



Project: Weld County, CO
 Site: Sec 7-T10N-R57W
 Well: Horsetail #07E-1802
 Wellbore: Hz
 Design: Plan #1

PROJECT DETAILS: Weld County, CO

Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Colorado Northern Zone

System Datum: Mean Sea Level

WELL DETAILS: Horsetail #07E-1802

+N/-S	+E/-W	Northing	Ground Level:	4925.60	Longitude	Slot
0.00	0.00	1558447.78	Easting	3469950.11	Latitude	40° 51' 14.250 N
						103° 48' 4.140 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
3	482.01	3.64	317.22	481.88	4.24	-3.93	2.00	317.22	-4.14	
4	5149.65	3.64	317.22	5140.12	221.76	-205.19	0.00	0.00	-216.35	
5	5331.66	0.00	0.00	5322.00	226.00	-209.12	2.00	180.00	-220.49	
6	5531.66	0.00	0.00	5522.00	226.00	-209.12	0.00	0.00	-220.49	
7	6350.05	90.00	180.00	6043.00	-295.00	-209.12	11.00	180.00	300.33	
8	14099.94	90.00	180.00	6043.00	-8044.90	-209.12	0.00	0.00	8047.61	1802 PBHL

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1550.00	1552.28	Upper Pierre
3500.00	3506.22	Hygiene
3650.00	3656.53	Lower Pierre
5515.00	5524.66	P200 Marker
5530.00	5539.66	P300 Marker
5550.00	5559.68	P350 Marker
5702.00	5715.45	Sharon Springs
5707.00	5720.79	Niobrara
5733.00	5748.90	Top A Chalk
5772.00	5792.41	Top A Marl
5792.00	5815.49	A Marl
5803.00	5828.46	Top Upper B
5826.00	5856.26	Base Upper B
5848.00	5883.89	Top Lower B
5882.00	5929.10	Base Lower B
5890.00	5940.29	Top B Marl
5919.00	5983.05	Top C Chalk
5931.00	6001.99	Middle C Chalk
5947.00	6028.70	Middle C Marl
5971.00	6072.88	Lower C Chalk
5987.00	6106.27	Lower C Marl
6001.00	6139.42	Lower C Marker
6013.00	6172.38	Top Ft. Hays
6027.00	6220.59	Ft. Hays Marker

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
300.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	Build 2°/100'
481.88	482.01	3.64	317.22	4.24	-3.93	-4.14	5.78	Hold 3.64° Inc
5140.12	5149.65	3.64	317.22	221.76	-205.19	-216.35	302.13	Drop 2°/100'
5322.00	5331.66	0.00	0.00	226.00	-209.12	-220.49	307.91	Hold Vertical
5522.00	5531.66	0.00	0.00	226.00	-209.12	-220.49	307.91	KOP, Build 11°/100'
6043.00	6350.05	90.00	180.00	-295.00	-209.12	300.33	828.91	LP @ 90° Inc, Hold
6043.00	14099.94	90.00	180.00	-8044.90	-209.12	8047.61	8578.80	TD at 14099.94

