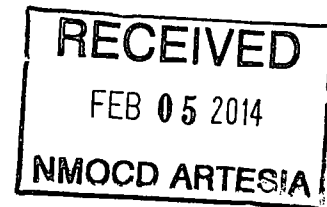
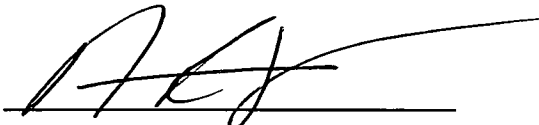


Apache Corporation
303 Veterans Airpark Lane, #3000
Midland, TX 79705

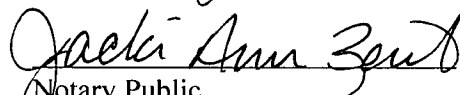
Crow Federal #10 H API#30-015-40574
Eddy County, New Mexico 883' FSL & 250' FWL, UL: M 10-175-31E

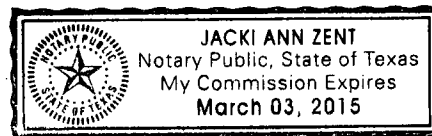
124	1.24	0.50	0.88	1.09	1.09
307	3.07	0.50	0.88	2.69	2.69
568	5.68	0.25	0.44	2.49	2.49




Archie Brown - General Manager

The attached instrument was acknowledged before me on the 3rd day of June, 2013 by
Archie Brown - General Manager, CapStar Drilling, Inc.


Notary Public





Apache Corporation

Eddy County, NM (NAD27 NME)

Crow Federal

#10H API # 30-015-40574

OH / Job #1310298

Survey: Phoenix MWD Surveys

Anticollision Report

07 May, 2013



PHOENIX
TECHNOLOGY SERVICES



Phoenix Technology Services
Anticollision Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3925.00usft (Capstar 114)
Reference Site:	Crow Federal	MD Reference:	KB @ 3925.00usft (Capstar 114)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH / Job #1310298	Database:	GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Reference	Survey: Phoenix MWD Surveys		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Program	Date: 05/07/13			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
629.00	9,765.00	Phoenix MWD Surveys (OH / Job #131029	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
Offset Well - Wellbore - Design						
Crow Federal						
#11H - Wellbore #1 / Job #1210349 - Plan 1 4-25-2012	3,794.37	3,783.84	49.73	34.04	3.170	CC
#11H - Wellbore #1 / Job #1210349 - Plan 1 4-25-2012	3,808.00	3,797.46	49.73	33.99	3.159	ES
#11H - Wellbore #1 / Job #1210349 - Plan 1 4-25-2012	4,893.00	4,881.93	57.11	36.67	2.794	SF
#12H - Wellbore #1 / Job #1210350 - Plan 1 4-25-2012	3,737.04	3,726.52	111.56	96.12	7.227	CC, ES
#12H - Wellbore #1 / Job #1210350 - Plan 1 4-25-2012	4,925.00	4,913.27	122.51	101.94	5.956	SF
#13H - OH / Job #1310316 - Surveys (Capstar 114)	629.00	597.82	25.80	24.44	19.000	CC
#13H - OH / Job #1310316 - Surveys (Capstar 114)	715.00	683.81	26.09	24.39	15.319	ES
#13H - OH / Job #1310316 - Surveys (Capstar 114)	4,664.00	4,635.14	48.74	30.57	2.682	SF
#14H - Wellbore #1 / Job #1210352 - Plan 1 4-25-2012	3,608.30	3,599.39	32.67	18.01	2.229	CC, ES
#14H - Wellbore #1 / Job #1210352 - Plan 1 4-25-2012	3,637.00	3,628.09	32.82	18.04	2.221	SF
#15H - OH / Job #1310461 - Plan #2 04-18-13	3,744.85	3,717.33	87.24	71.82	5.658	CC
#15H - OH / Job #1310461 - Plan #2 04-18-13	3,808.00	3,780.46	87.48	71.79	5.576	ES
#15H - OH / Job #1310461 - Plan #2 04-18-13	4,925.00	4,896.27	97.54	77.03	4.754	SF

Offset Design												Crow Federal - #11H - Wellbore #1 / Job #1210349 - Plan 1 4-25-2012		Offset Site Error:	0.00 usft
Survey Program: O-MWD												Offset Well Error:	0.00 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)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
0.00	0.00	0.00	0.00	0.00	0.00	-0.35	65.00	-0.40	65.77						
629.00	628.99	618.99	618.99	0.70	1.28	127.78	65.00	-0.40	66.32	64.35	1.98	33.574			
715.00	714.99	704.99	704.99	0.88	1.47	132.67	65.00	-0.40	66.71	64.36	2.35	28.384			
800.00	799.99	789.99	789.99	1.05	1.66	119.28	65.00	-0.40	67.06	64.35	2.71	24.740			
886.00	885.99	875.99	875.99	1.23	1.86	133.63	65.00	-0.40	67.46	64.38	3.08	21.877			
972.00	971.98	961.98	961.98	1.42	2.05	144.62	65.00	-0.40	68.15	64.68	3.47	19.661			
1,057.00	1,056.98	1,046.98	1,046.98	1.59	2.24	155.13	65.00	-0.40	68.98	65.15	3.83	18.002			
1,143.00	1,142.97	1,132.97	1,132.97	1.77	2.43	140.46	65.00	-0.40	69.79	65.59	4.20	16.619			
1,228.00	1,227.96	1,217.96	1,217.96	1.95	2.63	126.56	65.00	-0.40	70.67	66.10	4.57	15.449			
1,314.00	1,313.95	1,303.95	1,303.95	2.13	2.82	129.36	65.00	-0.40	71.64	66.70	4.94	14.488			
1,399.00	1,398.93	1,388.93	1,388.93	2.30	3.01	99.82	65.00	-0.40	72.26	66.96	5.31	13.619			
1,485.00	1,484.92	1,474.92	1,474.92	2.47	3.20	81.87	65.00	-0.40	72.30	66.63	5.67	12.744			
1,570.00	1,569.90	1,559.90	1,559.90	2.65	3.39	80.15	65.00	-0.40	72.04	66.01	6.04	11.937			
1,656.00	1,655.88	1,645.88	1,645.88	2.82	3.59	66.90	65.00	-0.40	71.58	65.18	6.40	11.177			
1,742.00	1,741.87	1,731.87	1,731.87	3.00	3.78	77.52	65.00	-0.40	71.06	64.28	6.78	10.482			

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



Phoenix Technology Services

Anticollision Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3925.00usft (Capstar 114)
Reference Site:	Crow Federal	MD Reference:	KB @ 3925.00usft (Capstar 114)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH / Job #1310298	Database:	GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.00 usft
Crow Federal - #11H - Wellbore #1 / Job #1210349 - Plan 1 4-25-2012														Offset Well Error:	0.00 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		
1,827.00	1,826.84	1,816.84	1,816.84	3.19	3.97	80.41	65.00	-0.40	70.68	63.52	7.16	9.878			
1,913.00	1,912.81	1,902.81	1,902.81	3.37	4.16	74.50	65.00	-0.40	70.19	62.66	7.53	9.321			
1,972.54	1,972.34	1,962.34	1,962.34	3.49	4.30	90.00	65.00	-0.40	69.98	62.20	7.79	8.986			
1,998.00	1,997.79	1,987.79	1,987.79	3.55	4.36	99.57	65.00	-0.40	70.02	62.12	7.90	8.865			
2,084.00	2,083.79	2,073.79	2,073.79	3.72	4.55	114.15	65.00	-0.40	70.30	62.03	8.27	8.502			
2,169.00	2,168.78	2,158.78	2,158.78	3.90	4.74	115.36	65.00	-0.40	70.71	62.07	8.64	8.185			
2,255.00	2,254.77	2,244.77	2,244.77	4.08	4.93	86.03	65.00	-0.40	70.93	61.92	9.01	7.870			
2,341.00	2,340.77	2,330.77	2,330.77	4.26	5.13	67.27	65.00	-0.40	70.78	61.39	9.38	7.543			
2,426.00	2,425.77	2,415.77	2,415.77	4.43	5.32	3.82	65.00	-0.40	70.22	60.47	9.75	7.203			
2,512.00	2,511.76	2,501.76	2,501.76	4.61	5.51	-13.76	65.00	-0.40	69.26	59.14	10.12	6.844			
2,597.00	2,596.75	2,586.75	2,586.75	4.79	5.70	-9.58	65.00	-0.40	67.95	57.47	10.49	6.480			
2,683.00	2,682.73	2,672.73	2,672.73	4.97	5.90	11.59	65.00	-0.40	66.11	55.25	10.86	6.088			
2,768.00	2,767.71	2,757.71	2,757.71	5.14	6.09	-7.23	65.00	-0.40	64.21	52.98	11.23	5.719			
2,854.00	2,853.69	2,843.69	2,843.69	5.32	6.28	-12.28	65.00	-0.40	62.58	50.98	11.60	5.395			
2,940.00	2,939.68	2,929.68	2,929.68	5.50	6.47	4.96	65.00	-0.40	60.88	48.90	11.97	5.085			
3,025.00	3,024.65	3,014.65	3,014.65	5.68	6.66	6.67	65.00	-0.40	58.74	46.40	12.34	4.760			
3,111.00	3,110.61	3,100.61	3,100.61	5.86	6.86	9.74	65.00	-0.40	56.21	43.50	12.71	4.421			
3,197.00	3,196.58	3,186.58	3,186.58	6.04	7.05	33.73	65.00	-0.40	53.94	40.85	13.09	4.120			
3,281.00	3,280.55	3,270.55	3,270.55	6.22	7.24	52.65	65.00	-0.40	52.49	39.03	13.46	3.900			
3,367.00	3,366.53	3,356.53	3,356.53	6.40	7.43	69.16	65.00	-0.40	51.62	37.79	13.83	3.732			
3,418.00	3,417.52	3,407.52	3,407.52	6.51	7.55	83.66	65.00	-0.40	51.38	37.32	14.06	3.655			
3,551.00	3,550.50	3,540.50	3,540.50	6.79	7.85	73.37	65.00	-0.40	50.84	36.20	14.64	3.473			
3,637.00	3,636.49	3,626.49	3,626.49	6.97	8.04	-64.50	65.00	-0.40	50.36	35.35	15.01	3.355			
3,723.00	3,722.49	3,712.49	3,712.49	7.15	8.23	-65.58	65.00	-0.40	49.92	34.54	15.38	3.246			
3,794.37	3,793.84	3,783.84	3,783.84	7.29	8.39	-90.00	65.00	-0.40	49.73	34.04	15.69	3.170 CC			
3,808.00	3,807.46	3,797.46	3,797.46	7.32	8.42	-92.05	65.00	-0.40	49.73	33.99	15.74	3.159 ES			
3,893.00	3,892.41	3,882.41	3,882.41	7.50	8.61	-103.09	65.00	-0.40	50.15	34.04	16.11	3.113			
3,979.00	3,978.38	3,968.38	3,968.38	7.67	8.81	-134.98	65.00	-0.40	50.87	34.39	16.48	3.087			
4,065.00	4,064.38	4,054.38	4,054.38	7.85	9.00	-166.00	65.00	-0.40	51.40	34.55	16.85	3.050			
4,150.00	4,149.37	4,139.37	4,139.37	8.03	9.19	-116.69	65.00	-0.40	51.95	34.73	17.22	3.017			
4,236.00	4,235.35	4,225.35	4,225.35	8.21	9.38	-112.76	65.00	-0.40	52.72	35.12	17.59	2.997			
4,321.00	4,320.31	4,310.31	4,310.31	8.39	9.58	-115.04	65.00	-0.40	53.74	35.78	17.96	2.992			
4,407.00	4,406.25	4,396.25	4,396.25	8.57	9.77	-121.28	65.00	-0.40	55.31	36.98	18.33	3.018			
4,493.00	4,492.20	4,482.20	4,482.20	8.74	9.96	-140.31	65.00	-0.40	57.11	38.41	18.70	3.054			
4,578.00	4,577.18	4,567.18	4,567.18	8.92	10.15	-165.98	65.00	-0.40	58.77	39.71	19.07	3.082			
4,664.00	4,663.17	4,653.17	4,653.17	9.10	10.35	-77.38	65.00	-0.40	59.58	40.14	19.45	3.064			
4,729.00	4,728.17	4,718.17	4,718.17	9.24	10.49	-37.83	65.00	-0.40	59.08	39.36	19.73	2.995			
4,797.00	4,796.15	4,786.15	4,786.15	9.38	10.65	-44.98	65.00	-0.40	58.11	38.09	20.02	2.903			
4,829.00	4,828.15	4,818.15	4,818.15	9.45	10.72	-55.83	65.00	-0.40	57.65	37.49	20.16	2.860			
4,861.00	4,860.12	4,850.12	4,850.12	9.51	10.79	-80.01	65.00	-0.40	57.28	36.98	20.30	2.822			
4,890.17	4,889.14	4,879.14	4,879.14	9.58	10.85	-90.00	65.00	-0.40	57.11	36.68	20.43	2.796			
4,893.00	4,891.93	4,881.93	4,881.93	9.58	10.86	-90.66	65.00	-0.40	57.11	36.67	20.44	2.794 SF			
4,925.00	4,923.27	4,913.27	4,913.27	9.66	10.93	-98.10	65.00	-0.40	57.63	37.06	20.57	2.802			
4,957.00	4,953.82	4,943.82	4,943.82	9.73	11.00	-104.51	65.00	-0.40	59.66	38.91	20.65	2.885			
4,989.00	4,983.42	4,973.42	4,973.42	9.81	11.07	-114.52	65.00	-0.40	63.93	43.33	20.60	3.103			
5,021.00	5,012.05	5,002.05	5,002.05	9.88	11.13	-123.93	65.00	-0.40	71.54	51.18	20.36	3.513			
5,053.00	5,039.51	5,029.51	5,029.51	9.96	11.19	-132.04	65.00	-0.40	82.62	62.65	19.96	4.138			
5,085.00	5,065.87	5,055.87	5,055.87	10.07	11.25	-138.41	65.00	-0.40	96.69	77.17	19.52	4.954			
5,117.00	5,090.78	5,080.78	5,080.78	10.21	11.31	-142.29	65.00	-0.40	113.57	94.68	18.89	6.012			
5,149.00	5,113.83	5,103.83	5,103.83	10.37	11.36	-143.76	65.00	-0.40	133.08	114.70	18.38	7.241			
5,181.00	5,134.90	5,124.90	5,124.90	10.57	11.41	-145.69	65.00	-0.40	154.91	137.17	17.74	8.734			
5,213.00	5,153.80	5,143.80	5,143.80	10.81	11.45	-145.61	65.00	-0.40	178.86	161.56	17.30	10.341			

