



Project: COLORADO NORTHERN ZONE - 83
Site: WELD_CAMP 37-31HZ PAD
Well: Camp 24C-30HZ
Wellbore: Camp 24C-30HZ
Section:
SHL:
Design: Camp 24C-30HZ (wp03)
Latitude: 40.175916
Longitude: -104.701506
GL: 4949.00
KB: 25' RKB + 4949' GL @ 4974.00ft

Azimuths to True North
Magnetic North: 8.69°

Magnetic Field
Strength: 52926.4 nT
Dip Angle: 66.85°
Date: 5/2/2012
Model: IGRF2010

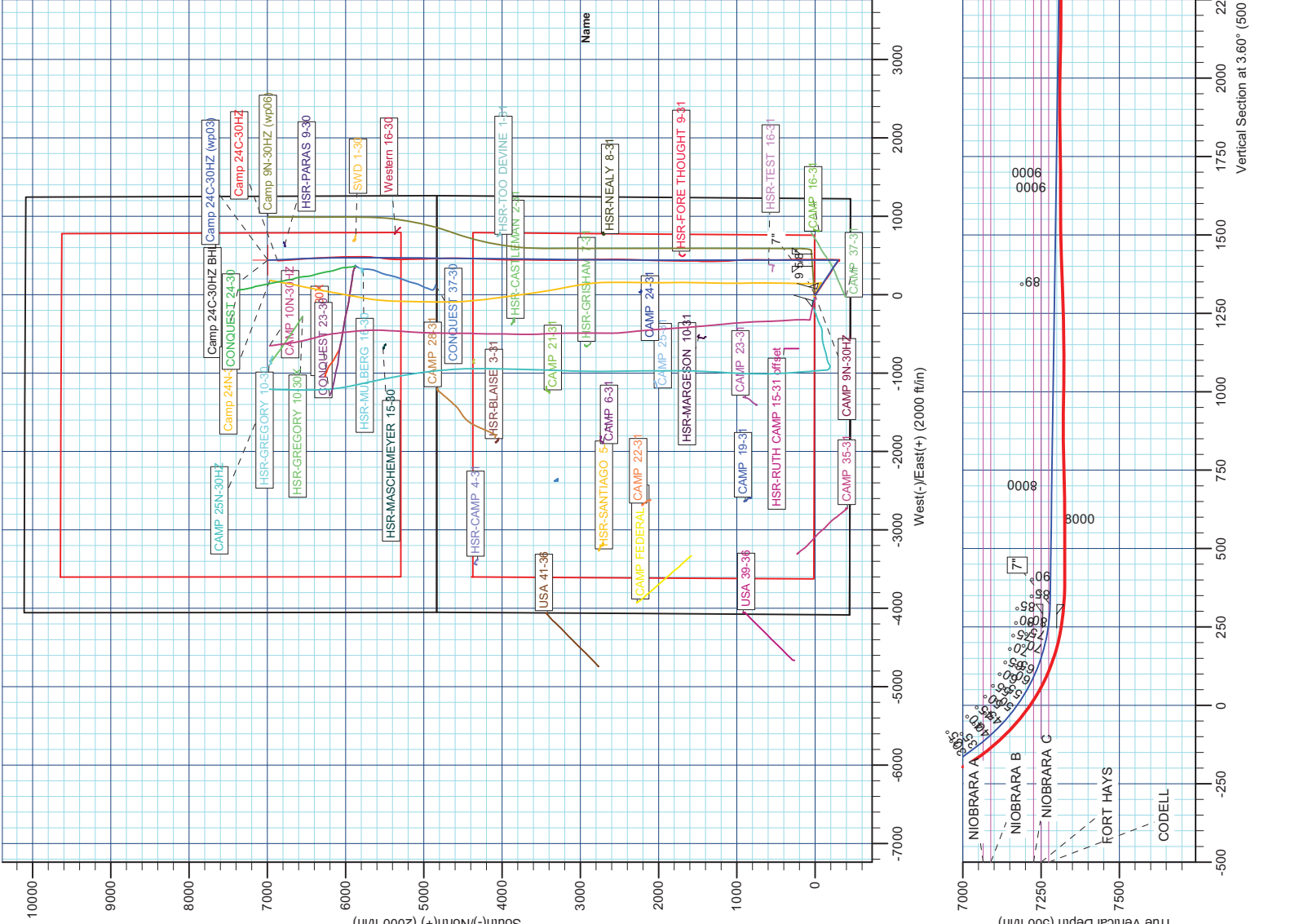
WELL DETAILS:		Camp 24C-30kHZ	
+N/S	0.00	Ground Level:	4949.00
+E/W	0.00	Northing	1307933.64
		Easting	3223120.90
		Latitude	40.175916
		Longitude	-104.701506
		Slot	