DESIGN TARGET DETAILS

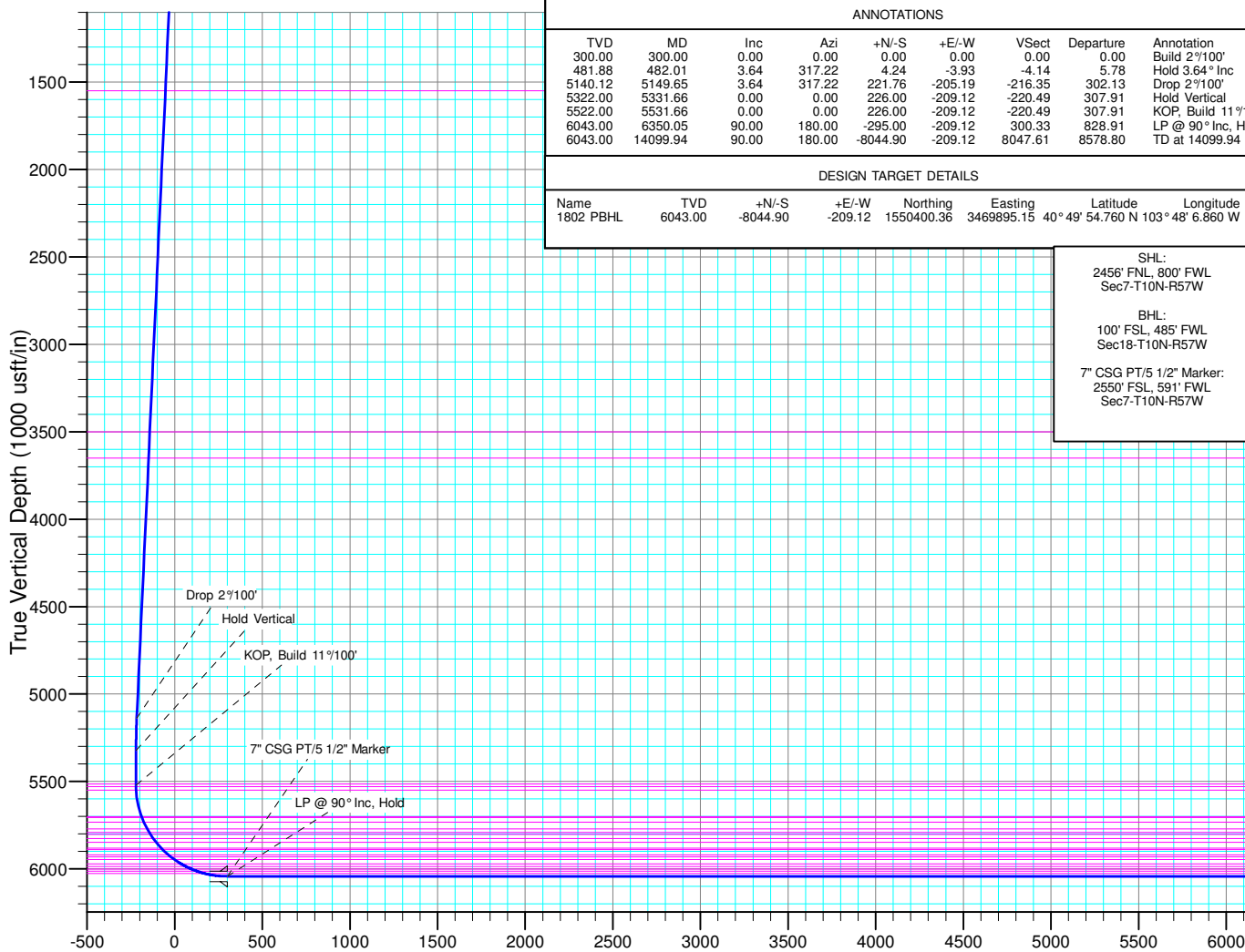
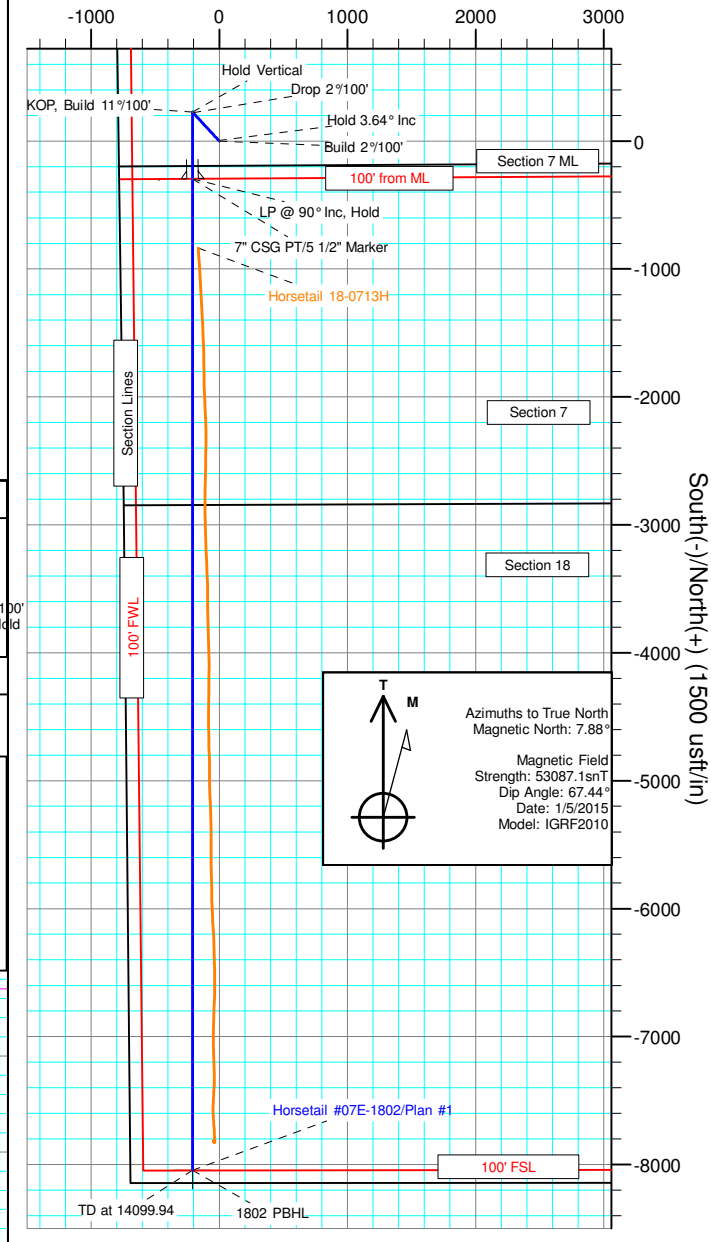
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
1802 PBHL	6043.00	-8044.90	-209.12	1550400.36	3469895.15	40° 49' 54.760 N	103° 48' 6.860 W