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



Phoenix Technology Services

Anticollision Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3925.00usft (Capstar 114)
Reference Site:	Crow Federal	MD Reference:	KB @ 3925.00usft (Capstar 114)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH / Job #1310298	Database:	GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:
Crow Federal - #11H - Wellbore #1 / Job #1210349 - Plan 1 4-25-2012													0.00 usft
Survey Program: 0-MWD													Offset Well Error:
Reference:													0.00 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
5,245.00	5,170.54	5,160.54	5,160.54	11.10	11.49	-147.40	65.00	-0.40	204.63	187.93	16.70	12.253	
5,277.00	5,185.28	5,175.28	5,175.28	11.45	11.52	-149.39	65.00	-0.40	231.94	215.84	16.10	14.403	
5,309.00	5,197.97	5,187.97	5,187.97	11.84	11.55	-147.68	65.00	-0.40	260.50	244.35	16.15	16.135	
5,341.00	5,208.65	5,198.65	5,198.65	12.28	11.57	-145.12	65.00	-0.40	289.95	273.35	16.60	17.466	
5,373.00	5,217.89	5,207.89	5,207.89	12.76	11.59	-144.04	65.00	-0.40	319.95	302.99	16.97	18.856	
5,405.00	5,226.42	5,216.42	5,216.42	13.28	11.61	-144.11	65.00	-0.40	350.24	333.03	17.21	20.351	
5,437.00	5,234.75	5,224.75	5,224.75	13.82	11.63	-145.89	65.00	-0.40	380.63	363.53	17.10	22.254	
5,469.00	5,242.39	5,232.39	5,232.39	14.40	11.65	-140.49	65.00	-0.40	411.23	392.59	18.64	22.060	
5,495.00	5,247.28	5,237.28	5,237.28	14.90	11.66	-134.81	65.00	-0.40	436.40	416.10	20.31	21.492	
5,518.00	5,250.44	5,240.44	5,240.44	15.35	11.67	-124.29	65.00	-0.40	458.88	435.79	23.09	19.873	
5,550.00	5,253.59	5,243.59	5,243.59	16.01	11.67	-118.56	65.00	-0.40	490.33	465.50	24.82	19.754	
5,646.00	5,257.36	6,230.11	5,822.73	18.08	19.50	-173.85	69.32	573.61	578.74	565.95	12.79	45.250	
5,742.00	5,257.36	6,326.07	5,824.07	20.28	21.53	-174.10	70.05	669.55	579.81	566.08	13.73	42.221	
5,838.00	5,258.11	6,422.05	5,825.40	22.57	23.68	-174.29	70.78	765.52	580.21	565.44	14.77	39.279	
5,934.00	5,259.29	6,518.05	5,826.73	24.94	25.93	-174.36	71.50	861.51	580.30	564.42	15.88	36.545	
6,030.00	5,260.21	6,614.04	5,828.06	27.36	28.24	-174.42	72.23	957.49	580.65	563.62	17.03	34.095	
6,126.00	5,260.96	6,710.04	5,829.39	29.82	30.61	-174.40	72.96	1,053.48	581.28	563.02	18.26	31.827	
6,222.00	5,261.63	6,805.98	5,830.73	32.31	33.01	-174.12	73.69	1,149.41	582.26	562.65	19.60	29.701	
6,318.00	5,263.22	6,901.93	5,832.06	34.82	35.46	-173.82	74.41	1,245.35	582.29	561.19	21.09	27.606	
6,413.00	5,267.12	6,996.89	5,833.37	37.32	37.90	-173.78	75.13	1,340.30	579.70	557.23	22.48	25.791	
6,508.00	5,270.68	7,091.82	5,834.69	39.82	40.36	-174.02	75.85	1,435.21	577.18	553.55	23.63	24.427	
6,603.00	5,272.43	7,186.79	5,836.01	42.35	42.85	-174.24	76.57	1,530.17	576.55	551.67	24.88	23.176	
6,699.00	5,274.27	7,282.79	5,837.34	44.91	45.37	-174.20	77.30	1,626.15	576.08	549.79	26.29	21.913	
6,794.00	5,276.84	7,377.77	5,838.66	47.46	47.88	-174.12	78.02	1,721.13	574.91	547.18	27.73	20.732	
6,890.00	5,280.52	7,473.74	5,839.99	50.04	50.43	-174.05	78.75	1,817.09	572.61	543.41	29.20	19.611	
6,986.00	5,283.54	7,569.72	5,841.32	52.62	52.99	-174.06	79.47	1,913.06	570.90	540.37	30.54	18.695	
7,082.00	5,285.80	7,665.71	5,842.66	55.21	55.56	-174.18	80.20	2,009.03	569.83	537.94	31.89	17.867	
7,178.00	5,287.89	7,761.69	5,843.99	57.80	58.13	-174.36	80.93	2,104.99	568.89	535.71	33.18	17.145	
7,188.29	5,288.03	7,771.98	5,844.13	58.08	58.41	-174.37	81.01	2,115.29	568.89	535.56	33.32	17.072	
7,274.00	5,288.65	7,857.68	5,845.32	60.40	60.71	-174.46	81.66	2,200.98	569.38	534.87	34.52	16.497	
7,370.00	5,289.07	7,953.67	5,846.65	63.01	63.29	-174.50	82.38	2,296.96	570.26	534.34	35.92	15.875	
7,464.00	5,289.81	8,047.67	5,847.96	65.56	65.83	-174.56	83.10	2,390.94	570.77	533.48	37.29	15.307	
7,560.00	5,290.06	8,143.66	5,849.29	68.17	68.42	-174.51	83.82	2,486.92	571.93	533.21	38.71	14.774	
7,656.00	5,290.06	8,239.62	5,850.62	70.79	71.02	-174.30	84.55	2,582.87	573.47	533.13	40.34	14.216	
7,752.00	5,290.39	8,335.60	5,851.95	73.40	73.62	-174.14	85.28	2,678.84	574.63	532.71	41.92	13.707	
7,849.00	5,290.90	8,432.59	5,853.30	76.05	76.25	-174.01	86.01	2,775.81	575.61	532.09	43.52	13.228	
7,945.00	5,292.07	8,528.58	5,854.63	78.67	78.85	-173.99	86.74	2,871.80	575.76	530.76	45.01	12.792	
8,041.00	5,293.58	8,624.58	5,855.96	81.29	81.46	-174.10	87.47	2,967.78	575.48	529.11	46.37	12.410	
8,051.01	5,293.72	8,634.59	5,856.10	81.56	81.74	-174.10	87.54	2,977.79	575.48	528.96	46.52	12.370	
8,137.00	5,294.67	8,720.58	5,857.29	83.91	84.07	-174.14	88.20	3,063.76	575.69	527.90	47.79	12.046	
8,232.00	5,294.67	8,815.56	5,858.61	86.51	86.66	-174.12	88.92	3,158.74	577.04	527.84	49.20	11.728	
8,328.00	5,293.50	8,911.52	5,859.94	89.14	89.27	-174.00	89.64	3,254.68	579.70	528.94	50.76	11.421	
8,424.00	5,293.08	9,007.48	5,861.27	91.76	91.89	-173.82	90.37	3,350.63	581.65	529.13	52.52	11.075	
8,521.00	5,294.69	9,104.45	5,862.62	94.42	94.53	-173.62	91.11	3,447.59	581.62	527.30	54.32	10.708	
8,617.00	5,297.79	9,200.40	5,863.95	97.05	97.15	-173.33	91.83	3,543.53	580.18	523.97	56.20	10.323	
8,713.00	5,301.30	9,296.34	5,865.28	99.68	99.77	-173.07	92.56	3,639.46	578.28	520.27	58.01	9.969	
8,809.00	5,304.32	9,392.32	5,866.61	102.31	102.39	-172.95	93.29	3,735.43	576.71	517.09	59.62	9.673	
8,905.00	5,306.58	9,488.32	5,867.95	104.94	105.02	-172.92	94.02	3,831.41	575.81	514.64	61.17	9.413	
9,001.00	5,308.93	9,584.31	5,869.28	107.57	107.64	-172.90	94.74	3,927.39	574.80	512.09	62.71	9.166	
9,098.00	5,311.04	9,681.30	5,870.62	110.23	110.29	-172.98	95.48	4,024.37	573.93	509.82	64.11	8.952	
9,194.00	5,312.80	9,777.28	5,871.96	112.85	112.92	-173.17	96.21	4,120.33	573.25	507.94	65.31	8.777	
9,290.00	5,314.56	9,873.25	5,873.29	115.48	115.54	-173.39	96.93	4,216.30	572.58	506.05	66.53	8.606	

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



Phoenix Technology Services
Anticollision Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3925.00usft (Capstar 114)
Reference Site:	Crow Federal	MD Reference:	KB @ 3925.00usft (Capstar 114)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore:	OH / Job #1310298	Database:	GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Offset Design Crow Federal - #11H - Wellbore #1 / Job #1210349 - Plan 1 4-25-2012													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 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)	Offset Wellbore Centre E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
9,307.91	5,314.80	9,891.16	5,873.54	115.97	116.04	-173.41	97.07	4,234.21	572.57	505.79	66.77	8.575		
9,386.00	5,315.48	9,969.24	5,874.62	118.11	118.17	-173.52	97.66	4,312.27	572.84	505.01	67.83	8.445		
9,482.00	5,316.82	10,065.23	5,875.95	120.74	120.80	-173.67	98.39	4,408.25	572.66	503.55	69.11	8.286		
9,578.00	5,319.75	10,161.20	5,877.28	123.37	123.43	-173.80	99.12	4,504.21	570.91	500.48	70.43	8.106		
9,674.00	5,324.28	10,257.14	5,878.61	125.99	126.06	-173.86	99.84	4,600.14	567.64	495.80	71.84	7.902		
9,710.00	5,326.38	10,293.11	5,879.11	126.98	127.04	-173.87	100.12	4,636.10	566.01	493.66	72.35	7.823		
9,765.00	5,329.74	10,348.04	5,879.88	128.48	128.55	-173.91	100.53	4,691.03	563.36	490.21	73.15	7.702		

