



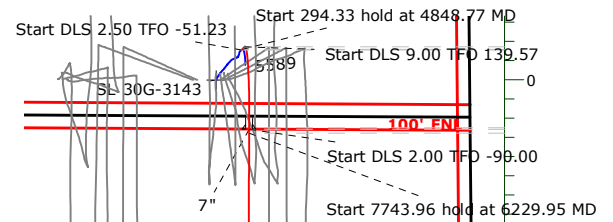
# WHITING PETROLEUM CORP.

Project: Weld County, CO  
Site: Sec 30-T10N-R57W  
Well: Horsetail #30G-3143  
Wellbore: Sidetrack #1  
Design: Plan #1

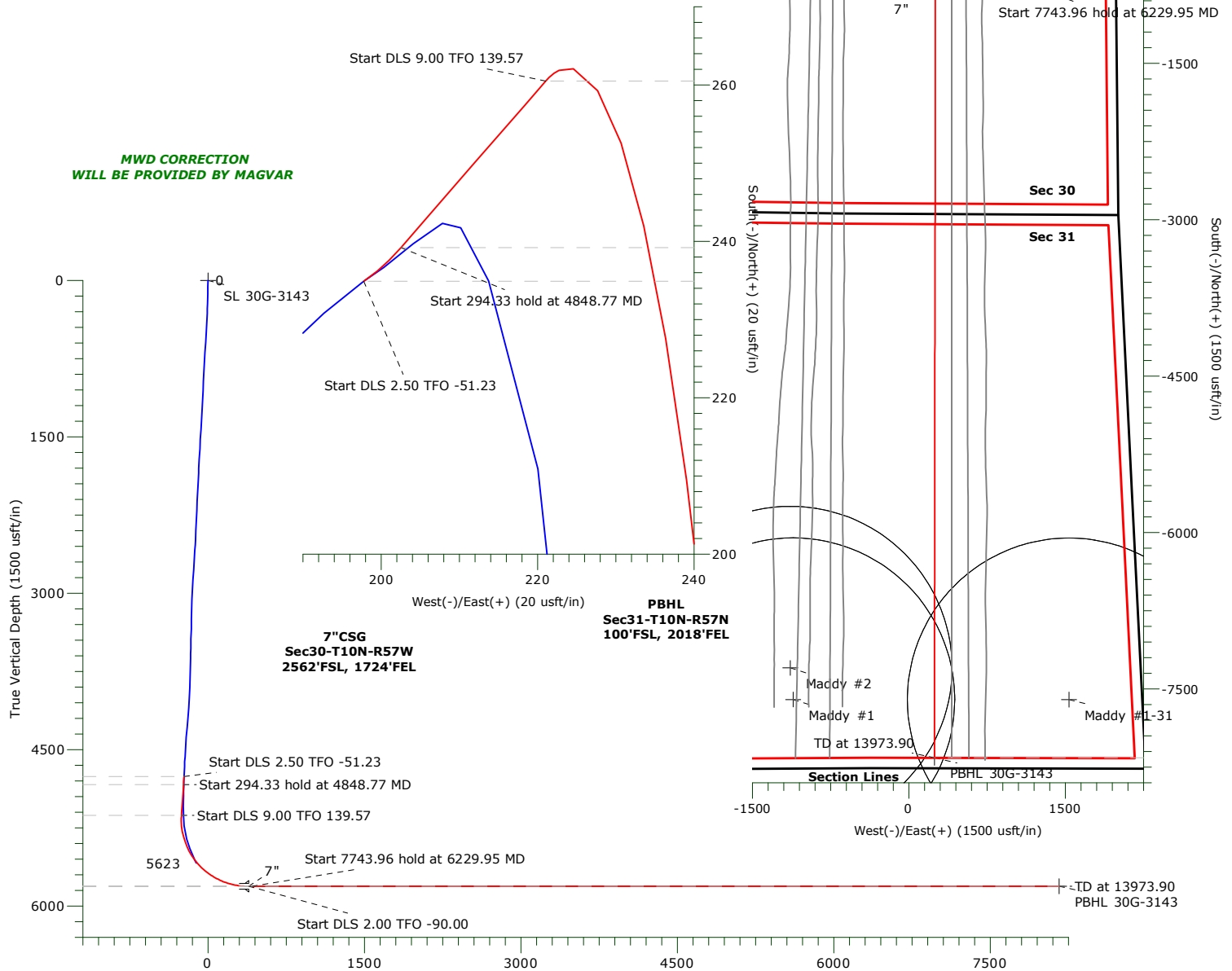


FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
0.00	3760.00	Top Codell
994.00	5913.15	Lower C Marl
1001.00	5930.32	Lower C Marker
1030.00	6017.86	Top Ft. Hays
1046.00	6095.08	Ft Hays Marker

CASING DETAILS			
TVD	MD	Name	Size
5812.00	6198.78	7"	7.00



MWD CORRECTION  
WILL BE PROVIDED BY MAGVAR



Vertical Section at 178.28° (1500 usft/in)  
WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SL 30G-3143	0.00	0.00	0.00	1542677.40	3472871.02	40.810528°N	103.791692°W	Point
PBHL 30G-3143	5812.00	-8159.12	245.38	1534524.53	3473273.53	40.788133°N	103.790806°W	Point
Maddy #2	6451.00	-7296.84	-1135.68	1535360.04	3471876.11	40.790500°N	103.795793°W	Circle (Radius: 1550.00)
Maddy #1-31	6471.00	-7601.03	1536.20	1535107.38	3474553.36	40.789665°N	103.786144°W	Circle (Radius: 1550.00)
Maddy #1	6475.00	-7599.24	-1109.94	1535058.19	3471907.67	40.789670°N	103.795700°W	Circle (Radius: 1550.00)

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	4771.00	4.07	57.02	4759.70	234.89	197.77	0.00	0.00	-228.84	
2	4848.77	5.50	41.00	4837.19	239.20	202.54	2.50	-51.23	-233.01	
3	5143.09	5.50	41.00	5130.17	260.49	221.04	0.00	0.00	-253.73	
4	6189.67	90.00	180.70	5812.00	-374.89	255.77	9.00	139.57	382.41	
5	6198.78	90.00	180.70	5812.00	-384.00	255.66	0.00	0.00	391.51	
6	6229.95	90.00	180.07	5812.00	-415.17	255.45	2.00	-90.00	422.66	
7	13973.90	90.00	180.07	5812.00	-8159.12	245.38	0.00	0.00	8162.81	PBHL 30G-3143

# **WHITING PETROLEUM CORP.**

**Weld County, CO  
Sec 30-T10N-R57W  
Horsetail #30G-3143**

**Sidetrack #1**

**Plan: Plan #1**

## **Standard Planning Report**

**05 December, 2016**

# Precision Drilling Corporation

## Planning Report

<b>Database:</b>	Local2	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Company:</b>	WHITING PETROLEUM CORP.	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site:</b>	Sec 30-T10N-R57W	<b>North Reference:</b>	True
<b>Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Sidetrack #1		
<b>Design:</b>	Plan #1		

<b>Project</b>	Weld County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		Sec 30-T10N-R57W			
Site Position:		Northing:	1,542,678.56 usft	Latitude:	40.810528°N
From:	Map	Easting:	3,472,930.99 usft	Longitude:	103.791475°W
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	1.10 °

Well	Horsetail #30G-3143					
Well Position	+N/-S	0.00 usft	Northing:	1,542,677.41 usft	Latitude:	40.810528°N
	+E/-W	-59.98 usft	Easting:	3,472,871.02 usft	Longitude:	103.791692°W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,738.00 usft

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	4,771.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	178.28

<b>Plan Sections</b>											
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target	
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)		
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)			
4,771.00	4.07	57.02	4,759.70	234.89	197.77	0.00	0.00	0.00	0.00		
4,848.77	5.50	41.00	4,837.19	239.20	202.54	2.50	1.84	-20.60	-51.23		
5,143.09	5.50	41.00	5,130.17	260.49	221.04	0.00	0.00	0.00	0.00		
6,189.67	90.00	180.70	5,812.00	-374.89	255.77	9.00	8.07	13.35	139.57		
6,198.78	90.00	180.70	5,812.00	-384.00	255.66	0.00	0.00	0.00	0.00		
6,229.95	90.00	180.07	5,812.00	-415.17	255.45	2.00	0.00	-2.00	-90.00		
13,973.91	90.00	180.07	5,812.00	-8,159.12	245.38	0.00	0.00	0.00	0.00	PBHL 30G-3143	

# Precision Drilling Corporation

## Planning Report

<b>Database:</b>	Local2	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Company:</b>	WHITING PETROLEUM CORP.	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site:</b>	Sec 30-T10N-R57W	<b>North Reference:</b>	True
<b>Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Sidetrack #1		
<b>Design:</b>	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
132.00	1.33	344.14	131.99	1.47	-0.42	-1.49	1.01	1.01	0.00
225.00	1.36	343.22	224.96	3.57	-1.03	-3.60	0.04	0.03	-0.99
318.00	2.68	25.24	317.91	6.59	-0.42	-6.60	2.04	1.42	45.18
411.00	4.02	33.74	410.75	11.27	2.31	-11.20	1.53	1.44	9.14
504.00	4.37	34.42	503.50	16.90	6.13	-16.71	0.38	0.38	0.73
597.00	4.21	31.95	596.24	22.72	9.94	-22.41	0.26	-0.17	-2.66
690.00	4.13	33.08	688.99	28.43	13.57	-28.00	0.12	-0.09	1.22
784.00	3.69	32.50	782.77	33.81	17.04	-33.29	0.47	-0.47	-0.62
875.00	3.60	30.95	873.59	38.73	20.09	-38.11	0.15	-0.10	-1.70
969.00	3.51	32.11	967.41	43.70	23.13	-42.99	0.12	-0.10	1.23
1,062.00	3.38	34.89	1,060.24	48.36	26.22	-47.55	0.23	-0.14	2.99
1,155.00	3.67	36.10	1,153.06	53.01	29.54	-52.10	0.32	0.31	1.30
1,249.00	3.90	38.88	1,246.86	57.93	33.32	-56.91	0.31	0.24	2.96
1,342.00	4.31	40.40	1,339.62	63.06	37.57	-61.90	0.46	0.44	1.63
1,435.00	4.76	43.73	1,432.33	68.51	42.50	-67.20	0.56	0.48	3.58
1,528.00	4.61	41.85	1,525.02	74.08	47.66	-72.61	0.23	-0.16	-2.02
1,621.00	4.49	42.94	1,617.72	79.53	52.63	-77.91	0.16	-0.13	1.17
1,715.00	4.16	42.42	1,711.46	84.74	57.44	-82.97	0.35	-0.35	-0.55
1,808.00	3.21	31.06	1,804.26	89.46	61.06	-87.58	1.28	-1.02	-12.22
1,901.00	4.24	39.29	1,897.07	94.35	64.58	-92.37	1.25	1.11	8.85
1,994.00	3.65	44.92	1,989.85	99.11	68.85	-96.99	0.76	-0.63	6.05
2,120.00	3.23	46.32	2,115.62	104.40	74.25	-102.12	0.34	-0.33	1.11
2,215.00	3.24	33.90	2,210.47	108.48	77.68	-106.09	0.74	0.01	-13.07
2,309.00	3.94	32.04	2,304.28	113.42	80.87	-110.94	0.75	0.74	-1.98
2,404.00	3.02	30.73	2,399.11	118.34	83.88	-115.76	0.97	-0.97	-1.38
2,498.00	3.57	49.19	2,492.95	122.38	87.36	-119.70	1.26	0.59	19.64
2,593.00	4.93	39.08	2,587.69	127.48	92.18	-124.65	1.63	1.43	-10.64
2,687.00	4.85	38.67	2,681.35	133.72	97.21	-130.74	0.09	-0.09	-0.44
2,782.00	5.53	42.07	2,775.96	140.25	102.78	-137.10	0.79	0.72	3.58
2,877.00	4.81	39.67	2,870.57	146.72	108.39	-143.39	0.79	-0.76	-2.53
2,972.00	4.65	42.16	2,965.25	152.64	113.52	-149.15	0.27	-0.17	2.62
3,066.00	3.52	55.68	3,059.01	157.09	118.46	-153.46	1.57	-1.20	14.38
3,161.00	3.00	67.23	3,153.86	159.69	123.16	-155.92	0.88	-0.55	12.16
3,256.00	2.59	62.50	3,248.75	161.65	127.36	-157.75	0.49	-0.43	-4.98
3,351.00	3.99	67.48	3,343.59	163.90	132.31	-159.85	1.50	1.47	5.24
3,446.00	4.06	65.15	3,438.35	166.58	138.42	-162.35	0.19	0.07	-2.45
3,540.00	4.24	65.65	3,532.11	169.41	144.60	-164.99	0.20	0.19	0.53
3,635.00	2.53	66.79	3,626.94	171.69	149.73	-167.11	1.80	-1.80	1.20
3,730.00	2.97	68.83	3,721.83	173.40	153.95	-168.70	0.47	0.46	2.15
3,824.00	3.77	80.81	3,815.67	174.78	159.28	-169.91	1.13	0.85	12.74
3,919.00	4.61	49.67	3,910.42	177.75	165.27	-172.70	2.51	0.88	-32.78
4,014.00	4.03	34.64	4,005.16	182.96	170.08	-177.77	1.33	-0.61	-15.82
4,109.00	5.22	20.93	4,099.85	189.75	173.52	-184.45	1.70	1.25	-14.43
4,203.00	4.41	13.75	4,193.52	197.25	175.91	-191.88	1.07	-0.86	-7.64
4,298.00	4.95	11.04	4,288.20	204.82	177.56	-199.39	0.61	0.57	-2.85
4,393.00	4.72	15.86	4,382.86	212.61	179.41	-207.12	0.49	-0.24	5.07
4,487.00	4.61	27.90	4,476.55	219.66	182.24	-214.09	1.05	-0.12	12.81
4,582.00	5.13	49.24	4,571.22	225.81	187.24	-220.08	1.97	0.55	22.46
4,676.00	3.87	45.16	4,664.92	230.79	192.67	-224.90	1.38	-1.34	-4.34
4,771.00	4.07	57.02	4,759.70	234.89	197.77	-228.84	0.89	0.21	12.48
4,800.00	4.56	49.89	4,788.62	236.19	199.52	-230.09	2.50	1.69	-24.59
4,848.77	5.50	41.00	4,837.19	239.20	202.54	-233.01	2.50	1.93	-18.23
4,900.00	5.50	41.00	4,888.19	242.91	205.76	-236.62	0.00	0.00	0.00

