.5	61.32	20.983		
8,400.0	7,636.7	8,437.5	7,646.7	27.0	35.4	90.47		596.8	-965.4	1,286.8	1,224.9	61.83	20.813		
8,500.0	7,645.4	8,537.3	7,648.1	27.5	36.9	90.14		596.6	-1,065.2	1,287.7	1,223.9	63.82	20.177		
8,600.0	7,651.8	8,637.1	7,649.5	27.9	38.5	89.86		596.4	-1,165.0	1,287.6	1,221.7	65.94	19.527		
8,700.0	7,656.1	8,737.1	7,650.9	28.5	40.2	89.75		596.1	-1,265.0	1,286.6	1,218.4	68.19	18.889		
8,727.1	7,656.9	8,764.2	7,651.2	28.6	40.7	89.74		596.1	-1,292.1	1,286.5	1,217.7	68.82	18.695		
8,800.0	7,658.3	8,837.1	7,652.2	29.0	42.0	89.74		595.9	-1,364.9	1,287.2	1,216.7	70.54	18.250		
8,900.0	7,658.8	8,937.0	7,653.6	29.6	43.8	89.76		595.7	-1,464.9	1,289.5	1,216.5	72.98	17.670		
9,000.0	7,657.4	9,037.0	7,655.0	30.2	45.7	89.87		595.4	-1,564.8	1,291.3	1,215.8	75.50	17.102		
9,100.0	7,654.4	9,137.0	7,654.6	30.9	47.7	89.97		595.2	-1,664.8	1,292.7	1,214.6	78.11	16.549		
9,200.0	7,650.2	9,237.0	7,651.2	31.5	49.6	90.00		594.9	-1,764.8	1,294.2	1,213.5	80.79	16.021		
9,300.0	7,646.5	9,337.0	7,647.6	32.2	51.7	90.00		594.7	-1,864.7	1,296.3	1,212.8	83.52	15.520		
9,400.0	7,643.6	9,436.9	7,644.0	33.0	53.7	89.92		594.4	-1,964.6	1,300.0	1,213.7	86.32	15.061		
9,500.0	7,638.5	9,536.8	7,640.3	33.7	55.8	89.93		594.2	-2,064.4	1,304.5	1,215.4	89.16	14.632		
9,600.0	7,634.5	9,636.7	7,636.7	34.5	57.9	90.01		593.9	-2,164.2	1,309.5	1,217.5	92.05	14.227		
9,700.0	7,632.6	9,736.5	7,633.1	35.3	60.1	89.98		593.7	-2,264.0	1,314.4	1,219.4	94.98	13.838		
9,800.0	7,631.9	9,836.4	7,629.4	36.1	62.2	89.89		593.5	-2,363.8	1,318.2	1,220.3	97.95	13.458		
9,900.0	7,632.4	9,936.3	7,625.8	36.9	64.4	89.71		593.2	-2,463.7	1,318.6	1,217.6	100.97	13.059		
10,000.0	7,631.3	10,036.3	7,622.1	37.7	66.6	89.60		593.0	-2,563.5	1,318.0	1,214.0	104.02	12.671		
10,100.0	7,629.1	10,136.3	7,618.5	38.6	68.8	89.54		592.7	-2,663.5	1,317.5	1,210.4	107.09	12.302		
10,200.0	7,628.7	10,236.2	7,614.9	39.4	71.0	89.39		592.5	-2,763.3	1,316.2	1,206.0	110.20	11.944		
10,300.0	7,628.7	10,336.1	7,611.2	40.3	73.3	89.25		592.2	-2,863.2	1,313.8	1,200.4	113.33	11.592		
10,400.0	7,626.9	10,436.0	7,607.6	41.2	75.5	89.19		592.0	-2,963.0	1,310.8	1,194.3	116.48	11.253		
10,500.0	7,625.3	10,536.0	7,604.0	42.1	77.8	89.08		591.7	-3,062.9	1,307.4	1,187.7	119.66	10.926		
10,600.0	7,623.5	10,635.9	7,600.3	43.1	80.0	89.05		591.5	-3,162.7	1,303.0	1,180.2	122.85	10.606		
10,700.0	7,620.8	10,736.4	7,598.1	44.0	82.3	89.08		591.2	-3,262.2	1,297.6	1,171.5	126.08	10.292		
10,800.0	7,619.4	10,836.5	7,598.7	44.9	84.6	89.09		591.0	-3,363.3	1,292.8	1,163.5	129.32	9.997		
10,900.0	7,618.8	10,936.4	7,599.4	45.9	86.9	89.14		590.7	-3,463.3	1,290.0	1,157.4	132.57	9.731		
10,994.2	7,617.9	11,030.6	7,600.1	46.8	89.1	89.20		590.5	-3,557.5	1,289.2	1,153.5	135.65	9.504		
11,000.0	7,617.9	11,036.4	7,600.1	46.8	89.2	89.20		590.5	-3,563.2	1,289.1	1,153.3	135.84	9.490		
11,100.0	7,616.5	11,136.4	7,600.9	47.8	91.5	89.28		590.3	-3,663.2	1,290.4	1,151.3	139.11	9.276		
11,200.0	7,614.8	11,236.3	7,601.6	48.8	93.9	89.38		590.0	-3,763.1	1,293.5	1,151.1	142.40	9.083		
11,300.0	7,612.9	11,336.2	7,602.3	49.7	96.2	89.46		589.8	-3,863.0	1,297.5	1,151.8	145.70	8.905		
11,400.0	7,609.0	11,436.0	7,603.1	50.7	98.5	89.66		589.5	-3,962.8	1,301.0	1,152.0	149.01	8.731		
11,500.0	7,605.8	11,535.9	7,603.8	51.7	100.8	89.88		589.3	-4,062.7	1,303.4	1,151.1	152.33	8.557		
11,600.0	7,605.2	11,635.9	7,604.5	52.7	103.2	89.98		589.1	-4,162.7	1,305.6	1,149.9	155.66	8.387		
11,700.0	7,606.4	11,735.8	7,605.3	53.7	105.5	89.96		588.8	-4,262.6	1,308.8	1,149.8	159.01	8.231		
11,800.0	7,607.1	11,835.8	7,606.0	54.7	107.8	89.95		588.6	-4,362.6	1,311.9	1,149.6	162.36	8.080		