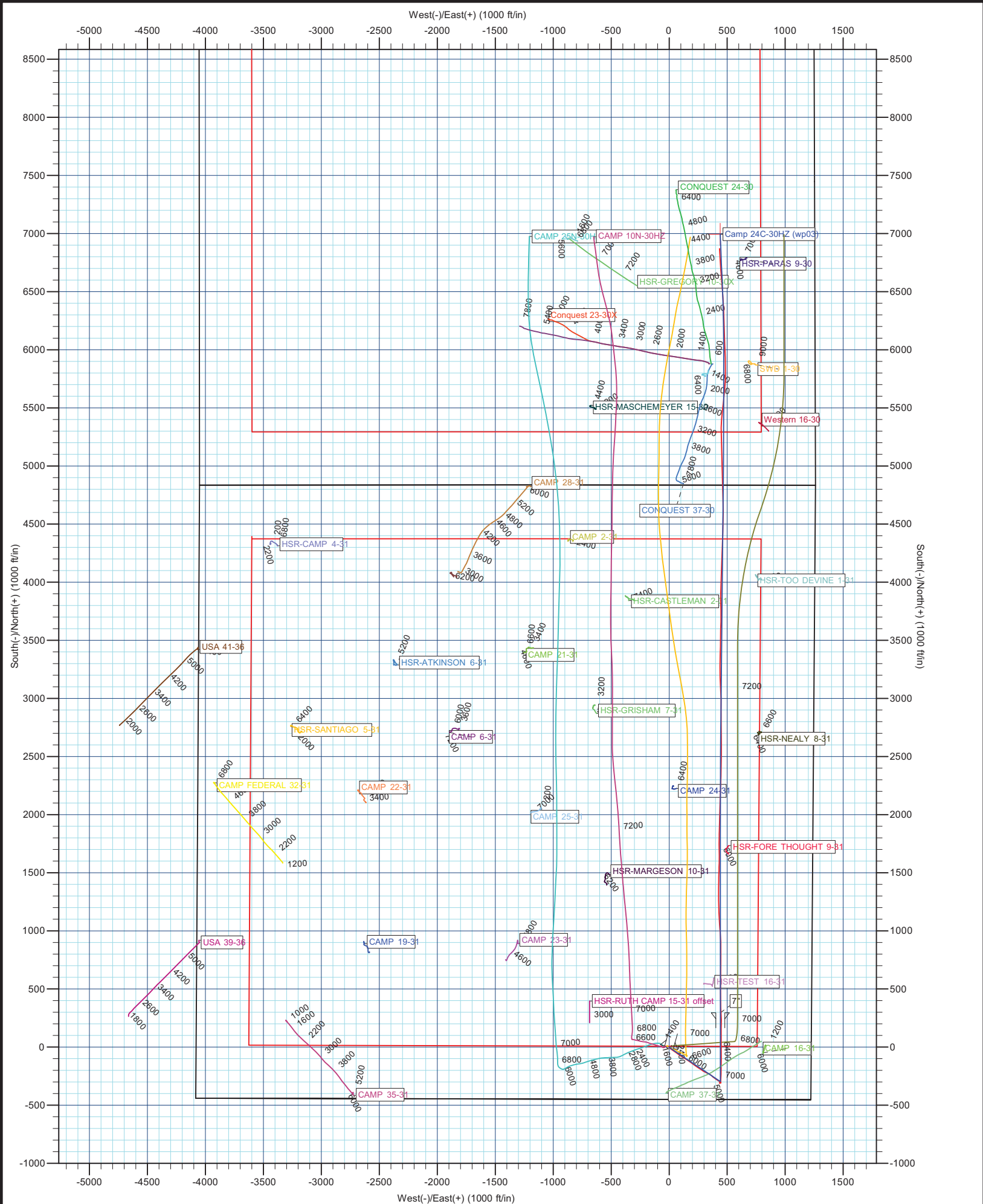
CASING DETAILS			
	TVD	MD	Name Size
	800.00	800.00	9 5/8" 9-5/8
	7279.00	7652.00	7" 7

