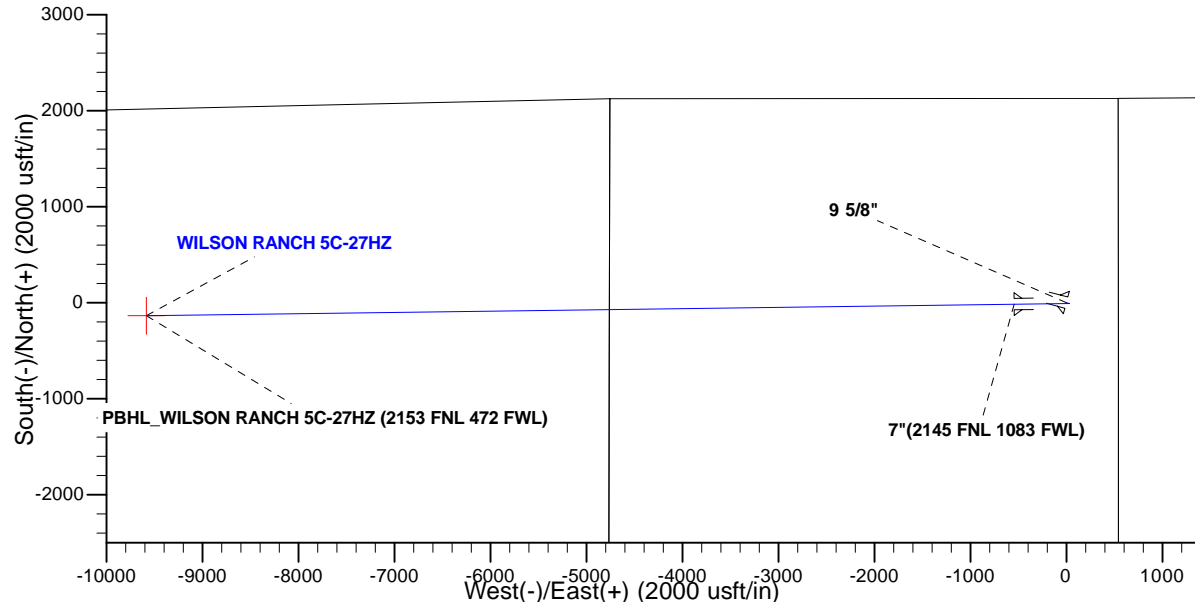
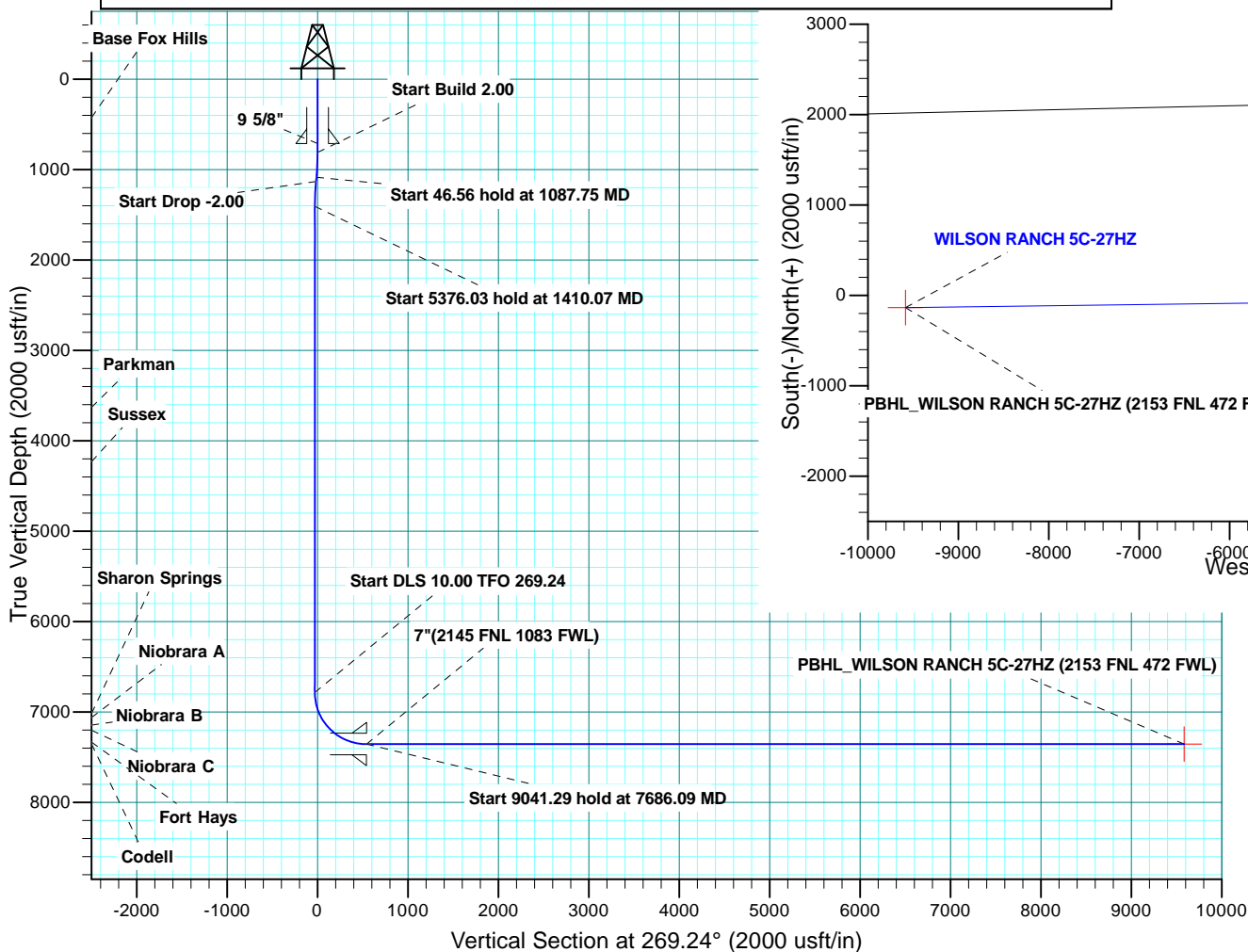


