

NM OIL CONSERVATION
ARTESIA DISTRICT

MAY 25 2018

RECEIVED

WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)

Sec 27-T19S-R29E

Turquoise PWU 27-61H

Wellbore #1

Design #1

30.015. 44984

Anticollision Report

09 May, 2018

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference	Design #1
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method	MD Interval 100.00ft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 1,500.00 ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Pedal Curve
Casing Method:	Not applied

Survey Tool Program	Date	5/9/2018
From (ft)	To (ft)	Survey (Wellbore)
0.00	13,882.90	Design #1 (Wellbore #1)
		Tool Name
		MWD+HDGM
		Description
		OWSG MWD + HDGM

Summary

Site Name	Reference Measure	Offset Measure	Distance Between Centres	Distance Between Ellipses	Separation	Warning
Offset Well - Wellbore - Design						
Sec 27-T19S-R29E						
Coral PWU 28-27 11H - Wellbore #1 - Prelim Plan 1						Out of range
Coral PWU 28-27 12H - Wellbore #1 - Prelim Plan 1						Out of range
Coral PWU 28-27 62H - Wellbore #1 - Prelim Plan 1						Out of range
Parkway West Unit #20 (Active) - Wellbore #1 - Wellbore						Out of range
Parkway West Unit 10 - Original Hole - Original Hole	12,169.18	9,127.26	849.93	722.04	6.646	CC
Parkway West Unit 10 - Original Hole - Original Hole	12,200.00	9,127.39	850.48	721.72	6.605	ES
Parkway West Unit 10 - Original Hole - Original Hole	12,300.00	9,127.79	859.93	729.14	6.575	SF
Parkway West Unit SWD - Wellbore #1 - Wellbore #1	9,331.74	9,085.41	273.36	206.74	4.103	Alert, CC, ES, SF
Turquoise PWU 27-10H - Wellbore #1 - Wellbore #1	9,729.95	10,094.28	937.91	851.24	10.822	CC
Turquoise PWU 27-10H - Wellbore #1 - Wellbore #1	13,882.90	14,223.00	983.26	670.75	3.146	Alert, ES, SF
Turquoise PWU 27-4H - Wellbore #1 - Wellbore #1						Out of range
Turquoise PWU 27-5H - Wellbore #1 - Wellbore #1	6,981.35	11,814.00	927.66	752.02	5.282	CC
Turquoise PWU 27-5H - Wellbore #1 - Wellbore #1	7,000.00	11,814.00	927.85	751.74	5.269	ES
Turquoise PWU 27-5H - Wellbore #1 - Wellbore #1	7,100.00	11,814.00	935.22	757.70	5.268	SF
Turquoise PWU 27-1H - Pilot Wellbore - Pilot Wellbore	0.00	0.00	195.80			
Turquoise PWU 27-1H - Pilot Wellbore - Pilot Wellbore	4,300.00	4,292.47	208.86	179.07	7.011	ES
Turquoise PWU 27-1H - Pilot Wellbore - Pilot Wellbore	4,600.00	4,587.58	217.60	185.74	6.829	SF
Turquoise PWU 27-1H - Wellbore #1 - Wellbore #1	0.00	0.00	195.80			
Turquoise PWU 27-1H - Wellbore #1 - Wellbore #1	4,300.00	4,292.47	208.86	176.06	6.368	ES
Turquoise PWU 27-1H - Wellbore #1 - Wellbore #1	4,600.00	4,587.58	217.60	182.52	6.202	SF
Turquoise PWU 27-3H - Wellbore #1 - Wellbore #1						Out of range
Turquoise PWU 27-7H - Wellbore #1 - Wellbore #1						Out of range
Turquoise PWU 27-8H - Wellbore #1 - Wellbore #1						Out of range
Turquoise PWU 27-9H - Wellbore #1 - Design #1	2,500.00	2,503.00	30.00	12.50	1.714	Minor Risk, CC, ES
Turquoise PWU 27-9H - Wellbore #1 - Design #1	2,600.00	2,602.47	30.89	12.67	1.695	Minor Risk, SF

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measure	Offset Measure	Distance Between Centres	Distance Between Ellipses	Separation	Warning
Offset Well - Wellbore - Design						
Sec 28-T19S-R29E						
Coral PWU 28-3H - Wellbore #1 - Wellbore #1						Out of range
Coral PWU 28-4H - Wellbore #1 - Wellbore #1	8,042.36	11,283.16	930.51	826.09	8.911	CC, ES, SF
Coral PWU 28-7H - Wellbore #1 - Wellbore #1						Out of range
Onyx PWU 29-28 61H - Wellbore #1 - Wellbore #1						Out of range
Onyx PWU 29-28 62H - Wellbore #1 - Wellbore #1						Out of range
Onyx PWU 29-28011H - Wellbore #1 - Wellbore #1						Out of range
Parkway #021 (Active) - Wellbore #1 - Wellbore #1						Out of range
Parkway Unit 16 (Active) - Wellbore #1 - Wellbore #1						Out of range
Parkway West Unit #3 - Wellbore #1 - Wellbore #1						Out of range
Turquoise PWU 27 10H - Original Hole - Actuals	9,734.34	10,098.64	937.77	850.48	10.744	CC
Turquoise PWU 27 10H - Original Hole - Actuals	13,882.90	14,223.00	982.49	670.61	3.150	Alert, ES, SF
Turquoise PWU 27 10H - Original Hole - P3v1	9,334.10	9,702.00	941.76	868.05	12.776	CC
Turquoise PWU 27 10H - Original Hole - P3v1	13,882.90	14,198.12	985.62	675.19	3.175	Alert, ES, SF
Turquoise PWU 27 10H - Original Hole - Plan 1	9,349.29	9,651.02	916.45	844.23	12.690	CC
Turquoise PWU 27 10H - Original Hole - Plan 1	13,882.90	14,131.09	960.41	660.76	3.205	Alert, ES, SF
Turquoise PWU 27 10H - Original Hole - PTL	9,223.21	9,562.71	951.60	881.21	13.520	CC, ES
Turquoise PWU 27 10H - Original Hole - PTL	9,300.00	9,562.71	955.15	884.14	13.449	SF
Turquoise PWU 27 10H - Original Hole - T&D	8,509.26	8,452.06	1,073.42	1,038.38	30.635	CC
Turquoise PWU 27 10H - Original Hole - T&D	8,600.00	8,543.37	1,073.59	1,038.25	30.372	ES
Turquoise PWU 27 10H - Original Hole - T&D	8,700.00	8,638.80	1,078.42	1,042.73	30.214	SF

Offset Design														Offset Site Error:	
Survey Program: 100-GYRO-NS-CT														Offset Well Error:	
Reference		Offset		Semi Major Axis		Distance								Warning	
Measured Depth Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
11,000.00	9,120.85	9,122.67	9,119.28	65.50	31.86	89.18	-1,390.11	3,171.44	1,445.46	1,368.60	76.85	18.808			
11,100.00	9,122.45	9,123.06	9,119.67	68.02	31.86	89.21	-1,390.11	3,171.43	1,365.84	1,286.25	79.59	17.162			
11,200.00	9,124.06	9,123.45	9,120.05	70.56	31.86	89.23	-1,390.12	3,171.43	1,289.06	1,206.31	82.75	15.578			
11,300.00	9,125.67	9,123.84	9,120.44	73.13	31.87	89.26	-1,390.12	3,171.42	1,215.66	1,129.29	86.38	14.074			
11,400.00	9,127.27	9,124.23	9,120.83	75.72	31.87	89.29	-1,390.12	3,171.42	1,146.30	1,055.81	90.49	12.668			
11,500.00	9,128.88	9,124.62	9,121.23	78.34	31.87	89.31	-1,390.13	3,171.41	1,081.75	986.67	95.08	11.377			
11,600.00	9,130.48	9,125.01	9,121.62	80.96	31.87	89.34	-1,390.13	3,171.41	1,022.91	922.81	100.09	10.220			
11,700.00	9,132.09	9,125.40	9,122.01	83.61	31.87	89.36	-1,390.13	3,171.40	970.83	865.39	105.43	9.208			
11,800.00	9,133.69	9,125.80	9,122.41	86.26	31.87	89.39	-1,390.14	3,171.40	926.64	815.72	110.93	8.354			
11,900.00	9,135.30	9,126.19	9,122.80	88.93	31.87	89.42	-1,390.14	3,171.40	891.53	775.21	116.32	7.665			
12,000.00	9,136.90	9,126.59	9,123.20	91.62	31.88	89.44	-1,390.14	3,171.39	866.60	745.30	121.30	7.144			
12,100.00	9,138.51	9,126.99	9,123.59	94.31	31.88	89.47	-1,390.15	3,171.39	852.74	727.20	125.54	6.793			
12,169.18	9,139.62	9,127.26	9,123.87	96.18	31.88	89.49	-1,390.15	3,171.38	849.93	722.04	127.89	6.646	CC		
12,200.00	9,140.12	9,127.39	9,123.99	97.01	31.88	89.50	-1,390.15	3,171.38	850.48	721.72	128.76	6.605	ES		
12,300.00	9,141.72	9,127.79	9,124.39	99.73	31.88	89.53	-1,390.16	3,171.38	859.93	729.14	130.80	6.575	SF		
12,400.00	9,143.33	9,128.19	9,124.79	102.45	31.88	89.55	-1,390.16	3,171.37	880.71	749.07	131.64	6.690			
12,500.00	9,144.93	9,128.59	9,125.19	105.18	31.88	89.58	-1,390.16	3,171.37	912.04	780.64	131.40	6.941			
12,600.00	9,146.54	9,128.99	9,125.60	107.91	31.88	89.61	-1,390.17	3,171.36	952.88	822.58	130.30	7.313			
12,700.00	9,148.14	9,129.40	9,126.00	110.66	31.89	89.63	-1,390.17	3,171.36	1,002.07	873.49	128.57	7.794			
12,800.00	9,149.75	9,129.80	9,126.41	113.41	31.89	89.66	-1,390.17	3,171.35	1,058.44	931.99	126.45	8.371			
12,900.00	9,151.36	9,130.21	9,126.81	116.16	31.89	89.69	-1,390.18	3,171.35	1,120.92	996.82	124.10	9.032			
13,000.00	9,152.96	9,130.61	9,127.22	118.92	31.89	89.72	-1,390.18	3,171.34	1,188.54	1,066.86	121.68	9.768			