SHL:
 2456' FNL, 800' FWL
 Sec7-T10N-R57W

BHL:
 100' FSL, 485' FWL
 Sec18-T10N-R57W

7" CSG PT/5 1/2" Marker:
 2550' FSL, 591' FWL
 Sec7-T10N-R57W

West(-)/East(+) (1500 usft/in)



Vertical Section at 181.49° (1000 usft/in)



Whiting Petroleum Corp.

**Weld County, CO
Sec 7-T10N-R57W
Horsetail #07E-1802**

Hz

Plan: Plan #1

Standard Planning Report

09 November, 2015



WOG Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Horsetail #07E-1802
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4946.60usft
Project:	Weld County, CO	MD Reference:	KBE @ 4946.60usft
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07E-1802	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

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

Site	Sec 7-T10N-R57W				
Site Position:		Northing:	1,558,450.14 usft	Latitude:	40° 51' 14.300 N
From:	Lat/Long	Easting:	3,469,810.15 usft	Longitude:	103° 48' 5.960 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	1.10 °

Well	Horsetail #07E-1802					
Well Position	+N/-S	-5.03 usft	Northing:	1,558,447.79 usft	Latitude:	40° 51' 14.250 N
	+E/-W	139.89 usft	Easting:	3,469,950.11 usft	Longitude:	103° 48' 4.140 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,925.60 usft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/5/2015	7.89	67.44	53,087

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	181.49

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
482.01	3.64	317.22	481.88	4.24	-3.93	2.00	2.00	0.00	317.22	
5,149.65	3.64	317.22	5,140.12	221.76	-205.19	0.00	0.00	0.00	0.00	
5,331.66	0.00	0.00	5,322.00	226.00	-209.12	2.00	-2.00	0.00	180.00	
5,531.66	0.00	0.00	5,522.00	226.00	-209.12	0.00	0.00	0.00	0.00	
6,350.05	90.00	180.00	6,043.00	-295.00	-209.12	11.00	11.00	0.00	180.00	
14,099.94	90.00	180.00	6,043.00	-8,044.90	-209.12	0.00	0.00	0.00	0.00	1802 PBHL