# Precision Drilling Corporation

## Planning Report

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<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site:</b>	Sec 30-T10N-R57W	<b>North Reference:</b>	True
<b>Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Sidetrack #1		
<b>Design:</b>	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,000.00	5.50	41.00	4,987.73	250.14	212.04	-243.66	0.00	0.00	0.00
5,100.00	5.50	41.00	5,087.27	257.38	218.33	-250.70	0.00	0.00	0.00
5,143.09	5.50	41.00	5,130.17	260.49	221.04	-253.73	0.00	0.00	0.00
5,150.00	5.04	45.59	5,137.04	260.96	221.48	-254.18	9.00	-6.62	66.47
5,200.00	3.68	105.33	5,186.92	262.07	224.60	-255.20	9.00	-2.72	119.48
5,250.00	6.49	147.51	5,236.74	259.26	227.67	-252.30	9.00	5.62	84.37
5,300.00	10.54	161.15	5,286.18	252.54	230.66	-245.50	9.00	8.10	27.27
5,350.00	14.85	167.12	5,334.95	241.96	233.57	-234.83	9.00	8.62	11.93
5,400.00	19.25	170.42	5,382.74	227.58	236.37	-220.37	9.00	8.79	6.62
5,450.00	23.68	172.54	5,429.26	209.48	239.05	-202.20	9.00	8.87	4.22
5,500.00	28.14	174.01	5,474.22	187.79	241.59	-180.44	9.00	8.91	2.95
5,550.00	32.60	175.11	5,517.35	162.63	243.97	-155.22	9.00	8.93	2.20
5,600.00	37.08	175.97	5,558.38	134.16	246.17	-126.70	9.00	8.95	1.72
5,650.00	41.56	176.67	5,597.05	102.55	248.20	-95.04	9.00	8.96	1.40
5,700.00	46.04	177.25	5,633.13	68.00	250.03	-60.46	9.00	8.96	1.17
5,750.00	50.52	177.76	5,666.40	30.73	251.64	-23.15	9.00	8.97	1.01
5,800.00	55.01	178.20	5,696.64	-9.04	253.04	16.65	9.00	8.97	0.88
5,850.00	59.50	178.60	5,723.69	-51.07	254.22	58.69	9.00	8.98	0.79
5,900.00	63.98	178.96	5,747.35	-95.09	255.15	102.71	9.00	8.98	0.72
5,950.00	68.47	179.29	5,767.50	-140.83	255.85	148.46	9.00	8.98	0.67
6,000.00	72.96	179.60	5,784.01	-188.01	256.30	195.63	9.00	8.98	0.63
6,050.00	77.45	179.90	5,796.77	-236.34	256.51	243.94	9.00	8.98	0.60
6,100.00	81.95	180.19	5,805.71	-285.52	256.47	293.10	9.00	8.98	0.58
6,150.00	86.44	180.48	5,810.77	-335.25	256.18	342.80	9.00	8.98	0.57
6,189.67	90.00	180.70	5,812.00	-374.89	255.77	382.41	9.00	8.98	0.56
6,198.78	90.00	180.70	5,812.00	-384.00	255.66	391.51	0.00	0.00	0.00
6,200.00	90.00	180.67	5,812.00	-385.22	255.65	392.73	2.00	0.00	-2.00
6,229.95	90.00	180.07	5,812.00	-415.17	255.45	422.66	2.00	0.00	-2.00
6,300.00	90.00	180.07	5,812.00	-485.22	255.36	492.68	0.00	0.00	0.00
6,400.00	90.00	180.07	5,812.00	-585.22	255.23	592.63	0.00	0.00	0.00
6,500.00	90.00	180.07	5,812.00	-685.22	255.10	692.58	0.00	0.00	0.00
6,600.00	90.00	180.07	5,812.00	-785.22	254.97	792.53	0.00	0.00	0.00
6,700.00	90.00	180.07	5,812.00	-885.22	254.84	892.48	0.00	0.00	0.00
6,800.00	90.00	180.07	5,812.00	-985.22	254.71	992.43	0.00	0.00	0.00
6,900.00	90.00	180.07	5,812.00	-1,085.22	254.58	1,092.38	0.00	0.00	0.00
7,000.00	90.00	180.07	5,812.00	-1,185.22	254.45	1,192.33	0.00	0.00	0.00
7,100.00	90.00	180.07	5,812.00	-1,285.22	254.32	1,292.28	0.00	0.00	0.00
7,200.00	90.00	180.07	5,812.00	-1,385.22	254.19	1,392.24	0.00	0.00	0.00
7,300.00	90.00	180.07	5,812.00	-1,485.22	254.06	1,492.19	0.00	0.00	0.00
7,400.00	90.00	180.07	5,812.00	-1,585.22	253.93	1,592.14	0.00	0.00	0.00
7,500.00	90.00	180.07	5,812.00	-1,685.22	253.80	1,692.09	0.00	0.00	0.00
7,600.00	90.00	180.07	5,812.00	-1,785.22	253.67	1,792.04	0.00	0.00	0.00
7,700.00	90.00	180.07	5,812.00	-1,885.22	253.54	1,891.99	0.00	0.00	0.00
7,800.00	90.00	180.07	5,812.00	-1,985.22	253.41	1,991.94	0.00	0.00	0.00
7,900.00	90.00	180.07	5,812.00	-2,085.22	253.28	2,091.89	0.00	0.00	0.00
8,000.00	90.00	180.07	5,812.00	-2,185.22	253.15	2,191.84	0.00	0.00	0.00
8,100.00	90.00	180.07	5,812.00	-2,285.22	253.02	2,291.79	0.00	0.00	0.00
8,200.00	90.00	180.07	5,812.00	-2,385.22	252.89	2,391.74	0.00	0.00	0.00
8,300.00	90.00	180.07	5,812.00	-2,485.22	252.76	2,491.69	0.00	0.00	0.00
8,400.00	90.00	180.07	5,812.00	-2,585.22	252.63	2,591.65	0.00	0.00	0.00
8,500.00	90.00	180.07	5,812.00	-2,685.22	252.50	2,691.60	0.00	0.00	0.00
8,600.00	90.00	180.07	5,812.00	-2,785.22	252.37	2,791.55	0.00	0.00	0.00
8,700.00	90.00	180.07	5,812.00	-2,885.22	252.24	2,891.50	0.00	0.00	0.00
8,800.00	90.00	180.07	5,812.00	-2,985.22	252.11	2,991.45	0.00	0.00	0.00

# Precision Drilling Corporation

## Planning Report

<b>Database:</b>	Local2	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Company:</b>	WHITING PETROLEUM CORP.	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site:</b>	Sec 30-T10N-R57W	<b>North Reference:</b>	True
<b>Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Sidetrack #1		
<b>Design:</b>	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,900.00	90.00	180.07	5,812.00	-3,085.22	251.98	3,091.40	0.00	0.00	0.00
9,000.00	90.00	180.07	5,812.00	-3,185.22	251.85	3,191.35	0.00	0.00	0.00
9,100.00	90.00	180.07	5,812.00	-3,285.22	251.72	3,291.30	0.00	0.00	0.00
9,200.00	90.00	180.07	5,812.00	-3,385.22	251.59	3,391.25	0.00	0.00	0.00
9,300.00	90.00	180.07	5,812.00	-3,485.22	251.46	3,491.20	0.00	0.00	0.00
9,400.00	90.00	180.07	5,812.00	-3,585.22	251.33	3,591.15	0.00	0.00	0.00
9,500.00	90.00	180.07	5,812.00	-3,685.22	251.20	3,691.10	0.00	0.00	0.00
9,600.00	90.00	180.07	5,812.00	-3,785.22	251.07	3,791.06	0.00	0.00	0.00
9,700.00	90.00	180.07	5,812.00	-3,885.22	250.94	3,891.01	0.00	0.00	0.00
9,800.00	90.00	180.07	5,812.00	-3,985.22	250.81	3,990.96	0.00	0.00	0.00
9,900.00	90.00	180.07	5,812.00	-4,085.22	250.68	4,090.91	0.00	0.00	0.00
10,000.00	90.00	180.07	5,812.00	-4,185.22	250.55	4,190.86	0.00	0.00	0.00
10,100.00	90.00	180.07	5,812.00	-4,285.22	250.42	4,290.81	0.00	0.00	0.00
10,200.00	90.00	180.07	5,812.00	-4,385.22	250.29	4,390.76	0.00	0.00	0.00
10,300.00	90.00	180.07	5,812.00	-4,485.22	250.16	4,490.71	0.00	0.00	0.00
10,400.00	90.00	180.07	5,812.00	-4,585.22	250.03	4,590.66	0.00	0.00	0.00
10,500.00	90.00	180.07	5,812.00	-4,685.22	249.90	4,690.61	0.00	0.00	0.00
10,600.00	90.00	180.07	5,812.00	-4,785.22	249.77	4,790.56	0.00	0.00	0.00
10,700.00	90.00	180.07	5,812.00	-4,885.22	249.64	4,890.51	0.00	0.00	0.00
10,800.00	90.00	180.07	5,812.00	-4,985.22	249.51	4,990.47	0.00	0.00	0.00
10,900.00	90.00	180.07	5,812.00	-5,085.22	249.38	5,090.42	0.00	0.00	0.00
11,000.00	90.00	180.07	5,812.00	-5,185.22	249.25	5,190.37	0.00	0.00	0.00
11,100.00	90.00	180.07	5,812.00	-5,285.22	249.12	5,290.32	0.00	0.00	0.00
11,200.00	90.00	180.07	5,812.00	-5,385.22	248.99	5,390.27	0.00	0.00	0.00
11,300.00	90.00	180.07	5,812.00	-5,485.22	248.86	5,490.22	0.00	0.00	0.00
11,400.00	90.00	180.07	5,812.00	-5,585.22	248.73	5,590.17	0.00	0.00	0.00
11,500.00	90.00	180.07	5,812.00	-5,685.22	248.60	5,690.12	0.00	0.00	0.00
11,600.00	90.00	180.07	5,812.00	-5,785.22	248.47	5,790.07	0.00	0.00	0.00
11,700.00	90.00	180.07	5,812.00	-5,885.22	248.34	5,890.02	0.00	0.00	0.00
11,800.00	90.00	180.07	5,812.00	-5,985.22	248.21	5,989.97	0.00	0.00	0.00
11,900.00	90.00	180.07	5,812.00	-6,085.22	248.08	6,089.92	0.00	0.00	0.00
12,000.00	90.00	180.07	5,812.00	-6,185.22	247.95	6,189.88	0.00	0.00	0.00
12,100.00	90.00	180.07	5,812.00	-6,285.22	247.82	6,289.83	0.00	0.00	0.00
12,200.00	90.00	180.07	5,812.00	-6,385.22	247.69	6,389.78	0.00	0.00	0.00
12,300.00	90.00	180.07	5,812.00	-6,485.22	247.56	6,489.73	0.00	0.00	0.00
12,400.00	90.00	180.07	5,812.00	-6,585.22	247.43	6,589.68	0.00	0.00	0.00
12,500.00	90.00	180.07	5,812.00	-6,685.22	247.30	6,689.63	0.00	0.00	0.00
12,600.00	90.00	180.07	5,812.00	-6,785.22	247.17	6,789.58	0.00	0.00	0.00
12,700.00	90.00	180.07	5,812.00	-6,885.22	247.04	6,889.53	0.00	0.00	0.00
12,800.00	90.00	180.07	5,812.00	-6,985.22	246.91	6,989.48	0.00	0.00	0.00
12,900.00	90.00	180.07	5,812.00	-7,085.22	246.78	7,089.43	0.00	0.00	0.00
13,000.00	90.00	180.07	5,812.00	-7,185.22	246.65	7,189.38	0.00	0.00	0.00
13,100.00	90.00	180.07	5,812.00	-7,285.22	246.52	7,289.33	0.00	0.00	0.00
13,200.00	90.00	180.07	5,812.00	-7,385.22	246.39	7,389.28	0.00	0.00	0.00
13,300.00	90.00	180.07	5,812.00	-7,485.22	246.26	7,489.24	0.00	0.00	0.00
13,400.00	90.00	180.07	5,812.00	-7,585.22	246.13	7,589.19	0.00	0.00	0.00
13,500.00	90.00	180.07	5,812.00	-7,685.22	246.00	7,689.14	0.00	0.00	0.00
13,600.00	90.00	180.07	5,812.00	-7,785.22	245.87	7,789.09	0.00	0.00	0.00
13,700.00	90.00	180.07	5,812.00	-7,885.22	245.74	7,889.04	0.00	0.00	0.00
13,800.00	90.00	180.07	5,812.00	-7,985.22	245.61	7,988.99	0.00	0.00	0.00
13,900.00	90.00	180.07	5,812.00	-8,085.22	245.48	8,088.94	0.00	0.00	0.00
13,973.91	90.00	180.07	5,812.00	-8,159.12	245.38	8,162.81	0.00	0.00	0.00

# Precision Drilling Corporation

## Planning Report

<b>Database:</b>	Local2	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Company:</b>	WHITING PETROLEUM CORP.	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site:</b>	Sec 30-T10N-R57W	<b>North Reference:</b>	True
<b>Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Sidetrack #1		
<b>Design:</b>	Plan #1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
SL 30G-3143	0.00	0.00	0.00	0.00	0.00	1,542,677.41	3,472,871.02	40.810528°N	103.791692°W
- plan hits target center									
- Point									
PBHL 30G-3143	0.00	0.00	5,812.00	-8,159.12	245.38	1,534,524.53	3,473,273.53	40.788133°N	103.790806°W
- plan hits target center									
- Point									
Maddy #2	0.00	0.00	6,451.00	-7,296.84	-1,135.68	1,535,360.05	3,471,876.11	40.790500°N	103.795793°W
- plan misses target center by 1522.74usft at 13113.42usft MD (5812.00 TVD, -7298.64 N, 246.50 E)									
- Circle (radius 1,550.00)									
Maddy #1-31	0.00	0.00	6,471.00	-7,601.03	1,536.20	1,535,107.38	3,474,553.36	40.789665°N	103.786144°W
- plan misses target center by 1448.66usft at 13414.14usft MD (5812.00 TVD, -7599.35 N, 246.11 E)									
- Circle (radius 1,550.00)									
Maddy #1	0.00	0.00	6,475.00	-7,599.24	-1,109.94	1,535,058.20	3,471,907.67	40.789670°N	103.795700°W
- plan misses target center by 1509.45usft at 13415.79usft MD (5812.00 TVD, -7601.00 N, 246.11 E)									
- Circle (radius 1,550.00)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
6,198.78	5,812.00	7"	7.00	8.75	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,760.00	0.00	Top Codell		0.00		
5,913.15	994.00	Lower C Marl		0.00		
5,930.32	1,001.00	Lower C Marker		0.00		
6,017.86	1,030.00	Top Ft. Hays		0.00		
6,095.08	1,046.00	Ft Hays Marker		0.00		

# **WHITING PETROLEUM CORP.**

**Weld County, CO  
Sec 30-T10N-R57W  
Horsetail #30G-3143**

**Sidetrack #1  
Plan #1**

## **Anticollision Report**

**05 December, 2016**



# Precision Drilling Corporation

## Anticollision Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Sidetrack #1	<b>Database:</b>	Local2
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	4,771.00 to 13,974.25usft	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.00 us	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.79 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	12/5/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
132.00	4,771.00	Survey #1 (Original Hole)	MWD+IFR1+MS+sag	Fixed:v2:crustal dec & 3-axis correction + sag	
4,771.00	13,973.91	Plan #1 (Sidetrack #1)	MWD	Fixed:v2:standard declination	

Summary						
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Sec 30-T10N-R57W						
Horsetail #30F-1947 - Original Hole - Original Hole						Out of range
Horsetail #30F-1948 - Original Hole - Original Hole						Out of range
Horsetail #30F-3106 - Original Hole - Original Hole						Out of range
Horsetail #30F-3107 - Original Hole - Original Hole						Out of range
Horsetail #30F-3108 - Original Hole - Original Hole	4,771.00	4,866.54	847.70	819.59	30.154	CC
Horsetail #30F-3108 - Original Hole - Original Hole	13,483.76	13,060.00	912.34	611.64	3.034	ES, SF
Horsetail #30G-1911 - Original Hole - Plan #2	5,568.69	6,332.57	99.14	65.27	2.927	CC, ES, SF
Horsetail #30G-1912 - Original Hole - Original Hole	5,657.91	6,304.14	200.97	169.18	6.321	CC, ES
Horsetail #30G-1912 - Original Hole - Original Hole	5,671.00	6,296.13	201.23	169.35	6.312	SF
Horsetail #30G-1943 - Original Hole - Original Hole	6,054.10	6,165.77	305.74	269.99	8.552	CC
Horsetail #30G-1943 - Original Hole - Original Hole	6,071.00	6,151.33	305.83	269.80	8.487	ES
Horsetail #30G-1943 - Original Hole - Original Hole	6,271.00	5,976.08	318.37	279.53	8.197	SF
Horsetail #30G-1944 - Original Hole - Original Hole	5,870.10	6,253.59	47.63	14.37	1.432	Level 3, CC, ES, SF
Horsetail #30G-3111 - Original Hole - Plan #2	5,111.41	5,116.28	194.84	164.84	6.495	CC
Horsetail #30G-3111 - Original Hole - Plan #2	13,974.25	13,701.57	320.04	113.22	1.547	ES, SF
Horsetail #30G-3112 - Original Hole - Original Hole	5,192.41	5,208.56	467.75	438.07	15.761	CC
Horsetail #30G-3112 - Original Hole - Original Hole	13,974.25	13,724.99	535.69	231.33	1.760	ES, SF
Horsetail #30G-3139 - Original Hole - Plan #2						Out of range
Horsetail #30G-3140 - Original Hole - Plan #2	4,771.00	4,747.17	918.17	889.37	31.881	CC
Horsetail #30G-3140 - Original Hole - Plan #2	11,471.00	11,418.36	999.94	762.84	4.217	ES, SF
Horsetail #30G-3143 - Original Hole - Original Hole	4,771.00	4,771.00	0.00	0.00	10,000.000	CC
Horsetail #30G-3143 - Original Hole - Original Hole	4,781.31	4,781.31	0.02	-0.01	0.715	Level 1, ES, SF
Horsetail #30G-3144 - Original Hole - Plan #2	5,980.07	5,936.13	300.86	266.65	8.793	CC
Horsetail #30G-3144 - Original Hole - Plan #2	13,974.25	13,906.24	339.60	8.15	1.025	Level 2, ES, SF
Sec 31-T10N-R57W						
Maddy #1 - Wellbore #1 - Original Hole						Out of range
Maddy #1-31 - Wellbore #1 - Original Hole						Out of range
Maddy #2 - Wellbore #1 - Original Hole						Out of range
Mertens #1-19 - Original Hole - Original Hole						Out of range

