

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_SPARBOE 3 PAD

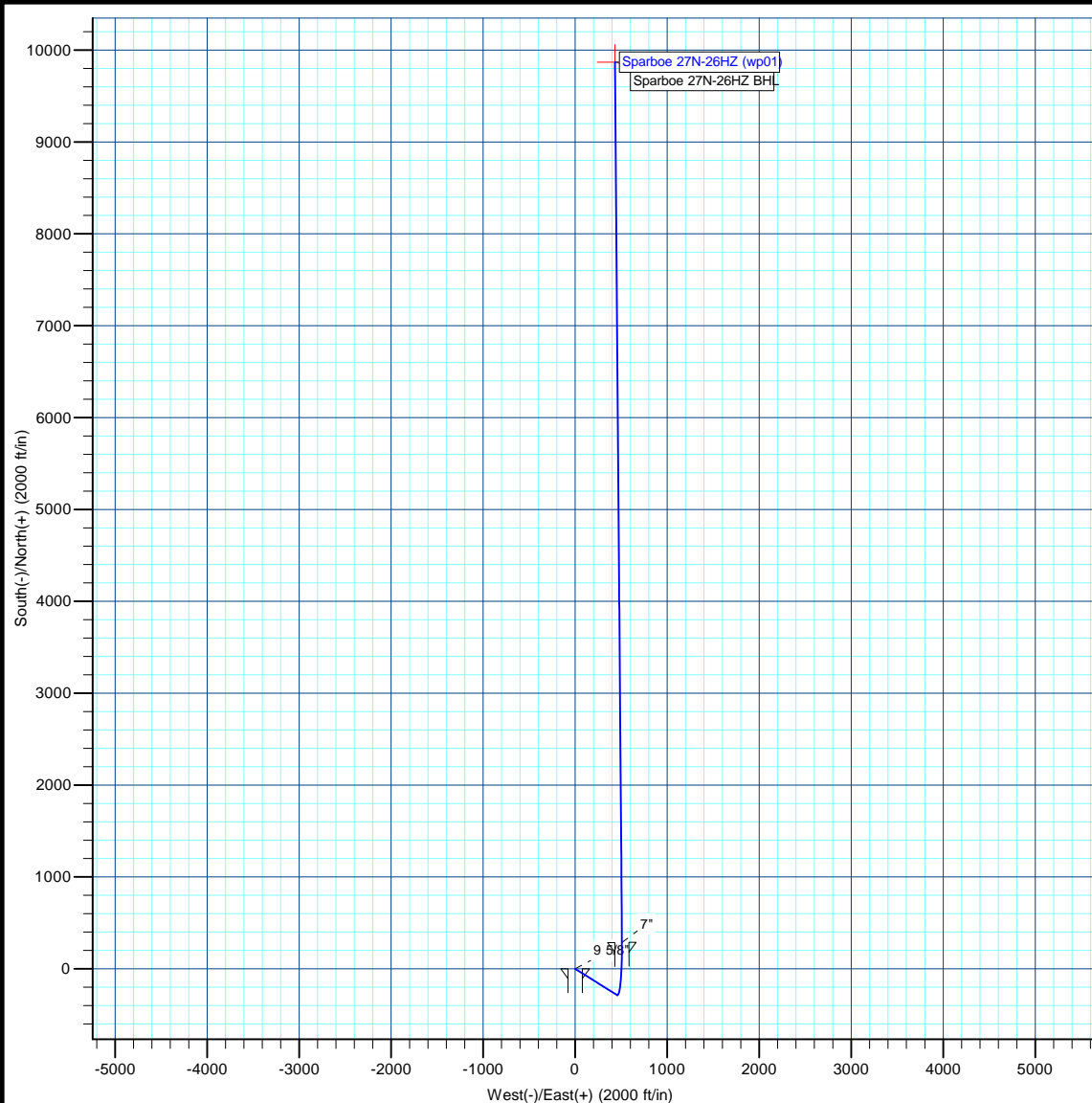
Sparboe 27N-26HZ

Sparboe 27N-26HZ

Plan: Sparboe 27N-26HZ (wp01)

