

US ROCKIES REGION PLANNING

COLORADO-NAD83-UTMFT13N

WELD_FARLEY 13-23HZ PAD

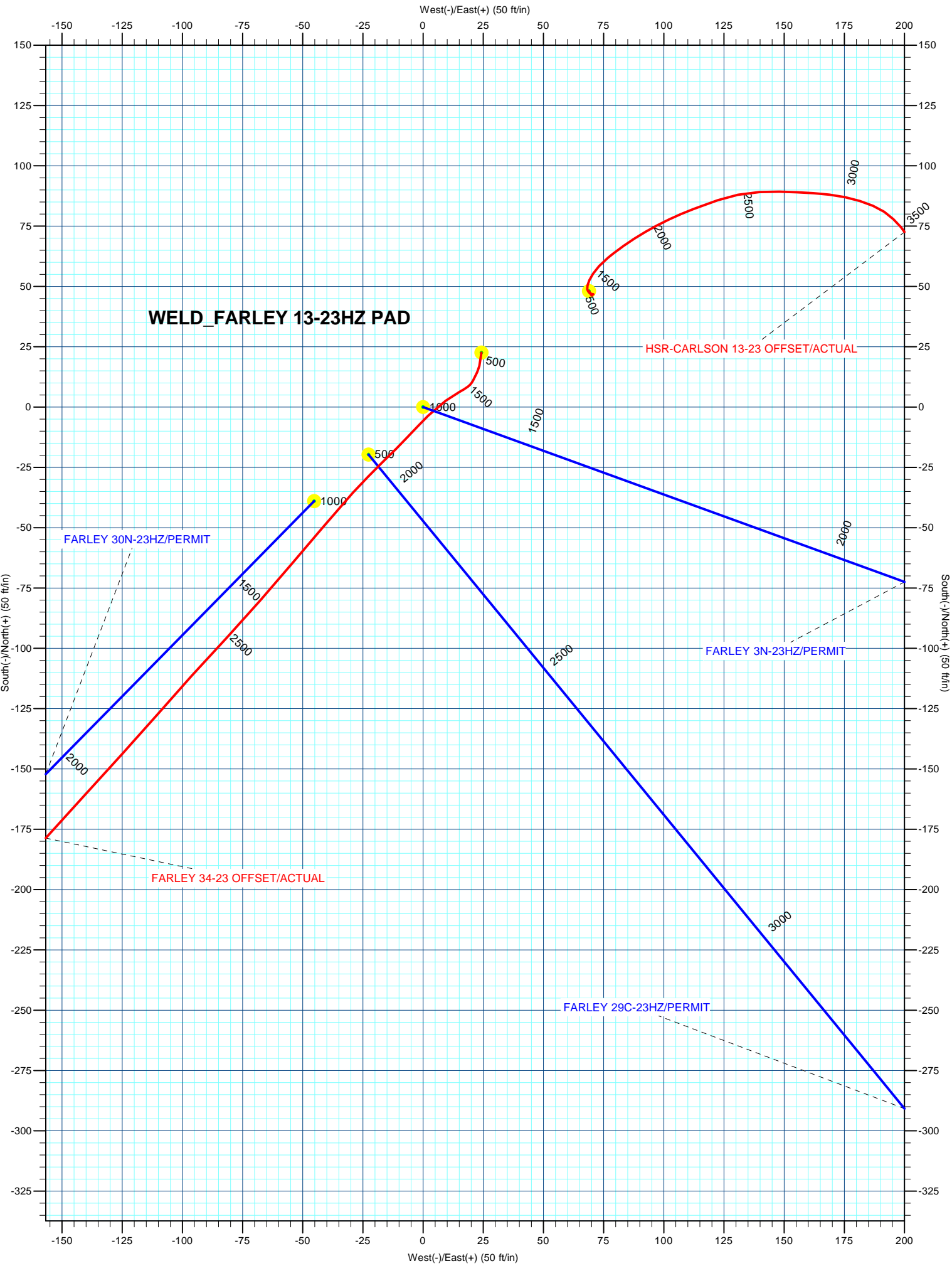
FARLEY 30N-23HZ

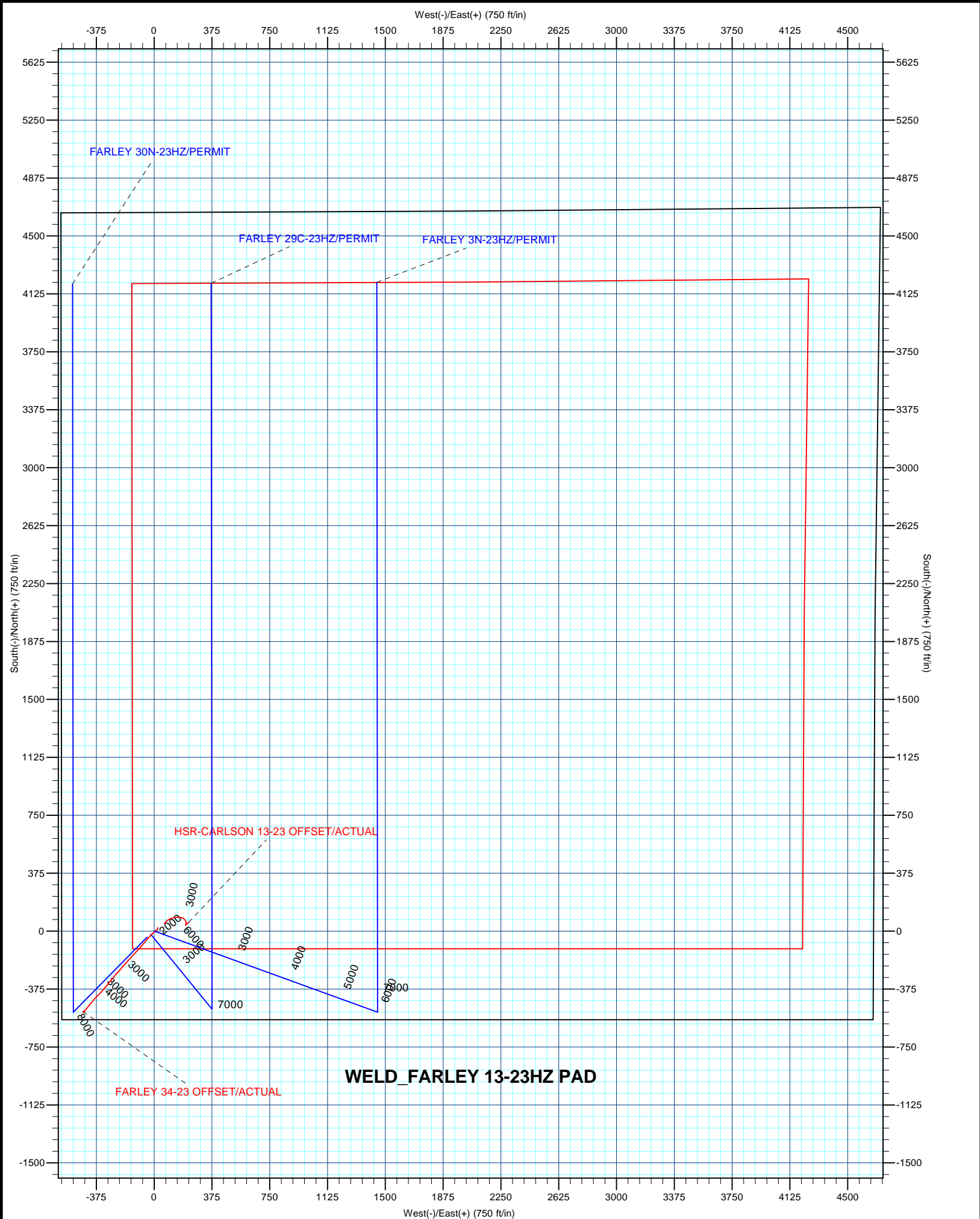
Wellbore #1

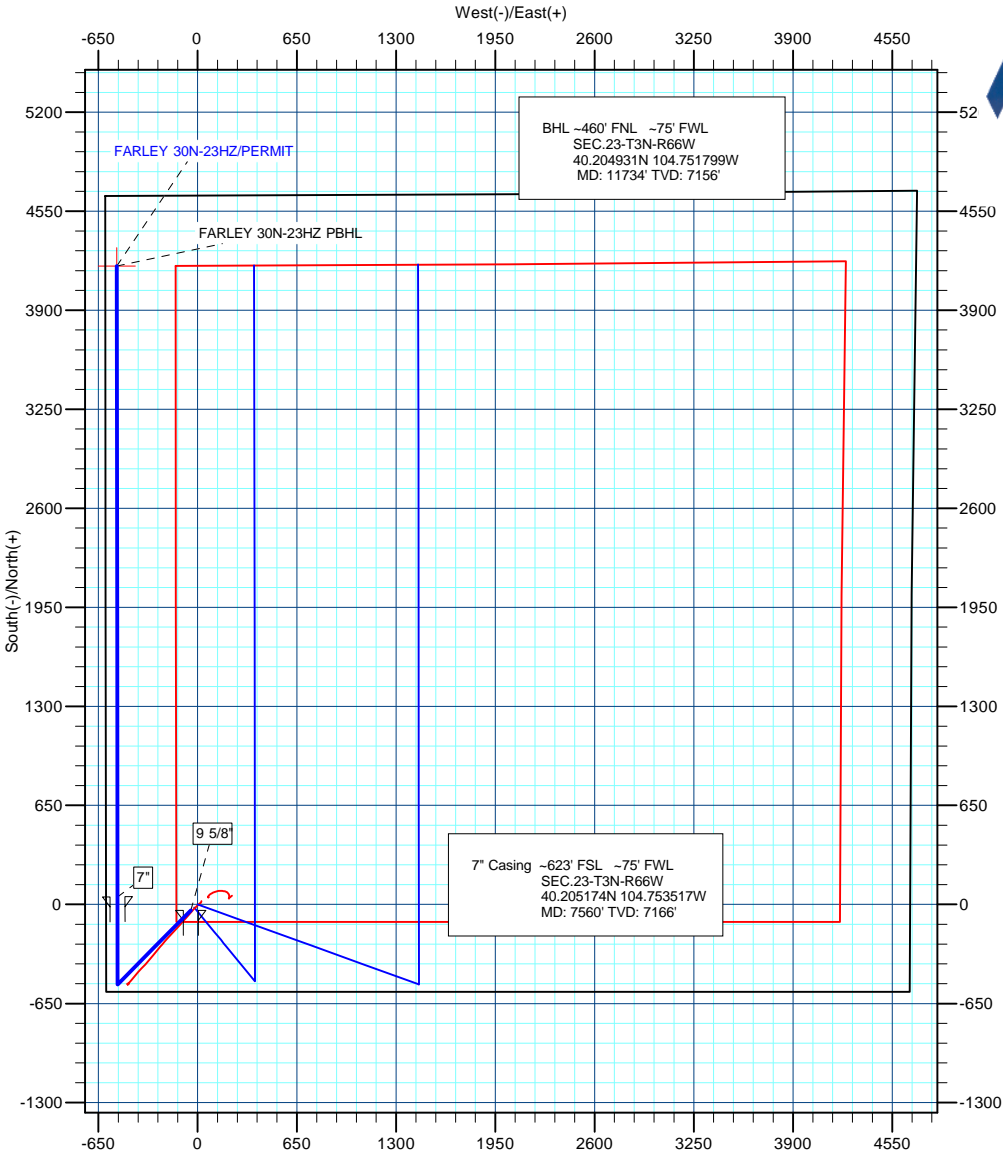
Plan: PERMIT

Standard Planning Report

