

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_CAMP 37-31HZ PAD

CAMP 25N-30HZ

CAMP 25N-30HZ

Design: CAMP 25N-30HZ

Standard Survey Report

01 June, 2012

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Azimuths to True North

Magnetic North: 8.69°

Magnetic Field

Strength: 52926.4nT

Dip Angle: 66.85°

Date: 5/2/2012

Model: IGRF2010

Project: COLORADO NORTHERN ZONE - 83

Site: WELD CAMP 37-31HZ PAD

Well: CAMP 25N-30HZ

Wellbore: CAMP 25N-30HZ

Section: SHL:

Design: CAMP 25N-30HZ

Latitude: 40.175944

Longitude: -104.701706

GL: 4949.00

KB: 25' RKB + 4949' GL @ 4974.00ft



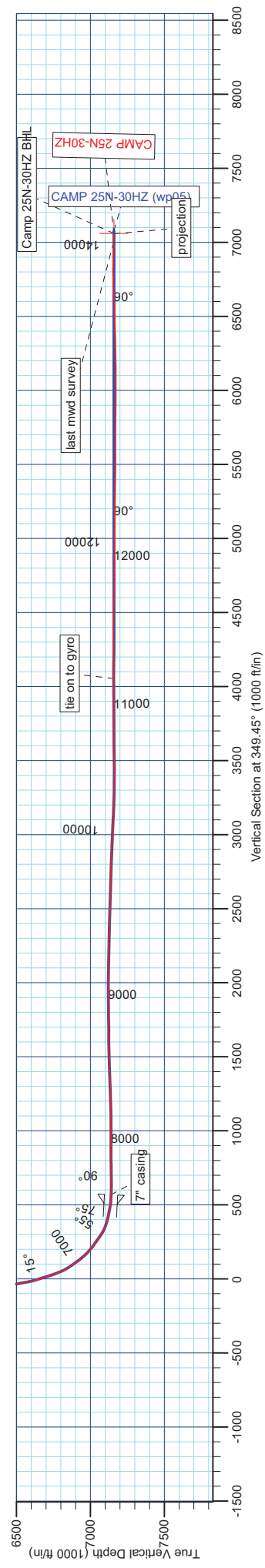
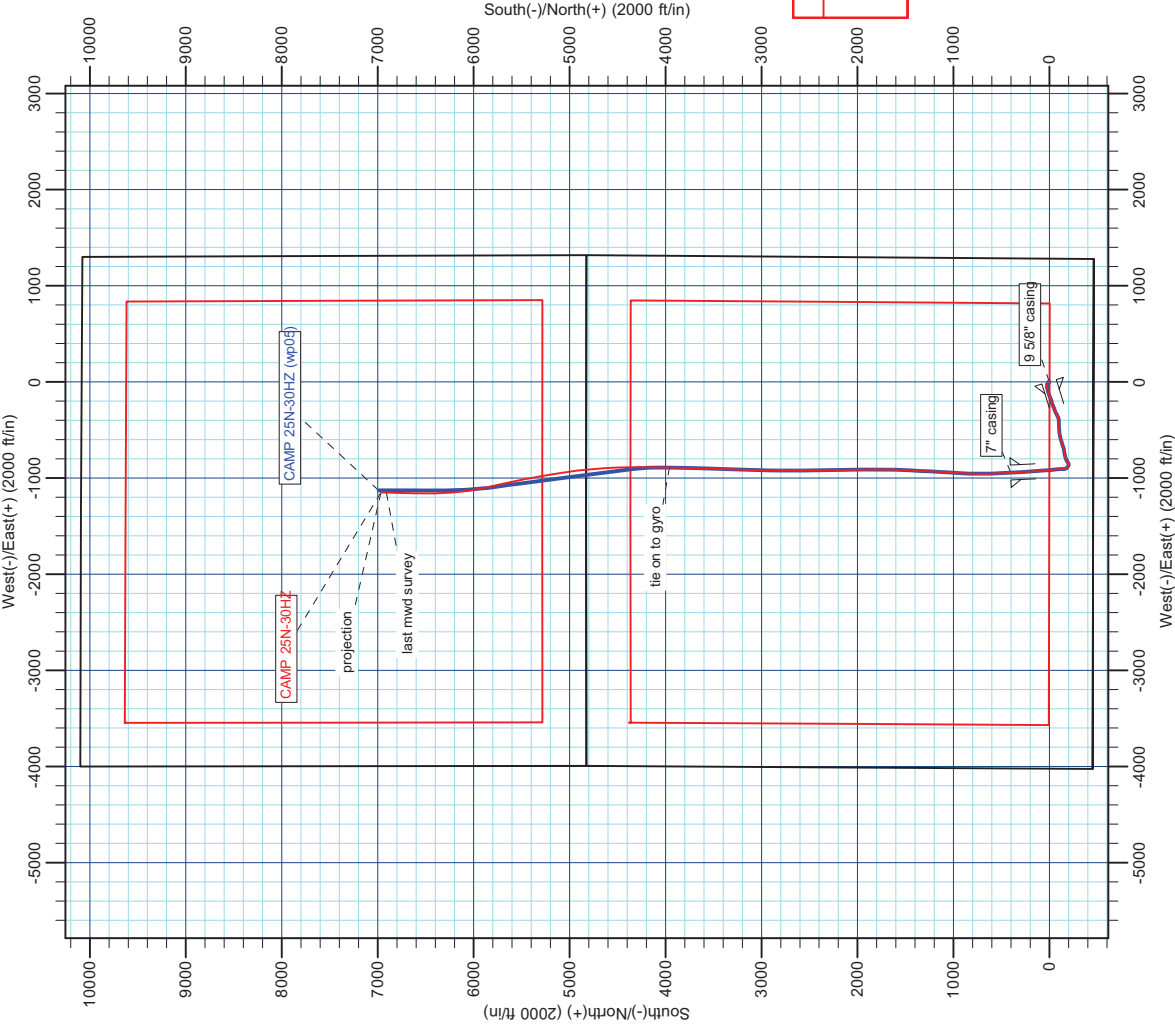
WELL DETAILS: CAMP 25N-30HZ				
	Ground Level:	4949.00	Latitude	Longitude
	Easting	3223064.93	40.175944	-104.701706
				Slot