FORMATION TOP DETAILS	
TVDPATH	MDPPath
3940.00	3984.59
4342.00	4385.49
6994.00	7059.77
7065.00	7148.20
7286.00	7179.70
7222.00	7411.93
7250.00	7477.09
7274.00	7584.16
	FORMATION
	PARKMAN
	SUSSEX
	SHARON SPRINGS
	NOBARRA A
	NOBARRA B
	NOBARRA C
	FORT HAYS
	CODELL

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)					
	TVD	+N/S	+E/W	Latitude	Longitude
Camp 24C-30HZ BHL	7320.00	693.53	440.26	40.195114	-104.699930
SWD 1-30 BHL	9690.92	5871.01	765.57	40.192032	-104.698766
					Shape Point
					Rectangle (Sides: L1000

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	VSect	
792.00	0.23	195.46	792.00	-0.29	-0.94	0.00	0.00	0.00	
1050.00	0.00	0.00	1050.00	-0.78	-1.08	0.09	180.00	-0.85	
1570.41	10.41	123.71	1567.55	-26.94	38.14	2.00	123.71	-24.49	
3990.13	10.41	123.71	3947.45	-29.57	40.179	0.00	0.00	-243.76	
4510.53	0.00	0.00	4465.00	-26.90	44.100	2.00	180.00	-267.41	
5160.53	0.00	0.00	5115.00	-29.57	44.100	0.00	0.00	-267.41	
6716.13	0.00	0.00	6670.80	-29.57	44.100	0.00	0.00	-267.41	
7136.13	34.36	0.00	6984.00	-193.70	44.100	10.00	0.00	-167.61	
7098.77	34.36	0.00	7098.77	-193.70	44.100	10.00	0.00	-167.61	
7652.19	89.18	0.00	7220.00	-29.93	44.100	0.00	0.00	323.54	
7652.19	89.18	0.00	7220.00	-29.93	44.100	10.00	0.00	323.54	
7652.19	89.18	0.00	7307.69	-22.98	44.100	0.00	0.00	2318.35	
9693.18	89.76	0.58	7308.07	-23.68	44.121	0.00	44.87	2359.32	
12525.78	89.76	0.58	7319.93	5168.65	469.84	0.00	0.00	5187.96	
12557.13	90.00	0.00	7320.00	5200.00	470.00	2.00	-67.49	5219.26	
13557.13	90.00	0.00	7320.00	6200.00	470.00	0.00	0.00	6312.28	
13672.88	90.00	357.68	7320.00	6315.72	467.66	2.00	-90.00	6332.63	
14351.25	90.00	357.68	7320.00	6993.53	440.26	0.00	0.00	7007.38	





Anadarko Petroleum Corp

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Camp 24C-30HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4949' GL @ 4974.00ft
Site:	WELD_CAMP 37-31HZ PAD	MD Reference:	25' RKB + 4949' GL @ 4974.00ft
Well:	Camp 24C-30HZ	North Reference:	True
Wellbore:	Camp 24C-30HZ	Survey Calculation Method:	Minimum Curvature
Design:	Camp 24C-30HZ	Database:	edmp

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_CAMP 37-31HZ PAD			
Site Position:		Northing:	1,307,943.36 usft	Latitude:	40.175944
From:	Lat/Long	Easting:	3,223,064.93 usft	Longitude:	-104.701706
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.52 °

Well	Camp 24C-30HZ					
Well Position	+N/-S	0.00 ft	Northing:	1,307,933.64 usft	Latitude:	40.175916
	+E/-W	0.00 ft	Easting:	3,223,120.90 usft	Longitude:	-104.701506
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,949.00 ft

Wellbore	Camp 24C-30HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/2/2012	8.69	66.85	52,926

Design	Camp 24C-30HZ				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	3.62	

Survey Program	Date	7/19/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
100.00	792.00	Survey #1 (Camp 24C-30HZ)	NS-GYRO-MS	NORTH SENSING GYROCOMPASSING M/S	
985.00	14,281.00	Survey #2 (Camp 24C-30HZ)	MWD	MWD - STANDARD	

