

EXTRACTION OIL & GAS

Weld County

Sec 18-T2N-R68W

RINN VALLEY EAST N17-20-13C

ORIGINAL WELLBORE

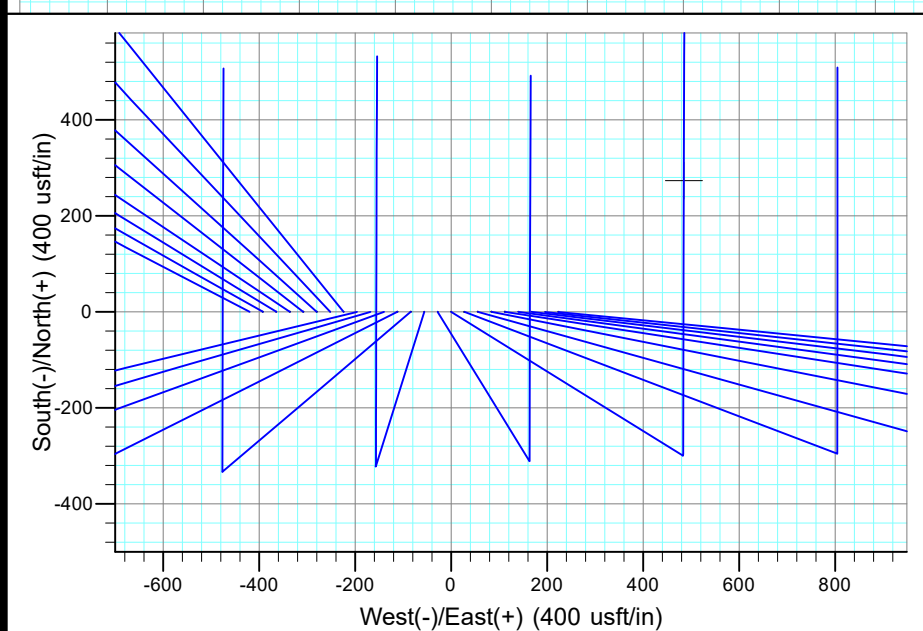
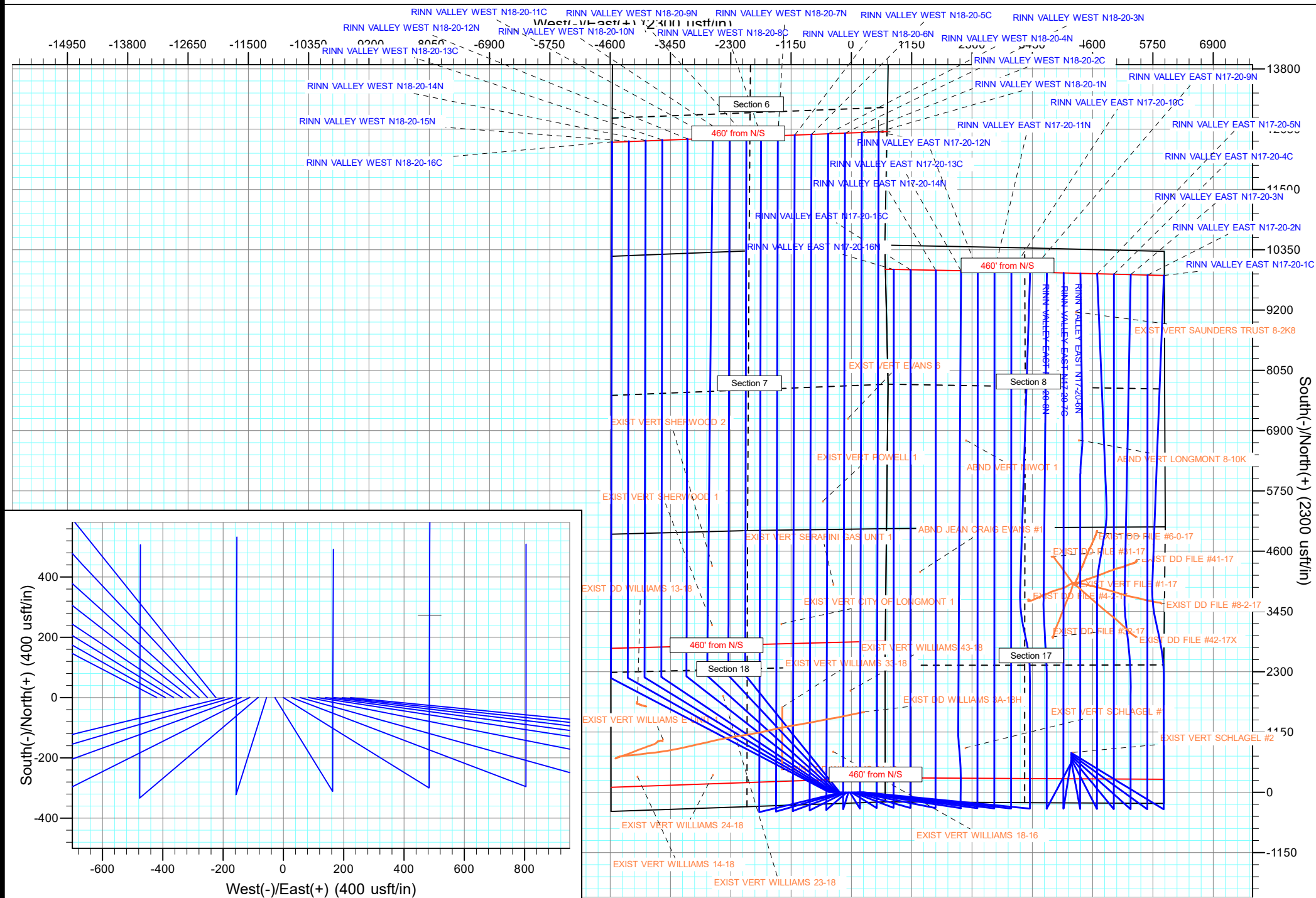
PROPOSAL 1