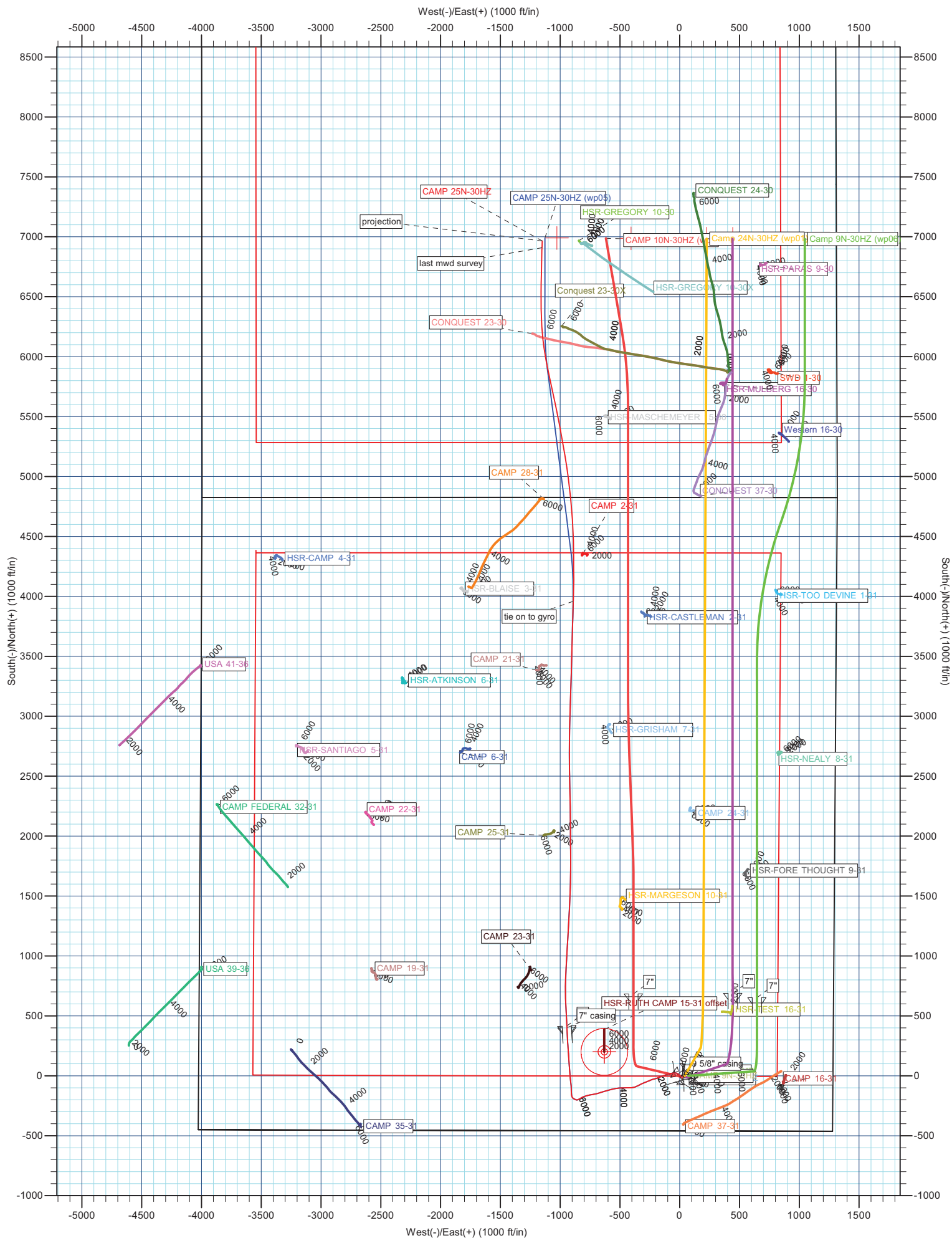
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	
11115.00	89.66	1.53	7158.46	3959.14	-890.71	0.00	0.00	4050.44	
11560.25	90.02	352.64	7159.70	4403.37	-913.32	2.00	-87.65	4492.60	
13042.62	90.02	352.64	7159.08	5873.52	-1103.28	0.00	0.00	5974.25	
13410.75	90.00	0.00	7159.00	6240.63	-1126.90	2.00	90.19	6340.44	
14160.75	90.00	0.00	7159.00	6990.63	-1126.90	0.00	0.00	7080.88	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
Camp 25N-30HZ BHL	7159.00	6990.63	-1026.90	40.195134	-104.705382
				Point	Point