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Horsetail #07E-1802
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4946.60usft
Project:	Weld County, CO	MD Reference:	KBE @ 4946.60usft
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07E-1802	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
Build 2°/100'										
400.00	2.00	317.22	399.98	1.28	-1.19	-1.25	2.00	2.00	0.00	
482.01	3.64	317.22	481.88	4.24	-3.93	-4.14	2.00	2.00	0.00	
Hold 3.64° Inc										
500.00	3.64	317.22	499.84	5.08	-4.70	-4.96	0.00	0.00	0.00	
600.00	3.64	317.22	599.64	9.74	-9.01	-9.50	0.00	0.00	0.00	
700.00	3.64	317.22	699.44	14.40	-13.33	-14.05	0.00	0.00	0.00	
800.00	3.64	317.22	799.24	19.06	-17.64	-18.60	0.00	0.00	0.00	
900.00	3.64	317.22	899.03	23.72	-21.95	-23.14	0.00	0.00	0.00	
1,000.00	3.64	317.22	998.83	28.38	-26.26	-27.69	0.00	0.00	0.00	
1,100.00	3.64	317.22	1,098.63	33.04	-30.57	-32.24	0.00	0.00	0.00	
1,200.00	3.64	317.22	1,198.43	37.70	-34.89	-36.78	0.00	0.00	0.00	
1,300.00	3.64	317.22	1,298.23	42.36	-39.20	-41.33	0.00	0.00	0.00	
1,400.00	3.64	317.22	1,398.03	47.02	-43.51	-45.87	0.00	0.00	0.00	
1,500.00	3.64	317.22	1,497.82	51.68	-47.82	-50.42	0.00	0.00	0.00	
1,552.28	3.64	317.22	1,550.00	54.12	-50.08	-52.80	0.00	0.00	0.00	
Upper Pierre										
1,600.00	3.64	317.22	1,597.62	56.34	-52.13	-54.97	0.00	0.00	0.00	
1,700.00	3.64	317.22	1,697.42	61.00	-56.45	-59.51	0.00	0.00	0.00	
1,800.00	3.64	317.22	1,797.22	65.66	-60.76	-64.06	0.00	0.00	0.00	
1,900.00	3.64	317.22	1,897.02	70.32	-65.07	-68.61	0.00	0.00	0.00	
2,000.00	3.64	317.22	1,996.82	74.98	-69.38	-73.15	0.00	0.00	0.00	
2,100.00	3.64	317.22	2,096.61	79.64	-73.69	-77.70	0.00	0.00	0.00	
2,200.00	3.64	317.22	2,196.41	84.30	-78.01	-82.25	0.00	0.00	0.00	
2,300.00	3.64	317.22	2,296.21	88.96	-82.32	-86.79	0.00	0.00	0.00	
2,400.00	3.64	317.22	2,396.01	93.62	-86.63	-91.34	0.00	0.00	0.00	
2,500.00	3.64	317.22	2,495.81	98.28	-90.94	-95.89	0.00	0.00	0.00	
2,600.00	3.64	317.22	2,595.60	102.94	-95.25	-100.43	0.00	0.00	0.00	
2,700.00	3.64	317.22	2,695.40	107.60	-99.57	-104.98	0.00	0.00	0.00	
2,800.00	3.64	317.22	2,795.20	112.26	-103.88	-109.53	0.00	0.00	0.00	
2,900.00	3.64	317.22	2,895.00	116.92	-108.19	-114.07	0.00	0.00	0.00	
3,000.00	3.64	317.22	2,994.80	121.58	-112.50	-118.62	0.00	0.00	0.00	
3,100.00	3.64	317.22	3,094.60	126.24	-116.81	-123.16	0.00	0.00	0.00	
3,200.00	3.64	317.22	3,194.39	130.90	-121.13	-127.71	0.00	0.00	0.00	
3,300.00	3.64	317.22	3,294.19	135.56	-125.44	-132.26	0.00	0.00	0.00	
3,400.00	3.64	317.22	3,393.99	140.22	-129.75	-136.80	0.00	0.00	0.00	
3,500.00	3.64	317.22	3,493.79	144.88	-134.06	-141.35	0.00	0.00	0.00	
3,506.22	3.64	317.22	3,500.00	145.17	-134.33	-141.63	0.00	0.00	0.00	
Hygiene										
3,600.00	3.64	317.22	3,593.59	149.54	-138.37	-145.90	0.00	0.00	0.00	
3,656.53	3.64	317.22	3,650.00	152.18	-140.81	-148.47	0.00	0.00	0.00	
Lower Pierre										
3,700.00	3.64	317.22	3,693.39	154.20	-142.69	-150.44	0.00	0.00	0.00	
3,800.00	3.64	317.22	3,793.18	158.86	-147.00	-154.99	0.00	0.00	0.00	
3,900.00	3.64	317.22	3,892.98	163.52	-151.31	-159.54	0.00	0.00	0.00	
4,000.00	3.64	317.22	3,992.78	168.18	-155.62	-164.08	0.00	0.00	0.00	
4,100.00	3.64	317.22	4,092.58	172.84	-159.93	-168.63	0.00	0.00	0.00	
4,200.00	3.64	317.22	4,192.38	177.50	-164.25	-173.18	0.00	0.00	0.00	
4,300.00	3.64	317.22	4,292.17	182.16	-168.56	-177.72	0.00	0.00	0.00	
4,400.00	3.64	317.22	4,391.97	186.82	-172.87	-182.27	0.00	0.00	0.00	



