

EXTRACTION OIL & GAS

Weld County

Sec 28-T1N-R68W

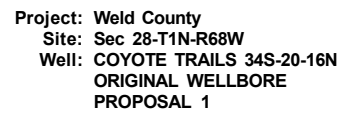
COYOTE TRAILS 34S-20-12N

ORIGINAL WELLBORE

PROPOSAL 1

Anticollision Report

12 September, 2017



Anticollision Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well COYOTE TRAILS 34S-20-12N
Project:	Weld County	TVD Reference:	KB 25' @ 5269.00usft
Reference Site:	Sec 28-T1N-R68W	MD Reference:	KB 25' @ 5269.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	COYOTE TRAILS 34S-20-12N	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	9/12/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	18,676.71	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 28-T1N-R68W						
COYOTE TRAILS 33S-20-1N - ORIGINAL WELLBORE -	500.00	500.00	305.91	302.77	97.529	CC, ES
COYOTE TRAILS 33S-20-1N - ORIGINAL WELLBORE -	18,677.20	17,871.77	3,558.30	3,158.22	8.894	SF
COYOTE TRAILS 33S-20-2C - ORIGINAL WELLBORE -	500.00	500.00	269.92	266.79	86.055	CC, ES
COYOTE TRAILS 33S-20-2C - ORIGINAL WELLBORE -	18,663.54	18,124.67	3,278.63	2,878.42	8.192	SF
COYOTE TRAILS 33S-20-3N - ORIGINAL WELLBORE -	500.00	500.00	233.93	230.80	74.581	CC, ES
COYOTE TRAILS 33S-20-3N - ORIGINAL WELLBORE -	18,664.54	17,877.44	2,977.94	2,577.74	7.441	SF
COYOTE TRAILS 33S-20-4N - ORIGINAL WELLBORE -	500.00	500.00	197.94	194.80	63.106	CC, ES
COYOTE TRAILS 33S-20-4N - ORIGINAL WELLBORE -	18,662.83	17,908.19	2,687.91	2,287.48	6.713	SF
COYOTE TRAILS 33S-20-5C - ORIGINAL WELLBORE -	500.00	500.00	161.95	158.82	51.633	CC, ES
COYOTE TRAILS 33S-20-5C - ORIGINAL WELLBORE -	18,663.59	18,192.90	2,412.03	2,012.11	6.031	SF
COYOTE TRAILS 33S-20-6N - ORIGINAL WELLBORE -	500.00	500.00	125.96	122.83	40.159	CC, ES
COYOTE TRAILS 33S-20-6N - ORIGINAL WELLBORE -	18,669.45	17,981.20	2,107.58	1,707.52	5.268	SF
COYOTE TRAILS 33S-20-7N - ORIGINAL WELLBORE -	500.00	500.00	89.97	86.84	28.685	CC, ES
COYOTE TRAILS 33S-20-7N - ORIGINAL WELLBORE -	18,677.20	18,027.03	1,817.60	1,418.21	4.551	SF
COYOTE TRAILS 34S-20-10N - ORIGINAL WELLBORE	500.00	500.00	35.99	32.85	11.473	CC, ES
COYOTE TRAILS 34S-20-10N - ORIGINAL WELLBORE	18,671.10	18,339.93	760.22	360.10	1.900	SF
COYOTE TRAILS 34S-20-11C - ORIGINAL WELLBORE	500.00	500.00	17.99	14.86	5.736	CC, ES
COYOTE TRAILS 34S-20-11C - ORIGINAL WELLBORE	18,662.90	18,706.96	460.83	104.00	1.291	Level 3, SF
COYOTE TRAILS 34S-20-13N - ORIGINAL WELLBORE	400.00	400.00	18.00	15.58	7.437	CC
COYOTE TRAILS 34S-20-13N - ORIGINAL WELLBORE	18,677.20	18,828.84	380.25	-21.04	0.948	Level 1, ES, SF
COYOTE TRAILS 34S-20-14C - ORIGINAL WELLBORE	300.00	300.00	35.99	34.29	21.137	CC, ES
COYOTE TRAILS 34S-20-14C - ORIGINAL WELLBORE	18,677.20	19,204.00	770.77	395.17	2.052	SF
COYOTE TRAILS 34S-20-15N - ORIGINAL WELLBORE	200.00	200.00	53.99	53.00	54.764	CC, ES
COYOTE TRAILS 34S-20-15N - ORIGINAL WELLBORE	18,677.20	19,218.96	1,140.45	738.54	2.838	SF
COYOTE TRAILS 34S-20-16N - ORIGINAL WELLBORE	100.00	100.00	71.98	71.71	267.735	CC, ES
COYOTE TRAILS 34S-20-16N - ORIGINAL WELLBORE	18,677.20	19,388.28	1,515.56	1,112.76	3.763	SF
COYOTE TRAILS 34S-20-8C - ORIGINAL WELLBORE -	500.00	500.00	71.98	68.84	22.948	CC, ES
COYOTE TRAILS 34S-20-8C - ORIGINAL WELLBORE -	18,670.31	18,344.02	1,549.70	1,151.75	3.894	SF
COYOTE TRAILS 34S-20-9N - ORIGINAL WELLBORE -	500.00	500.00	53.98	50.85	17.211	CC, ES
COYOTE TRAILS 34S-20-9N - ORIGINAL WELLBORE -	18,667.95	18,183.84	1,237.22	836.72	3.089	SF
EXIST VERT CARR 1 - Wellbore #1 - Design #1	500.00	500.00	3,888.73	3,877.52	347.030	CC
EXIST VERT CARR 1 - Wellbore #1 - Design #1	600.00	600.02	3,890.12	3,876.54	286.517	ES
EXIST VERT CARR 1 - Wellbore #1 - Design #1	8,600.00	7,670.85	6,875.86	6,682.36	35.534	SF
EXIST VERT DUMP UU 28-10 - Wellbore #1 - Design #1	500.00	519.00	886.53	875.00	76.889	CC
EXIST VERT DUMP UU 28-10 - Wellbore #1 - Design #1	800.00	818.45	889.86	871.23	47.769	ES
EXIST VERT DUMP UU 28-10 - Wellbore #1 - Design #1	8,500.00	7,618.83	3,592.19	3,402.62	18.949	SF
EXIST VERT DUMP UU 28-12 - Wellbore #1 - Design #1	500.00	508.00	2,899.38	2,888.04	255.735	CC