Anticollision Report

19 March, 2018



Project: Weld County
Site: Sec 18-T2N-R68W
Well: RINN VALLEY WEST N18-20-1N
ORIGINAL WELLBORE
PROPOSAL 1



Anticollision Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well RINN VALLEY EAST N17-20-13C
Project:	Weld County	TVD Reference:	KB 25' @ 4963.00usft
Reference Site:	Sec 18-T2N-R68W	MD Reference:	KB 25' @ 4963.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	RINN VALLEY EAST N17-20-13C	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDT_32Bit_ODBC
Reference Design:	PROPOSAL 1	Offset TVD Reference:	Offset Datum

Reference	PROPOSAL 1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.00usft	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:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	3/19/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	17,872.16	PROPOSAL 1 (ORIGINAL WELLBORE)	MWD OWSG	OWSG 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						
Sec 17-T2N-R68W						
ABND JEAN CRAIG EVANS #1 - Wellbore #1 - Design #	12,131.18	4,838.00	2,727.80	2,659.17	39.747	CC, ES
ABND JEAN CRAIG EVANS #1 - Wellbore #1 - Design #	14,000.00	4,838.00	3,306.56	3,197.92	30.436	SF
ABND VERT FILE 42-17 - Wellbore #1 - Design #1	2,295.29	1,020.00	5,596.28	5,566.14	185.684	CC
ABND VERT FILE 42-17 - Wellbore #1 - Design #1	2,300.00	1,020.00	5,596.28	5,566.11	185.525	ES
ABND VERT FILE 42-17 - Wellbore #1 - Design #1	16,200.00	1,020.00	8,070.62	7,972.58	82.317	SF
EXIST DD FILE #31-17 - Wellbore #1 - Wellbore #1	12,426.98	7,552.53	1,770.28	1,655.79	15.461	CC
EXIST DD FILE #31-17 - Wellbore #1 - Wellbore #1	12,500.00	7,552.44	1,771.79	1,655.40	15.223	ES
EXIST DD FILE #31-17 - Wellbore #1 - Wellbore #1	12,900.00	7,551.94	1,832.39	1,707.91	14.720	SF
EXIST DD FILE #32-17 - Wellbore #1 - Wellbore #1	10,906.58	7,638.28	1,801.20	1,707.14	19.150	CC
EXIST DD FILE #32-17 - Wellbore #1 - Wellbore #1	11,000.00	7,636.37	1,803.62	1,707.08	18.683	ES
EXIST DD FILE #32-17 - Wellbore #1 - Wellbore #1	11,500.00	7,627.00	1,896.40	1,789.02	17.660	SF
EXIST DD FILE #41-17 - Wellbore #1 - Wellbore #1	12,352.58	7,611.79	3,386.85	3,272.84	29.706	CC
EXIST DD FILE #41-17 - Wellbore #1 - Wellbore #1	12,400.00	7,614.38	3,387.18	3,272.05	29.420	ES
EXIST DD FILE #41-17 - Wellbore #1 - Wellbore #1	13,700.00	13,700.00	3,644.44	3,485.29	22.899	SF
EXIST DD FILE #4-2-17 - Wellbore #1 - Wellbore #1	11,608.78	7,497.41	1,331.87	1,230.86	13.185	CC, ES
EXIST DD FILE #4-2-17 - Wellbore #1 - Wellbore #1	12,000.00	7,492.93	1,388.14	1,276.75	12.463	SF
