

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_CARTER 10 PAD**

**Carter 16-32SX**

**Carter 16-32SX**

**Plan: Carter 16-32SX (wp04)**

## **Standard Planning Report**

**23 February, 2011**



Project: COLORADO NORTHERN ZONE - 83  
Site: WELD\_CARTER 10 PAD  
Well: Carter 16-32SX  
Wellbore: Carter 16-32SX  
Section:  
SHL:  
Design: Carter 16-32SX (wp04)  
Latitude: 40.093727  
Longitude: -104.797128  
GL: 4912.00  
KB: WELL @ 4912.00ft (Original Well Elev)

## FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3980.00	4341.97	PK Depth
4483.00	4911.08	SX Depth
4620.00	5066.09	Producing Top SX
4712.00	5170.18	Producing Btm SX



Azimuths to True North  
Magnetic North: 8.93°

Magnetic Field  
Strength: 53021.7snT  
Dip Angle: 66.81°  
Date: 12/4/2010  
Model: IGRF2010

## WELL DETAILS: Carter 16-32SX

+N/-S	+E/-W	Northing	Ground Level: Easting	4912.00 Latitude	Longitude	Slot
0.00	0.00	1277768.57	3196639.43	40.093727	-104.797128	

## CASING DETAILS

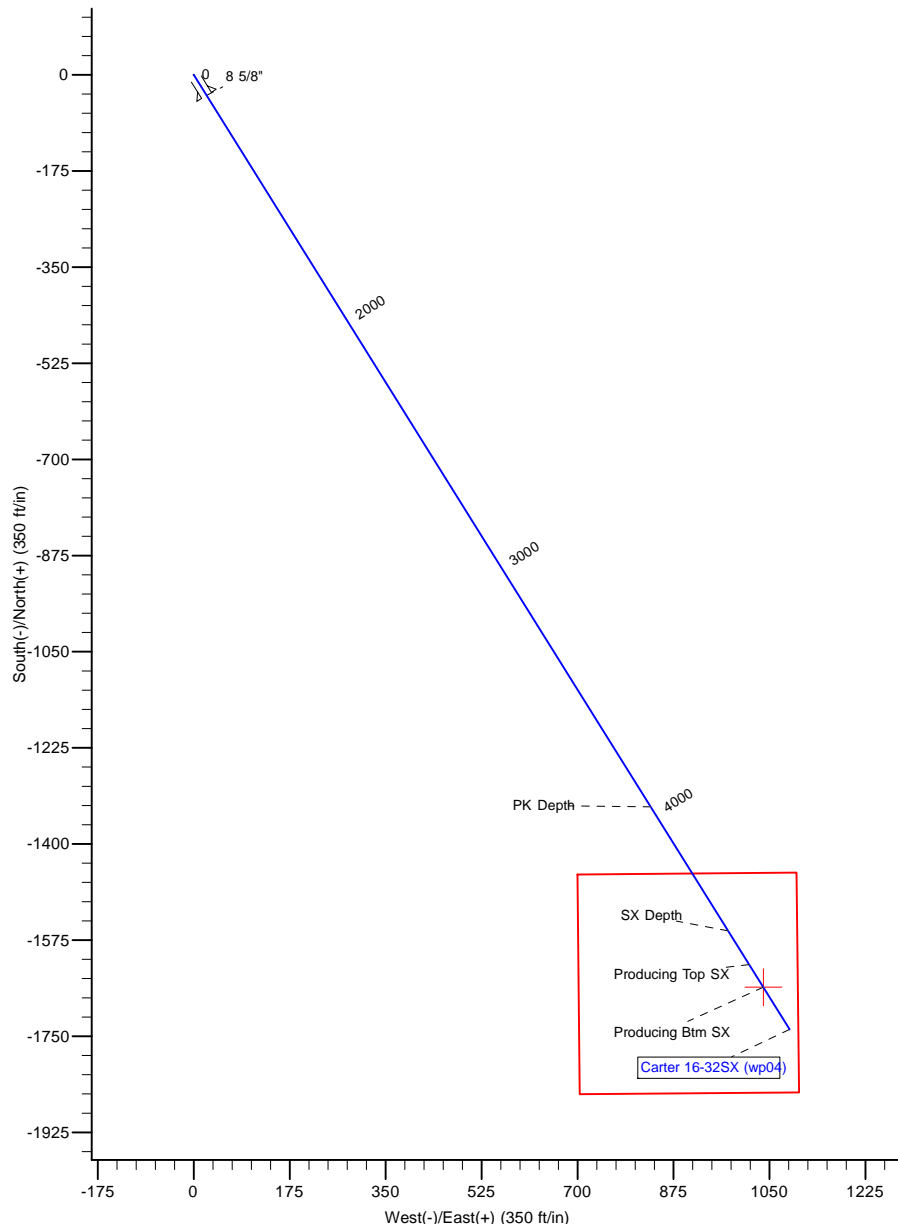
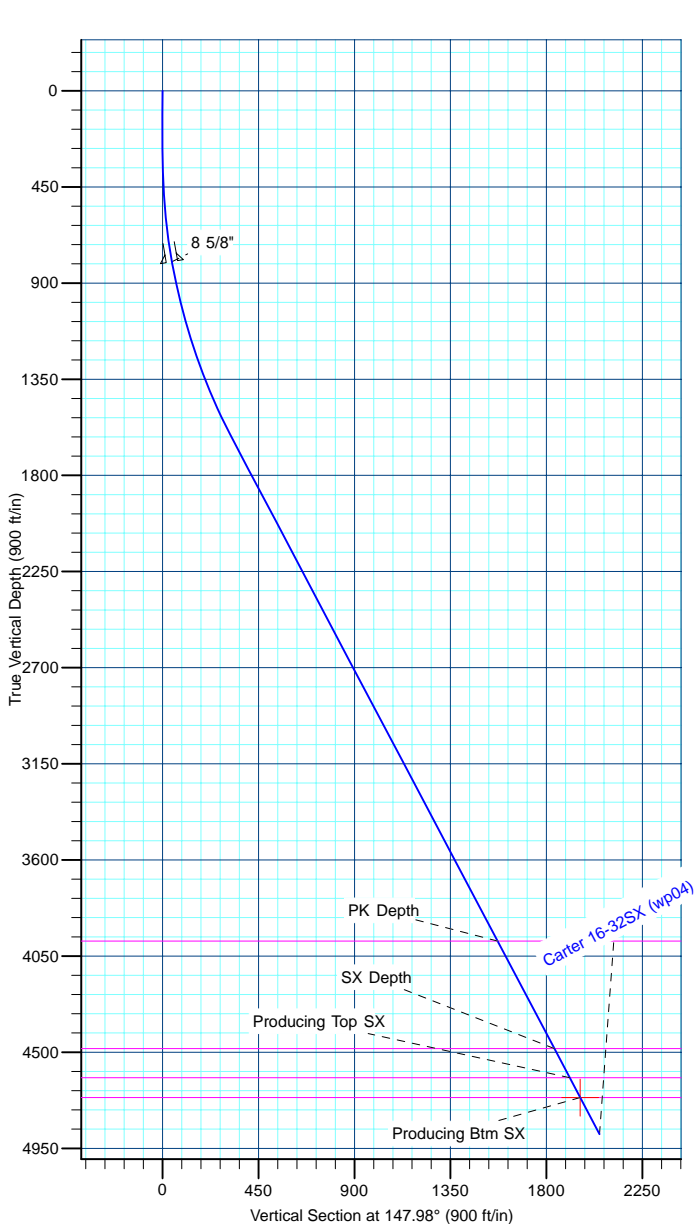
TVD	MD	Name	Size
800.00	802.57	8 5/8"	8-5/8

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Carter 16-32SX Target	4712.00	-1660.67	1038.57	1276116.19	3197691.13	40.089168	-104.793416	Point

## 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
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00
1694.59	27.89	147.98	1640.16	-282.16	176.46	2.00	147.98	332.79
5170.18	27.89	147.98	4712.00	-1660.67	1038.57	0.00	0.00	1958.69
5363.66	27.89	147.98	4883.00	-1737.41	1086.56	0.00	0.00	2049.19



<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well Carter 16-32SX
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 4912.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 4912.00ft (Original Well Elev)
<b>Site:</b>	WELD_CARTER 10 PAD	<b>North Reference:</b>	True
<b>Well:</b>	Carter 16-32SX	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Carter 16-32SX		
<b>Design:</b>	Carter 16-32SX (wp04)		

<b>Project</b>	COLORADO NORTHERN ZONE - 83		
<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		WELD_CARTER 10 PAD			
Site Position:		Northing:	1,277,768.43 ft	Latitude:	40.093728
From:	Lat/Long	Easting:	3,196,569.49 ft	Longitude:	-104.797378
Position Uncertainty:	0.00 ft	Slot Radius:	0 "	Grid Convergence:	0.45

