

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_FEHRN 17-32 PAD**

**FEHRN 7-32SX**

**FEHRN 7-32SX**

**Plan: FEHRN 7-32SX (wp02)**

## **Standard Planning Report**

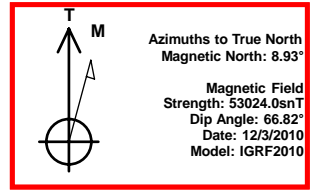
**25 February, 2011**



**Weatherford®**

Project: COLORADO NORTHERN ZONE - 83  
 Site: WELD\_FEHRN 17-32 PAD  
 Well: FEHRN 7-32SX  
 Wellbore: FEHRN 7-32SX  
 Section:  
 SHL:  
 Design: FEHRN 7-32SX (wp02)  
 Latitude: 40.097327  
 Longitude: -104.795771  
 GL: 4916.00  
 KB: GL @ 4916.00ft

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4116.00	4210.28	PK Depth
4502.00	4607.08	SX Depth
4644.00	4753.05	SX (Top of payzone)
4766.00	4878.47	SX (Base of pay zone)



WELL DETAILS: FEHRN 7-32SX

+N/-S	+E/-W	Northing	Ground Level: Easting	4916.00 Latitude	Longitude	Slot
0.00	0.00	1279082.96	3197008.65	40.097327	-104.795771	

CASING DETAILS

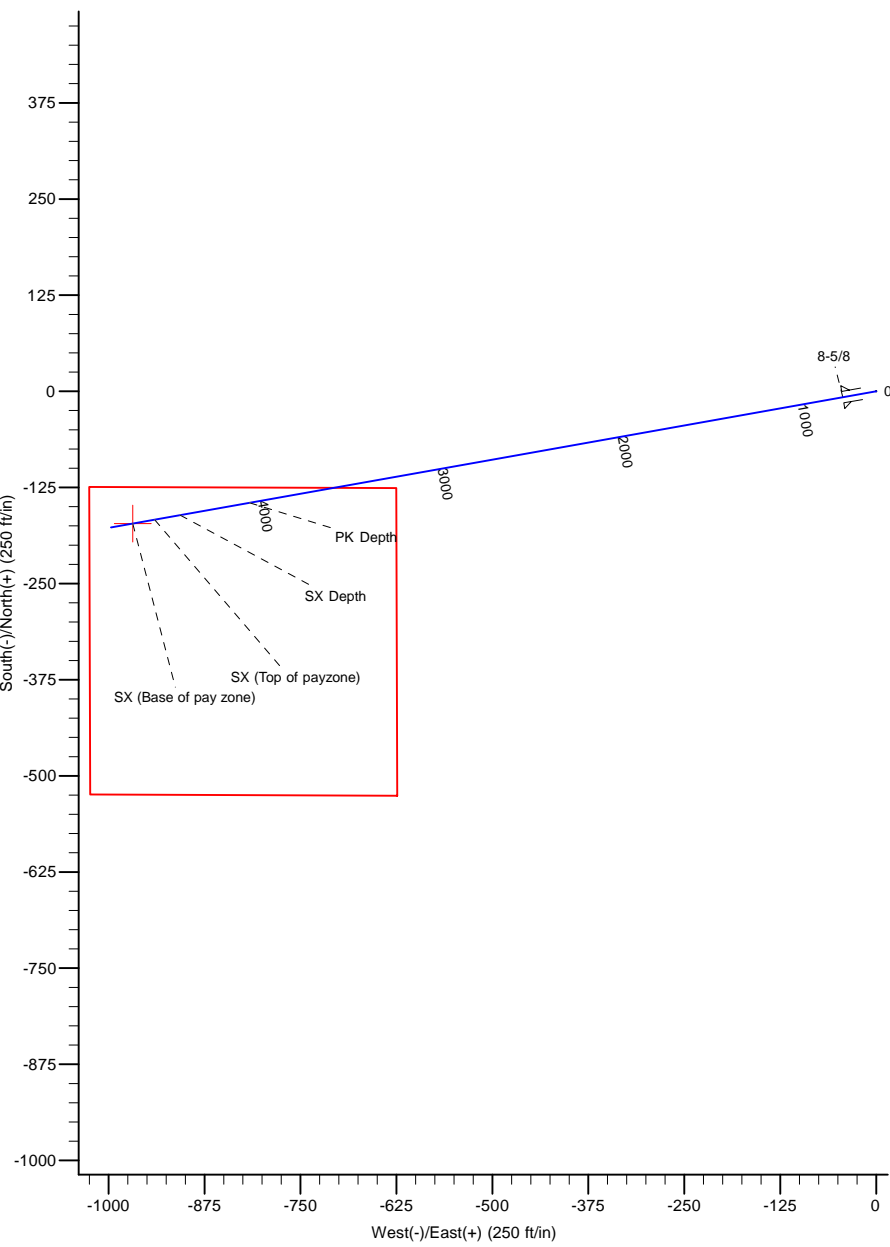
TVD	MD	Name	Size
800.00	802.57	8-5/8	8-5/8

