

EXTRACTION OIL & GAS

Weld County

Sec 32-T6N-R65W

WS-SUNRISE 4-5-5

ORIGINAL WELLBORE

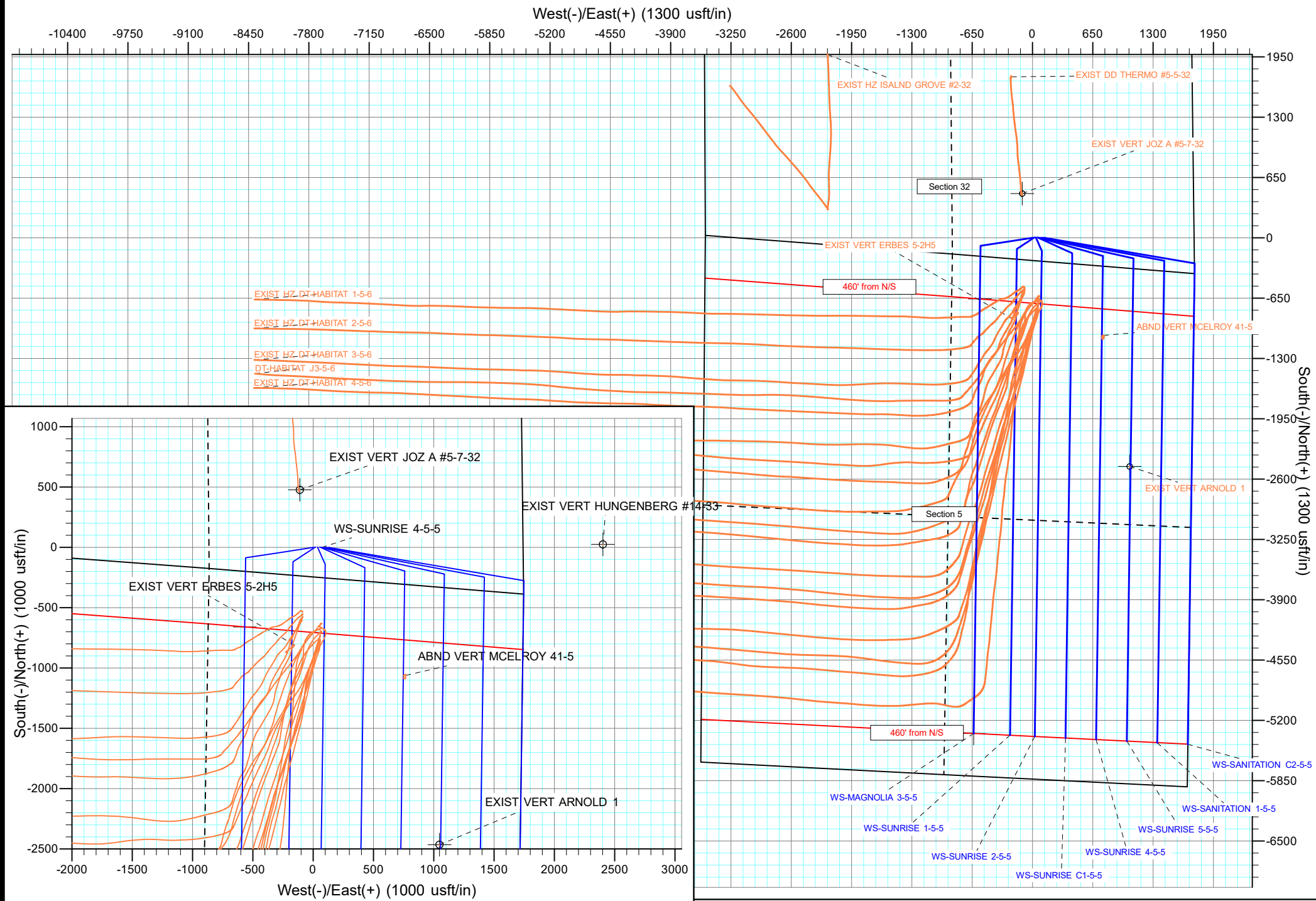
PROPOSAL 1

Anticollision Report

03 October, 2017



Project: Weld County
Site: Sec 32-T6N-R65W
Well: WS-MAGNOLIA 3-5-5
ORIGINAL WELLBORE
PROPOSAL 1



