

EXTRACTION OIL & GAS

Broomfield County

Sec 10-T1S-R68W

INTERCHANGE A S22-30-6N

ORIGINAL WELLBORE

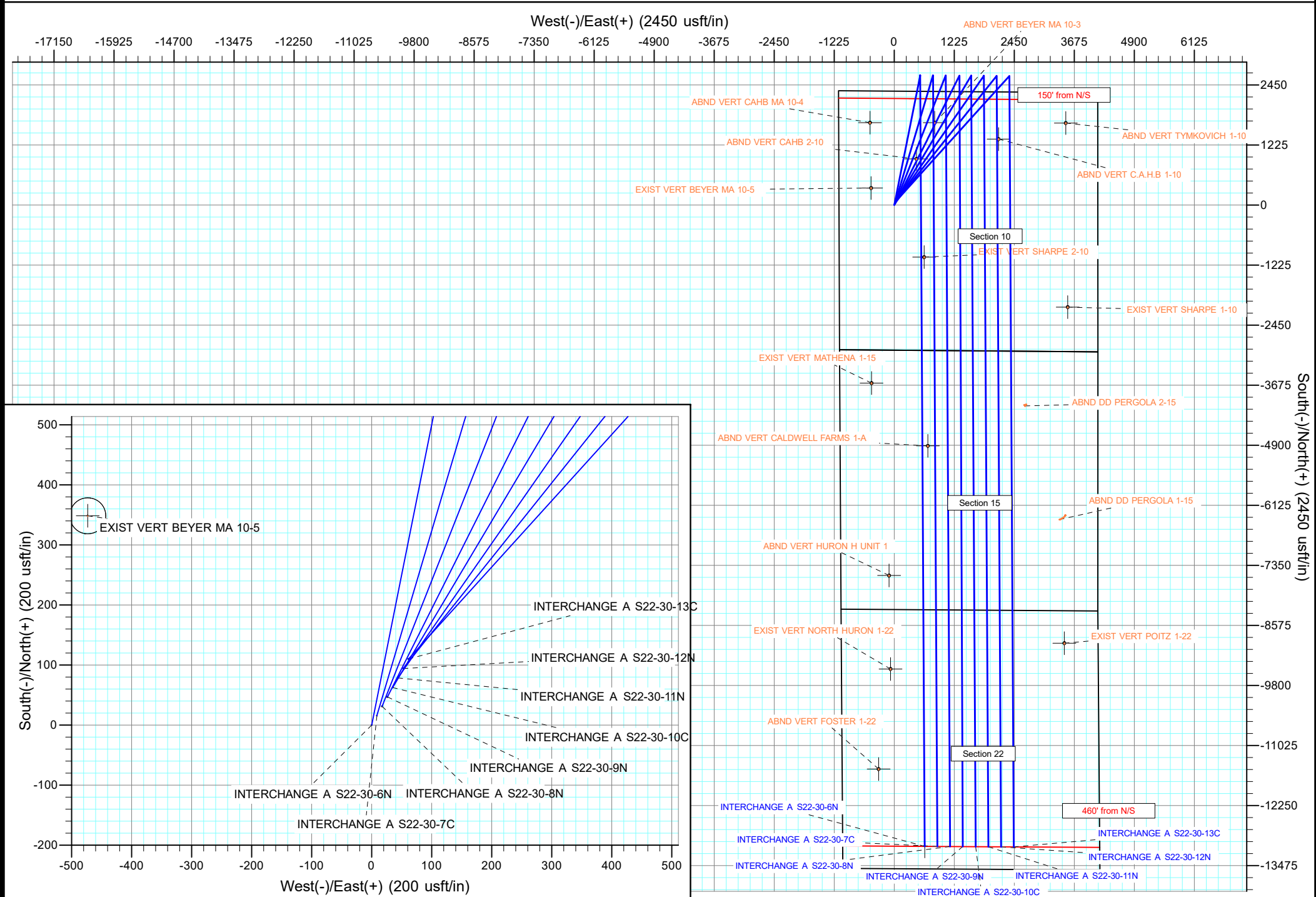
PROPOSAL 1

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 S22-30-6N
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 S22-30-6N	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	23,979.14	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	9,200.00	7,807.00	291.65	89.45	1.442	Level 3, SF
ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1	9,217.70	7,806.99	291.11	89.30	1.442	Level 3, CC, ES
ABND VERT C.A.H.B 1-10 - Wellbore #1 - Design #1	9,500.00	7,767.99	1,593.32	1,393.19	7.961	SF
ABND VERT C.A.H.B 1-10 - Wellbore #1 - Design #1	9,560.30	7,767.99	1,592.18	1,392.38	7.969	CC, ES
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	9,955.01	7,804.99	85.84	-114.26	0.429	Level 1, CC, ES, SF
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	4,802.80	4,431.27	816.51	697.33	6.851	CC
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	4,900.00	4,517.21	817.77	696.09	6.720	ES
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	9,210.04	7,825.00	1,031.49	829.27	5.101	SF
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #	5,882.06	5,180.00	3,118.51	3,060.77	54.015	CC
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #	5,900.00	5,180.00	3,118.56	3,060.68	53.880	ES
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #	6,600.00	5,180.00	3,200.12	3,137.92	51.454	SF
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	2,003.76	1,958.64	532.15	485.18	11.327	CC
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	2,100.00	2,045.84	533.71	484.35	10.813	ES
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	10,600.00	7,829.98	1,017.04	814.64	5.025	SF
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	12,995.35	7,759.96	2,983.68	2,758.04	13.224	CC
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	13,000.00	7,759.96	2,983.68	2,757.98	13.220	ES
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	13,500.00	7,759.95	3,026.05	2,793.68	13.022	SF
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	11,958.65	7,808.03	58.11	-155.25	0.272	Level 1, CC, ES, SF
INTERCHANGE A S22-30-10C - ORIGINAL WELLBORE	400.00	400.00	71.78	69.36	29.666	CC, ES
INTERCHANGE A S22-30-10C - ORIGINAL WELLBORE	23,878.25	32,741.75	1,073.48	439.10	1.692	SF
INTERCHANGE A S22-30-11N - ORIGINAL WELLBORE	300.00	300.00	90.01	88.31	52.863	CC, ES
INTERCHANGE A S22-30-11N - ORIGINAL WELLBORE	23,979.14	24,101.62	1,300.02	794.84	2.573	SF
INTERCHANGE A S22-30-12N - ORIGINAL WELLBORE	200.00	200.00	107.92	106.94	109.478	CC, ES