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Horsetail #07E-1802
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4946.60usft
Project:	Weld County, CO	MD Reference:	KBE @ 4946.60usft
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07E-1802	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,500.00	3.64	317.22	4,491.77	191.48	-177.18	-186.81	0.00	0.00	0.00
4,600.00	3.64	317.22	4,591.57	196.14	-181.49	-191.36	0.00	0.00	0.00
4,700.00	3.64	317.22	4,691.37	200.80	-185.81	-195.91	0.00	0.00	0.00
4,800.00	3.64	317.22	4,791.17	205.46	-190.12	-200.45	0.00	0.00	0.00
4,900.00	3.64	317.22	4,890.96	210.12	-194.43	-205.00	0.00	0.00	0.00
5,000.00	3.64	317.22	4,990.76	214.78	-198.74	-209.55	0.00	0.00	0.00
5,100.00	3.64	317.22	5,090.56	219.44	-203.05	-214.09	0.00	0.00	0.00
5,149.65	3.64	317.22	5,140.12	221.76	-205.19	-216.35	0.00	0.00	0.00
Drop 2°/100'									
5,200.00	2.63	317.22	5,190.38	223.78	-207.07	-218.32	2.00	-2.00	0.00
5,300.00	0.63	317.22	5,290.34	225.87	-209.00	-220.36	2.00	-2.00	0.00
5,331.66	0.00	0.00	5,322.00	226.00	-209.12	-220.49	2.00	-2.00	0.00
Hold Vertical									
5,400.00	0.00	0.00	5,390.34	226.00	-209.12	-220.49	0.00	0.00	0.00
5,500.00	0.00	0.00	5,490.34	226.00	-209.12	-220.49	0.00	0.00	0.00
5,524.66	0.00	0.00	5,515.00	226.00	-209.12	-220.49	0.00	0.00	0.00
P200 Marker									
5,531.66	0.00	0.00	5,522.00	226.00	-209.12	-220.49	0.00	0.00	0.00
KOP, Build 11°/100'									
5,539.66	0.88	180.00	5,530.00	225.94	-209.12	-220.43	11.00	11.00	0.00
P300 Marker									
5,550.00	2.02	180.00	5,540.33	225.68	-209.12	-220.17	11.00	11.00	0.00
5,559.68	3.08	180.00	5,550.00	225.25	-209.12	-219.74	11.00	11.00	0.00
P350 Marker									
5,600.00	7.52	180.00	5,590.14	221.52	-209.12	-216.02	11.00	11.00	0.00
5,650.00	13.01	180.00	5,639.32	212.62	-209.12	-207.11	11.00	11.00	0.00
5,700.00	18.51	180.00	5,687.42	199.04	-209.12	-193.54	11.00	11.00	0.00
5,715.45	20.21	180.00	5,702.00	193.92	-209.12	-188.42	11.00	11.00	0.00
Sharon Springs									
5,720.79	20.80	180.00	5,707.00	192.05	-209.12	-186.55	11.00	11.00	0.00
Niobrara									
5,748.90	23.89	180.00	5,733.00	181.36	-209.12	-175.87	11.00	11.00	0.00
Top A Chalk									
5,750.00	24.01	180.00	5,734.00	180.92	-209.12	-175.42	11.00	11.00	0.00
5,792.41	28.68	180.00	5,772.00	162.10	-209.12	-156.61	11.00	11.00	0.00
Top A Marl									
5,800.00	29.51	180.00	5,778.63	158.41	-209.12	-152.92	11.00	11.00	0.00
5,815.49	31.21	180.00	5,792.00	150.58	-209.12	-145.09	11.00	11.00	0.00
A Marl									
5,828.46	32.64	180.00	5,803.00	143.73	-209.12	-138.24	11.00	11.00	0.00
Top Upper B									
5,850.00	35.01	180.00	5,820.90	131.73	-209.12	-126.26	11.00	11.00	0.00
5,856.26	35.70	180.00	5,826.00	128.11	-209.12	-122.64	11.00	11.00	0.00
Base Upper B									
5,883.89	38.74	180.00	5,848.00	111.40	-209.12	-105.93	11.00	11.00	0.00
Top Lower B									
5,900.00	40.51	180.00	5,860.41	101.13	-209.12	-95.66	11.00	11.00	0.00
5,929.10	43.71	180.00	5,882.00	81.62	-209.12	-76.16	11.00	11.00	0.00
Base Lower B									
5,940.29	44.94	180.00	5,890.00	73.80	-209.12	-68.35	11.00	11.00	0.00
Top B Marl									
5,950.00	46.01	180.00	5,896.81	66.88	-209.12	-61.42	11.00	11.00	0.00