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



Phoenix Technology Services

Anticollision Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3925.00usft (Capstar 114)
Reference Site:	Crow Federal	MD Reference:	KB @ 3925.00usft (Capstar 114)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH / Job #1310298	Database:	GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Crow Federal - #12H - Wellbore #1 / Job #1210350 - Plan 1 4-25-2012													Offset Well Error:	0.00 usft
Survey Program: 0-MWD														
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	
0.00	0.00	0.00	0.00	0.00	0.00	-0.35	130.00	-0.80	130.39					
629.00	628.99	618.99	618.99	0.70	1.28	127.02	130.00	-0.80	131.31	129.34	1.98	66.472		
715.00	714.99	704.99	704.99	0.88	1.47	131.72	130.00	-0.80	131.69	129.34	2.35	56.031		
800.00	799.99	789.99	789.99	1.05	1.66	118.13	130.00	-0.80	132.03	129.32	2.71	48.710		
886.00	885.99	875.99	875.99	1.23	1.86	132.27	130.00	-0.80	132.42	129.34	3.08	42.943		
972.00	971.98	961.98	961.98	1.42	2.05	143.02	130.00	-0.80	133.10	129.63	3.47	38.397		
1,057.00	1,056.98	1,046.98	1,046.98	1.59	2.24	153.34	130.00	-0.80	133.91	130.08	3.83	34.947		
1,143.00	1,142.97	1,132.97	1,132.97	1.77	2.43	138.48	130.00	-0.80	134.70	130.51	4.20	32.076		
1,228.00	1,227.96	1,217.96	1,217.96	1.95	2.63	124.21	130.00	-0.80	135.55	130.98	4.57	29.629		
1,314.00	1,313.95	1,303.95	1,303.95	2.13	2.82	126.55	130.00	-0.80	136.46	131.52	4.95	27.595		
1,399.00	1,398.93	1,388.93	1,388.93	2.30	3.01	96.47	130.00	-0.80	137.00	131.70	5.31	25.819		
1,485.00	1,484.92	1,474.92	1,474.92	2.47	3.20	77.88	130.00	-0.80	136.93	131.26	5.67	24.133		
1,570.00	1,569.90	1,559.90	1,559.90	2.65	3.39	75.55	130.00	-0.80	136.56	130.52	6.04	22.623		
1,656.00	1,655.88	1,645.88	1,645.88	2.82	3.59	61.69	130.00	-0.80	135.96	129.55	6.41	21.227		
1,742.00	1,741.87	1,731.87	1,731.87	3.00	3.78	71.66	130.00	-0.80	135.28	128.50	6.78	19.953		
1,827.00	1,826.84	1,816.84	1,816.84	3.19	3.97	73.77	130.00	-0.80	134.69	127.54	7.16	18.822		
1,913.00	1,912.81	1,902.81	1,902.81	3.37	4.16	66.98	130.00	-0.80	133.94	126.40	7.53	17.783		
1,994.73	1,994.52	1,984.52	1,984.52	3.54	4.35	90.00	130.00	-0.80	133.52	125.63	7.89	16.932		
1,998.00	1,997.79	1,987.79	1,987.79	3.55	4.36	91.33	130.00	-0.80	133.52	125.62	7.90	16.902		
2,084.00	2,083.79	2,073.79	2,073.79	3.72	4.55	105.51	130.00	-0.80	133.64	125.37	8.27	16.159		
2,169.00	2,168.78	2,158.78	2,158.78	3.90	4.74	106.40	130.00	-0.80	133.91	125.27	8.64	15.498		
2,255.00	2,254.77	2,244.77	2,244.77	4.08	4.93	76.67	130.00	-0.80	133.95	124.94	9.01	14.859		
2,341.00	2,340.77	2,330.77	2,330.77	4.26	5.13	57.60	130.00	-0.80	133.67	124.29	9.39	14.243		
2,426.00	2,425.77	2,415.77	2,415.77	4.43	5.32	-6.02	130.00	-0.80	133.07	123.32	9.75	13.648		
2,512.00	2,511.76	2,501.76	2,501.76	4.61	5.51	-23.63	130.00	-0.80	132.14	122.02	10.12	13.057		
2,597.00	2,596.75	2,586.75	2,586.75	4.79	5.70	-19.44	130.00	-0.80	130.90	120.41	10.49	12.482		
2,683.00	2,682.73	2,672.73	2,672.73	4.97	5.90	1.55	130.00	-0.80	129.07	118.21	10.86	11.886		
2,768.00	2,767.71	2,757.71	2,757.71	5.14	6.09	-17.46	130.00	-0.80	127.18	115.95	11.23	11.327		
2,854.00	2,853.69	2,843.69	2,843.69	5.32	6.28	-22.51	130.00	-0.80	125.63	114.03	11.60	10.830		
2,940.00	2,939.68	2,929.68	2,929.68	5.50	6.47	-5.38	130.00	-0.80	123.96	111.99	11.97	10.355		
3,025.00	3,024.65	3,014.65	3,014.65	5.68	6.66	-3.96	130.00	-0.80	121.82	109.48	12.34	9.873		
3,111.00	3,110.61	3,100.61	3,100.61	5.86	6.86	-1.31	130.00	-0.80	119.27	106.56	12.71	9.382		
3,197.00	3,196.58	3,186.58	3,186.58	6.04	7.05	21.98	130.00	-0.80	116.88	103.79	13.09	8.929		
3,281.00	3,280.55	3,270.55	3,270.55	6.22	7.24	39.97	130.00	-0.80	115.18	101.73	13.46	8.560		
3,367.00	3,366.53	3,356.53	3,356.53	6.40	7.43	55.43	130.00	-0.80	113.98	100.15	13.83	8.241		
3,418.00	3,417.52	3,407.52	3,407.52	6.51	7.55	69.28	130.00	-0.80	113.51	99.45	14.05	8.076		
3,551.00	3,550.50	3,540.50	3,540.50	6.79	7.85	57.28	130.00	-0.80	112.30	97.67	14.63	7.674		
3,637.00	3,636.49	3,626.49	3,626.49	6.97	8.04	-80.91	130.00	-0.80	111.73	96.73	15.01	7.446		
3,723.00	3,722.49	3,712.49	3,712.49	7.15	8.23	-81.44	130.00	-0.80	111.57	96.19	15.38	7.256		
3,737.04	3,736.52	3,726.52	3,726.52	7.18	8.26	-89.98	130.00	-0.80	111.56	96.12	15.44	7.227	CC, ES	
3,808.00	3,807.46	3,797.46	3,797.46	7.32	8.42	-106.69	130.00	-0.80	111.89	96.15	15.74	7.108		
3,893.00	3,892.41	3,882.41	3,882.41	7.50	8.61	-115.72	130.00	-0.80	113.00	96.90	16.10	7.017		
3,979.00	3,978.38	3,968.38	3,968.38	7.67	8.81	-146.31	130.00	-0.80	114.10	97.63	16.48	6.925		
4,065.00	4,064.38	4,054.38	4,054.38	7.85	9.00	-177.04	130.00	-0.80	114.70	97.85	16.85	6.807		
4,150.00	4,149.37	4,139.37	4,139.37	8.03	9.19	-127.24	130.00	-0.80	115.37	98.15	17.22	6.700		
4,236.00	4,235.35	4,225.35	4,225.35	8.21	9.38	-122.20	130.00	-0.80	116.43	98.83	17.59	6.619		
4,321.00	4,320.31	4,310.31	4,310.31	8.39	9.58	-123.03	130.00	-0.80	117.78	99.83	17.96	6.559		
4,407.00	4,406.25	4,396.25	4,396.25	8.57	9.77	-127.52	130.00	-0.80	119.70	101.38	18.33	6.532		
4,493.00	4,492.20	4,482.20	4,482.20	8.74	9.96	-145.22	130.00	-0.80	121.72	103.01	18.70	6.509		
4,578.00	4,577.18	4,567.18	4,567.18	8.92	10.15	-170.38	130.00	-0.80	123.45	104.38	19.07	6.474		
4,664.00	4,663.17	4,653.17	4,653.17	9.10	10.35	-81.49	130.00	-0.80	124.29	104.84	19.45	6.392		
4,729.00	4,728.17	4,718.17	4,718.17	9.24	10.49	-41.67	130.00	-0.80	123.83	104.11	19.73	6.278		

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



Phoenix Technology Services

Anticollision Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3925.00usft (Capstar 114)
Reference Site:	Crow Federal	MD Reference:	KB @ 3925.00usft (Capstar 114)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH / Job #1310298	Database:	GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.00 usft
Crow Federal - #12H - Wellbore #1 / Job #1210350 - Plan 1 4-25-2012														Offset Well Error:	0.00 usft
Survey Program: 0-MWD															
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)				Between Centres (usft)	Between Ellipses (usft)		
4,797.00	4,796.15	4,786.15	4,786.15	9.38	10.65	-48.40	130.00	-0.80	122.92	102.89	20.02	6.139			
4,829.00	4,828.15	4,818.15	4,818.15	9.45	10.72	-58.97	130.00	-0.80	122.49	102.33	20.16	6.076			
4,861.00	4,860.12	4,850.12	4,850.12	9.51	10.79	-82.54	130.00	-0.80	122.17	101.88	20.30	6.018			
4,884.36	4,883.38	4,873.38	4,873.38	9.56	10.84	-90.00	130.00	-0.80	122.09	101.68	20.40	5.984			
4,893.00	4,891.93	4,881.93	4,881.93	9.58	10.86	-91.39	130.00	-0.80	122.10	101.66	20.44	5.974			
4,925.00	4,923.27	4,913.27	4,913.27	9.66	10.93	-95.53	130.00	-0.80	122.51	101.94	20.57	5.956 SF			
4,957.00	4,953.82	4,943.82	4,943.82	9.73	11.00	-97.58	130.00	-0.80	123.62	102.93	20.69	5.974			
4,989.00	4,983.42	4,973.42	4,973.42	9.81	11.07	-102.95	130.00	-0.80	125.97	105.19	20.78	6.062			
5,021.00	5,012.05	5,002.05	5,002.05	9.88	11.13	-108.54	130.00	-0.80	130.29	109.49	20.79	6.266			
5,053.00	5,039.51	5,029.51	5,029.51	9.96	11.19	-113.92	130.00	-0.80	137.08	116.35	20.73	6.614			
5,085.00	5,065.87	5,055.87	5,055.87	10.07	11.25	-118.69	130.00	-0.80	146.44	125.84	20.60	7.109			
5,117.00	5,090.78	5,080.78	5,080.78	10.21	11.31	-121.94	130.00	-0.80	158.51	138.13	20.38	7.777			
5,149.00	5,113.83	5,103.83	5,103.83	10.37	11.36	-123.51	130.00	-0.80	173.30	153.08	20.22	8.569			
5,181.00	5,134.90	5,124.90	5,124.90	10.57	11.41	-125.47	130.00	-0.80	190.71	170.71	19.99	9.539			
5,213.00	5,153.80	5,143.80	5,143.80	10.81	11.45	-125.78	130.00	-0.80	210.66	190.74	19.92	10.577			
5,245.00	5,170.54	5,160.54	5,160.54	11.10	11.49	-127.27	130.00	-0.80	232.95	213.19	19.76	11.788			
5,277.00	5,185.28	5,175.28	5,175.28	11.45	11.52	-128.58	130.00	-0.80	257.40	237.74	19.66	13.093			
5,309.00	5,197.97	5,187.97	5,187.97	11.84	11.55	-126.89	130.00	-0.80	283.57	263.52	20.06	14.139			
5,341.00	5,208.65	5,198.65	5,198.65	12.28	11.57	-124.74	130.00	-0.80	310.96	290.30	20.66	15.049			
5,373.00	5,217.89	5,207.89	5,207.89	12.76	11.59	-123.99	130.00	-0.80	339.19	318.05	21.14	16.042			
5,405.00	5,226.42	5,216.42	5,216.42	13.28	11.61	-124.62	130.00	-0.80	367.92	346.48	21.45	17.155			
5,437.00	5,234.75	5,224.75	5,224.75	13.82	11.63	-126.66	130.00	-0.80	396.96	375.46	21.51	18.457			
5,469.00	5,242.39	5,232.39	5,232.39	14.40	11.65	-122.48	130.00	-0.80	426.34	403.59	22.75	18.743			
5,495.00	5,247.28	5,237.28	5,237.28	14.90	11.66	-117.11	130.00	-0.80	450.61	426.48	24.13	18.675			
5,518.00	5,250.44	5,240.44	5,240.44	15.35	11.67	-110.14	130.00	-0.80	472.35	446.74	25.61	18.444			
5,550.00	5,253.59	5,243.59	5,243.59	16.01	11.67	-106.02	130.00	-0.80	502.86	476.11	26.75	18.797			
5,646.00	5,257.36	5,247.36	5,247.36	18.08	11.68	-89.18	130.00	-0.80	595.58	565.83	29.75	20.018			
5,742.00	5,257.36	5,247.36	5,247.36	20.28	11.68	-90.95	130.00	-0.80	689.20	657.25	31.95	21.572			
5,838.00	5,258.11	5,248.11	5,248.11	22.57	11.68	-94.14	130.00	-0.80	783.53	749.36	34.17	22.928			
5,934.00	5,259.29	5,249.29	5,249.29	24.94	11.69	-94.82	130.00	-0.80	878.37	841.86	36.51	24.058			
6,030.00	5,260.21	5,250.21	5,250.21	27.36	11.69	-92.98	130.00	-0.80	973.45	934.45	39.00	24.961			
6,126.00	5,260.96	5,250.96	5,250.96	29.82	30.62	-173.32	137.82	1,034.68	1,043.38	1,024.43	18.95	55.054			
6,222.00	5,261.63	5,251.63	5,251.63	32.31	32.99	-173.20	138.55	1,130.58	1,045.51	1,025.26	20.25	51.638			
6,318.00	5,263.22	5,253.22	5,253.22	34.82	35.39	-173.00	139.27	1,226.50	1,046.68	1,024.97	21.70	48.224			
6,413.00	5,267.12	5,257.12	5,257.12	37.32	37.81	-172.96	139.99	1,321.45	1,045.18	1,022.09	23.09	45.259			
6,508.00	5,270.68	5,260.68	5,260.68	39.82	40.24	-173.07	140.71	1,416.36	1,043.70	1,019.40	24.30	42.946			
6,514.61	5,270.82	5,260.82	5,260.82	40.00	40.41	-173.09	140.76	1,422.96	1,043.70	1,019.31	24.39	42.795			
6,603.00	5,272.43	5,262.43	5,262.43	42.35	42.70	-173.24	141.43	1,511.29	1,044.13	1,018.55	25.58	40.821			
6,699.00	5,274.27	5,264.27	5,264.27	44.91	45.21	-173.24	142.16	1,607.26	1,044.77	1,017.78	26.99	38.709			
6,794.00	5,276.84	5,266.84	5,266.84	47.46	47.70	-173.20	142.88	1,702.22	1,044.70	1,016.28	28.43	36.753			
6,890.00	5,280.52	5,270.52	5,270.52	50.04	50.23	-173.16	143.61	1,798.18	1,043.51	1,013.62	29.89	34.908			
6,960.52	5,283.00	5,273.00	5,273.00	51.94	52.10	-173.15	144.14	1,888.67	1,042.81	1,011.92	30.89	33.756			
6,986.00	5,283.54	5,273.54	5,273.54	52.62	52.77	-173.16	144.33	1,894.14	1,042.90	1,011.65	31.25	33.371			
7,082.00	5,285.80	5,275.80	5,275.80	55.21	55.33	-173.21	145.06	1,990.09	1,042.91	1,010.25	32.66	31.936			
7,122.06	5,286.86	5,276.86	5,276.86	56.29	56.39	-173.27	145.37	2,030.13	1,042.77	1,009.55	33.22	31.394			
7,178.00	5,287.89	5,277.89	5,277.89	57.80	57.89	-173.33	145.79	2,086.04	1,043.04	1,009.04	34.00	30.678			
7,274.00	5,288.65	5,278.65	5,278.65	60.40	60.45	-173.40	146.52	2,181.98	1,044.62	1,009.25	35.37	29.535			
7,370.00	5,289.07	5,279.07	5,279.07	63.01	63.03	-173.43	147.24	2,277.93	1,046.58	1,009.78	36.80	28.437			
7,464.00	5,289.81	5,279.81	5,279.81	65.56	65.55	-173.46	147.96	2,371.88	1,048.16	1,009.96	38.21	27.435			
7,560.00	5,290.06	5,280.06	5,280.06	68.17	68.14	-173.48	148.68	2,467.81	1,050.43	1,010.82	39.60	26.523			
7,656.00	5,290.06	5,280.06	5,280.06	70.79	70.72	-173.37	149.41	2,563.72	1,053.11	1,011.91	41.19	25.566			
7,752.00	5,290.39	5,280.39	5,280.39	73.40	73.31	-173.28	150.14	2,659.65	1,055.39	1,012.64	42.75	24.690			

