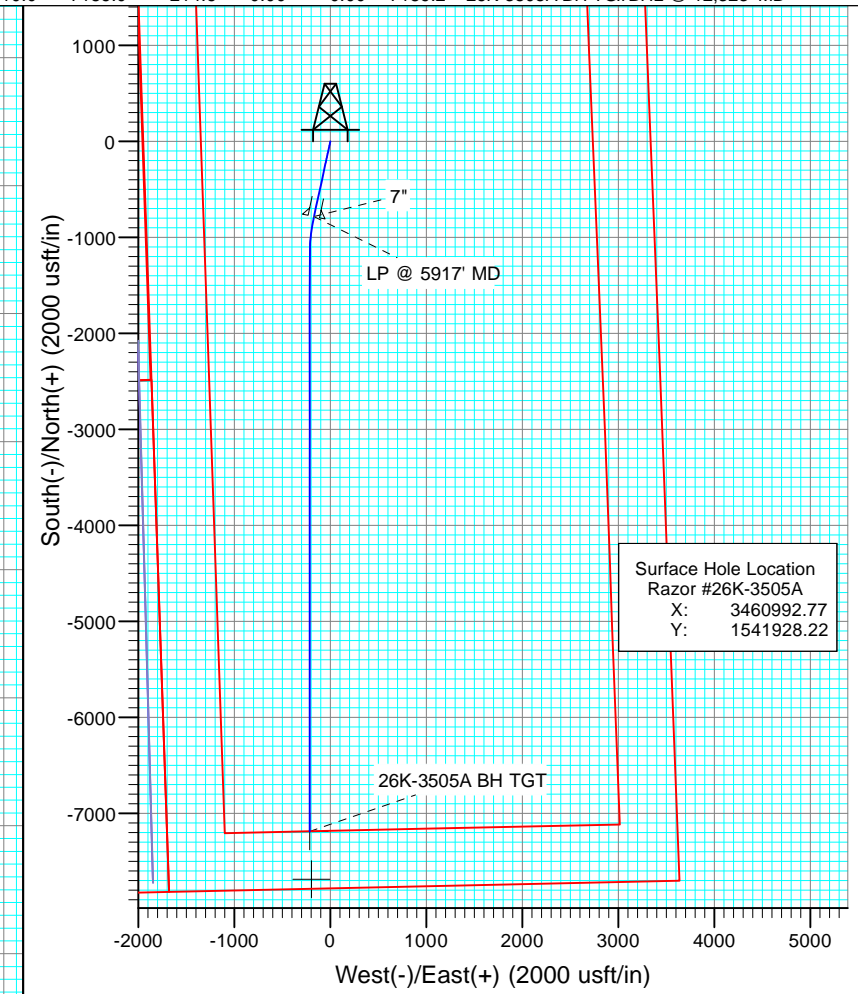


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0		KOP @ 1000' MD
3	1200.0	4.00	192.30	1199.8	-6.8	-1.5	2.00	192.30	6.9		EOB; 4°
4	5135.2	4.00	192.30	5125.5	-275.0	-60.0	0.00	0.00	276.7		Start 11° Build
5	5917.0	90.00	192.30	5610.0	-782.7	-170.7	11.00	0.00	787.4		LP @ 5917' MD
6	6327.0	90.00	180.00	5610.0	-1189.5	-214.5	3.00	-90.00	1195.4		EOT; 180° Az
7	12323.5	90.00	180.00	5610.0	-7186.0	-214.6	0.00	0.00	7189.2		26K-3505A BH TGT 26K-3505A BH TGT @ 12,323' MD



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
26K-3505A BH TGT	5610.0	-7186.0	-214.6	1534742.21	3460778.22
26K-3505A BH TGT	5610.0	-7684.5	-197.4	1534243.67	3460795.33

Azimuths to Grid North
 True North: -1.08°
 Magnetic North: 7.05°

Magnetic Field
 Strength: 53237.3snT
 Dip Angle: 67.46°
 Date: 5/16/2013
 Model: IGRF2013

Plan #2
 Razor #26K-3505A
 WELL @ 4754.0usft (Original Well Elev)
 Ground Elevation @ 4737.5
 North American Datum 1983
 Well Razor #26K-3505A, Grid North