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

# Precision Drilling Corporation

## Anticollision Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Sidetrack #1	<b>Database:</b>	Local2
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Sec 30-T10N-R57W - Horsetail #30F-3108 - Original Hole - Original Hole		Offset Site Error: 0.00 usft	
Survey Program: 140-MWD+IFR1+MS+sag													Offset Well Error: 0.00 usft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
4,771.00	4,759.70	4,866.54	4,827.16	14.21	15.50	-160.66	35.11	-625.53	847.70	819.59	28.11	30.154	CC			
4,871.00	4,859.33	4,941.12	4,901.73	14.28	15.70	-144.89	34.35	-623.99	853.29	824.95	28.33	30.118				
4,971.00	4,958.87	5,017.00	4,977.60	14.33	15.91	-145.24	33.34	-623.83	861.47	832.97	28.50	30.222				
5,071.00	5,058.41	5,091.74	5,051.95	14.38	16.10	-145.94	26.50	-624.23	872.46	843.80	28.66	30.440				
5,171.00	5,157.98	5,160.19	5,118.48	14.44	16.28	-171.89	10.57	-624.57	887.27	858.52	28.76	30.854				
5,271.00	5,257.56	5,224.71	5,178.99	14.48	16.46	96.53	-11.67	-624.51	902.32	873.58	28.74	31.394				
5,371.00	5,355.15	5,293.00	5,239.87	14.48	16.64	80.83	-42.53	-624.90	916.75	888.03	28.72	31.919				
5,471.00	5,448.35	5,364.43	5,299.75	14.47	16.82	74.87	-81.43	-624.76	928.80	900.05	28.75	32.305				
5,571.00	5,534.85	5,444.03	5,362.16	14.50	17.03	71.61	-130.77	-622.92	936.55	907.56	28.99	32.305				
5,671.00	5,612.53	5,508.72	5,409.52	14.58	17.22	69.91	-174.76	-621.13	940.56	911.29	29.26	32.144				
5,771.00	5,679.48	5,569.00	5,449.20	15.16	17.40	69.06	-220.09	-620.12	942.43	912.66	29.78	31.651				
5,871.00	5,734.05	5,614.73	5,475.80	16.09	17.55	68.77	-257.26	-619.99	942.49	912.03	30.47	30.936				
5,971.00	5,774.89	5,672.19	5,504.42	17.35	17.76	69.00	-307.06	-620.75	941.12	909.41	31.70	29.684				
6,071.00	5,800.99	5,779.14	5,554.66	18.93	18.15	70.76	-401.46	-622.27	935.01	900.99	34.02	27.487				
6,171.00	5,811.73	5,857.05	5,587.78	20.74	18.51	73.12	-471.92	-621.62	923.26	886.84	36.41	25.354				
6,271.00	5,812.00	5,921.22	5,607.30	22.59	18.86	74.49	-533.01	-620.66	912.40	873.68	38.71	23.568				
6,371.00	5,812.00	5,977.14	5,619.25	24.67	19.19	75.21	-587.60	-620.44	906.24	865.18	41.06	22.069				
6,471.00	5,812.00	6,047.72	5,624.48	26.89	19.62	75.54	-657.95	-620.75	904.56	860.95	43.61	20.744				
6,494.11	5,812.00	6,067.97	5,625.09	27.42	19.75	75.58	-678.19	-620.90	904.52	860.27	44.25	20.441				
6,571.00	5,812.00	6,142.21	5,625.54	29.19	20.25	75.61	-752.42	-621.39	904.79	858.32	46.48	19.467				
6,671.00	5,812.00	6,248.55	5,624.48	31.55	21.02	75.54	-858.76	-621.17	904.71	855.12	49.59	18.243				
6,771.00	5,812.00	6,360.78	5,623.85	33.96	21.85	75.48	-970.98	-620.03	903.76	850.94	52.82	17.110				
6,871.00	5,812.00	6,463.00	5,625.76	36.41	22.58	75.57	-1,073.17	-618.41	901.63	845.67	55.96	16.113				
6,971.00	5,812.00	6,553.00	5,628.07	38.89	23.27	75.70	-1,163.13	-617.74	900.15	841.12	59.02	15.251				
6,996.02	5,812.00	6,569.98	5,628.54	39.51	23.41	75.73	-1,180.11	-617.83	900.06	840.34	59.72	15.071				
7,071.00	5,812.00	6,626.87	5,629.42	41.39	23.87	75.80	-1,236.98	-618.72	900.81	838.92	61.89	14.554				
7,171.00	5,812.00	6,706.52	5,628.74	43.92	24.58	75.79	-1,316.58	-621.27	903.99	839.11	64.88	13.934				
7,271.00	5,812.00	6,800.52	5,626.47	46.47	25.40	75.72	-1,410.46	-625.51	908.81	840.71	68.10	13.345				
7,371.00	5,812.00	6,942.67	5,624.53	49.03	26.67	75.65	-1,552.53	-628.93	911.33	839.08	72.26	12.612				
7,443.51	5,812.00	7,017.73	5,623.02	50.89	27.40	75.55	-1,627.58	-628.63	911.32	836.52	74.80	12.183				
7,471.00	5,812.00	7,042.09	5,622.62	51.60	27.64	75.53	-1,651.94	-628.60	911.37	835.68	75.69	12.041				
7,571.00	5,812.00	7,148.03	5,622.14	54.19	28.64	75.50	-1,757.87	-629.17	911.90	832.66	79.25	11.507				
7,653.26	5,812.00	7,227.50	5,622.98	56.32	29.40	75.55	-1,837.33	-629.01	911.44	829.37	82.07	11.106				
7,671.00	5,812.00	7,242.29	5,623.23	56.78	29.54	75.57	-1,852.12	-629.12	911.47	828.83	82.64	11.030				
7,771.00	5,812.00	7,334.21	5,624.43	59.39	30.46	75.66	-1,944.02	-630.43	912.38	826.33	86.06	10.602				
7,871.00	5,812.00	7,440.94	5,623.72	62.00	31.57	75.63	-2,050.75	-631.46	913.37	823.61	89.76	10.176				
7,971.00	5,812.00	7,552.49	5,623.53	64.61	32.72	75.61	-2,162.29	-631.31	913.15	819.60	93.54	9.762				
8,071.00	5,812.00	7,656.69	5,623.90	67.24	33.81	75.62	-2,266.48	-630.37	912.05	814.84	97.22	9.382				
8,171.00	5,812.00	7,770.53	5,626.16	69.86	35.01	75.67	-2,380.30	-628.83	910.39	809.30	101.09	9.006				
8,271.00	5,812.00	7,854.55	5,626.37	72.50	35.93	75.72	-2,464.29	-627.18	908.08	803.62	104.46	8.693				
8,371.00	5,812.00	7,947.87	5,626.01	75.13	36.97	75.69	-2,557.61	-626.93	907.76	799.78	107.99	8.406				
8,471.00	5,812.00	8,059.07	5,625.72	77.77	38.23	75.66	-2,668.81	-626.08	906.98	795.09	111.89	8.106				
8,571.00	5,812.00	8,172.50	5,626.53	80.42	39.53	75.66	-2,782.21	-623.44	904.38	788.53	115.85	7.807				
8,671.00	5,812.00	8,255.71	5,627.22	83.06	40.47	75.68	-2,865.40	-622.03	902.39	783.15	119.24	7.568				
8,771.00	5,812.00	8,357.13	5,628.25	85.71	41.61	75.73	-2,966.81	-621.02	901.05	778.07	122.98	7.327				
8,871.00	5,812.00	8,446.88	5,629.44	88.36	42.62	75.79	-3,056.55	-620.76	900.31	773.82	126.50	7.117				
8,884.61	5,812.00	8,459.11	5,629.52	88.72	42.75	75.80	-3,068.78	-620.79	900.30	773.33	126.97	7.090				
8,971.00	5,812.00	8,540.71	5,628.79	91.02	43.68	75.76	-3,150.37	-621.09	900.68	770.63	130.05	6.925				
9,071.00	5,812.00	8,678.52	5,627.74	93.67	45.32	75.66	-3,288.16	-619.55	899.87	765.37	134.50	6.691				
9,171.00	5,812.00	8,759.72	5,627.26	96.33	46.29	75.58	-3,369.29	-616.48	896.42	758.54	137.88	6.502				
9,203.52	5,812.00	8,780.44	5,626.48	97.20	46.54	75.53	-3,389.99	-616.11	896.12	757.29	138.83	6.455				
9,271.00	5,812.00	8,830.22	5,623.83	98.99	47.11	75.36	-3,439.70	-615.96	896.71	755.86	140.84	6.367				

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

# Precision Drilling Corporation

## Anticollision Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Sidetrack #1	<b>Database:</b>	Local2
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 140-MWD+IFR1+MS+sag												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
9,371.00	5,812.00	8,913.96	5,619.88	101.65	48.06	75.14	-3,523.34	-617.45	899.48	755.48	144.00	6.246	
9,471.00	5,812.00	9,022.96	5,616.40	104.31	49.27	74.98	-3,632.23	-620.71	903.12	755.31	147.81	6.110	
9,571.00	5,812.00	9,144.58	5,618.41	106.98	50.69	75.13	-3,753.81	-622.58	903.96	751.81	152.15	5.941	
9,671.00	5,812.00	9,242.54	5,621.73	109.64	51.83	75.35	-3,851.71	-623.73	904.11	748.13	155.98	5.796	
9,771.00	5,812.00	9,367.37	5,625.37	112.31	53.29	75.56	-3,976.46	-623.25	902.82	742.47	160.35	5.630	
9,871.00	5,812.00	9,450.73	5,625.98	114.98	54.29	75.58	-4,059.82	-622.39	901.49	737.68	163.81	5.503	
9,971.00	5,812.00	9,551.81	5,626.15	117.64	55.51	75.58	-4,160.90	-621.53	900.49	732.88	167.62	5.372	
9,991.23	5,812.00	9,566.23	5,626.10	118.18	55.68	75.58	-4,175.32	-621.49	900.43	732.17	168.26	5.352	
10,071.00	5,812.00	9,626.00	5,625.24	120.31	56.41	75.53	-4,235.07	-622.17	901.45	730.69	170.76	5.279	
10,171.00	5,812.00	9,720.25	5,622.59	122.98	57.53	75.40	-4,329.26	-624.32	904.23	729.94	174.29	5.188	
10,271.00	5,812.00	9,835.20	5,621.39	125.65	58.90	75.36	-4,444.17	-626.65	906.34	727.93	178.41	5.080	
10,371.00	5,812.00	9,938.07	5,622.30	128.32	60.15	75.43	-4,547.03	-627.56	906.83	724.51	182.32	4.974	
10,471.00	5,812.00	10,026.56	5,621.48	131.00	61.22	75.40	-4,635.50	-629.12	908.61	722.81	185.80	4.890	
10,571.00	5,812.00	10,135.42	5,619.36	133.67	62.53	75.30	-4,744.32	-630.79	910.48	720.75	189.72	4.799	
10,671.00	5,812.00	10,257.71	5,618.93	136.34	64.04	75.27	-4,866.61	-630.88	910.53	716.53	194.00	4.693	
10,720.64	5,812.00	10,295.81	5,619.25	137.67	64.51	75.29	-4,904.71	-630.65	910.11	714.45	195.66	4.651	
10,771.00	5,812.00	10,329.64	5,618.93	139.02	64.92	75.27	-4,938.54	-630.93	910.56	713.40	197.16	4.618	
10,871.00	5,812.00	10,413.20	5,616.17	141.69	65.94	75.14	-5,022.02	-633.09	913.70	713.32	200.39	4.560	
10,971.00	5,812.00	10,547.30	5,612.14	144.37	67.58	74.93	-5,156.02	-635.44	916.24	711.35	204.89	4.472	
11,071.00	5,812.00	10,672.30	5,612.14	147.04	69.16	74.90	-5,281.01	-633.73	914.80	705.63	209.17	4.374	
11,171.00	5,812.00	10,775.44	5,613.96	149.72	70.45	74.95	-5,384.09	-630.53	911.21	698.13	213.08	4.276	
11,271.00	5,812.00	10,851.52	5,615.60	152.40	71.37	75.03	-5,460.13	-629.36	909.10	692.60	216.50	4.199	
11,286.17	5,812.00	10,861.64	5,615.68	152.80	71.49	75.04	-5,470.25	-629.36	909.06	692.09	216.97	4.190	
11,371.00	5,812.00	10,921.26	5,615.08	155.07	72.20	75.01	-5,529.86	-630.27	910.37	690.85	219.52	4.147	
11,471.00	5,812.00	11,030.36	5,612.97	157.75	73.56	74.92	-5,638.92	-632.53	912.76	689.26	223.50	4.084	
11,571.00	5,812.00	11,141.60	5,612.04	160.43	74.95	74.88	-5,750.15	-633.49	913.66	686.09	227.56	4.015	
11,671.00	5,812.00	11,247.82	5,611.43	163.11	76.26	74.84	-5,856.37	-633.83	914.00	682.53	231.47	3.949	
11,771.00	5,812.00	11,353.05	5,611.82	165.79	77.57	74.86	-5,961.59	-633.51	913.48	678.06	235.41	3.880	
11,871.00	5,812.00	11,457.56	5,613.09	168.47	78.87	74.93	-6,066.09	-632.97	912.53	673.15	239.38	3.812	
11,949.90	5,812.00	11,525.45	5,613.97	170.58	79.72	74.97	-6,133.98	-632.81	912.00	669.79	242.21	3.765	
11,971.00	5,812.00	11,543.21	5,614.06	171.15	79.94	74.98	-6,151.74	-632.89	912.04	669.10	242.94	3.754	
12,071.00	5,812.00	11,637.26	5,613.06	173.83	81.09	74.93	-6,245.77	-633.51	912.82	666.29	246.54	3.703	
12,171.00	5,812.00	11,743.86	5,609.15	176.51	82.37	74.69	-6,352.30	-633.40	913.56	663.35	250.22	3.651	
12,271.00	5,812.00	11,857.74	5,605.75	179.19	83.78	74.46	-6,466.12	-632.12	913.15	659.09	254.06	3.594	
12,371.00	5,812.00	11,973.31	5,603.39	181.87	85.24	74.26	-6,581.62	-629.08	911.04	653.11	257.93	3.532	
12,471.00	5,812.00	12,060.63	5,601.82	184.55	86.33	74.11	-6,668.87	-626.18	908.28	646.92	261.37	3.475	
12,571.00	5,812.00	12,176.96	5,601.33	187.23	87.76	74.06	-6,785.19	-624.96	907.50	642.15	265.35	3.420	
12,671.00	5,812.00	12,259.26	5,602.72	189.91	88.79	74.10	-6,867.45	-622.67	904.40	635.47	268.92	3.363	
12,715.10	5,812.00	12,291.00	5,603.05	191.09	89.19	74.12	-6,899.18	-622.64	904.15	633.79	270.37	3.344	
12,771.00	5,812.00	12,335.55	5,603.35	192.59	89.73	74.15	-6,943.73	-623.16	904.59	632.36	272.23	3.323	
12,871.00	5,812.00	12,422.63	5,603.73	195.27	90.77	74.21	-7,030.78	-625.24	906.63	630.93	275.70	3.289	
12,971.00	5,812.00	12,521.21	5,604.30	197.96	91.95	74.30	-7,129.31	-628.64	909.66	630.13	279.53	3.254	
13,071.00	5,812.00	12,627.15	5,605.34	200.64	93.28	74.41	-7,235.20	-631.71	912.06	628.40	283.65	3.215	
13,171.00	5,812.00	12,720.59	5,606.09	203.32	94.45	74.50	-7,328.59	-634.34	914.44	627.06	287.38	3.182	
13,271.00	5,812.00	12,857.53	5,607.13	206.00	96.17	74.60	-7,465.49	-636.70	915.94	623.68	292.26	3.134	
13,371.00	5,812.00	12,963.99	5,610.37	208.69	97.54	74.78	-7,571.90	-636.05	914.42	617.97	296.45	3.085	
13,471.00	5,812.00	13,060.00	5,614.17	211.37	98.75	74.99	-7,667.83	-635.21	912.43	611.96	300.47	3.037	
13,483.76	5,812.00	13,060.00	5,614.17	211.71	98.75	74.99	-7,667.83	-635.21	912.34	611.64	300.70	3.034 ES, SF	
13,571.00	5,812.00	13,060.00	5,614.17	214.05	98.75	74.99	-7,667.83	-635.21	916.50	615.77	300.74	3.048	
13,671.00	5,812.00	13,060.00	5,614.17	216.74	98.75	74.99	-7,667.83	-635.21	931.36	633.75	297.61	3.129	
13,771.00	5,812.00	13,060.00	5,614.17	219.42	98.75	74.99	-7,667.83	-635.21	956.49	664.99	291.50	3.281	
13,871.00	5,812.00	13,060.00	5,614.17	222.10	98.75	74.99	-7,667.83	-635.21	991.12	708.07	283.05	3.502	

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

# Precision Drilling Corporation

## Anticollision Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Sidetrack #1	<b>Database:</b>	Local2
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