WOG
Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Horsetail #07E-1802
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4946.60usft
Project:	Weld County, CO	MD Reference:	KBE @ 4946.60usft
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07E-1802	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,983.05	49.64	180.00	5,919.00	42.39	-209.12	-36.94	11.00	11.00	0.00
Top C Chalk									
6,000.00	51.50	180.00	5,929.76	29.30	-209.12	-23.85	11.00	11.00	0.00
6,001.99	51.72	180.00	5,931.00	27.74	-209.12	-22.29	11.00	11.00	0.00
Middle C Chalk									
6,028.70	54.66	180.00	5,947.00	6.36	-209.12	-0.92	11.00	11.00	0.00
Middle C Marl									
6,050.00	57.00	180.00	5,958.96	-11.27	-209.12	16.70	11.00	11.00	0.00
6,072.89	59.52	180.00	5,971.00	-30.73	-209.12	36.15	11.00	11.00	0.00
Lower C Chalk									
6,100.00	62.50	180.00	5,984.14	-54.44	-209.12	59.86	11.00	11.00	0.00
6,106.27	63.19	180.00	5,987.00	-60.02	-209.12	65.43	11.00	11.00	0.00
Lower C Marl									
6,139.42	66.84	180.00	6,001.00	-90.06	-209.12	95.46	11.00	11.00	0.00
Lower C Marker									
6,150.00	68.00	180.00	6,005.06	-99.83	-209.12	105.23	11.00	11.00	0.00
6,172.38	70.46	180.00	6,013.00	-120.76	-209.12	126.15	11.00	11.00	0.00
Top Ft. Hays									
6,200.00	73.50	180.00	6,021.54	-147.02	-209.12	152.40	11.00	11.00	0.00
6,220.59	75.76	180.00	6,027.00	-166.88	-209.12	172.25	11.00	11.00	0.00
Ft. Hays Marker									
6,250.00	79.00	180.00	6,033.42	-195.57	-209.12	200.93	11.00	11.00	0.00
6,300.00	84.50	180.00	6,040.60	-245.03	-209.12	250.38	11.00	11.00	0.00
6,350.05	90.00	180.00	6,043.00	-295.00	-209.12	300.34	11.00	11.00	0.00
LP @ 90° Inc, Hold - 7" CSG PT/5 1/2" Marker									
6,400.00	90.00	180.00	6,043.00	-344.95	-209.12	350.27	0.00	0.00	0.00
6,500.00	90.00	180.00	6,043.00	-444.95	-209.12	450.24	0.00	0.00	0.00
6,600.00	90.00	180.00	6,043.00	-544.95	-209.12	550.20	0.00	0.00	0.00
6,700.00	90.00	180.00	6,043.00	-644.95	-209.12	650.17	0.00	0.00	0.00
6,800.00	90.00	180.00	6,043.00	-744.95	-209.12	750.14	0.00	0.00	0.00
6,900.00	90.00	180.00	6,043.00	-844.95	-209.12	850.10	0.00	0.00	0.00
7,000.00	90.00	180.00	6,043.00	-944.95	-209.12	950.07	0.00	0.00	0.00
7,100.00	90.00	180.00	6,043.00	-1,044.95	-209.12	1,050.03	0.00	0.00	0.00
7,200.00	90.00	180.00	6,043.00	-1,144.95	-209.12	1,150.00	0.00	0.00	0.00
7,300.00	90.00	180.00	6,043.00	-1,244.95	-209.12	1,249.97	0.00	0.00	0.00
7,400.00	90.00	180.00	6,043.00	-1,344.95	-209.12	1,349.93	0.00	0.00	0.00
7,500.00	90.00	180.00	6,043.00	-1,444.95	-209.12	1,449.90	0.00	0.00	0.00
7,600.00	90.00	180.00	6,043.00	-1,544.95	-209.12	1,549.87	0.00	0.00	0.00
7,700.00	90.00	180.00	6,043.00	-1,644.95	-209.12	1,649.83	0.00	0.00	0.00
7,800.00	90.00	180.00	6,043.00	-1,744.95	-209.12	1,749.80	0.00	0.00	0.00
7,900.00	90.00	180.00	6,043.00	-1,844.95	-209.12	1,849.76	0.00	0.00	0.00
8,000.00	90.00	180.00	6,043.00	-1,944.95	-209.12	1,949.73	0.00	0.00	0.00
8,100.00	90.00	180.00	6,043.00	-2,044.95	-209.12	2,049.70	0.00	0.00	0.00
8,200.00	90.00	180.00	6,043.00	-2,144.95	-209.12	2,149.66	0.00	0.00	0.00
8,300.00	90.00	180.00	6,043.00	-2,244.95	-209.12	2,249.63	0.00	0.00	0.00
8,400.00	90.00	180.00	6,043.00	-2,344.95	-209.12	2,349.60	0.00	0.00	0.00
8,500.00	90.00	180.00	6,043.00	-2,444.95	-209.12	2,449.56	0.00	0.00	0.00
8,600.00	90.00	180.00	6,043.00	-2,544.95	-209.12	2,549.53	0.00	0.00	0.00
8,700.00	90.00	180.00	6,043.00	-2,644.95	-209.12	2,649.49	0.00	0.00	0.00
8,800.00	90.00	180.00	6,043.00	-2,744.95	-209.12	2,749.46	0.00	0.00	0.00
8,900.00	90.00	180.00	6,043.00	-2,844.95	-209.12	2,849.43	0.00	0.00	0.00
9,000.00	90.00	180.00	6,043.00	-2,944.95	-209.12	2,949.39	0.00	0.00	0.00
9,100.00	90.00	180.00	6,043.00	-3,044.95	-209.12	3,049.36	0.00	0.00	0.00