Standard Planning Report

25 July, 2012



Azimuths to True North
Magnetic North: 8.62°

Magnetic Field
Strength: 52864.0snT
Dip Angle: 66.78°
Date: 7/25/2012
Model: IGRF2010

Project: COLORADO NORTHERN ZONE - 83
Site: WELD SPARBOE 3 PAD
Well: Sparboe 27N-26HZ
Wellbore: Sparboe 27N-26HZ
Section:
SHL:
Design: Sparboe 27N-26HZ (wp01)
Latitude: 40.088446
Longitude: -104.628083
GL: 4953.00
KB: gl + rkb @ 4970.00ft

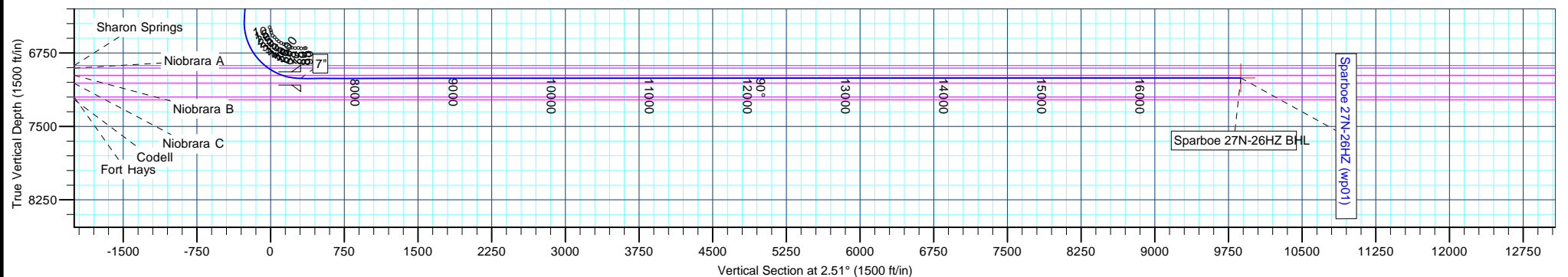
WELL DETAILS: Sparboe 27N-26HZ						
+N/-S	+E/-W	Northing	Ground Level:	4953.00	Latitude	Longitude
0.00	0.00	1276264.88	Easting	3243949.95	40.088446	-104.628083
Slot						

CASING DETAILS			
TVD	MD	Name	Size
1300.00	1300.00	9 5/8"	9-5/8
7010.00	7369.87	7"	7

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
0.00	0.00	Parkman
816.00	816.00	Fox Hills
4969.00	4969.85	Sussex
6880.00	6975.27	Sharon Springs
6905.00	7016.64	Niobrara A
6979.00	7180.10	Niobrara B

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Sparboe 27N-26HZ BHL	7005.00	9867.25	431.83	40.115533	-104.626539	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	
1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	0.00	
1823.48	6.47	122.29	1822.79	-9.75	15.42	2.00	122.29	-9.06	
6434.94	6.47	122.29	6404.88	-287.32	454.67	0.00	0.00	-267.17	
7369.87	90.00	359.56	7010.00	285.00	508.00	10.00	-122.56	306.94	
7373.23	90.03	359.54	7010.00	288.37	507.97	1.00	-27.36	310.30	
16952.42	90.03	359.54	7005.00	9867.25	431.83	0.00	0.00	9876.70	



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Sparboe 27N-26HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4970.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4970.00ft
Site:	WELD_SPARBOE 3 PAD	North Reference:	True
Well:	Sparboe 27N-26HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sparboe 27N-26HZ		
Design:	Sparboe 27N-26HZ (wp01)		

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		WELD_SPARBOE 3 PAD			
Site Position:		Northing:	1,276,264.61 usft	Latitude:	40.088446
From:	Lat/Long	Easting:	3,243,920.30 usft	Longitude:	-104.628189
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.56 °