Vertical Section at 181.71° (1500 usft/in)

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB	Local Co-ordinate Reference: Well Razor #26K-3505A
Company: Whiting Petroleum Corporation	TVD Reference: WELL @ 4754.0usft (Original Well Elev)
Project: Weld County, CO	MD Reference: WELL @ 4754.0usft (Original Well Elev)
Site: S26-T10N-R58W	North Reference: Grid
Well: Razor #26K-3505A	Survey Calculation Method: Minimum Curvature
Wellbore: HZ	
Design: Plan #2	

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 S26-T10N-R58W					
Site Position:	Northing:	1,541,774.28 usft	Latitude:	40° 48' 31.46 N	
From: Lat/Long	Easting:	3,459,642.55 usft	Longitude:	103° 50' 22.31 W	
Position Uncertainty: 0.0 usft	Slot Radius: 13-3/16"		Grid Convergence:	1.07 °	

Well Razor #26K-3505A					
Well Position	+N/-S	0.0 usft	Northing:	1,541,928.22 usft	Latitude: 40° 48' 32.73 N
	+E/-W	0.0 usft	Easting:	3,460,992.77 usft	Longitude: 103° 50' 4.72 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level: 4,737.5 usft

Wellbore HZ					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/16/2013	8.13	67.46	53,237

Design Plan #2					
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	181.71	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,200.0	4.00	192.30	1,199.8	-6.8	-1.5	2.00	2.00	0.00	192.30	
5,135.2	4.00	192.30	5,125.5	-275.0	-60.0	0.00	0.00	0.00	0.00	
5,917.0	90.00	192.30	5,610.0	-782.7	-170.7	11.00	11.00	0.00	0.00	
6,327.0	90.00	180.00	5,610.0	-1,189.5	-214.5	3.00	0.00	-3.00	-90.00	
12,323.5	90.00	180.00	5,610.0	-7,186.0	-214.6	0.00	0.00	0.00	0.00	26K-3505A BH TGT

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #26K-3505A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4754.0usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4754.0usft (Original Well Elev)
Site:	S26-T10N-R58W	North Reference:	Grid
Well:	Razor #26K-3505A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	KOP @ 1000' MD
1,200.0	4.00	192.30	1,199.8	-6.8	-1.5	6.9	2.00	2.00	EOB; 4°
5,135.2	4.00	192.30	5,125.5	-275.0	-60.0	276.7	0.00	0.00	Start 11° Build
5,696.5	65.74	192.30	5,564.0	-573.6	-125.1	577.1	11.00	11.00	Top Niobrara
5,917.0	90.00	192.30	5,610.0	-782.7	-170.7	787.4	11.00	11.00	LP @ 5917' MD - 7"
6,327.0	90.00	180.00	5,610.0	-1,189.5	-214.5	1,195.4	3.00	0.00	EOT; 180° Az
12,323.5	90.00	180.00	5,610.0	-7,186.0	-214.6	7,189.2	0.00	0.00	PBHL @ 12,323' MD

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
26K-3505A BH TGT - hit/miss target - Shape - Point	0.00	0.00	5,610.0	-7,186.0	-214.6	1,534,742.21	3,460,778.22	40° 47' 21.78 N	103° 50' 9.26 W
26K-3505A BHL - plan misses target center by 498.8usft at 12323.5usft MD (5610.0 TVD, -7186.0 N, -214.6 E) - Point	0.00	0.00	5,610.0	-7,684.5	-197.4	1,534,243.67	3,460,795.33	40° 47' 16.85 N	103° 50' 9.16 W

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
5,917.0	5,610.0	7"	0	0	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,696.5	5,564.0	Top Niobrara		0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
1,000.0	1,000.0	0.0	0.0	KOP @ 1000' MD	
1,200.0	1,199.8	-6.8	-1.5	EOB; 4°	
5,135.2	5,125.5	-275.0	-60.0	Start 11° Build	
5,917.0	5,610.0	-782.7	-170.7	LP @ 5917' MD	
6,327.0	5,610.0	-1,189.5	-214.5	EOT; 180° Az	
12,323.5	5,610.0	-7,186.0	-214.6	PBHL @ 12,323' MD	