22 May, 2013







Weatherford®

Project: COLORADO-NAD83-UTMFT13N
Site: WELD FARLEY 13-23HZ PAD
Well: FARLEY 30N-23HZ
Wellbore: Wellbore #1
Section: Sec.23-T3N-R66W
SHL: 536' FSL 554' FWL
Design: PERMIT
Latitude: 40.204931
Longitude: -104.751799
GL: 4939.00
KB: 25°RKB+4939°GL @ 4964.00ft



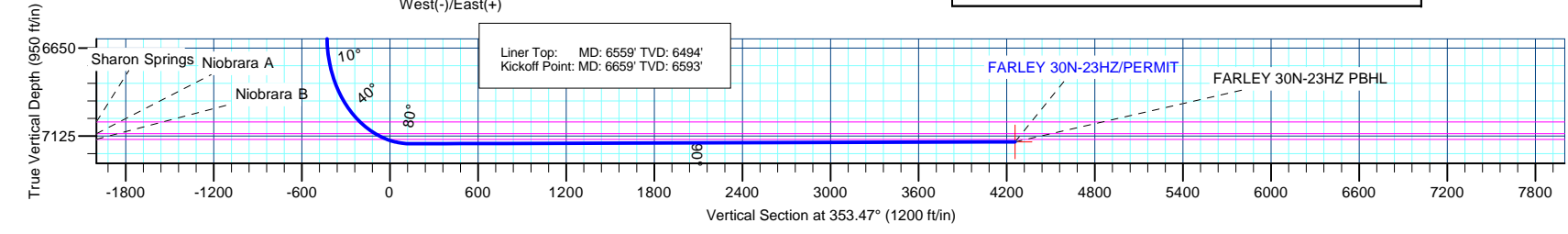
WELL DETAILS: FARLEY 30N-23HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	4939.00 Latitude 40.204931	Longitude -104.751799	Slot
-38.96	-45.23	14601455.35	1709717.39			