Well	Sparboe 27N-26HZ					
Well Position	+N/-S	-0.03 ft	Northing:	1,276,264.88 usft	Latitude:	40.088446
	+E/-W	29.66 ft	Easting:	3,243,949.95 usft	Longitude:	-104.628083
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,953.00 ft

Wellbore	Sparboe 27N-26HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/25/2012	8.61	66.78	52,864

Design	Sparboe 27N-26HZ (wp01)			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	2.51

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,823.48	6.47	122.29	1,822.79	-9.75	15.42	2.00	2.00	0.00	122.29	
6,434.94	6.47	122.29	6,404.88	-287.32	454.67	0.00	0.00	0.00	0.00	
7,369.87	90.00	359.56	7,010.00	285.00	508.00	10.00	8.93	-13.13	-122.56	
7,373.23	90.03	359.54	7,010.00	288.37	507.97	1.00	0.89	-0.46	-27.36	
16,952.42	90.03	359.54	7,005.00	9,867.25	431.83	0.00	0.00	0.00	0.00	Sparboe 27N-26HZ B

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Sparboe 27N-26HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4970.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4970.00ft
Site:	WELD_SPARBOE 3 PAD	North Reference:	True
Well:	Sparboe 27N-26HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sparboe 27N-26HZ		
Design:	Sparboe 27N-26HZ (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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
Parkman									
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
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
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
816.00	0.00	0.00	816.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills									
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,600.00	2.00	122.29	1,599.98	-0.93	1.48	-0.87	2.00	2.00	0.00
1,700.00	4.00	122.29	1,699.84	-3.73	5.90	-3.47	2.00	2.00	0.00
1,800.00	6.00	122.29	1,799.45	-8.38	13.27	-7.80	2.00	2.00	0.00
1,823.48	6.47	122.29	1,822.79	-9.75	15.42	-9.06	2.00	2.00	0.00
Start 4611.45 hold at 1823.48 MD									
1,900.00	6.47	122.29	1,898.83	-14.35	22.71	-13.35	0.00	0.00	0.00
2,000.00	6.47	122.29	1,998.19	-20.37	32.24	-18.94	0.00	0.00	0.00
2,100.00	6.47	122.29	2,097.55	-26.39	41.76	-24.54	0.00	0.00	0.00
2,200.00	6.47	122.29	2,196.92	-32.41	51.29	-30.14	0.00	0.00	0.00
2,300.00	6.47	122.29	2,296.28	-38.43	60.81	-35.73	0.00	0.00	0.00
2,400.00	6.47	122.29	2,395.64	-44.45	70.34	-41.33	0.00	0.00	0.00
2,500.00	6.47	122.29	2,495.00	-50.47	79.86	-46.93	0.00	0.00	0.00
2,600.00	6.47	122.29	2,594.37	-56.49	89.39	-52.52	0.00	0.00	0.00
2,700.00	6.47	122.29	2,693.73	-62.51	98.91	-58.12	0.00	0.00	0.00
2,800.00	6.47	122.29	2,793.09	-68.53	108.44	-63.72	0.00	0.00	0.00
2,900.00	6.47	122.29	2,892.46	-74.54	117.96	-69.32	0.00	0.00	0.00
3,000.00	6.47	122.29	2,991.82	-80.56	127.49	-74.91	0.00	0.00	0.00
3,100.00	6.47	122.29	3,091.18	-86.58	137.01	-80.51	0.00	0.00	0.00