Anticollision Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well WS-SUNRISE 4-5-5
Project:	Weld County	TVD Reference:	KB 25' @ 4667.00usft
Reference Site:	Sec 32-T6N-R65W	MD Reference:	KB 25' @ 4667.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	WS-SUNRISE 4-5-5	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	10/3/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	11,902.84	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 32-T6N-R65W						
EXIST DD THERMO #5-5-32 - Wellbore #1 - Wellbore #1	0.00	0.00	499.03			
EXIST DD THERMO #5-5-32 - Wellbore #1 - Wellbore #1	200.00	185.84	499.51	498.81	713.049	ES
EXIST DD THERMO #5-5-32 - Wellbore #1 - Wellbore #1	6,500.00	6,578.57	2,186.32	2,144.35	52.096	SF
EXIST HZ ISALND GROVE #2-32 - Wellbore #1 - Wellbo	5,054.88	5,678.31	2,931.59	2,888.96	68.770	CC
EXIST HZ ISALND GROVE #2-32 - Wellbore #1 - Wellbo	5,100.00	5,716.00	2,931.75	2,888.81	68.273	ES
EXIST HZ ISALND GROVE #2-32 - Wellbore #1 - Wellbo	6,550.00	6,716.59	3,014.97	2,965.40	60.828	SF
EXIST VERT HUNGENBERG #14-33 - Wellbore #1 - De	6,364.70	6,330.98	1,657.23	1,507.09	11.038	CC
EXIST VERT HUNGENBERG #14-33 - Wellbore #1 - De	6,450.00	6,415.96	1,658.18	1,506.03	10.898	ES
EXIST VERT HUNGENBERG #14-33 - Wellbore #1 - De	6,900.00	6,808.25	1,707.10	1,544.47	10.497	SF
EXIST VERT JOZ A #5-7-32 - Wellbore #1 - Design #1	700.00	689.00	511.17	495.39	32.388	CC
EXIST VERT JOZ A #5-7-32 - Wellbore #1 - Design #1	800.00	788.98	512.22	494.07	28.225	ES
EXIST VERT JOZ A #5-7-32 - Wellbore #1 - Design #1	6,450.00	6,409.04	1,104.16	952.17	7.265	SF
WS-MAGNOLIA 3-5-5 - ORIGINAL WELLBORE - PROP	700.00	702.00	72.37	67.80	15.810	CC, ES
WS-MAGNOLIA 3-5-5 - ORIGINAL WELLBORE - PROP	11,903.80	11,933.93	1,321.37	1,125.39	6.743	SF
WS-SANITATION 1-5-5 - ORIGINAL WELLBORE - PRO	300.00	300.00	36.19	34.48	21.252	CC, ES
WS-SANITATION 1-5-5 - ORIGINAL WELLBORE - PRO	11,903.80	11,973.92	660.33	463.16	3.349	SF
WS-SANITATION C2-5-5 - ORIGINAL WELLBORE - PR	100.00	99.00	55.67	55.40	208.110	CC, ES
WS-SANITATION C2-5-5 - ORIGINAL WELLBORE - PR	11,903.80	12,159.18	999.02	804.43	5.134	SF
WS-SUNRISE 1-5-5 - ORIGINAL WELLBORE - PROPO	700.00	701.00	53.01	48.44	11.590	CC, ES
WS-SUNRISE 1-5-5 - ORIGINAL WELLBORE - PROPO	11,899.98	11,889.35	928.24	732.20	4.735	SF
WS-SUNRISE 2-5-5 - ORIGINAL WELLBORE - PROPO	700.00	701.00	36.37	31.80	7.951	CC, ES
WS-SUNRISE 2-5-5 - ORIGINAL WELLBORE - PROPO	11,882.23	11,882.14	660.26	463.49	3.356	SF
WS-SUNRISE 5-5-5 - ORIGINAL WELLBORE - PROPO	500.00	499.00	19.49	16.35	6.219	CC, ES
WS-SUNRISE 5-5-5 - ORIGINAL WELLBORE - PROPO	11,903.80	11,930.21	331.54	134.51	1.683	SF
WS-SUNRISE C1-5-5 - ORIGINAL WELLBORE - PROP	700.00	701.00	17.09	12.52	3.737	CC, ES
WS-SUNRISE C1-5-5 - ORIGINAL WELLBORE - PROP	11,889.72	12,022.14	357.68	172.21	1.929	SF