SHL: WILSON RANCH 5C-27HZ								
GL 4998 KB 17 @ 5015.00usft								
		+N-S 0.00	+E-W 0.00	Northing 14630905.35	Easting 1650830.84	Latitude 40.286063	Longitude -104.962657	
DESIGN TARGET DETAILS								
Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Shape
PBHL 7358.00		-135.02	-9583.41	14630766.29	1641247.49	40.285687	-104.997021	Point
- plan hits target center								
SECTION DETAILS								
MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
812.00	0.00	0.00	812.00	0.00	0.00	0.00	0.00	0.00
1087.75	5.52	104.57	1087.33	-3.34	12.83	2.00	104.57	-12.79
1134.31	5.52	104.57	1133.67	-4.46	17.17	0.00	0.00	-17.10
1410.07	0.00	0.00	1409.00	-7.80	30.00	2.00	180.00	-29.89
6786.09	0.00	0.00	6785.03	-7.80	30.00	0.00	0.00	-29.89
7686.09	90.00	269.24	7357.98	-15.38	-542.91	10.00	269.24	543.06
16727.39	90.00	269.24	7358.00	-135.02	-9583.41	0.00	0.00	9584.36
PBHL_WILSON RANCH 5C-27HZ (2153 FNL 472 FWL)								



CASING DETAILS			
TVD	MD	Name	Size
712.00	712.00	9 5/8"	9.625
7357.98	7686.09	7"	7.000

FORMATION TOP DETAILS			
TVDPath	MDPath	Formation	Inc
427.00	427.00	Base Fox Hills	0.00
3631.00	3632.07	Parkman	0.00
4233.00	4234.07	Sussex	0.00
7018.00	7026.02	Sharon Springs	23.99
7063.00	7076.32	Niobrara A	29.02
7147.00	7177.90	Niobrara B	39.18
7202.00	7253.08	Niobrara C	46.70
7335.00	7523.26	Fort Hays	73.72
7355.00	7627.59	Codell	84.15



**Scientific Drilling**

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N**

**WILSON RANCH 8 -26HZ**

**WILSON RANCH 5C-27HZ**

**PLAN A**

**Plan: Permit Rev-1**

## **Standard Planning Report**

**30 December, 2014**

<b>Database:</b>	Denver Sales	<b>Local Co-ordinate Reference:</b>	Well WILSON RANCH 5C-27HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	GL 4998 KB 17 @ 5015.00usft
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	GL 4998 KB 17 @ 5015.00usft
<b>Site:</b>	WILSON RANCH 8 -26HZ	<b>North Reference:</b>	True
<b>Well:</b>	WILSON RANCH 5C-27HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	PLAN A		
<b>Design:</b>	Permit Rev-1		

<b>Project</b>	WELD-NAD83-UTMFT13N		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Zone 13N (108 W to 102 W)		