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
	100.00	0.19	292.17	100.00	0.06	-0.15	0.05	0.19	0.19	0.00
	200.00	0.22	186.37	200.00	-0.07	-0.33	-0.09	0.33	0.03	-105.80
	300.00	0.22	164.46	300.00	-0.44	-0.30	-0.46	0.08	0.00	-21.91
	400.00	0.08	52.65	400.00	-0.58	-0.19	-0.59	0.26	-0.14	-111.81
	500.00	0.29	347.17	500.00	-0.29	-0.19	-0.31	0.27	0.21	-65.48
	600.00	0.06	291.86	600.00	-0.03	-0.30	-0.05	0.26	-0.23	-55.31
	700.00	0.33	259.78	700.00	-0.06	-0.63	-0.10	0.28	0.27	-32.08
	792.00	0.23	195.46	792.00	-0.29	-0.94	-0.34	0.34	-0.11	-69.91
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Well:	Camp 24C-30HZ	North Reference:	True
Wellbore:	Camp 24C-30HZ	Survey Calculation Method:	Minimum Curvature
Design:	Camp 24C-30HZ	Database:	edmp

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)
985.00	0.14	264.77	985.00	-0.68	-1.28	-0.76	0.12	-0.05	35.91
1,081.00	1.54	152.17	1,080.98	-1.83	-0.79	-1.88	1.67	1.46	-117.29
1,175.00	3.99	135.87	1,174.87	-5.30	2.08	-5.16	2.71	2.61	-17.34
1,270.00	6.50	127.72	1,269.46	-10.96	8.63	-10.39	2.75	2.64	-8.58
1,365.00	8.51	125.39	1,363.65	-18.32	18.62	-17.11	2.14	2.12	-2.45
1,460.00	10.48	123.34	1,457.34	-27.14	31.57	-25.09	2.10	2.07	-2.16
1,502.00	10.51	124.65	1,498.64	-31.42	37.91	-28.96	0.57	0.07	3.12
1,597.00	10.62	126.59	1,592.03	-41.56	52.06	-38.19	0.39	0.12	2.04
1,692.00	10.61	127.90	1,685.40	-52.15	65.99	-47.88	0.25	-0.01	1.38
1,787.00	10.89	123.90	1,778.74	-62.53	80.34	-57.33	0.84	0.29	-4.21
1,882.00	10.04	123.02	1,872.15	-72.05	94.74	-65.93	0.91	-0.89	-0.93
1,976.00	9.25	121.66	1,964.83	-80.48	108.04	-73.50	0.87	-0.84	-1.45
2,071.00	9.02	121.17	2,058.62	-88.34	120.91	-80.53	0.26	-0.24	-0.52
2,166.00	7.66	121.54	2,152.61	-95.51	132.68	-86.94	1.43	-1.43	0.39
2,261.00	8.77	126.96	2,246.64	-103.18	143.86	-93.89	1.42	1.17	5.71
2,356.00	9.44	122.82	2,340.44	-111.75	156.20	-101.67	0.99	0.71	-4.36
