

# **EXTRACTION OIL & GAS**

**Weld County**

**Sec 18-T2N-R68W**

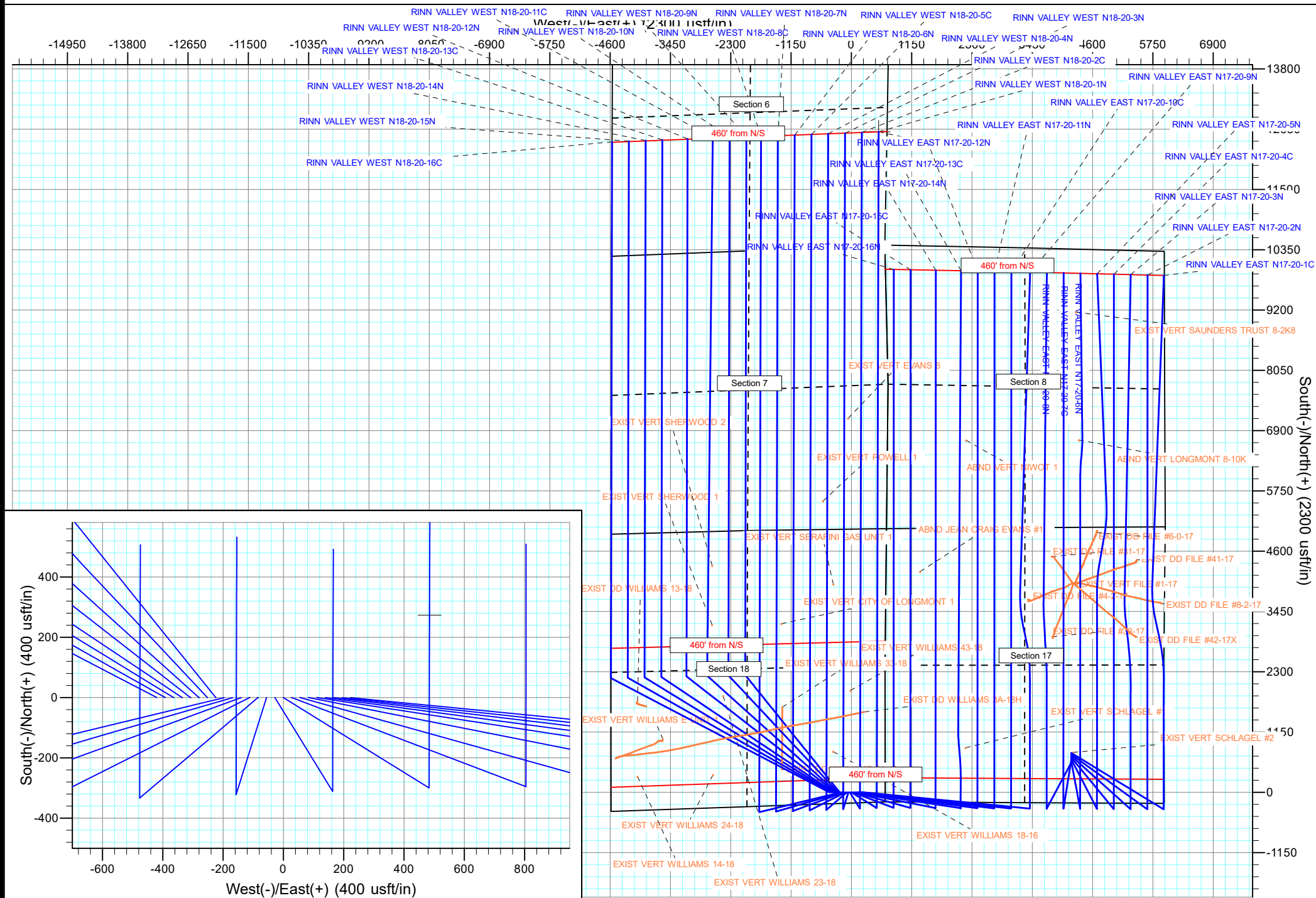
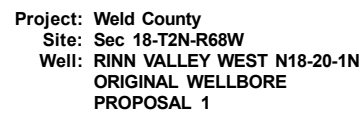
**RINN VALLEY EAST N17-20-9N**