Anticollision Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well WS-SUNRISE 4-5-5
Project:	Weld County	TVD Reference:	KB 25' @ 4667.00usft
Reference Site:	Sec 32-T6N-R65W	MD Reference:	KB 25' @ 4667.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	WS-SUNRISE 4-5-5	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 5-T5N-R65W						
ABND VERT MCELROY 41-5 - Wellbore #1 - Wellbore #	7,546.90	6,800.00	77.95	54.46	3.318	CC, ES, SF
DT-FORBES 1-5-6 - ORIGINAL WELLBORE - WB #1 - P	219.33	217.34	726.79	725.75	702.957	CC
DT-FORBES 1-5-6 - ORIGINAL WELLBORE - WB #1 - P	300.00	291.53	727.23	725.65	460.186	ES
DT-FORBES 1-5-6 - ORIGINAL WELLBORE - WB #1 - P	10,200.00	7,203.00	1,599.34	1,479.99	13.400	SF
DT-FORBES 2-5-6 - ORIGINAL WELLBORE - WB #1 - P	0.00	0.00	761.53			
DT-FORBES 2-5-6 - ORIGINAL WELLBORE - WB #1 - P	100.00	94.40	761.76	761.48	2,734.807	ES
DT-FORBES 4-5-6 - ORIGINAL WELLBORE - WB #1 - P	10,500.00	7,247.45	1,618.67	1,492.16	12.795	SF
DT-FORBES 3-5-6 - ORIGINAL WELLBORE - WB #1 - P	0.00	0.00	776.10			
DT-FORBES 3-5-6 - ORIGINAL WELLBORE - WB #1 - P	10,200.00	10,200.00	1,613.70	1,466.44	10.959	SF
DT-FORBES 4-5-6 - ORIGINAL WELLBORE - WB #1 - P	299.37	297.39	806.70	805.13	512.568	CC
DT-FORBES 4-5-6 - ORIGINAL WELLBORE - WB #1 - P	300.00	297.86	806.70	805.12	511.311	ES
DT-FORBES 4-5-6 - ORIGINAL WELLBORE - WB #1 - P	11,200.00	7,581.00	1,632.93	1,485.22	11.055	SF
DT-FORBES C6-5-6 - ORIGINAL WELLBORE - WB #1 -	0.00	0.00	743.32			
DT-FORBES C6-5-6 - ORIGINAL WELLBORE - WB #1 -	300.00	293.33	744.20	742.63	474.645	ES
DT-FORBES C6-5-6 - ORIGINAL WELLBORE - WB #1 -	10,400.00	7,392.00	1,555.55	1,428.70	12.263	SF
DT-FORBES C7-5-6 - ORIGINAL WELLBORE - ORIGIN	0.00	0.00	794.36			
DT-FORBES C7-5-6 - ORIGINAL WELLBORE - ORIGIN	200.00	191.31	794.91	794.03	906.950	ES
DT-FORBES C7-5-6 - ORIGINAL WELLBORE - ORIGIN	11,000.00	7,677.00	1,550.11	1,403.20	10.551	SF
DT-HABITAT C4-5-6 - ORIGINAL WELLBORE - WB #1 -	253.01	241.10	648.22	646.72	432.377	CC
DT-HABITAT C4-5-6 - ORIGINAL WELLBORE - WB #1 -	400.00	383.68	648.97	646.43	255.651	ES
DT-HABITAT C4-5-6 - ORIGINAL WELLBORE - WB #1 -	9,000.00	6,979.00	1,421.20	1,334.33	16.360	SF
DT-HABITAT J3-5-6 - ORIGINAL WELLBORE - WB #1 -	1,274.42	1,243.21	620.10	611.39	71.224	CC
DT-HABITAT J3-5-6 - ORIGINAL WELLBORE - WB #1 -	1,300.00	1,262.89	620.23	611.36	69.932	ES
DT-HABITAT J3-5-6 - ORIGINAL WELLBORE - WB #1 -	8,500.00	6,871.60	1,490.36	1,418.75	20.812	SF
DT-MARTINEZ 1-5-6 - ORIGINAL WELLBORE - WB #1 -	0.00	0.00	663.30			