# Precision Drilling Corporation

## Anticollision Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Sidetrack #1	<b>Database:</b>	Local2
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Sec 30-T10N-R57W - Horsetail #30G-1911 - Original Hole - Plan #2												<b>Offset Site Error:</b>	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag												<b>Offset Well Error:</b>	0.00 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,771.00	4,759.70	6,415.29	5,538.00	14.21	19.96	-164.07	234.66	145.44	780.06	770.04	10.02	77.873	
4,871.00	4,859.33	6,421.19	5,538.00	14.28	19.99	-156.96	240.56	145.42	681.19	670.92	10.27	66.341	
4,971.00	4,958.87	6,428.40	5,538.00	14.33	20.03	-153.57	247.77	145.39	582.75	572.09	10.66	54.649	
5,071.00	5,058.41	6,435.60	5,538.00	14.38	20.06	-150.00	254.97	145.36	484.84	473.55	11.29	42.941	
5,171.00	5,157.98	6,442.20	5,538.00	14.44	20.10	-161.71	261.57	145.33	387.83	375.48	12.36	31.387	
5,271.00	5,257.56	6,437.18	5,538.00	14.48	20.07	134.49	256.55	145.35	292.63	278.35	14.28	20.496	
5,371.00	5,355.15	6,416.62	5,538.00	14.48	19.97	128.17	235.99	145.44	203.50	185.35	18.15	11.213	
5,471.00	5,448.35	6,381.03	5,538.00	14.47	19.80	117.25	200.40	145.59	130.29	104.08	26.21	4.970	
5,568.69	5,532.94	6,332.57	5,538.00	14.50	19.60	95.20	151.94	145.80	99.14	65.27	33.87	2.927	CC, ES, SF
5,571.00	5,534.85	6,331.27	5,538.00	14.50	19.59	94.54	150.64	145.81	99.16	65.29	33.88	2.927	
5,671.00	5,612.53	6,268.57	5,538.00	14.58	19.36	65.17	87.94	146.08	127.07	99.77	27.30	4.655	
5,771.00	5,679.48	6,194.49	5,538.00	15.16	19.12	43.87	13.86	146.40	176.70	155.94	20.77	8.510	
5,871.00	5,734.05	6,110.83	5,538.00	16.09	18.92	32.22	-69.79	146.76	223.77	206.27	17.50	12.788	
5,971.00	5,774.89	6,019.67	5,538.00	17.35	18.78	26.04	-160.96	147.15	260.73	244.66	16.07	16.227	
6,071.00	5,800.99	5,950.00	5,536.25	18.93	18.73	23.14	-230.58	147.45	287.54	272.19	15.34	18.740	
6,171.00	5,811.73	5,877.46	5,526.77	20.74	18.71	21.00	-302.46	147.76	309.52	294.20	15.32	20.209	
6,271.00	5,812.00	5,811.60	5,511.14	22.59	18.72	19.66	-366.40	148.04	331.83	315.94	15.89	20.884	
6,371.00	5,812.00	5,750.00	5,490.61	24.67	18.75	18.44	-424.46	148.29	363.45	346.60	16.85	21.568	
6,471.00	5,812.00	5,700.00	5,469.88	26.89	18.79	17.35	-469.94	148.48	403.88	385.57	18.31	22.054	
6,571.00	5,812.00	5,639.52	5,440.14	29.19	18.85	16.00	-522.58	148.71	451.85	432.55	19.30	23.408	
6,671.00	5,812.00	5,600.00	5,418.06	31.55	18.89	15.12	-555.35	148.85	506.91	486.05	20.86	24.302	
6,771.00	5,812.00	5,550.00	5,387.29	33.96	18.94	14.04	-594.74	149.02	567.65	545.80	21.85	25.982	
6,871.00	5,812.00	5,500.00	5,353.52	36.41	19.00	13.02	-631.60	149.18	633.74	611.06	22.68	27.943	
6,971.00	5,812.00	5,476.04	5,336.33	38.89	19.02	12.55	-648.29	149.25	703.79	679.86	23.94	29.404	
7,071.00	5,812.00	5,450.00	5,316.96	41.39	19.05	12.06	-665.69	149.33	777.70	752.80	24.90	31.231	
7,171.00	5,812.00	5,417.38	5,291.72	43.92	19.08	11.48	-686.34	149.41	854.65	829.06	25.59	33.399	
7,271.00	5,812.00	5,400.00	5,277.84	46.47	19.10	11.19	-696.81	149.46	934.33	907.97	26.36	35.443	

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

# Precision Drilling Corporation

## Anticollision Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Sidetrack #1	<b>Database:</b>	Local2
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Sec 30-T10N-R57W - Horsetail #30G-1912 - Original Hole - Original Hole												<b>Offset Site Error:</b>	0.00 usft
Survey Program: 21-MWD+IFR1+MS+sag												<b>Offset Well Error:</b>	0.00 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,771.00	4,759.70	6,412.00	5,603.51	14.21	17.52	47.70	215.40	447.75	880.27	869.08	11.19	78.677	
4,871.00	4,859.33	6,412.09	5,603.51	14.28	17.52	71.05	215.49	447.76	783.52	771.81	11.71	66.920	
4,971.00	4,958.87	6,426.23	5,603.82	14.33	17.57	67.42	229.62	448.14	687.68	675.20	12.48	55.085	
5,071.00	5,058.41	6,438.57	5,604.01	14.38	17.61	64.12	241.96	448.48	593.02	579.47	13.54	43.784	
5,171.00	5,157.98	6,448.67	5,604.11	14.44	17.65	31.14	252.06	448.76	500.19	485.15	15.05	33.244	
5,271.00	5,257.56	6,443.87	5,604.07	14.48	17.63	-75.07	247.26	448.63	410.39	393.21	17.18	23.883	
5,371.00	5,355.15	6,422.10	5,603.74	14.48	17.56	-95.85	225.49	448.03	327.71	307.42	20.29	16.151	
5,471.00	5,448.35	6,391.75	5,603.04	14.47	17.47	-100.92	195.16	447.37	258.66	234.00	24.66	10.489	
5,571.00	5,534.85	6,350.70	5,602.35	14.50	17.38	-97.77	154.12	447.52	213.58	184.12	29.45	7.251	
5,657.91	5,602.94	6,304.14	5,602.01	14.56	17.29	-89.61	107.59	449.21	200.97	169.18	31.79	6.321 CC, ES	
5,671.00	5,612.53	6,296.13	5,602.00	14.58	17.27	-88.03	99.59	449.64	201.23	169.35	31.88	6.312 SF	
5,771.00	5,679.48	6,228.33	5,602.57	15.16	17.19	-74.95	31.99	454.69	217.27	186.19	31.08	6.991	
5,871.00	5,734.05	6,138.53	5,603.23	16.09	17.21	-61.73	-57.54	461.51	245.04	215.61	29.43	8.326	
5,971.00	5,774.89	6,063.31	5,599.12	17.35	17.32	-53.19	-132.51	465.42	274.78	246.58	28.20	9.745	
6,071.00	5,800.99	5,980.67	5,589.02	18.93	17.47	-46.69	-214.43	469.16	303.24	275.55	27.69	10.950	
6,171.00	5,811.73	5,899.00	5,570.75	20.74	17.66	-42.01	-293.92	471.92	329.52	301.71	27.81	11.847	
6,271.00	5,812.00	5,842.07	5,550.54	22.59	17.78	-39.53	-347.07	471.29	356.21	327.79	28.42	12.534	
6,371.00	5,812.00	5,774.44	5,518.03	24.67	17.91	-35.53	-406.03	465.35	391.30	363.07	28.23	13.862	
6,471.00	5,812.00	5,710.00	5,484.30	26.89	18.03	-31.74	-460.44	458.07	432.32	404.30	28.02	15.427	
6,571.00	5,812.00	5,665.72	5,459.07	29.19	18.11	-29.47	-496.64	454.76	481.50	452.92	28.58	16.846	
6,671.00	5,812.00	5,616.00	5,427.38	31.55	18.20	-27.53	-534.90	455.77	539.94	510.88	29.06	18.580	
6,771.00	5,812.00	5,592.45	5,411.36	33.96	18.24	-26.78	-552.08	457.43	604.08	574.01	30.07	20.090	
6,871.00	5,812.00	5,551.97	5,382.70	36.41	18.31	-25.53	-580.53	460.28	672.96	642.39	30.57	22.011	
6,971.00	5,812.00	5,521.00	5,359.85	38.89	18.37	-24.63	-601.31	462.46	745.40	714.28	31.12	23.950	
7,071.00	5,812.00	5,484.99	5,332.32	41.39	18.43	-23.66	-624.33	465.36	820.92	789.40	31.52	26.044	
7,171.00	5,812.00	5,457.06	5,310.29	43.92	18.47	-23.00	-641.28	468.13	899.23	867.27	31.95	28.142	
7,271.00	5,812.00	5,427.00	5,285.98	46.47	18.52	-22.37	-658.60	471.60	979.90	947.58	32.32	30.320	

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

# Precision Drilling Corporation

## Anticollision Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Sidetrack #1	<b>Database:</b>	Local2
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Sec 30-T10N-R57W - Horsetail #30G-1943 - Original Hole - Original Hole												<b>Offset Site Error:</b>	0.00 usft
Survey Program: 237-MWD+IFR1+MS+sag												<b>Offset Well Error:</b>	0.00 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,871.00	4,859.33	6,655.33	5,820.43	14.28	17.42	-141.59	249.73	-57.15	995.97	983.37	12.60	79.019	
4,971.00	4,958.87	6,661.01	5,820.35	14.33	17.43	-140.61	255.41	-57.24	902.08	888.74	13.34	67.636	
5,071.00	5,058.41	6,666.70	5,820.28	14.38	17.44	-139.62	261.10	-57.32	809.61	795.33	14.28	56.697	
5,171.00	5,157.98	6,671.80	5,820.21	14.44	17.45	-158.00	266.20	-57.40	719.08	703.58	15.50	46.397	
5,271.00	5,257.56	6,665.55	5,820.29	14.48	17.44	128.17	259.95	-57.30	631.35	614.32	17.03	37.078	
5,371.00	5,355.15	6,644.10	5,820.58	14.48	17.40	123.68	238.50	-56.99	549.31	530.40	18.91	29.042	
5,471.00	5,448.35	6,607.93	5,821.07	14.47	17.33	123.35	202.34	-56.51	476.36	455.15	21.21	22.455	
5,571.00	5,534.85	6,556.51	5,821.79	14.50	17.24	121.23	150.93	-55.88	415.70	391.81	23.89	17.399	
5,671.00	5,612.53	6,491.61	5,822.69	14.58	17.15	117.00	86.05	-54.85	369.45	342.70	26.75	13.811	
5,771.00	5,679.48	6,417.85	5,823.52	15.16	17.08	111.35	12.30	-53.82	338.29	308.77	29.51	11.462	
5,871.00	5,734.05	6,322.93	5,822.77	16.09	17.07	103.69	-82.60	-51.89	319.38	287.41	31.97	9.990	
5,971.00	5,774.89	6,235.10	5,817.22	17.35	17.13	97.03	-170.18	-49.31	308.45	274.31	34.14	9.035	
6,054.10	5,797.65	6,165.77	5,806.98	18.66	17.21	91.79	-238.72	-49.08	305.74	269.99	35.75	8.552 CC	
6,071.00	5,800.99	6,151.33	5,803.91	18.93	17.24	90.67	-252.82	-49.27	305.83	269.80	36.03	8.487 ES	
6,171.00	5,811.73	6,065.32	5,779.82	20.74	17.39	84.18	-335.31	-51.44	309.78	272.12	37.66	8.226	
6,271.00	5,812.00	5,976.08	5,746.18	22.59	17.58	77.98	-417.89	-53.72	318.37	279.53	38.84	8.197 SF	
6,371.00	5,812.00	5,899.00	5,708.70	24.67	17.76	71.58	-485.18	-54.85	334.50	295.11	39.39	8.492	
6,471.00	5,812.00	5,832.92	5,669.87	26.89	17.91	65.41	-538.60	-55.27	361.09	321.95	39.15	9.224	
6,571.00	5,812.00	5,779.07	5,633.91	29.19	18.02	60.17	-578.66	-55.40	399.49	361.13	38.36	10.414	
6,671.00	5,812.00	5,735.63	5,601.94	31.55	18.10	55.92	-608.05	-55.34	449.39	411.99	37.39	12.018	
6,771.00	5,812.00	5,710.00	5,581.91	33.96	18.14	53.45	-624.03	-55.23	509.29	472.64	36.65	13.897	
6,871.00	5,812.00	5,658.53	5,540.09	36.41	18.21	48.78	-654.02	-55.19	575.91	540.32	35.59	16.182	
6,971.00	5,812.00	5,616.00	5,504.41	38.89	18.26	45.28	-677.17	-55.48	648.21	613.38	34.83	18.611	
7,071.00	5,812.00	5,592.69	5,484.45	41.39	18.29	43.50	-689.20	-55.76	724.55	690.09	34.46	21.028	
7,171.00	5,812.00	5,564.77	5,460.17	43.92	18.31	41.50	-702.97	-56.20	804.29	770.19	34.10	23.583	
7,271.00	5,812.00	5,522.00	5,422.23	46.47	18.35	38.69	-722.70	-57.10	887.03	853.35	33.68	26.336	
7,371.00	5,812.00	5,522.00	5,422.23	49.03	18.35	38.69	-722.70	-57.10	971.31	937.60	33.71	28.812	

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



# Precision Drilling Corporation

## Anticollision Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Sidetrack #1	<b>Database:</b>	Local2
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Sec 30-T10N-R57W - Horsetail #30G-1944 - Original Hole - Original Hole												<b>Offset Site Error:</b>	0.00 usft
Survey Program: 21-MWD+IFR1+MS+sag												<b>Offset Well Error:</b>	0.00 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,771.00	4,759.70	6,581.50	5,725.81	14.21	17.70	48.75	258.07	306.12	972.44	962.85	9.59	101.418	
4,871.00	4,859.33	6,585.06	5,725.73	14.28	17.71	90.67	261.63	306.02	872.65	863.00	9.64	90.479	
4,971.00	4,958.87	6,589.92	5,725.63	14.33	17.72	87.30	266.49	305.88	772.93	763.20	9.73	79.446	
5,071.00	5,058.41	6,594.75	5,725.53	14.38	17.74	83.60	271.31	305.75	673.26	663.42	9.84	68.399	
5,171.00	5,157.98	6,599.00	5,725.45	14.44	17.75	27.76	275.56	305.62	573.64	563.64	10.00	57.370	
5,271.00	5,257.56	6,592.00	5,725.59	14.48	17.73	-120.75	268.56	305.83	474.44	464.27	10.17	46.663	
5,371.00	5,355.15	6,569.65	5,726.06	14.48	17.67	-144.80	246.22	306.44	377.89	367.52	10.37	36.436	
5,471.00	5,448.35	6,532.19	5,726.89	14.47	17.57	-150.60	208.78	307.35	286.65	275.84	10.81	26.519	
5,571.00	5,534.85	6,479.08	5,728.14	14.50	17.44	-149.77	155.70	308.34	203.49	191.51	11.97	16.995	
5,671.00	5,612.53	6,410.82	5,729.07	14.58	17.33	-142.79	87.45	307.71	130.49	115.47	15.02	8.687	
5,771.00	5,679.48	6,335.92	5,729.51	15.16	17.29	-125.39	12.60	305.06	72.76	49.64	23.12	3.147	
5,870.10	5,733.62	6,253.59	5,729.65	16.08	17.31	-84.55	-69.67	302.07	47.63	14.37	33.27	1.432	Level 3, CC, ES, SF
5,871.00	5,734.05	6,252.82	5,729.64	16.09	17.31	-84.10	-70.44	302.06	47.63	14.37	33.26	1.432	Level 3
5,971.00	5,774.89	6,165.02	5,726.85	17.35	17.41	-45.12	-158.18	300.86	65.72	40.30	25.42	2.585	
6,071.00	5,800.99	6,079.91	5,718.87	18.93	17.55	-29.47	-242.87	300.67	94.28	74.14	20.15	4.679	
6,171.00	5,811.73	6,000.83	5,699.73	20.74	17.71	-22.42	-319.50	302.10	126.56	107.48	19.09	6.631	
6,271.00	5,812.00	5,932.00	5,676.57	22.59	17.85	-19.83	-384.27	304.32	160.98	140.39	20.58	7.820	
6,371.00	5,812.00	5,855.41	5,642.57	24.67	18.02	-16.89	-452.76	306.85	205.12	184.09	21.03	9.754	
6,471.00	5,812.00	5,798.09	5,610.34	26.89	18.14	-14.77	-500.09	308.49	260.56	237.99	22.57	11.543	
6,571.00	5,812.00	5,743.00	5,574.77	29.19	18.25	-13.14	-542.07	310.68	324.41	300.65	23.76	13.655	
6,671.00	5,812.00	5,710.00	5,551.59	31.55	18.31	-12.18	-565.54	311.48	394.35	368.89	25.47	15.485	
6,771.00	5,812.00	5,651.38	5,508.23	33.96	18.40	-10.34	-604.96	310.65	467.74	442.09	25.66	18.232	
6,871.00	5,812.00	5,616.00	5,481.01	36.41	18.45	-9.27	-627.52	309.18	544.35	517.86	26.49	20.552	
6,971.00	5,812.00	5,579.37	5,451.77	38.89	18.49	-8.26	-649.50	307.44	623.97	596.91	27.06	23.060	
7,071.00	5,812.00	5,552.83	5,429.77	41.39	18.52	-7.64	-664.31	306.37	706.52	678.81	27.71	25.497	
7,171.00	5,812.00	5,521.00	5,402.56	43.92	18.56	-6.99	-680.78	305.31	791.50	763.37	28.13	28.142	
7,271.00	5,812.00	5,521.00	5,402.56	46.47	18.56	-6.99	-680.78	305.31	878.39	849.48	28.91	30.385	
7,371.00	5,812.00	5,480.10	5,366.65	49.03	18.58	-6.31	-700.33	304.30	966.14	937.11	29.03	33.281	