EXIST DD FILE #42-17X - Wellbore #1 - Wellbore #1	10,911.18	7,642.30	3,378.55	3,283.16	35.418	CC
EXIST DD FILE #42-17X - Wellbore #1 - Wellbore #1	11,000.00	7,640.73	3,379.71	3,282.76	34.859	ES
EXIST DD FILE #42-17X - Wellbore #1 - Wellbore #1	12,300.00	7,620.21	3,652.80	3,536.23	31.334	SF
EXIST DD FILE #6-0-17 - Wellbore #1 - Wellbore #1	12,908.49	7,606.75	2,619.72	2,493.64	20.778	CC
EXIST DD FILE #6-0-17 - Wellbore #1 - Wellbore #1	13,000.00	7,604.06	2,621.31	2,492.93	20.418	ES
EXIST DD FILE #6-0-17 - Wellbore #1 - Wellbore #1	13,700.00	7,582.74	2,736.54	2,594.48	19.264	SF
EXIST DD FILE #8-2-17 - Wellbore #1 - Wellbore #1	11,553.24	7,579.74	3,851.95	3,750.18	37.850	CC
EXIST DD FILE #8-2-17 - Wellbore #1 - Wellbore #1	11,600.00	7,579.36	3,852.23	3,749.57	37.523	ES
EXIST DD FILE #8-2-17 - Wellbore #1 - Wellbore #1	13,300.00	7,558.14	4,229.45	4,098.40	32.275	SF
EXIST VERT FILE #1-17 - Wellbore #1 - Design #1	11,903.97	7,462.00	2,203.88	2,099.07	21.026	CC
EXIST VERT FILE #1-17 - Wellbore #1 - Design #1	12,000.00	7,462.00	2,205.97	2,098.81	20.585	ES
EXIST VERT FILE #1-17 - Wellbore #1 - Design #1	12,600.00	7,462.00	2,311.18	2,192.27	19.436	SF
EXIST VERT SCHLAGEL #1 - Wellbore #1 - Design #1	8,760.67	7,477.00	122.40	-61.42	0.666	Level 1, CC, ES, SF
EXIST VERT SCHLAGEL #2 - Wellbore #1 - Design #1	8,515.98	7,488.00	2,157.54	1,975.18	11.831	CC, ES
EXIST VERT SCHLAGEL #2 - Wellbore #1 - Design #1	9,111.65	7,488.00	2,231.66	2,041.75	11.751	SF
RINN VALLEY EAST N17-20-1C - ORIGINAL WELLBOR	11,845.50	11,861.79	3,683.23	3,533.54	24.606	CC
RINN VALLEY EAST N17-20-1C - ORIGINAL WELLBOR	17,872.59	17,770.46	3,868.99	3,517.00	10.992	ES, SF
RINN VALLEY EAST N17-20-2N - ORIGINAL WELLBOR	6,541.14	5,556.13	3,524.24	3,469.94	64.908	CC
RINN VALLEY EAST N17-20-2N - ORIGINAL WELLBOR	17,872.59	17,489.99	3,565.43	3,212.23	10.095	ES, SF
RINN VALLEY EAST N17-20-3N - ORIGINAL WELLBOR	11,608.90	11,220.45	3,165.61	3,023.79	22.322	CC
RINN VALLEY EAST N17-20-3N - ORIGINAL WELLBOR	17,872.59	17,430.94	3,246.09	2,892.74	9.187	ES, SF

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

Anticollision Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well RINN VALLEY EAST N17-20-13C
Project:	Weld County	TVD Reference:	KB 25' @ 4963.00usft
Reference Site:	Sec 18-T2N-R68W	MD Reference:	KB 25' @ 4963.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	RINN VALLEY EAST N17-20-13C	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDT_32Bit_ODBC
Reference Design:	PROPOSAL 1	Offset TVD Reference:	Offset Datum