**ORIGINAL WELLBORE**

**PROPOSAL 1**

## **Anticollision Report**

**19 March, 2018**



# Anticollision Report

<b>Company:</b>	EXTRACTION OIL & GAS	<b>Local Co-ordinate Reference:</b>	Well RINN VALLEY EAST N17-20-9N
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KB 25' @ 4961.00usft
<b>Reference Site:</b>	Sec 18-T2N-R68W	<b>MD Reference:</b>	KB 25' @ 4961.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	RINN VALLEY EAST N17-20-9N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	ORIGINAL WELLBORE	<b>Database:</b>	EDT_32Bit_ODBC
<b>Reference Design:</b>	PROPOSAL 1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	PROPOSAL 1		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD + Stations Interval 100.00usft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 9,999.98 usft	<b>Error Surface:</b>	Pedal Curve
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	3/19/2018		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	18,144.53	PROPOSAL 1 (ORIGINAL WELLBORE)	MWD OWSG	OWSG MWD - Standard

<b>Summary</b>						
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 #	12,370.74	4,838.00	3,053.98	2,937.75	26.277	CC
ABND JEAN CRAIG EVANS #1 - Wellbore #1 - Design #	12,400.00	4,838.00	3,054.12	2,937.75	26.245	ES
ABND JEAN CRAIG EVANS #1 - Wellbore #1 - Design #	13,400.00	4,838.00	3,222.75	3,096.93	25.613	SF
ABND VERT FILE 42-17 - Wellbore #1 - Design #1	3,026.37	1,020.00	5,253.41	5,211.96	126.731	CC
ABND VERT FILE 42-17 - Wellbore #1 - Design #1	3,100.00	1,020.00	5,253.93	5,211.81	124.731	ES
ABND VERT FILE 42-17 - Wellbore #1 - Design #1	16,300.00	1,020.00	7,506.23	7,409.56	77.650	SF
EXIST DD FILE #31-17 - Wellbore #1 - Wellbore #1	12,729.93	7,281.17	594.40	478.48	5.128	CC, ES
EXIST DD FILE #31-17 - Wellbore #1 - Wellbore #1	12,800.00	7,280.96	598.52	479.08	5.011	SF
EXIST DD FILE #32-17 - Wellbore #1 - Wellbore #1	11,069.28	7,349.46	519.09	431.35	5.916	CC
EXIST DD FILE #32-17 - Wellbore #1 - Wellbore #1	11,100.00	7,349.99	520.00	430.27	5.795	ES
EXIST DD FILE #32-17 - Wellbore #1 - Wellbore #1	11,200.00	7,351.72	535.30	438.95	5.556	SF
EXIST DD FILE #41-17 - Wellbore #1 - Wellbore #1	12,695.90	7,303.92	2,201.32	2,084.45	18.836	CC
EXIST DD FILE #41-17 - Wellbore #1 - Wellbore #1	12,800.00	7,302.17	2,203.78	2,083.85	18.376	ES
EXIST DD FILE #41-17 - Wellbore #1 - Wellbore #1	13,500.00	7,290.37	2,343.53	2,206.36	17.084	SF
EXIST DD FILE #4-2-17 - Wellbore #1 - Wellbore #1	11,893.02	7,306.14	157.00	55.42	1.546	CC
EXIST DD FILE #4-2-17 - Wellbore #1 - Wellbore #1	11,900.00	7,306.15	157.14	54.28	1.528	ES, SF
EXIST DD FILE #42-17X - Wellbore #1 - Wellbore #1	10,878.16	7,409.16	2,068.40	1,978.63	23.042	CC
EXIST DD FILE #42-17X - Wellbore #1 - Wellbore #1	10,900.00	7,408.85	2,068.59	1,978.38	22.931	ES
EXIST DD FILE #42-17X - Wellbore #1 - Wellbore #1	12,055.74	7,393.37	2,368.39	2,254.98	20.883	SF
EXIST DD FILE #6-0-17 - Wellbore #1 - Wellbore #1	13,241.95	7,391.15	1,430.08	1,301.98	11.163	CC
EXIST DD FILE #6-0-17 - Wellbore #1 - Wellbore #1	13,300.00	7,387.95	1,431.26	1,301.04	10.992	ES
EXIST DD FILE #6-0-17 - Wellbore #1 - Wellbore #1	13,600.00	7,372.46	1,474.11	1,335.00	10.597	SF
EXIST DD FILE #8-2-17 - Wellbore #1 - Wellbore #1	11,270.76	7,417.88	2,654.55	2,563.53	29.166	CC
EXIST DD FILE #8-2-17 - Wellbore #1 - Wellbore #1	11,300.00	7,416.52	2,654.71	2,563.11	28.983	ES
EXIST DD FILE #8-2-17 - Wellbore #1 - Wellbore #1	13,100.00	7,381.75	2,934.08	2,804.78	22.692	SF
EXIST VERT FILE #1-17 - Wellbore #1 - Design #1	12,217.22	7,213.81	1,035.02	928.23	9.692	CC, ES
EXIST VERT FILE #1-17 - Wellbore #1 - Design #1	12,500.00	7,213.81	1,072.96	956.73	9.231	SF
EXIST VERT SCHLAGEL #1 - Wellbore #1 - Design #1	4,299.12	3,739.84	1,034.10	918.57	8.951	CC
EXIST VERT SCHLAGEL #1 - Wellbore #1 - Design #1	4,400.00	3,824.16	1,035.58	917.22	8.749	ES
EXIST VERT SCHLAGEL #1 - Wellbore #1 - Design #1	9,050.68	7,228.95	1,226.93	1,045.24	6.753	SF
EXIST VERT SCHLAGEL #2 - Wellbore #1 - Design #1	8,963.97	7,239.96	823.44	642.21	4.544	CC, ES
EXIST VERT SCHLAGEL #2 - Wellbore #1 - Design #1	9,100.00	7,239.95	834.60	649.74	4.515	SF
RINN VALLEY EAST N17-20-1C - ORIGINAL WELLBOR	6,729.24	5,476.39	2,392.60	2,331.93	39.437	CC
RINN VALLEY EAST N17-20-1C - ORIGINAL WELLBOR	18,144.53	17,794.45	2,566.26	2,216.51	7.338	ES, SF
RINN VALLEY EAST N17-20-2N - ORIGINAL WELLBOR	6,829.94	5,664.33	2,187.22	2,126.73	36.157	CC
RINN VALLEY EAST N17-20-2N - ORIGINAL WELLBOR	18,144.53	17,489.99	2,240.99	1,887.59	6.341	ES, SF
RINN VALLEY EAST N17-20-3N - ORIGINAL WELLBOR	6,982.94	5,926.79	1,898.98	1,838.52	31.407	CC