INTERCHANGE A S22-30-12N - ORIGINAL WELLBORE	23,979.14	24,153.04	1,559.41	1,054.41	3.088	SF
INTERCHANGE A S22-30-13C - ORIGINAL WELLBORE	100.00	75.00	125.83	125.60	534.905	CC, ES
INTERCHANGE A S22-30-13C - ORIGINAL WELLBORE	23,979.14	24,446.07	1,841.35	1,342.66	3.692	SF
INTERCHANGE A S22-30-7C - ORIGINAL WELLBORE	700.00	700.00	17.91	13.34	3.919	CC
INTERCHANGE A S22-30-7C - ORIGINAL WELLBORE	23,979.14	24,215.90	370.02	-28.16	0.929	Level 1, ES, SF
INTERCHANGE A S22-30-8N - ORIGINAL WELLBORE	600.00	600.00	35.82	31.97	9.296	CC
INTERCHANGE A S22-30-8N - ORIGINAL WELLBORE	23,873.00	29,189.66	517.73	-76.98	0.871	Level 1, ES, SF
INTERCHANGE A S22-30-9N - ORIGINAL WELLBORE	500.00	500.00	53.87	50.73	17.175	CC, ES
INTERCHANGE A S22-30-9N - ORIGINAL WELLBORE	23,979.14	24,039.03	777.79	272.50	1.539	SF

Anticollision Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well INTERCHANGE A S22-30-6N
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 S22-30-6N	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 15-T1S-R68W						
ABND DD PERGOLA 1-15 - Wellbore #1 - Wellbore #1	17,328.62	7,500.00	2,800.46	2,635.79	17.007	CC
ABND DD PERGOLA 1-15 - Wellbore #1 - Wellbore #1	17,400.00	7,500.00	2,801.37	2,635.41	16.880	ES
ABND DD PERGOLA 1-15 - Wellbore #1 - Wellbore #1	17,800.00	7,500.00	2,839.85	2,668.29	16.553	SF
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	15,004.63	7,500.00	2,118.92	1,992.82	16.803	CC, ES
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	15,400.00	7,500.00	2,155.49	2,023.72	16.358	SF
ABND VERT CALDWELL FARMS 1-A - Wellbore #1 - De	15,809.39	7,788.93	111.56	-158.03	0.414	Level 1, CC, ES, SF
ABND VERT HURON H UNIT 1 - Wellbore #1 - Design #	18,449.74	7,816.90	695.60	381.20	2.212	CC, ES, SF
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	14,521.97	7,811.94	1,029.60	780.20	4.128	CC, ES
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	14,600.00	7,811.94	1,032.55	782.42	4.128	SF
Sec 22-T1S-R68W						
ABND VERT FOSTER 1-22 - Wellbore #1 - Design #1	22,395.69	7,772.86	931.86	550.29	2.442	CC
ABND VERT FOSTER 1-22 - Wellbore #1 - Design #1	22,400.00	7,772.86	931.87	550.25	2.442	ES, SF
EXIST VERT NORTH HURON 1-22 - Wellbore #1 - Desi	20,356.13	7,789.88	676.10	329.56	1.951	CC, ES, SF
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	19,850.46	7,754.88	2,874.82	2,537.68	8.527	CC
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	19,900.00	7,754.88	2,875.24	2,537.20	8.506	ES
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	20,200.00	7,754.88	2,895.99	2,553.57	8.457	SF