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



Microsoft
Anticollision Report



Company:	Cimarex	Local Co-ordinate Reference:	Well: Cabrera 34 Federal #1H
Project:	Eddy County, NM (NAD 83)	TVD Reference:	KB @ 3259.3usft (H&P 393)
Reference Site:	(Cabrera) SEC 34 T-26-S R-27-E	MD Reference:	KB @ 3259.3usft (H&P 393)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Cabrera 34 Federal #1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design: (Cabrera) SEC 34 T-26-S R-27-E - Cabrera 34 Federal #4H - OWB - Plan #2												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)		Reference (usft)	Offset (usft)	Between Centres (usft)	Between Ellipses (usft)					
11,900.0	7,607.1	11,935.7	7,606.7	89.97	55.7	110.2	588.3	-4,462.5	1,315.2	1,149.4	165.72	7.936	
12,000.0	7,606.5	12,035.7	7,607.5	90.03	56.7	112.5	588.1	-4,562.5	1,318.2	1,149.1	169.09	7.796	
12,100.0	7,605.5	12,135.6	7,608.2	90.09	57.7	114.9	587.8	-4,662.4	1,320.4	1,148.0	172.47	7.656	
12,200.0	7,603.2	12,235.6	7,608.9	90.22	58.8	117.3	587.6	-4,762.4	1,322.1	1,146.3	175.85	7.519	
12,300.0	7,600.2	12,335.5	7,609.7	90.39	59.8	119.6	587.4	-4,862.3	1,322.9	1,143.7	179.23	7.381	
12,343.0	7,599.0	12,378.5	7,610.0	90.46	60.2	120.6	587.3	-4,905.2	1,323.1	1,142.5	180.69	7.323	



