EXTRACTION OIL & GAS

Broomfield County
Sec 10-T1S-R68W
INTERCHANGE B N35-20-8C

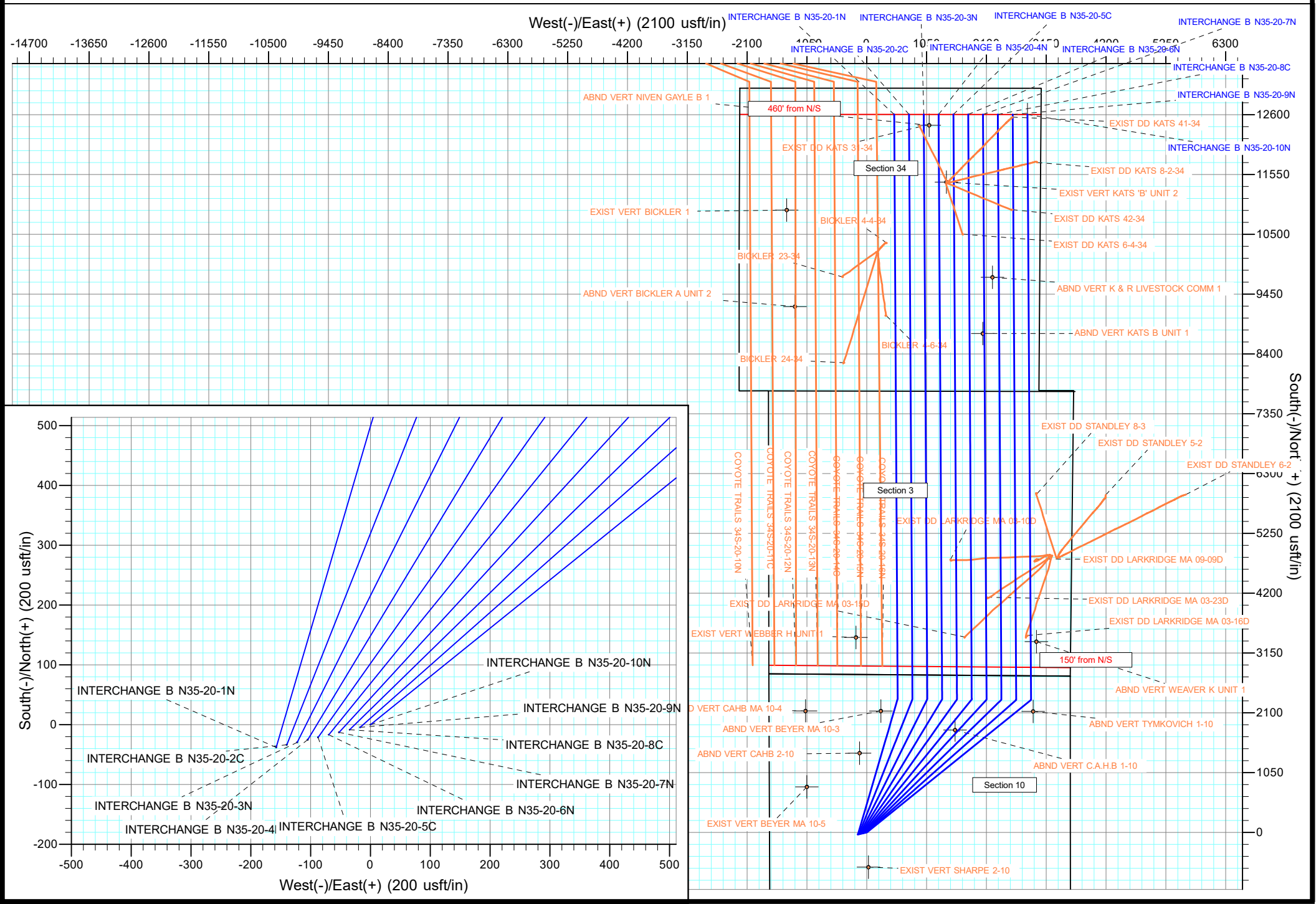
ORIGINAL WELLBORE
PROPOSAL 1

Anticollision Report

07 December, 2017

EXTRACTION Oil & Gas

Project: Broomfield County
Site: Sec 10-T1S-R68W
Well: INTERCHANGE B N35-20-10N
ORIGINAL WELLBORE
PROPOSAL 1