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

## Anticollision Report

<b>Company:</b>	EXTRACTION OIL & GAS	<b>Local Co-ordinate Reference:</b>	Well RINN VALLEY EAST N17-20-9N
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KB 25' @ 4961.00usft
<b>Reference Site:</b>	Sec 18-T2N-R68W	<b>MD Reference:</b>	KB 25' @ 4961.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	RINN VALLEY EAST N17-20-9N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	ORIGINAL WELLBORE	<b>Database:</b>	EDT_32Bit_ODBC
<b>Reference Design:</b>	PROPOSAL 1	<b>Offset TVD Reference:</b>	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 N17-20-3N - ORIGINAL WELLBOR	18,100.00	24,734.21	1,921.37	1,441.90	4.007	ES, SF
RINN VALLEY EAST N17-20-4C - ORIGINAL WELLBOR	7,164.13	6,210.52	1,565.75	1,505.22	25.871	CC
RINN VALLEY EAST N17-20-4C - ORIGINAL WELLBOR	18,144.53	17,618.90	1,622.93	1,274.72	4.661	ES, SF
RINN VALLEY EAST N17-20-5N - ORIGINAL WELLBOR	7,512.94	6,727.19	1,280.00	1,219.42	21.130	CC
RINN VALLEY EAST N17-20-5N - ORIGINAL WELLBOR	18,000.00	35,669.59	1,288.19	616.27	1.917	ES, SF
RINN VALLEY EAST N17-20-6N - ORIGINAL WELLBOR	7,531.69	6,733.70	960.18	900.16	15.997	CC
RINN VALLEY EAST N17-20-6N - ORIGINAL WELLBOR	18,144.53	17,327.22	960.51	605.26	2.704	ES, SF
RINN VALLEY EAST N17-20-7C - ORIGINAL WELLBOR	7,689.42	6,890.53	640.51	580.28	10.635	CC
RINN VALLEY EAST N17-20-7C - ORIGINAL WELLBOR	18,144.53	17,574.73	691.79	360.21	2.086	ES, SF
RINN VALLEY EAST N17-20-8N - ORIGINAL WELLBOR	10,617.17	9,864.16	319.91	217.97	3.138	CC
RINN VALLEY EAST N17-20-8N - ORIGINAL WELLBOR	18,144.53	17,355.09	320.40	-34.21	0.904	Level 1, ES, SF