DT-MARTINEZ 1-5-6 - ORIGINAL WELLBORE - WB #1 -	1,000.00	969.45	665.05	658.37	99.555	ES
DT-MARTINEZ 1-5-6 - ORIGINAL WELLBORE - WB #1 -	9,400.00	6,986.00	1,586.09	1,492.23	16.899	SF
DT-MARTINEZ 2-5-6 - ORIGINAL WELLBORE - WB #1 -	1,135.41	1,105.27	674.52	666.82	87.580	CC, ES
DT-MARTINEZ 2-5-6 - ORIGINAL WELLBORE - WB #1 -	9,600.00	6,985.00	1,730.60	1,629.21	17.069	SF
DT-MARTINEZ 3-5-6 - ORIGINAL WELLBORE - WB #1 -	0.00	0.00	714.28			
DT-MARTINEZ 3-5-6 - ORIGINAL WELLBORE - WB #1 -	100.00	82.64	714.45	714.07	1,886.470	ES
DT-MARTINEZ 3-5-6 - ORIGINAL WELLBORE - WB #1 -	9,900.00	7,107.00	1,592.91	1,483.18	14.517	SF
DT-MARTINEZ C5-5-6 - ORIGINAL WELLBORE - WB #	1,237.69	1,203.68	682.08	673.62	80.553	CC, ES
DT-MARTINEZ C5-5-6 - ORIGINAL WELLBORE - WB #	9,700.00	7,170.00	1,516.00	1,409.95	14.295	SF
EXIST HZ DT-FORBES 5-5-6 - Wellbore #1 - Wellbore #	0.00	0.00	857.96			
EXIST HZ DT-FORBES 5-5-6 - Wellbore #1 - Wellbore #	100.00	91.86	858.12	857.89	3,728.670	ES
EXIST HZ DT-FORBES 5-5-6 - Wellbore #1 - Wellbore #	11,600.00	7,725.52	1,429.38	1,277.73	9.426	SF
EXIST HZ DT-HABITAT 1-5-6 - Wellbore #1 - Wellbore #	545.65	542.70	555.45	552.75	205.382	CC
EXIST HZ DT-HABITAT 1-5-6 - Wellbore #1 - Wellbore #	1,000.00	995.33	557.02	551.77	106.125	ES
EXIST HZ DT-HABITAT 1-5-6 - Wellbore #1 - Wellbore #	7,700.00	6,535.00	1,518.63	1,474.05	34.062	SF
EXIST HZ DT-HABITAT 2-5-6 - Wellbore #1 - Wellbore #	847.44	844.62	574.21	569.81	130.475	CC
EXIST HZ DT-HABITAT 2-5-6 - Wellbore #1 - Wellbore #	1,100.00	1,098.64	575.22	569.39	98.626	ES
EXIST HZ DT-HABITAT 2-5-6 - Wellbore #1 - Wellbore #	8,000.00	6,588.00	1,510.68	1,459.61	29.581	SF
EXIST HZ DT-HABITAT 3-5-6 - Wellbore #1 - Wellbore #	278.73	275.74	591.25	590.07	499.677	CC
EXIST HZ DT-HABITAT 3-5-6 - Wellbore #1 - Wellbore #	700.00	693.32	592.62	589.05	166.049	ES
EXIST HZ DT-HABITAT 3-5-6 - Wellbore #1 - Wellbore #	8,400.00	6,635.00	1,527.00	1,466.97	25.441	SF
EXIST HZ DT-HABITAT 4-5-6 - Wellbore #1 - Wellbore #	432.98	429.99	606.96	604.90	294.121	CC, ES
EXIST HZ DT-HABITAT 4-5-6 - Wellbore #1 - Wellbore #	8,700.00	6,636.00	1,542.54	1,475.64	23.059	SF
EXIST HZ DT-HABITAT 5-5-6 - Wellbore #1 - Wellbore #	194.01	191.02	622.11	621.40	880.749	CC
EXIST HZ DT-HABITAT 5-5-6 - Wellbore #1 - Wellbore #	200.00	196.27	622.11	621.37	842.418	ES
EXIST HZ DT-HABITAT 5-5-6 - Wellbore #1 - Wellbore #	8,900.00	6,730.00	1,506.89	1,430.96	19.845	SF
EXIST VERT ARNOLD 1 - Wellbore #1 - Design #1	8,955.85	6,865.94	320.05	246.00	4.322	CC, ES
EXIST VERT ARNOLD 1 - Wellbore #1 - Design #1	9,000.00	6,865.93	323.08	247.50	4.274	SF