2,451.00	9.46	124.44	2,434.15	-120.39	169.18	-109.47	0.28	0.02	1.71
2,546.00	9.06	122.23	2,527.92	-128.79	181.95	-117.05	0.56	-0.42	-2.33
2,641.00	9.39	121.96	2,621.69	-136.89	194.85	-124.31	0.35	0.35	-0.28
2,736.00	10.56	129.87	2,715.25	-146.57	208.11	-133.14	1.89	1.23	8.33
2,830.00	12.46	129.96	2,807.36	-158.60	222.49	-144.24	2.02	2.02	0.10
2,925.00	13.07	119.86	2,900.02	-170.54	239.67	-155.07	2.43	0.64	-10.63
3,020.00	11.85	121.07	2,992.78	-180.92	257.34	-164.31	1.31	-1.28	1.27
3,115.00	11.08	123.63	3,085.89	-191.01	273.29	-173.38	0.97	-0.81	2.69
3,210.00	9.76	129.78	3,179.32	-201.22	287.08	-182.69	1.82	-1.39	6.47
3,305.00	9.47	116.15	3,273.00	-209.82	300.29	-190.44	2.41	-0.31	-14.35
3,400.00	6.68	117.46	3,367.05	-215.81	312.21	-195.67	2.94	-2.94	1.38
3,495.00	6.35	116.19	3,461.43	-220.68	321.83	-199.92	0.38	-0.35	-1.34
3,589.00	9.12	116.48	3,554.57	-226.29	333.16	-204.81	2.95	2.95	0.31
3,684.00	8.68	113.64	3,648.43	-232.52	346.47	-210.19	0.65	-0.46	-2.99
3,779.00	7.67	127.67	3,742.47	-239.27	358.05	-216.19	2.35	-1.06	14.77
3,874.00	8.54	133.32	3,836.52	-247.99	368.20	-224.25	1.24	0.92	5.95
3,969.00	10.35	127.49	3,930.23	-258.02	380.11	-233.51	2.15	1.91	-6.14
4,064.00	11.38	125.52	4,023.53	-268.66	394.51	-243.22	1.15	1.08	-2.07
4,159.00	10.93	123.70	4,116.73	-279.10	409.63	-252.69	0.60	-0.47	-1.92
4,253.00	8.43	122.79	4,209.39	-287.78	422.84	-260.52	2.66	-2.66	-0.97
4,349.00	4.74	118.76	4,304.74	-293.50	432.23	-265.63	3.87	-3.84	-4.20
4,443.00	2.45	139.33	4,398.55	-296.90	436.95	-268.72	2.76	-2.44	21.88
4,538.00	1.44	137.85	4,493.49	-299.32	439.07	-271.01	1.06	-1.06	-1.56
4,633.00	1.03	167.84	4,588.47	-301.04	440.05	-272.66	0.79	-0.43	31.57
4,728.00	0.91	170.56	4,683.46	-302.62	440.36	-274.22	0.14	-0.13	2.86
4,823.00	1.36	216.07	4,778.44	-304.28	439.82	-275.90	1.02	0.47	47.91
4,918.00	2.64	224.25	4,873.38	-306.75	437.63	-278.52	1.38	1.35	8.61