Microsoft
Anticollision Report

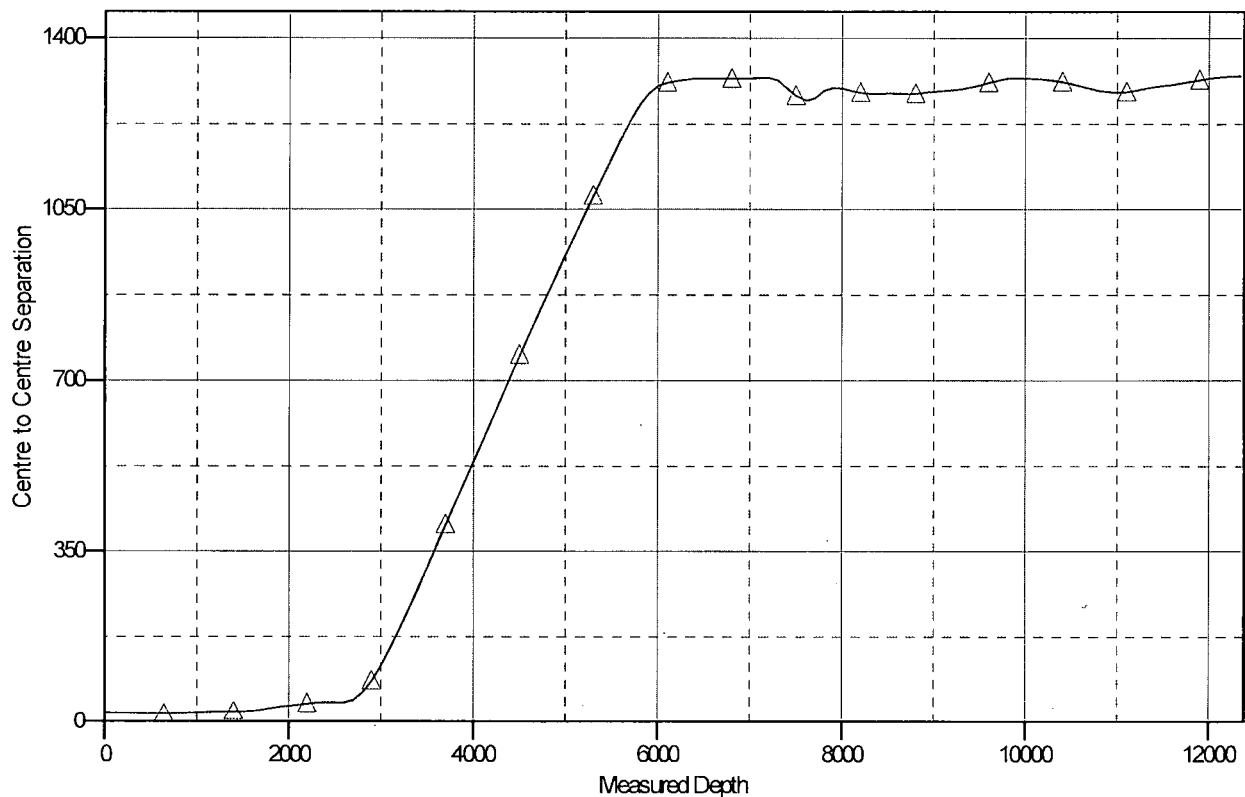


Company:	Cimarex	Local Co-ordinate Reference:	Well Cabrera 34 Federal #1H
Project:	Eddy County, NM (NAD 83)	TVD Reference:	KB @ 3259.3usft (H&P 393)
Reference Site:	(Cabrera) SEC 34_T-26-S_R-27-E	MD Reference:	KB @ 3259.3usft (H&P 393)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Cabrera 34 Federal #1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3259.3usft (H&P 393)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Cabrera 34 Federal #1H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.09°

