

EXTRACTION OIL & GAS

Broomfield County

Sec 10-T1S-R68W

INTERCHANGE B N35-20-3N

ORIGINAL WELLBORE

WB #1 - PATT 901

Anticollision Report

24 September, 2019

Anticollision Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well INTERCHANGE B N35-20-3N
Project:	Broomfield County	TVD Reference:	KB 29' @ 5241.00usft
Reference Site:	Sec 10-T1S-R68W	MD Reference:	KB 29' @ 5241.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	INTERCHANGE B N35-20-3N	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:	WB #1 - PATT 901	Offset TVD Reference:	Offset Datum

Reference	WB #1 - PATT 901		
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 Program	Date	9/24/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
122.30	18,288.00	OWB (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 34-T1N-R68W						
ABND VERT K & R LIVESTOCK COMM 1 - Wellbore #1	15,481.11	5,503.00	2,395.19	2,240.75	15.509	CC
ABND VERT K & R LIVESTOCK COMM 1 - Wellbore #1	15,499.97	5,503.00	2,395.30	2,240.63	15.487	ES
ABND VERT K & R LIVESTOCK COMM 1 - Wellbore #1	16,199.00	5,503.00	2,507.84	2,339.98	14.940	SF
ABND VERT KATS B UNIT 1 - Wellbore #1 - Design #1	14,535.50	7,602.61	981.24	673.43	3.188	CC
ABND VERT KATS B UNIT 1 - Wellbore #1 - Design #1	14,577.00	7,602.68	982.08	673.24	3.180	ES
ABND VERT KATS B UNIT 1 - Wellbore #1 - Design #1	14,599.97	7,602.82	983.30	674.01	3.179	SF
ABND VERT NIVEN GAYLE B 1 - Wellbore #1 - Design	16,999.97	5,145.00	2,726.08	2,600.97	21.789	SF
ABND VERT NIVEN GAYLE B 1 - Wellbore #1 - Design	18,164.78	5,145.00	2,455.17	2,361.34	26.166	CC, ES
EXIST DD KATS 31-34 - Wellbore #1 - Wellbore #1	18,138.78	7,689.38	142.42	-106.09	0.573	Level 1, CC, ES, SF
EXIST DD KATS 41-34 - Wellbore #1 - Wellbore #1	18,245.76	7,795.73	1,483.07	1,230.76	5.878	CC
EXIST DD KATS 41-34 - Wellbore #1 - Wellbore #1	18,288.00	7,796.55	1,483.67	1,229.77	5.844	ES, SF
EXIST DD KATS 42-34 - Wellbore #1 - Wellbore #1	16,688.78	7,722.77	1,474.80	1,253.11	6.653	CC
EXIST DD KATS 42-34 - Wellbore #1 - Wellbore #1	16,699.97	7,722.56	1,474.85	1,252.90	6.645	ES
EXIST DD KATS 42-34 - Wellbore #1 - Wellbore #1	16,799.97	7,720.36	1,479.80	1,255.98	6.611	SF
EXIST DD KATS 6-4-34 - Wellbore #1 - Wellbore #1	16,229.63	7,690.20	622.08	406.58	2.887	CC, ES
EXIST DD KATS 6-4-34 - Wellbore #1 - Wellbore #1	16,294.00	7,690.22	625.74	408.56	2.881	SF
EXIST DD KATS 8-2-34 - Wellbore #1 - Wellbore #1	17,464.94	7,802.54	1,910.69	1,676.03	8.142	CC
EXIST DD KATS 8-2-34 - Wellbore #1 - Wellbore #1	17,535.00	7,800.33	1,911.91	1,675.20	8.077	ES
EXIST DD KATS 8-2-34 - Wellbore #1 - Wellbore #1	17,726.00	7,796.24	1,924.45	1,683.40	7.984	SF
EXIST VERT KATS 'B' UNIT 2 - Wellbore #1 - Design #1	17,149.31	7,601.71	320.16	92.99	1.409	Level 3, CC
EXIST VERT KATS 'B' UNIT 2 - Wellbore #1 - Design #1	17,153.00	7,601.79	320.19	92.77	1.408	Level 3, ES, SF

Offset Design	Sec 34-T1N-R68W - ABND VERT K & R LIVESTOCK COMM 1 - Wellbore #1 - Design #1											Offset Site Error:	0.00 usft
Survey Program:	0-INC											Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance									
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)	Separation Factor	Warning
1,344.30	1,341.08	1,308.92	1,291.08	4.53	25.95	-10.41	9,776.85	2,328.16	9,998.33	9,967.90	30.43	328.591	
1,400.00	1,395.70	1,345.70	1,345.70	4.76	26.69	-11.98	9,776.85	2,328.16	9,987.63	9,956.26	31.37	318.367	
1,431.30	1,426.29	1,376.29	1,376.29	4.89	27.30	-12.75	9,776.85	2,328.16	9,981.15	9,949.05	32.10	310.927	
1,500.00	1,493.31	1,443.31	1,443.31	5.19	28.65	-12.85	9,776.85	2,328.16	9,966.41	9,932.71	33.70	295.730	
1,518.30	1,511.15	1,461.15	1,461.15	5.27	29.01	-12.87	9,776.85	2,328.16	9,962.44	9,928.31	34.13	291.924	
1,600.00	1,590.32	1,540.32	1,540.32	5.64	30.60	-14.60	9,776.85	2,328.16	9,942.84	9,906.82	36.02	276.017	
1,600.30	1,590.61	1,540.61	1,540.61	5.64	30.61	-14.61	9,776.85	2,328.16	9,942.76	9,906.73	36.03	275.961	

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