EXTRACTION OIL & GAS

Broomfield County
Sec 10-T1S-R68W
INTERCHANGE B S22-30-18N

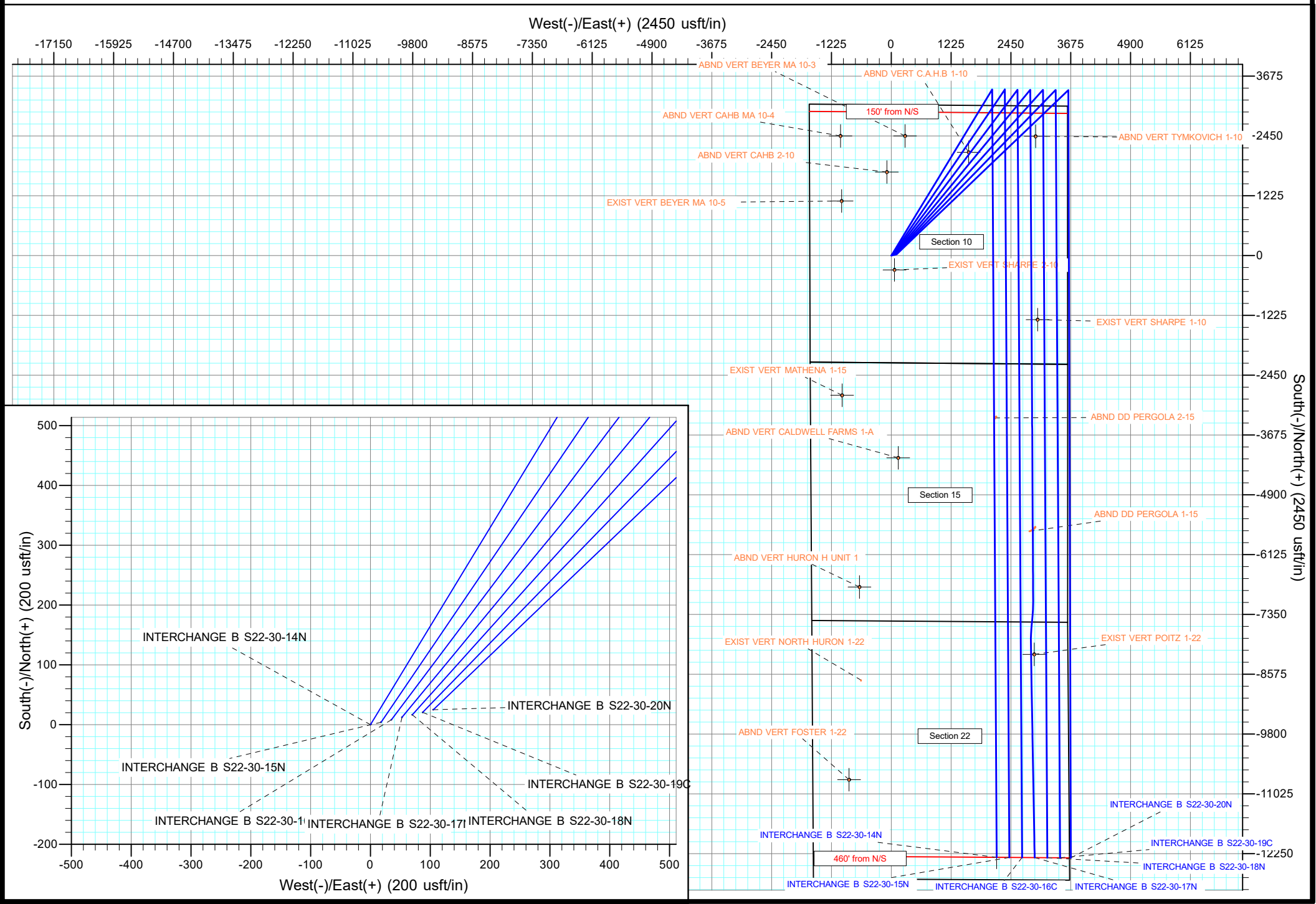
ORIGINAL WELLBORE
PROPOSAL 1

Anticollision Report

24 January, 2018

EXTRACTION Oil & Gas

Project: Broomfield County
Site: Sec 10-T1S-R68W
Well: INTERCHANGE B S22-30-14N
ORIGINAL WELLBORE
PROPOSAL 1



Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well INTERCHANGE B S22-30-18N
Project:	Broomfield County	**TVD Reference:**	KB 25' @ 5231.00usft
Reference Site:	Sec 10-T1S-R68W	**MD Reference:**	KB 25' @ 5231.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	INTERCHANGE B S22-30-18N	**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** 1/24/2018