Site	WILSON RANCH 8 -26HZ				
Site Position:		Northing:	14,630,963.58 usft	Latitude:	40.286223
From:	Lat/Long	Easting:	1,650,762.21 usft	Longitude:	-104.962903
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.02

Well	WILSON RANCH 5C-27HZ,					
Well Position	+N/-S	-58.27 usft	Northing:	14,630,905.34 usft	Latitude:	40.286063
	+E/-W	68.60 usft	Easting:	1,650,830.84 usft	Longitude:	-104.962657
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,998.00 usft

<b>Wellbore</b>	PLAN A				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	11/7/2014	8.45	66.82	52,722

<b>Design</b>	Permit Rev-1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	269.24

<b>Plan Sections</b>										
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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
812.00	0.00	0.00	812.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,087.75	5.52	104.57	1,087.33	-3.34	12.83	2.00	2.00	0.00	104.57	
1,134.31	5.52	104.57	1,133.67	-4.46	17.17	0.00	0.00	0.00	0.00	
1,410.07	0.00	0.00	1,409.00	-7.80	30.00	2.00	-2.00	0.00	180.00	
6,786.09	0.00	0.00	6,785.03	-7.80	30.00	0.00	0.00	0.00	0.00	
7,686.09	90.00	269.24	7,357.98	-15.38	-542.91	10.00	10.00	-10.08	269.24	
16,727.39	90.00	269.24	7,358.00	-135.02	-9,583.41	0.00	0.00	0.00	0.00	PBHL_WILSON RAN

<b>Database:</b>	Denver Sales	<b>Local Co-ordinate Reference:</b>	Well WILSON RANCH 5C-27HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	GL 4998 KB 17 @ 5015.00usft
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	GL 4998 KB 17 @ 5015.00usft
<b>Site:</b>	WILSON RANCH 8 -26HZ	<b>North Reference:</b>	True
<b>Well:</b>	WILSON RANCH 5C-27HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	PLAN A		
<b>Design:</b>	Permit Rev-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
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
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
427.00	0.00	0.00	427.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Base Fox Hills</b>									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
712.00	0.00	0.00	712.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9 5/8"</b>									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
812.00	0.00	0.00	812.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>									
900.00	1.76	104.57	899.99	-0.34	1.31	-1.30	2.00	2.00	0.00
1,000.00	3.76	104.57	999.87	-1.55	5.97	-5.95	2.00	2.00	0.00
1,087.75	5.52	104.57	1,087.33	-3.34	12.83	-12.79	2.00	2.00	0.00
<b>Start 46.56 hold at 1087.75 MD</b>									
1,100.00	5.52	104.57	1,099.52	-3.63	13.97	-13.92	0.00	0.00	0.00
1,134.31	5.52	104.57	1,133.67	-4.46	17.17	-17.10	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
1,200.00	4.20	104.57	1,199.12	-5.86	22.55	-22.47	2.00	-2.00	0.00
1,300.00	2.20	104.57	1,298.96	-7.27	27.95	-27.86	2.00	-2.00	0.00
1,400.00	0.20	104.57	1,398.93	-7.80	29.98	-29.88	2.00	-2.00	0.00
1,410.07	0.00	0.00	1,409.00	-7.80	30.00	-29.89	2.00	-2.00	0.00
<b>Start 5376.03 hold at 1410.07 MD</b>									
1,500.00	0.00	0.00	1,498.93	-7.80	30.00	-29.89	0.00	0.00	0.00
1,600.00	0.00	0.00	1,598.93	-7.80	30.00	-29.89	0.00	0.00	0.00
1,700.00	0.00	0.00	1,698.93	-7.80	30.00	-29.89	0.00	0.00	0.00
1,800.00	0.00	0.00	1,798.93	-7.80	30.00	-29.89	0.00	0.00	0.00
1,900.00	0.00	0.00	1,898.93	-7.80	30.00	-29.89	0.00	0.00	0.00
2,000.00	0.00	0.00	1,998.93	-7.80	30.00	-29.89	0.00	0.00	0.00
2,100.00	0.00	0.00	2,098.93	-7.80	30.00	-29.89	0.00	0.00	0.00
2,200.00	0.00	0.00	2,198.93	-7.80	30.00	-29.89	0.00	0.00	0.00
2,300.00	0.00	0.00	2,298.93	-7.80	30.00	-29.89	0.00	0.00	0.00
2,400.00	0.00	0.00	2,398.93	-7.80	30.00	-29.89	0.00	0.00	0.00
2,500.00	0.00	0.00	2,498.93	-7.80	30.00	-29.89	0.00	0.00	0.00
2,600.00	0.00	0.00	2,598.93	-7.80	30.00	-29.89	0.00	0.00	0.00
2,700.00	0.00	0.00	2,698.93	-7.80	30.00	-29.89	0.00	0.00	0.00
2,800.00	0.00	0.00	2,798.93	-7.80	30.00	-29.89	0.00	0.00	0.00
2,900.00	0.00	0.00	2,898.93	-7.80	30.00	-29.89	0.00	0.00	0.00
3,000.00	0.00	0.00	2,998.93	-7.80	30.00	-29.89	0.00	0.00	0.00
3,100.00	0.00	0.00	3,098.93	-7.80	30.00	-29.89	0.00	0.00	0.00
3,200.00	0.00	0.00	3,198.93	-7.80	30.00	-29.89	0.00	0.00	0.00
3,300.00	0.00	0.00	3,298.93	-7.80	30.00	-29.89	0.00	0.00	0.00
3,400.00	0.00	0.00	3,398.93	-7.80	30.00	-29.89	0.00	0.00	0.00
3,500.00	0.00	0.00	3,498.93	-7.80	30.00	-29.89	0.00	0.00	0.00
3,600.00	0.00	0.00	3,598.93	-7.80	30.00	-29.89	0.00	0.00	0.00
3,632.07	0.00	0.00	3,631.00	-7.80	30.00	-29.89	0.00	0.00	0.00
<b>Parkman</b>									
3,700.00	0.00	0.00	3,698.93	-7.80	30.00	-29.89	0.00	0.00	0.00
3,800.00	0.00	0.00	3,798.93	-7.80	30.00	-29.89	0.00	0.00	0.00