Anticollision Report

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well INTERCHANGE B N35-20-8C
Project:	Broomfield County	**TVD Reference:**	KB 25' @ 5261.00usft
Reference Site:	Sec 10-T1S-R68W	**MD Reference:**	KB 25' @ 5261.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	INTERCHANGE B N35-20-8C	**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** 12/7/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	18,978.31	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	4,366.51	3,900.51	1,336.24	1,224.32	11.940	CC
ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1	4,500.00	4,015.20	1,337.98	1,222.49	11.585	ES
ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1	8,850.00	7,915.18	2,149.44	1,941.45	10.334	SF
ABND VERT C.A.H.B 1-10 - Wellbore #1 - Design #1	5,731.29	5,034.04	186.30	38.10	1.257	Level 3, CC, ES, SF
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	2,836.03	2,583.62	1,067.37	996.95	15.157	CC
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	2,900.00	2,638.58	1,067.87	995.74	14.804	ES
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	4,100.00	3,669.54	1,248.07	1,146.76	12.320	SF
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	2,517.00	2,329.53	2,260.08	2,197.86	36.325	CC
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	2,700.00	2,486.75	2,262.02	2,194.89	33.694	ES
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	9,100.00	8,057.90	3,487.91	3,274.16	16.318	SF
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #	6,480.02	5,180.00	1,101.29	1,047.60	20.510	CC, ES, SF
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	300.00	286.00	1,300.20	1,294.08	212.574	CC
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	800.00	783.47	1,306.38	1,288.30	72.287	ES
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	8,850.00	7,938.18	3,820.62	3,620.98	19.138	SF
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	3,027.39	2,703.03	3,251.89	3,177.20	43.536	CC
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	3,400.00	3,023.15	3,257.48	3,172.72	38.432	ES
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	8,600.00	7,664.54	4,047.70	3,835.67	19.090	SF
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	300.00	248.00	604.08	598.75	113.407	CC
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	400.00	347.98	605.16	597.41	78.142	ES
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	8,700.00	7,785.28	3,823.41	3,631.25	19.897	SF
INTERCHANGE B N35-20-10N - ORIGINAL WELLBORE	100.00	100.00	35.75	35.48	132.955	CC, ES
INTERCHANGE B N35-20-10N - ORIGINAL WELLBORE	18,978.46	18,919.03	583.05	175.09	1.429	Level 3, SF
INTERCHANGE B N35-20-1N - ORIGINAL WELLBORE	300.00	300.00	126.24	124.54	74.140	CC, ES
INTERCHANGE B N35-20-1N - ORIGINAL WELLBORE	18,978.46	18,390.48	1,839.09	1,403.80	4.225	SF
INTERCHANGE B N35-20-2C - ORIGINAL WELLBORE	300.00	300.00	108.05	106.35	63.459	CC, ES
INTERCHANGE B N35-20-2C - ORIGINAL WELLBORE	18,978.46	18,652.48	1,560.11	1,119.80	3.543	SF
INTERCHANGE B N35-20-3N - ORIGINAL WELLBORE	300.00	300.00	90.22	88.52	52.987	CC, ES
INTERCHANGE B N35-20-3N - ORIGINAL WELLBORE	18,925.02	21,783.20	1,326.57	847.43	2.769	SF
INTERCHANGE B N35-20-4N - ORIGINAL WELLBORE	300.00	300.00	72.04	70.33	42.306	CC, ES
INTERCHANGE B N35-20-4N - ORIGINAL WELLBORE	18,978.46	18,500.24	1,072.98	647.34	2.521	SF
INTERCHANGE B N35-20-5C - ORIGINAL WELLBORE	300.00	300.00	54.21	52.50	31.834	CC, ES
INTERCHANGE B N35-20-5C - ORIGINAL WELLBORE	18,978.46	18,782.01	780.06	340.62	1.775	SF
INTERCHANGE B N35-20-6N - ORIGINAL WELLBORE	300.00	300.00	36.02	34.32	21.153	CC, ES
INTERCHANGE B N35-20-6N - ORIGINAL WELLBORE	18,978.46	18,613.25	583.30	188.45	1.477	Level 3, SF
INTERCHANGE B N35-20-7N - ORIGINAL WELLBORE	300.00	300.00	18.19	16.49	10.682	CC, ES
INTERCHANGE B N35-20-7N - ORIGINAL WELLBORE	18,978.46	18,679.37	370.68	44.44	1.136	Level 2, SF
INTERCHANGE B N35-20-9N - ORIGINAL WELLBORE	200.00	200.00	17.83	16.85	18.088	CC, ES