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	24,959.92	PROPOSAL 1 (ORIGINAL WELLBORE)	MWD OWSG	OWSG MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Sec 10-T1S-R68W						
ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1	4,156.20	3,477.54	1,469.16	1,361.20	13.609	CC
ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1	4,200.00	3,509.13	1,469.47	1,360.30	13.461	ES
ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1	5,000.00	4,086.10	1,581.16	1,452.67	12.306	SF
ABND VERT C.A.H.B 1-10 - Wellbore #1 - Design #1	5,053.76	4,085.87	276.02	143.76	2.087	CC, ES
ABND VERT C.A.H.B 1-10 - Wellbore #1 - Design #1	5,100.00	4,119.23	277.87	144.64	2.086	SF
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	3,002.57	2,643.52	1,252.07	1,176.24	16.511	CC
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	3,100.00	2,713.79	1,253.89	1,175.39	15.974	ES
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	3,900.00	3,309.24	1,397.90	1,299.78	14.246	SF
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	2,879.96	2,575.09	2,452.91	2,380.06	33.671	CC
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	3,000.00	2,661.67	2,454.32	2,378.17	32.230	ES
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	10,400.00	7,850.99	4,158.07	3,937.62	18.861	SF
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #	6,649.89	5,180.00	529.27	439.64	5.905	CC, ES, SF
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	1,028.07	1,036.26	1,544.55	1,520.35	63.809	CC
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	1,400.00	1,389.17	1,548.95	1,515.51	46.331	ES
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	12,000.00	7,855.97	4,166.28	3,948.31	19.114	SF
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	13,939.40	7,785.94	135.22	-91.31	0.597	Level 1, CC, ES, SF
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	300.00	278.00	308.95	303.00	51.924	CC
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	400.00	377.98	310.28	301.92	37.126	ES
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	13,300.00	7,817.95	3,086.54	2,864.19	13.882	SF
INTERCHANGE B S22-30-14N - ORIGINAL WELLBORE	300.00	300.00	72.04	70.33	42.306	CC, ES
INTERCHANGE B S22-30-14N - ORIGINAL WELLBORE	24,930.68	24,670.52	1,036.24	548.77	2.126	SF
INTERCHANGE B S22-30-15N - ORIGINAL WELLBORE	300.00	300.00	53.93	52.23	31.675	CC, ES
INTERCHANGE B S22-30-15N - ORIGINAL WELLBORE	24,931.10	24,730.20	777.00	289.50	1.594	SF
INTERCHANGE B S22-30-16C - ORIGINAL WELLBORE	300.00	300.00	36.02	34.32	21.153	CC
INTERCHANGE B S22-30-16C - ORIGINAL WELLBORE	24,837.84	30,637.47	580.44	30.99	1.056	Level 2, ES, SF
INTERCHANGE B S22-30-17N - ORIGINAL WELLBORE	300.00	300.00	17.92	16.21	10.522	CC
INTERCHANGE B S22-30-17N - ORIGINAL WELLBORE	24,959.92	24,890.99	259.00	-229.21	0.531	Level 1, ES, SF
INTERCHANGE B S22-30-19C - ORIGINAL WELLBORE	200.00	200.00	17.83	16.85	18.088	CC
INTERCHANGE B S22-30-19C - ORIGINAL WELLBORE	24,959.92	25,230.18	372.80	-13.50	0.965	Level 1, ES, SF
INTERCHANGE B S22-30-20N - ORIGINAL WELLBORE	100.00	100.00	36.02	35.75	133.970	CC
INTERCHANGE B S22-30-20N - ORIGINAL WELLBORE	24,959.92	25,134.17	482.27	-3.60	0.993	Level 1, ES, SF