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



Phoenix Technology Services

Anticollision Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3925.00usft (Capstar 114)
Reference Site:	Crow Federal	MD Reference:	KB @ 3925.00usft (Capstar 114)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore:	OH / Job #1310298	Database:	GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Offset Design Crow Federal - #12H - Wellbore #1 / Job #1210350 - Plan 1 4-25-2012													Offset Site Error: 0.00 usft
Survey Program: Q-MWD													Offset Well Error: 0.00 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	
7,849.00	5,290.90	8,864.44	6,330.62	76.05	75.94	-173.22	150.87	2,756.59	1,057.50	1,013.19	44.30	23.869	
7,945.00	5,292.07	8,960.42	6,333.06	78.67	78.54	-173.19	151.60	2,852.54	1,058.75	1,012.92	45.83	23.100	
8,041.00	5,293.58	9,056.41	6,335.50	81.29	81.14	-173.26	152.33	2,948.50	1,059.55	1,012.31	47.24	22.429	
8,137.00	5,294.67	9,152.40	6,337.94	83.91	83.74	-173.29	153.05	3,044.45	1,060.85	1,012.17	48.68	21.791	
8,232.00	5,294.67	9,247.37	6,340.35	86.51	86.32	-173.31	153.77	3,139.38	1,063.29	1,013.21	50.09	21.229	
8,328.00	5,293.50	9,343.29	6,342.78	89.14	88.93	-173.26	154.50	3,235.27	1,067.07	1,015.49	51.58	20.686	
8,424.00	5,293.08	9,439.22	6,345.22	91.76	91.54	-173.17	155.23	3,331.17	1,070.15	1,016.86	53.28	20.084	
8,521.00	5,294.69	9,536.19	6,347.69	94.42	94.18	-173.07	155.96	3,428.11	1,071.25	1,016.26	54.99	19.482	
8,617.00	5,297.79	9,632.15	6,350.12	97.05	96.79	-172.94	156.69	3,524.03	1,070.93	1,014.20	56.73	18.879	
8,713.00	5,301.30	9,728.11	6,352.56	99.68	99.41	-172.78	157.42	3,619.96	1,070.14	1,011.75	58.40	18.326	
8,809.00	5,304.32	9,824.11	6,355.00	102.31	102.02	-172.71	158.14	3,715.92	1,069.67	1,009.71	59.96	17.839	
8,834.54	5,305.00	9,849.65	6,355.65	103.01	102.72	-172.71	158.34	3,741.45	1,069.64	1,009.28	60.36	17.720	
8,905.00	5,306.58	9,920.11	6,357.44	104.94	104.64	-172.70	158.87	3,811.89	1,069.88	1,008.40	61.48	17.402	
9,001.00	5,308.93	10,016.11	6,359.88	107.57	107.26	-172.69	159.60	3,907.85	1,069.97	1,006.95	63.02	16.979	
9,033.28	5,309.80	10,048.39	6,360.70	108.45	108.14	-172.70	159.84	3,940.13	1,069.89	1,006.38	63.51	16.846	
9,098.00	5,311.04	10,113.10	6,362.34	110.23	109.91	-172.73	160.33	4,004.81	1,070.20	1,005.73	64.47	16.600	
9,194.00	5,312.80	10,209.07	6,364.78	112.85	112.53	-172.82	161.06	4,100.75	1,070.61	1,004.79	65.82	16.266	
9,204.03	5,313.02	10,219.10	6,365.04	113.13	112.81	-172.84	161.14	4,110.77	1,070.61	1,004.65	65.95	16.233	
9,290.00	5,314.56	10,305.05	6,367.22	115.48	115.16	-172.96	161.79	4,196.69	1,071.02	1,003.87	67.15	15.949	
9,386.00	5,315.48	10,401.03	6,369.66	118.11	117.78	-173.04	162.52	4,292.64	1,072.37	1,003.84	68.54	15.647	
9,482.00	5,316.82	10,497.01	6,372.10	120.74	120.40	-173.12	163.24	4,388.58	1,073.28	1,003.35	69.93	15.349	
9,578.00	5,319.75	10,592.99	6,374.53	123.37	123.03	-173.21	163.97	4,484.54	1,072.62	1,001.30	71.32	15.039	
9,674.00	5,324.28	10,688.96	6,376.97	125.99	125.65	-173.25	164.70	4,580.47	1,070.44	997.66	72.78	14.709	
9,710.00	5,326.38	10,724.94	6,377.89	126.98	126.64	-173.25	164.97	4,616.44	1,069.21	995.91	73.31	14.585	
9,765.00	5,329.74	10,779.90	6,379.28	128.48	128.14	-173.27	165.39	4,671.38	1,067.19	993.05	74.14	14.395	



Phoenix Technology Services

Anticollision Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3925.00usft (Capstar 114)
Reference Site:	Crow Federal	MD Reference:	KB @ 3925.00usft (Capstar 114)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH / Job #1310298	Database:	GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Crow Federal - #13H - OH / Job #1310316 - Surveys (Capstar 114)													Offset Site Error:	0.00 usft
Survey Program: 613-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Tooface (°)	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)						
0.00	0.00	0.00	0.00	0.00	0.00	179.77	-25.00	0.10	39.82					
629.00	628.99	597.82	597.82	0.70	0.66	-58.09	-27.02	0.35	25.80	1.36	19.000 CC			
715.00	714.99	683.81	683.80	0.88	0.83	-53.57	-27.69	-0.11	26.09	1.70	15.319 ES			
800.00	799.99	768.68	768.59	1.05	1.01	-61.13	-28.61	-3.44	26.61	2.05	12.974			
886.00	885.99	854.25	853.85	1.23	1.20	-33.97	-29.95	-10.56	28.52	2.42	11.809			
972.00	971.98	940.34	939.60	1.42	1.39	-11.51	-31.26	-18.11	31.62	2.79	11.332			
1,057.00	1,056.98	1,025.75	1,024.80	1.59	1.58	7.61	-31.13	-24.08	33.65	3.14	10.711			
1,143.00	1,142.97	1,111.19	1,110.01	1.77	1.77	0.74	-30.85	-30.32	36.51	3.50	10.439			
1,228.00	1,227.96	1,195.15	1,193.65	1.95	1.98	-7.15	-31.16	-37.60	40.85	3.87	10.560			
1,314.00	1,313.95	1,280.93	1,279.01	2.13	2.20	0.19	-32.02	-46.04	46.62	4.23	11.017			
1,399.00	1,398.93	1,366.75	1,364.50	2.30	2.41	-26.90	-32.55	-53.47	51.64	4.58	11.281			
1,485.00	1,484.92	1,453.95	1,451.55	2.47	2.61	-45.03	-33.09	-58.65	54.97	4.93	11.145			
1,570.00	1,569.90	1,539.86	1,537.40	2.65	2.79	-47.92	-33.36	-61.85	56.75	5.28	10.745			
1,656.00	1,655.88	1,627.10	1,624.62	2.82	2.97	-62.93	-33.29	-63.48	57.20	5.64	10.145			
1,742.00	1,741.87	1,713.68	1,711.20	3.00	3.14	-55.08	-33.18	-63.40	56.18	6.00	9.360			
1,827.00	1,826.84	1,799.18	1,796.69	3.19	3.31	-55.68	-32.85	-62.54	54.14	6.37	8.503			
1,913.00	1,912.81	1,885.40	1,882.90	3.37	3.48	-66.28	-32.53	-60.81	51.44	6.73	7.640			
1,998.00	1,997.79	1,970.33	1,967.79	3.55	3.64	-45.49	-32.20	-58.83	48.70	7.09	6.873			
2,084.00	2,083.79	2,055.81	2,053.26	3.72	3.80	-33.20	-31.68	-57.48	46.48	7.43	6.252			
2,169.00	2,168.78	2,140.60	2,138.05	3.90	3.96	-34.03	-31.66	-56.64	45.03	7.79	5.782			
2,255.00	2,254.77	2,226.40	2,223.85	4.08	4.13	-65.89	-31.78	-56.08	43.97	8.14	5.399			
2,341.00	2,340.77	2,312.51	2,309.96	4.26	4.31	-86.48	-31.73	-55.83	43.52	8.50	5.121			
2,379.31	2,379.07	2,350.80	2,348.24	4.34	4.38	-122.25	-31.56	-55.75	43.41	8.65	5.016			
2,426.00	2,425.77	2,397.41	2,394.86	4.43	4.48	-150.61	-31.38	-55.74	43.58	8.85	4.927			
2,512.00	2,511.76	2,483.42	2,480.86	4.61	4.65	-167.98	-30.96	-55.92	44.32	9.20	4.818			
2,597.00	2,596.75	2,568.68	2,566.12	4.79	4.82	-162.94	-30.06	-56.21	45.20	9.55	4.733			
2,683.00	2,682.73	2,654.56	2,651.98	4.97	5.00	-141.08	-28.52	-56.77	46.16	9.91	4.658			
2,768.00	2,767.71	2,739.34	2,736.74	5.14	5.18	-158.77	-26.89	-57.90	47.54	10.27	4.631			
2,854.00	2,853.69	2,825.36	2,822.75	5.32	5.36	-162.52	-25.78	-58.82	49.06	10.63	4.617			
2,940.00	2,939.68	2,911.29	2,908.67	5.50	5.54	-144.91	-24.94	-59.45	50.51	10.99	4.598			
3,025.00	3,024.65	2,995.88	2,993.25	5.68	5.72	-143.23	-24.05	-60.58	52.54	11.34	4.632			
3,111.00	3,110.61	3,081.65	3,079.00	5.86	5.90	-140.08	-23.05	-62.51	55.38	11.71	4.730			
3,197.00	3,196.58	3,167.56	3,164.88	6.04	6.09	-117.01	-22.27	-64.46	57.93	12.08	4.796			
3,281.00	3,280.55	3,251.48	3,248.78	6.22	6.27	-100.06	-21.95	-66.08	59.63	12.44	4.794			
3,367.00	3,366.53	3,337.84	3,335.14	6.40	6.45	-86.90	-22.48	-66.80	60.63	12.80	4.735			
3,418.00	3,417.52	3,388.87	3,386.16	6.51	6.55	-74.80	-22.95	-66.77	60.77	13.02	4.667			
3,551.00	3,550.50	3,522.13	3,519.41	6.79	6.83	-91.57	-24.23	-66.42	61.12	13.58	4.500			
3,637.00	3,636.49	3,608.86	3,606.14	6.97	7.00	129.00	-24.51	-65.69	61.20	13.94	4.391			
3,723.00	3,722.49	3,695.21	3,692.46	7.15	7.18	128.12	-24.68	-63.48	60.51	14.29	4.234			
3,808.00	3,807.46	3,780.04	3,777.26	7.32	7.35	103.83	-24.90	-61.31	59.90	14.64	4.092			
3,893.00	3,892.41	3,865.03	3,862.23	7.50	7.52	97.49	-25.21	-59.33	59.36	14.99	3.961			
3,979.00	3,978.38	3,951.07	3,948.24	7.67	7.69	68.05	-25.48	-57.18	58.14	15.34	3.790			
4,065.00	4,064.38	4,037.20	4,034.34	7.85	7.86	36.46	-25.54	-55.15	56.47	15.70	3.598			
4,150.00	4,149.37	4,122.14	4,119.26	8.03	8.04	85.93	-25.41	-53.03	54.74	16.05	3.411			
4,236.00	4,235.35	4,207.98	4,205.08	8.21	8.21	92.33	-25.34	-51.23	53.48	16.40	3.261			
4,321.00	4,320.31	4,292.78	4,289.87	8.39	8.39	94.01	-25.34	-49.66	52.56	16.75	3.137			
4,407.00	4,406.25	4,378.76	4,375.84	8.57	8.56	93.36	-25.42	-48.38	51.91	17.11	3.034			
4,493.00	4,492.20	4,464.76	4,461.83	8.74	8.74	78.94	-25.30	-47.00	50.74	17.46	2.906			
4,578.00	4,577.18	4,549.41	4,546.47	8.92	8.91	55.80	-24.95	-46.16	49.18	17.81	2.761			
4,640.73	4,639.90	4,611.89	4,608.95	9.05	9.04	98.26	-24.83	-46.03	48.68	18.07	2.693			
4,664.00	4,663.17	4,635.14	4,632.20	9.10	9.09	145.99	-24.81	-46.02	48.74	18.17	2.682 SF			
4,729.00	4,728.17	4,700.09	4,697.15	9.24	9.23	-173.82	-24.80	-46.02	49.48	18.44	2.683			