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

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well INTERCHANGE B N35-20-8C
Project:	Broomfield County	**TVD Reference:**	KB 25' @ 5261.00usft
Reference Site:	Sec 10-T1S-R68W	**MD Reference:**	KB 25' @ 5261.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	INTERCHANGE B N35-20-8C	**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 10-T1S-R68W						
INTERCHANGE B N35-20-9N - ORIGINAL WELLBORE	18,978.46	18,834.23	370.49	24.16	1.070	Level 2, SF
Sec 28-T1N-R68W						
COYOTE TRAILS 34S-20-10N - ORIGINAL WELLBORE	18,978.46	8,703.89	4,370.63	4,110.27	16.786	CC, ES, SF
COYOTE TRAILS 34S-20-11C - ORIGINAL WELLBORE	18,978.46	9,068.84	3,980.11	3,716.85	15.119	CC, ES, SF
COYOTE TRAILS 34S-20-12N - ORIGINAL WELLBORE	18,978.46	9,008.38	3,568.18	3,306.93	13.658	CC, ES, SF
COYOTE TRAILS 34S-20-13N - ORIGINAL WELLBORE	18,978.46	9,176.11	3,234.38	2,972.62	12.356	CC, ES, SF
COYOTE TRAILS 34S-20-14C - ORIGINAL WELLBORE	18,978.46	9,551.67	2,875.22	2,609.37	10.815	CC, ES, SF
COYOTE TRAILS 34S-20-15N - ORIGINAL WELLBORE	18,978.46	9,566.69	2,478.89	2,217.10	9.469	CC, ES, SF
COYOTE TRAILS 34S-20-16N - ORIGINAL WELLBORE	9,305.37	19,416.15	2,107.81	1,850.52	8.193	CC, ES, SF
Sec 34-T1N-R68W						
ABND VERT BICKLER A UNIT 2 - Wellbore #1 - Design	15,626.28	8,051.85	3,581.89	3,258.91	11.090	CC, ES
ABND VERT BICKLER A UNIT 2 - Wellbore #1 - Design	15,800.00	8,051.85	3,586.10	3,262.07	11.067	SF
ABND VERT K & R LIVESTOCK COMM 1 - Wellbore #1	14,500.00	5,503.00	3,007.37	2,879.72	23.558	SF
ABND VERT K & R LIVESTOCK COMM 1 - Wellbore #1	16,120.66	5,503.00	2,533.33	2,454.70	32.220	CC, ES
ABND VERT KATS B UNIT 1 - Wellbore #1 - Design #1	15,100.00	8,007.86	289.53	-26.83	0.915	Level 1, ES, SF
ABND VERT KATS B UNIT 1 - Wellbore #1 - Design #1	15,133.71	8,007.86	287.56	-26.12	0.917	Level 1, CC
ABND VERT NIVEN GAYLE B 1 - Wellbore #1 - Design	18,200.00	5,145.00	3,198.93	3,041.40	20.306	SF
ABND VERT NIVEN GAYLE B 1 - Wellbore #1 - Design	18,796.62	5,145.00	3,142.80	2,988.96	20.428	CC, ES
BICKLER 23-34 - Wellbore #1 - Wellbore #1	16,140.14	8,152.67	2,744.21	2,543.99	13.706	CC, ES
BICKLER 23-34 - Wellbore #1 - Wellbore #1	16,200.00	8,152.37	2,744.86	2,544.49	13.699	SF
BICKLER 24-34 - Wellbore #1 - Wellbore #1	14,635.09	8,388.03	2,724.12	2,535.29	14.426	CC, ES, SF
BICKLER 4-4-34 - Wellbore #1 - Wellbore #1	16,731.26	8,064.05	1,967.86	1,760.86	9.507	CC, ES, SF
BICKLER 4-6-34 - Wellbore #1 - Wellbore #1	15,456.73	8,172.28	1,987.41	1,794.20	10.286	CC, ES, SF
EXIST DD KATS 31-34 - Wellbore #1 - Wellbore #1	18,784.86	8,158.21	1,366.26	1,117.11	5.484	CC, ES, SF
EXIST DD KATS 41-34 - Wellbore #1 - Wellbore #1	18,928.61	8,238.74	250.86	-2.96	0.988	Level 1, CC
EXIST DD KATS 41-34 - Wellbore #1 - Wellbore #1	18,978.46	8,239.41	255.85	-3.47	0.987	Level 1, ES, SF
EXIST DD KATS 42-34 - Wellbore #1 - Wellbore #1	17,303.38	8,155.50	241.46	20.02	1.090	Level 2, CC, ES, SF
EXIST DD KATS 6-4-34 - Wellbore #1 - Wellbore #1	16,876.93	8,110.73	628.64	412.98	2.915	CC, ES, SF
EXIST DD KATS 8-2-34 - Wellbore #1 - Wellbore #1	18,132.56	8,242.30	685.55	449.80	2.908	CC
EXIST DD KATS 8-2-34 - Wellbore #1 - Wellbore #1	18,200.00	8,241.69	688.86	448.84	2.870	ES, SF
EXIST VERT BICKLER 1 - Wellbore #1 - Design #1	17,322.82	8,114.81	3,716.44	3,362.96	10.514	CC, ES
EXIST VERT BICKLER 1 - Wellbore #1 - Design #1	17,500.00	8,114.81	3,720.66	3,366.03	10.492	SF
EXIST VERT KATS 'B' UNIT 2 - Wellbore #1 - Design #1	17,795.92	8,028.80	909.89	682.45	4.001	CC, ES, SF