Anticollision Report

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Reference Site:	Sec 10-T1S-R68W	**MD Reference:**	KB 25' @ 5231.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	INTERCHANGE B S22-30-18N	**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 Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Sec 15-T1S-R68W						
ABND DD PERGOLA 1-15 - Wellbore #1 - Wellbore #1	18,272.69	7,500.00	429.88	298.77	3.279	CC, ES, SF
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	15,948.79	7,500.00	1,063.17	947.99	9.231	CC, ES
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	16,000.00	7,500.00	1,064.40	948.90	9.215	SF
ABND VERT CALDWELL FARMS 1-A - Wellbore #1 - De	16,753.77	7,814.90	3,007.01	2,742.59	11.372	CC
ABND VERT CALDWELL FARMS 1-A - Wellbore #1 - De	16,800.00	7,814.90	3,007.36	2,742.50	11.354	ES
ABND VERT CALDWELL FARMS 1-A - Wellbore #1 - De	17,000.00	7,814.89	3,017.07	2,750.52	11.319	SF
ABND VERT HURON H UNIT 1 - Wellbore #1 - Design #	19,394.23	7,842.86	3,813.85	3,507.04	12.431	CC
ABND VERT HURON H UNIT 1 - Wellbore #1 - Design #	19,400.00	7,842.86	3,813.86	3,506.99	12.428	ES
ABND VERT HURON H UNIT 1 - Wellbore #1 - Design #	19,700.00	7,842.85	3,826.09	3,516.55	12.361	SF
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	300.00	302.00	3,073.87	3,067.43	476.697	CC
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	400.00	402.02	3,075.50	3,066.65	347.577	ES
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	16,100.00	7,837.91	4,196.41	3,943.74	16.608	SF
Sec 22-T1S-R68W						
ABND VERT FOSTER 1-22 - Wellbore #1 - Design #1	23,340.20	7,801.20	4,049.65	3,677.32	10.877	CC
ABND VERT FOSTER 1-22 - Wellbore #1 - Design #1	23,400.00	7,801.20	4,050.09	3,677.18	10.861	ES
ABND VERT FOSTER 1-22 - Wellbore #1 - Design #1	23,600.00	7,801.20	4,057.98	3,683.43	10.834	SF
EXIST VERT NORTH HURON 1-22 - Wellbore #1 - Desi	21,300.61	7,815.83	3,794.14	3,456.17	11.226	CC, ES
EXIST VERT NORTH HURON 1-22 - Wellbore #1 - Desi	21,600.00	7,815.83	3,805.93	3,465.50	11.180	SF
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	20,794.52	7,780.84	243.28	-85.50	0.740	Level 1, CC, ES, 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)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	7.00	-7.00	0.00	0.08	4.97	2,433.35	211.56	2,442.53				
100.00	100.00	107.00	93.00	0.13	1.35	4.97	2,433.35	211.56	2,442.53	2,441.05	1.48	1,650.558	
200.00	200.00	207.00	193.00	0.49	3.62	4.97	2,433.35	211.56	2,442.53	2,438.41	4.12	593.435	
300.00	300.00	307.00	293.00	0.85	5.70	4.97	2,433.35	211.56	2,442.53	2,435.98	6.55	372.882	
400.00	399.98	407.02	392.98	1.21	7.74	-37.02	2,433.35	211.56	2,441.13	2,432.18	8.95	272.762	
500.00	499.84	507.16	492.84	1.57	9.77	-37.14	2,433.35	211.56	2,436.95	2,425.61	11.34	214.852	
600.00	599.45	607.55	592.45	1.94	11.80	-37.35	2,433.35	211.56	2,430.01	2,416.27	13.74	176.861	
700.00	698.70	708.30	691.70	2.32	13.84	-37.64	2,433.35	211.56	2,420.31	2,404.16	16.15	149.882	
800.00	797.47	809.53	790.47	2.72	15.88	-38.02	2,433.35	211.56	2,407.90	2,389.32	18.57	129.636	
900.00	895.62	888.62	888.62	3.15	17.47	-38.49	2,433.35	211.56	2,392.81	2,372.24	20.57	116.350	
1,000.00	993.06	986.06	986.06	3.62	19.44	-39.05	2,433.35	211.56	2,375.10	2,352.15	22.94	103.527	
1,100.00	1,089.64	1,082.64	1,082.64	4.12	21.38	-39.71	2,433.35	211.56	2,354.81	2,329.50	25.32	93.004	
1,200.00	1,185.27	1,178.27	1,178.27	4.66	23.31	-40.46	2,433.35	211.56	2,332.04	2,304.34	27.70	84.190	
1,300.00	1,279.82	1,272.82	1,272.82	5.25	25.21	-41.32	2,433.35	211.56	2,306.85	2,276.76	30.08	76.681	
1,400.00	1,373.17	1,366.17	1,366.17	5.89	27.09	-42.28	2,433.35	211.56	2,279.33	2,246.86	32.47	70.191	
1,500.00	1,465.21	1,458.21	1,458.21	6.58	28.94	-43.35	2,433.35	211.56	2,249.60	2,214.73	34.87	64.513	
1,600.00	1,555.84	1,548.84	1,548.84	7.32	30.77	-44.53	2,433.35	211.56	2,217.77	2,180.49	37.28	59.495	
1,700.00	1,644.94	1,637.94	1,637.94	8.11	32.56	-45.84	2,433.35	211.56	2,183.97	2,144.28	39.69	55.020	
1,800.00	1,732.39	1,725.39	1,725.39	8.96	34.32	-47.26	2,433.35	211.56	2,148.35	2,106.22	42.13	50.999	
1,900.00	1,818.11	1,811.11	1,811.11	9.87	36.04	-48.81	2,433.35	211.56	2,111.07	2,066.49	44.57	47.360	
2,000.00	1,901.97	1,905.03	1,894.97	10.83	37.93	-50.49	2,433.35	211.56	2,072.30	2,025.06	47.25	43.862	
2,100.00	1,983.88	1,976.88	1,976.88	11.85	39.38	-52.29	2,433.35	211.56	2,032.26	1,982.72	49.54	41.025	
2,200.00	2,063.74	2,056.74	2,056.74	12.93	40.98	-54.21	2,433.35	211.56	1,991.16	1,939.10	52.06	38.247	
2,300.00	2,141.45	2,134.45	2,134.45	14.07	42.55	-56.26	2,433.35	211.56	1,949.23	1,894.62	54.61	35.691	

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