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

Anticollision Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well COYOTE TRAILS 34S-20-12N
Project:	Weld County	TVD Reference:	KB 25' @ 5269.00usft
Reference Site:	Sec 28-T1N-R68W	MD Reference:	KB 25' @ 5269.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	COYOTE TRAILS 34S-20-12N	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 28-T1N-R68W						
EXIST VERT DUMP UU 28-12 - Wellbore #1 - Design #1	600.00	608.02	2,901.13	2,887.42	211.629	ES
EXIST VERT DUMP UU 28-12 - Wellbore #1 - Design #1	8,800.00	7,763.32	6,256.03	6,066.11	32.939	SF
EXIST VERT DUMP UU 28-16 - Wellbore #1 - Design #1	4,014.73	3,635.00	46.82	-58.77	0.443	Level 1, CC, ES, SF
EXIST VERT DUMP UU 28-2 - Wellbore #1 - Design #1	500.00	472.00	3,778.80	3,768.19	356.239	CC
EXIST VERT DUMP UU 28-2 - Wellbore #1 - Design #1	800.00	771.45	3,782.62	3,764.91	213.578	ES
EXIST VERT DUMP UU 28-2 - Wellbore #1 - Design #1	8,450.00	7,532.00	5,621.01	5,417.04	27.558	SF
EXIST VERT DUMP UU 28-5 - Wellbore #1 - Design #1	500.00	523.00	3,650.97	3,639.33	313.633	CC
EXIST VERT DUMP UU 28-5 - Wellbore #1 - Design #1	600.00	622.98	3,652.58	3,638.57	260.699	ES
EXIST VERT DUMP UU 28-5 - Wellbore #1 - Design #1	8,600.00	7,706.15	6,851.39	6,661.10	36.006	SF
EXIST VERT MEIKLE 2 - Wellbore #1 - Design #1	2,074.82	2,000.31	119.09	68.66	2.362	CC, ES
EXIST VERT MEIKLE 2 - Wellbore #1 - Design #1	2,100.00	2,021.11	119.82	68.77	2.347	SF
EXIST VERT MEIKLE 28-1 - Wellbore #1 - Design #1	1,601.80	1,557.83	387.61	350.09	10.330	CC
EXIST VERT MEIKLE 28-1 - Wellbore #1 - Design #1	1,700.00	1,648.21	389.51	349.47	9.729	ES
EXIST VERT MEIKLE 28-1 - Wellbore #1 - Design #1	2,000.00	1,915.39	425.09	377.50	8.932	SF
Sec 33-T1N-R68W						
ABND VERT GRAEBER 33-33D - Wellbore #1 - Design	10,500.00	7,178.00	1,786.04	1,587.32	8.988	SF
ABND VERT GRAEBER 33-33D - Wellbore #1 - Design	10,700.00	7,178.00	1,770.92	1,574.93	9.036	ES
ABND VERT GRAEBER 33-33D - Wellbore #1 - Design	10,734.47	7,178.00	1,770.58	1,575.08	9.057	CC
EXIST VERT GRAEBER 42-33 - Wellbore #1 - Design #1	10,600.00	7,769.00	1,656.49	1,432.13	7.383	SF
EXIST VERT GRAEBER 42-33 - Wellbore #1 - Design #1	10,700.00	7,769.00	1,651.33	1,428.20	7.401	ES
EXIST VERT GRAEBER 42-33 - Wellbore #1 - Design #1	10,735.23	7,769.00	1,650.96	1,428.28	7.414	CC
GRAEBER 31-33D - Wellbore #1 - Wellbore #1	4,397.33	4,351.61	2,135.79	2,074.31	34.741	CC
GRAEBER 31-33D - Wellbore #1 - Wellbore #1	4,500.00	4,407.49	2,137.32	2,074.27	33.896	ES
GRAEBER 31-33D - Wellbore #1 - Wellbore #1	5,500.00	5,097.45	2,294.12	2,218.71	30.422	SF
GRAEBER 33-33DX - Wellbore #1 - Wellbore #1	11,972.55	8,194.63	2,815.24	2,692.46	22.929	CC, ES
GRAEBER 33-33DX - Wellbore #1 - Wellbore #1	12,100.00	8,185.61	2,818.11	2,694.96	22.883	SF