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						
Sec 17-T2N-R68W						
RINN VALLEY EAST N17-20-4C - ORIGINAL WELLBOR	6,875.23	6,258.59	2,904.67	2,848.64	51.842	CC
RINN VALLEY EAST N17-20-4C - ORIGINAL WELLBOR	17,872.59	17,618.90	2,917.95	2,564.28	8.250	ES, SF
RINN VALLEY EAST N17-20-5N - ORIGINAL WELLBOR	7,255.35	6,998.02	2,599.15	2,540.82	44.562	CC
RINN VALLEY EAST N17-20-5N - ORIGINAL WELLBOR	17,872.59	17,358.43	2,608.09	2,254.17	7.369	ES, SF
RINN VALLEY EAST N17-20-6N - ORIGINAL WELLBOR	7,253.84	6,975.03	2,279.31	2,221.57	39.476	CC
RINN VALLEY EAST N17-20-6N - ORIGINAL WELLBOR	17,872.59	17,327.22	2,289.51	1,935.29	6.463	ES, SF
RINN VALLEY EAST N17-20-7C - ORIGINAL WELLBOR	17,843.24	17,574.73	1,957.32	1,602.86	5.522	CC
RINN VALLEY EAST N17-20-7C - ORIGINAL WELLBOR	17,872.59	17,574.73	1,957.54	1,602.38	5.512	ES, SF
RINN VALLEY EAST N17-20-8N - ORIGINAL WELLBOR	11,512.54	11,013.55	1,629.60	1,491.45	11.796	CC
RINN VALLEY EAST N17-20-8N - ORIGINAL WELLBOR	17,872.59	17,350.72	1,654.00	1,301.02	4.686	ES, SF

Anticollision Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well RINN VALLEY EAST N17-20-13C
Project:	Weld County	TVD Reference:	KB 25' @ 4963.00usft
Reference Site:	Sec 18-T2N-R68W	MD Reference:	KB 25' @ 4963.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	RINN VALLEY EAST N17-20-13C	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDT_32Bit_ODBC
Reference Design:	PROPOSAL 1	Offset TVD Reference:	Offset Datum