WOG
Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Horsetail #07E-1802
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4946.60usft
Project:	Weld County, CO	MD Reference:	KBE @ 4946.60usft
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07E-1802	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,200.00	90.00	180.00	6,043.00	-3,144.95	-209.12	3,149.33	0.00	0.00	0.00
9,300.00	90.00	180.00	6,043.00	-3,244.95	-209.12	3,249.29	0.00	0.00	0.00
9,400.00	90.00	180.00	6,043.00	-3,344.95	-209.12	3,349.26	0.00	0.00	0.00
9,500.00	90.00	180.00	6,043.00	-3,444.95	-209.12	3,449.22	0.00	0.00	0.00
9,600.00	90.00	180.00	6,043.00	-3,544.95	-209.12	3,549.19	0.00	0.00	0.00
9,700.00	90.00	180.00	6,043.00	-3,644.95	-209.12	3,649.16	0.00	0.00	0.00
9,800.00	90.00	180.00	6,043.00	-3,744.95	-209.12	3,749.12	0.00	0.00	0.00
9,900.00	90.00	180.00	6,043.00	-3,844.95	-209.12	3,849.09	0.00	0.00	0.00
10,000.00	90.00	180.00	6,043.00	-3,944.95	-209.12	3,949.06	0.00	0.00	0.00
10,100.00	90.00	180.00	6,043.00	-4,044.95	-209.12	4,049.02	0.00	0.00	0.00
10,200.00	90.00	180.00	6,043.00	-4,144.95	-209.12	4,148.99	0.00	0.00	0.00
10,300.00	90.00	180.00	6,043.00	-4,244.95	-209.12	4,248.95	0.00	0.00	0.00
10,400.00	90.00	180.00	6,043.00	-4,344.95	-209.12	4,348.92	0.00	0.00	0.00
10,500.00	90.00	180.00	6,043.00	-4,444.95	-209.12	4,448.89	0.00	0.00	0.00
10,600.00	90.00	180.00	6,043.00	-4,544.95	-209.12	4,548.85	0.00	0.00	0.00
10,700.00	90.00	180.00	6,043.00	-4,644.95	-209.12	4,648.82	0.00	0.00	0.00
10,800.00	90.00	180.00	6,043.00	-4,744.95	-209.12	4,748.79	0.00	0.00	0.00
10,900.00	90.00	180.00	6,043.00	-4,844.95	-209.12	4,848.75	0.00	0.00	0.00
11,000.00	90.00	180.00	6,043.00	-4,944.95	-209.12	4,948.72	0.00	0.00	0.00
11,100.00	90.00	180.00	6,043.00	-5,044.95	-209.12	5,048.68	0.00	0.00	0.00
11,200.00	90.00	180.00	6,043.00	-5,144.95	-209.12	5,148.65	0.00	0.00	0.00
11,300.00	90.00	180.00	6,043.00	-5,244.95	-209.12	5,248.62	0.00	0.00	0.00
11,400.00	90.00	180.00	6,043.00	-5,344.95	-209.12	5,348.58	0.00	0.00	0.00
11,500.00	90.00	180.00	6,043.00	-5,444.95	-209.12	5,448.55	0.00	0.00	0.00
11,600.00	90.00	180.00	6,043.00	-5,544.95	-209.12	5,548.52	0.00	0.00	0.00
11,700.00	90.00	180.00	6,043.00	-5,644.95	-209.12	5,648.48	0.00	0.00	0.00
11,800.00	90.00	180.00	6,043.00	-5,744.95	-209.12	5,748.45	0.00	0.00	0.00
11,900.00	90.00	180.00	6,043.00	-5,844.95	-209.12	5,848.41	0.00	0.00	0.00
12,000.00	90.00	180.00	6,043.00	-5,944.95	-209.12	5,948.38	0.00	0.00	0.00
12,100.00	90.00	180.00	6,043.00	-6,044.95	-209.12	6,048.35	0.00	0.00	0.00
12,200.00	90.00	180.00	6,043.00	-6,144.95	-209.12	6,148.31	0.00	0.00	0.00
12,300.00	90.00	180.00	6,043.00	-6,244.95	-209.12	6,248.28	0.00	0.00	0.00
12,400.00	90.00	180.00	6,043.00	-6,344.95	-209.12	6,348.24	0.00	0.00	0.00
12,500.00	90.00	180.00	6,043.00	-6,444.95	-209.12	6,448.21	0.00	0.00	0.00
12,600.00	90.00	180.00	6,043.00	-6,544.95	-209.12	6,548.18	0.00	0.00	0.00
12,700.00	90.00	180.00	6,043.00	-6,644.95	-209.12	6,648.14	0.00	0.00	0.00
12,800.00	90.00	180.00	6,043.00	-6,744.95	-209.12	6,748.11	0.00	0.00	0.00
12,900.00	90.00	180.00	6,043.00	-6,844.95	-209.12	6,848.08	0.00	0.00	0.00
13,000.00	90.00	180.00	6,043.00	-6,944.95	-209.12	6,948.04	0.00	0.00	0.00
13,100.00	90.00	180.00	6,043.00	-7,044.95	-209.12	7,048.01	0.00	0.00	0.00
13,200.00	90.00	180.00	6,043.00	-7,144.95	-209.12	7,147.97	0.00	0.00	0.00
13,300.00	90.00	180.00	6,043.00	-7,244.95	-209.12	7,247.94	0.00	0.00	0.00
13,400.00	90.00	180.00	6,043.00	-7,344.95	-209.12	7,347.91	0.00	0.00	0.00
13,500.00	90.00	180.00	6,043.00	-7,444.95	-209.12	7,447.87	0.00	0.00	0.00
13,600.00	90.00	180.00	6,043.00	-7,544.95	-209.12	7,547.84	0.00	0.00	0.00
13,700.00	90.00	180.00	6,043.00	-7,644.95	-209.12	7,647.81	0.00	0.00	0.00
13,800.00	90.00	180.00	6,043.00	-7,744.95	-209.12	7,747.77	0.00	0.00	0.00
13,900.00	90.00	180.00	6,043.00	-7,844.95	-209.12	7,847.74	0.00	0.00	0.00
14,000.00	90.00	180.00	6,043.00	-7,944.95	-209.12	7,947.70	0.00	0.00	0.00
14,099.94	90.00	180.00	6,043.00	-8,044.90	-209.12	8,047.61	0.00	0.00	0.00
TD at 14099.94									