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

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Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 27-T19S-R29E - Parkway West Unit 10 - Original Hole - Original Hole												Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT												Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis		Distance		Minimum		Separation		Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
13,100.00	9,154.57	9,131.02	9,127.63	121.69	31.89	89.74	-1,390.18	3,171.34	1,260.47	1,141.20	119.27	10.568	
13,200.00	9,156.17	9,131.43	9,128.04	124.45	31.89	89.77	-1,390.19	3,171.33	1,336.02	1,219.08	116.94	11.425	
13,300.00	9,157.78	9,131.84	9,128.45	127.23	31.89	89.80	-1,390.19	3,171.33	1,414.60	1,299.89	114.72	12.331	
13,400.00	9,159.38	9,132.25	9,128.86	130.01	31.90	89.83	-1,390.20	3,171.32	1,495.75	1,383.12	112.63	13.280	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 27-T19S-R29E - Parkway West Unit SWD - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 200-MWD+IGRF													Offset Well Error:	10.00 ft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Warning						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	10.00	152.42	-481.09	251.29	542.80					
100.00	100.00	101.83	101.81	0.52	10.00	152.25	-479.69	252.37	542.09	531.57	10.52	51.536		
200.00	200.00	209.88	209.70	0.70	10.01	151.70	-475.16	255.88	539.90	529.20	10.71	50.433		
300.00	300.00	312.49	312.06	0.99	10.03	151.01	-469.27	259.97	536.77	525.76	11.01	48.749		
400.00	400.00	409.02	408.35	1.31	10.06	150.36	-463.64	263.80	533.63	522.26	11.37	46.946		
500.00	500.00	503.65	502.77	1.64	10.11	149.72	-458.90	267.92	531.46	519.71	11.75	45.226		
600.00	600.00	600.86	599.79	1.99	10.17	149.08	-454.82	272.47	530.23	518.07	12.16	43.619		
700.00	700.00	700.19	698.94	2.34	10.24	148.45	-450.91	276.87	529.15	516.57	12.58	42.069		
800.00	800.00	798.20	796.80	2.69	10.33	147.86	-447.45	281.09	528.42	515.40	13.01	40.602		
900.00	900.00	897.88	896.35	3.04	10.43	147.30	-444.31	285.25	528.00	514.53	13.47	39.211		
1,000.00	1,000.00	998.84	997.18	3.40	10.54	146.75	-441.11	289.21	527.48	513.55	13.93	37.863		
1,100.00	1,100.00	1,098.44	1,096.66	3.75	10.66	146.22	-437.94	292.90	526.87	512.46	14.41	36.570		
1,200.00	1,200.00	1,197.15	1,195.25	4.11	10.79	145.71	-435.01	296.60	526.50	511.61	14.89	35.350		
1,300.00	1,300.00	1,296.88	1,294.88	4.46	10.93	145.21	-432.25	300.30	526.33	510.94	15.39	34.195		
1,400.00	1,400.00	1,397.14	1,395.04	4.82	11.08	144.74	-429.64	303.71	526.15	510.24	15.90	33.087		
1,500.00	1,500.00	1,497.66	1,495.49	5.17	11.25	144.32	-427.19	306.74	525.91	509.49	16.42	32.028		
1,600.00	1,600.00	1,598.28	1,596.05	5.53	11.42	143.95	-424.92	309.30	525.58	508.63	16.95	31.010		
1,700.00	1,700.00	1,699.58	1,697.30	5.89	11.60	143.62	-422.74	311.42	525.07	507.58	17.49	30.029		
1,800.00	1,800.00	1,800.92	1,798.61	6.25	11.79	143.33	-420.54	313.11	524.32	506.29	18.03	29.080		
1,900.00	1,900.00	1,902.28	1,899.93	6.60	11.98	143.08	-418.33	314.36	523.31	504.73	18.58	28.160		
2,000.00	2,000.00	2,000.31	1,997.94	6.96	12.18	142.86	-416.45	315.40	522.42	503.29	19.14	27.300		
2,100.00	2,100.00	2,098.87	2,096.49	7.32	12.38	142.67	-414.94	316.39	521.81	502.11	19.70	26.492		
2,200.00	2,200.00	2,197.71	2,195.31	7.68	12.59	142.52	-413.80	317.32	521.47	501.20	20.27	25.732		
2,300.00	2,300.00	2,297.45	2,295.05	8.03	12.81	142.37	-412.81	318.24	521.24	500.40	20.84	25.010		
2,400.00	2,400.00	2,397.20	2,394.79	8.39	13.03	142.23	-411.89	319.14	521.06	499.64	21.42	24.323		
2,500.00	2,500.00	2,497.14	2,494.72	8.75	13.26	142.10	-411.03	320.03	520.93	498.92	22.01	23.667		
2,600.00	2,600.00	2,597.54	2,595.11	9.11	13.50	141.96	-410.15	320.87	520.76	498.15	22.61	23.037		
2,700.00	2,700.00	2,697.94	2,695.51	9.47	13.74	141.83	-409.23	321.64	520.50	497.30	23.21	22.430		
2,800.00	2,800.00	2,798.34	2,795.90	9.82	13.99	141.71	-408.25	322.35	520.18	496.37	23.81	21.847		
2,900.00	2,900.00	2,898.74	2,896.30	10.18	14.24	141.58	-407.23	322.99	519.77	495.35	24.42	21.285		
3,000.00	3,000.00	2,999.15	2,996.69	10.54	14.49	141.46	-406.16	323.56	519.29	494.26	25.03	20.744		
3,100.00	3,100.00	3,099.59	3,097.13	10.90	14.75	141.34	-405.05	324.05	518.74	493.08	25.65	20.223		
3,200.00	3,200.00	3,200.07	3,197.60	11.26	15.02	141.24	-403.96	324.37	518.09	491.81	26.27	19.721		
3,300.00	3,300.00	3,300.55	3,298.08	11.61	15.28	141.15	-402.88	324.52	517.34	490.45	26.90	19.235		
3,400.00	3,400.00	3,401.03	3,398.55	11.97	15.55	141.08	-401.83	324.49	516.51	488.99	27.52	18.766		
3,500.00	3,500.00	3,501.43	3,498.94	12.33	15.82	141.02	-400.76	324.34	515.59	487.43	28.15	18.314		
3,600.00	3,599.99	3,601.78	3,599.28	12.67	16.10	-50.75	-399.60	324.19	513.90	485.14	28.77	17.864		
3,700.00	3,699.94	3,702.56	3,700.06	12.99	16.38	-51.15	-398.27	324.05	510.73	481.36	29.37	17.390		
3,800.00	3,799.79	3,803.25	3,800.73	13.32	16.66	-51.79	-396.65	323.97	506.05	476.07	29.98	16.882		
3,900.00	3,899.49	3,902.55	3,900.02	13.64	16.94	-52.65	-394.97	323.89	500.02	469.44	30.58	16.349		
4,000.00	3,999.01	4,001.78	3,999.23	13.97	17.23	-53.74	-393.37	323.80	492.86	461.66	31.20	15.798		
4,100.00	4,098.29	4,102.53	4,099.98	14.30	17.52	-55.10	-391.59	323.61	484.43	452.62	31.82	15.225		
4,200.00	4,197.35	4,202.94	4,200.36	14.63	17.81	-56.64	-389.46	323.30	474.98	442.54	32.44	14.641		
4,300.00	4,296.40	4,300.75	4,298.14	14.97	18.10	-58.22	-387.15	323.18	465.76	432.70	33.07	14.085		
4,400.00	4,395.44	4,399.26	4,396.62	15.31	18.40	-59.92	-384.64	323.39	457.04	423.34	33.70	13.562		
4,500.00	4,494.49	4,499.24	4,496.55	15.66	18.70	-61.76	-381.65	323.76	448.59	414.24	34.34	13.061		
4,600.00	4,593.54	4,598.29	4,595.54	16.00	19.00	-63.71	-378.19	324.19	440.35	405.36	34.99	12.584		
4,700.00	4,692.59	4,695.60	4,692.79	16.35	19.30	-65.70	-374.82	324.77	432.78	397.14	35.64	12.142		
4,800.00	4,791.63	4,793.89	4,791.03	16.71	19.61	-67.77	-371.60	325.50	426.01	389.71	36.30	11.736		
4,900.00	4,890.68	4,893.99	4,891.06	17.06	19.92	-69.94	-368.18	326.06	419.59	382.63	36.96	11.351		
5,000.00	4,989.73	4,993.15	4,990.16	17.42	20.23	-72.16	-364.59	326.35	413.47	375.84	37.63	10.987		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well: Turquoise PWU 27-81H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-81H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141 Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 27-T19S-R29E - Parkway West Unit SWD - Wellbore #1 - Wellbore #1														Offset Site Error:	6.00 ft
Survey Program: 200-MWD+GRF														Offset Well Error:	10.00 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi-Major Axis (ft)	Highside Footface (ft)	Offset Wellbore Centre (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
								N-S (ft)	E-W (ft)						
5,100.00	5,088.77	5,091.12	5,088.06	17.78	20.54	-74.44		-360.84	326.75	408.04	369.74	38.30	10.653		
5,200.00	5,187.82	5,190.17	5,187.04	18.14	20.85	-76.80		-357.22	327.23	403.35	364.37	38.98	10.349		
5,300.00	5,286.87	5,290.51	5,287.31	18.51	21.17	-79.20		-353.60	327.24	399.00	359.34	39.66	10.062		
5,400.00	5,385.91	5,388.47	5,385.21	18.87	21.48	-81.55		-350.29	326.90	395.11	354.78	40.33	9.796		
5,500.00	5,484.96	5,485.76	5,482.46	19.24	21.79	-83.89		-347.30	326.79	392.22	351.21	41.01	9.564		
5,600.00	5,584.01	5,584.34	5,581.00	19.61	22.10	-86.26		-344.49	326.84	390.25	348.55	41.70	9.360		
5,700.00	5,683.05	5,683.79	5,680.40	19.98	22.42	-88.71		-341.36	326.79	388.82	346.43	42.38	9.174		
5,800.00	5,782.10	5,783.17	5,779.71	20.35	22.74	-91.26		-337.61	326.66	387.91	344.84	43.07	8.906		
5,900.00	5,881.15	5,882.60	5,879.07	20.73	23.06	-93.81		-333.90	326.27	387.54	343.78	43.76	8.656		
5,918.79	5,899.76	5,901.29	5,897.75	20.80	23.12	-94.29		-333.22	326.17	387.54	343.64	43.89	8.630		
6,000.00	5,980.19	5,982.08	5,978.48	21.10	23.39	-96.34		-330.29	325.63	387.71	343.25	44.45	8.722		
6,100.00	6,079.24	6,080.80	6,077.14	21.48	23.71	-98.83		-326.83	324.61	386.46	343.32	45.14	8.606		
6,200.00	6,178.29	6,179.73	6,176.02	21.85	24.03	-101.25		-323.77	323.94	389.91	344.08	45.83	8.508		
6,300.00	6,277.33	6,277.24	6,273.49	22.23	24.34	-103.54		-321.24	323.14	392.11	345.60	46.51	8.430		
6,400.00	6,376.38	6,374.58	6,370.80	22.61	24.66	-105.78		-318.83	322.69	395.30	348.10	47.19	8.376		
6,500.00	6,475.43	6,474.78	6,470.97	22.99	24.99	-108.04		-316.35	322.22	399.11	351.23	47.88	8.335		
6,600.00	6,574.47	6,573.33	6,569.49	23.37	25.31	-110.21		-314.02	321.59	403.34	354.77	48.57	8.305		
6,700.00	6,673.52	6,671.94	6,668.08	23.76	25.63	-112.29		-312.04	321.06	408.18	358.93	49.25	8.288		
6,800.00	6,772.57	6,770.10	6,768.22	24.14	25.95	-114.26		-310.35	320.68	413.65	363.72	49.93	8.284		
6,900.00	6,871.61	6,868.36	6,864.47	24.52	26.28	-116.15		-308.89	320.50	419.75	369.13	50.62	8.293		
7,000.00	6,970.66	6,966.79	6,962.89	24.91	26.60	-117.94		-307.69	320.52	426.41	375.11	51.30	8.312		
7,100.00	7,069.71	7,065.49	7,061.59	25.29	26.93	-119.64		-306.78	320.72	433.57	381.58	51.98	8.340		
7,200.00	7,168.75	7,165.12	7,161.22	25.68	27.26	-121.29		-305.99	320.89	441.02	388.35	52.67	8.373		
7,300.00	7,267.80	7,264.06	7,260.15	26.07	27.59	-122.86		-305.29	320.94	448.69	395.33	53.36	8.409		
7,400.00	7,366.85	7,360.79	7,356.89	26.45	27.91	-124.33		-304.66	321.33	456.98	402.95	54.03	8.458		
7,500.00	7,465.89	7,457.58	7,453.67	26.84	28.23	-125.71		-304.06	322.24	466.05	411.35	54.70	8.519		
7,600.00	7,564.94	7,554.36	7,550.43	27.23	28.55	-127.11		-302.75	323.29	475.84	420.46	55.38	8.593		
7,700.00	7,663.99	7,651.22	7,647.26	27.62	28.87	-128.57		-300.46	324.32	486.35	430.30	56.05	8.677		
7,800.00	7,763.24	7,748.96	7,744.95	28.00	29.21	-130.04		-297.40	325.28	496.46	439.74	56.72	8.752		
7,900.00	7,862.77	7,848.53	7,844.44	28.38	29.55	-131.29		-293.69	326.12	505.30	447.89	57.41	8.802		
8,000.00	7,962.52	7,949.51	7,945.36	28.75	29.89	-132.25		-290.43	326.79	512.17	454.07	58.10	8.815		
8,100.00	8,062.43	8,050.34	8,046.15	29.10	30.23	-132.90		-287.47	327.60	517.34	458.55	58.79	8.800		
8,200.00	8,162.41	8,150.14	8,145.92	29.45	30.57	-133.25		-285.18	328.34	520.38	460.91	59.47	8.751		
8,300.00	8,262.41	8,247.06	8,242.81	29.78	30.90	-133.59		-282.93	329.59	522.73	462.61	60.12	8.695		
8,400.00	8,362.41	8,348.93	8,344.63	30.11	31.25	-133.85		-280.44	331.17	525.34	464.54	60.81	8.640		
8,500.00	8,462.41	8,450.98	8,446.68	30.44	31.61	-134.05		-278.78	332.21	527.01	465.49	61.52	8.567		
8,600.00	8,562.38	8,550.11	8,545.79	30.78	31.96	-134.18		-278.28	332.64	526.46	464.26	62.20	8.483		
8,700.00	8,661.04	8,648.14	8,643.82	31.10	32.28	-134.15		-278.63	332.85	513.33	450.48	62.85	8.167		
8,800.00	8,755.51	8,742.43	8,738.11	31.39	32.57	-133.97		-279.21	332.60	485.85	422.40	63.45	7.657		
8,900.00	8,842.92	8,828.75	8,824.43	31.65	32.85	-133.63		-279.80	331.93	446.12	382.13	63.99	6.972		
9,000.00	8,920.61	8,905.19	8,900.86	31.85	33.09	-133.15		-280.30	330.91	397.65	333.19	64.47	6.168		
9,100.00	8,998.23	8,981.05	8,976.71	32.02	33.30	-132.55		-281.04	330.04	346.23	281.28	64.95	5.331		
9,200.00	9,037.77	9,019.42	9,015.07	32.24	33.46	-131.85		-281.82	329.36	300.98	235.44	65.54	4.592 Alert		
9,300.00	9,073.67	9,053.74	9,049.38	32.50	33.57	-131.05		-282.46	328.89	275.21	208.89	66.34	4.149 Alert		
9,331.74	9,081.61	9,060.41	9,056.04	32.69	33.69	-130.25		-282.61	328.79	273.36	206.74	66.83	4.103 Alert, CC, ES, SF		
9,400.00	9,092.85	9,071.18	9,066.81	32.80	33.82	-129.35		-282.76	328.68	281.45	214.38	67.08	4.196 Alert		
9,500.00	9,098.76	9,076.88	9,072.51	32.88	33.93	-128.35		-282.81	328.64	320.46	253.08	67.38	4.756 Alert		
9,600.00	9,098.37	9,076.28	9,071.91	32.95	34.03	-127.25		-282.82	328.64	382.37	315.01	67.36	5.676		
9,700.00	9,099.98	9,077.69	9,073.32	32.99	34.13	-126.05		-282.83	328.64	457.95	390.70	67.25	6.810		
9,800.00	9,101.58	9,079.10	9,074.73	32.99	34.13	-124.75		-282.83	328.63	541.51	474.39	67.12	8.068		
9,900.00	9,103.19	9,080.51	9,076.14	32.99	34.13	-123.45		-282.84	328.63	629.87	562.87	67.01	9.400		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141 Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 27-T19S-R29E - Parkway West Unit SWD - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 200-MWD+IGRF													Offset Well Error:	10.00 ft
Reference	Offset	Semi-Major Axis		Distance		Warning								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre N-S (ft)	Offset Wellbore Centre E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,000.00	9,104.79	9,099.92	9,095.55	42.79	33.64	-91.57	-282.85	328.62	721.29	654.37	66.82	10.779		
10,100.00	9,106.40	9,100.34	9,095.97	44.75	33.64	-91.66	-282.85	328.62	814.72	747.87	66.85	12.188		
10,200.00	9,108.00	9,100.78	9,096.39	46.81	33.64	-91.74	-282.86	328.61	909.55	842.75	66.79	13.617		
10,300.00	9,109.61	9,101.18	9,096.81	48.95	33.64	-91.83	-282.87	328.61	1,005.38	938.62	66.75	15.061		
10,400.00	9,111.21	9,101.61	9,097.24	51.16	33.64	-91.92	-282.88	328.60	1,101.95	1,035.23	66.72	16.515		
10,500.00	9,112.82	9,102.04	9,097.67	53.43	33.64	-92.01	-282.88	328.60	1,199.08	1,132.38	66.70	17.977		
10,600.00	9,114.43	9,102.48	9,098.11	55.76	33.64	-92.10	-282.89	328.59	1,296.65	1,229.97	66.68	19.445		
10,700.00	9,116.03	9,102.91	9,098.54	58.14	33.65	-92.20	-282.90	328.59	1,394.57	1,327.89	66.67	20.916		
10,800.00	9,117.64	9,103.35	9,098.98	60.55	33.65	-92.29	-282.91	328.58	1,492.76	1,426.09	66.67	22.390		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM r5000 141 Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 27-T19S-R29E - Turquoise PWU 27-10H - Wellbore #1 - Wellbore #1														Offset Site Error:	5.00 ft
Survey Program: 154-MWD+GRF														Offset Well Error:	0.50 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis (ft)	Highside Toolface (°)	Offset Wellbore Centre (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
5,000.00	4,989.73	4,996.58	4,995.71	17.42	17.45	8.94	-1,569.59	-502.74	1,486.45	1,451.71	34.74	42.790			
5,100.00	5,088.77	5,102.38	5,101.48	17.78	17.81	7.05	-1,566.88	-503.15	1,470.49	1,435.06	35.44	41.496			
5,200.00	5,187.82	5,207.37	5,206.43	18.14	18.17	7.15	-1,563.83	-502.90	1,454.02	1,417.89	36.13	40.243			
5,300.00	5,286.87	5,313.56	5,312.55	18.51	18.53	7.25	-1,560.43	-502.42	1,437.21	1,400.39	36.83	39.026			
5,400.00	5,385.91	5,422.12	5,421.03	18.87	18.90	7.38	-1,556.05	-502.12	1,419.68	1,382.15	37.53	37.829			
5,500.00	5,484.96	5,514.89	5,513.71	19.24	19.22	7.49	-1,552.01	-501.98	1,401.92	1,363.72	38.20	36.700			
5,600.00	5,584.01	5,609.14	5,607.88	19.61	19.55	7.64	-1,548.22	-502.52	1,384.68	1,345.81	38.88	35.617			
5,700.00	5,683.05	5,706.03	5,704.87	19.98	19.89	7.84	-1,544.09	-504.15	1,367.60	1,328.04	39.57	34.566			
5,800.00	5,782.10	5,825.55	5,823.96	20.35	20.31	8.18	-1,537.64	-507.93	1,349.99	1,309.68	40.30	33.495			
5,900.00	5,881.15	5,917.12	5,915.30	20.73	20.64	8.47	-1,532.05	-510.99	1,331.79	1,290.81	40.99	32.492			
6,000.00	5,980.19	6,018.79	6,016.71	21.10	21.00	8.80	-1,525.78	-514.62	1,313.66	1,271.96	41.69	31.507			
6,100.00	6,079.24	6,118.26	6,115.93	21.48	21.38	9.14	-1,519.54	-517.96	1,295.39	1,252.99	42.40	30.554			
6,200.00	6,178.29	6,219.65	6,217.04	21.85	21.72	9.50	-1,512.96	-521.50	1,277.01	1,233.91	43.10	29.627			
6,300.00	6,277.33	6,321.21	6,318.26	22.23	22.09	9.90	-1,505.66	-525.68	1,258.26	1,214.45	43.81	28.719			
6,400.00	6,376.38	6,415.19	6,411.90	22.61	22.43	10.31	-1,498.96	-529.87	1,239.75	1,195.24	44.51	27.851			
6,500.00	6,475.43	6,510.29	6,506.87	22.99	22.77	10.72	-1,492.30	-534.12	1,221.43	1,176.21	45.22	27.013			
6,600.00	6,574.47	6,597.63	6,593.76	23.37	23.09	11.10	-1,486.78	-537.96	1,203.77	1,157.86	45.91	26.221			
6,700.00	6,673.52	6,684.36	6,680.27	23.76	23.41	11.48	-1,482.20	-541.97	1,187.19	1,140.59	46.60	25.476			
6,800.00	6,772.57	6,779.09	6,774.76	24.14	23.75	11.92	-1,477.54	-546.70	1,171.15	1,123.84	47.31	24.756			
6,900.00	6,871.61	6,864.39	6,859.86	24.52	24.07	12.33	-1,473.92	-551.37	1,155.98	1,107.99	48.00	24.085			
7,000.00	6,970.66	6,960.08	6,955.32	24.91	24.42	12.80	-1,470.40	-556.96	1,141.56	1,092.85	48.71	23.435			
7,100.00	7,069.71	7,058.07	7,053.09	25.29	24.78	13.29	-1,466.94	-562.60	1,127.31	1,077.88	49.43	22.806			
7,200.00	7,168.75	7,152.28	7,147.08	25.68	25.12	13.78	-1,463.85	-568.23	1,113.46	1,063.32	50.14	22.205			
7,300.00	7,267.80	7,254.84	7,249.37	26.07	25.50	14.34	-1,460.14	-574.61	1,099.50	1,048.62	50.88	21.610			
7,400.00	7,366.85	7,343.03	7,337.38	26.45	25.83	14.80	-1,457.58	-579.64	1,086.06	1,034.48	51.58	21.057			
7,500.00	7,465.89	7,429.40	7,423.64	26.84	26.14	15.20	-1,456.41	-583.95	1,073.75	1,021.49	52.27	20.544			
7,600.00	7,564.94	7,530.78	7,524.93	27.23	26.51	15.62	-1,455.93	-588.30	1,061.97	1,008.97	53.00	20.039			
7,700.00	7,663.99	7,619.48	7,613.54	27.62	26.83	15.98	-1,455.89	-592.15	1,050.68	996.97	53.69	19.571			
7,800.00	7,763.24	7,714.12	7,708.07	28.00	27.17	16.33	-1,456.38	-596.64	1,041.57	987.18	54.39	19.149			
7,900.00	7,862.77	7,808.26	7,802.11	28.38	27.51	16.62	-1,457.50	-600.90	1,035.52	980.43	55.09	18.796			
8,000.00	7,962.52	7,890.29	7,884.04	28.75	27.80	16.91	-1,459.66	-604.28	1,033.09	977.36	55.73	18.537			
8,006.34	7,968.86	7,895.46	7,889.19	28.77	27.82	16.92	-1,459.85	-604.48	1,033.09	977.32	55.77	18.524			
8,100.00	8,062.43	7,995.09	7,988.69	29.10	28.16	16.94	-1,463.95	-607.71	1,034.08	977.62	56.45	18.317			
8,200.00	8,162.41	8,096.51	8,090.00	29.45	28.51	16.96	-1,468.31	-609.52	1,037.01	979.86	57.15	18.145			
8,300.00	8,262.41	8,199.11	8,192.49	29.78	28.86	-151.52	-1,472.97	-610.60	1,041.46	983.62	57.84	18.006			
8,400.00	8,362.41	8,304.97	8,307.70	30.11	29.49	-152.14	-1,479.14	-601.12	1,042.67	984.00	58.67	17.772			
8,500.00	8,462.41	8,408.26	8,402.93	30.44	30.09	-155.08	-1,485.38	-545.24	1,033.97	974.97	59.00	17.525			
8,600.00	8,562.38	8,777.27	8,741.15	30.78	30.59	111.71	-1,489.46	-464.86	1,015.96	956.63	59.33	17.124			
8,700.00	8,661.04	8,886.79	8,826.89	31.10	30.98	110.08	-1,494.47	-397.02	1,001.26	941.12	60.14	16.850			
8,800.00	8,755.51	9,077.84	8,953.76	31.39	31.99	105.90	-1,503.50	-255.19	989.80	928.76	61.05	16.214			
8,900.00	8,842.92	9,249.48	9,033.76	31.65	33.46	101.73	-1,506.80	-103.76	977.07	914.19	62.87	15.540			
9,000.00	8,920.61	9,360.02	9,068.68	31.85	34.74	99.35	-1,506.13	1.01	965.35	900.41	64.94	14.866			
9,100.00	8,986.23	9,455.56	9,087.81	32.02	36.08	97.25	-1,506.96	94.63	958.63	891.54	67.09	14.289			
9,200.00	9,037.77	9,597.18	9,099.79	32.24	38.38	94.09	-1,504.66	235.54	952.48	882.30	70.18	13.573			
9,300.00	9,073.67	9,698.86	9,100.25	32.90	40.22	92.47	-1,500.93	337.15	946.98	874.08	72.90	12.990			
9,400.00	9,092.85	9,783.88	9,101.13	33.80	41.90	91.89	-1,498.13	422.12	943.49	867.94	75.55	12.489			
9,500.00	9,096.76	9,896.76	9,104.01	34.88	44.28	91.93	-1,494.50	534.90	940.79	861.83	78.96	11.915			
9,600.00	9,098.37	9,975.88	9,105.71	36.15	46.02	91.96	-1,492.34	613.97	938.60	856.80	82.00	11.446			
9,700.00	9,099.98	10,066.00	9,107.64	37.59	48.09	91.99	-1,491.23	704.07	937.93	852.41	85.52	10.968			
9,729.95	9,100.46	10,094.28	9,108.24	38.07	48.76	92.00	-1,491.05	732.34	937.91	851.24	86.66	10.822 CC			
9,800.00	9,101.58	10,162.11	9,109.83	39.19	50.38	92.03	-1,490.74	800.15	937.99	848.59	89.41	10.491			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 27-T19S-R29E - Turquoise PWU 27-10H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 154-MWD+IGRF													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,900.00	9,103.19	10,250.98	9,111.99	40.93	52.57	92.08	-1,490.92	888.99	938.78	845.45	93.33	10.059		
10,000.00	9,104.79	10,332.55	9,114.03	42.79	54.62	92.12	-1,492.34	970.52	941.12	843.87	97.24	9.678		
10,100.00	9,106.40	10,408.86	9,116.56	44.75	56.58	92.19	-1,495.33	1,046.73	945.67	844.54	101.13	9.351		
10,200.00	9,108.00	10,492.97	9,119.64	46.81	58.78	92.28	-1,500.80	1,130.61	952.74	847.41	105.33	9.045		
10,300.00	9,109.61	10,599.63	9,121.87	48.95	61.61	92.29	-1,507.87	1,237.00	959.93	849.61	110.33	8.701		
10,400.00	9,111.21	10,711.39	9,122.55	51.16	64.63	92.21	-1,514.31	1,348.57	966.21	850.61	115.60	8.358		
10,500.00	9,112.82	10,834.15	9,123.07	53.43	68.00	92.11	-1,519.19	1,471.24	970.71	849.44	121.28	8.004		
10,600.00	9,114.43	10,948.39	9,124.20	55.76	71.18	92.06	-1,521.43	1,585.44	973.20	846.42	126.79	7.676		
10,700.00	9,116.03	11,065.24	9,122.65	58.14	74.47	91.86	-1,521.79	1,702.28	973.94	841.50	132.44	7.354		
10,800.00	9,117.64	11,172.51	9,119.16	60.55	77.51	91.56	-1,520.96	1,809.48	973.57	835.66	137.90	7.060		
10,900.00	9,119.24	11,277.52	9,117.25	63.01	80.51	91.34	-1,519.42	1,914.47	972.57	829.21	143.36	6.784		
11,000.00	9,120.85	11,394.03	9,114.41	65.50	83.86	91.07	-1,516.71	2,030.91	970.74	821.60	149.13	6.509		
11,100.00	9,122.45	11,503.41	9,109.63	68.02	87.02	90.69	-1,512.40	2,140.09	967.24	812.47	154.77	6.250		
11,200.00	9,124.06	11,596.98	9,107.37	70.56	89.74	90.46	-1,508.59	2,233.56	963.69	803.59	160.09	6.020		
11,300.00	9,125.67	11,666.67	9,107.62	73.13	91.78	90.41	-1,507.03	2,303.22	962.01	797.15	164.85	5.836		
11,301.63	9,125.69	11,667.79	9,107.64	73.18	91.81	90.41	-1,507.02	2,304.34	962.01	797.08	164.93	5.833		
11,400.00	9,127.27	11,751.67	9,110.80	75.72	94.28	90.52	-1,507.50	2,388.15	963.07	793.11	169.96	5.666		
11,500.00	9,128.88	11,845.71	9,116.76	78.34	97.06	90.79	-1,508.61	2,482.00	964.86	789.52	175.34	5.503		
11,600.00	9,130.48	11,958.29	9,124.65	80.96	100.39	91.14	-1,509.97	2,594.29	966.76	785.49	181.27	5.333		
11,700.00	9,132.09	12,074.95	9,132.15	83.61	103.85	91.48	-1,509.13	2,710.71	966.68	779.38	187.30	5.161		
11,752.83	9,132.94	12,119.50	9,134.77	85.01	105.18	91.59	-1,508.67	2,755.18	966.48	776.43	190.05	5.085		
11,800.00	9,133.69	12,160.16	9,137.25	86.26	106.39	91.70	-1,508.53	2,795.76	966.64	774.12	192.52	5.021		
11,900.00	9,135.30	12,258.62	9,142.64	88.93	109.33	91.92	-1,508.65	2,894.07	967.44	769.33	198.11	4.883 Alert		
12,000.00	9,136.90	12,353.69	9,146.82	91.62	112.18	92.08	-1,509.08	2,989.05	968.54	764.92	203.62	4.757 Alert		
12,100.00	9,138.51	12,448.69	9,150.82	94.31	115.04	92.22	-1,510.00	3,083.96	970.16	761.01	209.15	4.639 Alert		
12,200.00	9,140.12	12,549.21	9,154.59	97.01	118.07	92.34	-1,511.26	3,184.40	972.04	757.18	214.86	4.524 Alert		
12,300.00	9,141.72	12,659.41	9,157.60	99.73	121.40	92.41	-1,512.01	3,294.55	973.32	752.44	220.88	4.407 Alert		
12,400.00	9,143.33	12,763.93	9,159.57	102.45	124.55	92.43	-1,511.84	3,399.05	973.72	746.97	226.75	4.294 Alert		
12,500.00	9,144.93	12,862.92	9,160.90	105.18	127.55	92.41	-1,511.76	3,498.04	974.17	741.70	232.47	4.190 Alert		
12,600.00	9,146.54	12,968.28	9,160.53	107.91	130.75	92.29	-1,511.45	3,603.39	974.35	735.94	238.41	4.087 Alert		
12,700.00	9,148.14	13,075.11	9,160.79	110.66	133.99	92.21	-1,510.39	3,710.22	973.86	729.48	244.37	3.985 Alert		
12,800.00	9,149.75	13,167.88	9,161.71	113.41	136.81	92.18	-1,509.25	3,802.98	973.17	723.20	249.98	3.893 Alert		
12,806.75	9,149.86	13,173.72	9,161.79	113.59	136.99	92.18	-1,509.21	3,808.82	973.17	722.83	250.34	3.887 Alert		
12,900.00	9,151.36	13,260.99	9,163.09	116.16	139.64	92.17	-1,509.11	3,896.08	973.57	717.99	255.58	3.809 Alert		
13,000.00	9,152.96	13,350.06	9,163.97	118.92	142.36	92.13	-1,509.53	3,985.14	974.59	713.52	261.06	3.733 Alert		
13,100.00	9,154.57	13,449.44	9,164.97	121.69	145.40	92.09	-1,511.15	4,084.50	976.73	709.86	266.87	3.660 Alert		
13,200.00	9,156.17	13,560.02	9,164.83	124.45	148.78	91.98	-1,511.94	4,195.08	977.94	704.90	273.04	3.582 Alert		
13,300.00	9,157.78	13,656.39	9,163.18	127.23	151.72	91.79	-1,512.27	4,291.44	978.73	699.94	278.79	3.511 Alert		
13,400.00	9,159.38	13,769.98	9,160.34	130.01	155.20	91.52	-1,512.42	4,404.98	979.31	694.26	285.05	3.436 Alert		
13,454.32	9,160.26	13,821.55	9,159.05	131.52	156.78	91.39	-1,512.13	4,456.54	979.25	691.08	288.17	3.398 Alert		
13,500.00	9,160.99	13,865.23	9,157.89	132.79	158.12	91.28	-1,511.98	4,500.21	979.29	688.50	290.80	3.368 Alert		
13,600.00	9,162.60	13,958.97	9,155.37	135.57	160.99	91.05	-1,512.05	4,593.91	979.83	683.34	296.49	3.305 Alert		
13,700.00	9,164.20	14,054.09	9,152.57	138.36	163.91	90.79	-1,512.66	4,688.98	980.96	678.73	302.23	3.246 Alert		
13,800.00	9,165.81	14,156.54	9,149.61	141.16	167.06	90.52	-1,513.41	4,791.39	982.18	674.00	308.18	3.187 Alert		
13,882.90	9,167.14	14,223.00	9,147.82	143.47	169.10	90.36	-1,513.81	4,857.82	983.26	670.75	312.51	3.146 Alert, ES, SF		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 27-T19S-R29E - Turquoise PWU 27-5H - Wellbore #1 - Wellbore #1												Offset Site Error: 5.00 ft	
Survey Program: 100-NS-Gyro-DP, 6595-MWD+IGRF												Offset Well Error: 0.50 ft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface ('')	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,900.00	5,881.15	11,814.00	7,066.47	20.73	155.11	-174.93	453.02	176.50	1,424.73	1,322.46	102.27	13.931	
6,000.00	5,980.19	11,814.00	7,066.47	21.10	155.11	-174.93	453.02	176.50	1,350.40	1,241.95	108.46	12.451	
6,100.00	6,079.24	11,814.00	7,066.47	21.48	155.11	-174.93	453.02	176.50	1,279.58	1,164.39	115.19	11.109	
6,200.00	6,178.29	11,814.00	7,066.47	21.85	155.11	-174.93	453.02	176.50	1,212.87	1,090.44	122.43	9.907	
6,300.00	6,277.33	11,814.00	7,066.47	22.23	155.11	-174.93	453.02	176.50	1,150.99	1,020.88	130.11	8.846	
6,400.00	6,376.38	11,814.00	7,066.47	22.61	155.11	-174.93	453.02	176.50	1,094.77	956.66	138.11	7.927	
6,500.00	6,475.43	11,814.00	7,066.47	22.99	155.11	-174.93	453.02	176.50	1,045.11	898.89	146.22	7.148	
6,600.00	6,574.47	11,814.00	7,066.47	23.37	155.11	-174.93	453.02	176.50	1,002.98	848.85	154.13	6.507	
6,700.00	6,673.52	11,814.00	7,066.47	23.76	155.11	-174.93	453.02	176.50	969.39	807.90	161.49	6.003	
6,800.00	6,772.57	11,814.00	7,066.47	24.14	155.11	-174.93	453.02	176.50	945.22	777.36	167.86	5.631	
6,900.00	6,871.61	11,814.00	7,066.47	24.52	155.11	-174.93	453.02	176.50	931.22	758.38	172.84	5.388	
6,981.35	6,952.18	11,814.00	7,066.47	24.84	155.11	-174.93	453.02	176.50	927.66	752.02	175.64	5.282 CC	
7,000.00	6,970.66	11,814.00	7,066.47	24.91	155.11	-174.93	453.02	176.50	927.85	751.74	176.11	5.269 ES	
7,100.00	7,069.71	11,814.00	7,066.47	25.29	155.11	-174.93	453.02	176.50	935.22	757.70	177.52	5.268 SF	
7,200.00	7,168.75	11,814.00	7,066.47	25.68	155.11	-174.93	453.02	176.50	953.08	775.97	177.11	5.381	
7,300.00	7,267.80	11,814.00	7,066.47	26.07	155.11	-174.93	453.02	176.50	980.86	805.78	175.09	5.602	
7,400.00	7,366.85	11,814.00	7,066.47	26.45	155.11	-174.93	453.02	176.50	1,017.76	845.97	171.78	5.925	
7,500.00	7,465.89	11,814.00	7,066.47	26.84	155.11	-174.93	453.02	176.50	1,062.81	895.25	167.56	6.343	
7,600.00	7,564.94	11,814.00	7,066.47	27.23	155.11	-174.93	453.02	176.50	1,115.03	952.27	162.76	6.851	
7,700.00	7,663.99	11,814.00	7,066.47	27.62	155.11	-174.94	453.02	176.50	1,173.45	1,015.77	157.68	7.442	
7,800.00	7,763.24	11,814.00	7,066.47	28.00	155.11	-175.05	453.02	176.50	1,236.04	1,083.57	152.47	8.107	
7,900.00	7,862.77	11,814.00	7,066.47	28.38	155.11	-175.16	453.02	176.50	1,301.40	1,154.19	147.20	8.841	
8,000.00	7,962.52	11,814.00	7,066.47	28.75	155.11	-175.27	453.02	176.50	1,369.09	1,227.11	141.98	9.643	
8,100.00	8,062.43	11,814.00	7,066.47	29.10	155.11	-175.39	453.02	176.50	1,438.75	1,301.90	136.85	10.514	