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



Phoenix Technology Services

Anticollision Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3925.00usft (Capstar 114)
Reference Site:	Crow Federal	MD Reference:	KB @ 3925.00usft (Capstar 114)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore:	OH / Job #1310298	Database:	GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Crow Federal - #13H - OH / Job #1310316 - Surveys (Capstar 114)													Offset Well Error:	0.00 usft
Survey Program: 613-MWD														
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		
4,797.00	4,796.15	4,767.89	4,764.95	9.38	9.37	179.77	-24.92	-46.11	50.93	32.21	18.72	2.720		
4,829.00	4,828.15	4,799.87	4,796.93	9.45	9.44	169.55	-25.01	-46.23	51.80	32.94	18.86	2.747		
4,861.00	4,860.12	4,830.20	4,827.25	9.51	9.50	147.43	-24.91	-46.67	53.22	34.25	18.98	2.805		
4,893.00	4,891.93	4,857.11	4,854.04	9.58	9.56	142.76	-24.96	-49.15	58.34	39.35	19.00	3.071		
4,925.00	4,923.27	4,883.00	4,879.46	9.66	9.62	145.67	-25.09	-54.02	68.66	49.73	18.93	3.627		
4,957.00	4,953.82	4,903.48	4,899.16	9.73	9.68	150.88	-25.14	-59.57	84.21	65.57	18.64	4.518		
4,989.00	4,983.42	4,922.13	4,916.74	9.81	9.73	153.23	-25.09	-65.80	104.12	85.69	18.42	5.651		
5,021.00	5,012.05	4,938.02	4,931.43	9.88	9.77	153.90	-25.05	-71.88	127.15	109.07	18.09	7.029		
5,053.00	5,039.51	4,951.20	4,943.38	9.96	9.81	153.89	-25.04	-77.41	152.72	134.97	17.76	8.600		
5,085.00	5,065.87	4,962.25	4,953.27	10.07	9.85	154.16	-25.06	-82.36	180.09	162.63	17.46	10.312		
5,117.00	5,090.78	4,970.87	4,960.88	10.21	9.87	152.18	-25.11	-86.39	208.99	191.98	17.02	12.280		
5,149.00	5,113.83	4,979.00	4,967.99	10.37	9.90	152.70	-25.18	-90.33	239.24	222.76	16.48	14.519		
5,181.00	5,134.90	4,979.00	4,967.99	10.57	9.90	142.32	-25.18	-90.33	270.36	253.40	16.96	15.941		
5,213.00	5,153.80	4,983.96	4,972.30	10.81	9.92	126.91	-25.24	-92.80	301.99	283.50	18.49	16.335		
5,245.00	5,170.54	4,984.56	4,972.82	11.10	9.92	82.22	-25.24	-93.10	333.85	312.95	20.90	15.973		
5,277.00	5,185.28	4,979.00	4,967.99	11.45	9.90	46.09	-25.18	-90.33	365.72	348.19	17.53	20.860		
5,309.00	5,197.97	4,979.00	4,967.99	11.84	9.90	28.59	-25.18	-90.33	397.34	382.87	14.47	27.464		
5,341.00	5,208.65	4,979.00	4,967.99	12.28	9.90	19.61	-25.18	-90.33	428.73	415.99	12.73	33.668		
5,373.00	5,217.89	4,979.00	4,967.99	12.76	9.90	15.79	-25.18	-90.33	459.95	447.90	12.04	38.190		
5,405.00	5,226.42	4,979.00	4,967.99	13.28	9.90	13.15	-25.18	-90.33	491.13	479.41	11.72	41.923		
5,437.00	5,234.75	4,967.84	4,958.22	13.82	9.86	11.21	-25.09	-84.95	522.11	510.52	11.59	45.042		
5,469.00	5,242.39	4,964.45	4,955.22	14.40	9.85	6.25	-25.07	-83.37	553.13	542.26	10.87	50.901		
5,495.00	5,247.28	4,961.30	4,952.42	14.90	9.84	6.17	-25.06	-81.92	578.04	567.43	10.60	54.519		
5,518.00	5,250.44	4,958.18	4,949.64	15.35	9.83	3.07	-25.05	-80.50	599.77	589.52	10.25	58.539		
5,550.00	5,253.59	4,946.00	4,938.69	16.01	9.79	3.64	-25.04	-75.18	629.79	619.52	10.27	61.332		
5,646.00	5,257.36	4,946.00	4,938.69	18.08	9.79	2.13	-25.04	-75.18	718.18	707.78	10.40	69.032		
5,742.00	5,257.36	4,928.22	4,922.40	20.28	9.74	2.10	-25.07	-68.05	806.40	795.51	10.89	74.062		
5,838.00	5,258.11	4,915.00	4,910.07	22.57	9.70	4.41	-25.12	-63.29	896.10	884.50	11.60	77.223		
5,934.00	5,259.29	4,915.00	4,910.07	24.94	9.70	5.27	-25.12	-63.29	986.81	974.52	12.29	80.324		
6,030.00	5,260.21	4,915.00	4,910.07	27.36	9.70	4.56	-25.12	-63.29	1,078.36	1,065.58	12.78	84.388		
6,126.00	5,260.96	4,898.20	4,894.12	29.82	9.66	9.56	-25.14	-58.01	1,169.94	1,155.46	14.48	80.790		
6,222.00	5,261.63	4,883.00	4,879.46	32.31	9.62	13.89	-25.09	-54.02	1,262.37	1,245.68	16.70	75.612		
6,318.00	5,263.22	4,883.00	4,879.46	34.82	9.62	7.45	-25.09	-54.02	1,355.12	1,339.78	15.34	88.346		
6,413.00	5,267.12	4,883.00	4,879.46	37.32	9.62	1.19	-25.09	-54.02	1,447.91	1,432.90	15.01	96.431		
6,508.00	5,270.68	4,883.00	4,879.46	39.82	9.62	-6.02	-25.09	-54.02	1,540.92	1,524.54	16.38	94.082		
6,603.00	5,272.43	4,883.00	4,879.46	42.35	9.62	5.55	-25.09	-54.02	1,633.80	1,616.91	16.89	96.759		
6,699.00	5,274.27	4,883.00	4,879.46	44.91	9.62	7.74	-25.09	-54.02	1,727.89	1,709.62	18.27	94.591		
6,794.00	5,276.84	4,883.00	4,879.46	47.46	9.62	8.11	-25.09	-54.02	1,821.32	1,802.16	19.15	95.092		
6,890.00	5,280.52	4,883.00	4,879.46	50.04	9.62	6.31	-25.09	-54.02	1,916.07	1,896.81	19.26	99.486		
6,986.00	5,283.54	4,883.00	4,879.46	52.62	9.62	3.04	-25.09	-54.02	2,010.85	1,991.77	19.08	105.412		
7,082.00	5,285.80	4,883.00	4,879.46	55.21	9.62	-3.17	-25.09	-54.02	2,105.63	2,085.79	19.84	106.110		
7,178.00	5,287.89	4,867.38	4,864.18	57.80	9.59	0.76	-25.01	-50.78	2,199.97	2,179.81	20.16	109.122		
7,274.00	5,288.65	4,865.70	4,862.53	60.40	9.58	3.53	-25.00	-50.49	2,294.61	2,273.41	21.20	108.238		
7,370.00	5,289.07	4,851.00	4,847.98	63.01	9.55	4.09	-24.93	-48.36	2,389.66	2,367.62	22.03	108.453		
7,464.00	5,289.81	4,851.00	4,847.98	65.56	9.55	2.29	-24.93	-48.36	2,482.43	2,460.11	22.32	111.213		
7,560.00	5,290.06	4,851.00	4,847.98	68.17	9.55	13.17	-24.93	-48.36	2,577.16	2,548.70	28.46	90.550		
7,656.00	5,290.06	4,851.00	4,847.98	70.79	9.55	12.52	-24.93	-48.36	2,671.92	2,643.05	28.86	92.572		
7,752.00	5,290.39	4,851.00	4,847.98	73.40	9.55	9.30	-24.93	-48.36	2,766.82	2,739.42	27.41	100.957		
7,848.00	5,290.90	4,851.00	4,847.98	76.05	9.55	10.90	-24.93	-48.36	2,862.82	2,833.46	29.36	97.519		
7,945.00	5,292.07	4,851.00	4,847.98	78.67	9.55	-3.16	-24.93	-48.36	2,958.00	2,931.95	26.05	113.550		
8,041.00	5,293.58	4,851.00	4,847.98	81.29	9.55	2.52	-24.93	-48.36	3,053.28	3,026.75	26.53	115.071		
8,137.00	5,294.67	4,851.00	4,847.98	83.91	9.55	3.20	-24.93	-48.36	3,148.56	3,121.16	27.40	114.916		

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



Phoenix Technology Services

Anticollision Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3925.00usft (Capstar 114)
Reference Site:	Crow Federal	MD Reference:	KB @ 3925.00usft (Capstar 114)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH / Job #1310298	Database:	GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 613-MWD												Offset Well Error:	0.00 usft
Crow Federal - #13H - OH / Job #1310316 - Surveys (Capstar 114)													
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
8,232.00	5,294.67	4,851.00	4,847.98	86.51	9.55	8.46	-24.93	-48.36	3,242.74	3,211.98	30.76	105.433	
8,328.00	5,293.50	4,851.00	4,847.98	89.14	9.55	12.78	-24.93	-48.36	3,337.78	3,302.57	35.21	94.805	
8,424.00	5,293.08	4,851.00	4,847.98	91.76	9.55	12.74	-24.93	-48.36	3,432.97	3,396.86	36.11	95.080	
8,521.00	5,294.69	4,851.00	4,847.98	94.42	9.55	19.13	-24.93	-48.36	3,529.41	3,485.14	44.27	79.717	
8,617.00	5,297.79	4,851.00	4,847.98	97.05	9.55	26.07	-24.93	-48.36	3,625.01	3,570.63	54.38	66.667	
8,713.00	5,301.30	4,851.00	4,847.98	99.68	9.55	15.24	-24.93	-48.36	3,720.67	3,679.03	41.65	89.341	
8,809.00	5,304.32	4,851.00	4,847.98	102.31	9.55	3.77	-24.93	-48.36	3,816.34	3,783.77	32.58	117.151	
8,905.00	5,306.58	4,851.00	4,847.98	104.94	9.55	5.58	-24.93	-48.36	3,911.98	3,877.78	34.20	114.389	
9,001.00	5,308.93	4,851.00	4,847.98	107.57	9.55	0.02	-24.93	-48.36	4,007.64	3,974.42	33.21	120.661	
9,098.00	5,311.04	4,851.00	4,847.98	110.23	9.55	-5.35	-24.93	-48.36	4,104.29	4,068.64	35.65	115.130	
9,194.00	5,312.80	4,851.00	4,847.98	112.85	9.55	-17.54	-24.93	-48.36	4,199.92	4,150.07	49.85	84.255	
9,290.00	5,314.56	4,851.00	4,847.98	115.48	9.55	-5.08	-24.93	-48.36	4,295.56	4,258.61	36.95	116.246	
9,386.00	5,315.48	4,851.00	4,847.98	118.11	9.55	-4.62	-24.93	-48.36	4,391.16	4,353.78	37.39	117.455	
9,482.00	5,316.82	4,851.00	4,847.98	120.74	9.55	-9.54	-24.93	-48.36	4,486.81	4,444.45	42.37	105.908	
9,578.00	5,319.75	4,851.00	4,847.98	123.37	9.55	-5.39	-24.93	-48.36	4,582.59	4,543.19	39.40	116.297	
9,674.00	5,324.28	4,851.00	4,847.98	125.99	9.55	-2.77	-24.93	-48.36	4,678.48	4,639.78	38.70	120.901	
9,710.00	5,326.38	4,851.00	4,847.98	126.98	9.55	-8.97	-24.93	-48.36	4,714.45	4,670.73	43.73	107.818	
9,765.00	5,329.74	4,851.00	4,847.98	128.48	9.55	-8.97	-24.93	-48.36	4,769.42	4,725.24	44.19	107.939	

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



Phoenix Technology Services

Anticollision Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3925.00usft (Capstar 114)
Reference Site:	Crow Federal	MD Reference:	KB @ 3925.00usft (Capstar 114)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH / Job #1310298	Database:	GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.00 usft
Crow Federal - #14H - Wellbore #1 / Job #1210352 - Plan 1 4-25-2012														Offset Well Error:	0.00 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)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
0.00	0.00	0.00	0.00	0.00	0.00	-0.43	40.00	-0.30	41.23						
629.00	628.99	618.26	617.56	0.70	1.31	99.85	39.86	-22.50	46.11	44.12	2.00	23.090			
715.00	714.99	704.08	703.18	0.88	1.52	98.77	39.82	-28.48	49.14	46.76	2.39	20.600			
800.00	799.99	788.90	787.79	1.05	1.74	80.12	39.78	-34.40	52.49	49.74	2.76	19.041			
886.00	885.99	874.73	873.41	1.23	1.95	89.80	39.74	-40.39	56.22	53.08	3.14	17.905			
972.00	971.98	961.23	959.73	1.42	2.15	97.15	39.71	-45.93	60.03	56.51	3.51	17.081			
1,057.00	1,056.98	1,047.15	1,045.57	1.59	2.33	105.73	39.68	-49.59	62.76	58.91	3.85	16.289			
1,143.00	1,142.97	1,134.18	1,132.58	1.77	2.49	90.41	39.67	-51.32	64.12	59.93	4.19	15.308			
1,228.00	1,227.96	1,219.56	1,217.96	1.95	2.65	76.81	39.67	-51.46	64.03	59.49	4.54	14.094			
1,314.00	1,313.95	1,305.54	1,303.95	2.13	2.83	79.99	39.67	-51.46	63.71	58.81	4.90	13.004			
1,399.00	1,398.93	1,390.53	1,388.93	2.30	3.00	50.57	39.67	-51.46	63.02	57.77	5.25	12.007			
1,485.00	1,484.92	1,476.51	1,474.92	2.47	3.18	32.31	39.67	-51.46	61.75	56.15	5.60	11.018			
1,570.00	1,569.90	1,561.50	1,559.90	2.65	3.35	30.11	39.67	-51.46	60.35	54.40	5.96	10.134			
1,656.00	1,655.88	1,647.48	1,645.88	2.82	3.53	16.22	39.67	-51.46	58.85	52.53	6.31	9.321			
1,742.00	1,741.87	1,733.46	1,731.87	3.00	3.72	26.14	39.67	-51.46	57.25	50.57	6.68	8.571			
1,827.00	1,826.84	1,818.44	1,816.84	3.19	3.90	28.38	39.67	-51.46	55.47	48.42	7.05	7.872			
1,913.00	1,912.81	1,904.41	1,902.81	3.37	4.08	21.68	39.67	-51.46	53.43	46.02	7.41	7.207			
1,998.00	1,997.79	1,989.39	1,987.79	3.55	4.26	46.31	39.67	-51.46	51.88	44.11	7.78	6.673			
2,084.00	2,083.79	2,075.38	2,073.79	3.72	4.45	60.98	39.67	-51.46	51.19	43.05	8.14	6.288			
2,169.00	2,168.78	2,160.38	2,158.78	3.90	4.63	62.44	39.67	-51.46	50.73	42.22	8.51	5.965			
2,255.00	2,254.77	2,246.37	2,244.77	4.08	4.82	33.17	39.67	-51.46	50.01	41.14	8.88	5.635			
2,341.00	2,340.77	2,332.37	2,330.77	4.26	5.01	14.18	39.67	-51.46	49.28	40.04	9.24	5.334			
2,426.00	2,425.77	2,417.36	2,415.77	4.43	5.19	-49.83	39.67	-51.46	48.71	39.11	9.60	5.074			
2,512.00	2,511.76	2,503.36	2,501.76	4.61	5.38	-68.31	39.67	-51.46	48.22	38.26	9.96	4.840			
2,597.00	2,596.75	2,588.35	2,586.75	4.79	5.57	-65.38	39.67	-51.46	47.69	37.36	10.32	4.619			
2,683.00	2,682.73	2,674.33	2,672.73	4.97	5.76	-46.11	39.67	-51.46	46.61	35.93	10.69	4.361			
2,768.00	2,767.71	2,759.31	2,757.71	5.14	5.94	-66.96	39.67	-51.46	45.55	34.49	11.05	4.122			
2,854.00	2,853.69	2,845.29	2,843.69	5.32	6.13	-73.72	39.67	-51.46	44.98	33.57	11.41	3.941			
2,940.00	2,939.68	2,931.27	2,929.68	5.50	6.32	-58.41	39.67	-51.46	44.26	32.48	11.78	3.757			
3,025.00	3,024.65	3,016.25	3,014.65	5.68	6.51	-59.32	39.67	-51.46	43.15	31.00	12.14	3.553			
3,111.00	3,110.61	3,102.21	3,100.61	5.86	6.70	-59.59	39.67	-51.46	41.85	29.33	12.51	3.344			
3,197.00	3,196.58	3,188.17	3,186.58	6.04	6.89	-39.09	39.67	-51.46	40.30	27.42	12.88	3.128			
3,281.00	3,280.55	3,272.15	3,270.55	6.22	7.07	-23.09	39.67	-51.46	38.64	25.40	13.24	2.918			
3,367.00	3,366.53	3,358.13	3,356.53	6.40	7.26	-9.04	39.67	-51.46	36.92	23.31	13.61	2.712			
3,418.00	3,417.52	3,409.12	3,407.52	6.51	7.38	4.29	39.67	-51.46	35.91	22.07	13.83	2.596			
3,551.00	3,550.50	3,542.09	3,540.50	6.79	7.67	-9.12	39.67	-51.46	33.26	18.85	14.41	2.308			
3,608.30	3,607.79	3,599.39	3,597.79	6.91	7.80	-89.99	39.67	-51.46	32.67	18.01	14.65	2.229 CC, ES			
3,637.00	3,636.49	3,628.09	3,626.49	6.97	7.86	-148.16	39.67	-51.46	32.82	18.04	14.77	2.221 SF			
3,723.00	3,722.49	3,714.08	3,712.49	7.15	8.05	-149.10	39.67	-51.46	33.71	18.57	15.14	2.226			
3,808.00	3,807.46	3,799.06	3,797.46	7.32	8.24	-174.09	39.67	-51.46	35.56	20.06	15.50	2.294			
3,893.00	3,892.41	3,884.01	3,882.41	7.50	8.43	178.16	39.67	-51.46	38.59	22.73	15.86	2.433			
3,979.00	3,978.38	3,969.98	3,968.38	7.67	8.62	148.87	39.67	-51.46	40.63	24.38	16.25	2.501			
4,065.00	4,064.38	4,055.97	4,054.38	7.85	8.81	118.87	39.67	-51.46	41.12	24.50	16.62	2.474			
4,150.00	4,149.37	4,140.97	4,139.37	8.03	9.00	169.43	39.67	-51.46	41.96	24.97	16.99	2.470			
4,236.00	4,235.35	4,226.95	4,225.35	8.21	9.20	175.53	39.67	-51.46	43.82	26.47	17.35	2.525			
4,321.00	4,320.31	4,311.91	4,310.31	8.39	9.38	175.97	39.67	-51.46	46.33	28.62	17.72	2.615			
4,407.00	4,406.25	4,397.85	4,396.25	8.57	9.58	173.15	39.67	-51.46	49.62	31.54	18.08	2.744			
4,493.00	4,492.20	4,483.80	4,482.20	8.74	9.77	157.15	39.67	-51.46	52.45	33.98	18.47	2.840			
4,578.00	4,577.18	4,568.78	4,567.18	8.92	9.96	133.48	39.67	-51.46	54.01	35.18	18.84	2.867			
4,664.00	4,663.17	4,654.77	4,653.17	9.10	10.15	-136.94	39.67	-51.46	54.86	35.64	19.21	2.855			
4,729.00	4,728.17	4,719.76	4,718.17	9.24	10.29	-97.59	39.67	-51.46	55.10	35.60	19.49	2.826			
4,797.00	4,796.15	4,787.75	4,786.15	9.38	10.45	-105.21	39.67	-51.46	55.36	35.57	19.79	2.798			