Anticollision Report

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well INTERCHANGE B N35-20-8C
Project:	Broomfield County	**TVD Reference:**	KB 25' @ 5261.00usft
Reference Site:	Sec 10-T1S-R68W	**MD Reference:**	KB 25' @ 5261.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	INTERCHANGE B N35-20-8C	**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 3-T1S-R68W						
ABND VERT WEAVER K UNIT 1 - Wellbore #1 - Design	9,719.52	8,056.99	620.47	525.99	6.567	CC, ES
ABND VERT WEAVER K UNIT 1 - Wellbore #1 - Design	9,900.00	8,056.99	646.19	541.39	6.166	SF
EXIST DD LARKRIDGE MA 03-10D - Wellbore #1 - Well	11,000.00	8,314.54	898.37	776.77	7.388	SF
EXIST DD LARKRIDGE MA 03-10D - Wellbore #1 - Well	11,170.13	8,314.65	882.11	764.29	7.487	CC, ES
EXIST DD LARKRIDGE MA 03-15D - Wellbore #1 - Well	9,700.00	8,365.12	643.78	531.15	5.716	SF
EXIST DD LARKRIDGE MA 03-15D - Wellbore #1 - Well	9,800.00	8,365.94	635.50	528.50	5.939	ES
EXIST DD LARKRIDGE MA 03-15D - Wellbore #1 - Well	9,802.96	8,365.97	635.49	528.68	5.950	CC
EXIST DD LARKRIDGE MA 03-16D - Wellbore #1 - Well	9,825.24	8,227.88	467.12	362.44	4.462	CC
EXIST DD LARKRIDGE MA 03-16D - Wellbore #1 - Well	9,900.00	8,229.14	473.06	361.96	4.258	ES, SF
EXIST DD LARKRIDGE MA 03-23D - Wellbore #1 - Well	10,400.00	8,249.22	260.54	140.99	2.179	SF
EXIST DD LARKRIDGE MA 03-23D - Wellbore #1 - Well	10,498.12	8,251.87	241.37	132.48	2.217	CC, ES
EXIST DD LARKRIDGE MA 09-09D - Wellbore #1 - Well	11,166.84	8,040.67	628.28	513.28	5.463	CC
EXIST DD LARKRIDGE MA 09-09D - Wellbore #1 - Well	11,200.00	8,040.83	629.16	511.85	5.363	ES
EXIST DD LARKRIDGE MA 09-09D - Wellbore #1 - Well	11,300.00	8,041.34	642.24	519.25	5.222	SF
EXIST DD STANDLEY 5-2 - Wellbore #1 - Wellbore #1	12,273.96	8,228.76	1,851.04	1,713.32	13.441	CC
EXIST DD STANDLEY 5-2 - Wellbore #1 - Wellbore #1	12,300.00	8,229.50	1,851.22	1,712.48	13.343	ES
EXIST DD STANDLEY 5-2 - Wellbore #1 - Wellbore #1	12,800.00	8,243.67	1,924.27	1,770.07	12.479	SF
EXIST DD STANDLEY 6-2 - Wellbore #1 - Wellbore #1	12,235.72	7,918.59	3,169.94	3,029.36	22.549	CC
EXIST DD STANDLEY 6-2 - Wellbore #1 - Wellbore #1	12,300.00	7,924.43	3,170.58	3,027.94	22.228	ES
EXIST DD STANDLEY 6-2 - Wellbore #1 - Wellbore #1	13,500.00	8,029.67	3,411.41	3,237.87	19.658	SF
EXIST DD STANDLEY 8-3 - Wellbore #1 - Wellbore #1	12,326.69	8,188.12	644.05	505.28	4.641	CC