3,200.00	6.47	122.29	3,190.55	-92.60	146.54	-86.11	0.00	0.00	0.00
3,300.00	6.47	122.29	3,289.91	-98.62	156.06	-91.70	0.00	0.00	0.00
3,400.00	6.47	122.29	3,389.27	-104.64	165.59	-97.30	0.00	0.00	0.00
3,500.00	6.47	122.29	3,488.64	-110.66	175.11	-102.90	0.00	0.00	0.00
3,600.00	6.47	122.29	3,588.00	-116.68	184.64	-108.49	0.00	0.00	0.00
3,700.00	6.47	122.29	3,687.36	-122.70	194.16	-114.09	0.00	0.00	0.00
3,800.00	6.47	122.29	3,786.73	-128.72	203.69	-119.69	0.00	0.00	0.00
3,900.00	6.47	122.29	3,886.09	-134.74	213.21	-125.29	0.00	0.00	0.00
4,000.00	6.47	122.29	3,985.45	-140.76	222.74	-130.88	0.00	0.00	0.00
4,100.00	6.47	122.29	4,084.82	-146.78	232.26	-136.48	0.00	0.00	0.00
4,200.00	6.47	122.29	4,184.18	-152.79	241.79	-142.08	0.00	0.00	0.00
4,300.00	6.47	122.29	4,283.54	-158.81	251.31	-147.67	0.00	0.00	0.00
4,400.00	6.47	122.29	4,382.91	-164.83	260.84	-153.27	0.00	0.00	0.00
4,500.00	6.47	122.29	4,482.27	-170.85	270.36	-158.87	0.00	0.00	0.00
4,600.00	6.47	122.29	4,581.63	-176.87	279.89	-164.47	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Sparboe 27N-26HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4970.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4970.00ft
Site:	WELD_SPARBOE 3 PAD	North Reference:	True
Well:	Sparboe 27N-26HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sparboe 27N-26HZ		
Design:	Sparboe 27N-26HZ (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,700.00	6.47	122.29	4,680.99	-182.89	289.41	-170.06	0.00	0.00	0.00
4,800.00	6.47	122.29	4,780.36	-188.91	298.94	-175.66	0.00	0.00	0.00
4,900.00	6.47	122.29	4,879.72	-194.93	308.46	-181.26	0.00	0.00	0.00
4,989.85	6.47	122.29	4,969.00	-200.34	317.02	-186.29	0.00	0.00	0.00
Sussex									
5,000.00	6.47	122.29	4,979.08	-200.95	317.99	-186.85	0.00	0.00	0.00
5,100.00	6.47	122.29	5,078.45	-206.97	327.51	-192.45	0.00	0.00	0.00
5,200.00	6.47	122.29	5,177.81	-212.99	337.04	-198.05	0.00	0.00	0.00
5,300.00	6.47	122.29	5,277.17	-219.01	346.57	-203.64	0.00	0.00	0.00
5,400.00	6.47	122.29	5,376.54	-225.03	356.09	-209.24	0.00	0.00	0.00
5,500.00	6.47	122.29	5,475.90	-231.04	365.62	-214.84	0.00	0.00	0.00
5,600.00	6.47	122.29	5,575.26	-237.06	375.14	-220.44	0.00	0.00	0.00
5,700.00	6.47	122.29	5,674.63	-243.08	384.67	-226.03	0.00	0.00	0.00
5,800.00	6.47	122.29	5,773.99	-249.10	394.19	-231.63	0.00	0.00	0.00
5,900.00	6.47	122.29	5,873.35	-255.12	403.72	-237.23	0.00	0.00	0.00
6,000.00	6.47	122.29	5,972.72	-261.14	413.24	-242.82	0.00	0.00	0.00
6,100.00	6.47	122.29	6,072.08	-267.16	422.77	-248.42	0.00	0.00	0.00
6,200.00	6.47	122.29	6,171.44	-273.18	432.29	-254.02	0.00	0.00	0.00
6,300.00	6.47	122.29	6,270.81	-279.20	441.82	-259.62	0.00	0.00	0.00
6,400.00	6.47	122.29	6,370.17	-285.22	451.34	-265.21	0.00	0.00	0.00