# Anticollision Report

<b>Company:</b>	EXTRACTION OIL & GAS	<b>Local Co-ordinate Reference:</b>	Well RINN VALLEY EAST N17-20-9N
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KB 25' @ 4961.00usft
<b>Reference Site:</b>	Sec 18-T2N-R68W	<b>MD Reference:</b>	KB 25' @ 4961.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	RINN VALLEY EAST N17-20-9N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	ORIGINAL WELLBORE	<b>Database:</b>	EDT_32Bit_ODBC
<b>Reference Design:</b>	PROPOSAL 1	<b>Offset TVD Reference:</b>	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	4,449.52			
EXIST DD WILLIAMS 13-18 - Wellbore #1 - Wellbore #1	100.00	81.59	4,449.74	4,449.48	10,000.000	ES
EXIST DD WILLIAMS 13-18 - Wellbore #1 - Wellbore #1	14,200.00	7,352.14	8,504.07	8,388.70	73.717	SF
EXIST DD WILLIAMS 34-18 - Wellbore #1 - Design #1	108.47	87.46	2,235.37	2,235.07	7,506.741	CC, ES
EXIST DD WILLIAMS 34-18 - Wellbore #1 - Design #1	11,700.00	6,669.22	5,303.70	5,218.82	62.484	SF
EXIST DD WILLIAMS 3A-18H - Wellbore #1 - Wellbore #	7,850.00	12,015.00	3,633.07	3,510.42	29.621	SF
EXIST DD WILLIAMS 3A-18H - Wellbore #1 - Wellbore #	9,700.00	12,015.00	3,155.84	3,078.14	40.616	ES
EXIST DD WILLIAMS 3A-18H - Wellbore #1 - Wellbore #	9,736.33	12,015.00	3,155.63	3,078.63	40.981	CC
EXIST VERT CITY OF LONGMONT 1 - Wellbore #1 - De	100.00	45.00	3,573.50	3,572.84	5,400.931	CC
EXIST VERT CITY OF LONGMONT 1 - Wellbore #1 - De	200.00	144.98	3,574.41	3,571.72	1,327.635	ES
EXIST VERT CITY OF LONGMONT 1 - Wellbore #1 - De	12,200.00	7,224.81	4,621.98	4,401.29	20.944	SF
EXIST VERT SERAFINI GAS UNIT 1 - Wellbore #1 - De	12,075.44	7,216.81	3,562.78	3,339.14	15.931	CC
EXIST VERT SERAFINI GAS UNIT 1 - Wellbore #1 - De	12,100.00	7,216.81	3,562.86	3,338.99	15.915	ES
EXIST VERT SERAFINI GAS UNIT 1 - Wellbore #1 - De	12,500.00	7,216.81	3,587.99	3,360.61	15.780	SF
EXIST VERT SHERWOOD 1 - Wellbore #1 - Design #1	100.00	50.00	4,304.13	4,303.41	5,976.095	CC
EXIST VERT SHERWOOD 1 - Wellbore #1 - Design #1	200.00	149.98	4,305.42	4,302.61	1,533.491	ES
EXIST VERT SHERWOOD 1 - Wellbore #1 - Design #1	12,800.00	7,229.81	6,059.25	5,831.43	26.597	SF
EXIST VERT SHERWOOD 2 - Wellbore #1 - Design #1	100.00	42.00	5,196.68	5,196.04	8,149.346	CC
EXIST VERT SHERWOOD 2 - Wellbore #1 - Design #1	200.00	141.98	5,197.78	5,195.13	1,963.046	ES
EXIST VERT SHERWOOD 2 - Wellbore #1 - Design #1	13,800.00	7,221.81	6,058.46	5,814.56	24.839	SF
EXIST VERT WILLIAMS 14-18 - Wellbore #1 - Design #1	100.00	150.00	4,312.81	4,310.40	1,792.072	CC
EXIST VERT WILLIAMS 14-18 - Wellbore #1 - Design #1	200.00	249.98	4,314.55	4,309.60	870.735	ES
EXIST VERT WILLIAMS 14-18 - Wellbore #1 - Design #1	11,800.00	7,329.81	8,004.03	7,793.37	37.995	SF
EXIST VERT WILLIAMS 18-16 - Wellbore #1 - Design #1	100.00	68.00	964.59	963.65	1,025.979	CC