Well	Carter 16-32SX					
Well Position	+N-S	-0.41 ft	Northing:	1,277,768.57 ft	Latitude:	40.093727
	+E-W	69.94 ft	Easting:	3,196,639.43 ft	Longitude:	-104.797128
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,912.00 ft

<b>Wellbore</b>	Carter 16-32SX				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	12/4/2010	8.93	66.81	53,022

<b>Design</b>	Carter 16-32SX (wp04)				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00	
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	147.98	

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
1,694.59	27.89	147.98	1,640.16	-282.16	176.46	2.00	2.00	0.00	147.98	
5,170.18	27.89	147.98	4,712.00	-1,660.67	1,038.57	0.00	0.00	0.00	0.00	Carter 16-32SX Tar
5,363.66	27.89	147.98	4,883.00	-1,737.41	1,086.56	0.00	0.00	0.00	0.00	

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well Carter 16-32SX
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 4912.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 4912.00ft (Original Well Elev)
<b>Site:</b>	WELD_CARTER 10 PAD	<b>North Reference:</b>	True
<b>Well:</b>	Carter 16-32SX	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Carter 16-32SX		
<b>Design:</b>	Carter 16-32SX (wp04)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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
400.00	2.00	147.98	399.98	-1.48	0.93	1.75	2.00	2.00	0.00
500.00	4.00	147.98	499.84	-5.92	3.70	6.98	2.00	2.00	0.00
600.00	6.00	147.98	599.45	-13.31	8.32	15.69	2.00	2.00	0.00
700.00	8.00	147.98	698.70	-23.64	14.78	27.88	2.00	2.00	0.00
800.00	10.00	147.98	797.47	-36.90	23.08	43.52	2.00	2.00	0.00
802.57	10.05	147.98	800.00	-37.28	23.31	43.97	2.00	2.00	0.00
8 5/8"									
900.00	12.00	147.98	895.62	-53.08	33.19	62.60	2.00	2.00	0.00
1,000.00	14.00	147.98	993.06	-72.15	45.12	85.10	2.00	2.00	0.00
1,100.00	16.00	147.98	1,089.64	-94.09	58.84	110.98	2.00	2.00	0.00
1,200.00	18.00	147.98	1,185.27	-118.88	74.35	140.21	2.00	2.00	0.00
1,300.00	20.00	147.98	1,279.82	-146.48	91.61	172.77	2.00	2.00	0.00
1,400.00	22.00	147.98	1,373.17	-176.86	110.61	208.60	2.00	2.00	0.00
1,500.00	24.00	147.98	1,465.21	-209.99	131.33	247.67	2.00	2.00	0.00
1,600.00	26.00	147.98	1,555.84	-245.82	153.73	289.93	2.00	2.00	0.00
1,694.59	27.89	147.98	1,640.16	-282.16	176.46	332.79	2.00	2.00	0.00
1,700.00	27.89	147.98	1,644.94	-284.31	177.80	335.33	0.00	0.00	0.00
1,800.00	27.89	147.98	1,733.32	-323.97	202.61	382.11	0.00	0.00	0.00
1,900.00	27.89	147.98	1,821.71	-363.63	227.41	428.89	0.00	0.00	0.00
2,000.00	27.89	147.98	1,910.09	-403.29	252.22	475.67	0.00	0.00	0.00
2,100.00	27.89	147.98	1,998.47	-442.96	277.02	522.45	0.00	0.00	0.00
2,200.00	27.89	147.98	2,086.86	-482.62	301.83	569.23	0.00	0.00	0.00
2,300.00	27.89	147.98	2,175.24	-522.28	326.63	616.01	0.00	0.00	0.00
2,400.00	27.89	147.98	2,263.62	-561.94	351.44	662.79	0.00	0.00	0.00
2,500.00	27.89	147.98	2,352.01	-601.61	376.24	709.57	0.00	0.00	0.00
2,600.00	27.89	147.98	2,440.39	-641.27	401.04	756.35	0.00	0.00	0.00
2,700.00	27.89	147.98	2,528.77	-680.93	425.85	803.13	0.00	0.00	0.00
2,800.00	27.89	147.98	2,617.16	-720.59	450.65	849.91	0.00	0.00	0.00
2,900.00	27.89	147.98	2,705.54	-760.26	475.46	896.69	0.00	0.00	0.00
3,000.00	27.89	147.98	2,793.92	-799.92	500.26	943.47	0.00	0.00	0.00
3,100.00	27.89	147.98	2,882.31	-839.58	525.07	990.25	0.00	0.00	0.00
3,200.00	27.89	147.98	2,970.69	-879.24	549.87	1,037.03	0.00	0.00	0.00
3,300.00	27.89	147.98	3,059.07	-918.91	574.68	1,083.81	0.00	0.00	0.00
3,400.00	27.89	147.98	3,147.46	-958.57	599.48	1,130.59	0.00	0.00	0.00
3,500.00	27.89	147.98	3,235.84	-998.23	624.29	1,177.37	0.00	0.00	0.00
3,600.00	27.89	147.98	3,324.22	-1,037.89	649.09	1,224.15	0.00	0.00	0.00
3,700.00	27.89	147.98	3,412.61	-1,077.56	673.90	1,270.93	0.00	0.00	0.00
3,800.00	27.89	147.98	3,500.99	-1,117.22	698.70	1,317.71	0.00	0.00	0.00
3,900.00	27.89	147.98	3,589.37	-1,156.88	723.51	1,364.49	0.00	0.00	0.00
4,000.00	27.89	147.98	3,677.76	-1,196.55	748.31	1,411.27	0.00	0.00	0.00
4,100.00	27.89	147.98	3,766.14	-1,236.21	773.12	1,458.05	0.00	0.00	0.00
4,200.00	27.89	147.98	3,854.52	-1,275.87	797.92	1,504.83	0.00	0.00	0.00
4,300.00	27.89	147.98	3,942.91	-1,315.53	822.72	1,551.61	0.00	0.00	0.00
4,341.97	27.89	147.98	3,980.00	-1,332.18	833.14	1,571.25	0.00	0.00	0.00
PK Depth									
4,400.00	27.89	147.98	4,031.29	-1,355.20	847.53	1,598.39	0.00	0.00	0.00
4,500.00	27.89	147.98	4,119.67	-1,394.86	872.33	1,645.17	0.00	0.00	0.00
4,600.00	27.89	147.98	4,208.05	-1,434.52	897.14	1,691.95	0.00	0.00	0.00
4,700.00	27.89	147.98	4,296.44	-1,474.18	921.94	1,738.73	0.00	0.00	0.00
4,800.00	27.89	147.98	4,384.82	-1,513.85	946.75	1,785.51	0.00	0.00	0.00