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Survey Report

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Well:	Camp 24C-30HZ	North Reference:	True
Wellbore:	Camp 24C-30HZ	Survey Calculation Method:	Minimum Curvature
Design:	Camp 24C-30HZ	Database:	edmp

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)
5,014.00	1.33	249.65	4,969.32	-308.72	435.04	-280.65	1.61	-1.36	26.46
5,109.00	0.14	281.99	5,064.31	-309.08	433.89	-281.08	1.28	-1.25	34.04
5,204.00	0.56	32.02	5,159.31	-308.67	434.02	-280.65	0.65	0.44	115.82
5,298.00	0.70	48.92	5,253.31	-307.90	434.70	-279.84	0.25	0.15	17.98
5,392.00	1.09	53.87	5,347.30	-307.00	435.86	-278.87	0.42	0.41	5.27
5,487.00	1.09	49.40	5,442.28	-305.87	437.27	-277.66	0.09	0.00	-4.71
5,582.00	1.04	50.80	5,537.26	-304.74	438.63	-276.44	0.06	-0.05	1.47
5,677.00	0.78	63.03	5,632.25	-303.90	439.87	-275.53	0.34	-0.27	12.87
5,771.00	0.82	67.22	5,726.24	-303.35	441.06	-274.91	0.08	0.04	4.46
5,866.00	0.56	82.27	5,821.23	-303.03	442.15	-274.51	0.33	-0.27	15.84
5,961.00	0.69	149.82	5,916.23	-303.46	442.90	-274.90	0.74	0.14	71.11
6,056.00	0.20	275.85	6,011.23	-303.94	443.02	-275.36	0.87	-0.52	132.66
6,151.00	0.44	63.82	6,106.23	-303.76	443.18	-275.18	0.65	0.25	155.76
6,246.00	0.53	92.03	6,201.22	-303.61	443.95	-274.98	0.27	0.09	29.69
6,340.00	0.44	148.84	6,295.22	-303.94	444.57	-275.27	0.50	-0.10	60.44
6,435.00	0.58	153.71	6,390.22	-304.68	444.97	-275.98	0.15	0.15	5.13
6,530.00	1.00	178.22	6,485.21	-305.94	445.21	-277.23	0.56	0.44	25.80
6,624.00	0.97	183.83	6,579.19	-307.55	445.18	-278.84	0.11	-0.03	5.97
6,656.00	1.25	190.93	6,611.19	-308.17	445.10	-279.46	0.97	0.88	22.19
6,688.00	1.19	186.20	6,643.18	-308.84	444.99	-280.13	0.37	-0.19	-14.78
6,719.00	0.49	316.08	6,674.18	-309.06	444.87	-280.37	5.00	-2.26	418.97
6,751.00	4.35	356.58	6,706.15	-307.75	444.70	-279.07	12.47	12.06	126.56
6,783.00	7.79	0.30	6,737.96	-304.37	444.64	-275.70	10.81	10.75	11.63
6,815.00	9.09	0.73	6,769.61	-299.68	444.68	-271.01	4.07	4.06	1.34
6,846.00	9.40	358.06	6,800.21	-294.70	444.63	-266.04	1.71	1.00	-8.61
6,878.00	12.64	359.56	6,831.62	-288.58	444.51	-259.95	10.16	10.13	4.69
6,909.00	15.71	0.78	6,861.67	-280.99	444.54	-252.37	9.95	9.90	3.94
6,941.00	18.44	2.67	6,892.26	-271.60	444.84	-242.98	8.70	8.53	5.91
6,972.00	21.00	5.38	6,921.44	-261.17	445.59	-232.53	8.77	8.26	8.74
7,004.00	23.62	5.07	6,951.04	-249.08	446.69	-220.38	8.20	8.19	-0.97
7,036.00	26.52	4.25	6,980.02	-235.57	447.79	-206.83	9.13	9.06	-2.56
7,067.00	29.72	2.95	7,007.36	-220.99	448.70	-192.22	10.51	10.32	-4.19
7,099.00	32.97	0.62	7,034.69	-204.35	449.20	-175.59	10.84	10.16	-7.28
7,130.00	36.47	359.93	7,060.16	-186.70	449.28	-157.96	11.36	11.29	-2.23
7,162.00	39.15	0.02	7,085.44	-167.08	449.27	-138.39	8.38	8.38	0.28
7,194.00	41.35	0.94	7,109.86	-146.41	449.45	-117.75	7.12	6.88	2.88
7,225.00	44.51	0.91	7,132.56	-125.30	449.79	-96.66	10.19	10.19	-0.10
7,257.00	46.76	359.90	7,154.93	-102.43	449.95	-73.82	7.38	7.03	-3.16
7,288.00	49.27	358.79	7,175.67	-79.39	449.68	-50.84	8.52	8.10	-3.58
7,320.00	52.83	357.83	7,195.78	-54.52	448.94	-26.07	11.37	11.13	-3.00
7,352.00	55.40	358.71	7,214.54	-28.60	448.16	-0.26	8.33	8.03	2.75
7,383.00	57.74	358.57	7,231.61	-2.74	447.55	25.51	7.56	7.55	-0.45
7,415.00	61.32	359.44	7,247.84	24.83	447.07	53.00	11.43	11.19	2.72