Anticollision Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well COYOTE TRAILS 34S-20-12N
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Reference Site:	Sec 28-T1N-R68W	MD Reference:	KB 25' @ 5269.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	COYOTE TRAILS 34S-20-12N	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 34-T1N-R68W						
ABND VERT BICKLER A UNIT 2 - Wellbore #1 - Design	12,377.38	7,747.01	10.78	-237.49	0.043	Level 1, CC, ES, SF
ABND VERT K & R LIVESTOCK COMM 1 - Wellbore #1	11,866.62	5,503.00	4,111.26	3,938.07	23.739	CC
ABND VERT K & R LIVESTOCK COMM 1 - Wellbore #1	12,000.00	5,503.00	4,113.42	3,937.05	23.322	ES
ABND VERT K & R LIVESTOCK COMM 1 - Wellbore #1	13,600.00	5,503.00	4,461.75	4,250.60	21.131	SF
ABND VERT KATS B UNIT 1 - Wellbore #1 - Design #1	12,854.30	7,703.01	3,285.86	3,030.75	12.880	CC
ABND VERT KATS B UNIT 1 - Wellbore #1 - Design #1	13,000.00	7,703.01	3,289.09	3,029.47	12.669	ES
ABND VERT KATS B UNIT 1 - Wellbore #1 - Design #1	13,800.00	7,703.01	3,419.25	3,138.46	12.177	SF
ABND VERT NIVEN GAYLE B 1 - Wellbore #1 - Design	6,900.00	5,145.00	2,811.40	2,681.93	21.714	SF
ABND VERT NIVEN GAYLE B 1 - Wellbore #1 - Design	7,000.00	5,145.00	2,807.05	2,678.12	21.772	ES
ABND VERT NIVEN GAYLE B 1 - Wellbore #1 - Design	7,011.72	5,145.00	2,807.01	2,678.15	21.784	CC
BICKLER 23-34 - Wellbore #1 - Wellbore #1	11,856.76	7,767.89	817.02	704.04	7.231	CC
BICKLER 23-34 - Wellbore #1 - Wellbore #1	11,900.00	7,768.27	818.17	702.14	7.052	ES
BICKLER 23-34 - Wellbore #1 - Wellbore #1	12,100.00	7,770.02	852.46	724.99	6.688	SF
BICKLER 24-34 - Wellbore #1 - Wellbore #1	13,364.13	8,023.30	844.23	691.43	5.525	CC
BICKLER 24-34 - Wellbore #1 - Wellbore #1	13,400.00	8,023.00	844.99	689.90	5.448	ES
BICKLER 24-34 - Wellbore #1 - Wellbore #1	13,500.00	8,022.16	855.09	694.73	5.332	SF
BICKLER 4-4-34 - Wellbore #1 - Wellbore #1	11,262.47	7,702.89	1,592.88	1,492.58	15.881	CC
BICKLER 4-4-34 - Wellbore #1 - Wellbore #1	11,300.00	7,703.37	1,593.33	1,491.34	15.623	ES
BICKLER 4-4-34 - Wellbore #1 - Wellbore #1	11,900.00	7,711.18	1,715.71	1,591.80	13.846	SF
BICKLER 4-6-34 - Wellbore #1 - Wellbore #1	12,539.96	7,802.34	1,578.58	1,449.53	12.232	CC