<b>Database:</b>	Denver Sales	<b>Local Co-ordinate Reference:</b>	Well WILSON RANCH 5C-27HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	GL 4998 KB 17 @ 5015.00usft
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	GL 4998 KB 17 @ 5015.00usft
<b>Site:</b>	WILSON RANCH 8 -26HZ	<b>North Reference:</b>	True
<b>Well:</b>	WILSON RANCH 5C-27HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	PLAN A		
<b>Design:</b>	Permit Rev-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)
3,900.00	0.00	0.00	3,898.93	-7.80	30.00	-29.89	0.00	0.00	0.00
4,000.00	0.00	0.00	3,998.93	-7.80	30.00	-29.89	0.00	0.00	0.00
4,100.00	0.00	0.00	4,098.93	-7.80	30.00	-29.89	0.00	0.00	0.00
4,200.00	0.00	0.00	4,198.93	-7.80	30.00	-29.89	0.00	0.00	0.00
4,234.07	0.00	0.00	4,233.00	-7.80	30.00	-29.89	0.00	0.00	0.00
<b>Sussex</b>									
4,300.00	0.00	0.00	4,298.93	-7.80	30.00	-29.89	0.00	0.00	0.00
4,400.00	0.00	0.00	4,398.93	-7.80	30.00	-29.89	0.00	0.00	0.00
4,500.00	0.00	0.00	4,498.93	-7.80	30.00	-29.89	0.00	0.00	0.00
4,600.00	0.00	0.00	4,598.93	-7.80	30.00	-29.89	0.00	0.00	0.00
4,700.00	0.00	0.00	4,698.93	-7.80	30.00	-29.89	0.00	0.00	0.00
4,800.00	0.00	0.00	4,798.93	-7.80	30.00	-29.89	0.00	0.00	0.00
4,900.00	0.00	0.00	4,898.93	-7.80	30.00	-29.89	0.00	0.00	0.00
5,000.00	0.00	0.00	4,998.93	-7.80	30.00	-29.89	0.00	0.00	0.00
5,100.00	0.00	0.00	5,098.93	-7.80	30.00	-29.89	0.00	0.00	0.00
5,200.00	0.00	0.00	5,198.93	-7.80	30.00	-29.89	0.00	0.00	0.00
5,300.00	0.00	0.00	5,298.93	-7.80	30.00	-29.89	0.00	0.00	0.00
5,400.00	0.00	0.00	5,398.93	-7.80	30.00	-29.89	0.00	0.00	0.00
5,500.00	0.00	0.00	5,498.93	-7.80	30.00	-29.89	0.00	0.00	0.00
5,600.00	0.00	0.00	5,598.93	-7.80	30.00	-29.89	0.00	0.00	0.00
5,700.00	0.00	0.00	5,698.93	-7.80	30.00	-29.89	0.00	0.00	0.00
5,800.00	0.00	0.00	5,798.93	-7.80	30.00	-29.89	0.00	0.00	0.00
5,900.00	0.00	0.00	5,898.93	-7.80	30.00	-29.89	0.00	0.00	0.00
6,000.00	0.00	0.00	5,998.93	-7.80	30.00	-29.89	0.00	0.00	0.00
6,100.00	0.00	0.00	6,098.93	-7.80	30.00	-29.89	0.00	0.00	0.00
6,200.00	0.00	0.00	6,198.93	-7.80	30.00	-29.89	0.00	0.00	0.00
6,300.00	0.00	0.00	6,298.93	-7.80	30.00	-29.89	0.00	0.00	0.00
6,400.00	0.00	0.00	6,398.93	-7.80	30.00	-29.89	0.00	0.00	0.00
6,500.00	0.00	0.00	6,498.93	-7.80	30.00	-29.89	0.00	0.00	0.00
6,600.00	0.00	0.00	6,598.93	-7.80	30.00	-29.89	0.00	0.00	0.00
6,700.00	0.00	0.00	6,698.93	-7.80	30.00	-29.89	0.00	0.00	0.00
6,786.09	0.00	0.00	6,785.03	-7.80	30.00	-29.89	0.00	0.00	0.00
<b>Start DLS 10.00 TFO 269.24</b>									
6,800.00	1.39	269.24	6,798.93	-7.80	29.83	-29.73	10.00	10.00	0.00
6,900.00	11.39	269.24	6,898.18	-7.95	18.72	-18.61	10.00	10.00	0.00
7,000.00	21.39	269.24	6,994.00	-8.32	-9.46	9.57	10.00	10.00	0.00
7,026.02	23.99	269.24	7,018.00	-8.46	-19.50	19.61	10.00	10.00	0.00
<b>Sharon Springs</b>									
7,076.32	29.02	269.24	7,063.00	-8.75	-41.94	42.05	10.00	10.00	0.00
<b>Niobrara A</b>									
7,100.00	31.39	269.24	7,083.46	-8.91	-53.85	53.97	10.00	10.00	0.00
7,177.90	39.18	269.24	7,147.00	-9.50	-98.81	98.93	10.00	10.00	0.00
<b>Niobrara B</b>									
7,200.00	41.39	269.24	7,163.86	-9.69	-113.10	113.22	10.00	10.00	0.00
7,253.08	46.70	269.24	7,202.00	-10.18	-149.99	150.11	10.00	10.00	0.00
<b>Niobrara C</b>									
7,300.00	51.39	269.24	7,232.75	-10.65	-185.41	185.53	10.00	10.00	0.00
7,400.00	61.39	269.24	7,288.03	-11.75	-268.58	268.71	10.00	10.00	0.00
7,500.00	71.39	269.24	7,328.03	-12.96	-360.08	360.23	10.00	10.00	0.00
7,523.26	73.72	269.24	7,335.00	-13.26	-382.27	382.41	10.00	10.00	0.00
<b>Fort Hays</b>									
7,600.00	81.39	269.24	7,351.53	-14.25	-457.15	457.29	10.00	10.00	0.00
7,627.59	84.15	269.24	7,355.00	-14.61	-484.51	484.66	10.00	10.00	0.00