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Site:	WELD_CAMP 37-31HZ PAD	MD Reference:	25' RKB + 4949' GL @ 4974.00ft
Well:	Camp 24C-30HZ	North Reference:	True
Wellbore:	Camp 24C-30HZ	Survey Calculation Method:	Minimum Curvature
Design:	Camp 24C-30HZ	Database:	edmp

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)
7,446.00	65.47	0.51	7,261.72	52.54	447.06	80.66	13.74	13.39	3.45
7,478.00	68.07	0.97	7,274.34	81.94	447.45	110.02	8.23	8.13	1.44
7,509.00	69.19	1.22	7,285.64	110.80	448.00	138.86	3.69	3.61	0.81
7,541.00	72.83	1.80	7,296.05	141.05	448.80	169.10	11.50	11.38	1.81
7,573.00	76.23	2.49	7,304.58	171.86	449.95	199.92	10.83	10.63	2.16
7,604.00	79.94	0.75	7,310.98	202.17	450.81	230.23	13.17	11.97	-5.61
7,636.00	81.93	358.03	7,316.02	233.77	450.47	261.74	10.45	6.22	-8.50
7,668.00	83.35	356.15	7,320.12	265.46	448.86	293.27	7.32	4.44	-5.88
7,689.00	84.46	355.87	7,322.35	286.29	447.40	313.96	5.45	5.29	-1.33
7,742.64	88.48	358.07	7,325.66	339.74	444.57	367.13	8.53	7.49	4.10
7"									
7,763.00	90.00	358.90	7,325.93	360.09	444.04	387.40	8.53	7.49	4.08
7,854.00	90.12	0.96	7,325.83	451.09	443.93	478.21	2.27	0.13	2.26
7,946.00	89.91	359.32	7,325.81	543.08	444.15	570.04	1.80	-0.23	-1.78
8,037.00	90.68	0.22	7,325.34	634.08	443.78	660.83	1.30	0.85	0.99
8,129.00	91.67	1.08	7,323.45	726.05	444.83	752.68	1.43	1.08	0.93
8,220.00	91.32	0.73	7,321.08	817.01	446.26	843.55	0.54	-0.38	-0.38
8,310.00	88.64	357.73	7,321.11	906.98	445.06	933.27	4.47	-2.98	-3.33
8,401.00	89.26	355.80	7,322.78	997.82	439.92	1,023.60	2.23	0.68	-2.12
8,493.00	90.00	355.64	7,323.37	1,089.56	433.06	1,114.72	0.82	0.80	-0.17
8,616.00	91.29	358.51	7,321.99	1,212.37	426.78	1,236.90	2.56	1.05	2.33
8,708.00	92.65	0.62	7,318.83	1,304.31	426.08	1,328.61	2.73	1.48	2.29
8,800.00	92.04	0.20	7,315.06	1,396.23	426.74	1,420.38	0.80	-0.66	-0.46
8,893.00	91.11	2.54	7,312.50	1,489.16	428.96	1,513.27	2.71	-1.00	2.52
8,985.00	89.29	0.20	7,312.18	1,581.12	431.16	1,605.19	3.22	-1.98	-2.54
9,077.00	90.37	0.14	7,312.46	1,673.12	431.43	1,697.02	1.18	1.17	-0.07
9,169.00	91.06	359.32	7,311.31	1,765.11	431.00	1,788.80	1.16	0.75	-0.89
9,261.00	90.86	2.40	7,309.77	1,857.08	432.38	1,880.67	3.35	-0.22	3.35
9,353.00	89.01	1.33	7,309.87	1,949.02	435.37	1,972.62	2.32	-2.01	-1.16
9,448.00	88.52	1.64	7,311.92	2,043.97	437.84	2,067.53	0.61	-0.52	0.33
9,543.00	89.81	2.06	7,313.30	2,138.91	440.90	2,162.47	1.43	1.36	0.44
9,637.00	89.51	1.62	7,313.86	2,232.86	443.92	2,256.43	0.57	-0.32	-0.47
9,733.00	88.94	1.61	7,315.16	2,328.81	446.63	2,352.36	0.59	-0.59	-0.01
9,828.00	90.37	0.96	7,315.73	2,423.78	448.76	2,447.27	1.65	1.51	-0.68
9,922.00	89.44	0.89	7,315.89	2,517.77	450.27	2,541.17	0.99	-0.99	-0.07
10,017.00	89.91	359.67	7,316.43	2,612.76	450.74	2,636.01	1.38	0.49	-1.28
10,113.00	90.37	359.19	7,316.19	2,708.76	449.78	2,731.75	0.69	0.48	-0.50
10,208.00	89.45	358.76	7,316.34	2,803.74	448.08	2,826.43	1.07	-0.97	-0.45
10,303.00	91.85	1.08	7,315.26	2,898.72	447.95	2,921.22	3.51	2.53	2.44
10,398.00	89.88	358.71	7,313.83	2,993.70	447.78	3,015.99	3.24	-2.07	-2.49
10,493.00	88.03	356.16	7,315.56	3,088.58	443.53	3,110.41	3.32	-1.95	-2.68
10,588.00	89.81	358.97	7,317.35	3,183.46	439.49	3,204.85	3.50	1.87	2.96
10,684.00	90.88	0.02	7,316.77	3,279.45	438.65	3,300.60	1.56	1.11	1.09
10,779.00	90.49	1.74	7,315.64	3,374.43	440.11	3,395.48	1.86	-0.41	1.81

Anadarko Petroleum Corp

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Camp 24C-30HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4949' GL @ 4974.00ft
Site:	WELD_CAMP 37-31HZ PAD	MD Reference:	25' RKB + 4949' GL @ 4974.00ft
Well:	Camp 24C-30HZ	North Reference:	True
Wellbore:	Camp 24C-30HZ	Survey Calculation Method:	Minimum Curvature
Design:	Camp 24C-30HZ	Database:	edmp