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



Phoenix Technology Services

Anticollision Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3925.00usft (Capstar 114)
Reference Site:	Crow Federal	MD Reference:	KB @ 3925.00usft (Capstar 114)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH / Job #1310298	Database:	GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Crow Federal - #14H - Wellbore #1 / Job #1210352 - Plan 1 4-25-2012													Offset Well Error:	0.00 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		
4,829.00	4,828.15	4,819.74	4,818.15	9.45	10.52	-116.21	39.67	-51.46	55.62	35.70	19.92	2.792		
4,861.00	4,860.12	4,851.72	4,850.12	9.51	10.59	-140.10	39.67	-51.46	56.46	36.41	20.05	2.816		
4,893.00	4,891.93	4,883.53	4,881.93	9.58	10.66	-148.97	39.67	-51.46	59.26	39.22	20.04	2.957		
4,925.00	4,923.27	4,914.87	4,913.27	9.66	10.73	-152.70	39.67	-51.46	64.89	44.97	19.92	3.257		
4,957.00	4,955.82	4,945.41	4,943.82	9.73	10.80	-153.40	39.67	-51.46	73.42	53.80	19.92	3.743		
4,989.00	4,983.42	4,975.01	4,973.42	9.81	10.86	-157.08	39.67	-51.46	84.59	65.25	19.34	4.374		
5,021.00	5,012.05	5,003.64	5,002.05	9.88	10.93	-160.28	39.67	-51.46	98.07	79.19	18.88	5.194		
5,053.00	5,039.51	5,031.11	5,029.51	9.96	10.99	-162.88	39.67	-51.46	113.85	95.45	18.40	6.188		
5,085.00	5,065.87	5,057.46	5,055.87	10.07	11.05	-164.61	39.67	-51.46	131.49	113.51	17.98	7.313		
5,117.00	5,090.78	5,082.38	5,080.78	10.21	11.10	-165.13	39.67	-51.46	151.13	133.91	17.22	8.776		
5,149.00	5,113.83	5,105.43	5,103.83	10.37	11.16	-163.73	39.67	-51.46	172.88	156.31	16.57	10.433		
5,181.00	5,134.90	5,126.50	5,124.90	10.57	11.20	-163.80	39.67	-51.46	196.52	180.74	15.78	12.452		
5,213.00	5,153.80	5,145.39	5,143.80	10.81	11.24	-162.30	39.67	-51.46	221.93	206.81	15.12	14.682		
5,245.00	5,170.54	5,162.13	5,160.54	11.10	11.28	-163.47	39.67	-51.46	248.85	234.49	14.35	17.335		
5,277.00	5,185.28	5,176.88	5,175.28	11.45	11.31	-165.40	39.67	-51.46	277.00	263.42	13.58	20.394		
5,309.00	5,197.97	5,189.56	5,187.97	11.84	11.34	-163.86	39.67	-51.46	306.21	293.02	13.18	23.224		
5,341.00	5,208.65	5,200.24	5,198.65	12.28	11.37	-161.27	39.67	-51.46	336.20	322.97	13.24	25.399		
5,373.00	5,217.89	5,209.49	5,207.89	12.76	11.39	-159.83	39.67	-51.46	366.68	353.26	13.42	27.322		
5,405.00	5,226.42	5,218.02	5,216.42	13.28	11.41	-158.87	39.67	-51.46	397.37	383.64	13.73	28.951		
5,437.00	5,234.75	5,226.35	5,224.75	13.82	11.43	-159.62	39.67	-51.46	428.11	414.33	13.78	31.068		
5,469.00	5,242.39	5,233.98	5,232.39	14.40	11.44	-154.01	39.67	-51.46	459.03	443.98	15.05	30.494		
5,495.00	5,247.28	5,238.88	5,237.28	14.90	11.45	-149.79	39.67	-51.46	484.44	468.26	16.18	29.936		
5,518.00	5,250.44	5,242.04	5,240.44	15.35	11.46	-137.76	39.67	-51.46	507.11	487.47	19.64	25.825		
5,550.00	5,253.59	5,245.19	5,243.59	16.01	11.47	-131.89	39.67	-51.46	538.80	517.18	21.62	24.918		
5,646.00	5,257.36	5,248.96	5,247.36	18.08	11.48	-87.62	39.67	-51.46	634.33	604.80	29.53	21.482		
5,742.00	5,257.36	5,248.96	5,247.36	20.28	11.48	-92.74	39.67	-51.46	730.04	698.32	31.71	23.020		
5,838.00	5,258.11	5,249.71	5,248.11	22.57	11.48	-103.84	39.67	-51.46	825.85	792.68	33.17	24.895		
5,934.00	5,259.29	5,250.88	5,249.29	24.94	11.48	-107.21	39.67	-51.46	921.75	886.78	34.98	26.354		
6,030.00	5,260.21	5,251.81	5,250.21	27.36	11.48	-100.14	39.67	-51.46	1,017.67	979.38	38.30	26.574		
6,126.00	5,260.96	5,252.56	5,250.96	29.82	11.48	-134.30	39.67	-51.46	1,113.64	1,082.60	31.04	35.876		
6,222.00	5,261.63	5,253.23	5,251.63	32.31	11.49	107.20	39.67	-51.46	1,209.64	1,167.59	42.04	28.772		
6,318.00	5,263.22	5,254.82	5,253.22	34.82	11.49	-147.25	39.67	-51.46	1,305.62	1,277.60	28.02	46.601		
6,413.00	5,267.12	5,258.72	5,257.12	37.32	11.50	-142.13	39.67	-51.46	1,400.49	1,368.11	32.37	43.259		
6,508.00	5,270.68	5,262.28	5,260.68	39.82	11.51	-107.48	39.67	-51.46	1,495.27	1,446.13	49.15	30.425		
6,603.00	5,272.43	5,264.02	5,262.43	42.35	11.51	-127.99	39.67	-51.46	1,590.16	1,546.49	43.67	36.410		
6,699.00	5,274.27	5,265.86	5,264.27	44.91	11.51	-151.76	39.67	-51.46	1,686.13	1,655.31	30.82	54.708		
6,794.00	5,276.84	5,268.43	5,266.84	47.46	11.52	-159.84	39.67	-51.46	1,781.09	1,754.58	26.51	67.179		
6,890.00	5,280.52	5,272.12	5,270.52	50.04	11.53	-158.63	39.67	-51.46	1,877.01	1,848.54	28.47	65.930		
6,986.00	5,283.54	5,275.14	5,273.54	52.62	11.53	-126.37	39.67	-51.46	1,972.94	1,920.02	52.91	37.286		
7,082.00	5,285.80	5,277.40	5,275.80	55.21	11.54	-126.79	39.67	-51.46	2,068.86	2,014.11	54.75	37.785		
7,178.00	5,287.89	5,279.49	5,277.89	57.80	11.54	-116.79	39.67	-51.46	2,164.78	2,102.20	62.58	34.591		
7,274.00	5,288.65	5,280.25	5,278.65	60.40	11.55	-95.56	39.67	-51.46	2,260.75	2,189.12	71.63	31.560		
7,370.00	5,289.07	5,280.66	5,279.07	63.01	11.55	-114.26	39.67	-51.46	2,356.74	2,288.18	68.55	34.378		
7,464.00	5,289.81	5,281.40	5,279.81	65.56	11.55	-113.53	39.67	-51.46	2,450.72	2,379.47	71.25	34.396		
7,560.00	5,290.06	5,281.65	5,280.06	68.17	11.55	75.25	39.67	-51.46	2,546.71	2,469.44	77.27	32.957		
7,656.00	5,290.06	5,281.65	5,280.06	70.79	11.55	110.47	39.67	-51.46	2,642.71	2,565.07	77.64	34.039		
7,752.00	5,290.39	5,281.99	5,280.39	73.40	11.55	172.70	39.67	-51.46	2,738.71	2,711.81	26.90	101.824		
7,849.00	5,290.90	5,282.50	5,280.90	76.05	11.55	151.04	39.67	-51.46	2,835.70	2,787.57	48.13	58.916		
7,945.00	5,292.07	5,283.67	5,282.07	78.67	11.55	-121.14	39.67	-51.46	2,931.68	2,853.33	78.35	37.416		
8,041.00	5,293.58	5,285.18	5,283.58	81.29	11.56	-131.21	39.67	-51.46	3,027.65	2,955.62	72.03	42.033		
8,137.00	5,294.67	5,286.27	5,284.67	83.91	11.56	-122.43	39.67	-51.46	3,123.63	3,041.74	81.89	38.144		
8,232.00	5,294.67	5,286.27	5,284.67	86.51	11.56	2.81	39.67	-51.46	3,218.63	3,190.13	28.50	112.931		

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



Phoenix Technology Services
Anticollision Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3925.00usft (Capstar 114)
Reference Site:	Crow Federal	MD Reference:	KB @ 3925.00usft (Capstar 114)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore:	OH / Job #1310298	Database:	GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Offset Design Crow Federal - #14H - Wellbore #1 / Job #1210352 - Plan 1 4-25-2012												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 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	
8,328.00	5,293.50	5,285.09	5,283.50	89.14	11.56	38.42	39.67	-51.46	3,314.62	3,248.14	66.48	49.858	
8,424.00	5,293.08	5,284.67	5,283.08	91.76	11.56	135.16	39.67	-51.46	3,410.61	3,334.61	75.99	44.880	
8,521.00	5,294.69	5,286.28	5,284.69	94.42	11.56	152.48	39.67	-51.46	3,507.59	3,451.52	56.07	62.553	
8,617.00	5,297.79	5,289.38	5,287.79	97.05	11.57	152.29	39.67	-51.46	3,603.52	3,545.86	57.67	62.488	
8,713.00	5,301.30	5,292.90	5,291.30	99.68	11.57	173.24	39.67	-51.46	3,699.45	3,665.27	34.18	108.245	
8,809.00	5,304.32	5,295.92	5,294.32	102.31	11.58	-157.65	39.67	-51.46	3,795.40	3,742.72	52.68	72.045	
8,905.00	5,306.58	5,298.18	5,296.58	104.94	11.59	-158.02	39.67	-51.46	3,891.37	3,838.02	53.35	72.946	
9,001.00	5,308.93	5,300.52	5,298.93	107.57	11.59	-151.38	39.67	-51.46	3,987.33	3,923.02	64.31	62.000	
9,098.00	5,311.04	5,302.64	5,301.04	110.23	11.60	-119.75	39.67	-51.46	4,084.29	3,977.22	107.07	38.146	
9,194.00	5,312.80	5,304.40	5,302.80	112.85	11.60	-118.88	39.67	-51.46	4,180.22	4,070.06	110.16	37.948	
9,290.00	5,314.56	5,306.16	5,304.56	115.48	11.60	-121.33	39.67	-51.46	4,276.15	4,166.08	110.07	38.849	
9,386.00	5,315.48	5,307.08	5,305.48	118.11	11.61	-103.14	39.67	-51.46	4,372.12	4,245.58	126.54	34.550	
9,482.00	5,316.82	5,308.42	5,306.82	120.74	11.61	-129.90	39.67	-51.46	4,468.08	4,363.87	104.22	42.873	
9,578.00	5,319.75	5,311.35	5,309.75	123.37	11.62	-152.89	39.67	-51.46	4,564.01	4,493.86	70.15	65.057	
9,674.00	5,324.28	5,315.87	5,314.28	125.99	11.63	-164.20	39.67	-51.46	4,659.89	4,607.09	52.80	88.255	
9,710.00	5,326.38	5,317.98	5,316.38	126.98	11.63	-162.58	39.67	-51.46	4,695.82	4,640.16	55.67	84.356	
9,765.00	5,329.74	5,321.33	5,319.74	128.48	11.64	-162.77	39.67	-51.46	4,750.71	4,694.75	55.96	84.899	