EXIST DD STANDLEY 8-3 - Wellbore #1 - Wellbore #1	12,400.00	8,187.62	648.21	505.19	4.532	ES, SF
EXIST VERT WEBBER H UNIT 1 - Wellbore #1 - Design	9,811.94	8,076.99	2,545.59	2,316.45	11.109	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	0.00	0.00	0.00	0.00	7.48	2,141.56	281.06	2,160.24				
100.00	100.00	63.00	63.00	0.13	0.75	7.48	2,141.56	281.06	2,159.93	2,159.05	0.88	2,451.902	
200.00	200.00	163.00	163.00	0.49	2.63	7.48	2,141.56	281.06	2,159.93	2,156.81	3.12	691.808	
300.00	300.00	263.00	263.00	0.85	4.79	7.48	2,141.56	281.06	2,159.93	2,154.29	5.64	383.076	
400.00	399.98	362.98	362.98	1.21	6.84	-38.26	2,141.56	281.06	2,158.56	2,150.51	8.05	268.115	
500.00	499.84	462.84	462.84	1.57	8.87	-38.40	2,141.56	281.06	2,154.45	2,144.01	10.44	206.309	
600.00	599.45	562.45	562.45	1.94	10.89	-38.63	2,141.56	281.06	2,147.62	2,134.79	12.83	167.430	
700.00	698.70	661.70	661.70	2.32	12.90	-38.95	2,141.56	281.06	2,138.09	2,122.89	15.21	140.598	
800.00	797.47	760.47	760.47	2.72	14.89	-39.37	2,141.56	281.06	2,125.90	2,108.32	17.59	120.890	
900.00	895.62	858.62	858.62	3.16	16.87	-39.89	2,141.56	281.06	2,111.10	2,091.13	19.96	105.747	
1,000.00	993.06	956.06	956.06	3.62	18.83	-40.51	2,141.56	281.06	2,093.73	2,071.39	22.34	93.708	
1,100.00	1,089.64	1,052.64	1,052.64	4.12	20.78	-41.23	2,141.56	281.06	2,073.87	2,049.15	24.73	83.877	
1,200.00	1,185.27	1,148.27	1,148.27	4.67	22.70	-42.07	2,141.56	281.06	2,051.60	2,024.49	27.11	75.672	
1,300.00	1,279.82	1,242.82	1,242.82	5.26	24.61	-43.01	2,141.56	281.06	2,027.01	1,997.51	29.50	68.702	
1,400.00	1,373.17	1,336.17	1,336.17	5.90	26.49	-44.08	2,141.56	281.06	2,000.20	1,968.30	31.91	62.692	
1,500.00	1,465.21	1,428.21	1,428.21	6.59	28.34	-45.26	2,141.56	281.06	1,971.30	1,936.99	34.32	57.444	
1,600.00	1,555.84	1,518.84	1,518.84	7.34	30.16	-46.58	2,141.56	281.06	1,940.44	1,903.70	36.74	52.813	
1,700.00	1,644.94	1,607.94	1,607.94	8.14	31.96	-48.02	2,141.56	281.06	1,907.78	1,868.60	39.18	48.689	
1,800.00	1,732.39	1,704.61	1,695.39	9.00	33.90	-49.60	2,141.56	281.06	1,873.49	1,831.66	41.83	44.789	
1,839.01	1,766.05	1,729.05	1,729.05	9.35	34.39	-50.25	2,141.56	281.06	1,859.71	1,817.10	42.61	43.644	
1,900.00	1,818.44	1,781.44	1,781.44	9.90	35.45	-50.94	2,141.56	281.06	1,838.14	1,794.01	44.13	41.654	

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