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						
Sec 18-T2N-R68W						
EXIST DD WILLIAMS 13-18 - Wellbore #1 - Wellbore #1	0.00	0.00	4,345.59			
EXIST DD WILLIAMS 13-18 - Wellbore #1 - Wellbore #1	100.00	80.39	4,345.81	4,345.54	10,000.000	ES
EXIST DD WILLIAMS 13-18 - Wellbore #1 - Wellbore #1	13,500.00	13,500.00	7,246.70	7,118.69	56.607	SF
EXIST DD WILLIAMS 34-18 - Wellbore #1 - Design #1	555.01	558.85	2,156.22	2,152.66	605.622	CC
EXIST DD WILLIAMS 34-18 - Wellbore #1 - Design #1	600.00	606.53	2,156.47	2,152.58	554.559	ES
EXIST DD WILLIAMS 34-18 - Wellbore #1 - Design #1	9,400.00	7,361.60	3,465.08	3,396.51	50.532	SF
EXIST DD WILLIAMS 3A-18H - Wellbore #1 - Wellbore #	8,292.45	12,015.00	2,187.93	2,065.98	17.941	SF
EXIST DD WILLIAMS 3A-18H - Wellbore #1 - Wellbore #	9,400.00	12,015.00	1,807.71	1,730.74	23.484	ES
EXIST DD WILLIAMS 3A-18H - Wellbore #1 - Wellbore #	9,447.48	12,015.00	1,807.09	1,731.95	24.049	CC
EXIST VERT CITY OF LONGMONT 1 - Wellbore #1 - De	11,118.38	7,473.00	3,384.47	3,168.93	15.702	CC, ES
EXIST VERT CITY OF LONGMONT 1 - Wellbore #1 - De	11,600.00	7,473.00	3,418.57	3,198.44	15.530	SF
EXIST VERT SERAFINI GAS UNIT 1 - Wellbore #1 - De	11,877.00	7,465.00	2,396.02	2,168.43	10.528	CC
EXIST VERT SERAFINI GAS UNIT 1 - Wellbore #1 - De	11,900.00	7,465.00	2,396.14	2,168.35	10.519	ES
EXIST VERT SERAFINI GAS UNIT 1 - Wellbore #1 - De	12,000.00	7,465.00	2,399.18	2,170.63	10.497	SF
EXIST VERT SHERWOOD 1 - Wellbore #1 - Design #1	500.00	448.00	4,229.80	4,219.67	417.529	CC
EXIST VERT SHERWOOD 1 - Wellbore #1 - Design #1	600.00	547.98	4,231.13	4,218.62	338.335	ES
EXIST VERT SHERWOOD 1 - Wellbore #1 - Design #1	12,100.00	7,478.00	4,813.42	4,587.26	21.284	SF
EXIST VERT SHERWOOD 2 - Wellbore #1 - Design #1	12,221.47	7,470.00	4,710.70	4,477.35	20.187	CC
EXIST VERT SHERWOOD 2 - Wellbore #1 - Design #1	12,300.00	7,470.00	4,711.36	4,477.04	20.107	ES
EXIST VERT SHERWOOD 2 - Wellbore #1 - Design #1	13,100.00	7,470.00	4,791.93	4,548.94	19.721	SF
EXIST VERT WILLIAMS 14-18 - Wellbore #1 - Design #1	500.00	548.00	4,201.22	4,189.10	346.734	CC
EXIST VERT WILLIAMS 14-18 - Wellbore #1 - Design #1	600.00	647.98	4,202.96	4,188.47	290.125	ES
EXIST VERT WILLIAMS 14-18 - Wellbore #1 - Design #1	10,100.00	7,578.00	6,402.60	6,205.29	32.450	SF
EXIST VERT WILLIAMS 18-16 - Wellbore #1 - Design #1	500.00	466.00	902.45	891.94	85.900	CC
EXIST VERT WILLIAMS 18-16 - Wellbore #1 - Design #1	600.00	565.98	903.56	890.68	70.152	ES
EXIST VERT WILLIAMS 18-16 - Wellbore #1 - Design #1	9,000.00	7,504.00	2,405.57	2,219.38	12.921	SF