Phoenix Technology Services

Anticollision Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3925.00usft (Capstar 114)
Reference Site:	Crow Federal	MD Reference:	KB @ 3925.00usft (Capstar 114)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH / Job #1310298	Database:	GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Offset Design Crow Federal - #15H - OH / Job #1310461 - Plan #2 04-18-13													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 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		
0.00	0.00	0.00	0.00	0.00	0.00	-0.38	105.00	-0.70	108.42					
629.00	628.99	601.99	601.99	0.70	1.23	127.17	105.00	-0.70	106.31	104.39	1.92	55.296		
715.00	714.99	687.99	687.99	0.88	1.42	131.92	105.00	-0.70	106.70	104.40	2.30	46.440		
800.00	799.99	772.99	772.99	1.05	1.61	118.38	105.00	-0.70	107.04	104.38	2.66	40.274		
886.00	885.99	858.99	858.99	1.23	1.80	132.57	105.00	-0.70	107.43	104.40	3.03	35.446		
972.00	971.98	944.98	944.98	1.42	2.00	143.38	105.00	-0.70	108.11	104.69	3.41	31.670		
1,057.00	1,056.98	1,029.98	1,029.98	1.59	2.19	153.75	105.00	-0.70	108.92	105.14	3.78	28.824		
1,143.00	1,142.97	1,115.97	1,115.97	1.77	2.38	138.93	105.00	-0.70	109.72	105.58	4.15	26.461		
1,228.00	1,227.96	1,200.96	1,200.96	1.95	2.57	124.76	105.00	-0.70	110.58	106.06	4.52	24.453		
1,314.00	1,313.95	1,286.95	1,286.95	2.13	2.77	127.22	105.00	-0.70	111.50	106.61	4.89	22.792		
1,399.00	1,398.93	1,371.93	1,371.93	2.30	2.96	97.27	105.00	-0.70	112.06	106.81	5.25	21.332		
1,485.00	1,484.92	1,457.92	1,457.92	2.47	3.15	78.85	105.00	-0.70	112.02	106.40	5.62	19.928		
1,570.00	1,569.90	1,542.90	1,542.90	2.65	3.34	76.66	105.00	-0.70	111.67	105.69	5.98	18.664		
1,656.00	1,655.88	1,628.88	1,628.88	2.82	3.53	62.96	105.00	-0.70	111.11	104.75	6.35	17.491		
1,742.00	1,741.87	1,714.87	1,714.87	3.00	3.73	73.08	105.00	-0.70	110.47	103.74	6.73	16.421		
1,827.00	1,826.84	1,799.84	1,799.84	3.19	3.92	75.38	105.00	-0.70	109.93	102.82	7.10	15.476		
1,913.00	1,912.81	1,885.81	1,885.81	3.37	4.11	68.80	105.00	-0.70	109.24	101.76	7.48	14.606		
1,999.65	1,999.44	1,962.44	1,962.44	3.53	4.28	90.00	105.00	-0.70	108.87	101.06	7.81	13.940		
1,998.00	1,997.79	1,970.79	1,970.79	3.55	4.30	93.33	105.00	-0.70	108.88	101.03	7.85	13.876		
2,084.00	2,083.79	2,056.79	2,056.79	3.72	4.50	107.61	105.00	-0.70	109.04	100.82	8.22	13.269		
2,169.00	2,168.78	2,141.78	2,141.78	3.90	4.69	108.59	105.00	-0.70	109.34	100.75	8.59	12.733		
2,255.00	2,254.77	2,227.77	2,227.77	4.08	4.88	78.96	105.00	-0.70	109.43	100.47	8.96	12.211		
2,341.00	2,340.77	2,313.77	2,313.77	4.26	5.07	59.97	105.00	-0.70	109.18	99.85	9.33	11.700		
2,426.00	2,425.77	2,398.77	2,398.77	4.43	5.26	-3.61	105.00	-0.70	108.59	98.89	9.70	11.198		
2,512.00	2,511.76	2,484.76	2,484.76	4.61	5.46	-21.23	105.00	-0.70	107.65	97.58	10.07	10.693		
2,597.00	2,596.75	2,569.75	2,569.75	4.79	5.65	-17.06	105.00	-0.70	106.38	95.95	10.43	10.196		
2,683.00	2,682.73	2,655.73	2,655.73	4.97	5.84	3.95	105.00	-0.70	104.55	93.74	10.81	9.675		
2,768.00	2,767.71	2,740.71	2,740.71	5.14	6.03	-15.04	105.00	-0.70	102.65	91.48	11.18	9.186		
2,854.00	2,853.69	2,826.69	2,826.69	5.32	6.23	-20.11	105.00	-0.70	101.08	89.53	11.55	8.754		
2,940.00	2,939.68	2,912.68	2,912.68	5.50	6.42	-2.99	105.00	-0.70	99.40	87.48	11.92	8.340		
3,025.00	3,024.65	2,997.65	2,997.65	5.68	6.61	-1.54	105.00	-0.70	97.25	84.96	12.29	7.915		
3,111.00	3,110.61	3,083.61	3,083.61	5.86	6.80	1.16	105.00	-0.70	94.70	82.04	12.66	7.480		
3,197.00	3,196.58	3,169.58	3,169.58	6.04	7.00	24.57	105.00	-0.70	92.32	79.29	13.04	7.081		
3,281.00	3,280.55	3,253.55	3,253.55	6.22	7.19	42.73	105.00	-0.70	90.68	77.27	13.40	6.765		
3,367.00	3,366.53	3,339.53	3,339.53	6.40	7.38	58.41	105.00	-0.70	89.54	75.76	13.78	6.498		
3,418.00	3,417.52	3,390.52	3,390.52	6.51	7.49	72.40	105.00	-0.70	89.11	75.11	14.00	6.364		
3,551.00	3,550.50	3,523.50	3,523.50	6.79	7.79	60.77	105.00	-0.70	88.05	73.47	14.58	6.038		
3,637.00	3,636.49	3,609.49	3,609.49	6.97	7.99	-77.36	105.00	-0.70	87.49	72.54	14.95	5.851		
3,723.00	3,722.49	3,695.49	3,695.49	7.15	8.18	-78.03	105.00	-0.70	87.27	71.95	15.32	5.695		
3,744.85	3,744.33	3,717.33	3,717.33	7.19	8.23	-90.00	105.00	-0.70	87.24	71.82	15.42	5.658 CC		
3,808.00	3,807.46	3,780.46	3,780.46	7.32	8.37	-103.56	105.00	-0.70	87.48	71.79	15.69	5.576 ES		
3,893.00	3,892.41	3,865.41	3,865.41	7.50	8.56	-113.02	105.00	-0.70	88.45	72.40	16.05	5.510		
3,979.00	3,978.38	3,951.38	3,951.38	7.67	8.75	-143.88	105.00	-0.70	89.47	73.05	16.43	5.447		
4,065.00	4,064.38	4,037.38	4,037.38	7.85	8.95	-174.67	105.00	-0.70	90.06	73.26	16.80	5.361		
4,150.00	4,149.37	4,122.37	4,122.37	8.03	9.14	-124.96	105.00	-0.70	90.71	73.54	17.17	5.284		
4,236.00	4,235.35	4,208.35	4,208.35	8.21	9.33	-120.15	105.00	-0.70	91.70	74.16	17.54	5.229		
4,321.00	4,320.31	4,293.31	4,293.31	8.39	9.52	-121.29	105.00	-0.70	92.99	75.08	17.90	5.193		
4,407.00	4,406.25	4,379.25	4,379.25	8.57	9.72	-126.15	105.00	-0.70	94.83	76.56	18.27	5.189		
4,493.00	4,492.20	4,465.20	4,465.20	8.74	9.91	-144.14	105.00	-0.70	96.80	78.15	18.65	5.191		
4,578.00	4,577.18	4,550.18	4,550.18	8.92	10.10	-169.40	105.00	-0.70	98.52	79.50	19.02	5.181		
4,664.00	4,663.17	4,636.17	4,636.17	9.10	10.29	-80.57	105.00	-0.70	99.35	79.96	19.39	5.123		
4,729.00	4,728.17	4,701.17	4,701.17	9.24	10.44	-40.82	105.00	-0.70	98.89	79.21	19.67	5.026		

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



Phoenix Technology Services

Anticollision Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3925.00usft (Capstar 114)
Reference Site:	Crow Federal	MD Reference:	KB @ 3925.00usft (Capstar 114)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH / Job #1310298	Database:	GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Offset Design Crow Federal - #15H - OH / Job #1310461 - Plan #2 04-18-13													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 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)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
4,797.00	4,796.15	4,769.15	4,769.15	9.38	10.59	-47.65	105.00	-0.70	97.96	77.99	19.97	4.906		
4,829.00	4,828.15	4,801.15	4,801.15	9.45	10.66	-58.29	105.00	-0.70	97.53	77.42	20.11	4.850		
4,861.00	4,860.12	4,833.12	4,833.12	9.51	10.74	-82.00	105.00	-0.70	97.20	76.95	20.25	4.800		
4,885.87	4,884.87	4,857.87	4,857.87	9.57	10.79	-90.00	105.00	-0.70	97.09	76.74	20.35	4.770		
4,893.00	4,891.93	4,864.93	4,864.93	9.58	10.81	-91.25	105.00	-0.70	97.10	76.72	20.39	4.763		
4,925.00	4,923.27	4,896.27	4,896.27	9.66	10.88	-96.14	105.00	-0.70	97.54	77.03	20.52	4.754 SF		
4,957.00	4,953.82	4,926.82	4,926.82	9.73	10.95	-99.21	105.00	-0.70	98.85	78.21	20.63	4.791		
4,989.00	4,983.42	4,956.42	4,956.42	9.81	11.01	-105.73	105.00	-0.70	101.69	80.99	20.69	4.914		
5,021.00	5,012.05	4,985.05	4,985.05	9.88	11.08	-112.39	105.00	-0.70	106.86	86.21	20.65	5.174		
5,053.00	5,039.51	5,012.51	5,012.51	9.96	11.14	-118.69	105.00	-0.70	114.87	94.37	20.50	5.604		
5,085.00	5,065.87	5,038.87	5,038.87	10.07	11.20	-124.14	105.00	-0.70	125.70	105.42	20.28	6.199		
5,117.00	5,090.78	5,063.78	5,063.78	10.21	11.25	-127.78	105.00	-0.70	139.40	119.47	19.93	6.994		
5,149.00	5,113.83	5,086.83	5,086.83	10.37	11.31	-129.51	105.00	-0.70	155.90	136.24	19.66	7.930		
5,181.00	5,134.90	5,107.90	5,107.90	10.57	11.35	-131.58	105.00	-0.70	175.00	155.71	19.29	9.070		
5,213.00	5,153.80	5,126.80	5,126.80	10.81	11.40	-131.85	105.00	-0.70	196.55	177.44	19.11	10.285		
5,245.00	5,170.54	5,143.54	5,143.54	11.10	11.43	-133.47	105.00	-0.70	220.27	201.45	18.82	11.705		
5,277.00	5,185.28	5,158.28	5,158.28	11.45	11.47	-135.00	105.00	-0.70	245.94	227.38	18.57	13.246		
5,309.00	5,197.97	5,170.97	5,170.97	11.84	11.50	-133.23	105.00	-0.70	273.15	254.25	18.90	14.454		
5,341.00	5,208.65	5,181.65	5,181.65	12.28	11.52	-130.86	105.00	-0.70	301.45	281.95	19.50	15.458		
5,373.00	5,217.89	5,190.89	5,190.89	12.76	11.54	-130.00	105.00	-0.70	330.47	310.50	19.96	16.553		
5,405.00	5,226.42	5,199.42	5,199.42	13.28	11.56	-130.54	105.00	-0.70	359.89	339.66	20.23	17.789		
5,437.00	5,234.75	5,207.75	5,207.75	13.82	11.58	-132.61	105.00	-0.70	389.53	369.33	20.20	19.281		
5,469.00	5,242.39	5,215.39	5,215.39	14.40	11.60	-127.93	105.00	-0.70	419.45	397.87	21.58	19.433		
5,495.00	5,247.28	5,220.28	5,220.28	14.90	11.61	-122.19	105.00	-0.70	444.13	420.99	23.14	19.196		
5,518.00	5,250.44	5,223.44	5,223.44	15.35	11.61	-114.05	105.00	-0.70	466.20	441.22	24.98	18.662		
5,550.00	5,253.59	5,226.59	5,226.59	16.01	11.62	-109.34	105.00	-0.70	497.13	470.84	26.29	18.910		
5,646.00	5,257.36	5,230.36	5,230.36	18.08	11.63	-89.01	105.00	-0.70	590.85	561.15	29.70	19.895		
5,742.00	5,257.36	5,230.36	5,230.36	20.28	11.63	-91.16	105.00	-0.70	685.22	653.33	31.89	21.484		
5,838.00	5,258.11	5,231.11	5,231.11	22.57	11.63	-95.12	105.00	-0.70	780.10	746.02	34.08	22.891		
5,934.00	5,259.29	5,232.29	5,232.29	24.94	11.63	-96.00	105.00	-0.70	875.33	838.94	36.39	24.052		
6,030.00	5,260.21	5,233.21	5,233.21	27.36	11.64	-93.70	105.00	-0.70	970.73	931.81	38.92	24.942		
6,126.00	5,260.96	5,233.96	5,233.96	29.82	11.64	-96.97	105.00	-0.70	1,066.35	1,025.18	41.17	25.903		
6,222.00	5,261.63	5,234.63	5,234.63	32.31	11.64	-97.41	105.00	-0.70	1,162.19	1,118.61	43.58	26.668		
6,318.00	5,263.22	5,236.22	5,236.22	34.82	11.64	-111.50	105.00	-0.70	1,258.02	1,214.46	43.56	28.880		
6,413.00	5,267.12	5,240.12	5,240.12	37.32	11.65	-120.63	105.00	-0.70	1,352.63	1,309.78	42.85	31.568		
6,508.00	5,270.68	5,243.68	5,243.68	39.82	11.66	-100.54	105.00	-0.70	1,447.07	1,396.41	50.65	28.567		
6,603.00	5,272.43	5,245.43	5,245.43	42.35	11.66	-104.00	105.00	-0.70	1,541.68	1,489.13	52.55	29.338		
6,699.00	5,274.27	5,247.27	5,247.27	44.91	11.67	-113.37	105.00	-0.70	1,637.50	1,585.12	52.38	31.260		
6,794.00	5,276.84	5,249.84	5,249.84	47.46	11.67	-122.33	105.00	-0.70	1,732.34	1,681.46	50.88	34.044		
6,890.00	5,280.52	5,253.52	5,253.52	50.04	11.68	-130.12	105.00	-0.70	1,828.14	1,779.42	48.72	37.522		
6,986.00	5,283.54	5,256.54	5,256.54	52.62	11.69	-106.75	105.00	-0.70	1,923.94	1,862.12	61.82	31.123		
7,082.00	5,285.80	5,258.80	5,258.80	55.21	11.69	-112.30	105.00	-0.70	2,019.71	1,957.38	62.33	32.405		
7,178.00	5,287.89	5,260.89	5,260.89	57.80	11.70	-103.37	105.00	-0.70	2,115.48	2,047.71	67.77	31.216		
7,274.00	5,288.65	5,261.65	5,261.65	60.40	11.70	-92.10	105.00	-0.70	2,211.34	2,139.29	72.06	30.689		
7,370.00	5,289.07	5,262.07	5,262.07	63.01	11.70	-99.03	105.00	-0.70	2,307.24	2,233.39	73.85	31.241		
7,464.00	5,289.81	5,262.81	5,262.81	65.56	11.70	-100.44	105.00	-0.70	2,401.14	2,325.06	76.08	31.561		
7,560.00	5,290.06	5,263.06	5,263.06	68.17	11.70	-74.96	105.00	-0.70	2,497.09	2,419.70	77.39	32.265		
7,656.00	5,290.06	5,263.06	5,263.06	70.79	11.70	-102.35	105.00	-0.70	2,593.08	2,512.37	80.71	32.129		
7,752.00	5,290.39	5,263.39	5,263.39	73.40	11.70	-98.29	105.00	-0.70	2,689.06	2,604.79	84.27	31.909		
7,849.00	5,290.90	5,263.90	5,263.90	76.05	11.70	-109.53	105.00	-0.70	2,786.04	2,702.93	83.11	33.524		
7,945.00	5,292.07	5,265.07	5,265.07	78.67	11.71	-108.66	105.00	-0.70	2,881.96	2,795.97	85.99	33.515		
8,041.00	5,293.58	5,266.58	5,266.58	81.29	11.71	-110.19	105.00	-0.70	2,977.85	2,890.11	87.74	33.939		