ANNOTATIONS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	-38.96	-45.23	0.00	0.00	0.00	
1000.00	0.00	0.00	1000.00	-38.96	-45.23	0.00	0.00	0.00	Start Build 2.00
1581.29	11.63	224.58	1577.31	-80.82	-86.49	2.00	224.58	-36.89	Start 2802.89 hold at 1581.29 MD
4384.17	11.63	224.58	4322.69	-483.11	-482.98	0.00	0.00	-391.44	Start Drop -2.00
4965.46	0.00	0.00	4900.00	-524.96	-524.23	2.00	180.00	-428.33	Start 1693.04 hold at 4965.46 MD
6658.50	0.00	0.00	6593.04	-524.96	-524.23	0.00	0.00	-428.33	Start Build 10.00
7559.89	90.14	359.94	7166.00	49.38	-524.88	10.00	359.94	142.35	Start 4140.26 hold at 7559.89 MD
11700.15	90.14	359.94	7156.00	4189.63	-529.58	0.00	0.00	4256.24	TD at 11700.15

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
FARLEY 30N-23HZ PBHL	7156.00	4189.63	-529.58	40.216543	-104.753534	Point

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
700.00	700.00	Fox Hills Base
4032.00	4087.39	Parkman
4456.00	4519.67	Sussex
7049.00	7185.81	Sharon Springs
7112.00	7307.75	Niobrara A
7143.00	7395.61	Niobrara B

CASING DETAILS			
TVD	MD	Name	Size
750.00	750.00	9 5/8"	9-5/8
7166.00	7559.89	7"	7



Anadarko Petroleum Corp

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Site WELD_FARLEY 13-23HZ PAD
Company:	US ROCKIES REGION PLANNING	TVD Reference:	25'RKB+4939'GL @ 4964.00ft
Project:	COLORADO-NAD83-UTMFT13N	MD Reference:	25'RKB+4939'GL @ 4964.00ft
Site:	WELD_FARLEY 13-23HZ PAD	North Reference:	True
Well:	FARLEY 30N-23HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT		

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

Site		WELD_FARLEY 13-23HZ PAD, Sec.23-T3N-R66W			
Site Position:		Northing:	14,601,494.44 usft	Latitude:	40.205038
From:	Lat/Long	Easting:	1,709,762.51 usft	Longitude:	-104.751637
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.16 °

Well	FARLEY 30N-23HZ					
Well Position	+N/-S	-38.96 ft	Northing:	14,601,455.35 usft	Latitude:	40.204931
	+E/-W	-45.23 ft	Easting:	1,709,717.39 usft	Longitude:	-104.751799
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,939.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	5/15/2013	8.54	66.84	52,854

Design	PERMIT				
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	-38.96	-45.23	353.47	

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	-38.96	-45.23	0.00	0.00	0.00	0.00	
1,000.00	0.00	0.00	1,000.00	-38.96	-45.23	0.00	0.00	0.00	0.00	
1,581.29	11.63	224.58	1,577.31	-80.82	-86.49	2.00	2.00	0.00	224.58	
4,384.17	11.63	224.58	4,322.69	-483.11	-482.98	0.00	0.00	0.00	0.00	
4,965.46	0.00	0.00	4,900.00	-524.96	-524.23	2.00	-2.00	0.00	180.00	
6,658.50	0.00	0.00	6,593.04	-524.96	-524.23	0.00	0.00	0.00	0.00	
7,559.89	90.14	359.94	7,166.00	49.38	-524.88	10.00	10.00	0.00	359.94	
11,700.15	90.14	359.94	7,156.00	4,189.63	-529.58	0.00	0.00	0.00	0.00	FARLEY 30N-23HZ P

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Project:	COLORADO-NAD83-UTMFT13N	MD Reference:	25'RKB+4939'GL @ 4964.00ft
Site:	WELD_FARLEY 13-23HZ PAD	North Reference:	True
Well:	FARLEY 30N-23HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT		