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well Carter 16-32SX
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 4912.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 4912.00ft (Original Well Elev)
<b>Site:</b>	WELD_CARTER 10 PAD	<b>North Reference:</b>	True
<b>Well:</b>	Carter 16-32SX	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Carter 16-32SX		
<b>Design:</b>	Carter 16-32SX (wp04)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,900.00	27.89	147.98	4,473.20	-1,553.51	971.55	1,832.29	0.00	0.00	0.00
4,911.08	27.89	147.98	4,483.00	-1,557.90	974.30	1,837.48	0.00	0.00	0.00
<b>SX Depth</b>									
5,000.00	27.89	147.98	4,561.59	-1,593.17	996.36	1,879.07	0.00	0.00	0.00
5,066.09	27.89	147.98	4,620.00	-1,619.38	1,012.75	1,909.99	0.00	0.00	0.00
<b>Producing Top SX</b>									
5,100.00	27.89	147.98	4,649.97	-1,632.83	1,021.16	1,925.86	0.00	0.00	0.00
5,170.18	27.89	147.98	4,712.00	-1,660.67	1,038.57	1,958.69	0.00	0.00	0.00
<b>Producing Btm SX - Carter 16-32SX Target</b>									
5,200.00	27.89	147.98	4,738.35	-1,672.50	1,045.97	1,972.64	0.00	0.00	0.00
5,300.00	27.89	147.98	4,826.74	-1,712.16	1,070.77	2,019.42	0.00	0.00	0.00
5,363.66	27.89	147.98	4,883.00	-1,737.41	1,086.56	2,049.19	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Carter 16-32SX Targe	0.00	0.00	4,712.00	-1,660.67	1,038.57	1,276,116.19	3,197,691.13	40.089168	-104.793416
- plan hits target center									
- Point									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
802.57	800.00	8 5/8"	8-5/8	11

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,341.97	3,980.00	PK Depth		0.00	
4,911.08	4,483.00	SX Depth			
5,066.09	4,620.00	Producing Top SX		0.00	
5,170.18	4,712.00	Producing Btm SX		0.00	