# Precision Drilling Corporation

## Anticollision Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Sidetrack #1	<b>Database:</b>	Local2
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
4,771.00	4,759.70	4,784.76	4,759.70	14.21	15.55	28.28	252.62	410.75	213.71	185.02	28.69	7.450	
4,871.00	4,859.33	4,884.39	4,859.33	14.28	15.82	45.86	252.62	410.75	207.15	178.09	29.06	7.128	
4,971.00	4,958.87	4,984.18	4,959.04	14.33	16.08	48.57	250.01	410.75	200.53	171.13	29.41	6.819	
5,071.00	5,058.41	5,079.78	5,053.24	14.38	16.28	55.18	234.25	410.75	195.44	165.61	29.83	6.552	
5,111.41	5,098.66	5,116.28	5,088.42	14.41	16.35	50.83	224.53	410.75	194.84	164.84	30.00	6.495 CC	
5,171.00	5,157.98	5,167.18	5,136.43	14.44	16.45	40.45	207.64	410.75	196.81	166.64	30.17	6.523	
5,271.00	5,257.56	5,250.00	5,211.19	14.48	16.60	-38.98	172.15	410.75	205.89	175.92	29.97	6.870	
5,371.00	5,355.15	5,328.48	5,277.22	14.48	16.72	-44.30	129.84	410.75	219.99	190.97	29.02	7.581	
5,471.00	5,448.35	5,405.17	5,336.25	14.47	16.84	-41.75	80.95	410.75	236.73	209.20	27.52	8.600	
5,571.00	5,534.85	5,479.93	5,387.73	14.50	16.96	-38.42	26.80	410.75	254.14	228.40	25.74	9.874	
5,671.00	5,612.53	5,550.00	5,429.91	14.58	17.07	-35.57	-29.11	410.75	270.78	247.06	23.72	11.417	
5,771.00	5,679.48	5,625.24	5,468.07	15.16	17.20	-33.11	-93.91	410.75	285.53	263.31	22.21	12.854	
5,871.00	5,734.05	5,700.00	5,498.15	16.09	17.37	-31.31	-162.30	410.75	297.76	276.62	21.14	14.088	
5,971.00	5,774.89	5,766.96	5,518.13	17.35	17.56	-30.22	-226.18	410.75	306.86	286.40	20.46	14.999	
6,071.00	5,800.99	5,837.10	5,531.74	18.93	17.79	-29.59	-294.95	410.75	312.62	291.88	20.73	15.077	
6,171.00	5,811.73	5,907.03	5,537.70	20.74	18.07	-29.46	-364.59	410.75	314.82	292.94	21.88	14.386	
6,271.00	5,812.00	5,998.66	5,538.00	22.59	18.49	-29.55	-456.22	410.75	314.98	291.53	23.45	13.432	
6,371.00	5,812.00	6,098.66	5,538.00	24.67	19.04	-29.57	-556.22	410.75	315.04	289.91	25.13	12.536	
6,471.00	5,812.00	6,198.66	5,538.00	26.89	19.67	-29.59	-656.22	410.75	315.10	288.18	26.93	11.701	
6,571.00	5,812.00	6,298.66	5,538.00	29.19	20.37	-29.61	-756.22	410.75	315.17	286.36	28.81	10.940	
6,671.00	5,812.00	6,398.66	5,538.00	31.55	21.14	-29.63	-856.22	410.75	315.23	284.47	30.76	10.248	
6,771.00	5,812.00	6,498.66	5,538.00	33.96	21.97	-29.65	-956.22	410.75	315.30	282.53	32.77	9.622	
6,871.00	5,812.00	6,598.66	5,538.00	36.41	22.86	-29.68	-1,056.22	410.75	315.36	280.54	34.83	9.055	
6,971.00	5,812.00	6,698.66	5,538.00	38.89	23.78	-29.70	-1,156.22	410.75	315.43	278.50	36.92	8.542	
7,071.00	5,812.00	6,798.66	5,538.00	41.39	24.75	-29.72	-1,256.22	410.75	315.49	276.43	39.06	8.077	
7,171.00	5,812.00	6,898.66	5,538.00	43.92	25.76	-29.74	-1,356.22	410.75	315.56	274.33	41.23	7.654	
7,271.00	5,812.00	6,998.66	5,538.00	46.47	26.80	-29.76	-1,456.22	410.75	315.62	272.20	43.42	7.269	
7,371.00	5,812.00	7,098.66	5,538.00	49.03	27.86	-29.78	-1,556.22	410.75	315.68	270.05	45.64	6.917	
7,471.00	5,812.00	7,198.66	5,538.00	51.60	28.95	-29.80	-1,656.22	410.75	315.75	267.88	47.87	6.596	
7,571.00	5,812.00	7,298.66	5,538.00	54.19	30.07	-29.82	-1,756.22	410.75	315.81	265.68	50.13	6.300	
7,671.00	5,812.00	7,398.66	5,538.00	56.78	31.20	-29.84	-1,856.22	410.75	315.88	263.48	52.40	6.028	
7,771.00	5,812.00	7,498.66	5,538.00	59.39	32.36	-29.86	-1,956.22	410.75	315.94	261.25	54.69	5.777	
7,871.00	5,812.00	7,598.66	5,538.00	62.00	33.53	-29.88	-2,056.22	410.75	316.01	259.02	56.99	5.545	
7,971.00	5,812.00	7,698.66	5,538.00	64.61	34.71	-29.90	-2,156.22	410.75	316.07	256.77	59.30	5.330	
8,071.00	5,812.00	7,798.66	5,538.00	67.24	35.91	-29.92	-2,256.22	410.75	316.14	254.51	61.63	5.130	
8,171.00	5,812.00	7,898.66	5,538.00	69.86	37.12	-29.94	-2,356.22	410.75	316.20	252.24	63.96	4.944	
8,271.00	5,812.00	7,998.66	5,538.00	72.50	38.34	-29.96	-2,456.22	410.75	316.27	249.96	66.31	4.770	
8,371.00	5,812.00	8,098.66	5,538.00	75.13	39.57	-29.98	-2,556.22	410.75	316.33	247.67	68.66	4.607	
8,471.00	5,812.00	8,198.66	5,538.00	77.77	40.80	-30.00	-2,656.22	410.75	316.40	245.38	71.02	4.455	
8,571.00	5,812.00	8,298.66	5,538.00	80.42	42.05	-30.02	-2,756.22	410.75	316.46	243.08	73.39	4.312	
8,671.00	5,812.00	8,398.66	5,538.00	83.06	43.31	-30.04	-2,856.22	410.75	316.53	240.77	75.76	4.178	
8,771.00	5,812.00	8,498.66	5,538.00	85.71	44.57	-30.06	-2,956.22	410.75	316.59	238.45	78.14	4.052	
8,871.00	5,812.00	8,598.66	5,538.00	88.36	45.83	-30.08	-3,056.22	410.75	316.66	236.13	80.53	3.932	
8,971.00	5,812.00	8,698.66	5,538.00	91.02	47.11	-30.10	-3,156.22	410.75	316.72	233.80	82.92	3.820	
9,071.00	5,812.00	8,798.66	5,538.00	93.67	48.38	-30.13	-3,256.22	410.75	316.79	231.47	85.32	3.713	
9,171.00	5,812.00	8,898.66	5,538.00	96.33	49.67	-30.15	-3,356.22	410.75	316.85	229.13	87.72	3.612	
9,271.00	5,812.00	8,998.66	5,538.00	98.99	50.95	-30.17	-3,456.22	410.75	316.92	226.79	90.13	3.516	
9,371.00	5,812.00	9,098.66	5,538.00	101.65	52.25	-30.19	-3,556.22	410.75	316.99	224.45	92.54	3.425	
9,471.00	5,812.00	9,198.66	5,538.00	104.31	53.54	-30.21	-3,656.22	410.75	317.05	222.09	94.96	3.339	
9,571.00	5,812.00	9,298.66	5,538.00	106.98	54.84	-30.23	-3,756.22	410.75	317.12	219.74	97.38	3.257	
9,671.00	5,812.00	9,398.66	5,538.00	109.64	56.14	-30.25	-3,856.22	410.75	317.18	217.38	99.80	3.178	
9,771.00	5,812.00	9,498.66	5,538.00	112.31	57.45	-30.27	-3,956.22	410.75	317.25	215.02	102.23	3.103	

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

# Precision Drilling Corporation

## Anticollision Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Sidetrack #1	<b>Database:</b>	Local2
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
9,871.00	5,812.00	9,598.66	5,538.00	114.98	58.76	-30.29	-4,056.22	410.75	317.31	212.65	104.66	3.032	
9,971.00	5,812.00	9,698.66	5,538.00	117.64	60.07	-30.31	-4,156.22	410.75	317.38	210.28	107.10	2.963	
10,071.00	5,812.00	9,798.66	5,538.00	120.31	61.38	-30.33	-4,256.22	410.75	317.44	207.91	109.54	2.898	
10,171.00	5,812.00	9,898.66	5,538.00	122.98	62.70	-30.35	-4,356.22	410.75	317.51	205.53	111.98	2.835	
10,271.00	5,812.00	9,998.66	5,538.00	125.65	64.01	-30.37	-4,456.22	410.75	317.58	203.15	114.43	2.775	
10,371.00	5,812.00	10,098.66	5,538.00	128.32	65.33	-30.39	-4,556.22	410.75	317.64	200.77	116.88	2.718	
10,471.00	5,812.00	10,198.66	5,538.00	131.00	66.66	-30.41	-4,656.22	410.75	317.71	198.38	119.33	2.662	
10,571.00	5,812.00	10,298.66	5,538.00	133.67	67.98	-30.43	-4,756.22	410.75	317.77	195.99	121.78	2.609	
10,671.00	5,812.00	10,398.66	5,538.00	136.34	69.31	-30.45	-4,856.22	410.75	317.84	193.60	124.24	2.558	
10,771.00	5,812.00	10,498.66	5,538.00	139.02	70.63	-30.47	-4,956.22	410.75	317.91	191.20	126.70	2.509	
10,871.00	5,812.00	10,598.66	5,538.00	141.69	71.96	-30.49	-5,056.22	410.75	317.97	188.80	129.17	2.462	
10,971.00	5,812.00	10,698.66	5,538.00	144.37	73.29	-30.51	-5,156.22	410.75	318.04	186.40	131.63	2.416	
11,071.00	5,812.00	10,798.66	5,538.00	147.04	74.63	-30.53	-5,256.22	410.75	318.10	184.00	134.10	2.372	
11,171.00	5,812.00	10,898.66	5,538.00	149.72	75.96	-30.55	-5,356.22	410.75	318.17	181.59	136.58	2.330	
11,271.00	5,812.00	10,998.66	5,538.00	152.40	77.29	-30.57	-5,456.22	410.75	318.24	179.19	139.05	2.289	
11,371.00	5,812.00	11,098.66	5,538.00	155.07	78.63	-30.59	-5,556.22	410.75	318.30	176.77	141.53	2.249	
11,471.00	5,812.00	11,198.66	5,538.00	157.75	79.97	-30.61	-5,656.22	410.75	318.37	174.36	144.01	2.211	
11,571.00	5,812.00	11,298.66	5,538.00	160.43	81.30	-30.63	-5,756.22	410.75	318.43	171.94	146.49	2.174	
11,671.00	5,812.00	11,398.66	5,538.00	163.11	82.64	-30.65	-5,856.22	410.75	318.50	169.53	148.97	2.138	
11,771.00	5,812.00	11,498.66	5,538.00	165.79	83.98	-30.67	-5,956.22	410.75	318.57	167.11	151.46	2.103	
11,871.00	5,812.00	11,598.66	5,538.00	168.47	85.32	-30.69	-6,056.22	410.75	318.63	164.68	153.95	2.070	
11,971.00	5,812.00	11,698.66	5,538.00	171.15	86.67	-30.71	-6,156.22	410.75	318.70	162.26	156.44	2.037	
12,071.00	5,812.00	11,798.66	5,538.00	173.83	88.01	-30.73	-6,256.22	410.75	318.77	159.83	158.94	2.006	
12,171.00	5,812.00	11,898.66	5,538.00	176.51	89.35	-30.75	-6,356.22	410.75	318.83	157.40	161.43	1.975	
12,271.00	5,812.00	11,998.66	5,538.00	179.19	90.70	-30.77	-6,456.22	410.75	318.90	154.97	163.93	1.945	
12,371.00	5,812.00	12,098.66	5,538.00	181.87	92.04	-30.79	-6,556.22	410.75	318.97	152.53	166.43	1.916	
12,471.00	5,812.00	12,198.66	5,538.00	184.55	93.39	-30.81	-6,656.22	410.75	319.03	150.10	168.94	1.888	
12,571.00	5,812.00	12,298.66	5,538.00	187.23	94.73	-30.83	-6,756.22	410.75	319.10	147.66	171.44	1.861	
12,671.00	5,812.00	12,398.66	5,538.00	189.91	96.08	-30.85	-6,856.22	410.75	319.17	145.22	173.95	1.835	
12,771.00	5,812.00	12,498.66	5,538.00	192.59	97.43	-30.87	-6,956.22	410.75	319.23	142.77	176.46	1.809	
12,871.00	5,812.00	12,598.66	5,538.00	195.27	98.78	-30.89	-7,056.22	410.75	319.30	140.33	178.97	1.784	
12,971.00	5,812.00	12,698.66	5,538.00	197.96	100.12	-30.91	-7,156.22	410.75	319.37	137.88	181.49	1.760	
13,071.00	5,812.00	12,798.66	5,538.00	200.64	101.47	-30.93	-7,256.22	410.75	319.43	135.43	184.00	1.736	
13,171.00	5,812.00	12,898.66	5,538.00	203.32	102.82	-30.95	-7,356.22	410.75	319.50	132.98	186.52	1.713	
13,271.00	5,812.00	12,998.66	5,538.00	206.00	104.17	-30.97	-7,456.22	410.75	319.57	130.53	189.04	1.690	
13,371.00	5,812.00	13,098.66	5,538.00	208.69	105.52	-30.99	-7,556.22	410.75	319.63	128.07	191.56	1.669	
13,471.00	5,812.00	13,198.66	5,538.00	211.37	106.88	-31.01	-7,656.22	410.75	319.70	125.61	194.09	1.647	
13,571.00	5,812.00	13,298.66	5,538.00	214.05	108.23	-31.03	-7,756.22	410.76	319.77	123.15	196.61	1.626	
13,671.00	5,812.00	13,398.66	5,538.00	216.74	109.58	-31.05	-7,856.22	410.76	319.84	120.69	199.14	1.606	
13,771.00	5,812.00	13,498.66	5,538.00	219.42	110.93	-31.07	-7,956.22	410.76	319.90	118.23	201.67	1.586	
13,871.00	5,812.00	13,598.66	5,538.00	222.10	112.29	-31.09	-8,056.22	410.76	319.97	115.76	204.21	1.567	
13,971.00	5,812.00	13,698.66	5,538.00	224.79	113.64	-31.11	-8,156.22	410.76	320.04	113.30	206.74	1.548	
13,974.25	5,812.00	13,701.57	5,538.00	224.87	113.68	-31.11	-8,159.12	410.76	320.04	113.22	206.82	1.547 ES, SF	