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape Point
FEHRN 7-32SX target	4766.00	-171.88	-968.51	1278903.39	3196041.53	40.096855	-104.799233	

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
969.91	13.40	259.94	963.82	-13.62	-76.77	2.00	259.94	77.97
4878.47	13.40	259.94	4766.00	-171.88	-968.51	0.00	0.00	983.65
5001.82	13.40	259.94	4886.00	-176.88	-996.66	0.00	0.00	1012.23



<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well FEHRN 7-32SX
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL @ 4916.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL @ 4916.00ft
<b>Site:</b>	WELD_FEHRN 17-32 PAD	<b>North Reference:</b>	True
<b>Well:</b>	FEHRN 7-32SX	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	FEHRN 7-32SX		
<b>Design:</b>	FEHRN 7-32SX (wp02)		

<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		

<b>Site</b>	WELD_FEHRN 17-32 PAD				
<b>Site Position:</b>		<b>Northing:</b>	1,279,083.46 ft	<b>Latitude:</b>	40.097327
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,197,067.90 ft	<b>Longitude:</b>	-104.795559
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	0 "	<b>Grid Convergence:</b>	0.46 °

<b>Well</b>	FEHRN 7-32SX					
<b>Well Position</b>	<b>+N/-S</b>	-0.04 ft	<b>Northing:</b>	1,279,082.96 ft	<b>Latitude:</b>	40.097327
	<b>+E/-W</b>	-59.25 ft	<b>Easting:</b>	3,197,008.65 ft	<b>Longitude:</b>	-104.795771
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	4,916.00 ft

<b>Wellbore</b>	FEHRN 7-32SX				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	12/3/2010	8.93	66.82	53,024

<b>Design</b>	FEHRN 7-32SX (wp02)			
<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	259.94

<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	
969.91	13.40	259.94	963.82	-13.62	-76.77	2.00	2.00	0.00	259.94	
4,878.47	13.40	259.94	4,766.00	-171.88	-968.51	0.00	0.00	0.00	0.00	FEHRN 7-32SX tar
5,001.82	13.40	259.94	4,886.00	-176.88	-996.66	0.00	0.00	0.00	0.00	

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well FEHRN 7-32SX
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL @ 4916.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL @ 4916.00ft
<b>Site:</b>	WELD_FEHRN 17-32 PAD	<b>North Reference:</b>	True
<b>Well:</b>	FEHRN 7-32SX	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	FEHRN 7-32SX		
<b>Design:</b>	FEHRN 7-32SX (wp02)		