EXIST VERT WILLIAMS 23-18 - Wellbore #1 - Design #1	500.00	473.00	3,150.14	3,139.54	297.246	CC
EXIST VERT WILLIAMS 23-18 - Wellbore #1 - Design #1	600.00	572.98	3,151.69	3,138.72	242.974	ES
EXIST VERT WILLIAMS 23-18 - Wellbore #1 - Design #1	10,700.00	7,503.00	4,587.78	4,382.31	22.328	SF
EXIST VERT WILLIAMS 24-18 - Wellbore #1 - Design #1	500.00	528.00	2,769.67	2,757.96	236.482	CC
EXIST VERT WILLIAMS 24-18 - Wellbore #1 - Design #1	600.00	627.98	2,771.42	2,757.34	196.794	ES
EXIST VERT WILLIAMS 24-18 - Wellbore #1 - Design #1	9,111.65	7,558.00	4,752.36	4,564.50	25.296	SF
EXIST VERT WILLIAMS 33-18 - Wellbore #1 - Design #1	500.00	473.00	2,164.46	2,153.86	204.237	CC
EXIST VERT WILLIAMS 33-18 - Wellbore #1 - Design #1	600.00	572.98	2,165.79	2,152.82	166.967	ES
EXIST VERT WILLIAMS 33-18 - Wellbore #1 - Design #1	10,000.00	7,503.00	3,388.02	3,190.78	17.177	SF
EXIST VERT WILLIAMS 43-18 - Wellbore #1 - Design #1	500.00	462.00	1,947.96	1,937.59	187.764	CC
EXIST VERT WILLIAMS 43-18 - Wellbore #1 - Design #1	9,855.08	7,508.00	2,057.15	1,859.68	10.417	ES
EXIST VERT WILLIAMS 43-18 - Wellbore #1 - Design #1	10,000.00	7,508.00	2,062.25	1,863.84	10.394	SF
EXIST VERT WILLIAMS E UNIT 1 - Wellbore #1 - Desig	500.00	361.00	3,841.69	3,833.33	459.528	CC
EXIST VERT WILLIAMS E UNIT 1 - Wellbore #1 - Desig	600.00	460.98	3,843.42	3,832.68	357.749	ES
EXIST VERT WILLIAMS E UNIT 1 - Wellbore #1 - Desig	10,600.00	7,409.00	5,879.62	5,679.18	29.333	SF
RINN VALLEY EAST N17-20-10C - ORIGINAL WELLBO	200.00	199.00	83.88	82.90	85.403	CC, ES
RINN VALLEY EAST N17-20-10C - ORIGINAL WELLBO	17,872.59	18,190.90	960.81	599.04	2.656	SF
RINN VALLEY EAST N17-20-11N - ORIGINAL WELLBO	300.00	299.00	55.92	54.22	32.912	CC, ES
RINN VALLEY EAST N17-20-11N - ORIGINAL WELLBO	17,872.59	17,849.98	687.15	338.13	1.969	SF
RINN VALLEY EAST N17-20-12N - ORIGINAL WELLBO	400.00	400.00	27.96	25.54	11.556	CC, ES
RINN VALLEY EAST N17-20-12N - ORIGINAL WELLBO	17,872.59	17,737.60	406.37	92.90	1.296	Level 3, SF
RINN VALLEY EAST N17-20-14N - ORIGINAL WELLBO	500.00	501.00	27.96	24.82	8.904	CC, ES
RINN VALLEY EAST N17-20-14N - ORIGINAL WELLBO	17,872.59	17,495.64	541.63	219.20	1.680	SF
RINN VALLEY EAST N17-20-15C - ORIGINAL WELLBO	500.00	501.00	56.20	53.06	17.897	CC, ES
RINN VALLEY EAST N17-20-15C - ORIGINAL WELLBO	17,872.59	17,634.42	960.41	600.26	2.667	SF
RINN VALLEY EAST N17-20-16N - ORIGINAL WELLBO	500.00	502.00	84.16	81.02	26.771	CC, ES
RINN VALLEY EAST N17-20-16N - ORIGINAL WELLBO	17,872.59	17,341.28	1,305.29	952.65	3.702	SF

