

EXTRACTION OIL & GAS

Broomfield County

Sec 10-T1S-R68W

INTERCHANGE A S22-30-8N

ORIGINAL WELLBORE

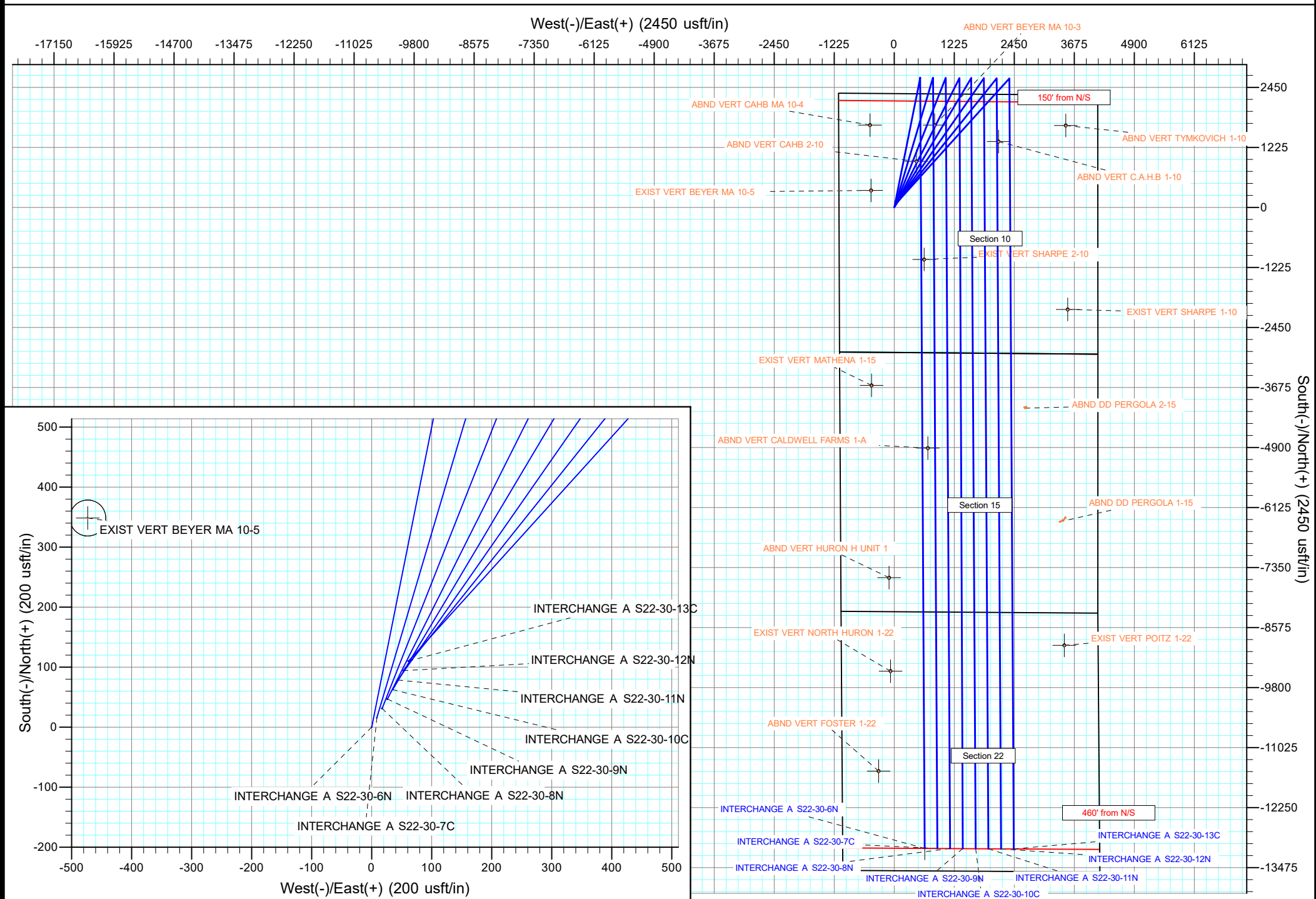
PROPOSAL 1

Anticollision Report

23 January, 2018



Project: Broomfield County
Site: Sec 10-T1S-R68W
Well: INTERCHANGE A S22-30-6N
ORIGINAL WELLBORE
PROPOSAL 1