Offset Design Sec 10-T1S-R68W - ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1												Offset Site Error:	0.00 usft
Survey Program: 0-INC												Offset Well Error:	0.00 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis 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	26.16	1,681.13	825.80	1,873.30				
100.00	100.00	67.00	67.00	0.13	0.79	26.16	1,681.13	825.80	1,873.01	1,872.08	0.93	2,017.639	
200.00	200.00	167.00	167.00	0.49	2.72	26.16	1,681.13	825.80	1,873.01	1,869.79	3.21	582.792	
300.00	300.00	267.00	267.00	0.85	4.87	26.16	1,681.13	825.80	1,873.01	1,867.28	5.72	327.362	
400.00	400.00	367.00	367.00	1.21	6.92	26.16	1,681.13	825.80	1,873.01	1,864.87	8.13	230.263	
500.00	500.00	467.00	467.00	1.57	8.96	26.16	1,681.13	825.80	1,873.01	1,862.48	10.53	177.939	
600.00	600.00	567.00	567.00	1.93	10.98	26.16	1,681.13	825.80	1,873.01	1,860.10	12.91	145.088	
700.00	700.00	667.00	667.00	2.29	13.00	26.16	1,681.13	825.80	1,873.01	1,857.72	15.29	122.512	
800.00	800.00	767.00	767.00	2.64	15.02	26.16	1,681.13	825.80	1,873.01	1,855.34	17.66	106.031	
900.00	899.98	866.98	866.98	3.00	17.04	14.89	1,681.13	825.80	1,871.32	1,851.28	20.04	93.384	
1,000.00	999.84	966.84	966.84	3.36	19.05	14.95	1,681.13	825.80	1,866.26	1,843.85	22.41	83.273	
1,100.00	1,099.45	1,066.45	1,066.45	3.72	21.06	15.07	1,681.13	825.80	1,857.84	1,833.06	24.78	74.977	
1,200.00	1,198.70	1,165.70	1,165.70	4.09	23.05	15.23	1,681.13	825.80	1,846.07	1,818.93	27.14	68.022	
1,300.00	1,297.47	1,264.47	1,264.47	4.47	25.04	15.44	1,681.13	825.80	1,830.97	1,801.48	29.49	62.086	
1,400.00	1,395.62	1,362.62	1,362.62	4.87	27.02	15.70	1,681.13	825.80	1,812.57	1,780.74	31.83	56.940	
1,500.00	1,493.06	1,460.06	1,460.06	5.30	28.98	16.02	1,681.13	825.80	1,790.89	1,756.73	34.16	52.423	
1,600.00	1,589.64	1,556.64	1,556.64	5.75	30.92	16.39	1,681.13	825.80	1,765.97	1,729.49	36.48	48.410	
1,700.00	1,685.27	1,652.27	1,652.27	6.24	32.85	16.83	1,681.13	825.80	1,737.86	1,699.08	38.78	44.812	
1,800.00	1,779.82	1,746.82	1,746.82	6.77	34.75	17.34	1,681.13	825.80	1,706.60	1,665.53	41.07	41.556	
1,900.00	1,873.17	1,840.17	1,840.17	7.33	36.63	17.93	1,681.13	825.80	1,672.24	1,628.90	43.34	38.587	
2,000.00	1,965.21	1,932.21	1,932.21	7.94	38.48	18.60	1,681.13	825.80	1,634.86	1,589.27	45.59	35.861	
2,100.00	2,055.84	2,022.84	2,022.84	8.60	40.30	19.37	1,681.13	825.80	1,594.51	1,546.69	47.82	33.344	
2,192.49	2,138.30	2,105.30	2,105.30	9.25	41.96	20.18	1,681.13	825.80	1,554.63	1,504.76	49.87	31.175	
2,200.00	2,144.94	2,111.94	2,111.94	9.30	42.10	20.23	1,681.13	825.80	1,551.29	1,501.25	50.04	31.003	
2,300.00	2,233.36	2,200.36	2,200.36	10.04	43.87	20.83	1,681.13	825.80	1,506.94	1,454.70	52.24	28.846	
2,400.00	2,321.78	2,288.78	2,288.78	10.79	45.65	21.47	1,681.13	825.80	1,462.74	1,408.28	54.46	26.860	

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