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	-38.96	-45.23	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	-38.96	-45.23	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	-38.96	-45.23	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	-38.96	-45.23	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	-38.96	-45.23	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	-38.96	-45.23	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	-38.96	-45.23	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	-38.96	-45.23	0.00	0.00	0.00	0.00
Fox Hills Base									
750.00	0.00	0.00	750.00	-38.96	-45.23	0.00	0.00	0.00	0.00
9 5/8"									
800.00	0.00	0.00	800.00	-38.96	-45.23	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	-38.96	-45.23	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	-38.96	-45.23	0.00	0.00	0.00	0.00
Start Build 2.00									
1,100.00	2.00	224.58	1,099.98	-40.21	-46.46	-1.10	2.00	2.00	0.00
1,200.00	4.00	224.58	1,199.84	-43.93	-50.13	-4.38	2.00	2.00	0.00
1,300.00	6.00	224.58	1,299.45	-50.14	-56.25	-9.85	2.00	2.00	0.00
1,400.00	8.00	224.58	1,398.70	-58.82	-64.80	-17.50	2.00	2.00	0.00
1,500.00	10.00	224.58	1,497.47	-69.96	-75.78	-27.32	2.00	2.00	0.00
1,581.29	11.63	224.58	1,577.31	-80.82	-86.49	-36.89	2.00	2.00	0.00
Start 2802.89 hold at 1581.29 MD									
1,600.00	11.63	224.58	1,595.64	-83.51	-89.14	-39.26	0.00	0.00	0.00
1,700.00	11.63	224.58	1,693.58	-97.86	-103.28	-51.91	0.00	0.00	0.00
1,800.00	11.63	224.58	1,791.53	-112.21	-117.43	-64.56	0.00	0.00	0.00
1,900.00	11.63	224.58	1,889.48	-126.57	-131.57	-77.21	0.00	0.00	0.00
2,000.00	11.63	224.58	1,987.43	-140.92	-145.72	-89.86	0.00	0.00	0.00
2,100.00	11.63	224.58	2,085.38	-155.27	-159.86	-102.51	0.00	0.00	0.00
2,200.00	11.63	224.58	2,183.33	-169.62	-174.01	-115.16	0.00	0.00	0.00
2,300.00	11.63	224.58	2,281.27	-183.98	-188.16	-127.81	0.00	0.00	0.00
2,400.00	11.63	224.58	2,379.22	-198.33	-202.30	-140.45	0.00	0.00	0.00
2,500.00	11.63	224.58	2,477.17	-212.68	-216.45	-153.10	0.00	0.00	0.00
2,600.00	11.63	224.58	2,575.12	-227.03	-230.59	-165.75	0.00	0.00	0.00
2,700.00	11.63	224.58	2,673.07	-241.39	-244.74	-178.40	0.00	0.00	0.00
2,800.00	11.63	224.58	2,771.02	-255.74	-258.88	-191.05	0.00	0.00	0.00
2,900.00	11.63	224.58	2,868.97	-270.09	-273.03	-203.70	0.00	0.00	0.00
3,000.00	11.63	224.58	2,966.91	-284.44	-287.18	-216.35	0.00	0.00	0.00
3,100.00	11.63	224.58	3,064.86	-298.80	-301.32	-229.00	0.00	0.00	0.00
3,200.00	11.63	224.58	3,162.81	-313.15	-315.47	-241.65	0.00	0.00	0.00
3,300.00	11.63	224.58	3,260.76	-327.50	-329.61	-254.30	0.00	0.00	0.00
3,400.00	11.63	224.58	3,358.71	-341.85	-343.76	-266.95	0.00	0.00	0.00
3,500.00	11.63	224.58	3,456.66	-356.21	-357.90	-279.60	0.00	0.00	0.00
3,600.00	11.63	224.58	3,554.61	-370.56	-372.05	-292.25	0.00	0.00	0.00
3,700.00	11.63	224.58	3,652.55	-384.91	-386.20	-304.90	0.00	0.00	0.00
3,800.00	11.63	224.58	3,750.50	-399.26	-400.34	-317.55	0.00	0.00	0.00
3,900.00	11.63	224.58	3,848.45	-413.62	-414.49	-330.20	0.00	0.00	0.00
4,000.00	11.63	224.58	3,946.40	-427.97	-428.63	-342.85	0.00	0.00	0.00
4,087.39	11.63	224.58	4,032.00	-440.51	-441.00	-353.90	0.00	0.00	0.00
Parkman									
4,100.00	11.63	224.58	4,044.35	-442.32	-442.78	-355.50	0.00	0.00	0.00
4,200.00	11.63	224.58	4,142.30	-456.67	-456.92	-368.15	0.00	0.00	0.00
4,300.00	11.63	224.58	4,240.24	-471.03	-471.07	-380.79	0.00	0.00	0.00
4,384.17	11.63	224.58	4,322.69	-483.11	-482.98	-391.44	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	25'RKB+4939'GL @ 4964.00ft
Project:	COLORADO-NAD83-UTMFT13N	MD Reference:	25'RKB+4939'GL @ 4964.00ft
Site:	WELD_FARLEY 13-23HZ PAD	North Reference:	True
Well:	FARLEY 30N-23HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT		