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	259.94	399.98	-0.30	-1.72	1.75	2.00	2.00	0.00
500.00	4.00	259.94	499.84	-1.22	-6.87	6.98	2.00	2.00	0.00
600.00	6.00	259.94	599.45	-2.74	-15.45	15.69	2.00	2.00	0.00
700.00	8.00	259.94	698.70	-4.87	-27.45	27.88	2.00	2.00	0.00
800.00	10.00	259.94	797.47	-7.61	-42.85	43.52	2.00	2.00	0.00
802.57	10.05	259.94	800.00	-7.68	-43.29	43.97	2.00	2.00	0.00
<b>8-5/8</b>									
900.00	12.00	259.94	895.62	-10.94	-61.64	62.60	2.00	2.00	0.00
969.91	13.40	259.94	963.82	-13.62	-76.77	77.97	2.00	2.00	0.00
1,000.00	13.40	259.94	993.09	-14.84	-83.64	84.94	0.00	0.00	0.00
1,100.00	13.40	259.94	1,090.37	-18.89	-106.45	108.11	0.00	0.00	0.00
1,200.00	13.40	259.94	1,187.65	-22.94	-129.27	131.29	0.00	0.00	0.00
1,300.00	13.40	259.94	1,284.93	-26.99	-152.08	154.46	0.00	0.00	0.00
1,400.00	13.40	259.94	1,382.21	-31.04	-174.90	177.63	0.00	0.00	0.00
1,500.00	13.40	259.94	1,479.48	-35.09	-197.71	200.80	0.00	0.00	0.00
1,600.00	13.40	259.94	1,576.76	-39.14	-220.53	223.97	0.00	0.00	0.00
1,700.00	13.40	259.94	1,674.04	-43.19	-243.34	247.14	0.00	0.00	0.00
1,800.00	13.40	259.94	1,771.32	-47.24	-266.16	270.32	0.00	0.00	0.00
1,900.00	13.40	259.94	1,868.60	-51.28	-288.97	293.49	0.00	0.00	0.00
2,000.00	13.40	259.94	1,965.88	-55.33	-311.79	316.66	0.00	0.00	0.00
2,100.00	13.40	259.94	2,063.15	-59.38	-334.60	339.83	0.00	0.00	0.00
2,200.00	13.40	259.94	2,160.43	-63.43	-357.42	363.00	0.00	0.00	0.00
2,300.00	13.40	259.94	2,257.71	-67.48	-380.23	386.17	0.00	0.00	0.00
2,400.00	13.40	259.94	2,354.99	-71.53	-403.05	409.35	0.00	0.00	0.00
2,500.00	13.40	259.94	2,452.27	-75.58	-425.86	432.52	0.00	0.00	0.00
2,600.00	13.40	259.94	2,549.55	-79.63	-448.68	455.69	0.00	0.00	0.00
2,700.00	13.40	259.94	2,646.82	-83.68	-471.49	478.86	0.00	0.00	0.00
2,800.00	13.40	259.94	2,744.10	-87.73	-494.31	502.03	0.00	0.00	0.00
2,900.00	13.40	259.94	2,841.38	-91.77	-517.12	525.20	0.00	0.00	0.00
3,000.00	13.40	259.94	2,938.66	-95.82	-539.94	548.38	0.00	0.00	0.00
3,100.00	13.40	259.94	3,035.94	-99.87	-562.75	571.55	0.00	0.00	0.00
3,200.00	13.40	259.94	3,133.22	-103.92	-585.57	594.72	0.00	0.00	0.00
3,300.00	13.40	259.94	3,230.49	-107.97	-608.38	617.89	0.00	0.00	0.00
3,400.00	13.40	259.94	3,327.77	-112.02	-631.20	641.06	0.00	0.00	0.00
3,500.00	13.40	259.94	3,425.05	-116.07	-654.01	664.23	0.00	0.00	0.00
3,600.00	13.40	259.94	3,522.33	-120.12	-676.83	687.41	0.00	0.00	0.00
3,700.00	13.40	259.94	3,619.61	-124.17	-699.65	710.58	0.00	0.00	0.00
3,800.00	13.40	259.94	3,716.89	-128.22	-722.46	733.75	0.00	0.00	0.00
3,900.00	13.40	259.94	3,814.16	-132.26	-745.28	756.92	0.00	0.00	0.00
4,000.00	13.40	259.94	3,911.44	-136.31	-768.09	780.09	0.00	0.00	0.00
4,100.00	13.40	259.94	4,008.72	-140.36	-790.91	803.26	0.00	0.00	0.00
4,200.00	13.40	259.94	4,106.00	-144.41	-813.72	826.44	0.00	0.00	0.00
4,210.28	13.40	259.94	4,116.00	-144.83	-816.07	828.82	0.00	0.00	0.00
<b>PK Depth</b>									
4,300.00	13.40	259.94	4,203.28	-148.46	-836.54	849.61	0.00	0.00	0.00
4,400.00	13.40	259.94	4,300.56	-152.51	-859.35	872.78	0.00	0.00	0.00
4,500.00	13.40	259.94	4,397.83	-156.56	-882.17	895.95	0.00	0.00	0.00
4,600.00	13.40	259.94	4,495.11	-160.61	-904.98	919.12	0.00	0.00	0.00
4,607.08	13.40	259.94	4,502.00	-160.89	-906.60	920.76	0.00	0.00	0.00

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well FEHRN 7-32SX
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL @ 4916.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL @ 4916.00ft
<b>Site:</b>	WELD_FEHRN 17-32 PAD	<b>North Reference:</b>	True
<b>Well:</b>	FEHRN 7-32SX	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	FEHRN 7-32SX		
<b>Design:</b>	FEHRN 7-32SX (wp02)		

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)
<b>SX Depth</b>									
4,700.00	13.40	259.94	4,592.39	-164.66	-927.80	942.29	0.00	0.00	0.00
4,753.05	13.40	259.94	4,644.00	-166.80	-939.90	954.59	0.00	0.00	0.00
<b>SX (Top of payzone)</b>									
4,800.00	13.40	259.94	4,689.67	-168.71	-950.61	965.47	0.00	0.00	0.00
4,878.47	13.40	259.94	4,766.00	-171.88	-968.51	983.65	0.00	0.00	0.00
<b>SX (Base of pay zone) - FEHRN 7-32SX target</b>									
4,900.00	13.40	259.94	4,786.95	-172.75	-973.43	988.64	0.00	0.00	0.00
5,000.00	13.40	259.94	4,884.23	-176.80	-996.24	1,011.81	0.00	0.00	0.00
5,001.82	13.40	259.94	4,886.00	-176.88	-996.66	1,012.23	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
FEHRN 7-32SX target - hit/miss target - Shape - Point	0.00	0.00	4,766.00	-171.88	-968.51	1,278,903.39	3,196,041.53	40.096855	-104.799233

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 (°)
4,210.28	4,116.00	PK Depth			
4,607.08	4,502.00	SX Depth		0.00	
4,753.05	4,644.00	SX (Top of payzone)		0.00	
4,878.47	4,766.00	SX (Base of pay zone)		0.00	