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

Anticollision Report

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Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDT_32Bit_ODBC
Reference Design:	PROPOSAL 1	Offset TVD Reference:	Offset Datum

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						
Sec 18-T2N-R68W						
RINN VALLEY EAST N17-20-9N - ORIGINAL WELLBOR	100.00	98.00	111.85	111.58	420.209	CC, ES
RINN VALLEY EAST N17-20-9N - ORIGINAL WELLBOR	17,872.59	18,130.04	1,340.31	979.37	3.713	SF
RINN VALLEY WEST N18-20-10N - ORIGINAL WELLBO	500.00	504.00	364.05	360.90	115.537	CC, ES
RINN VALLEY WEST N18-20-10N - ORIGINAL WELLBO	17,872.59	15,650.49	4,426.13	4,068.07	12.361	SF
RINN VALLEY WEST N18-20-11C - ORIGINAL WELLBO	500.00	505.00	392.01	388.86	124.270	CC, ES
RINN VALLEY WEST N18-20-11C - ORIGINAL WELLBO	17,872.59	15,959.63	4,739.06	4,380.16	13.204	SF
RINN VALLEY WEST N18-20-12N - ORIGINAL WELLBO	500.00	505.00	419.98	416.82	133.133	CC, ES
RINN VALLEY WEST N18-20-12N - ORIGINAL WELLBO	17,872.59	15,968.18	5,225.48	4,866.17	14.543	SF
RINN VALLEY WEST N18-20-13C - ORIGINAL WELLBO	400.00	405.00	447.94	445.50	183.761	CC, ES
RINN VALLEY WEST N18-20-13C - ORIGINAL WELLBO	17,872.59	16,381.79	5,699.25	5,339.14	15.826	SF
RINN VALLEY WEST N18-20-16C - ORIGINAL WELLBO	300.00	305.00	476.18	474.46	276.741	CC, ES
RINN VALLEY WEST N18-20-14N - ORIGINAL WELLBO	17,872.59	16,355.15	6,024.52	5,664.16	16.718	SF
RINN VALLEY WEST N18-20-15N - ORIGINAL WELLBO	200.00	206.00	504.14	503.13	500.483	CC, ES
RINN VALLEY WEST N18-20-15N - ORIGINAL WELLBO	17,872.59	16,514.18	6,344.52	5,983.81	17.589	SF
RINN VALLEY WEST N18-20-16C - ORIGINAL WELLBO	100.00	107.00	532.10	531.82	1,912.214	CC, ES
RINN VALLEY WEST N18-20-16C - ORIGINAL WELLBO	17,872.59	16,844.83	6,658.98	6,297.94	18.444	SF
RINN VALLEY WEST N18-20-1N - ORIGINAL WELLBOR	500.00	502.00	112.12	108.98	35.665	CC, ES
RINN VALLEY WEST N18-20-1N - ORIGINAL WELLBOR	17,872.59	17,320.15	1,598.28	1,243.26	4.502	SF
RINN VALLEY WEST N18-20-2C - ORIGINAL WELLBOR	500.00	503.00	140.09	136.94	44.509	CC, ES
RINN VALLEY WEST N18-20-2C - ORIGINAL WELLBOR	17,872.59	17,561.77	1,898.05	1,537.32	5.262	SF
RINN VALLEY WEST N18-20-3N - ORIGINAL WELLBOR	500.00	503.00	168.05	164.90	53.392	CC, ES
RINN VALLEY WEST N18-20-3N - ORIGINAL WELLBOR	17,872.59	17,322.44	2,232.57	1,874.31	6.232	SF
RINN VALLEY WEST N18-20-4N - ORIGINAL WELLBOR	500.00	504.00	196.01	192.86	62.206	CC, ES
RINN VALLEY WEST N18-20-4N - ORIGINAL WELLBOR	17,872.59	17,348.64	2,551.09	2,192.58	7.116	SF
RINN VALLEY WEST N18-20-5C - ORIGINAL WELLBOR	500.00	506.00	223.97	220.81	70.918	CC, ES
RINN VALLEY WEST N18-20-5C - ORIGINAL WELLBOR	17,872.59	17,638.63	2,859.05	2,498.61	7.932	SF
RINN VALLEY WEST N18-20-6N - ORIGINAL WELLBOR	500.00	507.00	251.93	248.77	79.681	CC, ES
RINN VALLEY WEST N18-20-6N - ORIGINAL WELLBOR	17,872.59	17,450.24	3,189.60	2,830.65	8.886	SF
RINN VALLEY WEST N18-20-7N - ORIGINAL WELLBOR	500.00	507.00	280.17	277.01	88.613	CC, ES
RINN VALLEY WEST N18-20-7N - ORIGINAL WELLBOR	17,872.59	17,524.60	3,508.82	3,149.62	9.768	SF
RINN VALLEY WEST N18-20-8C - ORIGINAL WELLBOR	500.00	508.00	308.13	304.97	97.347	CC, ES
RINN VALLEY WEST N18-20-8C - ORIGINAL WELLBOR	17,872.59	17,851.88	3,819.79	3,459.45	10.601	SF
RINN VALLEY WEST N18-20-9N - ORIGINAL WELLBOR	500.00	503.00	336.09	332.95	106.785	CC, ES
RINN VALLEY WEST N18-20-9N - ORIGINAL WELLBOR	17,872.59	15,551.64	4,106.68	3,749.15	11.486	SF
Sec 8-T2N-R68W						
ABND VERT LONGMONT 8-10K - Wellbore #1 - Design	14,657.30	7,443.00	2,269.35	1,995.34	8.282	CC
ABND VERT LONGMONT 8-10K - Wellbore #1 - Design	14,700.00	7,443.00	2,269.76	1,994.63	8.250	ES
ABND VERT LONGMONT 8-10K - Wellbore #1 - Design	15,000.00	7,443.00	2,295.08	2,013.36	8.147	SF
ABND VERT NIWOT 1 - Wellbore #1 - Design #1	14,640.61	7,453.00	116.15	-157.78	0.424	Level 1, CC, ES, SF
EXIST VERT SAUNDERS TRUST 8-2K8 - Wellbore #1 -	17,099.03	7,539.00	2,195.61	1,877.37	6.899	CC
EXIST VERT SAUNDERS TRUST 8-2K8 - Wellbore #1 -	17,200.00	7,539.00	2,197.93	1,877.11	6.851	ES
EXIST VERT SAUNDERS TRUST 8-2K8 - Wellbore #1 -	17,400.00	7,539.00	2,216.14	1,891.23	6.821	SF

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-INC												Offset Well Error:	0.00 usft
Reference													
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)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	15.88	4,211.83	1,198.21	4,379.48				
100.00	100.00	32.00	32.00	0.13	0.38	15.88	4,211.83	1,198.21	4,378.95	4,378.44	0.52	8,455.895	

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