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 27-T19S-R29E - Turquoise PWU 27-1H - Pilot Wellbore - Pilot Wellbore														Offset Site Error:	5.00 ft
Survey Program: 100-MWD+IGRF														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)							
0.00	0.00	0.00	0.00	0.50	0.50	121.69	-102.81	166.54	195.80						
100.00	100.00	93.06	93.06	0.52	0.52	121.71	-103.05	166.80	196.06	1.03	189.833				
200.00	200.00	192.85	192.85	0.70	0.68	121.72	-103.50	167.47	195.49	1.38	142.159				
300.00	300.00	292.12	292.11	0.99	0.96	121.62	-103.73	168.51	197.89	1.95	101.602				
400.00	400.00	392.18	392.16	1.31	1.28	121.41	-103.75	169.91	199.10	2.59	76.931				
500.00	500.00	491.70	491.67	1.64	1.62	121.17	-103.71	171.43	200.38	3.26	61.492				
600.00	600.00	592.09	592.05	1.99	1.96	120.91	-103.60	173.05	201.71	3.95	51.096				
700.00	700.00	691.54	691.48	2.34	2.31	120.62	-103.42	174.71	203.05	4.64	43.738				
800.00	800.00	791.19	791.12	2.69	2.66	120.32	-103.29	176.61	204.62	5.34	38.295				
900.00	900.00	890.91	890.81	3.04	3.01	119.97	-103.06	178.72	206.34	6.05	34.118				
1,000.00	1,000.00	990.34	990.21	3.40	3.37	119.56	-102.74	181.11	208.26	6.75	30.836				
1,100.00	1,100.00	1,087.92	1,087.74	3.75	3.72	119.04	-102.31	184.24	210.85	7.45	28.285				
1,200.00	1,200.00	1,186.72	1,186.45	4.11	4.07	118.43	-102.00	188.39	214.38	8.16	26.267				
1,300.00	1,300.00	1,288.54	1,288.18	4.46	4.44	117.82	-101.60	192.54	217.79	8.88	24.520				
1,400.00	1,400.00	1,389.48	1,389.07	4.82	4.80	117.29	-101.06	195.84	220.44	9.60	22.963				
1,500.00	1,500.00	1,490.62	1,490.17	5.17	5.17	116.86	-100.57	198.60	222.65	10.32	21.579				
1,600.00	1,600.00	1,591.89	1,591.41	5.53	5.53	116.49	-100.05	200.74	224.32	11.04	20.325				
1,700.00	1,700.00	1,692.53	1,692.04	5.89	5.89	116.19	-99.53	202.37	225.54	11.75	19.190				
1,800.00	1,800.00	1,792.42	1,791.92	6.25	6.25	115.91	-99.04	203.84	226.64	12.47	18.180				
1,900.00	1,900.00	1,893.99	1,893.48	6.60	6.61	115.69	-98.60	204.98	227.46	13.19	17.251				
2,000.00	2,000.00	1,994.28	1,993.77	6.96	6.97	115.52	-98.16	205.60	227.83	13.90	16.392				
2,100.00	2,100.00	2,094.58	2,094.06	7.32	7.32	115.36	-97.68	206.11	228.09	14.61	15.611				
2,200.00	2,200.00	2,194.65	2,194.13	7.68	7.67	115.23	-97.30	206.48	228.26	15.32	14.897				
2,300.00	2,300.00	2,294.78	2,294.27	8.03	8.03	115.10	-96.87	206.83	228.39	16.03	14.244				
2,400.00	2,400.00	2,394.99	2,394.48	8.39	8.38	114.96	-96.40	207.11	228.45	16.74	13.643				
2,500.00	2,500.00	2,494.97	2,494.45	8.75	8.73	114.83	-95.94	207.34	228.46	17.45	13.089				
2,600.00	2,600.00	2,595.49	2,594.97	9.11	9.08	114.68	-95.37	207.51	228.37	18.16	12.573				
2,700.00	2,700.00	2,695.77	2,695.25	9.47	9.43	114.55	-94.77	207.48	228.10	18.87	12.090				
2,800.00	2,800.00	2,796.18	2,795.65	9.82	9.77	114.46	-94.26	207.26	227.69	19.57	11.636				
2,900.00	2,900.00	2,896.93	2,896.40	10.18	10.11	114.40	-93.77	206.74	227.02	20.26	11.203				
3,000.00	3,000.00	2,996.83	2,996.30	10.54	10.44	114.36	-93.28	206.06	226.20	20.96	10.793				
3,100.00	3,100.00	3,096.94	3,096.41	10.90	10.78	114.36	-92.97	205.30	225.38	21.65	10.410				
3,200.00	3,200.00	3,197.78	3,197.24	11.26	11.11	114.43	-92.78	204.24	224.35	22.34	10.040				
3,300.00	3,300.00	3,297.00	3,296.45	11.61	11.44	114.54	-92.74	203.11	223.29	23.04	9.693				
3,400.00	3,400.00	3,403.09	3,396.35	11.97	11.80	114.68	-92.88	202.11	222.44	23.75	9.366				
3,500.00	3,500.00	3,496.90	3,496.34	12.33	12.11	114.83	-93.06	201.12	221.61	24.42	9.074				
3,600.00	3,599.99	3,597.01	3,596.45	12.67	12.45	-76.92	-93.15	200.13	220.50	25.10	8.785				
3,700.00	3,699.94	3,697.21	3,696.64	12.99	12.79	-77.67	-93.12	199.10	218.83	25.76	8.495				
3,800.00	3,799.79	3,796.87	3,796.30	13.32	13.13	-79.04	-92.94	198.12	216.76	26.43	8.202				
3,900.00	3,899.49	3,896.58	3,896.00	13.64	13.47	-81.04	-92.65	197.24	214.50	27.09	7.917				
4,000.00	3,999.01	3,996.16	3,995.58	13.97	13.81	-83.64	-92.41	196.31	212.23	27.76	7.644				
4,100.00	4,098.29	4,095.34	4,094.76	14.30	14.15	-86.88	-92.12	195.41	210.27	28.43	7.395				
4,200.00	4,197.35	4,194.51	4,193.92	14.63	14.49	-90.65	-91.68	194.53	209.00	29.11	7.179				
4,259.24	4,256.02	4,252.59	4,252.00	14.83	14.70	-92.94	-91.25	194.09	208.74	29.51	7.072				
4,300.00	4,296.40	4,292.47	4,291.87	14.97	14.84	-94.56	-90.80	193.91	208.86	29.79	7.011 ES				
4,400.00	4,395.44	4,389.97	4,389.37	15.31	15.18	-98.62	-89.29	193.94	210.35	30.48	6.902				
4,500.00	4,494.49	4,488.11	4,487.48	15.66	15.53	-102.68	-87.56	194.46	213.44	31.17	6.848				
4,600.00	4,593.54	4,587.58	4,586.93	16.00	15.88	-106.76	-85.41	194.96	217.60	31.86	6.829 SF				
4,700.00	4,692.59	4,686.45	4,685.75	16.35	16.23	-110.94	-82.21	195.07	222.62	32.56	6.837				
4,800.00	4,791.63	4,784.87	4,784.08	16.71	16.58	-115.13	-78.10	194.94	228.79	33.25	6.880				
4,900.00	4,890.68	4,883.61	4,882.70	17.06	16.93	-119.33	-73.07	194.52	236.14	33.95	6.956				