WOG Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Horsetail #07E-1802
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4946.60usft
Project:	Weld County, CO	MD Reference:	KBE @ 4946.60usft
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07E-1802	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
1802 PBHL	0.00	0.00	6,043.00	-8,044.90	-209.12	1,550,400.36	3,469,895.14	40° 49' 54.760 N	103° 48' 6.860 W
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter	
(usft)	(usft)		(in)	(in)	
6,350.05	6,043.00	7" CSG PT/5 1/2" Marker	7.000	8.750	

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
1,552.28	1,550.00	Upper Pierre				
3,506.22	3,500.00	Hygiene				
3,656.53	3,650.00	Lower Pierre				
5,524.66	5,515.00	P200 Marker				
5,539.66	5,530.00	P300 Marker				
5,559.68	5,550.00	P350 Marker				
5,715.45	5,702.00	Sharon Springs				
5,720.79	5,707.00	Niobrara				
5,748.90	5,733.00	Top A Chalk				
5,792.41	5,772.00	Top A Marl				
5,815.49	5,792.00	A Marl				
5,828.46	5,803.00	Top Upper B				
5,856.26	5,826.00	Base Upper B				
5,883.89	5,848.00	Top Lower B				
5,929.10	5,882.00	Base Lower B				
5,940.29	5,890.00	Top B Marl				
5,983.05	5,919.00	Top C Chalk				
6,001.99	5,931.00	Middle C Chalk				
6,028.70	5,947.00	Middle C Marl				
6,072.89	5,971.00	Lower C Chalk				
6,106.27	5,987.00	Lower C Marl				
6,139.42	6,001.00	Lower C Marker				
6,172.38	6,013.00	Top Ft. Hays				
6,220.59	6,027.00	Ft. Hays Marker				



WOG
Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Horsetail #07E-1802
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4946.60usft
Project:	Weld County, CO	MD Reference:	KBE @ 4946.60usft
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07E-1802	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
300.00	300.00	0.00	0.00	Build 2°/100'	
482.01	481.88	4.24	-3.93	Hold 3.64° Inc	
5,149.65	5,140.12	221.76	-205.19	Drop 2°/100'	
5,331.66	5,322.00	226.00	-209.12	Hold Vertical	
5,531.66	5,522.00	226.00	-209.12	KOP, Build 11°/100'	
6,350.05	6,043.00	-295.00	-209.12	LP @ 90° Inc, Hold	
14,099.94	6,043.00	-8,044.90	-209.12	TD at 14099.94	