# Precision Drilling Corporation

## Anticollision Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Sidetrack #1	<b>Database:</b>	Local2
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 236-MWD+IFR1+MS+sag												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
4,771.00	4,759.70	4,791.96	4,742.91	14.21	15.77	31.67	246.05	688.94	491.58	463.44	28.14	17.469	
4,871.00	4,859.33	4,904.47	4,855.39	14.28	16.07	48.56	245.36	690.78	486.89	458.39	28.49	17.087	
4,971.00	4,958.87	5,017.52	4,968.05	14.33	16.33	50.50	237.22	690.74	480.73	451.92	28.81	16.687	
5,071.00	5,058.41	5,118.83	5,066.48	14.38	16.53	54.23	213.92	686.99	472.36	443.16	29.20	16.179	
5,171.00	5,157.98	5,193.79	5,136.76	14.44	16.66	33.62	188.07	684.31	467.87	438.25	29.62	15.797	
5,192.41	5,179.35	5,208.56	5,150.32	14.45	16.68	5.18	182.22	684.08	467.75	438.07	29.68	15.761 CC	
5,271.00	5,257.56	5,262.21	5,198.67	14.48	16.78	-52.20	159.00	684.13	469.32	439.52	29.79	15.752	
5,371.00	5,355.15	5,332.00	5,259.10	14.48	16.91	-62.67	124.22	686.56	475.32	445.62	29.70	16.004	
5,471.00	5,448.35	5,414.57	5,325.84	14.47	17.05	-63.78	75.82	690.16	482.86	453.29	29.57	16.329	
5,571.00	5,534.85	5,488.43	5,380.25	14.50	17.17	-63.34	25.99	692.84	490.08	460.78	29.30	16.723	
5,671.00	5,612.53	5,563.07	5,429.82	14.58	17.30	-62.57	-29.64	696.48	497.56	468.35	29.21	17.036	
5,771.00	5,679.48	5,641.41	5,474.75	15.16	17.44	-61.80	-93.67	699.86	503.91	474.51	29.40	17.141	
5,871.00	5,734.05	5,722.77	5,513.79	16.09	17.63	-61.29	-164.97	702.03	507.76	477.72	30.05	16.900	
5,971.00	5,774.89	5,804.00	5,545.73	17.35	17.86	-61.39	-239.60	704.17	509.47	478.25	31.22	16.319	
6,071.00	5,800.99	5,873.78	5,568.01	18.93	18.11	-62.15	-305.65	706.82	509.34	476.40	32.94	15.463	
6,171.00	5,811.73	5,948.24	5,585.62	20.74	18.44	-63.50	-377.87	710.17	507.82	472.55	35.27	14.399	
6,271.00	5,812.00	6,036.14	5,594.35	22.59	18.89	-64.53	-465.26	712.34	506.21	468.50	37.71	13.423	
6,371.00	5,812.00	6,131.35	5,596.05	24.67	19.44	-64.65	-560.42	711.15	504.46	464.25	40.22	12.544	
6,394.19	5,812.00	6,150.93	5,595.80	25.19	19.56	-64.62	-580.00	710.93	504.38	463.56	40.83	12.355	
6,471.00	5,812.00	6,216.06	5,593.70	26.89	19.97	-64.40	-645.09	710.71	505.29	462.48	42.82	11.801	
6,571.00	5,812.00	6,337.95	5,591.63	29.19	20.70	-64.16	-766.95	710.05	505.71	460.38	45.33	11.156	
6,671.00	5,812.00	6,452.13	5,594.06	31.55	21.42	-64.20	-881.01	705.67	501.33	453.34	47.99	10.447	
6,771.00	5,812.00	6,543.71	5,594.41	33.96	22.07	-64.03	-972.49	701.47	497.17	446.30	50.87	9.774	
6,871.00	5,812.00	6,631.27	5,595.07	36.41	22.73	-64.02	-1,060.02	699.77	495.21	441.33	53.88	9.191	
6,894.78	5,812.00	6,651.82	5,595.18	37.00	22.88	-64.03	-1,080.58	699.72	495.13	440.52	54.61	9.066	
6,971.00	5,812.00	6,721.50	5,595.43	38.89	23.43	-64.10	-1,150.25	700.43	495.79	438.83	56.96	8.704	
7,071.00	5,812.00	6,814.24	5,596.97	41.39	24.19	-64.39	-1,242.95	702.90	497.60	437.43	60.17	8.270	
7,171.00	5,812.00	6,914.71	5,596.66	43.92	25.08	-64.55	-1,343.33	706.76	501.33	437.94	63.39	7.909	
7,271.00	5,812.00	7,035.37	5,599.94	46.47	26.14	-64.98	-1,463.93	708.38	501.40	434.78	66.63	7.526	
7,371.00	5,812.00	7,131.85	5,604.34	49.03	27.02	-65.46	-1,560.31	708.75	499.97	429.89	70.08	7.134	
7,409.00	5,812.00	7,166.38	5,605.33	50.01	27.36	-65.58	-1,594.82	709.02	499.83	428.42	71.41	7.000	
7,471.00	5,812.00	7,221.52	5,605.73	51.60	27.93	-65.65	-1,649.95	709.54	500.26	426.70	73.56	6.801	
7,571.00	5,812.00	7,323.86	5,604.79	54.19	28.95	-65.61	-1,752.27	710.78	501.87	425.00	76.87	6.529	
7,671.00	5,812.00	7,420.39	5,606.21	56.78	29.91	-65.84	-1,848.79	712.32	502.84	422.51	80.33	6.260	
7,771.00	5,812.00	7,534.42	5,606.11	59.39	31.09	-65.86	-1,962.80	712.89	503.51	419.85	83.66	6.018	
7,871.00	5,812.00	7,649.78	5,608.14	62.00	32.24	-65.91	-2,078.07	709.15	499.83	412.93	86.89	5.752	
7,971.00	5,812.00	7,724.00	5,609.67	64.61	33.00	-66.01	-2,152.27	707.92	497.73	407.15	90.57	5.495	
7,976.14	5,812.00	7,733.69	5,609.79	64.75	33.11	-66.03	-2,161.95	707.94	497.69	406.95	90.74	5.485	
8,071.00	5,812.00	7,818.00	5,608.91	67.24	34.05	-65.96	-2,246.25	708.41	498.69	404.64	94.05	5.302	
8,171.00	5,812.00	7,914.68	5,607.53	69.86	35.08	-65.91	-2,342.90	710.26	501.14	403.67	97.47	5.142	
8,271.00	5,812.00	8,016.24	5,608.98	72.50	36.11	-66.22	-2,444.39	713.61	503.69	402.65	101.04	4.985	
8,371.00	5,812.00	8,112.14	5,608.87	75.13	37.15	-66.35	-2,540.24	716.53	506.64	402.04	104.60	4.844	
8,471.00	5,812.00	8,215.21	5,608.17	77.77	38.28	-66.41	-2,643.26	719.43	509.61	401.50	108.11	4.714	
8,571.00	5,812.00	8,315.53	5,608.57	80.42	39.36	-66.58	-2,743.54	722.11	512.02	400.33	111.70	4.584	
8,671.00	5,812.00	8,409.06	5,606.48	83.06	40.41	-66.48	-2,837.02	724.48	515.35	400.20	115.15	4.476	
8,771.00	5,812.00	8,509.32	5,605.41	85.71	41.53	-66.54	-2,937.20	728.24	519.33	400.63	118.70	4.375	
8,871.00	5,812.00	8,609.36	5,606.27	88.36	42.65	-66.81	-3,037.16	732.19	522.74	400.33	122.41	4.270	
8,971.00	5,812.00	8,709.09	5,604.73	91.02	43.81	-66.83	-3,136.79	736.11	527.08	401.10	125.98	4.184	
9,071.00	5,812.00	8,845.38	5,604.89	93.67	45.37	-66.91	-3,273.05	737.49	528.32	398.91	129.40	4.083	
9,171.00	5,812.00	8,949.99	5,607.52	96.33	46.54	-67.04	-3,377.57	734.21	524.55	391.58	132.97	3.945	
9,271.00	5,812.00	9,044.31	5,608.30	98.99	47.61	-66.98	-3,471.83	731.01	521.22	384.65	136.57	3.817	
9,371.00	5,812.00	9,144.61	5,609.68	101.65	48.75	-67.01	-3,572.07	728.14	518.17	378.03	140.14	3.697	

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

# Precision Drilling Corporation

## Anticollision Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Sidetrack #1	<b>Database:</b>	Local2
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 236-MWD+IFR1+MS+sag												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,471.00	5,812.00	9,238.32	5,610.30	104.31	49.83	-66.98	-3,665.75	725.92	515.85	372.08	143.77	3.588	
9,571.00	5,812.00	9,331.42	5,610.93	106.98	50.90	-67.01	-3,758.84	724.92	514.71	367.28	147.43	3.491	
9,590.99	5,812.00	9,349.41	5,611.30	107.51	51.11	-67.05	-3,776.83	725.01	514.68	366.48	148.20	3.473	
9,671.00	5,812.00	9,422.22	5,613.77	109.64	51.95	-67.37	-3,849.57	726.56	515.28	363.90	151.38	3.404	
9,771.00	5,812.00	9,514.94	5,616.42	112.31	53.07	-67.78	-3,942.21	729.60	517.36	361.98	155.38	3.330	
9,871.00	5,812.00	9,606.94	5,616.91	114.98	54.21	-67.99	-4,034.12	733.35	521.04	361.84	159.20	3.273	
9,971.00	5,812.00	9,705.62	5,615.47	117.64	55.42	-68.02	-4,132.70	737.64	525.74	362.86	162.88	3.228	
10,071.00	5,812.00	9,821.99	5,617.01	120.31	56.80	-68.38	-4,248.94	742.48	529.31	362.43	166.88	3.172	
10,171.00	5,812.00	9,939.48	5,620.40	122.98	58.19	-68.76	-4,366.37	743.20	528.91	358.17	170.73	3.098	
10,269.98	5,812.00	10,028.95	5,620.47	125.63	59.27	-68.73	-4,455.84	742.13	527.91	353.49	174.42	3.027	
10,271.00	5,812.00	10,029.86	5,620.46	125.65	59.28	-68.73	-4,456.75	742.13	527.91	353.45	174.46	3.026	
10,371.00	5,812.00	10,118.43	5,618.43	128.32	60.38	-68.53	-4,545.29	742.26	529.01	351.01	178.00	2.972	
10,471.00	5,812.00	10,230.93	5,615.77	131.00	61.75	-68.27	-4,657.75	742.24	529.98	348.61	181.36	2.922	
10,480.75	5,812.00	10,239.84	5,615.64	131.26	61.85	-68.25	-4,666.66	742.17	529.97	348.26	181.71	2.917	
10,571.00	5,812.00	10,327.03	5,613.10	133.67	62.91	-67.98	-4,753.81	741.68	530.57	345.82	184.75	2.872	
10,671.00	5,812.00	10,447.37	5,611.88	136.34	64.34	-67.75	-4,874.10	738.87	528.85	340.93	187.91	2.814	
10,771.00	5,812.00	10,547.90	5,614.30	139.02	65.53	-67.87	-4,974.54	735.71	525.14	333.48	191.66	2.740	
10,871.00	5,812.00	10,636.77	5,615.11	141.69	66.62	-67.87	-5,063.38	733.52	522.66	327.17	195.49	2.674	
10,971.00	5,812.00	10,730.60	5,615.33	144.37	67.77	-67.88	-5,157.20	733.17	522.33	323.11	199.22	2.622	
11,010.41	5,812.00	10,769.67	5,616.57	145.42	68.24	-68.03	-5,196.25	733.60	522.31	321.48	200.83	2.601	
11,071.00	5,812.00	10,825.37	5,618.39	147.04	68.92	-68.25	-5,251.92	734.54	522.59	319.26	203.33	2.570	
11,171.00	5,812.00	10,913.73	5,619.48	149.72	70.03	-68.46	-5,340.24	736.69	524.53	317.29	207.24	2.531	
11,271.00	5,812.00	11,015.17	5,618.71	152.40	71.30	-68.52	-5,441.62	740.16	528.12	317.10	211.03	2.503	
11,371.00	5,812.00	11,114.16	5,619.41	155.07	72.51	-68.72	-5,540.55	743.20	530.85	315.92	214.93	2.470	
11,471.00	5,812.00	11,202.57	5,617.52	157.75	73.62	-68.65	-5,628.89	746.18	534.90	316.46	218.44	2.449	
11,571.00	5,812.00	11,313.62	5,613.72	160.43	75.01	-68.43	-5,739.80	750.08	539.60	317.61	221.99	2.431	
11,671.00	5,812.00	11,439.85	5,613.67	163.11	76.55	-68.41	-5,866.01	749.41	538.95	313.42	225.53	2.390	
11,771.00	5,812.00	11,538.93	5,613.10	165.79	77.77	-68.30	-5,965.07	748.03	537.98	308.88	229.10	2.348	
11,871.00	5,812.00	11,647.93	5,614.46	168.47	79.10	-68.33	-6,074.03	745.23	535.23	302.56	232.67	2.300	
11,971.00	5,812.00	11,748.32	5,616.30	171.15	80.30	-68.40	-6,174.36	742.28	531.94	295.54	236.40	2.250	
12,071.00	5,812.00	11,840.84	5,618.11	173.83	81.41	-68.50	-6,266.84	740.07	529.14	288.81	240.33	2.202	
12,171.00	5,812.00	11,936.30	5,618.59	176.51	82.60	-68.51	-6,362.29	738.88	527.90	283.81	244.09	2.163	
12,271.00	5,812.00	12,035.41	5,617.28	179.19	83.83	-68.31	-6,461.37	737.22	526.95	279.41	247.54	2.129	
12,371.00	5,812.00	12,133.08	5,614.52	181.87	85.06	-67.96	-6,558.98	735.29	526.29	275.52	250.76	2.099	
12,408.12	5,812.00	12,168.09	5,613.44	182.86	85.49	-67.83	-6,593.97	734.70	526.19	274.23	251.96	2.088	
12,471.00	5,812.00	12,223.97	5,612.28	184.55	86.18	-67.71	-6,649.84	734.55	526.61	272.49	254.11	2.072	
12,571.00	5,812.00	12,318.98	5,611.51	187.23	87.35	-67.70	-6,744.82	736.16	528.59	270.82	257.77	2.051	
12,671.00	5,812.00	12,423.62	5,611.06	189.91	88.65	-67.74	-6,849.45	738.10	530.60	269.08	261.52	2.029	
12,771.00	5,812.00	12,523.69	5,611.88	192.59	89.89	-67.90	-6,949.50	739.71	531.89	266.47	265.42	2.004	
12,871.00	5,812.00	12,622.08	5,612.39	195.27	91.13	-68.02	-7,047.88	741.41	533.42	264.10	269.32	1.981	
12,971.00	5,812.00	12,722.09	5,612.30	197.96	92.37	-68.08	-7,147.87	743.07	535.11	262.01	273.10	1.959	
13,071.00	5,812.00	12,818.01	5,610.86	200.64	93.58	-68.00	-7,243.76	744.51	537.19	260.53	276.66	1.942	
13,171.00	5,812.00	12,939.56	5,607.63	203.32	95.08	-67.62	-7,365.25	742.82	536.89	257.26	279.63	1.920	
13,271.00	5,812.00	13,035.24	5,604.77	206.00	96.26	-67.24	-7,460.85	740.34	535.77	253.04	282.73	1.895	
13,371.00	5,812.00	13,134.92	5,601.47	208.69	97.52	-66.84	-7,560.45	738.25	535.24	249.52	285.73	1.873	
13,471.00	5,812.00	13,238.90	5,598.42	211.37	98.80	-66.43	-7,664.35	735.53	534.12	245.51	288.61	1.851	
13,571.00	5,812.00	13,340.90	5,596.02	214.05	100.03	-66.07	-7,766.28	732.57	532.54	240.98	291.55	1.827	
13,671.00	5,812.00	13,431.53	5,594.29	216.74	101.13	-65.81	-7,856.86	730.33	531.22	236.42	294.79	1.802	
13,671.09	5,812.00	13,431.60	5,594.29	216.74	101.13	-65.81	-7,856.94	730.33	531.22	236.42	294.80	1.802	
13,771.00	5,812.00	13,523.53	5,592.41	219.42	102.26	-65.64	-7,948.85	730.62	532.42	234.30	298.12	1.786	
13,871.00	5,812.00	13,623.05	5,589.79	222.10	103.48	-65.40	-8,048.33	730.85	533.85	232.57	301.27	1.772	
13,971.00	5,812.00	13,721.74	5,586.29	224.79	104.73	-65.07	-8,146.96	731.05	535.63	231.37	304.27	1.760	

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

# Precision Drilling Corporation

## Anticollision Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Sidetrack #1	<b>Database:</b>	Local2
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Sec 30-T10N-R57W - Horsetail #30G-3112 - Original Hole - Original Hole												<b>Offset Site Error:</b>	0.00 usft
Survey Program: 236-MWD+IFR1+MS+sag												<b>Offset Well Error:</b>	0.00 usft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,974.25	5,812.00	13,724.99	5,586.17	224.87	104.77	-65.06	-8,150.20	731.06	535.69	231.33	304.36	1.760 ES, SF	