Anticollision Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well INTERCHANGE A S22-30-8N
Project:	Broomfield County	TVD Reference:	KB 25' @ 5257.00usft
Reference Site:	Sec 10-T1S-R68W	MD Reference:	KB 25' @ 5257.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	INTERCHANGE A S22-30-8N	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	1/23/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	24,005.58	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 10-T1S-R68W						
ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1	5,199.12	4,739.68	146.20	15.86	1.122	Level 2, CC
ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1	5,200.00	4,740.46	146.20	15.84	1.122	Level 2, ES, SF
ABND VERT C.A.H.B 1-10 - Wellbore #1 - Design #1	9,500.00	7,767.99	1,075.56	874.93	5.361	SF
ABND VERT C.A.H.B 1-10 - Wellbore #1 - Design #1	9,580.72	7,767.99	1,072.53	872.84	5.371	CC, ES
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	3,435.60	3,178.89	71.07	-12.94	0.846	Level 1, CC, ES, SF
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	4,160.68	3,839.79	1,084.03	980.61	10.482	CC
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	4,300.00	3,962.94	1,085.99	978.95	10.146	ES
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	9,230.80	7,825.00	1,551.18	1,348.99	7.672	SF
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #	6,083.16	5,180.00	2,710.83	2,650.40	44.860	CC
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #	6,100.00	5,180.00	2,710.89	2,650.33	44.765	ES
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #	6,579.46	5,180.00	2,755.89	2,692.53	43.497	SF
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	1,414.72	1,406.22	572.65	539.60	17.325	CC
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	1,600.00	1,569.82	575.55	538.23	15.424	ES
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	10,600.00	7,829.99	1,535.38	1,333.39	7.601	SF
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	13,015.58	7,759.97	2,464.48	2,239.40	10.950	CC, ES
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	13,400.00	7,759.97	2,494.28	2,263.68	10.816	SF
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	11,979.26	7,808.02	461.22	248.36	2.167	CC, ES, SF
INTERCHANGE A S22-30-10C - ORIGINAL WELLBORE	400.00	400.00	35.96	33.54	14.861	CC
INTERCHANGE A S22-30-10C - ORIGINAL WELLBORE	23,900.00	31,519.38	585.54	9.81	1.017	Level 2, ES, SF
INTERCHANGE A S22-30-11N - ORIGINAL WELLBORE	300.00	300.00	54.19	52.49	31.825	CC, ES
INTERCHANGE A S22-30-11N - ORIGINAL WELLBORE	24,006.13	24,108.07	781.62	276.80	1.548	SF
INTERCHANGE A S22-30-12N - ORIGINAL WELLBORE	200.00	200.00	72.10	71.11	73.139	CC, ES
INTERCHANGE A S22-30-12N - ORIGINAL WELLBORE	24,006.13	24,159.50	1,041.01	536.37	2.063	SF
INTERCHANGE A S22-30-13C - ORIGINAL WELLBORE	100.00	75.00	90.01	89.78	382.627	CC, ES
INTERCHANGE A S22-30-13C - ORIGINAL WELLBORE	24,006.13	24,450.08	1,331.84	838.77	2.701	SF
INTERCHANGE A S22-30-6N - ORIGINAL WELLBORE	600.00	600.00	35.82	31.97	9.296	CC
INTERCHANGE A S22-30-6N - ORIGINAL WELLBORE	23,913.18	34,772.22	517.76	-175.01	0.747	Level 1, ES, SF
INTERCHANGE A S22-30-7C - ORIGINAL WELLBORE	600.00	600.00	17.91	14.06	4.648	CC
INTERCHANGE A S22-30-7C - ORIGINAL WELLBORE	24,003.47	24,225.01	369.55	-36.82	0.909	Level 1, ES, SF
INTERCHANGE A S22-30-9N - ORIGINAL WELLBORE	500.00	500.00	18.05	14.91	5.754	CC
INTERCHANGE A S22-30-9N - ORIGINAL WELLBORE	24,006.13	24,038.63	259.35	-245.39	0.514	Level 1, ES, SF

Anticollision Report

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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 15-T1S-R68W						
ABND DD PERGOLA 1-15 - Wellbore #1 - Wellbore #1	17,348.87	7,500.00	2,284.38	2,120.23	13.917	CC
ABND DD PERGOLA 1-15 - Wellbore #1 - Wellbore #1	17,400.00	7,500.00	2,284.95	2,119.76	13.832	ES
ABND DD PERGOLA 1-15 - Wellbore #1 - Wellbore #1	17,700.00	7,500.00	2,311.21	2,141.22	13.596	SF
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	15,024.98	7,500.00	1,605.99	1,480.44	12.792	CC, ES
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	15,300.00	7,500.00	1,629.37	1,499.18	12.515	SF
ABND VERT CALDWELL FARMS 1-A - Wellbore #1 - Design #	15,829.99	7,788.95	407.27	138.27	1.514	CC, ES, SF
ABND VERT HURON H UNIT 1 - Wellbore #1 - Design #	18,470.46	7,816.93	1,214.08	900.27	3.869	CC, ES
ABND VERT HURON H UNIT 1 - Wellbore #1 - Design #	18,500.00	7,816.93	1,214.44	900.40	3.867	SF
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	14,542.73	7,811.96	1,548.60	1,299.78	6.224	CC, ES
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	14,600.00	7,811.96	1,549.66	1,300.25	6.213	SF
Sec 22-T1S-R68W						
ABND VERT FOSTER 1-22 - Wellbore #1 - Design #1	22,416.44	7,772.90	1,449.82	1,068.84	3.805	CC, ES, SF
EXIST VERT NORTH HURON 1-22 - Wellbore #1 - Design #1	20,376.84	7,789.92	1,194.34	848.38	3.452	CC, ES
EXIST VERT NORTH HURON 1-22 - Wellbore #1 - Design #1	20,400.00	7,789.92	1,194.56	848.43	3.451	SF
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	19,870.70	7,754.92	2,356.52	2,019.98	7.002	CC
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	19,900.00	7,754.92	2,356.70	2,019.55	6.990	ES
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	20,100.00	7,754.92	2,367.64	2,027.06	6.952	SF