<b>Database:</b>	Denver Sales	<b>Local Co-ordinate Reference:</b>	Well WILSON RANCH 5C-27HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	GL 4998 KB 17 @ 5015.00usft
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	GL 4998 KB 17 @ 5015.00usft
<b>Site:</b>	WILSON RANCH 8 -26HZ	<b>North Reference:</b>	True
<b>Well:</b>	WILSON RANCH 5C-27HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	PLAN A		
<b>Design:</b>	Permit Rev-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)
<b>Codell</b>									
7,686.09	90.00	269.24	7,357.98	-15.38	-542.90	543.06	10.00	10.00	0.00
<b>Start 9041.29 hold at 7686.09 MD - 7"(2145 FNL 1083 FWL)</b>									
7,700.00	90.00	269.24	7,357.98	-15.57	-556.81	556.97	0.00	0.00	0.00
7,800.00	90.00	269.24	7,357.98	-16.89	-656.80	656.97	0.00	0.00	0.00
7,900.00	90.00	269.24	7,357.98	-18.21	-756.80	756.97	0.00	0.00	0.00
8,000.00	90.00	269.24	7,357.98	-19.54	-856.79	856.97	0.00	0.00	0.00
8,100.00	90.00	269.24	7,357.98	-20.86	-956.78	956.97	0.00	0.00	0.00
8,200.00	90.00	269.24	7,357.99	-22.18	-1,056.77	1,056.97	0.00	0.00	0.00
8,300.00	90.00	269.24	7,357.99	-23.51	-1,156.76	1,156.97	0.00	0.00	0.00
8,400.00	90.00	269.24	7,357.99	-24.83	-1,256.75	1,256.97	0.00	0.00	0.00
8,500.00	90.00	269.24	7,357.99	-26.15	-1,356.74	1,356.97	0.00	0.00	0.00
8,600.00	90.00	269.24	7,357.99	-27.48	-1,456.73	1,456.97	0.00	0.00	0.00
8,700.00	90.00	269.24	7,357.99	-28.80	-1,556.73	1,556.97	0.00	0.00	0.00
8,800.00	90.00	269.24	7,357.99	-30.12	-1,656.72	1,656.97	0.00	0.00	0.00
8,900.00	90.00	269.24	7,357.99	-31.45	-1,756.71	1,756.97	0.00	0.00	0.00
9,000.00	90.00	269.24	7,357.99	-32.77	-1,856.70	1,856.97	0.00	0.00	0.00
9,100.00	90.00	269.24	7,357.99	-34.09	-1,956.69	1,956.97	0.00	0.00	0.00
9,200.00	90.00	269.24	7,357.99	-35.42	-2,056.68	2,056.97	0.00	0.00	0.00
9,300.00	90.00	269.24	7,357.99	-36.74	-2,156.67	2,156.97	0.00	0.00	0.00
9,400.00	90.00	269.24	7,357.99	-38.06	-2,256.66	2,256.97	0.00	0.00	0.00
9,500.00	90.00	269.24	7,357.99	-39.38	-2,356.66	2,356.97	0.00	0.00	0.00
9,600.00	90.00	269.24	7,357.99	-40.71	-2,456.65	2,456.97	0.00	0.00	0.00
9,700.00	90.00	269.24	7,357.99	-42.03	-2,556.64	2,556.97	0.00	0.00	0.00