# Precision Drilling Corporation

## Anticollision Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Sidetrack #1	<b>Database:</b>	Local2
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
4,771.00	4,759.70	4,747.17	4,701.59	14.21	16.60	-145.50	255.84	-718.32	918.17	889.37	28.80	31.881	CC
4,871.00	4,859.33	4,888.49	4,842.75	14.28	16.93	-129.71	258.39	-723.99	928.24	899.03	29.21	31.781	
4,971.00	4,958.87	5,004.61	4,958.87	14.33	17.20	-130.22	258.62	-724.49	934.77	905.24	29.53	31.657	
5,071.00	5,058.41	5,104.15	5,058.41	14.38	17.47	-130.67	258.82	-724.49	941.00	911.15	29.86	31.518	
5,171.00	5,157.98	5,202.89	5,157.07	14.44	17.70	-155.75	255.90	-724.50	947.31	917.15	30.16	31.406	
5,271.00	5,257.56	5,300.00	5,252.71	14.48	17.90	113.83	239.63	-724.56	953.67	923.28	30.39	31.384	
5,371.00	5,355.15	5,394.72	5,342.56	14.48	18.07	99.09	209.93	-724.68	959.89	929.35	30.54	31.430	
5,471.00	5,448.35	5,488.44	5,426.16	14.47	18.22	93.79	167.75	-724.85	965.81	935.12	30.69	31.474	
5,571.00	5,534.85	5,580.95	5,501.73	14.50	18.36	90.83	114.53	-725.07	971.24	940.32	30.91	31.417	
5,671.00	5,612.53	5,672.44	5,568.12	14.58	18.48	88.87	51.69	-725.32	976.01	944.68	31.34	31.147	
5,771.00	5,679.48	5,763.11	5,624.35	15.16	18.60	87.49	-19.33	-725.61	980.00	947.94	32.06	30.569	
5,871.00	5,734.05	5,853.14	5,669.65	16.09	18.73	86.53	-97.04	-725.92	983.06	949.91	33.15	29.652	
5,971.00	5,774.89	5,942.70	5,703.40	17.35	18.89	85.89	-179.93	-726.26	985.12	950.47	34.65	28.431	
6,071.00	5,800.99	6,031.98	5,725.15	18.93	19.10	85.56	-266.44	-726.60	986.09	949.58	36.52	27.003	
6,171.00	5,811.73	6,121.16	5,734.59	20.74	19.37	85.50	-355.05	-726.96	985.97	947.28	38.69	25.484	
6,241.23	5,813.06	6,188.60	5,735.00	22.04	19.62	85.46	-422.48	-727.23	985.81	945.52	40.29	24.467	
6,271.00	5,812.00	6,218.38	5,735.00	22.59	19.75	85.52	-452.26	-727.35	985.77	944.78	41.00	24.046	
6,371.00	5,812.00	6,318.38	5,735.00	24.67	20.23	85.52	-552.26	-727.76	986.04	942.41	43.63	22.600	
6,471.00	5,812.00	6,418.38	5,735.00	26.89	20.81	85.52	-652.25	-728.16	986.32	939.83	46.48	21.220	
6,571.00	5,812.00	6,518.38	5,735.00	29.19	21.46	85.52	-752.25	-728.56	986.59	937.11	49.48	19.939	
6,671.00	5,812.00	6,618.38	5,735.00	31.55	22.19	85.52	-852.25	-728.97	986.86	934.25	52.61	18.759	
6,771.00	5,812.00	6,718.38	5,735.00	33.96	22.97	85.53	-952.25	-729.37	987.13	931.29	55.84	17.678	
6,871.00	5,812.00	6,818.38	5,735.00	36.41	23.81	85.53	-1,052.25	-729.77	987.41	928.24	59.16	16.690	
6,971.00	5,812.00	6,918.38	5,735.00	38.89	24.70	85.53	-1,152.25	-730.18	987.68	925.12	62.56	15.787	
7,071.00	5,812.00	7,018.38	5,735.00	41.39	25.63	85.53	-1,252.25	-730.58	987.95	921.92	66.03	14.963	
7,171.00	5,812.00	7,118.38	5,735.00	43.92	26.60	85.53	-1,352.25	-730.98	988.22	918.67	69.55	14.208	
7,271.00	5,812.00	7,218.38	5,735.00	46.47	27.60	85.53	-1,452.25	-731.39	988.50	915.37	73.13	13.518	
7,371.00	5,812.00	7,318.37	5,735.00	49.03	28.64	85.53	-1,552.24	-731.79	988.77	912.03	76.74	12.884	
7,471.00	5,812.00	7,418.37	5,735.00	51.60	29.70	85.53	-1,652.24	-732.19	989.04	908.64	80.40	12.302	
7,571.00	5,812.00	7,518.37	5,735.00	54.19	30.79	85.54	-1,752.24	-732.60	989.31	905.23	84.09	11.765	
7,671.00	5,812.00	7,618.37	5,735.00	56.78	31.89	85.54	-1,852.24	-733.00	989.59	901.78	87.81	11.270	
7,771.00	5,812.00	7,718.37	5,735.00	59.39	33.02	85.54	-1,952.24	-733.40	989.86	898.31	91.55	10.812	
7,871.00	5,812.00	7,818.37	5,735.00	62.00	34.17	85.54	-2,052.24	-733.81	990.13	894.81	95.32	10.387	
7,971.00	5,812.00	7,918.37	5,735.00	64.61	35.33	85.54	-2,152.24	-734.21	990.40	891.29	99.11	9.993	
8,071.00	5,812.00	8,018.37	5,735.00	67.24	36.50	85.54	-2,252.24	-734.62	990.68	887.76	102.92	9.626	
8,171.00	5,812.00	8,118.37	5,735.00	69.86	37.69	85.54	-2,352.23	-735.02	990.95	884.20	106.74	9.283	
8,271.00	5,812.00	8,218.37	5,735.00	72.50	38.89	85.54	-2,452.23	-735.42	991.22	880.64	110.59	8.963	
8,371.00	5,812.00	8,318.37	5,735.00	75.13	40.10	85.55	-2,552.23	-735.83	991.49	877.05	114.44	8.664	
8,471.00	5,812.00	8,418.37	5,735.00	77.77	41.32	85.55	-2,652.23	-736.23	991.77	873.46	118.31	8.383	
8,571.00	5,812.00	8,518.37	5,735.00	80.42	42.55	85.55	-2,752.23	-736.63	992.04	869.85	122.19	8.119	
8,671.00	5,812.00	8,618.37	5,735.00	83.06	43.79	85.55	-2,852.23	-737.04	992.31	866.24	126.07	7.871	
8,771.00	5,812.00	8,718.37	5,735.00	85.71	45.04	85.55	-2,952.23	-737.44	992.58	862.61	129.97	7.637	
8,871.00	5,812.00	8,818.37	5,735.00	88.36	46.29	85.55	-3,052.23	-737.84	992.86	858.98	133.88	7.416	
8,971.00	5,812.00	8,918.37	5,735.00	91.02	47.55	85.55	-3,152.23	-738.25	993.13	855.33	137.79	7.207	
9,071.00	5,812.00	9,018.37	5,735.00	93.67	48.81	85.55	-3,252.22	-738.65	993.40	851.68	141.72	7.010	
9,171.00	5,812.00	9,118.37	5,735.00	96.33	50.08	85.56	-3,352.22	-739.05	993.67	848.03	145.65	6.823	
9,271.00	5,812.00	9,218.37	5,735.00	98.99	51.36	85.56	-3,452.22	-739.46	993.95	844.37	149.58	6.645	
9,371.00	5,812.00	9,318.37	5,735.00	101.65	52.64	85.56	-3,552.22	-739.86	994.22	840.70	153.52	6.476	
9,471.00	5,812.00	9,418.37	5,735.00	104.31	53.92	85.56	-3,652.22	-740.26	994.49	837.02	157.47	6.316	
9,571.00	5,812.00	9,518.37	5,735.00	106.98	55.21	85.56	-3,752.22	-740.67	994.76	833.35	161.42	6.163	
9,671.00	5,812.00	9,618.37	5,735.00	109.64	56.50	85.56	-3,852.22	-741.07	995.04	829.66	165.37	6.017	
9,771.00	5,812.00	9,718.37	5,735.00	112.31	57.80	85.56	-3,952.22	-741.47	995.31	825.97	169.33	5.878	

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

# Precision Drilling Corporation

## Anticollision Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Sidetrack #1	<b>Database:</b>	Local2
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Sec 30-T10N-R57W - Horsetail #30G-3140 - Original Hole - Plan #2												<b>Offset Site Error:</b>	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag												<b>Offset Well Error:</b>	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
9,871.00	5,812.00	9,818.37	5,735.00	114.98	59.10	85.56	-4,052.21	-741.88	995.58	822.28	173.30	5.745	
9,971.00	5,812.00	9,918.37	5,735.00	117.64	60.40	85.57	-4,152.21	-742.28	995.85	818.59	177.27	5.618	
10,071.00	5,812.00	10,018.36	5,735.00	120.31	61.70	85.57	-4,252.21	-742.68	996.13	814.89	181.24	5.496	
10,171.00	5,812.00	10,118.36	5,735.00	122.98	63.01	85.57	-4,352.21	-743.09	996.40	811.19	185.21	5.380	
10,271.00	5,812.00	10,218.36	5,735.00	125.65	64.32	85.57	-4,452.21	-743.49	996.67	807.48	189.19	5.268	
10,371.00	5,812.00	10,318.36	5,735.00	128.32	65.64	85.57	-4,552.21	-743.89	996.94	803.77	193.17	5.161	
10,471.00	5,812.00	10,418.36	5,735.00	131.00	66.95	85.57	-4,652.21	-744.30	997.22	800.06	197.15	5.058	
10,571.00	5,812.00	10,518.36	5,735.00	133.67	68.27	85.57	-4,752.21	-744.70	997.49	796.35	201.14	4.959	
10,671.00	5,812.00	10,618.36	5,735.00	136.34	69.59	85.57	-4,852.21	-745.10	997.76	792.63	205.13	4.864	
10,771.00	5,812.00	10,718.36	5,735.00	139.02	70.91	85.58	-4,952.20	-745.51	998.03	788.92	209.12	4.773	
10,871.00	5,812.00	10,818.36	5,735.00	141.69	72.23	85.58	-5,052.20	-745.91	998.31	785.20	213.11	4.684	
10,971.00	5,812.00	10,918.36	5,735.00	144.37	73.55	85.58	-5,152.20	-746.31	998.58	781.47	217.11	4.600	
11,071.00	5,812.00	11,018.36	5,735.00	147.04	74.88	85.58	-5,252.20	-746.72	998.85	777.75	221.10	4.518	
11,171.00	5,812.00	11,118.36	5,735.00	149.72	76.21	85.58	-5,352.20	-747.12	999.12	774.02	225.10	4.439	
11,271.00	5,812.00	11,218.36	5,735.00	152.40	77.53	85.58	-5,452.20	-747.52	999.40	770.30	229.10	4.362	
11,371.00	5,812.00	11,318.36	5,735.00	155.07	78.86	85.58	-5,552.20	-747.93	999.67	766.57	233.10	4.289	
11,471.00	5,812.00	11,418.36	5,735.00	157.75	80.20	85.58	-5,652.20	-748.33	999.94	762.84	237.11	4.217 ES, SF	

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



# Precision Drilling Corporation

## Anticollision Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Sidetrack #1	<b>Database:</b>	Local2
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 132-MWD+IFR1+MS+sag												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,771.00	4,759.70	4,771.00	4,759.70	0.00	0.00	0.00	234.89	197.77	0.00	0.00	0.00	N/A CC	
4,781.31	4,769.98	4,781.31	4,769.98	0.01	0.03	158.67	235.28	198.38	0.02	-0.01	0.03	0.715	Level 1, ES, SF
4,871.00	4,859.33	4,870.94	4,859.45	0.10	0.30	168.70	238.49	202.61	2.68	2.35	0.33	8.042	
4,971.00	4,958.87	4,970.68	4,959.11	0.19	0.60	170.42	240.89	205.85	8.39	7.66	0.72	11.591	
5,071.00	5,058.41	5,070.31	5,058.70	0.30	0.89	172.09	242.49	208.17	15.27	14.16	1.11	13.773	
5,171.00	5,157.98	5,169.07	5,157.41	0.41	1.18	144.36	241.01	210.78	24.10	22.63	1.47	16.389	
5,271.00	5,257.56	5,266.90	5,254.70	0.45	1.46	54.33	232.00	214.79	28.79	27.04	1.76	16.371	
5,371.00	5,355.15	5,364.34	5,350.16	0.37	1.75	43.84	213.31	219.54	28.09	26.14	1.94	14.448	
5,471.00	5,448.35	5,461.25	5,442.59	0.38	2.03	51.29	184.59	222.99	24.29	22.22	2.08	11.690	
5,571.00	5,534.85	5,559.74	5,533.25	0.77	2.30	79.76	146.21	225.19	20.37	17.75	2.62	7.764	
5,593.06	5,552.82	5,581.42	5,552.74	1.17	2.36	89.63	136.75	225.88	20.06	17.37	2.69	7.457	
5,671.00	5,612.53	5,623.00	5,589.44	2.65	2.48	106.33	117.27	227.24	42.90	38.95	3.95	10.874	
5,771.00	5,679.48	5,623.00	5,589.44	4.82	2.48	69.36	117.27	227.24	139.04	134.86	4.18	33.295	
5,871.00	5,734.05	5,623.00	5,589.44	5.95	2.48	32.02	117.27	227.24	237.65	233.40	4.26	55.828	
5,971.00	5,774.89	5,623.00	5,589.44	7.03	2.48	17.78	117.27	227.24	335.21	330.72	4.49	74.710	
6,071.00	5,800.99	5,623.00	5,589.44	8.18	2.48	11.99	117.27	227.24	430.83	425.14	5.69	75.684	
6,171.00	5,811.73	5,623.00	5,589.44	9.45	2.48	9.17	117.27	227.24	523.86	516.65	7.21	72.639	
6,271.00	5,812.00	5,623.00	5,589.44	10.81	2.48	7.40	117.27	227.24	615.80	608.36	7.45	82.709	
6,371.00	5,812.00	5,623.00	5,589.44	12.43	2.48	7.40	117.27	227.24	709.86	702.39	7.47	94.985	
6,471.00	5,812.00	5,623.00	5,589.44	14.27	2.48	7.40	117.27	227.24	805.35	797.89	7.46	107.962	
6,571.00	5,812.00	5,623.00	5,589.44	16.27	2.48	7.40	117.27	227.24	901.82	894.40	7.42	121.490	
6,671.00	5,812.00	5,623.00	5,589.44	18.41	2.48	7.40	117.27	227.24	998.99	991.61	7.37	135.457	