6,434.94	6.47	122.29	6,404.88	-287.32	454.67	-267.17	0.00	0.00	0.00
Start DLS 10.00 TFO -122.56									
6,450.00	5.80	109.62	6,419.86	-288.03	456.10	-267.81	10.00	-4.45	-84.09
6,500.00	6.22	60.56	6,469.62	-287.55	460.85	-267.12	10.00	0.85	-98.13
6,550.00	9.68	33.56	6,519.14	-282.71	465.53	-262.08	10.00	6.91	-53.99
6,600.00	14.09	21.90	6,568.07	-273.55	470.13	-252.73	10.00	8.82	-23.33
6,650.00	18.79	15.84	6,616.01	-260.15	474.60	-239.15	10.00	9.41	-12.12
6,700.00	23.62	12.16	6,662.62	-242.60	478.91	-221.43	10.00	9.64	-7.35
6,750.00	28.50	9.68	6,707.52	-221.04	483.03	-199.71	10.00	9.76	-4.96
6,800.00	33.41	7.88	6,750.39	-195.63	486.93	-174.15	10.00	9.83	-3.61
6,850.00	38.34	6.49	6,790.89	-166.56	490.57	-144.95	10.00	9.87	-2.78
6,900.00	43.29	5.37	6,828.72	-134.06	493.92	-112.34	10.00	9.89	-2.23
6,950.00	48.25	4.44	6,863.59	-98.38	496.98	-76.56	10.00	9.91	-1.85
6,975.27	50.75	4.03	6,880.00	-79.22	498.40	-57.35	10.00	9.92	-1.64
Sharon Springs									
7,000.00	53.21	3.65	6,895.23	-59.78	499.70	-37.88	10.00	9.93	-1.53
7,016.64	54.86	3.41	6,905.00	-46.34	500.53	-24.41	10.00	9.93	-1.45
Niobrara A									
7,050.00	58.18	2.95	6,923.40	-18.56	502.07	3.41	10.00	9.93	-1.37
7,100.00	63.15	2.33	6,947.89	24.96	504.07	46.98	10.00	9.94	-1.25
7,150.00	68.12	1.76	6,968.52	70.47	505.69	92.51	10.00	9.95	-1.15
7,180.10	71.11	1.43	6,979.00	98.66	506.47	120.71	10.00	9.95	-1.08
Niobrara B									
7,200.00	73.09	1.22	6,985.12	117.60	506.91	139.65	10.00	9.95	-1.05
7,250.00	78.07	0.72	6,997.56	166.00	507.73	188.04	10.00	9.95	-1.01
7,300.00	83.05	0.23	7,005.77	215.31	508.13	237.32	10.00	9.95	-0.98
7,350.00	88.02	359.75	7,009.66	265.14	508.12	287.10	10.00	9.95	-0.96
7,369.87	90.00	359.56	7,010.00	285.00	508.00	306.94	10.00	9.95	-0.95
Start DLS 1.00 TFO -27.36 - 7"									
7,373.23	90.03	359.54	7,010.00	288.37	507.97	310.30	1.00	0.89	-0.46
Start 9579.19 hold at 7373.23 MD									
7,400.00	90.03	359.54	7,009.99	315.13	507.76	337.03	0.00	0.00	0.00
7,500.00	90.03	359.54	7,009.93	415.13	506.97	436.90	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Sparboe 27N-26HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4970.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4970.00ft
Site:	WELD_SPARBOE 3 PAD	North Reference:	True
Well:	Sparboe 27N-26HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sparboe 27N-26HZ		
Design:	Sparboe 27N-26HZ (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,600.00	90.03	359.54	7,009.88	515.13	506.17	536.77	0.00	0.00	0.00
7,700.00	90.03	359.54	7,009.83	615.12	505.38	636.63	0.00	0.00	0.00
7,800.00	90.03	359.54	7,009.78	715.12	504.58	736.50	0.00	0.00	0.00
7,900.00	90.03	359.54	7,009.72	815.12	503.79	836.36	0.00	0.00	0.00
8,000.00	90.03	359.54	7,009.67	915.11	502.99	936.23	0.00	0.00	0.00