FORMATION TOP DETAILS			
TVDPath	MDPath	Formation	
3948.00	3985.36	PARKMAN	
4366.00	4409.71	SUSSEX	
7019.00	7179.50	SHARON SPRINGS	
7079.00	7284.03	NIORARA A	
7102.00	7337.09	NIORARA B	

CASING DETAILS			
TVD	MD	Name	Size
853.30	853.32	9 5/8" casing	9-5/8
7140.74	7555.72	7" casing	7





Anadarko Petroleum Corp

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well CAMP 25N-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 25N-30HZ	North Reference:	True
Wellbore:	CAMP 25N-30HZ	Survey Calculation Method:	Minimum Curvature
Design:	CAMP 25N-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 25N-30HZ					
Well Position	+N/-S	0.00 ft	Northing:	1,307,943.34 usft	Latitude:	40.175944
	+E/-W	0.00 ft	Easting:	3,223,064.93 usft	Longitude:	-104.701706
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,949.00 ft

Wellbore	CAMP 25N-30HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/2/2012	8.69	66.85	52,926

Design	CAMP 25N-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	349.45	

Survey Program	Date	6/1/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
100.00	11,115.00	Survey #1 (CAMP 25N-30HZ)	NS-GYRO-MS	NORTH SENSING GYROCOMPASSING M/S	
11,199.00	14,144.00	Survey #2 (CAMP 25N-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	1.00	53.72	99.99	0.51	0.70	0.38	1.00	1.00	0.00	
200.00	0.26	342.27	199.99	1.24	1.33	0.98	0.95	-0.74	-71.45	
300.00	0.71	122.20	299.99	1.13	1.79	0.78	0.93	0.45	139.93	
400.00	0.27	194.96	399.98	0.57	2.26	0.15	0.68	-0.45	72.76	
500.00	0.74	66.14	499.98	0.61	2.78	0.09	0.93	0.47	-128.82	
600.00	0.34	263.11	599.98	0.83	3.08	0.25	1.06	-0.40	-163.02	
700.00	0.34	346.60	699.98	1.08	2.72	0.57	0.45	0.00	83.49	
800.00	0.54	170.29	799.98	0.91	2.73	0.39	0.87	0.20	-176.31	
853.32	0.05	73.01	853.30	0.67	2.80	0.15	1.02	-0.91	-182.45	