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)
Start Drop -2.00									
4,400.00	11.31	224.58	4,338.20	-485.35	-485.19	-393.42	2.00	-2.00	0.00
4,500.00	9.31	224.58	4,436.58	-498.09	-497.75	-404.65	2.00	-2.00	0.00
4,519.67	8.92	224.58	4,456.00	-500.31	-499.93	-406.61	2.00	-2.00	0.00
Sussex									
4,600.00	7.31	224.58	4,535.53	-508.38	-507.89	-413.72	2.00	-2.00	0.00
4,700.00	5.31	224.58	4,634.92	-516.21	-515.61	-420.62	2.00	-2.00	0.00
4,800.00	3.31	224.58	4,734.63	-521.56	-520.88	-425.34	2.00	-2.00	0.00
4,900.00	1.31	224.58	4,834.54	-524.43	-523.71	-427.86	2.00	-2.00	0.00
4,965.46	0.00	0.00	4,900.00	-524.96	-524.23	-428.33	2.00	-2.00	0.00
Start 1693.04 hold at 4965.46 MD									
5,000.00	0.00	0.00	4,934.54	-524.96	-524.23	-428.33	0.00	0.00	0.00
5,100.00	0.00	0.00	5,034.54	-524.96	-524.23	-428.33	0.00	0.00	0.00
5,200.00	0.00	0.00	5,134.54	-524.96	-524.23	-428.33	0.00	0.00	0.00
5,300.00	0.00	0.00	5,234.54	-524.96	-524.23	-428.33	0.00	0.00	0.00
5,400.00	0.00	0.00	5,334.54	-524.96	-524.23	-428.33	0.00	0.00	0.00
5,500.00	0.00	0.00	5,434.54	-524.96	-524.23	-428.33	0.00	0.00	0.00
5,600.00	0.00	0.00	5,534.54	-524.96	-524.23	-428.33	0.00	0.00	0.00
5,700.00	0.00	0.00	5,634.54	-524.96	-524.23	-428.33	0.00	0.00	0.00
5,800.00	0.00	0.00	5,734.54	-524.96	-524.23	-428.33	0.00	0.00	0.00
5,900.00	0.00	0.00	5,834.54	-524.96	-524.23	-428.33	0.00	0.00	0.00
6,000.00	0.00	0.00	5,934.54	-524.96	-524.23	-428.33	0.00	0.00	0.00
6,100.00	0.00	0.00	6,034.54	-524.96	-524.23	-428.33	0.00	0.00	0.00
6,200.00	0.00	0.00	6,134.54	-524.96	-524.23	-428.33	0.00	0.00	0.00
6,300.00	0.00	0.00	6,234.54	-524.96	-524.23	-428.33	0.00	0.00	0.00
6,400.00	0.00	0.00	6,334.54	-524.96	-524.23	-428.33	0.00	0.00	0.00
6,500.00	0.00	0.00	6,434.54	-524.96	-524.23	-428.33	0.00	0.00	0.00
6,600.00	0.00	0.00	6,534.54	-524.96	-524.23	-428.33	0.00	0.00	0.00
6,658.50	0.00	0.00	6,593.04	-524.96	-524.23	-428.33	0.00	0.00	0.00
Start Build 10.00									
6,700.00	4.15	359.94	6,634.50	-523.46	-524.23	-426.84	10.00	10.00	0.00
6,750.00	9.15	359.94	6,684.15	-517.67	-524.24	-421.09	10.00	10.00	0.00
6,800.00	14.15	359.94	6,733.10	-507.58	-524.25	-411.06	10.00	10.00	0.00
6,850.00	19.15	359.94	6,780.99	-493.26	-524.27	-396.83	10.00	10.00	0.00
6,900.00	24.15	359.94	6,827.45	-474.82	-524.29	-378.51	10.00	10.00	0.00
6,950.00	29.15	359.94	6,872.12	-452.40	-524.31	-356.23	10.00	10.00	0.00
7,000.00	34.15	359.94	6,914.67	-426.17	-524.34	-330.17	10.00	10.00	0.00
7,050.00	39.15	359.94	6,954.78	-396.34	-524.38	-300.52	10.00	10.00	0.00
7,100.00	44.15	359.94	6,992.13	-363.12	-524.42	-267.52	10.00	10.00	0.00
7,150.00	49.15	359.94	7,026.44	-326.77	-524.46	-231.40	10.00	10.00	0.00
7,185.81	52.73	359.94	7,049.00	-298.97	-524.49	-203.78	10.00	10.00	0.00
Sharon Springs									
7,200.00	54.15	359.94	7,057.45	-287.57	-524.50	-192.45	10.00	10.00	0.00
7,250.00	59.15	359.94	7,084.93	-245.82	-524.55	-150.97	10.00	10.00	0.00
7,300.00	64.15	359.94	7,108.67	-201.83	-524.60	-107.26	10.00	10.00	0.00
7,307.76	64.93	359.94	7,112.00	-194.83	-524.61	-100.30	10.00	10.00	0.00
Niobrara A									
7,350.00	69.15	359.94	7,128.48	-155.94	-524.65	-61.66	10.00	10.00	0.00
7,395.61	73.71	359.94	7,143.00	-112.71	-524.70	-18.70	10.00	10.00	0.00
Niobrara B									
7,400.00	74.15	359.94	7,144.21	-108.50	-524.70	-14.52	10.00	10.00	0.00
7,450.00	79.15	359.94	7,155.76	-59.86	-524.76	33.81	10.00	10.00	0.00
7,500.00	84.15	359.94	7,163.01	-10.41	-524.82	82.95	10.00	10.00	0.00