Ladder Plot



LEGEND

▲ Cabrera 34 Federal #41, OWB, Plan # 2V0



Company:	Cimarex	Local Co-ordinate Reference:	Well Cabrera 34 Federal #1H
Project:	Eddy County, NM, (NAD 83)	TVD Reference:	KB @ 3259.3usft (H&P 393)
Reference Site:	(Cabrera) SEC 34-T-26-S-R-27-E	MD Reference:	KB @ 3259.3usft (H&P 393)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Cabrera 34 Federal #1H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3259.3usft (H&P 393)

Offset Depths are relative to Offset Datum

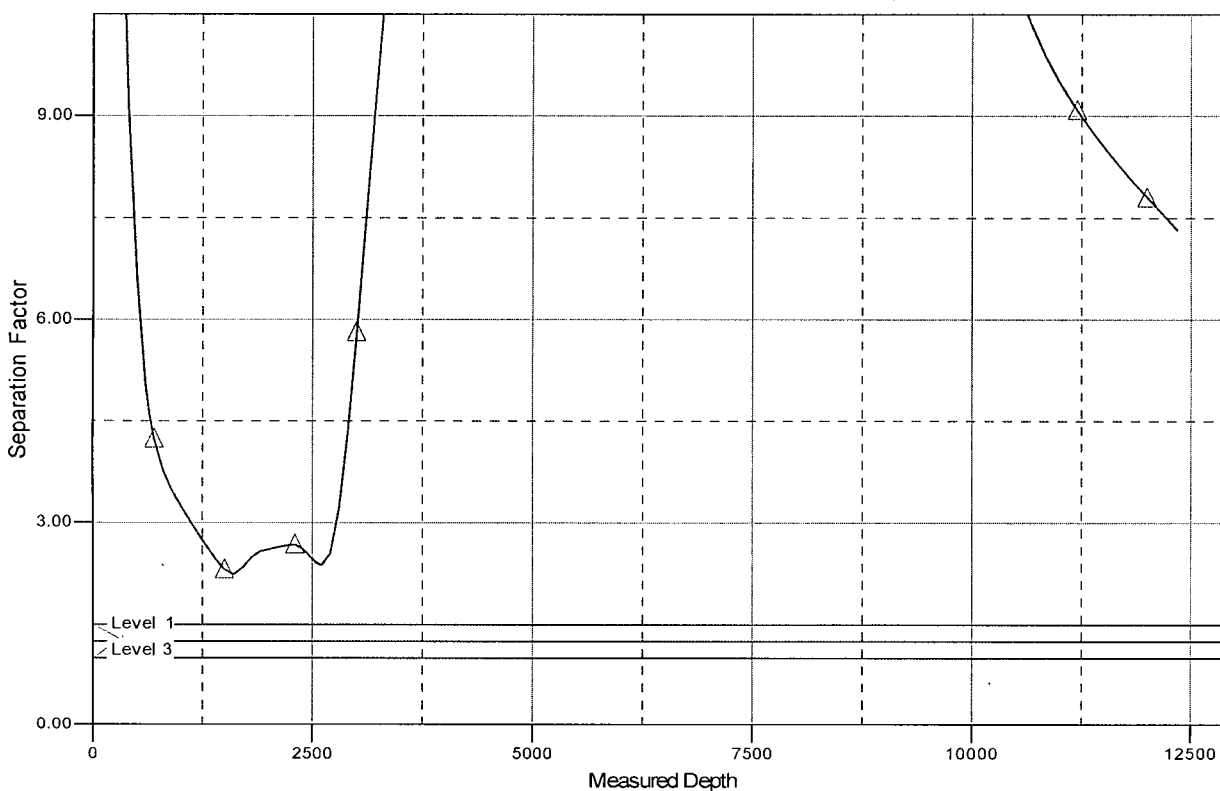
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Cabrera 34 Federal #1H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.09°

Separation Factor Plot



LEGEND

—△— Cabrera 34 Federal #4H, OWB, Plan # 2 V O