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well: Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM r5000.141 Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 27-T19S-R29E - Turquoise PWU 27-1H - Pilot Wellbore - Pilot Wellbore														Offset Site Error:	5.00 ft
Survey Program: 100-MWD-MGRF														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance					Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres	Between Ellipses	Minimum Separation		Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)				
5,000.00	4,989.73	4,983.17	4,982.12	17.42	17.28	-123.30	-88.14	193.76	244.34	209.69	34.65	7.052			
5,100.00	5,088.77	5,082.20	5,081.05	17.78	17.63	-126.92	-63.85	192.69	253.17	217.82	35.35	7.162			
5,200.00	5,187.82	5,181.16	5,179.91	18.14	17.98	-130.27	-59.33	191.46	262.71	228.67	36.04	7.289			
5,300.00	5,286.87	5,280.51	5,279.18	18.51	18.33	-133.32	-55.45	190.19	272.83	238.09	36.74	7.425			
5,400.00	5,385.91	5,378.98	5,377.58	18.87	18.68	-136.02	-52.11	189.00	283.42	245.98	37.44	7.571			
5,500.00	5,484.96	5,477.12	5,475.64	19.24	19.03	-138.60	-48.40	187.69	294.74	256.61	38.13	7.730			
5,600.00	5,584.01	5,575.17	5,573.61	19.61	19.38	-140.99	-44.56	186.43	306.74	267.92	38.82	7.901			
5,700.00	5,683.05	5,673.86	5,672.20	19.98	19.73	-143.28	-40.41	185.01	319.32	279.80	39.52	8.080			
5,800.00	5,782.10	5,773.73	5,771.95	20.35	20.09	-145.51	-35.99	183.02	332.12	291.90	40.22	8.258			
5,900.00	5,881.15	5,873.04	5,871.13	20.73	20.44	-147.62	-31.65	180.49	344.96	304.04	40.92	8.430			
6,000.00	5,980.19	5,971.42	5,969.37	21.10	20.79	-149.61	-27.22	177.67	358.12	316.50	41.61	8.606			
6,100.00	6,079.24	6,069.74	6,067.53	21.48	21.14	-151.52	-22.52	174.59	371.72	329.41	42.31	8.786			
6,200.00	6,178.29	6,171.56	6,169.17	21.85	21.51	-153.42	-17.62	170.84	385.39	342.36	43.03	8.957			
6,300.00	6,277.33	6,271.44	6,268.83	22.23	21.87	-155.26	-13.14	166.09	398.55	354.82	43.73	9.114			
6,400.00	6,376.38	6,369.97	6,367.17	22.61	22.22	-156.92	-8.89	161.49	411.99	367.56	44.43	9.274			
6,500.00	6,475.43	6,470.11	6,467.15	22.99	22.58	-158.39	-5.22	157.49	425.57	380.44	45.13	9.429			
6,600.00	6,574.47	6,571.43	6,568.38	23.37	22.94	-159.66	-2.44	153.87	438.85	393.01	45.85	9.572			
6,700.00	6,673.52	6,669.75	6,666.63	23.76	23.28	-160.70	-0.55	150.98	451.95	405.40	46.54	9.710			
6,800.00	6,772.57	6,768.20	6,765.05	24.14	23.63	-161.55	1.00	149.15	465.41	418.17	47.24	9.851			
6,900.00	6,871.61	6,871.82	6,868.65	24.52	24.00	-162.30	1.90	147.76	478.62	430.85	47.97	9.978			
7,000.00	6,970.66	6,971.64	6,968.67	24.91	24.34	-162.84	1.41	147.01	490.99	442.33	48.66	10.090			
7,100.00	7,069.71	7,071.00	7,067.83	25.29	24.67	-163.29	0.78	146.78	503.51	454.15	49.35	10.202			
7,200.00	7,168.75	7,171.24	7,168.06	25.68	25.01	-163.70	-0.10	146.71	515.92	465.87	50.05	10.308			
7,300.00	7,267.80	7,268.86	7,265.67	26.07	25.34	-163.96	-1.50	147.54	528.30	477.57	50.73	10.413			
7,400.00	7,366.85	7,374.32	7,371.08	26.45	25.70	-164.11	-4.05	149.15	540.10	488.65	51.46	10.496			
7,500.00	7,465.89	7,472.44	7,469.16	26.84	26.03	-164.23	-6.67	150.60	551.68	499.53	52.15	10.579			
7,600.00	7,564.94	7,570.50	7,567.18	27.23	26.36	-164.39	-8.95	151.86	563.48	510.64	52.84	10.664			
7,700.00	7,663.99	7,668.50	7,665.16	27.62	26.70	-164.57	-10.89	152.94	575.49	521.96	53.53	10.751			
7,800.00	7,763.24	7,766.61	7,763.25	28.00	27.03	-164.78	-12.49	153.82	586.23	532.01	54.22	10.812			
7,900.00	7,862.77	7,864.92	7,861.55	28.38	27.36	-164.94	-13.75	154.52	594.68	539.77	54.91	10.830			
8,000.00	7,962.52	7,963.38	7,960.00	28.75	27.70	-165.05	-14.68	155.03	600.84	545.24	55.60	10.807			
8,100.00	8,062.43	8,061.94	8,058.56	29.10	28.03	-165.12	-15.26	155.35	604.70	548.41	56.28	10.744			
8,200.00	8,162.41	8,160.55	8,157.18	29.45	28.37	-165.14	-15.50	155.49	606.25	549.29	56.96	10.643			
8,300.00	8,262.41	8,259.18	8,255.81	29.78	28.70	-165.43	-15.40	155.43	606.36	548.72	57.64	10.520			
8,400.00	8,362.41	8,180.00	8,178.62	30.11	28.44	-165.44	-15.51	155.49	632.52	576.96	55.56	11.384			
8,500.00	8,462.41	8,180.00	8,178.62	30.44	28.44	-165.44	-15.51	155.49	667.94	614.39	53.55	12.473			
8,600.00	8,562.38	8,180.00	8,178.62	30.78	28.44	-61.25	-15.51	155.49	715.15	663.98	51.17	13.975			
8,700.00	8,661.04	8,180.00	8,178.62	31.10	28.44	-56.09	-15.51	155.49	766.83	718.19	48.64	15.765			
8,800.00	8,755.51	8,180.00	8,178.62	31.39	28.44	-51.09	-15.51	155.49	819.69	773.52	46.17	17.754			
8,900.00	8,842.92	8,180.00	8,178.62	31.65	28.44	-46.46	-15.51	155.49	872.06	828.11	43.95	19.843			
9,000.00	8,920.61	8,180.00	8,178.62	31.85	28.44	-42.37	-15.51	155.49	922.57	880.41	42.15	21.887			
9,100.00	8,998.23	8,180.00	8,178.62	32.02	28.44	-38.86	-15.51	155.49	970.08	929.16	40.91	23.710			
9,200.00	9,037.77	8,180.00	8,178.62	32.24	28.44	-35.92	-15.51	155.49	1,013.67	973.33	40.34	25.129			
9,300.00	9,073.67	8,180.00	8,178.62	32.90	28.44	-33.51	-15.51	155.49	1,052.58	1,012.12	40.48	26.013			
9,400.00	9,092.85	8,180.00	8,178.62	33.80	28.44	-31.59	-15.51	155.49	1,088.19	1,044.93	41.27	26.322			
9,500.00	9,096.76	8,180.00	8,178.62	34.88	28.44	-30.77	-15.51	155.49	1,115.69	1,073.06	42.63	26.171			
9,600.00	9,098.37	8,180.00	8,178.62	36.15	28.44	-30.77	-15.51	155.49	1,151.33	1,107.09	44.24	26.024			
9,700.00	9,099.98	8,180.00	8,178.62	37.59	28.44	-30.77	-15.51	155.49	1,194.30	1,148.37	45.93	26.001			
9,800.00	9,101.58	8,180.00	8,178.62	39.19	28.44	-30.77	-15.51	155.49	1,243.84	1,196.23	47.61	26.127			
9,900.00	9,103.19	8,180.00	8,178.62	40.93	28.44	-30.77	-15.51	155.49	1,299.20	1,250.00	49.20	26.404			
10,000.00	9,104.79	8,180.00	8,178.62	42.79	28.44	-30.77	-15.51	155.49	1,359.68	1,308.99	50.69	26.826			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 27-T19S-R29E - Turquoise PWU 27-1H - Pilot Wellbore - Pilot Wellbore												Offset Site Error:	5.00 ft
Survey Program: 100-MWD+IGRF												Offset Well Error:	0.50 ft
Reference	Vertical	Offset	Semi Major Axis	Highside	Offset Wellbore Centre	Distance	Minimum	Separation	Warning				
Measured Depth (ft)	Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Toolface (°)	+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Separation (ft)	Factor	
10,100.00	9,106.40	8,180.00	8,176.62	44.75	28.44	-30.77	-15.51	155.49	1,424.61	1,372.57	52.03	27.378	
10,200.00	9,108.00	8,180.00	8,176.62	46.81	28.44	-30.77	-15.51	155.49	1,493.42	1,440.17	53.25	28.046	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000:141 Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Sec 27-T19S-R29E - Turquoise PWU 27-1H - Wellbore #1 - Wellbore #1														Offset Site Error:	5.00 ft
Survey Program: 100-NSG-GYC-Drop: 7392-MWD-IGRF														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Distance		Warning							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Footface (ft)	Offset Wellbore Centre (ft)	+N-S (ft)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	121.69	-102.81	166.54	195.80						
100.00	100.00	93.06	93.06	0.52	0.52	121.71	-103.05	166.80	196.06	195.03	1.04	188.825			
200.00	200.00	192.85	192.85	0.70	0.74	121.72	-103.50	167.47	196.87	195.43	1.44	136.613			
300.00	300.00	282.12	282.11	0.99	1.08	121.62	-103.73	168.51	197.89	195.82	2.07	95.608			
400.00	400.00	392.18	392.16	1.31	1.47	121.41	-103.75	169.91	199.10	196.32	2.78	71.721			
500.00	500.00	491.70	491.67	1.64	1.87	121.17	-103.71	171.43	200.38	196.87	3.51	57.082			
600.00	600.00	592.09	592.05	1.99	2.27	120.91	-103.60	173.05	201.71	197.45	4.26	47.319			
700.00	700.00	691.54	691.48	2.34	2.68	120.62	-103.42	174.71	203.05	198.02	5.02	40.441			
800.00	800.00	791.19	791.12	2.69	3.11	120.32	-103.29	176.61	204.62	198.83	5.79	35.332			
900.00	900.00	890.91	890.81	3.04	3.54	119.97	-103.06	178.72	206.34	199.77	6.57	31.401			
1,000.00	1,000.00	990.34	990.21	3.40	3.98	119.56	-102.74	181.11	208.26	200.91	7.36	28.314			
1,100.00	1,100.00	1,087.92	1,087.74	3.75	4.42	119.04	-102.31	184.24	210.85	202.72	8.14	25.917			
1,200.00	1,200.00	1,186.72	1,186.45	4.11	4.86	118.43	-102.00	188.39	214.38	205.45	8.93	24.016			
1,300.00	1,300.00	1,288.54	1,288.18	4.46	5.32	117.82	-101.60	192.54	217.79	208.06	9.74	22.372			
1,400.00	1,400.00	1,389.48	1,389.07	4.82	5.78	117.29	-101.06	195.84	220.44	209.90	10.54	20.914			
1,500.00	1,500.00	1,490.62	1,490.17	5.17	6.24	116.86	-100.57	198.60	222.65	211.31	11.35	19.622			
1,600.00	1,600.00	1,591.89	1,591.41	5.53	6.71	116.49	-100.05	200.74	224.32	212.16	12.15	18.457			
1,700.00	1,700.00	1,692.53	1,692.04	5.89	7.14	116.19	-99.53	202.37	225.54	212.60	12.94	17.430			
1,800.00	1,800.00	1,792.42	1,791.92	6.25	7.55	115.91	-99.04	203.84	226.64	212.93	13.71	16.536			
1,900.00	1,900.00	1,893.99	1,893.48	6.60	7.95	115.69	-98.60	204.98	227.46	212.99	14.48	15.711			
2,000.00	2,000.00	1,994.28	1,993.77	6.96	8.36	115.52	-98.16	205.60	227.83	212.58	15.25	14.944			
2,100.00	2,100.00	2,094.58	2,094.06	7.32	8.77	115.36	-97.68	206.11	228.09	212.07	16.01	14.242			
2,200.00	2,200.00	2,194.85	2,194.13	7.68	9.18	115.23	-97.30	206.48	228.26	211.47	16.78	13.600			
2,300.00	2,300.00	2,294.78	2,294.27	8.03	9.58	115.10	-96.87	206.83	228.39	210.84	17.55	13.011			
2,400.00	2,400.00	2,394.99	2,394.48	8.39	9.99	114.96	-96.40	207.11	228.45	210.12	18.32	12.467			
2,500.00	2,500.00	2,494.97	2,494.45	8.75	10.40	114.83	-95.94	207.34	228.46	209.37	19.09	11.965			
2,600.00	2,600.00	2,595.49	2,594.97	9.11	10.82	114.68	-95.37	207.51	228.37	208.51	19.87	11.495			
2,700.00	2,700.00	2,695.77	2,695.25	9.47	11.23	114.55	-94.77	207.48	228.10	207.46	20.64	11.052			
2,800.00	2,800.00	2,796.18	2,795.65	9.82	11.64	114.46	-94.26	207.26	227.69	206.28	21.41	10.634			
2,900.00	2,900.00	2,896.93	2,896.40	10.18	12.06	114.40	-93.77	206.74	227.02	204.83	22.19	10.232			
3,000.00	3,000.00	2,998.83	2,998.30	10.54	12.47	114.36	-93.28	206.06	226.20	203.24	22.96	9.852			
3,100.00	3,100.00	3,098.94	3,098.41	10.90	12.88	114.36	-92.97	205.30	225.38	201.65	23.73	9.497			
3,200.00	3,200.00	3,197.78	3,197.24	11.26	13.30	114.43	-92.78	204.24	224.35	199.84	24.51	9.155			
3,300.00	3,300.00	3,297.00	3,296.45	11.61	13.71	114.54	-92.74	203.11	223.29	198.02	25.28	8.834			
3,400.00	3,400.00	3,403.09	3,398.35	11.97	14.15	114.68	-92.68	202.11	222.44	196.37	26.07	8.531			
3,500.00	3,500.00	3,496.90	3,496.34	12.33	14.54	114.83	-93.06	201.12	221.61	194.79	26.82	8.262			
3,600.00	3,599.99	3,597.01	3,596.45	12.67	14.95	-76.92	-93.15	200.13	220.50	192.92	27.58	7.995			
3,700.00	3,699.94	3,697.21	3,696.64	12.99	15.37	-77.67	-93.12	199.10	218.83	190.52	28.32	7.728			
3,800.00	3,799.79	3,796.87	3,796.30	13.32	15.78	-79.04	-92.94	198.12	216.78	187.70	29.06	7.459			
3,900.00	3,899.49	3,896.58	3,896.00	13.64	16.19	-81.04	-92.65	197.24	214.50	184.70	29.80	7.197			
4,000.00	3,999.01	3,996.16	3,995.58	13.97	16.61	-83.64	-92.41	196.31	212.23	181.68	30.55	6.947			
4,100.00	4,098.29	4,095.34	4,094.76	14.30	17.02	-86.88	-92.12	195.41	210.27	178.97	31.30	6.718			
4,200.00	4,197.35	4,194.51	4,193.92	14.63	17.43	-90.85	-91.68	194.53	209.00	178.95	32.05	6.521			
4,259.24	4,256.02	4,252.59	4,252.00	14.83	17.67	-92.94	-91.25	194.09	208.74	176.24	32.50	6.424			
4,300.00	4,296.40	4,292.47	4,291.87	14.97	17.84	-94.56	-90.80	193.91	208.86	176.06	32.80	6.368 ES			
4,400.00	4,395.44	4,389.97	4,389.37	15.31	18.25	-98.62	-89.29	193.94	210.35	176.80	33.55	6.269			
4,500.00	4,494.49	4,488.11	4,487.48	15.66	18.67	-102.68	-87.56	194.46	213.44	179.12	34.31	6.220			
4,600.00	4,593.54	4,587.58	4,586.93	16.00	19.09	-106.76	-85.41	194.96	217.60	182.52	35.08	6.202 SF			
4,700.00	4,692.59	4,688.45	4,685.75	16.35	19.51	-110.94	-82.21	195.07	222.62	186.78	35.85	6.210			
4,800.00	4,791.63	4,784.87	4,784.08	16.71	19.93	-115.13	-78.10	194.94	228.79	182.18	36.61	6.249			
4,900.00	4,890.68	4,883.63	4,882.72	17.06	20.35	-119.29	-73.23	194.57	236.14	186.76	37.38	6.318			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 27-T19S-R29E - Turquoise PWU 27-1H - Wellbore #1 - Wellbore #1														Offset Site Error:	5.00 ft
Survey Program: 100-NSG-GYC_Drop_7392-MWD+IGRF														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toothface (")	Distance		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)										
5,000.00	4,989.73	4,982.64	4,981.63	17.42	20.77	-123.14	-68.70	194.04	244.39	206.25	38.14	6.408			
5,100.00	5,088.77	5,081.79	5,080.69	17.78	21.20	-126.66	-64.53	193.35	253.38	214.47	38.91	6.512			
5,200.00	5,187.82	5,181.09	5,179.91	18.14	21.62	-129.89	-60.74	192.50	262.94	223.26	39.68	6.627			
5,300.00	5,286.87	5,280.52	5,279.27	18.51	22.05	-132.84	-57.32	191.49	272.94	232.49	40.45	6.747			
5,400.00	5,385.91	5,378.97	5,377.66	18.87	22.47	-135.56	-54.01	190.30	283.42	242.20	41.22	6.876			
5,500.00	5,484.96	5,477.12	5,475.73	19.24	22.89	-138.15	-50.29	189.00	294.64	252.66	41.98	7.018			
5,600.00	5,584.01	5,575.17	5,573.70	19.61	23.32	-140.57	-46.45	187.74	306.54	263.80	42.75	7.171			
5,700.00	5,683.05	5,673.87	5,672.30	19.98	23.74	-142.87	-42.31	186.32	319.03	275.51	43.52	7.331			
5,800.00	5,782.10	5,773.75	5,772.07	20.35	24.17	-145.12	-37.88	184.33	331.75	287.45	44.29	7.490			
5,900.00	5,881.15	5,873.07	5,871.25	20.73	24.60	-147.25	-33.54	181.80	344.50	299.44	45.06	7.645			
6,000.00	5,980.19	5,971.45	5,969.50	21.10	25.03	-149.25	-29.11	178.98	357.58	311.75	45.83	7.803			
6,100.00	6,079.24	6,069.78	6,067.67	21.48	25.45	-151.18	-24.41	175.90	371.11	324.52	46.59	7.965			
6,200.00	6,178.29	6,171.62	6,169.32	21.85	25.89	-153.10	-19.51	172.14	384.71	337.33	47.38	8.120			
6,300.00	6,277.33	6,271.49	6,268.98	22.23	26.32	-154.94	-15.03	167.39	397.79	349.64	48.15	8.261			
6,400.00	6,376.38	6,370.01	6,367.30	22.61	26.74	-156.62	-10.78	162.79	411.17	362.25	48.91	8.406			
6,500.00	6,475.43	6,470.13	6,467.26	22.99	27.17	-158.10	-7.11	158.79	424.70	375.01	49.69	8.547			
6,600.00	6,574.47	6,571.43	6,568.46	23.37	27.60	-159.38	-4.33	155.18	437.94	387.47	50.47	8.677			
6,700.00	6,673.52	6,669.72	6,666.70	23.76	28.02	-160.44	-2.44	152.29	450.99	399.76	51.23	8.803			
6,800.00	6,772.57	6,768.15	6,765.09	24.14	28.45	-161.30	-0.89	150.46	464.42	412.42	52.00	8.931			
6,900.00	6,871.61	6,871.73	6,868.66	24.52	28.89	-162.05	0.01	149.07	477.61	424.81	52.80	9.046			
7,000.00	6,970.66	6,971.74	6,968.66	24.91	29.31	-162.60	-0.48	148.32	489.96	436.39	53.57	9.146			
7,100.00	7,069.71	7,070.89	7,067.82	25.29	29.72	-163.06	-1.12	148.09	502.46	448.12	54.34	9.246			
7,200.00	7,168.75	7,171.11	7,168.03	25.68	30.13	-163.47	-1.99	148.01	514.86	459.75	55.12	9.341			
7,300.00	7,267.80	7,268.73	7,265.64	26.07	30.53	-163.73	-3.39	148.85	527.23	471.36	55.87	9.436			
7,400.00	7,366.85	7,362.26	7,359.07	26.45	30.78	-163.72	-5.28	152.06	540.28	483.80	56.48	9.566			
7,500.00	7,465.89	7,435.98	7,432.22	26.84	30.84	-163.10	-7.95	160.59	555.85	499.04	56.80	9.786			
7,600.00	7,564.94	7,494.76	7,489.88	27.23	30.85	-162.27	-8.98	171.81	576.97	520.15	56.82	10.155			
7,700.00	7,663.99	7,540.95	7,534.22	27.62	30.86	-161.41	-7.74	184.68	606.12	549.67	56.45	10.738			
7,800.00	7,763.24	7,592.40	7,582.15	28.00	30.87	-160.39	-4.50	203.03	641.31	585.36	55.95	11.462			
7,900.00	7,862.77	7,650.77	7,634.32	28.38	30.90	-158.88	-0.96	228.94	679.92	624.45	55.47	12.258			
8,000.00	7,962.52	7,705.00	7,680.74	28.75	30.95	-157.31	2.08	256.78	721.51	666.70	54.81	13.165			
8,100.00	8,062.43	7,758.50	7,724.64	29.10	31.01	-155.67	4.86	287.20	765.96	711.89	54.08	14.164			
8,200.00	8,162.41	7,801.00	7,758.05	29.45	31.09	-154.41	7.05	313.37	813.50	760.47	53.03	15.341			
8,300.00	8,262.41	7,833.00	7,781.93	29.78	31.16	-153.39	8.46	334.62	865.21	813.52	51.69	16.740			
8,400.00	8,362.41	7,864.00	7,803.65	30.11	31.24	-152.39	9.48	356.70	922.25	871.89	50.37	18.311			
8,500.00	8,462.41	7,896.00	7,824.39	30.44	31.35	-151.47	10.19	381.06	984.32	935.16	49.16	20.022			
8,600.00	8,562.38	7,927.00	7,843.15	30.78	31.47	-144.83	10.76	405.73	1,050.01	1,001.98	48.03	21.862			
8,700.00	8,661.04	7,959.00	7,861.56	31.10	31.62	-138.69	11.67	431.88	1,111.58	1,064.69	46.88	23.709			
8,800.00	8,755.51	7,990.00	7,878.52	31.39	31.79	-134.26	13.12	457.79	1,165.90	1,120.23	45.68	25.524			
8,900.00	8,842.92	8,021.00	7,894.17	31.65	31.97	-131.10	15.08	484.47	1,212.16	1,167.68	44.48	27.254			
9,000.00	8,920.61	8,021.00	7,894.17	31.85	31.97	-29.05	15.08	484.47	1,250.01	1,207.40	42.62	29.332			
9,100.00	8,986.23	8,086.21	7,922.92	32.02	32.52	-27.47	19.72	542.80	1,276.50	1,234.10	42.40	30.107			
9,200.00	9,037.77	8,125.86	7,938.00	32.24	32.86	-26.69	22.68	579.34	1,293.00	1,251.25	41.75	30.972			
9,300.00	9,073.67	8,170.00	7,952.60	32.90	33.23	-26.55	26.07	620.85	1,298.62	1,257.19	41.43	31.345			
9,400.00	9,092.85	8,213.61	7,964.98	33.80	33.71	-27.02	29.46	662.53	1,293.05	1,251.60	41.45	31.192			
9,500.00	9,096.76	8,265.00	7,977.64	34.88	34.34	-27.71	32.91	712.21	1,277.41	1,235.44	41.97	30.436			
9,600.00	9,098.37	8,315.21	7,987.59	36.15	35.03	-28.00	35.39	761.35	1,263.45	1,220.77	42.68	29.605			
9,700.00	9,099.98	8,359.00	7,993.88	37.59	35.66	-28.19	37.35	804.64	1,253.92	1,210.44	43.47	28.844			
9,800.00	9,101.58	8,408.31	7,998.44	39.19	36.45	-28.34	39.47	853.69	1,248.75	1,204.22	44.53	28.042			
9,900.00	9,103.19	8,471.04	8,001.79	40.93	37.50	-28.47	41.74	916.29	1,246.91	1,201.04	45.87	27.183			
9,918.20	9,103.48	8,485.00	8,002.21	41.27	37.74	-28.49	42.16	930.23	1,246.90	1,200.75	46.15	27.018			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:
Sec 27-T19S-R29E - Turquoise PWU 27-1H - Wellbore #1 - Wellbore #1													5.00 ft
Survey Program: 100-NSG-GYC_Drop, 7392-MWD+IGRF													Offset Well Error: 0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (ft)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
10,000.00	9,104.79	8,555.08	8,004.18	42.79	39.03	-28.61	45.03	1,000.22	1,247.40	1,199.83	47.57	26.225	
10,100.00	9,106.40	8,650.01	8,007.29	44.75	40.88	-28.86	50.83	1,094.92	1,248.61	1,199.00	49.61	25.171	
10,200.00	9,108.00	8,756.46	8,010.96	46.81	43.10	-29.15	57.60	1,201.09	1,249.81	1,197.85	51.96	24.052	
10,300.00	9,109.61	8,839.23	8,013.70	48.95	44.92	-29.38	62.97	1,283.65	1,251.25	1,197.11	54.15	23.108	
10,400.00	9,111.21	8,916.72	8,015.27	51.16	46.69	-29.60	68.88	1,360.90	1,254.38	1,197.99	56.39	22.246	
10,500.00	9,112.82	8,999.70	8,015.81	53.43	48.64	-29.85	76.12	1,443.56	1,259.25	1,200.43	58.82	21.410	
10,600.00	9,114.43	9,096.66	8,016.62	55.76	50.98	-30.22	86.39	1,539.96	1,264.94	1,203.29	61.65	20.517	
10,700.00	9,116.03	9,196.63	8,017.97	58.14	53.46	-30.62	97.45	1,639.31	1,270.51	1,205.80	64.70	19.636	
10,800.00	9,117.64	9,284.71	8,018.98	60.55	55.69	-30.99	107.60	1,726.80	1,276.55	1,208.90	67.66	18.868	
10,900.00	9,119.24	9,382.95	8,020.00	63.01	58.23	-31.45	120.60	1,824.16	1,283.64	1,212.65	70.99	18.082	
11,000.00	9,120.85	9,482.21	8,021.83	65.50	60.83	-31.94	133.77	1,922.53	1,290.15	1,215.66	74.49	17.321	
11,100.00	9,122.45	9,615.44	8,024.66	68.02	64.39	-32.58	151.23	2,054.58	1,296.65	1,217.80	78.85	16.444	
11,200.00	9,124.06	9,748.11	8,029.67	70.56	68.02	-33.06	162.95	2,186.62	1,299.18	1,216.08	83.10	15.634	
11,300.00	9,125.67	9,845.95	8,033.56	73.13	70.74	-33.39	170.79	2,284.06	1,301.28	1,214.60	86.68	15.012	
11,400.00	9,127.27	9,948.48	8,036.81	75.72	73.61	-33.64	177.29	2,386.33	1,303.18	1,212.88	90.30	14.432	
11,500.00	9,128.88	10,052.06	8,040.21	78.34	76.54	-33.91	183.91	2,489.65	1,305.04	1,211.03	94.01	13.882	
11,600.00	9,130.48	10,155.54	8,044.38	80.96	79.49	-34.20	190.84	2,592.81	1,306.47	1,208.63	97.84	13.353	
11,700.00	9,132.09	10,244.43	8,047.84	83.61	82.04	-34.45	196.92	2,681.42	1,308.14	1,206.71	101.43	12.897	
11,800.00	9,133.69	10,324.08	8,049.94	86.26	84.34	-34.66	202.67	2,760.84	1,311.09	1,206.26	104.83	12.507	
11,900.00	9,135.30	10,407.66	8,051.33	88.93	86.76	-34.91	209.98	2,844.09	1,315.69	1,207.29	108.40	12.137	
12,000.00	9,136.90	10,502.42	8,052.73	91.62	89.50	-35.21	218.89	2,938.42	1,320.90	1,208.58	112.32	11.761	
12,100.00	9,138.51	10,591.92	8,054.14	94.31	92.11	-35.52	228.33	3,027.41	1,326.72	1,210.49	116.23	11.415	
12,200.00	9,140.12	10,686.55	8,055.67	97.01	94.86	-35.90	239.71	3,121.34	1,333.42	1,212.98	120.44	11.071	
12,300.00	9,141.72	10,799.20	8,057.71	99.73	98.16	-36.32	252.21	3,233.27	1,339.47	1,214.32	125.15	10.703	
12,400.00	9,143.33	10,906.18	8,059.27	102.45	101.31	-36.66	262.58	3,339.73	1,345.04	1,215.42	129.62	10.377	
12,500.00	9,144.93	11,042.13	8,061.10	105.18	105.34	-36.95	272.23	3,475.32	1,349.25	1,214.68	134.57	10.026	
12,600.00	9,146.54	11,143.22	8,062.54	107.91	108.35	-37.08	276.86	3,576.29	1,351.82	1,213.28	138.55	9.757	
12,700.00	9,148.14	11,237.02	8,063.50	110.66	111.16	-37.19	280.88	3,670.01	1,354.54	1,212.19	142.35	9.516	
12,800.00	9,149.75	11,327.40	8,064.60	113.41	113.86	-37.33	285.84	3,760.23	1,357.84	1,211.64	146.21	9.287	
12,900.00	9,151.36	11,413.55	8,065.65	116.16	116.44	-37.50	291.79	3,846.18	1,362.02	1,211.92	150.10	9.074	
13,000.00	9,152.96	11,513.52	8,067.04	118.92	119.44	-37.75	299.77	3,945.82	1,366.74	1,212.27	154.47	8.848	
13,100.00	9,154.57	11,620.43	8,069.32	121.69	122.64	-38.04	308.80	4,052.32	1,371.17	1,212.01	159.16	8.615	
13,200.00	9,156.17	11,728.31	8,072.42	124.45	125.88	-38.36	318.10	4,159.75	1,375.18	1,211.18	164.00	8.385	
13,300.00	9,157.78	11,827.50	8,076.42	127.23	128.87	-38.69	326.95	4,258.47	1,378.51	1,209.75	168.75	8.169	
13,400.00	9,159.38	11,907.26	8,078.61	130.01	131.27	-38.94	334.29	4,337.85	1,383.03	1,210.12	172.92	7.998	
13,500.00	9,160.99	11,997.43	8,080.07	132.79	133.98	-39.20	342.85	4,427.61	1,388.65	1,211.31	177.34	7.830	
13,600.00	9,162.60	12,105.55	8,082.39	135.57	137.24	-39.55	353.95	4,535.13	1,394.43	1,211.95	182.47	7.642	
13,700.00	9,164.20	12,224.64	8,087.89	138.36	140.83	-40.05	367.32	4,653.33	1,398.94	1,210.60	188.34	7.428	
13,800.00	9,165.81	12,327.76	8,094.74	141.16	143.92	-40.57	380.09	4,755.43	1,402.77	1,208.75	194.02	7.230	
13,882.90	9,167.14	12,345.00	8,095.92	143.47	144.44	-40.65	382.25	4,772.49	1,407.49	1,211.37	196.12	7.177	