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

Anticollision Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well WS-SUNRISE 4-5-5
Project:	Weld County	TVD Reference:	KB 25' @ 4667.00usft
Reference Site:	Sec 32-T6N-R65W	MD Reference:	KB 25' @ 4667.00usft
Site Error:	0.00 usft	North Reference:	True
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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 5-T5N-R65W						
EXIST VERT ERBES 5-2H5 - Wellbore #1 - Wellbore #1	0.00	0.00	839.71			
EXIST VERT ERBES 5-2H5 - Wellbore #1 - Wellbore #1	100.00	77.47	839.81	839.60	4,013.296	ES
EXIST VERT ERBES 5-2H5 - Wellbore #1 - Wellbore #1	7,500.00	6,902.58	970.25	938.73	30.783	SF

Offset Design													Offset Site Error: 0.00 usft
Sec 32-T6N-R65W - EXIST DD THERMO #5-5-32 - Wellbore #1 - Wellbore #1													Offset Well Error: 0.00 usft
Survey Program: 549-MWD													
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	-22.09	462.29	-187.61	499.03				
100.00	100.00	87.51	87.51	0.13	0.10	-22.09	462.40	-187.69	499.04	498.81	0.23	2,147.926	
200.00	200.00	185.84	185.84	0.49	0.21	-22.10	462.79	-187.96	499.51	498.81	0.70	713.049	ES
300.00	300.00	284.16	284.16	0.85	0.32	-22.13	463.45	-188.42	500.31	499.14	1.17	428.114	
400.00	400.00	382.48	382.47	1.21	0.43	-22.15	464.38	-189.08	501.45	499.81	1.64	306.381	
500.00	500.00	480.78	480.76	1.57	0.54	-22.19	465.60	-189.94	502.92	500.81	2.10	238.952	
600.00	600.00	579.76	579.72	1.93	0.68	-22.24	467.07	-191.00	504.70	502.10	2.60	193.806	
700.00	700.00	675.37	675.31	2.29	0.89	-22.31	468.58	-192.26	506.67	503.51	3.16	160.091	
800.00	799.98	761.91	761.78	2.63	1.08	-128.26	471.71	-193.60	511.70	508.00	3.70	138.308	
900.00	899.84	846.67	846.33	2.98	1.28	-128.31	477.63	-194.35	521.72	517.49	4.23	123.334	
1,000.00	999.45	933.13	932.36	3.33	1.50	-128.41	486.19	-194.80	536.45	531.68	4.77	112.393	
1,091.72	1,090.50	1,012.45	1,011.10	3.67	1.72	-128.62	495.66	-195.68	553.79	548.51	5.28	104.846	
1,100.00	1,098.70	1,019.24	1,017.84	3.70	1.74	-128.67	496.54	-195.79	555.53	550.20	5.33	104.223	
1,200.00	1,197.77	1,101.06	1,098.78	4.08	1.99	-129.22	508.31	-197.32	578.00	572.12	5.88	98.380	
1,300.00	1,296.84	1,184.62	1,181.06	4.47	2.27	-129.59	522.86	-198.26	602.92	596.49	6.43	93.735	
1,400.00	1,395.90	1,266.34	1,261.07	4.87	2.58	-129.76	539.46	-198.36	630.06	623.07	6.99	90.114	
1,500.00	1,494.97	1,346.18	1,338.86	5.27	2.91	-129.90	557.44	-199.12	659.50	651.95	7.55	87.314	