EXIST VERT WILLIAMS 18-16 - Wellbore #1 - Design #1	200.00	167.98	965.76	962.53	298.820	ES
EXIST VERT WILLIAMS 18-16 - Wellbore #1 - Design #1	9,600.00	7,247.91	3,803.50	3,617.60	20.460	SF
EXIST VERT WILLIAMS 23-18 - Wellbore #1 - Design #1	100.00	75.00	3,241.78	3,240.80	3,331.107	CC
EXIST VERT WILLIAMS 23-18 - Wellbore #1 - Design #1	200.00	174.98	3,243.30	3,239.96	971.707	ES
EXIST VERT WILLIAMS 23-18 - Wellbore #1 - Design #1	11,900.00	7,254.81	5,954.22	5,741.21	27.952	SF
EXIST VERT WILLIAMS 24-18 - Wellbore #1 - Design #1	100.00	130.00	2,880.78	2,878.84	1,481.069	CC
EXIST VERT WILLIAMS 24-18 - Wellbore #1 - Design #1	200.00	229.98	2,882.53	2,877.99	635.039	ES
EXIST VERT WILLIAMS 24-18 - Wellbore #1 - Design #1	11,600.00	7,309.81	6,622.45	6,415.80	32.046	SF
EXIST VERT WILLIAMS 33-18 - Wellbore #1 - Design #1	100.00	75.00	2,240.07	2,239.09	2,301.795	CC
EXIST VERT WILLIAMS 33-18 - Wellbore #1 - Design #1	200.00	174.98	2,241.38	2,238.05	671.606	ES
EXIST VERT WILLIAMS 33-18 - Wellbore #1 - Design #1	11,600.00	7,254.81	4,882.68	4,675.07	23.518	SF
EXIST VERT WILLIAMS 43-18 - Wellbore #1 - Design #1	100.00	64.00	1,958.83	1,957.98	2,304.057	CC
EXIST VERT WILLIAMS 43-18 - Wellbore #1 - Design #1	400.00	363.45	1,962.31	1,954.28	244.433	ES
EXIST VERT WILLIAMS 43-18 - Wellbore #1 - Design #1	11,400.00	7,243.81	3,514.99	3,310.32	17.174	SF
EXIST VERT WILLIAMS E UNIT 1 - Wellbore #1 - Desig	115.67	0.00	3,949.87	3,949.68	10,000.000	CC, ES
EXIST VERT WILLIAMS E UNIT 1 - Wellbore #1 - Desig	11,900.00	7,142.81	7,315.23	7,105.88	34.942	SF
RINN VALLEY EAST N17-20-10C - ORIGINAL WELLBO	100.00	101.00	27.96	27.69	102.633	CC, ES
RINN VALLEY EAST N17-20-10C - ORIGINAL WELLBO	18,144.53	18,184.00	434.74	108.34	1.332	Level 3, SF
RINN VALLEY EAST N17-20-11N - ORIGINAL WELLBO	100.00	101.00	55.92	55.65	205.270	CC, ES
RINN VALLEY EAST N17-20-11N - ORIGINAL WELLBO	18,144.53	17,834.86	676.44	315.96	1.876	SF
RINN VALLEY EAST N17-20-12N - ORIGINAL WELLBO	100.00	102.00	83.88	83.61	303.902	CC, ES
RINN VALLEY EAST N17-20-12N - ORIGINAL WELLBO	18,144.53	17,712.65	996.57	636.55	2.768	SF
RINN VALLEY EAST N17-20-13C - ORIGINAL WELLBO	100.00	102.00	111.85	111.57	405.201	CC, ES
RINN VALLEY EAST N17-20-13C - ORIGINAL WELLBO	18,144.53	17,846.10	1,339.95	980.50	3.728	SF
RINN VALLEY EAST N17-20-14N - ORIGINAL WELLBO	100.00	103.00	139.81	139.53	500.007	CC, ES
RINN VALLEY EAST N17-20-14N - ORIGINAL WELLBO	18,144.53	17,471.08	1,796.98	1,436.88	4.990	SF
RINN VALLEY EAST N17-20-15C - ORIGINAL WELLBO	100.00	103.00	168.05	167.77	601.008	CC, ES
RINN VALLEY EAST N17-20-15C - ORIGINAL WELLBO	18,144.53	17,609.86	2,290.79	1,930.54	6.359	SF
RINN VALLEY EAST N17-20-16N - ORIGINAL WELLBO	100.00	104.00	196.01	195.72	692.135	CC, ES