8,100.00	90.03	359.54	7,009.62	1,015.11	502.20	1,036.10	0.00	0.00	0.00
8,200.00	90.03	359.54	7,009.57	1,115.11	501.40	1,135.96	0.00	0.00	0.00
8,300.00	90.03	359.54	7,009.52	1,215.11	500.61	1,235.83	0.00	0.00	0.00
8,400.00	90.03	359.54	7,009.46	1,315.10	499.81	1,335.70	0.00	0.00	0.00
8,500.00	90.03	359.54	7,009.41	1,415.10	499.02	1,435.56	0.00	0.00	0.00
8,600.00	90.03	359.54	7,009.36	1,515.10	498.22	1,535.43	0.00	0.00	0.00
8,700.00	90.03	359.54	7,009.31	1,615.09	497.43	1,635.30	0.00	0.00	0.00
8,800.00	90.03	359.54	7,009.25	1,715.09	496.63	1,735.16	0.00	0.00	0.00
8,900.00	90.03	359.54	7,009.20	1,815.09	495.84	1,835.03	0.00	0.00	0.00
9,000.00	90.03	359.54	7,009.15	1,915.08	495.04	1,934.90	0.00	0.00	0.00
9,100.00	90.03	359.54	7,009.10	2,015.08	494.25	2,034.76	0.00	0.00	0.00
9,200.00	90.03	359.54	7,009.05	2,115.08	493.45	2,134.63	0.00	0.00	0.00
9,300.00	90.03	359.54	7,008.99	2,215.07	492.66	2,234.50	0.00	0.00	0.00
9,400.00	90.03	359.54	7,008.94	2,315.07	491.86	2,334.36	0.00	0.00	0.00
9,500.00	90.03	359.54	7,008.89	2,415.07	491.07	2,434.23	0.00	0.00	0.00
9,600.00	90.03	359.54	7,008.84	2,515.06	490.27	2,534.09	0.00	0.00	0.00
9,700.00	90.03	359.54	7,008.79	2,615.06	489.48	2,633.96	0.00	0.00	0.00
9,800.00	90.03	359.54	7,008.73	2,715.06	488.68	2,733.83	0.00	0.00	0.00
9,900.00	90.03	359.54	7,008.68	2,815.05	487.89	2,833.69	0.00	0.00	0.00
10,000.00	90.03	359.54	7,008.63	2,915.05	487.09	2,933.56	0.00	0.00	0.00
10,100.00	90.03	359.54	7,008.58	3,015.05	486.30	3,033.43	0.00	0.00	0.00
10,200.00	90.03	359.54	7,008.52	3,115.04	485.50	3,133.29	0.00	0.00	0.00
10,300.00	90.03	359.54	7,008.47	3,215.04	484.71	3,233.16	0.00	0.00	0.00
10,400.00	90.03	359.54	7,008.42	3,315.04	483.91	3,333.03	0.00	0.00	0.00
10,500.00	90.03	359.54	7,008.37	3,415.04	483.12	3,432.89	0.00	0.00	0.00
10,600.00	90.03	359.54	7,008.32	3,515.03	482.32	3,532.76	0.00	0.00	0.00
10,700.00	90.03	359.54	7,008.26	3,615.03	481.53	3,632.63	0.00	0.00	0.00
10,800.00	90.03	359.54	7,008.21	3,715.03	480.73	3,732.49	0.00	0.00	0.00
10,900.00	90.03	359.54	7,008.16	3,815.02	479.94	3,832.36	0.00	0.00	0.00
11,000.00	90.03	359.54	7,008.11	3,915.02	479.14	3,932.22	0.00	0.00	0.00
11,100.00	90.03	359.54	7,008.05	4,015.02	478.35	4,032.09	0.00	0.00	0.00
11,200.00	90.03	359.54	7,008.00	4,115.01	477.55	4,131.96	0.00	0.00	0.00
11,300.00	90.03	359.54	7,007.95	4,215.01	476.76	4,231.82	0.00	0.00	0.00
11,400.00	90.03	359.54	7,007.90	4,315.01	475.96	4,331.69	0.00	0.00	0.00
11,500.00	90.03	359.54	7,007.85	4,415.00	475.17	4,431.56	0.00	0.00	0.00
11,600.00	90.03	359.54	7,007.79	4,515.00	474.37	4,531.42	0.00	0.00	0.00
11,700.00	90.03	359.54	7,007.74	4,615.00	473.58	4,631.29	0.00	0.00	0.00
11,800.00	90.03	359.54	7,007.69	4,714.99	472.78	4,731.16	0.00	0.00	0.00