9,800.00	90.00	269.24	7,357.99	-43.35	-2,656.63	2,656.97	0.00	0.00	0.00
9,900.00	90.00	269.24	7,357.99	-44.68	-2,756.62	2,756.97	0.00	0.00	0.00
10,000.00	90.00	269.24	7,357.99	-46.00	-2,856.61	2,856.97	0.00	0.00	0.00
10,100.00	90.00	269.24	7,357.99	-47.32	-2,956.60	2,956.97	0.00	0.00	0.00
10,200.00	90.00	269.24	7,357.99	-48.65	-3,056.59	3,056.97	0.00	0.00	0.00
10,300.00	90.00	269.24	7,357.99	-49.97	-3,156.59	3,156.97	0.00	0.00	0.00
10,400.00	90.00	269.24	7,357.99	-51.29	-3,256.58	3,256.97	0.00	0.00	0.00
10,500.00	90.00	269.24	7,357.99	-52.62	-3,356.57	3,356.97	0.00	0.00	0.00
10,600.00	90.00	269.24	7,357.99	-53.94	-3,456.56	3,456.97	0.00	0.00	0.00
10,700.00	90.00	269.24	7,357.99	-55.26	-3,556.55	3,556.97	0.00	0.00	0.00
10,800.00	90.00	269.24	7,357.99	-56.59	-3,656.54	3,656.97	0.00	0.00	0.00
10,900.00	90.00	269.24	7,357.99	-57.91	-3,756.53	3,756.97	0.00	0.00	0.00
11,000.00	90.00	269.24	7,357.99	-59.23	-3,856.52	3,856.97	0.00	0.00	0.00
11,100.00	90.00	269.24	7,357.99	-60.56	-3,956.52	3,956.97	0.00	0.00	0.00
11,200.00	90.00	269.24	7,357.99	-61.88	-4,056.51	4,056.97	0.00	0.00	0.00
11,300.00	90.00	269.24	7,357.99	-63.20	-4,156.50	4,156.97	0.00	0.00	0.00
11,400.00	90.00	269.24	7,357.99	-64.53	-4,256.49	4,256.97	0.00	0.00	0.00
11,500.00	90.00	269.24	7,357.99	-65.85	-4,356.48	4,356.97	0.00	0.00	0.00
11,600.00	90.00	269.24	7,357.99	-67.17	-4,456.47	4,456.97	0.00	0.00	0.00
11,700.00	90.00	269.24	7,357.99	-68.50	-4,556.46	4,556.97	0.00	0.00	0.00
11,800.00	90.00	269.24	7,357.99	-69.82	-4,656.45	4,656.97	0.00	0.00	0.00
11,900.00	90.00	269.24	7,357.99	-71.14	-4,756.45	4,756.97	0.00	0.00	0.00
12,000.00	90.00	269.24	7,357.99	-72.47	-4,856.44	4,856.97	0.00	0.00	0.00
12,100.00	90.00	269.24	7,357.99	-73.79	-4,956.43	4,956.97	0.00	0.00	0.00
12,200.00	90.00	269.24	7,357.99	-75.11	-5,056.42	5,056.97	0.00	0.00	0.00
12,300.00	90.00	269.24	7,357.99	-76.44	-5,156.41	5,156.97	0.00	0.00	0.00
12,400.00	90.00	269.24	7,357.99	-77.76	-5,256.40	5,256.97	0.00	0.00	0.00
12,500.00	90.00	269.24	7,357.99	-79.08	-5,356.39	5,356.97	0.00	0.00	0.00
12,600.00	90.00	269.24	7,357.99	-80.41	-5,456.38	5,456.97	0.00	0.00	0.00
12,700.00	90.00	269.24	7,357.99	-81.73	-5,556.38	5,556.97	0.00	0.00	0.00