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Survey Report

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Site:	WELD_CAMP 37-31HZ PAD	MD Reference:	25' RKB + 4949' GL @ 4974.00ft
Well:	CAMP 25N-30HZ	North Reference:	True
Wellbore:	CAMP 25N-30HZ	Survey Calculation Method:	Minimum Curvature
Design:	CAMP 25N-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)
9 5/8" casing									
900.00	0.49	1.57	899.98	0.88	2.83	0.35	1.02	0.94	-153.04
1,000.00	0.58	108.55	999.97	1.15	3.32	0.52	0.86	0.09	106.98
1,100.00	0.61	333.83	1,099.97	1.46	3.56	0.79	1.10	0.03	-134.72
1,200.00	4.13	312.67	1,199.87	4.38	0.68	4.18	3.56	3.51	-21.16
1,300.00	7.91	304.67	1,299.30	10.74	-7.63	11.95	3.87	3.79	-8.00
1,400.00	8.93	302.25	1,398.22	18.79	-19.85	22.11	1.08	1.02	-2.42
1,500.00	11.61	272.80	1,496.68	23.43	-36.48	29.71	5.80	2.68	-29.46
1,600.00	12.42	264.09	1,594.50	22.81	-57.22	32.91	1.98	0.81	-8.71
1,700.00	12.28	256.27	1,692.19	19.18	-78.24	33.19	1.68	-0.14	-7.82
1,800.00	11.60	254.73	1,790.03	14.01	-98.27	31.77	0.75	-0.68	-1.54
1,900.00	10.42	253.12	1,888.19	8.74	-116.62	29.95	1.21	-1.17	-1.62
2,000.00	10.01	247.91	1,986.60	2.85	-133.33	27.21	1.01	-0.41	-5.20
2,100.00	8.26	245.87	2,085.33	-3.36	-147.94	23.79	1.78	-1.75	-2.05
2,200.00	7.75	250.61	2,184.36	-8.54	-160.85	21.07	0.83	-0.51	4.74
2,300.00	6.21	252.91	2,283.61	-12.37	-172.39	19.41	1.56	-1.54	2.30
2,400.00	6.60	240.41	2,383.00	-16.79	-182.55	16.93	1.44	0.38	-12.50
2,500.00	8.21	254.51	2,482.17	-21.54	-194.43	14.44	2.42	1.62	14.10
2,600.00	10.77	260.01	2,580.79	-25.06	-210.52	13.91	2.71	2.56	5.50
2,700.00	10.18	249.82	2,679.13	-29.74	-228.02	12.53	1.94	-0.59	-10.19
2,800.00	8.41	245.34	2,777.82	-35.84	-242.97	9.27	1.92	-1.78	-4.48
2,900.00	11.95	248.15	2,876.23	-42.74	-259.22	5.46	3.57	3.54	2.80
3,000.00	11.87	250.44	2,974.08	-50.04	-278.52	1.82	0.48	-0.08	2.29
3,100.00	11.62	249.30	3,071.98	-57.04	-297.63	-1.57	0.34	-0.25	-1.14
3,200.00	11.02	241.93	3,170.04	-65.10	-315.49	-6.22	1.57	-0.61	-7.36
3,300.00	10.06	242.15	3,268.36	-73.67	-331.63	-11.69	0.96	-0.96	0.22
3,400.00	7.53	245.41	3,367.17	-80.48	-345.31	-15.88	2.58	-2.53	3.27
3,500.00	6.90	248.07	3,466.38	-85.44	-356.84	-18.65	0.71	-0.63	2.66
3,600.00	6.97	244.98	3,565.65	-90.25	-367.90	-21.35	0.38	0.07	-3.09
3,700.00	6.96	252.19	3,664.92	-94.67	-379.16	-23.63	0.87	-0.01	7.20
3,800.00	6.30	260.73	3,764.25	-97.40	-390.34	-24.27	1.18	-0.66	8.54
3,900.00	7.88	268.79	3,863.49	-98.43	-402.60	-23.03	1.87	1.59	8.06
4,000.00	8.33	267.42	3,962.49	-98.90	-416.69	-20.92	0.49	0.45	-1.37
4,100.00	10.96	268.52	4,061.06	-99.47	-433.43	-18.41	2.63	2.63	1.10
4,200.00	10.62	269.07	4,159.30	-99.87	-452.15	-15.37	0.35	-0.33	0.55
4,300.00	9.59	267.83	4,257.74	-100.33	-469.68	-12.62	1.06	-1.04	-1.25
4,400.00	9.12	267.94	4,356.42	-100.93	-485.92	-10.24	0.47	-0.47	0.11
4,500.00	9.80	265.80	4,455.06	-101.84	-502.32	-8.12	0.76	0.68	-2.14
4,600.00	8.52	264.17	4,553.78	-103.22	-518.18	-6.57	1.30	-1.27	-1.62
4,700.00	11.21	260.38	4,652.29	-105.60	-535.14	-5.80	2.76	2.69	-3.79
4,800.00	12.28	259.82	4,750.20	-109.10	-555.20	-5.58	1.08	1.07	-0.57
4,900.00	11.87	254.71	4,847.99	-113.69	-575.59	-6.36	1.15	-0.42	-5.11
5,000.00	11.55	253.85	4,945.91	-119.19	-595.12	-8.18	0.37	-0.32	-0.86