11,900.00	90.03	359.54	7,007.64	4,814.99	471.99	4,831.02	0.00	0.00	0.00
12,000.00	90.03	359.54	7,007.58	4,914.99	471.19	4,930.89	0.00	0.00	0.00
12,100.00	90.03	359.54	7,007.53	5,014.98	470.40	5,030.76	0.00	0.00	0.00
12,200.00	90.03	359.54	7,007.48	5,114.98	469.60	5,130.62	0.00	0.00	0.00
12,300.00	90.03	359.54	7,007.43	5,214.98	468.81	5,230.49	0.00	0.00	0.00
12,400.00	90.03	359.54	7,007.38	5,314.98	468.01	5,330.36	0.00	0.00	0.00
12,500.00	90.03	359.54	7,007.32	5,414.97	467.22	5,430.22	0.00	0.00	0.00
12,600.00	90.03	359.54	7,007.27	5,514.97	466.42	5,530.09	0.00	0.00	0.00
12,700.00	90.03	359.54	7,007.22	5,614.97	465.63	5,629.95	0.00	0.00	0.00
12,800.00	90.03	359.54	7,007.17	5,714.96	464.83	5,729.82	0.00	0.00	0.00
12,900.00	90.03	359.54	7,007.12	5,814.96	464.04	5,829.69	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Sparboe 27N-26HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4970.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4970.00ft
Site:	WELD_SPARBOE 3 PAD	North Reference:	True
Well:	Sparboe 27N-26HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sparboe 27N-26HZ		
Design:	Sparboe 27N-26HZ (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,000.00	90.03	359.54	7,007.06	5,914.96	463.24	5,929.55	0.00	0.00	0.00
13,100.00	90.03	359.54	7,007.01	6,014.95	462.45	6,029.42	0.00	0.00	0.00
13,200.00	90.03	359.54	7,006.96	6,114.95	461.65	6,129.29	0.00	0.00	0.00
13,300.00	90.03	359.54	7,006.91	6,214.95	460.86	6,229.15	0.00	0.00	0.00
13,400.00	90.03	359.54	7,006.85	6,314.94	460.06	6,329.02	0.00	0.00	0.00
13,500.00	90.03	359.54	7,006.80	6,414.94	459.27	6,428.89	0.00	0.00	0.00
13,600.00	90.03	359.54	7,006.75	6,514.94	458.47	6,528.75	0.00	0.00	0.00
13,700.00	90.03	359.54	7,006.70	6,614.93	457.68	6,628.62	0.00	0.00	0.00
13,800.00	90.03	359.54	7,006.65	6,714.93	456.88	6,728.49	0.00	0.00	0.00
13,900.00	90.03	359.54	7,006.59	6,814.93	456.09	6,828.35	0.00	0.00	0.00
14,000.00	90.03	359.54	7,006.54	6,914.92	455.30	6,928.22	0.00	0.00	0.00
14,100.00	90.03	359.54	7,006.49	7,014.92	454.50	7,028.08	0.00	0.00	0.00
14,200.00	90.03	359.54	7,006.44	7,114.92	453.71	7,127.95	0.00	0.00	0.00
14,300.00	90.03	359.54	7,006.38	7,214.91	452.91	7,227.82	0.00	0.00	0.00
14,400.00	90.03	359.54	7,006.33	7,314.91	452.12	7,327.68	0.00	0.00	0.00
14,500.00	90.03	359.54	7,006.28	7,414.91	451.32	7,427.55	0.00	0.00	0.00
14,600.00	90.03	359.54	7,006.23	7,514.91	450.53	7,527.42	0.00	0.00	0.00
14,700.00	90.03	359.54	7,006.18	7,614.90	449.73	7,627.28	0.00	0.00	0.00
14,800.00	90.03	359.54	7,006.12	7,714.90	448.94	7,727.15	0.00	0.00	0.00
14,900.00	90.03	359.54	7,006.07	7,814.90	448.14	7,827.02	0.00	0.00	0.00
15,000.00	90.03	359.54	7,006.02	7,914.89	447.35	7,926.88	0.00	0.00	0.00
15,100.00	90.03	359.54	7,005.97	8,014.89	446.55	8,026.75	0.00	0.00	0.00