Anadarko Petroleum Corp

Planning Report

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	25'RKB+4939'GL @ 4964.00ft
Project:	COLORADO-NAD83-UTMFT13N	MD Reference:	25'RKB+4939'GL @ 4964.00ft
Site:	WELD_FARLEY 13-23HZ PAD	North Reference:	True
Well:	FARLEY 30N-23HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT		

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)
7,550.00	89.15	359.94	7,165.94	39.49	-524.87	132.53	10.00	10.00	0.00
7,559.89	90.14	359.94	7,166.00	49.38	-524.88	142.35	10.00	10.00	0.00
Start 4140.26 hold at 7559.89 MD - 7"									
7,600.00	90.14	359.94	7,165.90	89.49	-524.93	182.21	0.00	0.00	0.00
7,700.00	90.14	359.94	7,165.66	189.49	-525.04	281.57	0.00	0.00	0.00
7,800.00	90.14	359.94	7,165.42	289.49	-525.16	380.93	0.00	0.00	0.00
7,900.00	90.14	359.94	7,165.18	389.49	-525.27	480.30	0.00	0.00	0.00
8,000.00	90.14	359.94	7,164.93	489.49	-525.38	579.66	0.00	0.00	0.00
8,100.00	90.14	359.94	7,164.69	589.49	-525.50	679.02	0.00	0.00	0.00
8,200.00	90.14	359.94	7,164.45	689.49	-525.61	778.39	0.00	0.00	0.00
8,300.00	90.14	359.94	7,164.21	789.49	-525.72	877.75	0.00	0.00	0.00
8,400.00	90.14	359.94	7,163.97	889.49	-525.84	977.11	0.00	0.00	0.00
8,500.00	90.14	359.94	7,163.73	989.49	-525.95	1,076.47	0.00	0.00	0.00
8,600.00	90.14	359.94	7,163.49	1,089.49	-526.06	1,175.84	0.00	0.00	0.00
8,700.00	90.14	359.94	7,163.24	1,189.49	-526.18	1,275.20	0.00	0.00	0.00
8,800.00	90.14	359.94	7,163.00	1,289.48	-526.29	1,374.56	0.00	0.00	0.00
8,900.00	90.14	359.94	7,162.76	1,389.48	-526.40	1,473.93	0.00	0.00	0.00
9,000.00	90.14	359.94	7,162.52	1,489.48	-526.52	1,573.29	0.00	0.00	0.00
9,100.00	90.14	359.94	7,162.28	1,589.48	-526.63	1,672.65	0.00	0.00	0.00
9,200.00	90.14	359.94	7,162.04	1,689.48	-526.74	1,772.01	0.00	0.00	0.00
9,300.00	90.14	359.94	7,161.80	1,789.48	-526.86	1,871.38	0.00	0.00	0.00
9,400.00	90.14	359.94	7,161.55	1,889.48	-526.97	1,970.74	0.00	0.00	0.00
9,500.00	90.14	359.94	7,161.31	1,989.48	-527.08	2,070.10	0.00	0.00	0.00
9,600.00	90.14	359.94	7,161.07	2,089.48	-527.20	2,169.47	0.00	0.00	0.00
9,700.00	90.14	359.94	7,160.83	2,189.48	-527.31	2,268.83	0.00	0.00	0.00
9,800.00	90.14	359.94	7,160.59	2,289.48	-527.42	2,368.19	0.00	0.00	0.00
9,900.00	90.14	359.94	7,160.35	2,389.48	-527.54	2,467.56	0.00	0.00	0.00
10,000.00	90.14	359.94	7,160.11	2,489.48	-527.65	2,566.92	0.00	0.00	0.00
10,100.00	90.14	359.94	7,159.86	2,589.48	-527.76	2,666.28	0.00	0.00	0.00
10,200.00	90.14	359.94	7,159.62	2,689.48	-527.88	2,765.64	0.00	0.00	0.00
10,300.00	90.14	359.94	7,159.38	2,789.48	-527.99	2,865.01	0.00	0.00	0.00
10,400.00	90.14	359.94	7,159.14	2,889.48	-528.10	2,964.37	0.00	0.00	0.00
10,500.00	90.14	359.94	7,158.90	2,989.48	-528.22	3,063.73	0.00	0.00	0.00
10,600.00	90.14	359.94	7,158.66	3,089.48	-528.33	3,163.10	0.00	0.00	0.00
10,700.00	90.14	359.94	7,158.42	3,189.48	-528.45	3,262.46	0.00	0.00	0.00
10,800.00	90.14	359.94	7,158.17	3,289.48	-528.56	3,361.82	0.00	0.00	0.00
10,900.00	90.14	359.94	7,157.93	3,389.48	-528.67	3,461.18	0.00	0.00	0.00
11,000.00	90.14	359.94	7,157.69	3,489.48	-528.79	3,560.55	0.00	0.00	0.00
11,100.00	90.14	359.94	7,157.45	3,589.48	-528.90	3,659.91	0.00	0.00	0.00
11,200.00	90.14	359.94	7,157.21	3,689.48	-529.01	3,759.27	0.00	0.00	0.00
11,300.00	90.14	359.94	7,156.97	3,789.48	-529.13	3,858.64	0.00	0.00	0.00
11,400.00	90.14	359.94	7,156.72	3,889.48	-529.24	3,958.00	0.00	0.00	0.00
11,500.00	90.14	359.94	7,156.48	3,989.48	-529.35	4,057.36	0.00	0.00	0.00
11,600.00	90.14	359.94	7,156.24	4,089.47	-529.47	4,156.73	0.00	0.00	0.00
11,700.15	90.14	359.94	7,156.00	4,189.63	-529.58	4,256.24	0.00	0.00	0.00
TD at 11700.15 - FARLEY 30N-23HZ PBHL									