Anadarko Petroleum Corp

Survey Report

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Site:	WELD_CAMP 37-31HZ PAD	MD Reference:	25' RKB + 4949' GL @ 4974.00ft
Well:	CAMP 25N-30HZ	North Reference:	True
Wellbore:	CAMP 25N-30HZ	Survey Calculation Method:	Minimum Curvature
Design:	CAMP 25N-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)	
5,100.00	13.87	254.92	5,043.45	-125.09	-616.31	-10.10	2.34	2.32	1.06	
5,200.00	12.83	253.12	5,140.75	-131.43	-638.51	-12.27	1.12	-1.04	-1.79	
5,300.00	11.08	251.55	5,238.57	-137.70	-658.25	-14.82	1.79	-1.76	-1.58	
5,400.00	9.51	252.29	5,336.96	-143.25	-675.23	-17.17	1.58	-1.57	0.75	
5,500.00	9.08	254.57	5,435.65	-147.86	-690.70	-18.87	0.57	-0.43	2.28	
5,600.00	9.45	257.51	5,534.35	-151.73	-706.31	-19.81	0.60	0.37	2.94	
5,700.00	10.13	262.92	5,632.89	-154.59	-723.05	-19.56	1.15	0.69	5.41	
5,800.00	9.85	261.74	5,731.38	-156.90	-740.24	-18.68	0.35	-0.29	-1.18	
5,900.00	11.72	256.02	5,829.61	-160.59	-758.56	-18.95	2.15	1.87	-5.72	
6,000.00	10.19	254.19	5,927.79	-165.45	-776.92	-20.36	1.57	-1.53	-1.83	
6,100.00	10.08	250.78	6,026.23	-170.74	-793.69	-22.49	0.61	-0.11	-3.41	
6,200.00	7.05	248.37	6,125.10	-175.88	-807.66	-24.99	3.06	-3.04	-2.41	
6,300.00	12.25	241.16	6,223.66	-183.26	-822.67	-29.50	5.33	5.20	-7.22	
6,400.00	10.93	237.91	6,321.62	-193.42	-839.99	-36.31	1.47	-1.32	-3.25	
6,450.00	10.50	245.62	6,370.75	-197.82	-848.16	-39.14	2.99	-0.86	15.42	
6,480.00	10.31	250.19	6,400.25	-199.86	-853.17	-40.23	2.82	-0.63	15.25	
6,510.00	10.53	261.81	6,429.76	-201.16	-858.41	-40.54	7.02	0.71	38.70	
6,540.00	12.08	284.26	6,459.19	-200.77	-864.17	-39.11	15.43	5.17	74.84	
6,570.00	14.87	295.60	6,488.37	-198.34	-870.69	-35.52	12.78	9.32	37.81	
6,600.00	14.63	298.46	6,517.38	-194.87	-877.49	-30.87	2.55	-0.80	9.52	
6,630.00	14.79	299.51	6,546.40	-191.18	-884.15	-26.02	1.04	0.53	3.51	
6,660.00	14.00	304.30	6,575.46	-187.24	-890.49	-20.99	4.76	-2.62	15.98	
6,690.00	15.03	322.24	6,604.51	-182.12	-895.87	-14.97	15.30	3.41	59.78	
6,720.00	17.11	335.00	6,633.35	-175.04	-900.12	-7.24	13.63	6.95	42.54	
6,750.00	18.26	342.79	6,661.93	-166.55	-903.37	1.71	8.76	3.83	25.97	
6,780.00	18.80	353.95	6,690.39	-157.25	-905.28	11.20	11.94	1.81	37.19	
6,810.00	18.05	358.73	6,718.85	-147.80	-905.89	20.61	5.64	-2.52	15.95	
6,840.00	17.38	358.57	6,747.43	-138.67	-906.10	29.62	2.23	-2.22	-0.54	
6,870.00	20.33	359.67	6,775.82	-128.98	-906.24	39.17	9.91	9.84	3.66	
6,900.00	26.12	359.02	6,803.37	-117.15	-906.39	50.82	19.32	19.30	-2.16	
6,930.00	29.30	357.65	6,829.93	-103.21	-906.80	64.60	10.79	10.58	-4.56	
6,960.00	31.93	356.07	6,855.75	-87.96	-907.65	79.75	9.18	8.78	-5.26	
6,990.00	35.01	354.29	6,880.77	-71.48	-909.05	96.21	10.77	10.26	-5.94	
7,020.00	35.32	352.23	6,905.30	-54.33	-911.07	113.45	4.10	1.06	-6.88	
7,050.00	38.73	351.83	6,929.24	-36.44	-913.58	131.49	11.38	11.35	-1.34	
7,080.00	41.28	355.08	6,952.22	-17.29	-915.77	150.72	11.00	8.51	10.86	
7,110.00	44.20	356.01	6,974.26	3.01	-917.34	170.96	9.96	9.74	3.10	
7,140.00	49.06	355.04	6,994.85	24.75	-919.05	192.64	16.36	16.19	-3.24	
7,170.00	54.27	356.46	7,013.45	48.20	-920.78	216.02	17.75	17.36	4.71	
7,200.00	54.23	356.59	7,030.98	72.51	-922.26	240.18	0.40	-0.14	0.46	
7,230.00	53.92	355.74	7,048.59	96.74	-923.88	264.31	2.51	-1.02	-2.84	
7,260.00	55.13	355.41	7,065.99	121.10	-925.77	288.60	4.15	4.05	-1.10	
7,290.00	60.37	355.39	7,082.00	146.38	-927.80	313.82	17.44	17.44	-0.09	