15,200.00	90.03	359.54	7,005.91	8,114.89	445.76	8,126.62	0.00	0.00	0.00
15,300.00	90.03	359.54	7,005.86	8,214.88	444.96	8,226.48	0.00	0.00	0.00
15,400.00	90.03	359.54	7,005.81	8,314.88	444.17	8,326.35	0.00	0.00	0.00
15,500.00	90.03	359.54	7,005.76	8,414.88	443.37	8,426.22	0.00	0.00	0.00
15,600.00	90.03	359.54	7,005.71	8,514.87	442.58	8,526.08	0.00	0.00	0.00
15,700.00	90.03	359.54	7,005.65	8,614.87	441.78	8,625.95	0.00	0.00	0.00
15,800.00	90.03	359.54	7,005.60	8,714.87	440.99	8,725.81	0.00	0.00	0.00
15,900.00	90.03	359.54	7,005.55	8,814.86	440.19	8,825.68	0.00	0.00	0.00
16,000.00	90.03	359.54	7,005.50	8,914.86	439.40	8,925.55	0.00	0.00	0.00
16,100.00	90.03	359.54	7,005.45	9,014.86	438.60	9,025.41	0.00	0.00	0.00
16,200.00	90.03	359.54	7,005.39	9,114.85	437.81	9,125.28	0.00	0.00	0.00
16,300.00	90.03	359.54	7,005.34	9,214.85	437.01	9,225.15	0.00	0.00	0.00
16,400.00	90.03	359.54	7,005.29	9,314.85	436.22	9,325.01	0.00	0.00	0.00
16,500.00	90.03	359.54	7,005.24	9,414.85	435.42	9,424.88	0.00	0.00	0.00
16,600.00	90.03	359.54	7,005.18	9,514.84	434.63	9,524.75	0.00	0.00	0.00
16,700.00	90.03	359.54	7,005.13	9,614.84	433.83	9,624.61	0.00	0.00	0.00
16,800.00	90.03	359.54	7,005.08	9,714.84	433.04	9,724.48	0.00	0.00	0.00
16,900.00	90.03	359.54	7,005.03	9,814.83	432.24	9,824.35	0.00	0.00	0.00
16,952.42	90.03	359.54	7,005.00	9,867.25	431.83	9,876.70	0.00	0.00	0.00
TD at 16952.42 - Sparboe 27N-26HZ BHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Sparboe 27N-26HZ BHL	0.00	0.00	7,005.00	9,867.25	431.83	1,286,135.88	3,244,284.74	40.115533	-104.626539
- plan hits target center									
- Point									

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Sparboe 27N-26HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4970.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4970.00ft
Site:	WELD_SPARBOE 3 PAD	North Reference:	True
Well:	Sparboe 27N-26HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sparboe 27N-26HZ		
Design:	Sparboe 27N-26HZ (wp01)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
1,300.00	1,300.00	9 5/8"	9-5/8	12-1/4	
7,369.87	7,010.00	7"	7	8-3/4	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
0.00	0.00	Parkman			
816.00	816.00	Fox Hills			
4,989.85	4,969.00	Sussex			
6,975.27	6,880.00	Sharon Springs			
7,016.64	6,905.00	Niobrara A			
7,180.10	6,979.00	Niobrara B			

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,500.00	1,500.00	0.00	0.00	Start Build 2.00	
1,823.48	1,822.79	-9.75	15.42	Start 4611.45 hold at 1823.48 MD	
6,434.94	6,404.88	-287.32	454.67	Start DLS 10.00 TFO -122.56	
7,369.87	7,010.00	285.00	508.00	Start DLS 1.00 TFO -27.36	
7,373.23	7,010.00	288.37	507.97	Start 9579.19 hold at 7373.23 MD	
16,952.42	7,005.00	9,867.25	431.83	TD at 16952.42	