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

# Anticollision Report

<b>Company:</b>	EXTRACTION OIL & GAS	<b>Local Co-ordinate Reference:</b>	Well RINN VALLEY EAST N17-20-9N
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KB 25' @ 4961.00usft
<b>Reference Site:</b>	Sec 18-T2N-R68W	<b>MD Reference:</b>	KB 25' @ 4961.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	RINN VALLEY EAST N17-20-9N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	ORIGINAL WELLBORE	<b>Database:</b>	EDT_32Bit_ODBC
<b>Reference Design:</b>	PROPOSAL 1	<b>Offset TVD Reference:</b>	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 N17-20-16N - ORIGINAL WELLBO	18,144.53	17,319.60	2,597.80	2,237.77	7.215	SF
RINN VALLEY WEST N18-20-10N - ORIGINAL WELLBO	100.00	106.00	475.90	475.61	1,638.981	CC, ES
RINN VALLEY WEST N18-20-10N - ORIGINAL WELLBO	18,144.53	15,627.94	5,735.91	5,377.29	15.995	SF
RINN VALLEY WEST N18-20-11C - ORIGINAL WELLBO	100.00	107.00	503.86	503.57	1,714.117	CC, ES
RINN VALLEY WEST N18-20-11C - ORIGINAL WELLBO	18,144.53	15,937.01	6,060.99	5,702.12	16.889	SF
RINN VALLEY WEST N18-20-12N - ORIGINAL WELLBO	100.00	107.00	531.82	531.53	1,809.240	CC, ES
RINN VALLEY WEST N18-20-14N - ORIGINAL WELLBO	18,144.53	15,945.57	6,536.32	6,176.70	18.176	SF
RINN VALLEY WEST N18-20-13C - ORIGINAL WELLBO	100.00	107.00	559.78	559.49	1,904.362	CC, ES
RINN VALLEY WEST N18-20-13C - ORIGINAL WELLBO	18,144.53	16,359.15	7,020.50	6,660.49	19.501	SF
RINN VALLEY WEST N18-20-14N - ORIGINAL WELLBO	100.00	107.00	588.02	587.73	2,000.437	CC, ES
RINN VALLEY WEST N18-20-14N - ORIGINAL WELLBO	18,144.53	16,332.55	7,336.18	6,975.68	20.350	SF
RINN VALLEY WEST N18-20-15N - ORIGINAL WELLBO	100.00	108.00	615.98	615.69	2,070.312	CC, ES
RINN VALLEY WEST N18-20-15N - ORIGINAL WELLBO	18,144.53	16,508.50	7,656.40	7,295.32	21.204	SF
RINN VALLEY WEST N18-20-16C - ORIGINAL WELLBO	100.00	109.00	643.94	643.66	2,292.006	CC, ES
RINN VALLEY WEST N18-20-16C - ORIGINAL WELLBO	18,144.53	16,822.24	7,979.66	7,618.77	22.111	SF
RINN VALLEY WEST N18-20-16N - ORIGINAL WELLBOR	100.00	104.00	223.97	223.69	790.870	CC, ES
RINN VALLEY WEST N18-20-1N - ORIGINAL WELLBOR	18,144.53	17,301.50	2,895.35	2,535.22	8.040	SF
RINN VALLEY WEST N18-20-2C - ORIGINAL WELLBOR	100.00	105.00	251.93	251.64	878.485	CC, ES
RINN VALLEY WEST N18-20-2C - ORIGINAL WELLBOR	18,144.53	17,540.17	3,224.43	2,863.51	8.934	SF
RINN VALLEY WEST N18-20-3N - ORIGINAL WELLBOR	100.00	105.00	279.89	279.60	975.986	CC, ES