<b>Database:</b>	Denver Sales	<b>Local Co-ordinate Reference:</b>	Well WILSON RANCH 5C-27HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	GL 4998 KB 17 @ 5015.00usft
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	GL 4998 KB 17 @ 5015.00usft
<b>Site:</b>	WILSON RANCH 8 -26HZ	<b>North Reference:</b>	True
<b>Well:</b>	WILSON RANCH 5C-27HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	PLAN A		
<b>Design:</b>	Permit Rev-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)
12,800.00	90.00	269.24	7,357.99	-83.05	-5,656.37	5,656.97	0.00	0.00	0.00
12,900.00	90.00	269.24	7,357.99	-84.38	-5,756.36	5,756.97	0.00	0.00	0.00
13,000.00	90.00	269.24	7,357.99	-85.70	-5,856.35	5,856.97	0.00	0.00	0.00
13,100.00	90.00	269.24	7,357.99	-87.02	-5,956.34	5,956.97	0.00	0.00	0.00
13,200.00	90.00	269.24	7,357.99	-88.35	-6,056.33	6,056.97	0.00	0.00	0.00
13,300.00	90.00	269.24	7,357.99	-89.67	-6,156.32	6,156.97	0.00	0.00	0.00
13,400.00	90.00	269.24	7,357.99	-90.99	-6,256.31	6,256.97	0.00	0.00	0.00
13,500.00	90.00	269.24	7,357.99	-92.32	-6,356.31	6,356.97	0.00	0.00	0.00
13,600.00	90.00	269.24	7,357.99	-93.64	-6,456.30	6,456.97	0.00	0.00	0.00
13,700.00	90.00	269.24	7,357.99	-94.96	-6,556.29	6,556.97	0.00	0.00	0.00
13,800.00	90.00	269.24	7,357.99	-96.29	-6,656.28	6,656.97	0.00	0.00	0.00
13,900.00	90.00	269.24	7,357.99	-97.61	-6,756.27	6,756.97	0.00	0.00	0.00
14,000.00	90.00	269.24	7,357.99	-98.93	-6,856.26	6,856.97	0.00	0.00	0.00
14,100.00	90.00	269.24	7,357.99	-100.26	-6,956.25	6,956.97	0.00	0.00	0.00
14,200.00	90.00	269.24	7,357.99	-101.58	-7,056.24	7,056.97	0.00	0.00	0.00
14,300.00	90.00	269.24	7,357.99	-102.90	-7,156.24	7,156.97	0.00	0.00	0.00
14,400.00	90.00	269.24	7,357.99	-104.23	-7,256.23	7,256.97	0.00	0.00	0.00
14,500.00	90.00	269.24	7,357.99	-105.55	-7,356.22	7,356.97	0.00	0.00	0.00
14,600.00	90.00	269.24	7,357.99	-106.87	-7,456.21	7,456.97	0.00	0.00	0.00
14,700.00	90.00	269.24	7,357.99	-108.20	-7,556.20	7,556.97	0.00	0.00	0.00
14,800.00	90.00	269.24	7,357.99	-109.52	-7,656.19	7,656.97	0.00	0.00	0.00
14,900.00	90.00	269.24	7,357.99	-110.84	-7,756.18	7,756.97	0.00	0.00	0.00
15,000.00	90.00	269.24	7,357.99	-112.17	-7,856.17	7,856.97	0.00	0.00	0.00
15,100.00	90.00	269.24	7,357.99	-113.49	-7,956.17	7,956.97	0.00	0.00	0.00
15,200.00	90.00	269.24	7,357.99	-114.81	-8,056.16	8,056.97	0.00	0.00	0.00
15,300.00	90.00	269.24	7,357.99	-116.13	-8,156.15	8,156.97	0.00	0.00	0.00
15,400.00	90.00	269.24	7,357.99	-117.46	-8,256.14	8,256.97	0.00	0.00	0.00
15,500.00	90.00	269.24	7,357.99	-118.78	-8,356.13	8,356.97	0.00	0.00	0.00
15,600.00	90.00	269.24	7,357.99	-120.10	-8,456.12	8,456.97	0.00	0.00	0.00
15,700.00	90.00	269.24	7,357.99	-121.43	-8,556.11	8,556.97	0.00	0.00	0.00
15,800.00	90.00	269.24	7,357.99	-122.75	-8,656.10	8,656.97	0.00	0.00	0.00
15,900.00	90.00	269.24	7,357.99	-124.07	-8,756.10	8,756.97	0.00	0.00	0.00
16,000.00	90.00	269.24	7,357.99	-125.40	-8,856.09	8,856.97	0.00	0.00	0.00
16,100.00	90.00	269.24	7,357.99	-126.72	-8,956.08	8,956.97	0.00	0.00	0.00
16,200.00	90.00	269.24	7,357.99	-128.04	-9,056.07	9,056.97	0.00	0.00	0.00
16,300.00	90.00	269.24	7,357.99	-129.37	-9,156.06	9,156.97	0.00	0.00	0.00
16,400.00	90.00	269.24	7,358.00	-130.69	-9,256.05	9,256.97	0.00	0.00	0.00
16,500.00	90.00	269.24	7,358.00	-132.01	-9,356.04	9,356.97	0.00	0.00	0.00
16,600.00	90.00	269.24	7,358.00	-133.34	-9,456.03	9,456.97	0.00	0.00	0.00
16,700.00	90.00	269.24	7,358.00	-134.66	-9,556.03	9,556.97	0.00	0.00	0.00
16,727.39	90.00	269.24	7,358.00	-135.02	-9,583.41	9,584.36	0.00	0.00	0.00
TD at 16727.39 - PBHL_WILSON RANCH 5C-27HZ (2153 FNL 472 FWL)									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL_WILSON RANCH-	0.00	0.00	7,358.00	-135.02	-9,583.41	14,630,766.28	1,641,247.48	40.285687	-104.997021
- plan hits target center									
- Point									