Anadarko Petroleum Corp

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Site WELD_FARLEY 13-23HZ PAD
Company:	US ROCKIES REGION PLANNING	TVD Reference:	25'RKB+4939'GL @ 4964.00ft
Project:	COLORADO-NAD83-UTMFT13N	MD Reference:	25'RKB+4939'GL @ 4964.00ft
Site:	WELD_FARLEY 13-23HZ PAD	North Reference:	True
Well:	FARLEY 30N-23HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
FARLEY 30N-23HZ PBI	0.00	0.00	7,156.00	4,189.63	-529.58	14,605,682.56	1,709,221.21	40.216543	-104.753534
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(")	(")
750.00	750.00	9 5/8"		9-5/8	13-1/2
7,559.89	7,166.00	7"		7	8-3/4

Formations						
Measured Depth	Vertical Depth	Name		Lithology	Dip	Dip Direction
(ft)	(ft)				(°)	(°)
700.00	700.00	Fox Hills Base				
4,087.39	4,032.00	Parkman				
4,519.67	4,456.00	Sussex				
7,185.81	7,049.00	Sharon Springs				
7,307.76	7,112.00	Niobrara A				
7,395.61	7,143.00	Niobrara B				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S	+E/-W		
(ft)	(ft)	(ft)	(ft)		
1,000.00	1,000.00	-38.96	-45.23	Start Build 2.00	
1,581.29	1,577.31	-80.82	-86.49	Start 2802.89 hold at 1581.29 MD	
4,384.17	4,322.69	-483.11	-482.98	Start Drop -2.00	
4,965.46	4,900.00	-524.96	-524.23	Start 1693.04 hold at 4965.46 MD	
6,658.50	6,593.04	-524.96	-524.23	Start Build 10.00	
7,559.89	7,166.00	49.38	-524.88	Start 4140.26 hold at 7559.89 MD	
11,700.15	7,156.00	4,189.63	-529.58	TD at 11700.15	