1,600.00	1,594.04	1,428.53	1,418.63	5.68	3.28	-130.00	577.85	-200.30	691.12	682.99	8.13	84.976	
1,700.00	1,693.10	1,511.70	1,498.89	6.09	3.69	-130.08	599.58	-201.95	724.20	715.47	8.72	83.009	
1,800.00	1,792.17	1,594.00	1,577.93	6.50	4.11	-130.13	622.42	-203.99	758.89	749.57	9.32	81.431	
1,900.00	1,891.24	1,682.12	1,662.27	6.91	4.58	-130.17	647.82	-206.37	794.62	784.68	9.94	79.936	
2,000.00	1,990.30	1,778.38	1,754.41	7.33	5.07	-130.23	675.54	-209.38	830.51	819.90	10.61	78.303	
2,100.00	2,089.37	1,879.10	1,851.06	7.74	5.54	-130.32	703.69	-212.55	865.66	854.38	11.28	76.744	
2,200.00	2,188.44	1,972.00	1,940.32	8.16	6.00	-130.41	729.26	-215.54	900.46	888.54	11.92	75.539	
2,300.00	2,287.50	2,056.79	2,021.59	8.58	6.44	-130.43	753.35	-217.62	935.75	923.21	12.53	74.659	
2,400.00	2,386.57	2,137.16	2,098.32	9.00	6.88	-130.45	777.13	-220.11	972.31	959.18	13.13	74.049	
2,500.00	2,485.64	2,241.38	2,197.90	9.42	7.45	-130.55	807.54	-224.66	1,009.07	995.21	13.86	72.797	
2,600.00	2,584.70	2,347.12	2,299.49	9.84	7.98	-130.65	836.62	-228.42	1,043.93	1,029.34	14.59	71.549	
2,700.00	2,683.77	2,425.17	2,374.27	10.26	8.40	-130.69	858.86	-230.93	1,079.58	1,064.40	15.17	71.160	
2,800.00	2,782.84	2,510.57	2,455.68	10.68	8.89	-130.66	884.56	-232.93	1,116.28	1,100.47	15.81	70.605	
2,900.00	2,881.90	2,608.65	2,549.07	11.11	9.44	-130.54	914.50	-233.85	1,152.79	1,136.26	16.53	69.728	
3,000.00	2,980.97	2,686.56	2,623.06	11.53	9.89	-130.43	938.93	-234.30	1,189.90	1,172.77	17.13	69.454	
3,100.00	3,080.04	2,765.50	2,697.72	11.95	10.38	-130.32	964.53	-235.03	1,228.11	1,210.36	17.75	69.195	
3,200.00	3,179.10	2,883.53	2,809.68	12.38	11.06	-130.22	1,001.83	-237.03	1,265.90	1,247.29	18.61	68.022	
3,300.00	3,278.17	2,976.50	2,898.28	12.80	11.57	-130.20	1,029.90	-239.35	1,302.76	1,283.47	19.29	67.537	
3,400.00	3,377.24	3,079.07	2,996.15	13.23	12.13	-130.21	1,060.46	-242.31	1,339.45	1,319.42	20.03	66.878	
3,500.00	3,476.30	3,186.05	3,098.72	13.65	12.70	-130.26	1,090.65	-245.58	1,374.76	1,353.97	20.79	66.138	
3,600.00	3,575.37	3,278.85	3,187.75	14.08	13.19	-130.34	1,116.59	-249.26	1,410.23	1,388.77	21.46	65.723	
3,700.00	3,674.43	3,368.34	3,273.73	14.50	13.67	-130.43	1,141.13	-252.96	1,445.34	1,423.23	22.11	65.377	
3,800.00	3,773.50	3,442.21	3,344.43	14.93	14.07	-130.49	1,162.28	-256.21	1,481.60	1,458.93	22.66	65.370	

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