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design											Sec 27-T19S-R29E - Turquoise PWU 27-9H - Wellbore #1 - Design #1			Offset Site Error: 5.00 ft	
Survey Program: 0-MWD+HDGM											Offset Well Error: 0.50 ft				
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.00	0.00	3.00	3.00	0.50	0.50	0.15	30.00	0.08	30.00						
100.00	100.00	103.00	103.00	0.52	0.52	0.15	30.00	0.08	30.00	28.96	1.04	28.964			
200.00	200.00	203.00	203.00	0.70	0.70	0.15	30.00	0.08	30.00	28.60	1.40	21.355			
300.00	300.00	303.00	303.00	0.99	0.99	0.15	30.00	0.08	30.00	28.02	1.98	15.187			
400.00	400.00	403.00	403.00	1.31	1.31	0.15	30.00	0.08	30.00	27.38	2.62	11.455			
500.00	500.00	503.00	503.00	1.64	1.65	0.15	30.00	0.08	30.00	26.71	3.29	9.110			
600.00	600.00	603.00	603.00	1.99	1.99	0.15	30.00	0.08	30.00	26.02	3.98	7.534			
700.00	700.00	703.00	703.00	2.34	2.34	0.15	30.00	0.08	30.00	25.32	4.68	6.411			
800.00	800.00	803.00	803.00	2.69	2.69	0.15	30.00	0.08	30.00	24.62	5.38	5.574			
900.00	900.00	903.00	903.00	3.04	3.05	0.15	30.00	0.08	30.00	23.91	6.09	4.928 Alert			
1,000.00	1,000.00	1,003.00	1,003.00	3.40	3.40	0.15	30.00	0.08	30.00	23.20	6.80	4.414 Alert			
1,100.00	1,100.00	1,103.00	1,103.00	3.75	3.76	0.15	30.00	0.08	30.00	22.49	7.51	3.997 Alert			
1,200.00	1,200.00	1,203.00	1,203.00	4.11	4.11	0.15	30.00	0.08	30.00	21.78	8.22	3.651 Alert			
1,300.00	1,300.00	1,303.00	1,303.00	4.46	4.47	0.15	30.00	0.08	30.00	21.07	8.93	3.360 Alert			
1,400.00	1,400.00	1,403.00	1,403.00	4.82	4.82	0.15	30.00	0.08	30.00	20.36	9.64	3.111 Alert			
1,500.00	1,500.00	1,503.00	1,503.00	5.17	5.18	0.15	30.00	0.08	30.00	19.64	10.36	2.897 Alert			
1,600.00	1,600.00	1,603.00	1,603.00	5.53	5.54	0.15	30.00	0.08	30.00	18.93	11.07	2.710 Alert			
1,700.00	1,700.00	1,703.00	1,703.00	5.89	5.89	0.15	30.00	0.08	30.00	18.22	11.78	2.546 Alert			
1,800.00	1,800.00	1,803.00	1,803.00	6.25	6.25	0.15	30.00	0.08	30.00	17.50	12.50	2.400 Minor Risk			
1,900.00	1,900.00	1,903.00	1,903.00	6.60	6.61	0.15	30.00	0.08	30.00	16.79	13.21	2.271 Minor Risk			
2,000.00	2,000.00	2,003.00	2,003.00	6.96	6.97	0.15	30.00	0.08	30.00	16.07	13.93	2.154 Minor Risk			
2,100.00	2,100.00	2,103.00	2,103.00	7.32	7.32	0.15	30.00	0.08	30.00	15.36	14.64	2.049 Minor Risk			
2,200.00	2,200.00	2,203.00	2,203.00	7.68	7.68	0.15	30.00	0.08	30.00	14.64	15.36	1.953 Minor Risk			
2,300.00	2,300.00	2,303.00	2,303.00	8.03	8.04	0.15	30.00	0.08	30.00	13.93	16.07	1.866 Minor Risk			
2,400.00	2,400.00	2,403.00	2,403.00	8.39	8.40	0.15	30.00	0.08	30.00	13.21	16.79	1.787 Minor Risk			
2,500.00	2,500.00	2,503.00	2,503.00	8.75	8.76	0.15	30.00	0.08	30.00	12.50	17.50	1.714 Minor Risk, CC, ES			
2,600.00	2,600.00	2,602.47	2,602.47	9.11	9.11	-0.32	30.88	-0.17	30.89	12.67	18.22	1.695 Minor Risk, SF			
2,700.00	2,700.00	2,701.90	2,701.86	9.47	9.47	-1.56	33.42	-0.91	33.45	14.53	18.92	1.768 Minor Risk			
2,800.00	2,800.00	2,801.21	2,801.07	9.82	9.82	-3.23	37.60	-2.12	37.71	18.09	19.62	1.922 Minor Risk			
2,900.00	2,900.00	2,900.33	2,900.01	10.18	10.18	-5.01	43.43	-3.81	43.70	23.38	20.32	2.151 Minor Risk			
3,000.00	3,000.00	3,000.25	2,999.14	10.54	10.53	-6.64	50.61	-5.89	51.10	30.07	21.02	2.430 Minor Risk			
3,100.00	3,100.00	3,100.54	3,098.56	10.90	10.89	-7.87	57.94	-8.01	58.66	36.92	21.74	2.698 Alert			
3,200.00	3,200.00	3,200.83	3,197.97	11.26	11.25	-8.83	65.26	-10.14	66.24	43.78	22.46	2.950 Alert			
3,300.00	3,300.00	3,301.13	3,297.39	11.61	11.61	-9.58	72.59	-12.26	73.83	50.66	23.17	3.186 Alert			
3,400.00	3,400.00	3,401.42	3,396.80	11.97	11.97	-10.20	79.92	-14.38	81.44	57.55	23.89	3.409 Alert			
3,500.00	3,500.00	3,501.71	3,496.22	12.33	12.33	-10.71	87.24	-16.50	89.05	64.44	24.60	3.619 Alert			
3,600.00	3,599.99	3,602.09	3,595.55	12.67	12.70	157.48	94.56	-18.62	97.67	72.37	25.30	3.860 Alert			
3,700.00	3,699.94	3,702.66	3,694.69	12.99	13.06	157.72	101.87	-20.74	108.30	82.31	25.99	4.167 Alert			
3,800.00	3,799.79	3,803.47	3,793.59	13.32	13.43	158.30	109.16	-22.85	120.94	94.27	26.67	4.534 Alert			
3,900.00	3,899.49	3,904.57	3,892.20	13.64	13.79	159.08	116.43	-24.96	135.62	108.25	27.36	4.956 Alert			
4,000.00	3,999.01	4,006.01	3,990.47	13.97	14.16	159.97	123.67	-27.05	152.34	124.28	28.05	5.430			
4,100.00	4,098.29	4,092.17	4,088.36	14.30	14.48	160.92	130.88	-29.14	171.12	142.43	28.69	5.964			
4,200.00	4,197.35	4,190.01	4,185.92	14.63	14.83	161.87	138.07	-31.23	191.52	162.15	29.37	6.521			
4,300.00	4,296.40	4,287.84	4,283.46	14.97	15.19	162.68	145.26	-33.31	212.09	182.04	30.05	7.058			
4,400.00	4,395.44	4,385.66	4,380.99	15.31	15.54	163.34	152.45	-35.39	232.68	201.95	30.73	7.571			
4,500.00	4,494.49	4,483.49	4,478.53	15.66	15.90	163.89	159.64	-37.47	253.30	221.89	31.42	8.063			
4,600.00	4,593.54	4,581.31	4,576.07	16.00	16.26	164.36	166.82	-39.56	273.94	241.84	32.10	8.534			
4,700.00	4,692.59	4,679.13	4,673.60	16.35	16.62	164.77	174.01	-41.64	294.60	261.81	32.79	8.985			
4,800.00	4,791.63	4,776.96	4,771.14	16.71	16.97	165.12	181.20	-43.72	315.27	281.79	33.48	9.418			
4,900.00	4,890.68	4,874.78	4,868.68	17.06	17.33	165.43	188.39	-45.80	335.94	301.78	34.17	9.833			
5,000.00	4,989.73	4,972.61	4,966.22	17.42	17.69	165.70	195.58	-47.88	356.63	321.77	34.86	10.231			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well: Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM r5000.141 Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design: Sec 27-T19S-R29E - Turquoise PWU 27-9H - Wellbore #1 - Design #1														Offset Site Error:	5.00 ft
Survey Program: C-MWD+HDGM														Offset Well Error:	0.50 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toeface (ft)	Offset Wellbore Centre (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning			
5,100.00	5,088.77	5,070.43	5,063.75	17.78	18.05	165.94	202.77	-49.97	377.32	341.77	35.55	10.614			
5,200.00	5,187.82	5,168.25	5,161.29	18.14	18.41	166.16	209.95	-52.05	398.02	361.78	36.24	10.982			
5,300.00	5,288.87	5,268.08	5,258.83	18.51	18.77	166.36	217.14	-54.13	418.72	381.79	36.94	11.336			
5,400.00	5,385.91	5,363.90	5,356.36	18.87	19.13	166.53	224.33	-56.21	439.43	401.80	37.63	11.677			
5,500.00	5,484.96	5,461.72	5,453.80	19.24	19.48	166.69	231.52	-58.30	460.14	421.81	38.33	12.005			
5,600.00	5,584.01	5,559.55	5,551.44	19.61	19.84	166.84	238.71	-60.38	480.86	441.83	39.03	12.321			
5,700.00	5,683.05	5,657.37	5,649.98	19.98	20.20	166.98	245.89	-62.46	501.58	461.85	39.73	12.626			
5,800.00	5,782.10	5,755.20	5,746.51	20.35	20.56	167.10	253.08	-64.54	522.30	481.87	40.43	12.920			
5,900.00	5,881.15	5,853.02	5,844.05	20.73	20.92	167.22	260.27	-66.63	543.02	501.89	41.13	13.204			
6,000.00	5,980.19	5,950.84	5,941.59	21.10	21.28	167.32	267.46	-68.71	563.74	521.91	41.83	13.478			
6,100.00	6,079.24	6,048.87	6,038.12	21.48	21.64	167.42	274.65	-70.79	584.47	541.94	42.53	13.743			
6,200.00	6,178.29	6,146.49	6,136.66	21.85	22.00	167.52	281.84	-72.87	605.19	561.96	43.23	13.999			
6,300.00	6,277.33	6,244.31	6,234.20	22.23	22.36	167.60	289.02	-74.95	625.92	581.99	43.94	14.247			
6,400.00	6,376.38	6,342.14	6,331.74	22.61	22.72	167.68	296.21	-77.04	646.65	602.01	44.64	14.486			
6,500.00	6,475.43	6,439.96	6,429.27	22.99	23.08	167.76	303.40	-79.12	667.38	622.04	45.34	14.718			
6,600.00	6,574.47	6,537.79	6,526.81	23.37	23.44	167.83	310.59	-81.20	688.12	642.07	46.05	14.943			
6,700.00	6,673.52	6,635.61	6,624.35	23.76	23.80	167.90	317.78	-83.28	708.85	662.09	46.75	15.161			
6,800.00	6,772.57	6,733.43	6,721.88	24.14	24.16	167.96	324.96	-85.37	729.58	682.12	47.46	15.372			
6,900.00	6,871.61	6,831.26	6,819.42	24.52	24.52	168.02	332.15	-87.45	750.32	702.15	48.17	15.577			
7,000.00	6,970.66	6,929.08	6,916.96	24.91	24.88	168.08	339.34	-89.53	771.05	722.18	48.88	15.776			
7,100.00	7,069.71	7,026.91	7,014.50	25.29	25.25	168.13	346.53	-91.61	791.79	742.21	49.58	15.969			
7,200.00	7,168.75	7,124.73	7,112.03	25.68	25.61	168.18	353.72	-93.69	812.53	762.23	50.29	16.156			
7,300.00	7,267.80	7,222.55	7,209.57	26.07	25.97	168.23	360.91	-95.78	833.26	782.26	51.00	16.338			
7,400.00	7,366.85	7,320.38	7,307.11	26.45	26.33	168.27	368.09	-97.86	854.00	802.29	51.71	16.515			
7,500.00	7,465.89	7,418.20	7,404.64	26.84	26.69	168.32	375.28	-99.94	874.74	822.32	52.42	16.687			
7,600.00	7,564.94	7,516.02	7,502.18	27.23	27.05	168.36	382.47	-102.02	895.48	842.35	53.13	16.854			
7,700.00	7,663.99	7,613.85	7,599.72	27.62	27.41	168.41	389.66	-104.11	916.21	862.36	53.84	17.017			
7,800.00	7,763.24	7,711.98	7,697.57	28.00	27.77	168.48	396.87	-106.20	936.93	882.88	54.55	17.147			
7,900.00	7,862.77	7,810.57	7,795.87	28.38	28.14	168.52	404.11	-108.29	957.65	903.39	55.26	17.229			
8,000.00	7,962.52	7,911.74	7,896.74	28.75	28.51	168.52	411.54	-110.44	978.37	923.90	55.99	17.258			
8,100.00	8,062.43	8,043.40	8,028.18	29.10	28.99	168.49	418.74	-112.53	999.05	944.41	56.91	17.151			
8,200.00	8,162.41	8,175.90	8,160.64	29.45	29.48	168.48	421.59	-113.36	1019.74	964.92	57.78	16.960			
8,300.00	8,262.41	8,280.87	8,265.41	29.78	29.83	0.06	421.64	-113.37	1040.41	985.43	58.49	16.754			
8,400.00	8,362.41	8,380.87	8,365.41	30.11	30.18	0.06	421.64	-113.37	1061.07	1005.94	59.19	16.556			
8,500.00	8,462.41	8,480.87	8,465.41	30.44	30.54	0.06	421.64	-113.37	1081.74	1026.45	59.89	16.363			
8,600.00	8,562.38	8,580.14	8,564.83	30.78	30.88	-89.59	421.65	-111.62	1102.41	1046.96	60.58	16.178			
8,700.00	8,661.04	8,678.86	8,662.11	31.10	31.19	-89.54	421.74	-95.48	1123.08	1067.47	61.23	16.006			
8,800.00	8,755.51	8,777.46	8,755.06	31.39	31.48	-89.51	421.92	-82.95	1143.75	1087.98	61.88	15.844			
8,900.00	8,842.92	8,875.98	8,841.00	31.65	31.73	-89.49	422.18	-15.04	1164.42	1108.49	62.48	15.687			
9,000.00	8,920.61	8,974.46	8,917.44	31.85	31.84	-89.48	422.52	46.85	1185.09	1129.00	63.14	15.521			
9,100.00	8,996.23	9,072.94	8,982.18	32.02	32.32	-89.49	422.83	120.90	1205.76	1149.51	63.95	15.325			
9,200.00	9,037.77	9,171.47	9,033.32	32.24	32.86	-89.51	423.40	204.97	1226.42	1170.02	65.00	15.078			
9,300.00	9,073.67	9,270.09	9,069.34	32.90	33.55	-89.55	423.90	296.85	1247.08	1190.53	66.39	14.763			
9,400.00	9,092.85	9,368.84	9,089.15	33.80	34.42	-89.61	424.44	393.27	1267.74	1211.04	68.15	14.381			
9,469.67	9,088.04	9,437.76	9,093.05	34.55	35.13	-89.53	424.82	482.04	1288.40	1231.55	69.60	14.081			
9,500.00	9,096.76	9,468.16	9,093.36	34.88	35.48	-89.63	424.98	492.43	1309.06	1252.06	70.27	13.946			
9,600.00	9,098.37	9,568.16	9,094.37	36.15	36.72	-89.59	425.54	592.42	1329.72	1272.57	72.77	13.467			
9,700.00	9,099.98	9,668.15	9,095.39	37.59	38.13	-89.56	426.09	692.41	1350.38	1293.08	75.62	12.960			
9,800.00	9,101.58	9,768.15	9,096.40	39.19	39.69	-89.52	426.64	792.41	1371.04	1313.59	78.78	12.439			
9,900.00	9,103.19	9,868.15	9,097.41	40.93	41.40	-89.49	427.19	892.40	1391.70	1334.10	82.23	11.919			
10,000.00	9,104.79	9,968.15	9,098.42	42.79	43.23	-89.45	427.74	992.39	1412.36	1354.61	85.91	11.407			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 27-T19S-R29E - Turquoise PWU 27-9H - Wellbore #1 - Design #1													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,100.00	9,106.40	10,068.15	9,099.43	44.75	45.17	-89.42	428.30	1,092.38	980.04	890.23	89.82	10.912		
10,200.00	9,108.00	10,168.15	9,100.45	46.81	47.20	-89.38	428.85	1,192.37	980.05	886.14	93.91	10.436		
10,300.00	9,109.61	10,268.14	9,101.46	48.95	49.31	-89.35	429.40	1,292.36	980.06	881.90	98.16	9.984		
10,400.00	9,111.21	10,368.14	9,102.47	51.16	51.50	-89.31	429.95	1,392.36	980.06	877.50	102.56	9.556		
10,500.00	9,112.82	10,468.14	9,103.48	53.43	53.75	-89.28	430.50	1,492.35	980.07	872.99	107.09	9.152		
10,600.00	9,114.43	10,568.14	9,104.50	55.76	56.06	-89.24	431.05	1,592.34	980.08	868.36	111.72	8.772		
10,700.00	9,116.03	10,668.14	9,105.51	58.14	58.42	-89.21	431.61	1,692.33	980.09	863.63	116.46	8.416		
10,800.00	9,117.64	10,768.14	9,106.52	60.55	60.82	-89.17	432.16	1,792.32	980.10	858.82	121.28	8.081		
10,900.00	9,119.24	10,868.13	9,107.53	63.01	63.26	-89.14	432.71	1,892.31	980.11	853.93	126.18	7.768		
11,000.00	9,120.85	10,968.13	9,108.54	65.50	65.73	-89.11	433.26	1,992.31	980.12	848.98	131.14	7.474		
11,100.00	9,122.45	11,068.13	9,109.56	68.02	68.24	-89.07	433.81	2,092.30	980.13	843.96	136.17	7.198		
11,200.00	9,124.06	11,168.13	9,110.57	70.56	70.77	-89.04	434.37	2,192.29	980.14	838.89	141.25	6.939		
11,300.00	9,125.67	11,268.13	9,111.58	73.13	73.33	-89.00	434.92	2,292.28	980.15	833.77	146.37	6.696		
11,400.00	9,127.27	11,368.12	9,112.59	75.72	75.91	-88.97	435.47	2,392.27	980.16	828.61	151.54	6.468		
11,500.00	9,128.88	11,468.12	9,113.61	78.34	78.51	-88.93	436.02	2,492.26	980.17	823.42	156.75	6.253		
11,600.00	9,130.48	11,568.12	9,114.62	80.96	81.13	-88.90	436.57	2,592.25	980.18	818.18	162.00	6.051		
11,700.00	9,132.09	11,668.12	9,115.63	83.61	83.76	-88.86	437.13	2,692.25	980.19	812.92	167.28	5.860		
11,800.00	9,133.69	11,768.12	9,116.64	86.26	86.41	-88.83	437.68	2,792.24	980.20	807.62	172.58	5.680		
11,900.00	9,135.30	11,868.12	9,117.66	88.93	89.07	-88.79	438.23	2,892.23	980.22	802.30	177.91	5.510		
12,000.00	9,136.90	11,968.11	9,118.67	91.62	91.75	-88.76	438.78	2,992.22	980.23	796.96	183.27	5.349		
12,100.00	9,138.51	12,068.11	9,119.68	94.31	94.44	-88.72	439.33	3,092.21	980.24	791.60	188.65	5.196		
12,200.00	9,140.12	12,168.11	9,120.69	97.01	97.13	-88.69	439.89	3,192.20	980.26	786.21	194.05	5.052		
12,300.00	9,141.72	12,268.11	9,121.70	99.73	99.84	-88.65	440.44	3,292.20	980.27	780.81	199.46	4.915 Alert		
12,400.00	9,143.33	12,368.11	9,122.72	102.45	102.55	-88.62	440.99	3,392.19	980.29	775.39	204.90	4.784 Alert		
12,500.00	9,144.93	12,468.11	9,123.73	105.18	105.28	-88.59	441.54	3,492.18	980.30	769.96	210.35	4.660 Alert		
12,600.00	9,146.54	12,568.10	9,124.74	107.91	108.01	-88.55	442.09	3,592.17	980.32	764.51	215.81	4.543 Alert		
12,700.00	9,148.14	12,668.10	9,125.75	110.66	110.75	-88.52	442.64	3,692.16	980.33	759.05	221.29	4.430 Alert		
12,800.00	9,149.75	12,768.10	9,126.77	113.41	113.49	-88.48	443.20	3,792.15	980.35	753.57	226.78	4.323 Alert		
12,900.00	9,151.36	12,868.10	9,127.78	116.16	116.24	-88.45	443.75	3,892.15	980.36	748.09	232.28	4.221 Alert		
13,000.00	9,152.96	12,968.10	9,128.79	118.92	119.00	-88.41	444.30	3,992.14	980.38	742.59	237.79	4.123 Alert		
13,100.00	9,154.57	13,068.09	9,129.80	121.69	121.76	-88.38	444.85	4,092.13	980.40	737.09	243.31	4.029 Alert		
13,200.00	9,156.17	13,168.09	9,130.81	124.45	124.52	-88.34	445.40	4,192.12	980.41	731.58	248.84	3.940 Alert		
13,300.00	9,157.78	13,268.09	9,131.83	127.23	127.29	-88.31	445.96	4,292.11	980.43	726.05	254.38	3.854 Alert		
13,400.00	9,159.38	13,368.09	9,132.84	130.01	130.07	-88.27	446.51	4,392.10	980.45	720.53	259.93	3.772 Alert		
13,500.00	9,160.99	13,468.09	9,133.85	132.79	132.85	-88.24	447.06	4,492.09	980.47	714.99	265.48	3.693 Alert		
13,600.00	9,162.60	13,568.09	9,134.86	135.57	135.63	-88.20	447.61	4,592.09	980.49	709.45	271.04	3.617 Alert		
13,700.00	9,164.20	13,668.08	9,135.88	138.36	138.41	-88.17	448.16	4,692.08	980.51	703.90	276.61	3.545 Alert		
13,800.00	9,165.81	13,768.08	9,136.89	141.16	141.20	-88.13	448.72	4,792.07	980.53	698.34	282.18	3.475 Alert		
13,882.90	9,167.14	13,850.98	9,137.73	143.47	143.52	-88.11	449.17	4,874.96	980.54	693.73	286.81	3.419 Alert		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141 Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28-T19S-R29E - Coral PWU 28-4H - Wellbore #1 - Wellbore #1														Offset Site Error	5.00 ft
Survey Program: 200-NSG-GYC Drop 7387-MWD-HGRF														Offset Well Error	0.50 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (F)	Offset Wellbore Centre	Offset Wellbore Centre	Distance	Distance	Minimum Separation	Separation Factor	Warning	
				(ft)	(ft)	(ft)		N/S	E/W	Between Centres (ft)	Between Ellipses (ft)	(ft)			
6,900.00	6,871.61	11,443.83	7,950.39	25.03	78.00	88.97		-396.13	-1,044.75	1,478.24	1,402.04	74.20	19.894		
7,000.00	6,970.66	11,427.70	7,950.70	25.40	77.71	88.02		-412.25	-1,044.71	1,400.73	1,323.87	76.86	18.224		
7,100.00	7,069.71	11,411.58	7,951.00	25.78	77.43	87.06		-428.37	-1,044.67	1,328.28	1,248.55	79.73	16.660		
7,200.00	7,168.75	11,395.55	7,951.31	26.16	77.14	86.10		-444.40	-1,044.62	1,259.40	1,176.62	82.78	15.213		
7,300.00	7,267.80	11,379.34	7,951.62	26.54	76.86	85.13		-460.60	-1,044.54	1,194.73	1,108.73	86.00	13.892		
7,400.00	7,366.85	11,363.35	7,951.91	26.92	76.58	84.17		-476.59	-1,044.47	1,134.97	1,045.65	89.32	12.706		
7,500.00	7,465.89	11,347.57	7,952.19	27.30	76.30	83.21		-492.37	-1,044.41	1,080.86	988.29	92.67	11.665		
7,600.00	7,564.94	11,332.00	7,952.44	27.69	76.03	82.27		-507.93	-1,044.34	1,033.58	937.69	95.89	10.778		
7,700.00	7,663.99	11,316.85	7,952.67	28.07	75.76	81.28		-523.28	-1,044.27	993.81	894.97	98.84	10.054		
7,800.00	7,763.24	11,303.04	7,952.86	28.45	75.52	79.96		-536.90	-1,044.21	962.84	861.50	101.34	9.501		
7,900.00	7,862.77	11,292.17	7,953.01	28.82	75.32	78.98		-547.77	-1,044.16	941.82	838.82	103.20	9.126		
8,000.00	7,962.52	11,285.45	7,953.10	29.18	75.21	78.41		-554.48	-1,044.14	931.52	827.26	104.26	8.935		
8,042.36	8,004.82	11,283.18	7,953.14	29.33	75.17	78.26		-556.77	-1,044.13	930.51	826.09	104.43	8.911	CC, ES, SF	
8,100.00	8,062.43	11,280.60	7,953.18	29.53	75.12	78.13		-559.33	-1,044.13	932.38	828.00	104.38	8.933		
8,200.00	8,162.41	11,277.72	7,953.23	29.87	75.07	78.13		-562.21	-1,044.12	944.40	840.85	103.55	9.120		
8,300.00	8,262.41	11,276.19	7,953.25	30.20	75.04	-90.33		-563.74	-1,044.12	967.01	865.14	101.88	9.492		
8,400.00	8,362.41	11,274.62	7,953.28	30.52	75.02	-90.43		-565.31	-1,044.12	999.17	899.64	99.53	10.039		
8,500.00	8,462.41	11,272.97	7,953.31	30.85	74.99	-90.53		-568.96	-1,044.12	1,039.98	943.27	96.72	10.753		
8,600.00	8,562.38	11,271.24	7,953.34	31.18	74.96	179.67		-568.69	-1,044.12	1,089.61	995.94	93.67	11.632		
8,700.00	8,661.04	11,269.53	7,953.38	31.50	74.93	179.48		-570.39	-1,044.12	1,156.63	1,065.70	90.93	12.721		
8,800.00	8,755.51	11,267.94	7,953.41	31.79	74.90	179.17		-571.99	-1,044.12	1,238.82	1,150.00	88.82	13.948		
8,900.00	8,842.92	11,266.54	7,953.44	32.04	74.88	178.51		-573.39	-1,044.13	1,331.15	1,243.67	87.47	15.218		
9,000.00	8,920.61	11,265.41	7,953.46	32.24	74.86	175.62		-574.52	-1,044.13	1,429.12	1,342.26	86.87	16.452		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28-T19S-R29E - Turquoise PWU 27 10H - Original Hole - Actuals														Offset Site Error:	5.00 ft
Survey Program: 154-MWD+IGRF														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Tooface (")	Distance		Minimum Separation (ft)	Separation Factor	Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)							
5,000.00	4,989.73	4,996.58	4,995.71	18.12	18.15	6.93	-1,569.64	-502.71	1,486.48	1,450.34	36.14	41.129			
5,100.00	5,088.77	5,102.38	5,101.48	18.47	18.50	7.05	-1,566.93	-503.12	1,470.53	1,433.71	36.81	39.945			
5,200.00	5,187.82	5,207.37	5,206.43	18.82	18.84	7.15	-1,563.88	-502.87	1,454.05	1,416.57	37.48	38.794			
5,300.00	5,286.87	5,313.56	5,312.55	19.17	19.19	7.25	-1,560.47	-502.39	1,437.25	1,399.09	38.15	37.671			
5,400.00	5,385.91	5,422.12	5,421.03	19.52	19.55	7.38	-1,556.09	-502.09	1,419.71	1,380.89	38.83	36.563			
5,500.00	5,484.96	5,514.88	5,513.71	19.88	19.85	7.49	-1,552.06	-501.95	1,401.95	1,362.47	39.48	35.512			
5,600.00	5,584.01	5,609.14	5,607.88	20.24	20.17	7.64	-1,548.27	-502.49	1,384.72	1,344.58	40.13	34.502			
5,700.00	5,683.05	5,706.02	5,704.66	20.60	20.50	7.84	-1,544.14	-504.12	1,367.63	1,326.83	40.80	33.519			
5,800.00	5,782.10	5,825.54	5,823.95	20.96	20.91	8.18	-1,537.68	-507.90	1,350.02	1,308.50	41.52	32.517			
5,900.00	5,881.15	5,917.11	5,915.30	21.32	21.23	8.47	-1,532.10	-510.96	1,331.83	1,289.65	42.18	31.573			
6,000.00	5,980.19	6,018.78	6,016.70	21.68	21.58	8.80	-1,525.83	-514.59	1,313.69	1,270.82	42.87	30.645			
6,100.00	6,079.24	6,118.25	6,115.92	22.05	21.93	9.14	-1,519.59	-517.93	1,295.42	1,251.87	43.55	29.745			
6,200.00	6,178.29	6,219.64	6,217.03	22.42	22.28	9.49	-1,513.00	-521.48	1,277.05	1,232.81	44.24	28.867			
6,300.00	6,277.33	6,321.21	6,318.25	22.79	22.64	9.90	-1,505.71	-525.66	1,258.30	1,213.37	44.93	28.005			
6,400.00	6,376.38	6,415.18	6,411.90	23.16	22.97	10.30	-1,499.01	-529.85	1,239.79	1,194.17	45.61	27.180			
6,500.00	6,475.43	6,510.28	6,506.67	23.53	23.31	10.72	-1,492.35	-534.10	1,221.47	1,175.16	46.30	26.381			
6,600.00	6,574.47	6,597.62	6,593.75	23.90	23.62	11.10	-1,486.83	-537.94	1,203.81	1,156.83	46.98	25.625			
6,700.00	6,673.52	6,694.35	6,690.26	24.28	23.93	11.48	-1,482.26	-541.95	1,187.23	1,139.57	47.65	24.913			
6,800.00	6,772.57	6,779.08	6,774.75	24.65	24.27	11.92	-1,477.59	-546.69	1,171.19	1,122.84	48.35	24.224			
6,900.00	6,871.61	6,864.38	6,859.85	25.03	24.57	12.32	-1,473.97	-551.35	1,156.02	1,107.00	49.02	23.582			
7,000.00	6,970.66	6,960.07	6,955.31	25.40	24.92	12.80	-1,470.45	-556.94	1,141.60	1,091.88	49.72	22.960			
7,100.00	7,069.71	7,058.06	7,053.08	25.78	25.27	13.29	-1,467.00	-562.58	1,127.36	1,076.93	50.43	22.356			
7,200.00	7,168.75	7,152.27	7,147.07	26.16	25.61	13.77	-1,463.90	-568.22	1,113.50	1,062.38	51.13	21.780			
7,300.00	7,267.80	7,254.83	7,249.37	26.54	25.98	14.34	-1,460.19	-574.59	1,099.55	1,047.70	51.85	21.207			
7,400.00	7,366.85	7,343.02	7,337.38	26.92	26.30	14.80	-1,457.64	-579.62	1,086.11	1,033.57	52.53	20.675			
7,500.00	7,465.89	7,429.40	7,423.63	27.30	26.61	15.20	-1,456.47	-583.93	1,073.80	1,020.59	53.21	20.181			
7,600.00	7,564.94	7,530.78	7,524.92	27.69	26.97	15.62	-1,455.98	-588.28	1,062.01	1,008.09	53.93	19.694			
7,700.00	7,663.99	7,619.47	7,613.53	28.07	27.29	15.98	-1,455.95	-592.13	1,050.70	996.10	54.60	19.243			
7,800.00	7,763.24	7,714.11	7,708.06	28.45	27.62	16.33	-1,456.44	-596.62	1,041.62	986.32	55.30	18.837			
7,900.00	7,862.77	7,808.26	7,802.10	28.82	27.95	16.62	-1,457.56	-600.88	1,035.57	979.58	55.99	18.497			
8,000.00	7,962.52	7,890.29	7,884.03	29.18	28.24	16.81	-1,459.72	-604.26	1,033.14	976.53	56.61	18.249			
8,006.34	7,968.86	7,895.45	7,889.19	29.20	28.26	16.82	-1,459.91	-604.47	1,033.13	976.48	56.65	18.236			
8,100.00	8,062.43	7,995.09	7,988.69	29.53	28.60	16.94	-1,464.01	-607.70	1,034.12	976.80	57.32	18.040			
8,200.00	8,162.41	8,096.51	8,090.00	29.87	28.94	16.96	-1,468.37	-609.50	1,037.06	979.04	58.01	17.877			
8,300.00	8,262.41	8,199.11	8,192.49	30.20	29.28	-151.52	-1,473.03	-610.58	1,041.51	982.81	58.69	17.746			
8,400.00	8,362.41	8,395.00	8,387.72	30.52	29.90	-152.15	-1,479.20	-601.09	1,042.72	983.21	59.51	17.522			
8,500.00	8,462.41	8,608.43	8,593.08	30.85	30.50	-155.08	-1,485.43	-545.16	1,034.01	974.19	59.82	17.286			
8,600.00	8,562.38	8,777.38	8,741.24	31.18	30.99	111.71	-1,489.50	-464.78	1,015.99	955.86	60.13	16.897			
8,700.00	8,661.04	8,886.88	8,826.95	31.50	31.38	110.07	-1,494.51	-396.94	1,001.28	940.35	60.93	16.434			
8,800.00	8,755.51	9,078.02	8,953.86	31.79	32.36	105.89	-1,503.51	-255.02	989.81	928.00	61.81	16.014			
8,900.00	8,842.92	9,249.71	9,033.84	32.04	33.81	101.72	-1,506.78	-103.52	977.05	913.44	63.61	15.361			
9,000.00	8,920.61	9,360.14	9,068.71	32.24	35.07	99.34	-1,506.10	1.15	965.31	899.66	65.65	14.703			
9,100.00	8,986.23	9,455.74	9,087.64	32.40	36.38	97.25	-1,506.91	94.83	958.58	890.80	67.78	14.142			
9,200.00	9,037.77	9,597.31	9,099.79	32.62	38.64	94.09	-1,504.59	235.69	952.41	881.59	70.83	13.447			
9,300.00	9,073.67	9,698.98	9,100.25	33.28	40.46	92.46	-1,500.84	337.30	946.90	873.39	73.51	12.880			
9,400.00	9,092.85	9,783.98	9,101.14	34.17	42.11	91.89	-1,498.03	422.24	943.39	867.26	76.13	12.392			
9,500.00	9,096.76	9,896.89	9,104.01	35.24	44.44	91.93	-1,494.38	535.06	940.68	861.19	79.50	11.833			
9,600.00	9,098.37	9,975.97	9,105.71	36.49	46.17	91.96	-1,492.22	614.09	938.48	855.98	82.50	11.376			
9,700.00	9,099.98	10,066.11	9,107.65	37.92	48.22	91.99	-1,491.09	704.20	937.79	851.81	85.98	10.907			
9,734.34	9,100.53	10,098.64	9,108.33	38.47	48.98	92.01	-1,490.88	736.72	937.77	850.48	87.28	10.744 CC			
9,800.00	9,101.58	10,162.23	9,109.83	39.51	50.48	92.03	-1,490.58	800.29	937.84	848.01	89.82	10.441			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28-T19S-R29E - Turquoise PWU 27 10H - Original Hole - Actuals													Offset Site Error:	5.00 ft
Survey Program: 154-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)				Between Centres (ft)	Between Ellipses (ft)	
9,900.00	9,103.19	10,251.08	9,111.99	41.23	52.64	92.08	-1,490.75	889.12	938.61	844.90	10.016			
10,000.00	9,104.79	10,332.65	9,114.03	43.08	54.68	92.12	-1,492.16	970.64	940.94	843.35	9.642			
10,100.00	9,106.40	10,408.95	9,116.56	45.03	56.62	92.19	-1,495.14	1,046.85	945.48	844.04	9.321			
10,200.00	9,108.00	10,493.12	9,119.64	47.07	58.79	92.28	-1,500.61	1,130.77	952.54	846.93	9.019			
10,300.00	9,109.61	10,599.78	9,121.87	49.20	61.59	92.29	-1,507.66	1,237.17	959.71	849.15	8.680			
10,400.00	9,111.21	10,711.54	9,122.55	51.40	64.59	92.21	-1,514.08	1,348.75	965.97	850.17	8.342			
10,500.00	9,112.82	10,834.32	9,123.07	53.66	67.92	92.11	-1,518.94	1,471.42	970.46	849.02	7.991			
10,600.00	9,114.43	10,948.54	9,124.20	55.98	71.08	92.06	-1,521.16	1,585.62	972.93	846.02	7.666			
10,700.00	9,116.03	11,065.37	9,122.64	58.35	74.34	91.86	-1,521.50	1,702.43	973.65	841.12	7.347			
10,800.00	9,117.64	11,172.63	9,119.16	60.76	77.36	91.56	-1,520.65	1,809.63	973.26	835.30	7.055			
10,900.00	9,119.24	11,277.64	9,117.25	63.21	80.34	91.34	-1,519.09	1,914.61	972.24	828.86	6.781			
11,000.00	9,120.85	11,394.17	9,114.40	65.69	83.66	91.07	-1,516.36	2,031.07	970.40	821.27	6.507			
11,100.00	9,122.45	11,503.52	9,109.63	68.20	86.80	90.69	-1,512.03	2,140.23	966.89	812.16	6.249			
11,200.00	9,124.06	11,597.09	9,107.37	70.74	89.50	90.46	-1,508.22	2,233.68	963.32	803.29	6.020			
11,300.00	9,125.67	11,666.75	9,107.62	73.30	91.52	90.41	-1,506.65	2,303.33	961.62	796.86	5.836			
11,301.97	9,125.70	11,668.10	9,107.65	73.36	91.56	90.41	-1,506.64	2,304.68	961.62	796.77	5.833			
11,400.00	9,127.27	11,751.79	9,110.81	75.89	94.01	90.52	-1,507.11	2,388.30	962.68	792.82	5.668			
11,500.00	9,128.88	11,845.83	9,116.77	78.49	96.76	90.79	-1,508.20	2,482.14	964.45	789.24	5.505			
11,600.00	9,130.48	11,958.45	9,124.66	81.12	100.07	91.15	-1,509.55	2,594.47	966.33	785.22	5.336			
11,700.00	9,132.09	12,075.09	9,132.16	83.76	103.52	91.48	-1,508.68	2,710.87	966.24	779.13	5.164			
11,753.77	9,132.95	12,120.41	9,134.82	85.18	104.86	91.59	-1,508.21	2,756.11	966.03	776.13	5.087			
11,800.00	9,133.69	12,160.27	9,137.25	86.41	106.04	91.70	-1,508.07	2,795.89	966.19	773.88	5.024			
11,900.00	9,135.30	12,258.75	9,142.64	89.08	108.96	91.92	-1,508.18	2,894.22	966.97	769.09	4.887 Alert			
12,000.00	9,136.90	12,353.82	9,146.82	91.75	111.79	92.08	-1,508.60	2,989.20	968.06	764.69	4.760 Alert			
12,100.00	9,138.51	12,448.82	9,150.83	94.44	114.63	92.22	-1,509.50	3,084.11	969.66	760.78	4.642 Alert			
12,200.00	9,140.12	12,549.35	9,154.59	97.14	117.64	92.35	-1,510.74	3,184.57	971.53	756.96	4.528 Alert			
12,300.00	9,141.72	12,659.54	9,157.60	99.85	120.95	92.42	-1,511.48	3,294.71	972.79	752.23	4.411 Alert			
12,400.00	9,143.33	12,764.05	9,159.57	102.57	124.09	92.43	-1,511.29	3,399.20	973.17	746.77	4.298 Alert			
12,500.00	9,144.93	12,863.05	9,160.90	105.30	127.07	92.42	-1,511.19	3,498.19	973.61	741.50	4.195 Alert			
12,600.00	9,146.54	12,968.41	9,160.53	108.03	130.24	92.29	-1,510.86	3,603.55	973.77	735.75	4.091 Alert			
12,700.00	9,148.14	13,075.23	9,160.79	110.77	133.46	92.21	-1,509.79	3,710.37	973.26	729.30	3.989 Alert			
12,800.00	9,149.75	13,167.98	9,161.71	113.52	136.27	92.18	-1,508.64	3,803.10	972.56	723.02	3.897 Alert			
12,807.73	9,149.87	13,174.68	9,161.81	113.73	136.47	92.18	-1,508.60	3,809.80	972.56	722.60	3.891 Alert			
12,900.00	9,151.36	13,261.11	9,163.10	116.27	139.09	92.17	-1,508.49	3,896.22	972.94	717.81	3.813 Alert			
13,000.00	9,152.96	13,350.17	9,163.97	119.03	141.79	92.14	-1,508.90	3,985.27	973.95	713.35	3.737 Alert			
13,100.00	9,154.57	13,449.59	9,164.97	121.79	144.81	92.10	-1,510.49	4,084.68	976.08	709.70	3.664 Alert			
13,200.00	9,156.17	13,560.16	9,164.83	124.56	148.17	91.98	-1,511.27	4,195.24	977.27	704.74	3.586 Alert			
13,300.00	9,157.78	13,656.51	9,163.18	127.33	151.10	91.79	-1,511.59	4,291.58	978.04	699.78	3.515 Alert			
13,400.00	9,159.38	13,770.12	9,160.34	130.10	154.55	91.52	-1,511.72	4,405.15	978.61	694.11	3.440 Alert			
13,457.51	9,160.31	13,824.72	9,158.96	131.70	156.22	91.39	-1,511.40	4,459.73	978.54	690.75	3.400 Alert			
13,500.00	9,160.99	13,865.35	9,157.89	132.88	157.45	91.28	-1,511.26	4,500.35	978.58	688.35	3.372 Alert			
13,600.00	9,162.60	13,959.10	9,155.37	135.67	160.31	91.05	-1,511.32	4,594.06	979.10	683.19	3.309 Alert			
13,700.00	9,164.20	14,054.22	9,152.57	138.45	163.21	90.79	-1,511.92	4,689.14	980.21	678.59	3.250 Alert			
13,800.00	9,165.81	14,156.67	9,149.60	141.24	166.34	90.52	-1,512.64	4,791.55	981.42	673.86	3.191 Alert			
13,882.90	9,167.14	14,223.00	9,147.82	143.56	168.37	90.36	-1,513.04	4,857.85	982.49	670.61	3.150 Alert, ES, SF			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28-T19S-R29E - Turquoise PWU 27 10H - Original Hole - P3v1														Offset Site Error:	5.00 ft
Survey Program: 154-MWD+IGRF, 8178-														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
5,000.00	4,989.73	4,996.58	4,995.71	18.12	18.15	6.93	-1,569.64	-502.71	1,486.48	1,450.34	36.14	41.130			
5,100.00	5,088.77	5,102.38	5,101.48	18.47	18.50	7.05	-1,566.93	-503.12	1,470.53	1,433.71	36.81	39.946			
5,200.00	5,187.82	5,207.37	5,206.43	18.82	18.84	7.15	-1,563.88	-502.87	1,454.05	1,416.57	37.48	38.795			
5,300.00	5,286.87	5,313.56	5,312.55	19.17	19.19	7.25	-1,560.47	-502.39	1,437.25	1,399.09	38.15	37.673			
5,400.00	5,385.91	5,422.12	5,421.03	19.52	19.55	7.38	-1,556.09	-502.09	1,419.71	1,380.89	38.83	36.565			
5,500.00	5,484.96	5,514.88	5,513.71	19.88	19.85	7.49	-1,552.06	-501.95	1,401.95	1,362.47	39.48	35.514			
5,600.00	5,584.01	5,609.14	5,607.88	20.24	20.17	7.64	-1,548.27	-502.49	1,384.72	1,344.58	40.13	34.503			
5,700.00	5,683.05	5,706.02	5,704.66	20.60	20.50	7.84	-1,544.14	-504.12	1,367.63	1,326.83	40.80	33.520			
5,800.00	5,782.10	5,825.54	5,823.95	20.96	20.91	8.18	-1,537.68	-507.90	1,350.02	1,308.51	41.51	32.519			
5,900.00	5,881.15	5,917.11	5,915.30	21.32	21.23	8.47	-1,532.10	-510.96	1,331.83	1,289.65	42.18	31.575			
6,000.00	5,980.19	6,018.78	6,016.70	21.68	21.58	8.80	-1,525.83	-514.59	1,313.69	1,270.82	42.87	30.647			
6,100.00	6,079.24	6,118.25	6,115.92	22.05	21.93	9.14	-1,519.59	-517.93	1,295.42	1,251.87	43.55	29.746			
6,200.00	6,178.29	6,219.64	6,217.03	22.42	22.28	9.49	-1,513.00	-521.48	1,277.05	1,232.81	44.24	28.869			
6,300.00	6,277.33	6,321.21	6,318.25	22.79	22.64	9.90	-1,505.71	-525.66	1,258.30	1,213.37	44.93	28.007			
6,400.00	6,376.38	6,415.18	6,411.90	23.16	22.97	10.30	-1,499.01	-529.85	1,239.79	1,194.18	45.61	27.182			
6,500.00	6,475.43	6,510.28	6,506.67	23.53	23.31	10.72	-1,492.35	-534.10	1,221.47	1,175.17	46.30	26.382			
6,600.00	6,574.47	6,597.62	6,593.75	23.90	23.62	11.10	-1,486.83	-537.94	1,203.81	1,156.83	46.98	25.625			
6,700.00	6,673.52	6,684.35	6,680.26	24.28	23.93	11.48	-1,482.26	-541.95	1,187.23	1,139.57	47.65	24.913			
6,800.00	6,772.57	6,779.08	6,774.75	24.65	24.27	11.92	-1,477.59	-546.69	1,171.19	1,122.84	48.35	24.225			
6,900.00	6,871.61	6,864.38	6,859.85	25.03	24.57	12.32	-1,473.97	-551.35	1,156.02	1,107.00	49.02	23.582			
7,000.00	6,970.66	6,960.07	6,955.31	25.40	24.92	12.80	-1,470.45	-556.94	1,141.60	1,091.88	49.72	22.960			
7,100.00	7,069.71	7,058.06	7,053.08	25.78	25.27	13.29	-1,467.00	-562.58	1,127.36	1,076.93	50.43	22.356			
7,200.00	7,168.75	7,152.27	7,147.07	26.16	25.61	13.77	-1,463.90	-568.22	1,113.50	1,062.38	51.13	21.780			
7,300.00	7,267.80	7,254.83	7,249.37	26.54	25.98	14.34	-1,460.19	-574.59	1,099.55	1,047.70	51.85	21.207			
7,400.00	7,366.85	7,343.02	7,337.38	26.92	26.30	14.80	-1,457.64	-579.62	1,086.11	1,033.57	52.53	20.675			
7,500.00	7,465.89	7,429.40	7,423.63	27.30	26.61	15.20	-1,456.47	-583.93	1,073.80	1,020.59	53.21	20.182			
7,600.00	7,564.94	7,530.78	7,524.92	27.69	26.97	15.62	-1,455.98	-588.28	1,062.01	1,008.09	53.92	19.694			
7,700.00	7,663.99	7,619.47	7,613.53	28.07	27.29	15.98	-1,455.95	-592.13	1,050.70	996.10	54.60	19.243			
7,800.00	7,763.24	7,714.11	7,708.06	28.45	27.62	16.33	-1,456.44	-596.62	1,041.62	986.32	55.30	18.837			
7,900.00	7,862.77	7,808.26	7,802.10	28.82	27.95	16.62	-1,457.56	-600.88	1,035.57	979.58	55.98	18.498			
8,000.00	7,962.52	7,890.29	7,884.03	29.18	28.24	16.81	-1,459.72	-604.26	1,033.14	976.53	56.61	18.251			
8,006.34	7,968.86	7,895.45	7,889.19	29.20	28.26	16.82	-1,459.91	-604.47	1,033.13	976.49	56.64	18.239			
8,100.00	8,062.43	7,995.09	7,988.69	29.53	28.60	16.94	-1,464.01	-607.70	1,034.12	976.80	57.32	18.042			
8,200.00	8,162.41	8,096.51	8,090.00	29.87	28.94	16.96	-1,468.37	-609.50	1,037.06	979.05	58.01	17.879			
8,300.00	8,262.41	8,202.40	8,190.98	30.20	29.29	-151.52	-1,472.97	-610.57	1,041.52	982.82	58.70	17.744			
8,400.00	8,362.41	8,312.61	8,305.87	30.52	29.66	-151.63	-1,478.24	-611.25	1,045.92	986.51	59.40	17.607			
8,500.00	8,462.41	8,578.77	8,566.24	30.85	30.43	-154.25	-1,488.70	-563.15	1,040.88	980.96	59.92	17.372			
8,600.00	8,562.38	8,797.53	8,759.75	31.18	31.05	111.56	-1,494.55	-462.71	1,023.77	963.88	59.88	17.096			
8,700.00	8,661.04	8,977.26	8,894.36	31.50	31.77	108.11	-1,497.16	-344.18	1,004.50	944.18	60.32	16.652			
8,800.00	8,755.51	9,131.47	8,986.95	31.79	32.71	104.99	-1,497.71	-221.14	986.38	924.88	61.51	16.037			
8,900.00	8,842.92	9,267.90	9,048.40	32.04	33.91	102.12	-1,496.89	-99.52	970.45	907.11	63.34	15.321			
9,000.00	8,920.61	9,380.66	9,082.82	32.24	35.22	99.74	-1,495.76	7.74	957.53	892.00	65.52	14.613			
9,100.00	8,986.23	9,481.98	9,099.13	32.40	36.63	97.44	-1,495.48	107.65	948.59	880.73	67.86	13.979			
9,200.00	9,037.77	9,575.27	9,102.49	32.62	38.10	95.20	-1,495.84	200.85	943.53	873.29	70.25	13.432			
9,300.00	9,073.67	9,668.88	9,103.60	33.28	39.73	93.39	-1,496.32	294.45	941.85	869.07	72.78	12.941			
9,334.10	9,082.13	9,702.00	9,103.99	33.58	40.33	92.92	-1,496.48	327.57	941.76	868.05	73.71	12.776 CC			
9,400.00	9,092.85	9,767.11	9,104.76	34.17	41.59	92.30	-1,496.81	392.67	942.01	866.41	75.60	12.461			
9,500.00	9,096.76	9,867.03	9,105.95	35.24	43.61	92.09	-1,497.32	492.58	942.96	864.27	78.70	11.982			
9,600.00	9,098.37	9,967.02	9,107.14	36.49	45.76	92.06	-1,497.83	592.56	944.01	861.91	82.10	11.499			
9,700.00	9,099.98	10,067.01	9,108.32	37.92	48.02	92.03	-1,498.34	692.55	945.05	859.27	85.78	11.017			
9,800.00	9,101.58	10,167.01	9,109.51	39.51	50.36	92.00	-1,498.85	792.53	946.10	856.38	89.72	10.545			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well: Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28-T19S-R29E - Turquoise PWU 27-10H - Original Hole - P3v1														Offset Site Error:	5.00 ft
Survey Program: 154-MWD-HGRE 8176														Offset Well Error:	0.00 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre (ft)	+N/S	+E/W	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
9,900.00	9,103.19	10,267.00	9,110.70	41.23	52.79	91.98	-1,499.36	892.52	947.14	853.27	93.87	10.090			
10,000.00	9,104.79	10,366.99	9,111.88	43.08	55.29	91.95	-1,499.86	992.50	948.19	849.97	98.21	9.654			
10,100.00	9,106.40	10,466.99	9,113.07	45.03	57.85	91.92	-1,500.37	1,092.49	949.23	846.51	102.72	9.241			
10,200.00	9,108.00	10,566.98	9,114.26	47.07	60.46	91.89	-1,500.88	1,192.48	950.28	842.89	107.38	8.850			
10,300.00	9,109.61	10,666.97	9,115.44	49.20	63.11	91.87	-1,501.39	1,292.46	951.32	839.15	112.17	8.481			
10,400.00	9,111.21	10,766.97	9,116.63	51.40	65.81	91.84	-1,501.90	1,392.45	952.37	835.30	117.07	8.135			
10,500.00	9,112.82	10,866.96	9,117.82	53.68	68.54	91.81	-1,502.41	1,492.43	953.41	831.35	122.06	7.811			
10,600.00	9,114.43	10,966.95	9,119.00	55.98	71.30	91.79	-1,502.91	1,592.42	954.46	827.31	127.15	7.507			
10,700.00	9,116.03	11,066.95	9,120.19	58.35	74.09	91.76	-1,503.42	1,692.40	955.51	823.20	132.31	7.222			
10,800.00	9,117.64	11,166.94	9,121.38	60.78	76.91	91.73	-1,503.93	1,792.39	956.55	819.01	137.54	6.955			
10,900.00	9,119.24	11,266.94	9,122.56	63.21	79.75	91.70	-1,504.44	1,892.37	957.60	814.77	142.83	6.705			
11,000.00	9,120.85	11,366.93	9,123.75	65.69	82.61	91.68	-1,504.95	1,992.36	958.65	810.47	148.17	6.470			
11,100.00	9,122.45	11,466.92	9,124.94	68.20	85.49	91.65	-1,505.46	2,092.34	959.69	806.13	153.57	6.249			
11,200.00	9,124.06	11,566.92	9,126.12	70.74	88.38	91.62	-1,505.96	2,192.33	960.74	801.74	159.00	6.042			
11,300.00	9,125.67	11,666.91	9,127.31	73.30	91.29	91.60	-1,506.47	2,292.31	961.79	797.32	164.47	5.848			
11,400.00	9,127.27	11,766.90	9,128.50	75.89	94.21	91.57	-1,506.98	2,392.30	962.84	792.85	169.98	5.664			
11,500.00	9,128.88	11,866.90	9,129.68	78.49	97.14	91.54	-1,507.49	2,492.28	963.89	788.36	175.52	5.491			
11,600.00	9,130.48	11,966.89	9,130.87	81.12	100.09	91.52	-1,508.00	2,592.27	964.93	783.84	181.09	5.328			
11,700.00	9,132.09	12,066.88	9,132.06	83.76	103.04	91.49	-1,508.51	2,692.25	965.98	779.29	186.69	5.174			
11,800.00	9,133.69	12,166.88	9,133.24	86.41	106.01	91.46	-1,509.01	2,792.24	967.03	774.72	192.31	5.028			
11,900.00	9,135.30	12,266.87	9,134.43	89.08	108.98	91.44	-1,509.52	2,892.22	968.08	770.13	197.95	4.890 Alert			
12,000.00	9,136.90	12,366.84	9,136.00	91.75	112.03	91.43	-1,509.90	2,994.58	969.00	765.32	203.68	4.757 Alert			
12,100.00	9,138.51	12,469.24	9,137.85	94.44	115.02	91.45	-1,510.15	3,094.56	969.81	760.45	209.36	4.632 Alert			
12,200.00	9,140.12	12,569.23	9,139.70	97.14	118.01	91.46	-1,510.40	3,194.54	970.61	755.56	215.05	4.513 Alert			
12,300.00	9,141.72	12,669.23	9,141.55	99.85	121.02	91.47	-1,510.64	3,294.52	971.41	750.66	220.76	4.400 Alert			
12,400.00	9,143.33	12,769.23	9,143.40	102.57	124.02	91.49	-1,510.89	3,394.50	972.22	745.74	226.48	4.293 Alert			
12,500.00	9,144.93	12,869.22	9,145.25	105.30	127.03	91.50	-1,511.14	3,494.48	973.02	740.81	232.21	4.190 Alert			
12,600.00	9,146.54	12,969.22	9,147.10	108.03	130.05	91.51	-1,511.38	3,594.46	973.83	735.86	237.98	4.092 Alert			
12,700.00	9,148.14	13,069.22	9,148.95	110.77	133.07	91.52	-1,511.63	3,694.43	974.63	730.91	243.72	3.999 Alert			
12,800.00	9,149.75	13,169.21	9,150.80	113.52	136.10	91.54	-1,511.88	3,794.41	975.43	725.94	249.49	3.910 Alert			
12,900.00	9,151.36	13,269.21	9,152.65	116.27	139.13	91.55	-1,512.12	3,894.39	976.24	720.97	255.27	3.824 Alert			
13,000.00	9,152.96	13,369.21	9,154.50	119.03	142.16	91.56	-1,512.37	3,994.37	977.04	715.99	261.06	3.743 Alert			
13,100.00	9,154.57	13,469.20	9,156.35	121.79	145.20	91.58	-1,512.62	4,094.35	977.85	710.99	266.85	3.664 Alert			
13,200.00	9,156.17	13,569.20	9,158.20	124.56	148.24	91.59	-1,512.86	4,194.33	978.65	705.99	272.68	3.589 Alert			
13,300.00	9,157.78	13,669.20	9,160.05	127.33	151.28	91.60	-1,513.11	4,294.31	979.46	700.99	278.47	3.517 Alert			
13,400.00	9,159.38	13,769.19	9,161.90	130.10	154.33	91.62	-1,513.35	4,394.29	980.26	695.97	284.29	3.448 Alert			
13,500.00	9,160.99	13,869.19	9,163.75	132.88	157.37	91.63	-1,513.60	4,494.27	981.07	690.95	290.11	3.382 Alert			
13,600.00	9,162.60	13,969.19	9,165.60	135.67	160.43	91.64	-1,513.85	4,594.25	981.87	685.92	295.95	3.318 Alert			
13,700.00	9,164.20	14,069.18	9,167.45	138.45	163.48	91.65	-1,514.09	4,694.23	982.67	680.89	301.78	3.256 Alert			
13,800.00	9,165.81	14,169.18	9,169.29	141.24	166.54	91.67	-1,514.34	4,794.20	983.48	675.85	307.63	3.197 Alert			
13,892.90	9,167.14	14,198.12	9,169.83	143.56	167.42	91.67	-1,514.41	4,823.14	985.62	675.19	310.44	3.175 Alert, ES, SF			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28-T19S-R29E - Turquoise PWU 27 10H - Original Hole - Plan 1												Offset Site Error:	5.00 ft
Survey Program: 0-MWD(OWSG)												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
4,900.00	4,890.68	4,865.68	4,865.68	17.78	17.93	4.53	-1,580.36	-443.11	1,492.43	1,456.81	35.62	41.900	
5,000.00	4,989.73	4,964.73	4,964.73	18.12	18.27	4.57	-1,580.36	-443.11	1,478.70	1,442.41	36.29	40.751	
5,100.00	5,088.77	5,063.77	5,063.77	18.47	18.61	4.61	-1,580.36	-443.11	1,464.96	1,428.01	36.96	39.641	
5,200.00	5,187.82	5,162.82	5,162.82	18.82	18.95	4.66	-1,580.36	-443.11	1,451.23	1,413.61	37.63	38.568	
5,300.00	5,286.87	5,261.87	5,261.87	19.17	19.30	4.70	-1,580.36	-443.11	1,437.50	1,399.20	38.30	37.531	
5,400.00	5,385.91	5,360.91	5,360.91	19.52	19.64	4.75	-1,580.36	-443.11	1,423.78	1,384.80	38.98	36.529	
5,500.00	5,484.96	5,459.96	5,459.96	19.88	19.98	4.79	-1,580.36	-443.11	1,410.05	1,370.39	39.65	35.558	
5,600.00	5,584.01	5,559.01	5,559.01	20.24	20.33	4.84	-1,580.36	-443.11	1,396.32	1,355.99	40.33	34.619	
5,700.00	5,683.05	5,658.05	5,658.05	20.60	20.67	4.89	-1,580.36	-443.11	1,382.59	1,341.58	41.01	33.710	
5,800.00	5,782.10	5,757.10	5,757.10	20.96	21.02	4.94	-1,580.36	-443.11	1,368.87	1,327.17	41.70	32.830	
5,900.00	5,881.15	5,856.15	5,856.15	21.32	21.36	4.99	-1,580.36	-443.11	1,355.15	1,312.77	42.38	31.976	
6,000.00	5,980.19	5,955.19	5,955.19	21.68	21.71	5.04	-1,580.36	-443.11	1,341.42	1,298.36	43.06	31.149	
6,100.00	6,079.24	6,054.24	6,054.24	22.05	22.05	5.09	-1,580.36	-443.11	1,327.70	1,283.95	43.75	30.347	
6,200.00	6,178.29	6,153.29	6,153.29	22.42	22.40	5.14	-1,580.36	-443.11	1,313.98	1,269.54	44.44	29.569	
6,300.00	6,277.33	6,252.33	6,252.33	22.79	22.75	5.20	-1,580.36	-443.11	1,300.26	1,255.13	45.13	28.813	
6,400.00	6,376.38	6,351.38	6,351.38	23.16	23.09	5.25	-1,580.36	-443.11	1,286.54	1,240.73	45.82	28.080	
6,500.00	6,475.43	6,450.43	6,450.43	23.53	23.44	5.31	-1,580.36	-443.11	1,272.82	1,226.32	46.51	27.368	
6,600.00	6,574.47	6,549.47	6,549.47	23.90	23.79	5.37	-1,580.36	-443.11	1,259.11	1,211.91	47.20	26.676	
6,700.00	6,673.52	6,648.52	6,648.52	24.28	24.13	5.43	-1,580.36	-443.11	1,245.39	1,197.50	47.89	26.004	
6,800.00	6,772.57	6,747.57	6,747.57	24.65	24.48	5.49	-1,580.36	-443.11	1,231.68	1,183.09	48.59	25.350	
6,900.00	6,871.61	6,846.61	6,846.61	25.03	24.83	5.55	-1,580.36	-443.11	1,217.97	1,168.69	49.28	24.715	
7,000.00	6,970.66	6,945.66	6,945.66	25.40	25.18	5.61	-1,580.36	-443.11	1,204.26	1,154.28	49.98	24.096	
7,100.00	7,069.71	7,044.71	7,044.71	25.78	25.52	5.68	-1,580.36	-443.11	1,190.55	1,139.87	50.67	23.494	
7,200.00	7,168.75	7,143.75	7,143.75	26.16	25.87	5.74	-1,580.36	-443.11	1,176.84	1,125.47	51.37	22.909	
7,300.00	7,267.80	7,242.80	7,242.80	26.54	26.22	5.81	-1,580.36	-443.11	1,163.13	1,111.07	52.07	22.338	
7,400.00	7,366.85	7,341.85	7,341.85	26.92	26.57	5.88	-1,580.36	-443.11	1,149.43	1,096.66	52.77	21.783	
7,500.00	7,465.89	7,440.89	7,440.89	27.30	26.92	5.95	-1,580.36	-443.11	1,135.73	1,082.26	53.47	21.241	
7,600.00	7,564.94	7,539.94	7,539.94	27.69	27.27	6.03	-1,580.36	-443.11	1,122.03	1,067.86	54.17	20.714	
7,700.00	7,663.99	7,638.99	7,638.99	28.07	27.62	6.10	-1,580.36	-443.11	1,108.34	1,053.47	54.87	20.200	
7,800.00	7,763.24	7,738.24	7,738.24	28.45	27.97	6.15	-1,580.36	-443.11	1,094.64	1,040.03	55.57	19.726	
7,900.00	7,862.77	7,837.77	7,837.77	28.82	28.32	6.19	-1,580.36	-443.11	1,080.95	1,030.37	56.27	19.311	
8,000.00	7,962.52	7,937.52	7,937.52	29.18	28.67	6.21	-1,580.36	-443.11	1,070.69	1,022.71	56.97	18.951	
8,100.00	8,062.43	8,037.43	8,037.43	29.53	29.02	6.23	-1,580.36	-443.11	1,070.33	1,017.66	57.67	18.646	
8,200.00	8,162.41	8,137.41	8,137.41	29.87	29.37	6.24	-1,580.36	-443.11	1,070.57	1,015.20	58.37	18.393	
8,290.85	8,253.26	8,228.26	8,228.26	30.17	29.70	6.24	-1,580.36	-443.11	1,073.34	1,014.35	59.00	18.194	
8,300.00	8,262.41	8,237.41	8,237.41	30.20	29.73	-162.17	-1,580.36	-443.11	1,073.53	1,014.47	59.06	18.177	
8,400.00	8,362.41	8,337.41	8,337.41	30.52	30.08	-162.17	-1,580.36	-443.11	1,073.53	1,013.78	59.75	17.967	
8,500.00	8,462.41	8,437.41	8,437.41	30.85	30.44	-162.17	-1,580.36	-443.11	1,073.53	1,013.09	60.44	17.762	
8,600.00	8,562.38	9,138.81	9,026.93	31.18	33.17	94.74	-1,503.46	-152.86	1,065.11	1,008.16	56.94	18.704	
8,700.00	8,661.04	9,198.15	9,052.93	31.50	33.57	96.62	-1,491.99	-100.79	1,022.56	963.54	59.03	17.324	
8,800.00	8,755.51	9,256.89	9,073.72	31.79	34.04	97.81	-1,482.93	-46.63	986.64	925.49	61.15	16.135	
8,900.00	8,842.92	9,315.31	9,089.30	32.04	34.56	98.30	-1,476.28	9.25	958.06	894.87	63.20	15.160	
9,000.00	8,920.61	9,373.51	9,099.61	32.24	35.15	98.11	-1,472.06	66.35	937.28	872.18	65.09	14.399	
9,100.00	8,996.23	9,431.46	9,104.59	32.40	35.80	97.31	-1,470.29	124.04	924.41	857.58	66.84	13.831	
9,200.00	9,073.77	9,509.43	9,105.71	32.62	36.76	95.49	-1,470.48	201.99	918.61	849.85	68.76	13.359	
9,300.00	9,073.67	9,603.01	9,106.72	33.28	38.05	93.65	-1,470.86	295.56	916.62	845.64	70.98	12.914	
9,349.29	9,085.26	9,651.02	9,107.24	33.72	38.80	92.99	-1,471.05	343.58	916.45	844.23	72.22	12.690 CC	
9,400.00	9,092.85	9,701.22	9,107.78	34.17	39.58	92.54	-1,471.26	393.77	916.59	843.11	73.48	12.473	
9,500.00	9,096.76	9,801.13	9,108.87	35.24	41.29	92.33	-1,471.66	493.67	917.43	841.15	76.27	12.029	
9,600.00	9,098.37	9,901.12	9,109.95	36.49	43.13	92.29	-1,472.06	593.66	918.36	838.99	79.37	11.570	
9,700.00	9,099.98	10,001.12	9,111.03	37.92	45.10	92.26	-1,472.47	693.65	919.29	836.52	82.77	11.106	

