

EXTRACTION OIL & GAS

Weld County

Sec 18-T2N-R68W

RINN VALLEY WEST N18-20-9N

ORIGINAL WELLBORE

PROPOSAL 1

Anticollision Report

03 May, 2018

Anticollision Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well RINN VALLEY WEST N18-20-9N
Project:	Weld County	TVD Reference:	KB 25' @ 4966.00usft
Reference Site:	Sec 18-T2N-R68W	MD Reference:	KB 25' @ 4966.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	RINN VALLEY WEST N18-20-9N	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	5/3/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	18,102.64	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 18-T2N-R68W						
EXIST DD WILLIAMS 13-18 - Wellbore #1 - Wellbore #1	7,564.33	6,819.20	2,128.60	2,048.93	26.718	CC, ES
EXIST DD WILLIAMS 13-18 - Wellbore #1 - Wellbore #1	8,300.00	7,293.44	2,277.85	2,186.86	25.035	SF
EXIST DD WILLIAMS 34-18 - Wellbore #1 - Design #1	4,614.63	4,108.63	24.15	-26.68	0.475	Level 1, CC, ES, SF
EXIST DD WILLIAMS 3A-18H - Wellbore #1 - Wellbore #	7,696.15	9,920.19	1,226.82	1,118.01	11.275	CC
EXIST DD WILLIAMS 3A-18H - Wellbore #1 - Wellbore #	7,700.00	9,920.62	1,226.84	1,117.94	11.266	ES
EXIST DD WILLIAMS 3A-18H - Wellbore #1 - Wellbore #	7,800.00	9,932.90	1,240.31	1,129.46	11.189	SF
EXIST VERT CITY OF LONGMONT 1 - Wellbore #1 - De	8,800.00	7,220.00	687.55	477.93	3.280	ES, SF
EXIST VERT CITY OF LONGMONT 1 - Wellbore #1 - De	8,809.77	7,220.00	687.48	478.11	3.284	CC
EXIST VERT SERAFINI GAS UNIT 1 - Wellbore #1 - De	9,564.46	7,212.01	1,678.93	1,457.90	7.596	CC, ES, SF
EXIST VERT SHERWOOD 1 - Wellbore #1 - Design #1	8,788.83	7,225.00	634.87	425.71	3.035	CC
EXIST VERT SHERWOOD 1 - Wellbore #1 - Design #1	8,800.00	7,225.00	634.97	425.15	3.026	ES
EXIST VERT SHERWOOD 1 - Wellbore #1 - Design #1	8,900.00	7,225.00	644.53	429.45	2.997	SF
EXIST VERT SHERWOOD 2 - Wellbore #1 - Design #1	9,918.11	7,217.01	634.37	407.55	2.797	CC, ES
EXIST VERT SHERWOOD 2 - Wellbore #1 - Design #1	10,000.00	7,217.01	639.63	408.23	2.764	SF
EXIST VERT WILLIAMS 14-18 - Wellbore #1 - Design #1	6,331.44	5,607.19	2,816.36	2,649.39	16.867	CC
EXIST VERT WILLIAMS 14-18 - Wellbore #1 - Design #1	7,506.50	6,752.00	2,825.40	2,630.42	14.491	ES
EXIST VERT WILLIAMS 14-18 - Wellbore #1 - Design #1	7,800.00	7,032.84	2,876.51	2,674.82	14.262	SF
EXIST VERT WILLIAMS 18-16 - Wellbore #1 - Design #1	2,834.78	2,638.46	389.53	321.13	5.695	CC
EXIST VERT WILLIAMS 18-16 - Wellbore #1 - Design #1	2,900.00	2,708.35	391.35	320.90	5.555	ES
EXIST VERT WILLIAMS 18-16 - Wellbore #1 - Design #1	3,000.00	2,773.20	401.09	328.53	5.527	SF
EXIST VERT WILLIAMS 23-18 - Wellbore #1 - Design #1	6,947.41	6,120.92	577.87	396.94	3.194	CC
EXIST VERT WILLIAMS 23-18 - Wellbore #1 - Design #1	7,506.50	6,677.00	579.92	386.46	2.998	ES
EXIST VERT WILLIAMS 23-18 - Wellbore #1 - Design #1	7,550.00	6,720.46	581.06	386.66	2.989	SF
EXIST VERT WILLIAMS 24-18 - Wellbore #1 - Design #1	4,715.19	4,234.02	1,673.10	1,551.31	13.738	CC
EXIST VERT WILLIAMS 24-18 - Wellbore #1 - Design #1	4,900.00	4,384.74	1,676.52	1,549.60	13.209	ES
EXIST VERT WILLIAMS 24-18 - Wellbore #1 - Design #1	7,650.00	6,874.01	2,021.16	1,830.44	10.598	SF
EXIST VERT WILLIAMS 33-18 - Wellbore #1 - Design #1	5,027.74	4,433.92	168.35	38.92	1.301	Level 3, CC, ES, SF
EXIST VERT WILLIAMS 43-18 - Wellbore #1 - Design #1	4,047.18	3,623.23	1,380.26	1,278.46	13.559	CC
EXIST VERT WILLIAMS 43-18 - Wellbore #1 - Design #1	4,200.00	3,747.86	1,383.09	1,277.09	13.048	ES
EXIST VERT WILLIAMS 43-18 - Wellbore #1 - Design #1	7,950.00	7,066.53	2,060.79	1,873.15	10.983	SF
EXIST VERT WILLIAMS E UNIT 1 - Wellbore #1 - Desig	7,506.50	6,565.00	1,991.55	1,800.19	10.408	CC, ES
EXIST VERT WILLIAMS E UNIT 1 - Wellbore #1 - Desig	7,750.00	6,801.24	2,023.42	1,826.43	10.271	SF
RINN VALLEY EAST N17-20-10C - ORIGINAL WELLBO	200.00	196.00	419.98	419.00	432.315	CC, ES
RINN VALLEY EAST N17-20-10C - ORIGINAL WELLBO	16,200.00	18,190.90	5,109.51	4,742.97	13.940	SF
RINN VALLEY EAST N17-20-11N - ORIGINAL WELLBO	300.00	296.00	392.01	390.33	232.181	CC, ES
RINN VALLEY EAST N17-20-11N - ORIGINAL WELLBO	16,100.00	17,849.98	4,772.26	4,406.92	13.062	SF
RINN VALLEY EAST N17-20-12N - ORIGINAL WELLBO	400.00	397.00	364.05	361.64	151.127	CC, ES