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Site:	WELD_CAMP 37-31HZ PAD	MD Reference:	25' RKB + 4949' GL @ 4974.00ft
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Wellbore:	CAMP 25N-30HZ	Survey Calculation Method:	Minimum Curvature
Design:	CAMP 25N-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)
7,320.00	66.16	356.83	7,095.49	173.10	-929.61	340.42	19.79	19.32	4.81
7,350.00	71.20	355.28	7,106.39	200.97	-931.54	368.18	17.47	16.79	-5.17
7,380.00	76.08	355.18	7,114.84	229.65	-933.93	396.81	16.26	16.26	-0.32
7,410.00	78.14	356.29	7,121.53	258.81	-936.11	425.87	7.76	6.87	3.70
7,440.00	78.75	357.54	7,127.54	288.16	-937.69	455.01	4.57	2.02	4.18
7,470.00	79.73	357.64	7,133.15	317.60	-938.93	484.19	3.28	3.27	0.32
7,500.00	85.23	357.58	7,137.07	347.31	-940.17	513.62	18.35	18.35	-0.21
7,555.72	87.23	357.15	7,140.74	402.85	-942.73	568.68	3.67	3.58	-0.78
7" casing									
7,600.00	88.82	356.80	7,142.26	447.04	-945.06	612.55	3.67	3.58	-0.77
7,700.00	92.19	356.58	7,141.39	546.85	-950.84	711.74	3.38	3.37	-0.23
7,800.00	90.16	358.66	7,139.34	646.73	-954.99	810.69	2.91	-2.02	2.09
7,900.00	89.52	0.95	7,139.62	746.73	-955.33	909.05	2.38	-0.65	2.29
8,000.00	90.28	2.71	7,139.79	846.67	-952.14	1,006.72	1.91	0.77	1.75
8,100.00	90.72	2.81	7,138.92	946.55	-947.33	1,104.03	0.45	0.43	0.10
8,200.00	91.34	3.55	7,137.12	1,046.38	-941.78	1,201.16	0.97	0.62	0.74
8,300.00	91.69	3.36	7,134.47	1,146.16	-935.76	1,298.15	0.40	0.35	-0.20
8,400.00	92.71	3.11	7,130.63	1,245.93	-930.12	1,395.20	1.05	1.02	-0.25
8,500.00	91.65	2.50	7,126.83	1,345.73	-925.24	1,492.42	1.22	-1.06	-0.61
8,600.00	90.96	3.24	7,124.55	1,445.58	-920.24	1,589.66	1.02	-0.69	0.74
8,700.00	89.53	2.80	7,124.12	1,545.44	-914.97	1,686.87	1.49	-1.43	-0.44
8,800.00	90.73	359.79	7,123.89	1,645.40	-912.71	1,784.72	3.24	1.20	-3.01
8,900.00	90.56	0.15	7,122.76	1,745.39	-912.76	1,883.04	0.40	-0.17	0.36
9,000.00	90.56	359.78	7,121.77	1,845.39	-912.82	1,981.35	0.37	0.00	-0.37
9,100.00	89.11	359.83	7,122.06	1,945.38	-913.16	2,079.72	1.46	-1.46	0.05
9,200.00	89.10	359.84	7,123.63	2,045.37	-913.46	2,178.07	0.01	0.00	0.01
9,300.00	88.58	359.34	7,125.65	2,145.35	-914.17	2,276.48	0.72	-0.52	-0.50
9,400.00	87.29	359.16	7,129.26	2,245.27	-915.48	2,374.96	1.30	-1.29	-0.18
9,500.00	89.28	358.71	7,132.25	2,345.21	-917.33	2,473.54	2.04	1.99	-0.45
9,600.00	88.23	358.40	7,134.42	2,445.15	-919.85	2,572.25	1.10	-1.06	-0.31
9,700.00	87.85	359.48	7,137.85	2,545.07	-921.69	2,670.82	1.14	-0.38	1.07
9,800.00	88.99	359.56	7,140.61	2,645.03	-922.53	2,769.24	1.15	1.15	0.09
9,900.00	87.66	0.37	7,143.52	2,744.98	-922.59	2,867.52	1.55	-1.33	0.80
10,000.00	87.14	1.30	7,148.06	2,844.87	-921.14	2,965.45	1.07	-0.53	0.93
10,100.00	87.26	1.22	7,152.95	2,944.72	-918.94	3,063.21	0.14	0.12	-0.08
10,200.00	87.85	1.66	7,157.22	3,044.60	-916.43	3,160.94	0.73	0.59	0.44
10,300.00	88.58	1.77	7,160.35	3,144.51	-913.44	3,258.61	0.74	0.73	0.11
10,400.00	89.75	1.86	7,161.80	3,244.44	-910.28	3,356.28	1.18	1.18	0.09
10,500.00	89.99	1.75	7,162.03	3,344.39	-907.13	3,453.96	0.25	0.23	-0.10
10,600.00	91.25	1.68	7,160.96	3,444.34	-904.13	3,551.67	1.26	1.26	-0.07
10,700.00	90.19	1.66	7,159.71	3,544.29	-901.21	3,649.39	1.06	-1.06	-0.03
10,800.00	89.56	1.27	7,159.92	3,644.25	-898.66	3,747.20	0.73	-0.63	-0.38
10,900.00	90.70	1.46	7,159.69	3,744.22	-896.27	3,845.04	1.15	1.13	0.19
11,000.00	90.61	1.47	7,158.56	3,844.18	-893.71	3,942.84	0.09	-0.09	0.01