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well: Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM r5000.141 Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28-T19S-R29E - Turquoise PWU 27-10H - Original Hole - Plan 1														Offset Site Error:	8.00 ft
Survey Program: 0-MWD(OVWSG)														Offset Well Error:	0.00 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre -N/+S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
9,800.00	9,101.58	10,101.11	9,112.11	39.51	47.17	92.22	-1,472.87	793.84	920.23	833.79	88.43	10.847			
9,900.00	9,103.19	10,201.11	9,113.19	41.23	49.33	92.19	-1,473.27	893.82	921.16	830.84	90.32	10.198			
10,000.00	9,104.79	10,301.10	9,114.28	43.08	51.57	92.15	-1,473.68	993.81	922.10	827.68	94.42	9.766			
10,100.00	9,106.40	10,401.09	9,115.38	45.03	53.89	92.12	-1,474.08	1,093.80	923.03	824.34	98.69	9.353			
10,200.00	9,108.00	10,501.09	9,116.44	47.07	56.26	92.08	-1,474.48	1,193.59	923.97	820.85	103.11	8.981			
10,300.00	9,109.61	10,601.08	9,117.52	49.20	58.69	92.05	-1,474.89	1,293.57	924.90	817.23	107.87	8.590			
10,400.00	9,111.21	10,701.08	9,118.60	51.40	61.16	92.01	-1,475.29	1,393.56	925.84	813.48	112.36	8.240			
10,500.00	9,112.82	10,801.07	9,119.69	53.68	63.68	91.98	-1,475.69	1,493.55	926.77	809.63	117.14	7.912			
10,600.00	9,114.43	10,901.07	9,120.77	55.98	66.24	91.95	-1,476.10	1,593.54	927.71	805.69	122.02	7.603			
10,700.00	9,116.03	11,001.06	9,121.85	58.35	68.82	91.91	-1,476.50	1,693.52	928.65	801.67	126.98	7.313			
10,800.00	9,117.64	11,101.05	9,122.93	60.76	71.44	91.88	-1,476.91	1,793.51	929.58	797.57	132.01	7.042			
10,900.00	9,119.24	11,201.05	9,124.01	63.21	74.08	91.84	-1,477.31	1,893.50	930.52	793.42	137.11	6.787			
11,000.00	9,120.85	11,301.04	9,125.10	65.69	76.75	91.81	-1,477.71	1,993.48	931.46	789.20	142.26	6.548			
11,100.00	9,122.45	11,401.04	9,126.18	68.20	79.44	91.77	-1,478.12	2,093.47	932.40	784.93	147.47	6.323			
11,200.00	9,124.06	11,501.03	9,127.26	70.74	82.15	91.74	-1,478.52	2,193.46	933.34	780.62	152.72	6.112			
11,300.00	9,125.67	11,601.02	9,128.34	73.30	84.87	91.71	-1,478.92	2,293.45	934.28	776.27	158.01	5.913			
11,400.00	9,127.27	11,701.02	9,129.42	75.89	87.61	91.67	-1,479.33	2,393.43	935.22	771.88	163.34	5.726			
11,500.00	9,128.88	11,801.01	9,130.51	78.49	90.37	91.64	-1,479.73	2,493.42	936.16	767.45	168.70	5.549			
11,600.00	9,130.48	11,901.01	9,131.59	81.12	93.13	91.61	-1,480.13	2,593.41	937.10	763.00	174.10	5.383			
11,700.00	9,132.09	12,001.00	9,132.67	83.76	95.91	91.57	-1,480.54	2,693.40	938.04	758.52	179.52	5.225			
11,800.00	9,133.69	12,100.99	9,133.75	86.41	98.70	91.54	-1,480.94	2,793.38	938.98	754.01	184.97	5.076			
11,900.00	9,135.30	12,200.98	9,134.83	89.08	101.50	91.50	-1,481.35	2,893.37	939.92	749.48	190.44	4.936 Alert			
12,000.00	9,136.90	12,300.80	9,136.37	91.75	104.31	91.50	-1,481.75	2,993.17	940.87	744.95	195.92	4.802 Alert			
12,100.00	9,138.51	12,400.79	9,138.22	94.44	107.13	91.51	-1,482.15	3,093.14	941.83	740.40	201.43	4.676 Alert			
12,200.00	9,140.12	12,500.78	9,140.07	97.14	109.95	91.53	-1,482.56	3,193.12	942.79	735.84	206.96	4.556 Alert			
12,300.00	9,141.72	12,600.78	9,141.92	99.85	112.79	91.54	-1,482.96	3,293.10	943.75	731.28	212.50	4.441 Alert			
12,400.00	9,143.33	12,700.78	9,143.77	102.57	115.63	91.55	-1,483.36	3,393.07	944.72	726.68	218.05	4.332 Alert			
12,500.00	9,144.93	12,800.77	9,145.82	105.30	118.48	91.57	-1,483.77	3,493.05	945.68	722.05	223.63	4.229 Alert			
12,600.00	9,146.54	12,900.77	9,147.47	108.03	121.33	91.58	-1,484.17	3,593.03	946.64	717.43	229.21	4.130 Alert			
12,700.00	9,148.14	13,000.76	9,149.32	110.77	124.18	91.59	-1,484.57	3,693.01	947.60	712.80	234.80	4.036 Alert			
12,800.00	9,149.75	13,100.76	9,151.17	113.52	127.05	91.61	-1,484.98	3,792.98	948.56	708.15	240.41	3.946 Alert			
12,900.00	9,151.36	13,200.75	9,153.02	116.27	129.91	91.62	-1,485.38	3,892.96	949.52	703.50	246.03	3.856 Alert			
13,000.00	9,152.96	13,300.75	9,154.87	119.03	132.79	91.63	-1,485.78	3,992.94	950.48	698.83	251.65	3.777 Alert			
13,100.00	9,154.57	13,400.74	9,156.72	121.79	135.66	91.64	-1,486.19	4,092.92	951.45	694.16	257.29	3.698 Alert			
13,200.00	9,156.17	13,500.74	9,158.57	124.56	138.54	91.66	-1,486.59	4,192.89	952.41	689.47	262.93	3.622 Alert			
13,300.00	9,157.78	13,600.73	9,160.42	127.33	141.42	91.67	-1,486.99	4,292.87	953.37	684.78	268.59	3.550 Alert			
13,400.00	9,159.38	13,700.73	9,162.27	130.10	144.31	91.68	-1,487.40	4,392.85	954.33	680.09	274.25	3.480 Alert			
13,500.00	9,160.99	13,800.72	9,164.12	132.88	147.20	91.70	-1,487.80	4,492.82	955.29	675.38	279.91	3.413 Alert			
13,600.00	9,162.60	13,900.72	9,165.97	135.67	150.09	91.71	-1,488.21	4,592.80	956.26	670.67	285.58	3.348 Alert			
13,700.00	9,164.20	14,000.71	9,167.82	138.45	152.99	91.72	-1,488.61	4,692.78	957.22	665.95	291.26	3.286 Alert			
13,800.00	9,165.81	14,100.71	9,169.67	141.24	155.88	91.74	-1,489.01	4,792.76	958.18	661.23	296.95	3.227 Alert			
13,882.90	9,167.14	14,131.09	9,170.23	143.56	158.77	91.74	-1,489.13	4,823.13	960.41	660.78	299.85	3.205 Alert, ES, SF			