RINN VALLEY WEST N18-20-3N - ORIGINAL WELLBOR	18,144.53	17,300.84	3,535.26	3,174.34	9.795	SF
RINN VALLEY WEST N18-20-4N - ORIGINAL WELLBOR	100.00	106.00	307.85	307.56	1,060.234	CC, ES
RINN VALLEY WEST N18-20-4N - ORIGINAL WELLBOR	18,144.53	17,326.99	3,855.47	3,494.93	10.694	SF
RINN VALLEY WEST N18-20-5C - ORIGINAL WELLBOR	100.00	108.00	335.81	335.52	1,128.664	CC, ES
RINN VALLEY WEST N18-20-5C - ORIGINAL WELLBOR	18,144.53	17,616.89	4,183.12	3,822.59	11.602	SF
RINN VALLEY WEST N18-20-6N - ORIGINAL WELLBOR	100.00	109.00	363.77	363.47	1,208.085	CC, ES
RINN VALLEY WEST N18-20-6N - ORIGINAL WELLBOR	18,144.53	17,428.47	4,496.31	4,136.14	12.484	SF
RINN VALLEY WEST N18-20-7N - ORIGINAL WELLBOR	100.00	109.00	392.02	391.71	1,301.872	CC, ES
RINN VALLEY WEST N18-20-7N - ORIGINAL WELLBOR	18,144.53	17,502.81	4,816.48	4,456.33	13.373	SF
RINN VALLEY WEST N18-20-8C - ORIGINAL WELLBOR	100.00	110.00	419.98	419.67	1,378.321	CC, ES
RINN VALLEY WEST N18-20-8C - ORIGINAL WELLBOR	18,144.53	17,830.03	5,142.46	4,782.13	14.272	SF
RINN VALLEY WEST N18-20-9N - ORIGINAL WELLBOR	100.00	105.00	447.94	447.65	1,561.967	CC, ES
RINN VALLEY WEST N18-20-9N - ORIGINAL WELLBOR	18,144.53	15,529.02	5,415.94	5,057.73	15.119	SF
Sec 8-T2N-R68W						
ABND VERT LONGMONT 8-10K - Wellbore #1 - Design	14,971.33	7,205.19	1,031.75	760.27	3.800	CC
ABND VERT LONGMONT 8-10K - Wellbore #1 - Design	15,000.00	7,205.19	1,032.15	759.45	3.785	ES
ABND VERT LONGMONT 8-10K - Wellbore #1 - Design	15,100.00	7,205.19	1,039.74	763.42	3.763	SF
ABND VERT NIWOT 1 - Wellbore #1 - Design #1	14,900.00	7,204.81	1,120.36	850.07	4.145	ES, SF
ABND VERT NIWOT 1 - Wellbore #1 - Design #1	14,900.89	7,204.81	1,120.36	850.08	4.145	CC
EXIST VERT SAUNDERS TRUST 8-2K8 - Wellbore #1 -	17,410.45	7,309.19	897.08	581.64	2.844	CC, ES
EXIST VERT SAUNDERS TRUST 8-2K8 - Wellbore #1 -	17,500.00	7,309.19	901.54	582.39	2.825	SF

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-INC													Offset Well Error:	0.00 usft
Reference														
Offset														
Semi Major Axis														
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	14.46	4,212.19	1,086.38	4,350.53					
100.00	100.00	34.00	34.00	0.13	0.41	14.46	4,212.19	1,086.38	4,350.03	4,349.49	0.54	8,028.520		
200.00	199.98	133.98	133.98	0.49	1.98	-81.14	4,212.19	1,086.38	4,349.76	4,347.30	2.46	1,765.260		

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