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)
10,874.00	89.88	1.40	7,315.33	3,469.39	442.71	3,490.42	0.74	-0.64	-0.36
10,969.00	88.83	0.62	7,316.40	3,564.37	444.38	3,585.31	1.38	-1.11	-0.82
11,064.00	90.86	1.95	7,316.66	3,659.34	446.51	3,680.23	2.55	2.14	1.40
11,160.00	87.60	357.94	7,317.95	3,755.30	446.42	3,775.99	5.38	-3.40	-4.18
11,255.00	89.81	359.60	7,320.10	3,850.24	444.38	3,870.62	2.91	2.33	1.75
11,349.00	91.85	2.53	7,318.73	3,944.20	446.13	3,964.50	3.80	2.17	3.12
11,444.00	91.54	2.05	7,315.92	4,039.08	449.92	4,059.43	0.60	-0.33	-0.51
11,539.00	91.23	0.90	7,313.63	4,134.02	452.37	4,154.33	1.25	-0.33	-1.21
11,634.00	93.45	2.57	7,309.75	4,228.89	455.24	4,249.19	2.92	2.34	1.76
11,729.00	93.03	2.35	7,304.38	4,323.65	459.31	4,344.02	0.50	-0.44	-0.23
11,823.00	92.90	2.06	7,299.52	4,417.46	462.92	4,437.87	0.34	-0.14	-0.31
11,918.00	91.54	1.49	7,295.84	4,512.34	465.86	4,532.74	1.55	-1.43	-0.60
12,013.00	87.53	358.77	7,296.61	4,607.30	466.08	4,627.54	5.10	-4.22	-2.86
12,108.00	86.97	358.75	7,301.17	4,702.17	464.03	4,722.09	0.59	-0.59	-0.02
12,204.00	88.03	358.54	7,305.35	4,798.05	461.76	4,817.63	1.13	1.10	-0.22
12,298.00	90.68	358.48	7,306.41	4,892.01	459.32	4,911.24	2.82	2.82	-0.06
12,393.00	91.06	358.26	7,304.97	4,986.96	456.61	5,005.83	0.46	0.40	-0.23
12,487.00	90.25	359.28	7,303.89	5,080.93	454.60	5,099.49	1.39	-0.86	1.09
12,582.00	90.19	358.03	7,303.53	5,175.90	452.37	5,194.13	1.32	-0.06	-1.32
12,677.00	91.85	358.23	7,301.84	5,270.83	449.27	5,288.68	1.76	1.75	0.21
12,772.00	92.65	2.83	7,298.11	5,365.73	450.14	5,383.44	4.91	0.84	4.84
12,867.00	91.54	6.42	7,294.63	5,460.34	457.80	5,478.34	3.95	-1.17	3.78
12,962.00	91.11	6.21	7,292.44	5,554.73	468.24	5,573.21	0.50	-0.45	-0.22
13,057.00	89.51	5.49	7,291.92	5,649.23	477.93	5,668.14	1.85	-1.68	-0.76
13,151.00	88.83	2.19	7,293.28	5,743.00	484.22	5,762.11	3.58	-0.72	-3.51
13,246.00	89.01	359.67	7,295.07	5,837.96	485.76	5,856.98	2.66	0.19	-2.65
13,341.00	88.77	358.60	7,296.92	5,932.93	484.33	5,951.67	1.15	-0.25	-1.13
13,436.00	88.33	357.16	7,299.32	6,027.83	480.82	6,046.16	1.58	-0.46	-1.52
13,531.00	89.82	357.99	7,300.85	6,122.73	476.80	6,140.62	1.80	1.57	0.87
13,626.00	89.82	358.76	7,301.15	6,217.69	474.10	6,235.22	0.81	0.00	0.81
13,721.00	87.29	357.43	7,303.55	6,312.60	470.95	6,329.74	3.01	-2.66	-1.40
13,816.00	86.36	357.25	7,308.81	6,407.35	466.54	6,424.02	1.00	-0.98	-0.19
13,911.00	88.52	355.24	7,313.05	6,502.04	460.33	6,518.13	3.10	2.27	-2.12
14,006.00	88.20	355.64	7,315.77	6,596.70	452.78	6,612.13	0.54	-0.34	0.42
14,101.00	88.39	356.07	7,318.60	6,691.41	445.92	6,706.22	0.49	0.20	0.45
14,197.00	87.90	356.23	7,321.70	6,787.15	439.47	6,801.35	0.54	-0.51	0.17
14,229.00	87.96	356.57	7,322.86	6,819.06	437.46	6,833.08	1.08	0.19	1.06
last mwd survey									
14,281.00	88.06	357.12	7,324.67	6,870.95	434.60	6,884.68	1.07	0.19	1.06
projection									