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28-T19S-R29E - Turquoise PWU 27 10H - Original Hole - PTL													Offset Site Error: 5.00 ft	
Survey Program: 154-MWD+IGRF. 8755-													Offset Well Error: 0.00 ft	
Reference Offset				Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,989.73	4,996.58	4,995.71	18.12	18.15	6.93	-1,569.64	-502.71	1,486.48	1,450.34	36.14	41.130		
5,100.00	5,088.77	5,102.38	5,101.48	18.47	18.50	7.05	-1,566.93	-503.12	1,470.53	1,433.71	36.81	39.946		
5,200.00	5,187.82	5,207.37	5,206.43	18.82	18.84	7.15	-1,563.88	-502.87	1,454.05	1,416.57	37.48	38.795		
5,300.00	5,286.87	5,313.56	5,312.55	19.17	19.19	7.25	-1,560.47	-502.39	1,437.25	1,399.09	38.15	37.673		
5,400.00	5,385.91	5,422.12	5,421.03	19.52	19.55	7.38	-1,556.09	-502.09	1,419.71	1,380.89	38.83	36.565		
5,500.00	5,484.96	5,514.88	5,513.71	19.88	19.85	7.49	-1,552.06	-501.95	1,401.95	1,362.47	39.48	35.514		
5,600.00	5,584.01	5,609.14	5,607.88	20.24	20.17	7.64	-1,548.27	-502.49	1,384.72	1,344.58	40.13	34.503		
5,700.00	5,683.05	5,706.02	5,704.66	20.60	20.50	7.84	-1,544.14	-504.12	1,367.63	1,326.83	40.80	33.520		
5,800.00	5,782.10	5,825.54	5,823.95	20.96	20.91	8.18	-1,537.68	-507.90	1,350.02	1,308.51	41.51	32.519		
5,900.00	5,881.15	5,917.11	5,915.30	21.32	21.23	8.47	-1,532.10	-510.96	1,331.83	1,289.65	42.18	31.575		
6,000.00	5,980.19	6,018.78	6,016.70	21.68	21.58	8.80	-1,525.83	-514.59	1,313.69	1,270.82	42.87	30.647		
6,100.00	6,079.24	6,118.25	6,115.92	22.05	21.93	9.14	-1,519.59	-517.93	1,295.42	1,251.87	43.55	29.746		
6,200.00	6,178.29	6,219.64	6,217.03	22.42	22.28	9.49	-1,513.00	-521.48	1,277.05	1,232.81	44.24	28.869		
6,300.00	6,277.33	6,321.21	6,318.25	22.79	22.64	9.90	-1,505.71	-525.66	1,258.30	1,213.37	44.93	28.007		
6,400.00	6,376.38	6,415.18	6,411.90	23.16	22.97	10.30	-1,499.01	-529.85	1,239.79	1,194.18	45.61	27.182		
6,500.00	6,475.43	6,510.28	6,506.67	23.53	23.31	10.72	-1,492.35	-534.10	1,221.47	1,175.17	46.30	26.382		
6,600.00	6,574.47	6,597.62	6,593.75	23.90	23.62	11.10	-1,486.83	-537.94	1,203.81	1,156.83	46.98	25.625		
6,700.00	6,673.52	6,684.35	6,680.26	24.28	23.93	11.48	-1,482.26	-541.95	1,187.23	1,139.57	47.65	24.913		
6,800.00	6,772.57	6,779.08	6,774.75	24.65	24.27	11.92	-1,477.59	-546.69	1,171.19	1,122.84	48.35	24.225		
6,900.00	6,871.61	6,864.38	6,859.85	25.03	24.57	12.32	-1,473.97	-551.35	1,156.02	1,107.00	49.02	23.582		
7,000.00	6,970.66	6,960.07	6,955.31	25.40	24.92	12.80	-1,470.45	-556.94	1,141.60	1,091.88	49.72	22.960		
7,100.00	7,069.71	7,058.06	7,053.08	25.78	25.27	13.29	-1,467.00	-562.58	1,127.36	1,076.93	50.43	22.356		
7,200.00	7,168.75	7,152.27	7,147.07	26.16	25.61	13.77	-1,463.90	-568.22	1,113.50	1,062.38	51.13	21.780		
7,300.00	7,267.80	7,254.83	7,249.37	26.54	25.98	14.34	-1,460.19	-574.59	1,099.55	1,047.70	51.85	21.207		
7,400.00	7,366.85	7,343.02	7,337.38	26.92	26.30	14.80	-1,457.64	-579.62	1,086.11	1,033.57	52.53	20.675		
7,500.00	7,465.89	7,429.40	7,423.63	27.30	26.61	15.20	-1,456.47	-583.93	1,073.80	1,020.59	53.21	20.182		
7,600.00	7,564.94	7,530.78	7,524.92	27.69	26.97	15.62	-1,455.98	-588.28	1,062.01	1,008.09	53.92	19.694		
7,700.00	7,663.99	7,619.47	7,613.53	28.07	27.29	15.98	-1,455.95	-592.13	1,050.70	996.10	54.60	19.243		
7,800.00	7,763.24	7,714.11	7,708.06	28.45	27.62	16.33	-1,456.44	-596.62	1,041.62	986.32	55.30	18.837		
7,900.00	7,862.77	7,808.26	7,802.10	28.82	27.95	16.62	-1,457.56	-600.88	1,035.57	979.58	55.98	18.498		
8,000.00	7,962.52	7,890.29	7,884.03	29.18	28.24	16.81	-1,459.72	-604.26	1,033.14	976.53	56.61	18.251		
8,006.34	7,968.86	7,895.45	7,889.19	29.20	28.26	16.82	-1,459.91	-604.47	1,033.13	976.49	56.64	18.239		
8,100.00	8,062.43	7,995.09	7,988.69	29.53	28.60	16.94	-1,464.01	-607.70	1,034.12	976.80	57.32	18.042		
8,200.00	8,162.41	8,096.51	8,090.00	29.87	28.94	16.96	-1,468.37	-609.50	1,037.06	979.05	58.01	17.879		
8,300.00	8,262.41	8,199.11	8,192.49	30.20	29.28	-151.52	-1,473.03	-610.58	1,041.51	982.82	58.69	17.747		
8,400.00	8,362.41	8,395.00	8,387.72	30.52	29.90	-152.15	-1,479.20	-601.09	1,042.72	983.21	59.50	17.524		
8,500.00	8,462.41	8,608.43	8,593.08	30.85	30.50	-155.08	-1,485.43	-545.16	1,034.01	974.25	59.76	17.303		
8,600.00	8,562.38	8,779.93	8,743.38	31.18	31.00	111.64	-1,489.53	-463.41	1,015.97	955.97	60.01	16.931		
8,700.00	8,661.04	8,939.22	8,866.15	31.50	31.60	108.76	-1,494.01	-362.36	999.31	938.76	60.55	16.503		
8,800.00	8,755.51	9,087.57	8,960.78	31.79	32.43	105.80	-1,497.61	-248.45	984.52	922.90	61.62	15.977		
8,900.00	8,842.92	9,220.89	9,026.76	32.04	33.50	102.98	-1,500.29	-132.80	972.25	909.00	63.25	15.372		
9,000.00	8,920.61	9,343.29	9,069.81	32.24	34.83	100.26	-1,502.22	-18.37	962.81	897.50	65.30	14.743		
9,100.00	8,986.23	9,457.66	9,093.97	32.40	36.36	97.63	-1,503.53	93.31	956.13	888.47	67.66	14.132		
9,200.00	9,037.77	9,562.71	9,102.05	32.62	38.00	95.20	-1,504.28	197.98	951.92	881.76	70.16	13.568		
9,223.21	9,047.54	9,562.71	9,102.05	32.76	38.00	95.24	-1,504.28	197.98	951.60	881.21	70.38	13.520 CC, ES		
9,300.00	9,073.67	9,562.71	9,102.05	33.28	38.00	94.88	-1,504.28	197.98	955.15	884.14	71.02	13.449 SF		
9,400.00	9,092.85	9,562.71	9,102.05	34.17	38.00	93.36	-1,504.28	197.98	970.18	898.37	71.81	13.511		
9,500.00	9,096.76	9,562.71	9,102.05	35.24	38.00	92.13	-1,504.28	197.98	995.97	923.43	72.54	13.731		
9,600.00	9,098.37	9,562.71	9,102.05	36.49	38.00	92.13	-1,504.28	197.98	1,030.95	957.72	73.23	14.078		
9,700.00	9,099.98	9,562.71	9,102.05	37.92	38.00	92.13	-1,504.28	197.98	1,074.13	1,000.26	73.86	14.542		
9,800.00	9,101.58	9,562.71	9,102.05	39.51	38.00	92.13	-1,504.28	197.98	1,124.57	1,050.15	74.42	15.112		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28-T19S-R29E - Turquoise PWU 27 10H - Original Hole - PTL													Offset Site Error:	5.00 ft
Survey Program: 154-MWD+IGRF, 8755-													Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis		Distance										
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
9,900.00	9,103.19	9,562.71	9,102.05	41.23	38.00	92.13	-1,504.28	197.98	1,181.33	1,106.45	74.88	15.775		
10,000.00	9,104.79	9,562.71	9,102.05	43.08	38.00	92.13	-1,504.28	197.98	1,243.56	1,168.30	75.27	16.522		
10,100.00	9,106.40	9,562.71	9,102.05	45.03	38.00	92.13	-1,504.28	197.98	1,310.48	1,234.90	75.58	17.339		
10,200.00	9,108.00	9,562.71	9,102.05	47.07	38.00	92.13	-1,504.28	197.98	1,381.40	1,305.56	75.83	18.217		
10,300.00	9,109.61	9,562.71	9,102.05	49.20	38.00	92.13	-1,504.28	197.98	1,455.73	1,379.70	76.03	19.146		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 28-T19S-R29E - Turquoise PWU 27 10H - Original Hole - T&D											Offset Site Error:		5.00 ft
Survey Program:													Offset Well Error:		0.00 ft
Reference		Offset		Semi Major Axis			Distance								Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
4,900.00	4,890.68	4,859.36	4,858.56	17.78		4.53	-1,580.19	-443.22	1,492.32	1,469.63	22.69	65.768			
5,000.00	4,989.73	4,956.68	4,955.85	18.12		4.57	-1,580.20	-443.19	1,478.59	1,455.57	23.02	64.237			
5,100.00	5,088.77	5,054.67	5,053.80	18.47		4.61	-1,580.20	-443.17	1,464.86	1,441.51	23.35	62.745			
5,200.00	5,187.82	5,151.27	5,150.37	18.82		4.65	-1,580.21	-443.12	1,451.15	1,427.47	23.68	61.291			
5,300.00	5,286.87	5,247.32	5,246.38	19.17		4.69	-1,580.20	-443.09	1,437.43	1,413.42	24.01	59.872			
5,400.00	5,385.91	5,344.29	5,343.30	19.52		4.74	-1,580.22	-443.08	1,423.75	1,399.41	24.34	58.490			
5,500.00	5,484.96	5,461.08	5,459.96	19.88		4.79	-1,580.36	-443.11	1,410.05	1,385.38	24.67	57.155			
5,600.00	5,584.01	5,560.21	5,559.01	20.24		4.84	-1,580.36	-443.11	1,396.32	1,371.32	25.01	55.840			
5,700.00	5,683.05	5,659.33	5,658.05	20.60		4.89	-1,580.36	-443.11	1,382.59	1,357.25	25.34	54.558			
5,800.00	5,782.10	5,758.49	5,757.10	20.96		4.94	-1,580.36	-443.11	1,368.87	1,343.19	25.68	53.306			
5,900.00	5,881.15	5,857.73	5,856.15	21.32		4.99	-1,580.36	-443.11	1,355.15	1,329.13	26.02	52.085			
6,000.00	5,980.19	5,957.00	5,955.19	21.68		5.04	-1,580.36	-443.11	1,341.42	1,315.07	26.36	50.894			
6,100.00	6,079.24	6,055.50	6,053.42	22.05		5.12	-1,579.61	-443.55	1,327.11	1,300.41	26.70	49.708			
6,200.00	6,178.29	6,152.81	6,150.48	22.42		5.17	-1,579.63	-443.47	1,313.39	1,286.35	27.04	48.570			
6,300.00	6,277.33	6,250.53	6,247.96	22.79		5.22	-1,579.58	-443.54	1,299.64	1,272.26	27.38	47.459			
6,400.00	6,376.38	6,347.83	6,344.93	23.16		5.28	-1,579.52	-443.60	1,285.89	1,258.16	27.73	46.373			
6,500.00	6,475.43	6,445.28	6,442.04	23.53		5.34	-1,579.59	-443.61	1,272.26	1,244.18	28.08	45.316			
6,600.00	6,574.47	6,542.42	6,538.85	23.90		5.39	-1,579.61	-443.58	1,258.58	1,230.16	28.42	44.282			
6,700.00	6,673.52	6,640.37	6,636.50	24.28		5.45	-1,579.78	-443.52	1,245.02	1,216.25	28.77	43.277			
6,800.00	6,772.57	6,741.18	6,737.08	24.65		5.51	-1,579.92	-443.53	1,231.43	1,202.31	29.11	42.296			
6,900.00	6,871.61	6,839.51	6,835.17	25.03		5.57	-1,579.98	-443.50	1,217.78	1,188.31	29.46	41.333			
7,000.00	6,970.66	6,941.40	6,936.82	25.40		5.62	-1,580.19	-443.37	1,204.20	1,174.39	29.81	40.397			
7,100.00	7,069.71	7,040.93	7,036.12	25.78		5.68	-1,580.26	-443.27	1,190.53	1,160.38	30.16	39.477			
7,200.00	7,168.75	7,148.93	7,143.75	26.16		5.74	-1,580.36	-443.11	1,176.84	1,146.34	30.50	38.586			
7,300.00	7,267.80	7,248.22	7,242.80	26.54		5.81	-1,580.36	-443.11	1,163.13	1,132.29	30.85	37.704			
7,400.00	7,366.85	7,347.48	7,341.85	26.92		5.88	-1,580.36	-443.11	1,149.43	1,118.23	31.20	36.842			
7,500.00	7,465.89	7,446.66	7,440.89	27.30		5.95	-1,580.36	-443.11	1,135.73	1,104.18	31.55	35.998			
7,600.00	7,564.94	7,545.80	7,539.94	27.69		6.03	-1,580.36	-443.11	1,122.03	1,090.13	31.90	35.171			
7,700.00	7,663.99	7,644.94	7,638.99	28.07		6.10	-1,580.36	-443.11	1,108.34	1,076.09	32.25	34.363			
7,800.00	7,763.24	7,744.29	7,738.24	28.45		6.15	-1,580.36	-443.11	1,096.20	1,063.59	32.61	33.621			
7,900.00	7,862.77	7,843.93	7,837.77	28.82		6.19	-1,580.36	-443.11	1,086.65	1,053.69	32.96	32.974			
8,000.00	7,962.52	7,943.81	7,937.52	29.18		6.21	-1,580.36	-443.11	1,079.69	1,046.38	33.30	32.420			
8,100.00	8,062.43	8,043.83	8,037.43	29.53		6.23	-1,580.36	-443.11	1,075.33	1,041.68	33.65	31.957			
8,200.00	8,162.41	8,154.52	8,147.99	29.87		6.24	-1,580.73	-443.22	1,074.01	1,040.03	33.98	31.609			
8,300.00	8,262.41	8,300.00	8,237.41	30.20		-162.17	-1,580.36	-443.11	1,073.53	1,039.20	34.33	31.270			
8,400.00	8,362.41	8,349.76	8,337.41	30.52		-162.17	-1,580.36	-443.11	1,073.53	1,038.86	34.67	30.966			
8,500.00	8,462.41	8,445.09	8,437.41	30.85		-162.17	-1,580.36	-443.11	1,073.53	1,038.52	35.01	30.668			
8,509.26	8,471.67	8,452.06	8,444.25	30.88		108.09	-1,580.56	-442.09	1,073.42	1,038.38	35.04	30.635 CC			
8,600.00	8,562.38	8,543.37	8,532.86	31.18		108.07	-1,580.51	-441.47	1,073.59	1,038.25	35.35	30.372 ES			
8,700.00	8,661.04	8,638.80	8,622.72	31.50		108.21	-1,580.46	-441.08	1,078.42	1,042.73	35.69	30.214 SF			
8,800.00	8,755.51	8,762.83	8,730.51	31.79		108.96	-1,580.36	-443.11	1,089.87	1,053.86	36.01	30.267			
8,900.00	8,842.92	8,865.29	8,813.91	32.04		109.12	-1,580.57	-440.20	1,106.88	1,070.53	36.35	30.451			
9,000.00	8,920.61	8,960.43	8,883.97	32.24		108.73	-1,580.60	-440.19	1,132.75	1,096.03	36.72	30.848			
9,100.00	8,986.23	9,088.02	8,961.23	32.40		108.21	-1,580.36	-443.11	1,168.55	1,131.42	37.13	31.474			
9,200.00	9,037.77	9,186.87	9,012.77	32.62		105.77	-1,580.36	-443.11	1,212.57	1,174.95	37.62	32.233			
9,300.00	9,073.67	9,279.30	9,048.67	33.28		101.48	-1,580.36	-443.11	1,265.37	1,227.19	38.18	33.140			
9,400.00	9,092.85	9,327.28	9,063.17	34.17		94.75	-1,580.34	-441.45	1,324.66	1,285.86	38.80	34.142			
9,500.00	9,096.76	9,327.34	9,063.22	35.24		90.37	-1,580.34	-441.45	1,390.52	1,351.10	39.42	35.271			
9,600.00	9,098.37	9,370.77	9,073.37	36.49		90.94	-1,580.36	-443.11	1,461.48	1,421.44	40.04	36.503			