<b>Database:</b>	Denver Sales	<b>Local Co-ordinate Reference:</b>	Well WILSON RANCH 5C-27HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	GL 4998 KB 17 @ 5015.00usft
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	GL 4998 KB 17 @ 5015.00usft
<b>Site:</b>	WILSON RANCH 8 -26HZ	<b>North Reference:</b>	True
<b>Well:</b>	WILSON RANCH 5C-27HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	PLAN A		
<b>Design:</b>	Permit Rev-1		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
712.00	712.00	9 5/8"	9.625	13.500	
7,686.09	7,357.98	7"(2145 FNL 1083 FWL)	7.000	8.750	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
427.00	426.00	Base Fox Hills				
3,632.07	3,630.00	Parkman				
4,234.07	4,232.00	Sussex				
7,026.02	7,017.00	Sharon Springs				
7,076.32	7,062.00	Niobrara A				
7,177.90	7,146.00	Niobrara B				
7,253.08	7,201.00	Niobrara C				
7,523.26	7,334.00	Fort Hays				
7,627.59	7,354.00	Codell				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
812.00	812.00	0.00	0.00	Start Build 2.00	
1,087.75	1,087.33	-3.34	12.83	Start 46.56 hold at 1087.75 MD	
1,134.31	1,133.67	-4.46	17.17	Start Drop -2.00	
1,410.07	1,409.00	-7.80	30.00	Start 5376.03 hold at 1410.07 MD	
6,786.09	6,785.03	-7.80	30.00	Start DLS 10.00 TFO 269.24	
7,686.09	7,357.98	-15.38	-542.91	Start 9041.29 hold at 7686.09 MD	
16,727.39	7,358.00	-135.02	-9,583.41	TD at 16727.39	