BICKLER 4-6-34 - Wellbore #1 - Wellbore #1	12,600.00	7,802.22	1,579.72	1,447.85	11.979	ES
BICKLER 4-6-34 - Wellbore #1 - Wellbore #1	13,000.00	7,801.43	1,644.25	1,497.26	11.186	SF
EXIST VERT BICKLER 1 - Wellbore #1 - Design #1	10,681.53	7,810.00	153.38	-69.34	0.689	Level 1, CC, ES, SF
LARKRIDGE MA 03-10D - Wellbore #1 - Wellbore #1	16,820.03	8,023.99	2,710.35	2,512.74	13.716	CC
LARKRIDGE MA 03-10D - Wellbore #1 - Wellbore #1	16,900.00	8,024.23	2,711.53	2,511.19	13.535	ES
LARKRIDGE MA 03-10D - Wellbore #1 - Wellbore #1	17,600.00	8,026.33	2,820.35	2,601.44	12.884	SF
Sec 3-T1S-R68W						
EXIST VERT WEBBER H UNIT 1 - Wellbore #1 - Design	18,186.69	7,772.00	1,053.35	705.63	3.029	CC
EXIST VERT WEBBER H UNIT 1 - Wellbore #1 - Design	18,200.00	7,772.00	1,053.43	704.87	3.022	ES
EXIST VERT WEBBER H UNIT 1 - Wellbore #1 - Design	18,300.00	7,772.00	1,059.43	705.46	2.993	SF
Sec 4-T1N-R68W						
ABND VERT ASHER 1 - Wellbore #1 - Design #1	14,826.50	5,625.00	4,561.58	4,346.63	21.222	CC, ES
ABND VERT ASHER 1 - Wellbore #1 - Design #1	15,100.00	5,625.00	4,569.77	4,353.82	21.161	SF
ABND VERT HULSTROM G UNIT 1 - Wellbore #1 - Des	15,600.00	7,754.01	1,053.66	749.75	3.467	ES, SF
ABND VERT HULSTROM G UNIT 1 - Wellbore #1 - Des	15,628.69	7,754.01	1,053.27	750.17	3.475	CC
EXIST VERT NORDSTROM 2-4 - Wellbore #1 - Design #	18,149.13	7,816.00	5,082.73	4,734.78	14.608	CC
EXIST VERT NORDSTROM 2-4 - Wellbore #1 - Design #	18,200.00	7,816.00	5,082.98	4,734.65	14.592	ES
EXIST VERT NORDSTROM 2-4 - Wellbore #1 - Design #	18,500.00	7,816.00	5,094.82	4,744.62	14.548	SF
EXIST VERT NORDSTROM 5-4 - Wellbore #1 - Design #	17,100.00	7,780.00	2,571.54	2,241.63	7.795	SF
EXIST VERT NORDSTROM 5-4 - Wellbore #1 - Design #	17,149.37	7,780.00	2,571.07	2,241.22	7.795	CC, ES

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-MWD OWSG												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)		
0.00	0.00	0.00	0.00	0.00	0.00	-89.68	1.70	-305.91	305.91				
100.00	100.00	100.00	100.00	0.13	0.13	-89.68	1.70	-305.91	305.91	305.64	0.27	1,137.833	
200.00	200.00	200.00	200.00	0.49	0.49	-89.68	1.70	-305.91	305.91	304.93	0.99	310.318	

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