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

Anticollision Report

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Site Error:	0.00 usft	North Reference:	True
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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 N17-20-12N - ORIGINAL WELLBO	16,000.00	17,737.60	4,442.59	4,078.78	12.211	SF
RINN VALLEY EAST N17-20-13C - ORIGINAL WELLBO	500.00	497.00	336.09	332.97	107.520	CC, ES
RINN VALLEY EAST N17-20-13C - ORIGINAL WELLBO	15,900.00	17,872.59	4,121.55	3,759.84	11.395	SF
RINN VALLEY EAST N17-20-14N - ORIGINAL WELLBO	600.00	598.00	308.13	304.29	80.109	CC, ES
RINN VALLEY EAST N17-20-14N - ORIGINAL WELLBO	15,800.00	17,504.45	3,626.75	3,265.87	10.050	SF
RINN VALLEY EAST N17-20-15C - ORIGINAL WELLBO	700.00	698.00	279.89	275.33	61.335	CC, ES
RINN VALLEY EAST N17-20-15C - ORIGINAL WELLBO	15,700.00	17,652.00	3,151.15	2,792.19	8.779	SF
RINN VALLEY EAST N17-20-16N - ORIGINAL WELLBO	800.00	799.00	251.93	246.65	47.679	CC, ES
RINN VALLEY EAST N17-20-16N - ORIGINAL WELLBO	15,700.00	17,363.45	2,820.82	2,461.35	7.847	SF
RINN VALLEY EAST N17-20-9N - ORIGINAL WELLBOR	100.00	95.00	447.94	447.68	1,708.819	CC, ES
RINN VALLEY EAST N17-20-9N - ORIGINAL WELLBOR	16,300.00	18,144.53	5,470.74	5,102.06	14.839	SF
RINN VALLEY WEST N18-20-10N - ORIGINAL WELLBO	700.00	701.00	27.96	23.39	6.113	CC
RINN VALLEY WEST N18-20-10N - ORIGINAL WELLBO	17,993.25	24,599.86	319.78	-236.06	0.575	Level 1, ES, SF
RINN VALLEY WEST N18-20-11C - ORIGINAL WELLBO	600.00	602.00	55.92	52.06	14.485	CC, ES
RINN VALLEY WEST N18-20-11C - ORIGINAL WELLBO	18,102.64	18,523.39	687.08	268.37	1.641	SF
RINN VALLEY WEST N18-20-12N - ORIGINAL WELLBO	500.00	502.00	83.88	80.74	26.682	CC, ES
RINN VALLEY WEST N18-20-12N - ORIGINAL WELLBO	18,102.64	18,474.27	1,121.27	672.59	2.499	SF
RINN VALLEY WEST N18-20-13C - ORIGINAL WELLBO	400.00	402.00	111.84	109.42	46.086	CC, ES
RINN VALLEY WEST N18-20-13C - ORIGINAL WELLBO	18,102.64	18,868.13	1,620.58	1,177.99	3.662	SF
RINN VALLEY WEST N18-20-14N - ORIGINAL WELLBO	300.00	302.00	140.09	138.38	81.925	CC, ES
RINN VALLEY WEST N18-20-14N - ORIGINAL WELLBO	18,102.64	18,827.94	1,922.02	1,472.63	4.277	SF
RINN VALLEY WEST N18-20-15N - ORIGINAL WELLBO	200.00	203.00	168.05	167.05	168.628	CC, ES
RINN VALLEY WEST N18-20-15N - ORIGINAL WELLBO	18,102.64	18,973.96	2,242.27	1,792.72	4.988	SF