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



Phoenix Technology Services
Anticollision Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3925.00usft (Capstar 114)
Reference Site:	Crow Federal	MD Reference:	KB @ 3925.00usft (Capstar 114)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH / Job #1310298	Database:	GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Offset Design										Crow Federal - #15H - OH / Job #1310461 - Plan #2 04-18-13		Offset Site Error: 0.00 usft	
Survey Program: 0-MWD												Offset Well Error: 0.00 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	
8,137.00	5,294.67	5,267.67	5,267.67	83.91	11.71	-103.98	105.00	-0.70	3,073.78	2,980.78	93.00	33.050	
8,232.00	5,294.67	5,267.67	5,267.67	86.51	11.71	-66.68	105.00	-0.70	3,168.75	3,077.79	90.96	34.838	
8,328.00	5,293.50	5,266.50	5,266.50	89.14	11.71	-25.84	105.00	-0.70	3,264.73	3,213.41	51.31	63.623	
8,424.00	5,293.08	5,266.08	5,266.08	91.76	11.71	-119.08	105.00	-0.70	3,360.72	3,269.21	91.52	36.723	
8,521.00	5,294.69	5,267.69	5,267.69	94.42	11.71	-168.52	105.00	-0.70	3,457.70	3,421.26	36.44	94.875	
8,617.00	5,297.79	5,270.79	5,270.79	97.05	11.72	177.44	105.00	-0.70	3,553.65	3,522.31	31.34	113.395	
8,713.00	5,301.30	5,274.30	5,274.30	99.68	11.73	-158.38	105.00	-0.70	3,649.58	3,599.01	50.58	72.158	
8,809.00	5,304.32	5,277.32	5,277.32	102.31	11.73	-133.92	105.00	-0.70	3,745.51	3,660.39	85.13	44.000	
8,905.00	5,306.58	5,279.58	5,279.58	104.94	11.74	-127.72	105.00	-0.70	3,841.45	3,747.01	94.44	40.675	
9,001.00	5,308.93	5,281.93	5,281.93	107.57	11.74	-132.09	105.00	-0.70	3,937.38	3,846.05	91.34	43.109	
9,098.00	5,311.04	5,284.04	5,284.04	110.23	11.75	-108.94	105.00	-0.70	4,034.29	3,918.44	115.85	34.823	
9,194.00	5,312.80	5,285.80	5,285.80	112.85	11.75	-111.69	105.00	-0.70	4,130.16	4,013.78	116.38	35.488	
9,290.00	5,314.56	5,287.56	5,287.56	115.48	11.76	-109.96	105.00	-0.70	4,226.03	4,105.88	120.15	35.172	
9,386.00	5,315.48	5,288.48	5,288.48	118.11	11.76	-97.93	105.00	-0.70	4,321.96	4,193.27	128.69	33.584	
9,482.00	5,316.82	5,289.82	5,289.82	120.74	11.76	-118.40	105.00	-0.70	4,417.87	4,300.08	117.80	37.505	
9,578.00	5,319.75	5,292.75	5,292.75	123.37	11.77	-138.35	105.00	-0.70	4,513.76	4,419.65	94.11	47.964	
9,674.00	5,324.28	5,297.28	5,297.28	125.99	11.78	-151.76	105.00	-0.70	4,609.60	4,536.09	73.51	62.705	
9,710.00	5,326.38	5,299.38	5,299.38	126.98	11.78	-151.44	105.00	-0.70	4,645.52	4,570.95	74.57	62.298	
9,765.00	5,329.74	5,302.74	5,302.74	128.48	11.79	-151.73	105.00	-0.70	4,700.39	4,625.51	74.88	62.774	



Phoenix Technology Services
Anticollision Report

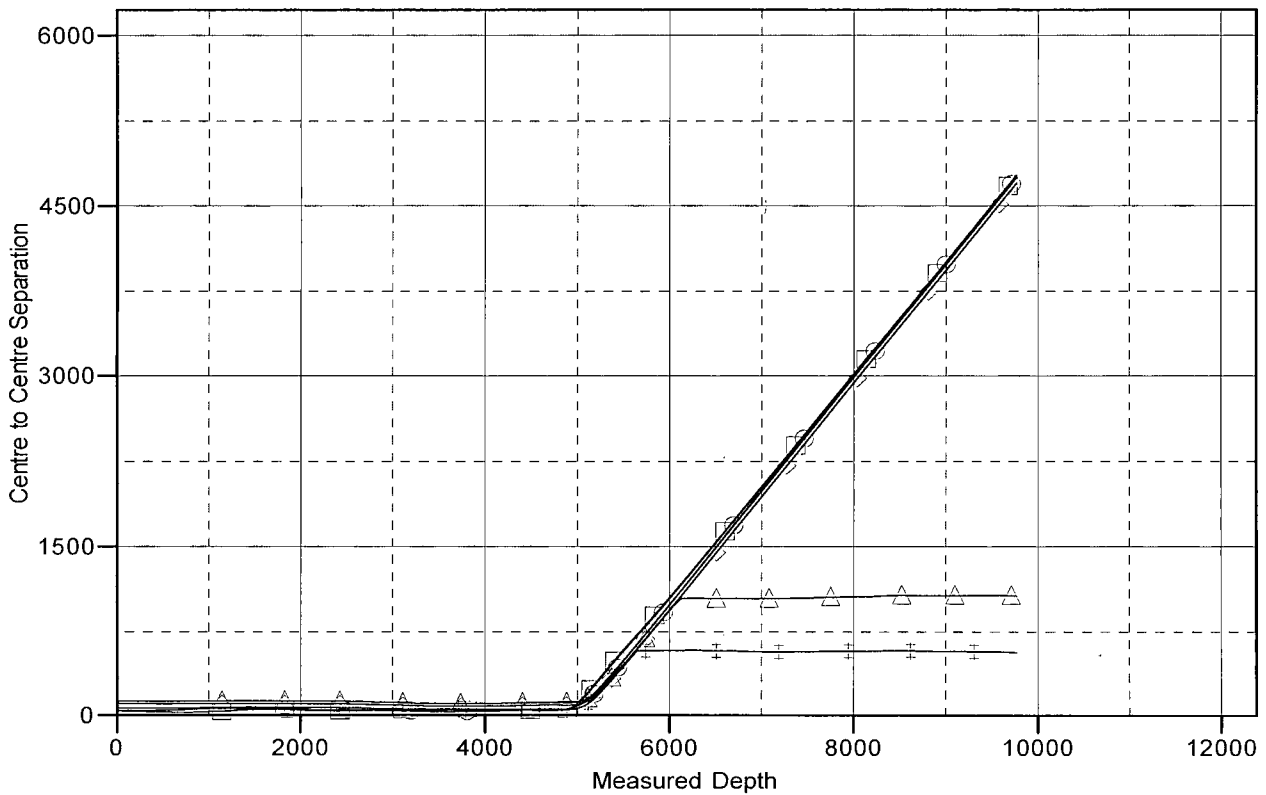


Company:	Apache Corporation	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3925.00usft (Capstar 114)
Reference Site:	Crow Federal	MD Reference:	KB @ 3925.00usft (Capstar 114)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore:	OH / Job #1310298	Database:	GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3925.00usft (Capstar 114)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 19' 60.000000 W

Coordinates are relative to: #10H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.25°

Ladder Plot



LEGEND

Wellbore #1 / Job #1210350, Plan 1 4-25-2012 V0 #13H, OH / Job #1310316, Surveys (Capstar114) V0 #15H, OH / Job #1310461, Plan #2 04-18-13
Wellbore #1 / Job #1210349, Plan 1 4-25-2012 V0 #14H, Wellbore #1 / Job #1210352, Plan 1 4-25-2012 V0



Phoenix Technology Services

Anticollision Report

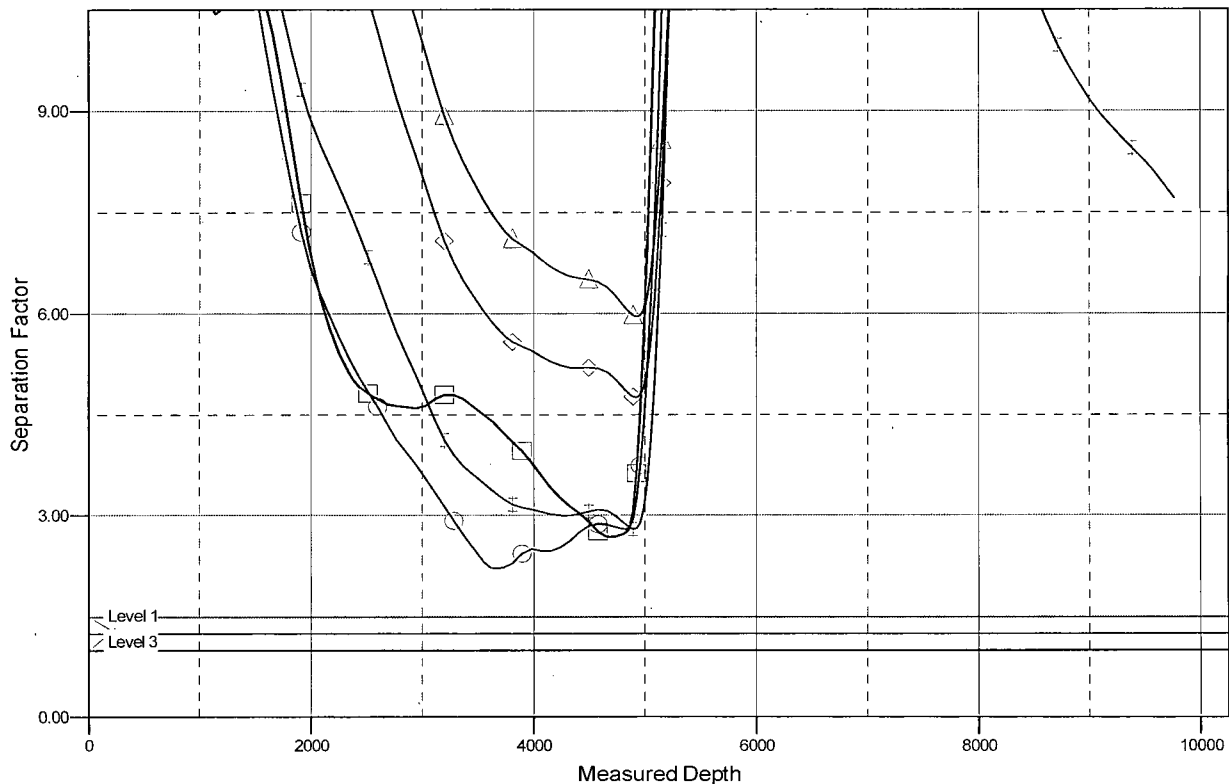


Company:	Apache Corporation	Local Co-ordinate Reference:	Well #10H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3925.00usft (Capstar 114)
Reference Site:	Crow Federal	MD Reference:	KB @ 3925.00usft (Capstar 114)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH / Job #1310298	Database:	GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset.TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3925.00usft (Capstar 114)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 19' 60.000000 W

Coordinates are relative to: #10H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.25°

Separation Factor Plot



LEGEND

Wellbore #1 / Job #1210350, Plan 1 4-25-2012 V0 #13H, OH / Job #1310316, Surveys (Capstar 114) V0 #15H, OH / Job #1310461, Plan #2 04-18-13
Wellbore #1 / Job #1210349, Plan 1 4-25-2012 V0 #14H, Wellbore #1 / Job #1210352, Plan 1 4-25-2012 V0