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-INC													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)	Offset Wellbore Centre +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	26.11	1,649.81	808.42	1,837.53					
100.00	100.00	67.00	67.00	0.13	0.79	26.11	1,649.81	808.42	1,837.23	1,836.30	0.93	1,979.099		
200.00	200.00	167.00	167.00	0.49	2.72	26.11	1,649.81	808.42	1,837.23	1,834.01	3.21	571.659		
300.00	300.00	267.00	267.00	0.85	4.87	26.11	1,649.81	808.42	1,837.23	1,831.51	5.72	321.109		
400.00	400.00	367.00	367.00	1.21	6.92	26.11	1,649.81	808.42	1,837.23	1,829.09	8.13	225.864		
500.00	500.00	467.00	467.00	1.57	8.96	26.11	1,649.81	808.42	1,837.23	1,826.70	10.53	174.540		
600.00	600.00	567.00	567.00	1.93	10.98	26.11	1,649.81	808.42	1,837.23	1,824.32	12.91	142.317		
700.00	699.98	666.98	666.98	2.29	13.00	4.57	1,649.81	808.42	1,835.49	1,820.20	15.29	120.062		
800.00	799.84	766.84	766.84	2.65	15.02	4.59	1,649.81	808.42	1,830.27	1,812.61	17.66	103.620		
900.00	899.45	866.45	866.45	3.01	17.03	4.63	1,649.81	808.42	1,821.59	1,801.55	20.03	90.928		
1,000.00	998.70	965.70	965.70	3.38	19.03	4.68	1,649.81	808.42	1,809.44	1,787.04	22.40	80.793		
1,100.00	1,097.47	1,064.47	1,064.47	3.77	21.02	4.75	1,649.81	808.42	1,793.85	1,769.10	24.75	72.480		
1,200.00	1,195.62	1,162.62	1,162.62	4.18	22.99	4.83	1,649.81	808.42	1,774.83	1,747.74	27.09	65.511		
1,300.00	1,293.06	1,260.06	1,260.06	4.61	24.95	4.93	1,649.81	808.42	1,752.42	1,722.99	29.42	59.562		
1,400.00	1,389.64	1,356.64	1,356.64	5.08	26.90	5.05	1,649.81	808.42	1,726.63	1,694.89	31.74	54.405		
1,500.00	1,485.27	1,452.27	1,452.27	5.59	28.82	5.19	1,649.81	808.42	1,697.50	1,663.46	34.03	49.876		
1,600.00	1,579.82	1,546.82	1,546.82	6.14	30.73	5.36	1,649.81	808.42	1,665.07	1,628.75	36.31	45.852		
1,700.00	1,673.17	1,640.17	1,640.17	6.72	32.60	5.55	1,649.81	808.42	1,629.37	1,590.80	38.57	42.242		
1,800.00	1,765.21	1,732.21	1,732.21	7.36	34.46	5.77	1,649.81	808.42	1,590.46	1,549.65	40.81	38.975		
1,900.00	1,855.84	1,822.84	1,822.84	8.04	36.28	6.02	1,649.81	808.42	1,548.39	1,505.37	43.02	35.994		
1,994.10	1,939.72	1,906.72	1,906.72	8.73	37.97	6.30	1,649.81	808.42	1,505.95	1,460.88	45.07	33.412		
2,000.00	1,944.94	1,911.94	1,911.94	8.77	38.07	6.31	1,649.81	808.42	1,503.20	1,458.00	45.20	33.253		
2,100.00	2,033.33	2,000.33	2,000.33	9.53	39.85	6.51	1,649.81	808.42	1,456.67	1,409.30	47.37	30.752		
2,200.00	2,121.72	2,088.72	2,088.72	10.31	41.63	6.73	1,649.81	808.42	1,410.15	1,360.61	49.54	28.466		
2,300.00	2,210.11	2,177.11	2,177.11	11.10	43.41	6.96	1,649.81	808.42	1,363.64	1,311.93	51.71	26.369		
2,400.00	2,298.50	2,265.50	2,265.50	11.90	45.18	7.20	1,649.81	808.42	1,317.15	1,263.26	53.90	24.439		

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