RINN VALLEY WEST N18-20-16C - ORIGINAL WELLBO	100.00	104.00	196.01	195.73	714.753	CC, ES
RINN VALLEY WEST N18-20-16C - ORIGINAL WELLBO	17,905.35	27,410.18	2,571.78	1,991.89	4.435	SF
RINN VALLEY WEST N18-20-1N - ORIGINAL WELLBOR	800.00	801.00	223.97	218.68	42.330	CC, ES
RINN VALLEY WEST N18-20-1N - ORIGINAL WELLBOR	18,102.64	19,869.54	2,522.51	2,075.25	5.640	SF
RINN VALLEY WEST N18-20-2C - ORIGINAL WELLBOR	800.00	800.00	196.01	190.72	37.070	CC, ES
RINN VALLEY WEST N18-20-2C - ORIGINAL WELLBOR	18,102.64	20,116.15	2,216.95	1,770.75	4.969	SF
RINN VALLEY WEST N18-20-3N - ORIGINAL WELLBOR	800.00	800.00	168.05	162.76	31.782	CC, ES
RINN VALLEY WEST N18-20-3N - ORIGINAL WELLBOR	18,102.64	19,871.66	1,882.71	1,434.60	4.201	SF
RINN VALLEY WEST N18-20-4N - ORIGINAL WELLBOR	800.00	801.00	140.09	134.79	26.476	CC, ES
RINN VALLEY WEST N18-20-4N - ORIGINAL WELLBOR	18,102.64	19,904.46	1,562.40	1,114.42	3.488	SF
RINN VALLEY WEST N18-20-5C - ORIGINAL WELLBOR	800.00	803.00	112.12	106.83	21.163	CC, ES
RINN VALLEY WEST N18-20-5C - ORIGINAL WELLBOR	18,102.64	20,188.31	1,265.90	823.81	2.863	SF
RINN VALLEY WEST N18-20-6N - ORIGINAL WELLBOR	800.00	804.00	84.16	78.86	15.874	CC, ES
RINN VALLEY WEST N18-20-6N - ORIGINAL WELLBOR	18,099.96	20,002.70	921.34	474.03	2.060	SF
RINN VALLEY WEST N18-20-7N - ORIGINAL WELLBOR	800.00	804.00	55.92	50.62	10.548	CC, ES
RINN VALLEY WEST N18-20-7N - ORIGINAL WELLBOR	18,102.64	20,074.46	601.11	154.05	1.345	Level 3, SF
RINN VALLEY WEST N18-20-8C - ORIGINAL WELLBOR	800.00	805.00	27.96	22.66	5.270	CC
RINN VALLEY WEST N18-20-8C - ORIGINAL WELLBOR	18,000.00	21,432.57	372.60	-5.16	0.986	Level 1, ES, SF
Sec 6-T2N-R68W						
ABND VERT MAYEDA 1 - Wellbore #1 - Design #1	16,466.62	4,333.00	2,990.56	2,884.94	28.315	CC
ABND VERT MAYEDA 1 - Wellbore #1 - Design #1	16,500.00	4,333.00	2,990.75	2,884.85	28.243	ES
ABND VERT MAYEDA 1 - Wellbore #1 - Design #1	17,900.00	4,333.00	3,316.32	3,183.50	24.968	SF
EXIST VERT MAYEDA, JOHN Y 2 - Wellbore #1 - Desig	16,526.57	7,272.01	460.28	119.36	1.350	Level 3, CC, ES, SF
Sec 7-T2N-R68W						
EXIST VERT EVANS 6 - Wellbore #1 - Design #1	12,732.04	7,201.01	1,951.22	1,677.51	7.129	CC, ES, SF
EXIST VERT POWELL 1 - Wellbore #1 - Design #1	11,150.08	7,207.01	1,473.74	1,226.76	5.967	CC, ES, SF

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