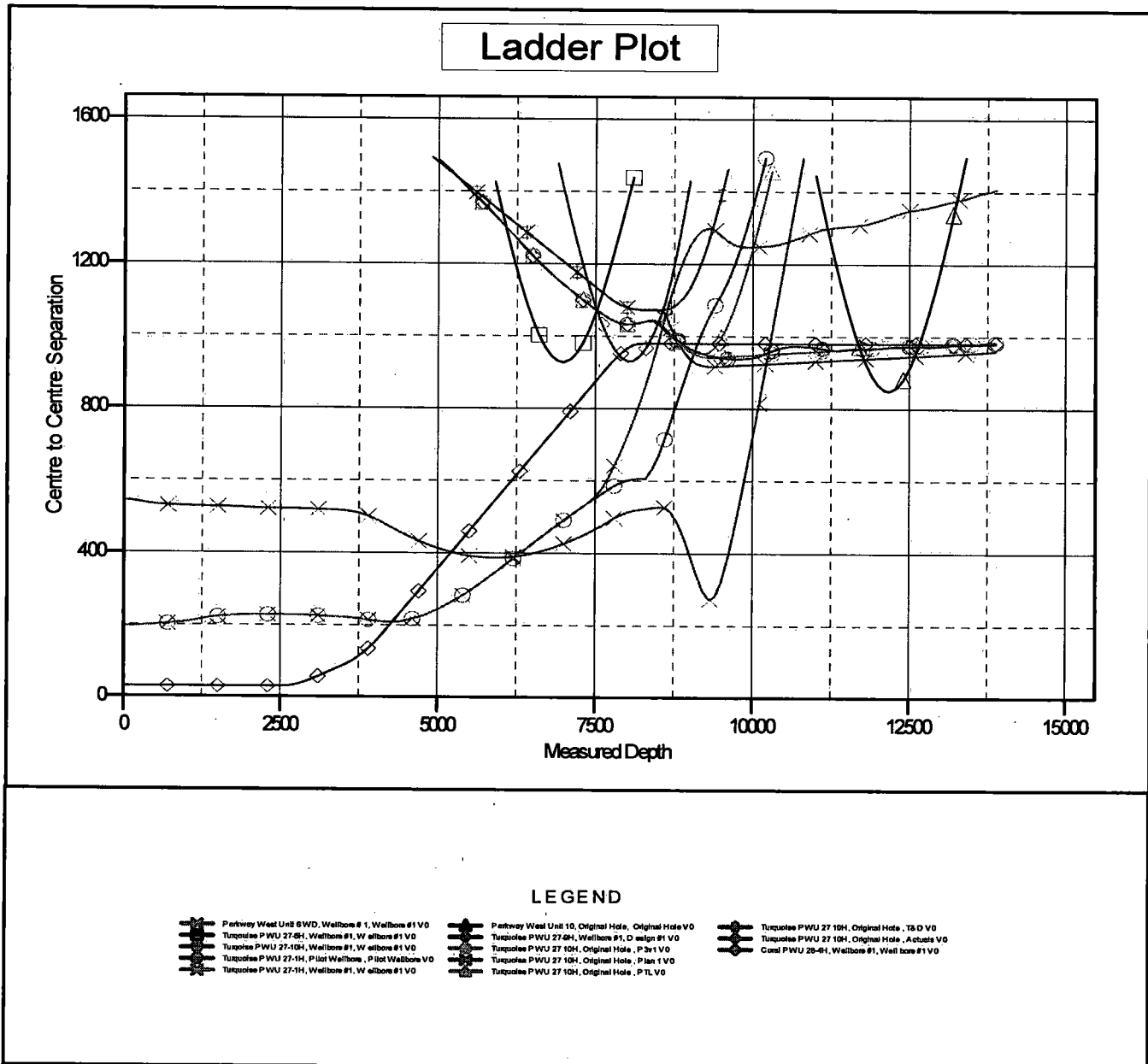
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM r5000 141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3370.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Turquoise PWU 27-61H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.14°



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

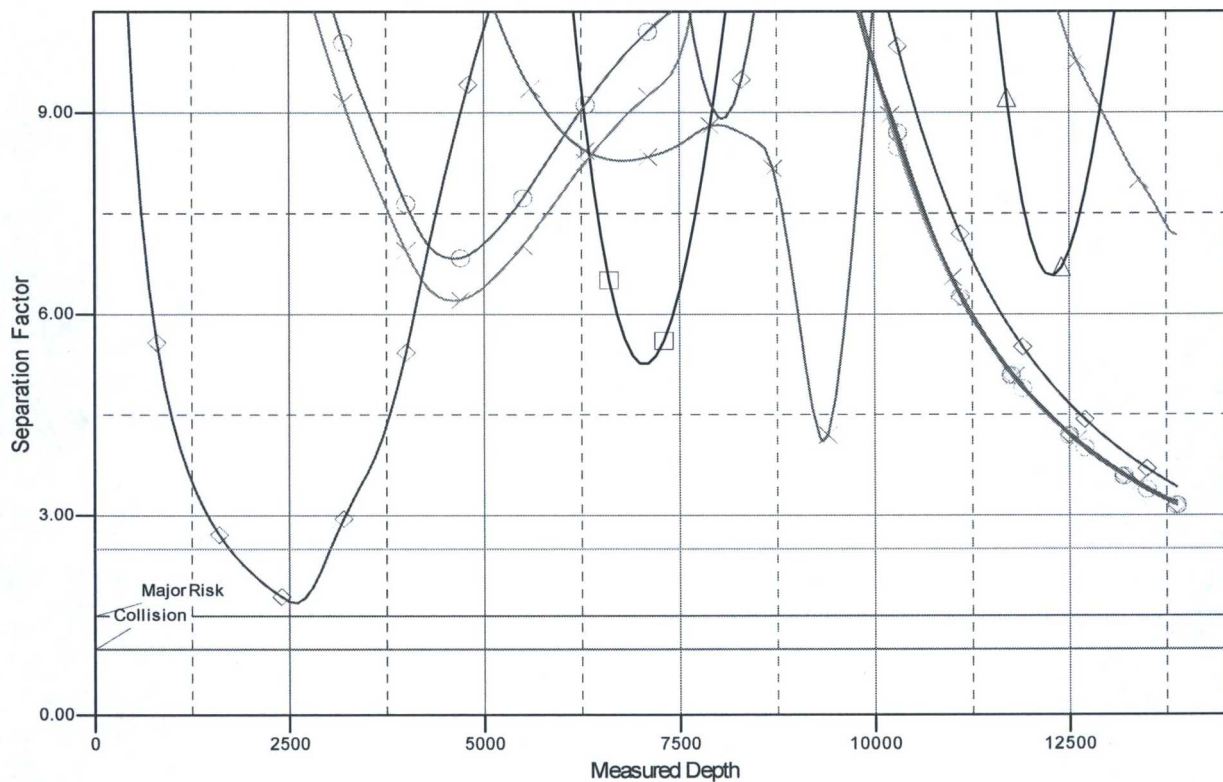
Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Turquoise PWU 27-61H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3370.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3370.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-61H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3370.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Turquoise PWU 27-61H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.14°

Separation Factor Plot



LEGEND

Parkway West Unit SWD, Wellbore # 1, Wellbore #1 V0	Parkway West Unit 10, Original Hole, Original Hole V0	Turquoise PWU 27 10H, Original Hole, T&D V0
Turquoise PWU 27-61H, Wellbore #1, Wellbore #1 V0	Turquoise PWU 27-61H, Wellbore #1, Design #1 V0	Turquoise PWU 27 10H, Original Hole, Actuals V0
Turquoise PWU 27-10H, Wellbore #1, Wellbore #1 V0	Turquoise PWU 27 10H, Original Hole, P3v1 V0	Corral PWU 28-4H, Wellbore #1, Wellbore #1 V0
Turquoise PWU 27-1H, Pilot Wellbore, Pilot Wellbore V0	Turquoise PWU 27 10H, Original Hole, Plan V0	
Turquoise PWU 27-1H, Wellbore #1, Wellbore #1 V0	Turquoise PWU 27 10H, Original Hole, PTL V0	

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

WCDSC Permian NM

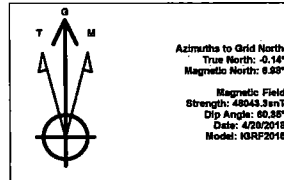
WELL DETAILS: Turquoise PWU 27-61H

RKB @ 3370.00ft
3943.70

Northing 596510.32 Easting 622176.74 Latitude 32.536932 Longitude -104.070724

SECTION DETAILS Design #1

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3500.00	0.00	0.00	3500.00	0.00	0.00	0.00	0.00	Begin Nudge
4133.40	7.92	191.59	4131.39	-42.80	-8.78	1.25	-12.15	EOB
7889.78	7.92	191.59	7853.84	-522.70	-107.16	0.00	-148.32	EOH
5 8217.59	0.00	0.00	8180.00	-558.37	-114.47	1.50	-158.44	Drop to Vertical
6 8580.69	0.00	0.00	8523.10	-558.37	-114.47	0.00	-158.44	KOP @ 8561' MD, 1358' FNL, 50' FWL
7 9451.50	89.08	89.88	8085.99	-555.28	449.28	10.00	403.78	Land Point
8 13892.90	89.08	89.88	9167.14	-530.62	4880.04	0.00	4822.60	PBHL: 1310' FNL, 230' FEL



devon