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



# Precision Drilling Corporation

## Anticollision Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Sidetrack #1	<b>Database:</b>	Local2
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
4,771.00	4,759.70	4,777.17	4,742.71	14.21	16.06	30.48	249.67	541.79	344.75	315.90	28.85	11.950	
4,871.00	4,859.33	4,889.16	4,854.62	14.28	16.32	47.29	251.47	545.25	341.52	312.36	29.16	11.713	
4,971.00	4,958.87	4,993.41	4,958.87	14.33	16.58	48.52	251.62	545.55	335.35	305.88	29.46	11.382	
5,071.00	5,058.41	5,092.95	5,058.41	14.38	16.85	49.77	251.62	545.55	329.06	299.24	29.82	11.036	
5,171.00	5,157.98	5,191.30	5,156.68	14.44	17.09	26.91	248.94	545.56	323.03	292.86	30.17	10.706	
5,271.00	5,257.56	5,287.40	5,251.35	14.48	17.29	-60.66	232.97	545.62	317.65	287.19	30.46	10.428	
5,371.00	5,355.15	5,381.98	5,341.13	14.48	17.47	-72.66	203.52	545.73	313.01	282.34	30.66	10.208	
5,471.00	5,448.35	5,475.22	5,424.42	14.47	17.63	-75.40	161.79	545.88	309.15	278.34	30.81	10.035	
5,571.00	5,534.85	5,567.32	5,499.84	14.50	17.78	-76.04	109.08	546.07	306.07	275.11	30.97	9.884	
5,671.00	5,612.53	5,658.46	5,566.23	14.58	17.92	-75.97	46.74	546.30	303.76	272.50	31.25	9.719	
5,771.00	5,679.48	5,750.00	5,623.27	15.16	18.06	-75.67	-24.75	546.56	302.15	270.35	31.80	9.502	
5,871.00	5,734.05	5,838.64	5,668.18	16.09	18.21	-75.37	-101.08	546.83	301.20	268.50	32.70	9.210	
5,971.00	5,774.89	5,928.03	5,702.31	17.35	18.41	-75.15	-183.63	547.13	300.86	266.81	34.06	8.834	
5,980.07	5,777.87	5,936.13	5,704.82	17.50	18.43	-75.14	-191.32	547.16	300.86	266.65	34.21	8.793 CC	
6,071.00	5,800.99	6,017.20	5,724.51	18.93	18.66	-75.08	-269.91	547.45	301.09	265.23	35.86	8.396	
6,171.00	5,811.73	6,106.31	5,734.44	20.74	18.98	-75.18	-358.40	547.77	301.86	263.79	38.06	7.930	
6,271.00	5,812.00	6,203.08	5,735.00	22.59	19.40	-75.26	-455.16	548.12	302.68	262.33	40.35	7.501	
6,371.00	5,812.00	6,303.08	5,735.00	24.67	19.92	-75.29	-555.16	548.48	303.16	260.23	42.93	7.062	
6,471.00	5,812.00	6,403.08	5,735.00	26.89	20.52	-75.31	-655.15	548.85	303.64	257.93	45.71	6.642	
6,571.00	5,812.00	6,503.08	5,735.00	29.19	21.20	-75.33	-755.15	549.21	304.12	255.47	48.64	6.252	
6,671.00	5,812.00	6,603.08	5,735.00	31.55	21.94	-75.36	-855.15	549.58	304.59	252.90	51.70	5.892	
6,771.00	5,812.00	6,703.08	5,735.00	33.96	22.74	-75.38	-955.15	549.94	305.07	250.22	54.85	5.562	
6,871.00	5,812.00	6,803.08	5,735.00	36.41	23.59	-75.40	-1,055.15	550.30	305.55	247.45	58.10	5.259	
6,971.00	5,812.00	6,903.07	5,735.00	38.89	24.50	-75.43	-1,155.14	550.67	306.03	244.61	61.42	4.983	
7,071.00	5,812.00	7,003.07	5,735.00	41.39	25.44	-75.45	-1,255.14	551.03	306.51	241.70	64.80	4.730	
7,171.00	5,812.00	7,103.07	5,735.00	43.92	26.42	-75.47	-1,355.14	551.39	306.98	238.74	68.24	4.498	
7,271.00	5,812.00	7,203.07	5,735.00	46.47	27.44	-75.50	-1,455.14	551.76	307.46	235.73	71.73	4.286	
7,371.00	5,812.00	7,303.07	5,735.00	49.03	28.48	-75.52	-1,555.14	552.12	307.94	232.67	75.27	4.091	
7,471.00	5,812.00	7,403.07	5,735.00	51.60	29.55	-75.54	-1,655.13	552.48	308.42	229.58	78.84	3.912	
7,571.00	5,812.00	7,503.07	5,735.00	54.19	30.65	-75.57	-1,755.13	552.85	308.90	226.45	82.44	3.747	
7,671.00	5,812.00	7,603.07	5,735.00	56.78	31.76	-75.59	-1,855.13	553.21	309.37	223.29	86.08	3.594	
7,771.00	5,812.00	7,703.06	5,735.00	59.39	32.90	-75.61	-1,955.13	553.58	309.85	220.11	89.74	3.453	
7,871.00	5,812.00	7,803.06	5,735.00	62.00	34.05	-75.63	-2,055.13	553.94	310.33	216.91	93.42	3.322	
7,971.00	5,812.00	7,903.06	5,735.00	64.61	35.22	-75.66	-2,155.13	554.30	310.81	213.68	97.13	3.200	
8,071.00	5,812.00	8,003.06	5,735.00	67.24	36.40	-75.68	-2,255.12	554.67	311.29	210.43	100.86	3.086	
8,171.00	5,812.00	8,103.06	5,735.00	69.86	37.60	-75.70	-2,355.12	555.03	311.76	207.17	104.60	2.981	
8,271.00	5,812.00	8,203.06	5,735.00	72.50	38.80	-75.72	-2,455.12	555.39	312.24	203.89	108.36	2.882	
8,371.00	5,812.00	8,303.06	5,735.00	75.13	40.02	-75.75	-2,555.12	555.76	312.72	200.59	112.13	2.789	
8,471.00	5,812.00	8,403.06	5,735.00	77.77	41.25	-75.77	-2,655.12	556.12	313.20	197.29	115.91	2.702	
8,571.00	5,812.00	8,503.05	5,735.00	80.42	42.48	-75.79	-2,755.11	556.48	313.68	193.97	119.71	2.620	
8,671.00	5,812.00	8,603.05	5,735.00	83.06	43.73	-75.81	-2,855.11	556.85	314.16	190.64	123.51	2.543	
8,771.00	5,812.00	8,703.05	5,735.00	85.71	44.98	-75.83	-2,955.11	557.21	314.64	187.30	127.33	2.471	
8,871.00	5,812.00	8,803.05	5,735.00	88.36	46.23	-75.86	-3,055.11	557.58	315.11	183.96	131.16	2.403	
8,971.00	5,812.00	8,903.05	5,735.00	91.02	47.50	-75.88	-3,155.11	557.94	315.59	180.60	134.99	2.338	
9,071.00	5,812.00	9,003.05	5,735.00	93.67	48.77	-75.90	-3,255.10	558.30	316.07	177.24	138.83	2.277	
9,171.00	5,812.00	9,103.05	5,735.00	96.33	50.04	-75.92	-3,355.10	558.67	316.55	173.87	142.68	2.219	
9,271.00	5,812.00	9,203.05	5,735.00	98.99	51.32	-75.94	-3,455.10	559.03	317.03	170.49	146.54	2.163	
9,371.00	5,812.00	9,303.04	5,735.00	101.65	52.61	-75.96	-3,555.10	559.39	317.51	167.11	150.40	2.111	
9,471.00	5,812.00	9,403.04	5,735.00	104.31	53.89	-75.99	-3,655.10	559.76	317.99	163.72	154.27	2.061	
9,571.00	5,812.00	9,503.04	5,735.00	106.98	55.19	-76.01	-3,755.10	560.12	318.47	160.32	158.14	2.014	
9,671.00	5,812.00	9,603.04	5,735.00	109.64	56.48	-76.03	-3,855.09	560.49	318.95	156.92	162.02	1.969	
9,771.00	5,812.00	9,703.04	5,735.00	112.31	57.78	-76.05	-3,955.09	560.85	319.43	153.52	165.91	1.925	

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

# Precision Drilling Corporation

## Anticollision Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Sidetrack #1	<b>Database:</b>	Local2
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Sec 30-T10N-R57W - Horsetail #30G-3144 - Original Hole - Plan #2												<b>Offset Site Error:</b>	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag												<b>Offset Well Error:</b>	0.00 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,871.00	5,812.00	9,803.04	5,735.00	114.98	59.09	-76.07	-4,055.09	561.21	319.90	150.11	169.79	1.884	
9,971.00	5,812.00	9,903.04	5,735.00	117.64	60.39	-76.09	-4,155.09	561.58	320.38	146.70	173.69	1.845	
10,071.00	5,812.00	10,003.04	5,735.00	120.31	61.70	-76.11	-4,255.09	561.94	320.86	143.28	177.58	1.807	
10,171.00	5,812.00	10,103.04	5,735.00	122.98	63.01	-76.14	-4,355.08	562.30	321.34	139.86	181.48	1.771	
10,271.00	5,812.00	10,203.03	5,735.00	125.65	64.32	-76.16	-4,455.08	562.67	321.82	136.44	185.39	1.736	
10,371.00	5,812.00	10,303.03	5,735.00	128.32	65.64	-76.18	-4,555.08	563.03	322.30	133.01	189.29	1.703	
10,471.00	5,812.00	10,403.03	5,735.00	131.00	66.96	-76.20	-4,655.08	563.39	322.78	129.58	193.20	1.671	
10,571.00	5,812.00	10,503.03	5,735.00	133.67	68.28	-76.22	-4,755.08	563.76	323.26	126.14	197.12	1.640	
10,671.00	5,812.00	10,603.03	5,735.00	136.34	69.60	-76.24	-4,855.07	564.12	323.74	122.71	201.03	1.610	
10,771.00	5,812.00	10,703.03	5,735.00	139.02	70.92	-76.26	-4,955.07	564.49	324.22	119.27	204.95	1.582	
10,871.00	5,812.00	10,803.03	5,735.00	141.69	72.25	-76.28	-5,055.07	564.85	324.70	115.83	208.87	1.555	
10,971.00	5,812.00	10,903.03	5,735.00	144.37	73.58	-76.30	-5,155.07	565.21	325.18	112.38	212.80	1.528	
11,071.00	5,812.00	11,003.02	5,735.00	147.04	74.90	-76.32	-5,255.07	565.58	325.66	108.93	216.72	1.503	
11,171.00	5,812.00	11,103.02	5,735.00	149.72	76.23	-76.34	-5,355.07	565.94	326.14	105.48	220.65	1.478	Level 3
11,271.00	5,812.00	11,203.02	5,735.00	152.40	77.57	-76.36	-5,455.06	566.30	326.62	102.03	224.58	1.454	Level 3
11,371.00	5,812.00	11,303.02	5,735.00	155.07	78.90	-76.38	-5,555.06	566.67	327.10	98.58	228.52	1.431	Level 3
11,471.00	5,812.00	11,403.02	5,735.00	157.75	80.23	-76.40	-5,655.06	567.03	327.58	95.13	232.45	1.409	Level 3
11,571.00	5,812.00	11,503.02	5,735.00	160.43	81.57	-76.42	-5,755.06	567.39	328.06	91.67	236.39	1.388	Level 3
11,671.00	5,812.00	11,603.02	5,735.00	163.11	82.90	-76.45	-5,855.06	567.76	328.54	88.21	240.33	1.367	Level 3
11,771.00	5,812.00	11,703.02	5,735.00	165.79	84.24	-76.47	-5,955.05	568.12	329.02	84.75	244.27	1.347	Level 3
11,871.00	5,812.00	11,803.01	5,735.00	168.47	85.58	-76.49	-6,055.05	568.49	329.50	81.29	248.21	1.327	Level 3
11,971.00	5,812.00	11,903.01	5,735.00	171.15	86.92	-76.51	-6,155.05	568.85	329.98	77.82	252.16	1.309	Level 3
12,071.00	5,812.00	12,003.01	5,735.00	173.83	88.26	-76.53	-6,255.05	569.21	330.46	74.36	256.10	1.290	Level 3
12,171.00	5,812.00	12,103.01	5,735.00	176.51	89.60	-76.55	-6,355.05	569.58	330.94	70.89	260.05	1.273	Level 3
12,271.00	5,812.00	12,203.01	5,735.00	179.19	90.94	-76.57	-6,455.04	569.94	331.42	67.42	264.00	1.255	Level 3
12,371.00	5,812.00	12,303.01	5,735.00	181.87	92.29	-76.59	-6,555.04	570.30	331.90	63.95	267.95	1.239	Level 2
12,471.00	5,812.00	12,403.01	5,735.00	184.55	93.63	-76.60	-6,655.04	570.67	332.38	60.48	271.90	1.222	Level 2
12,571.00	5,812.00	12,503.01	5,735.00	187.23	94.97	-76.62	-6,755.04	571.03	332.86	57.00	275.85	1.207	Level 2
12,671.00	5,812.00	12,603.00	5,735.00	189.91	96.32	-76.64	-6,855.04	571.39	333.34	53.53	279.81	1.191	Level 2
12,771.00	5,812.00	12,703.00	5,735.00	192.59	97.67	-76.66	-6,955.04	571.76	333.82	50.05	283.76	1.176	Level 2
12,871.00	5,812.00	12,803.00	5,735.00	195.27	99.01	-76.68	-7,055.03	572.12	334.30	46.58	287.72	1.162	Level 2
12,971.00	5,812.00	12,903.00	5,735.00	197.96	100.36	-76.70	-7,155.03	572.49	334.78	43.10	291.68	1.148	Level 2
13,071.00	5,812.00	13,003.00	5,735.00	200.64	101.71	-76.72	-7,255.03	572.85	335.26	39.62	295.64	1.134	Level 2
13,171.00	5,812.00	13,103.00	5,735.00	203.32	103.06	-76.74	-7,355.03	573.21	335.74	36.14	299.60	1.121	Level 2
13,271.00	5,812.00	13,203.00	5,735.00	206.00	104.40	-76.76	-7,455.03	573.58	336.22	32.66	303.56	1.108	Level 2
13,371.00	5,812.00	13,303.00	5,735.00	208.69	105.75	-76.78	-7,555.02	573.94	336.70	29.18	307.52	1.095	Level 2
13,471.00	5,812.00	13,402.99	5,735.00	211.37	107.10	-76.80	-7,655.02	574.30	337.18	25.69	311.49	1.082	Level 2
13,571.00	5,812.00	13,502.99	5,735.00	214.05	108.45	-76.82	-7,755.02	574.67	337.66	22.21	315.45	1.070	Level 2
13,671.00	5,812.00	13,602.99	5,735.00	216.74	109.81	-76.84	-7,855.02	575.03	338.14	18.72	319.42	1.059	Level 2
13,771.00	5,812.00	13,702.99	5,735.00	219.42	111.16	-76.86	-7,955.02	575.40	338.62	15.24	323.39	1.047	Level 2
13,871.00	5,812.00	13,802.99	5,735.00	222.10	112.51	-76.88	-8,055.01	575.76	339.10	11.75	327.35	1.036	Level 2
13,971.00	5,812.00	13,902.99	5,735.00	224.79	113.86	-76.89	-8,155.01	576.12	339.59	8.26	331.32	1.025	Level 2
13,974.25	5,812.00	13,906.24	5,735.00	224.87	113.91	-76.89	-8,158.26	576.13	339.60	8.15	331.45	1.025	Level 2, ES, SF

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

# Precision Drilling Corporation

## Anticollision Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Sidetrack #1	<b>Database:</b>	Local2
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

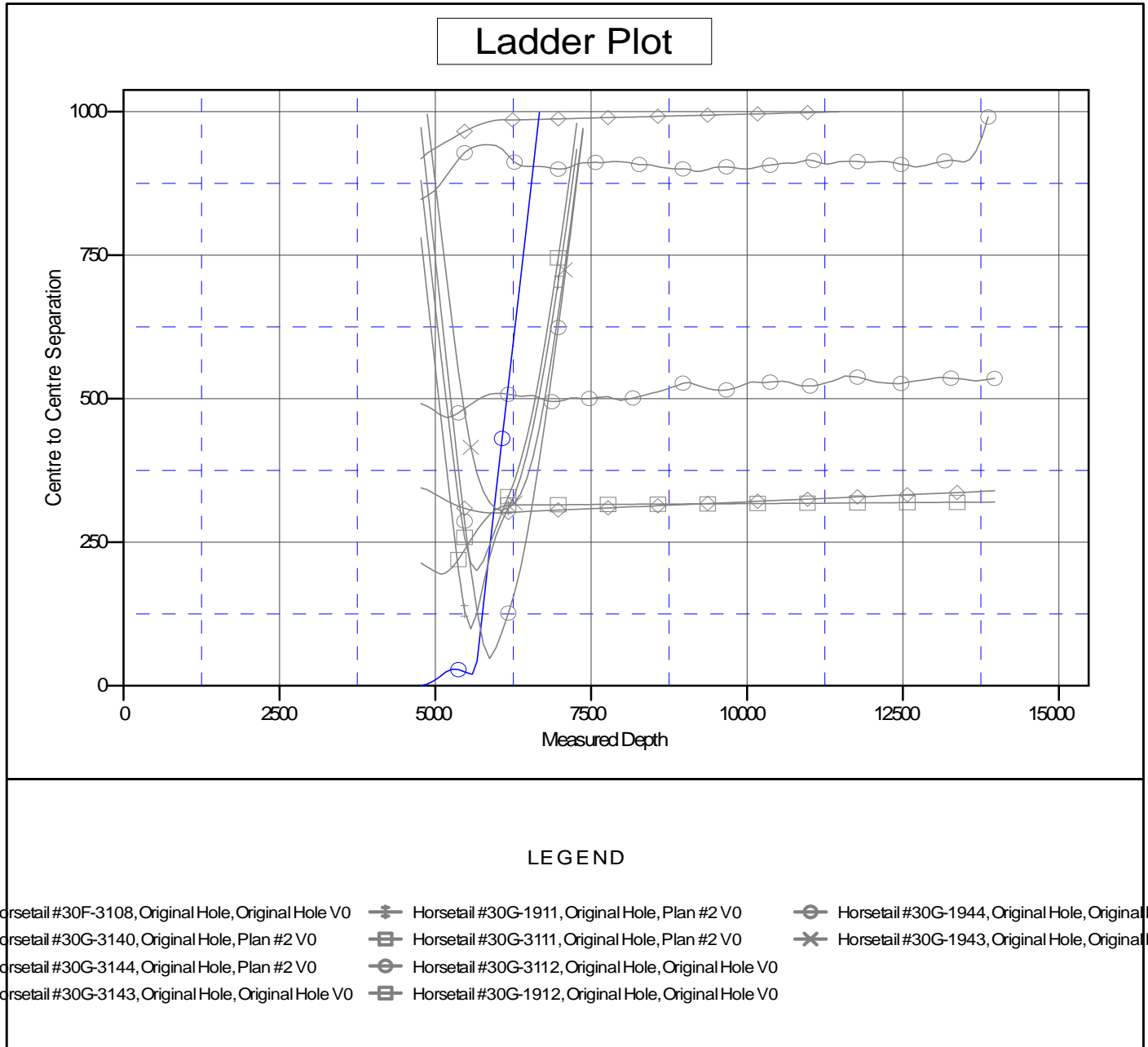
Reference Depths are relative to 4738'GL+21'KB @ 4759.00usft (Unit 406) Coordinates are relative to: Horsetail #30G-3143

Offset Depths are relative to Offset Datum

Coordinate System is US State Plane 1983, Colorado Northern Zone

Central Meridian is 105.500000°W

Grid Convergence at Surface is: 1.10°



# Precision Drilling Corporation

## Anticollision Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30G-3143
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	4738'GL+21'KB @ 4759.00usft (Unit 406)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30G-3143	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Sidetrack #1	<b>Database:</b>	Local2
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to 4738'GL+21'KB @ 4759.00usft (Unit 406) Coordinates are relative to: Horsetail #30G-3143  
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone  
Central Meridian is 105.500000°W Grid Convergence at Surface is: 1.10°

