

# **Anadarko Petroleum Corp.**

**Weld County, CO (NAD 83)**

**Sec. 25-T3N-R66W**

**Camp 4N-25HZ ReLoc**

**Plan B Rev 3**

**Survey: Final Field Surveys**

## **Survey Report - Geographic**

**23 February, 2012**

# Halliburton Company

## Survey Report - Geographic

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Camp 4N-25HZ ReLoc
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	RKB 25' @ 5068.00ft (H&P 308)
<b>Site:</b>	Sec. 25-T3N-R66W	<b>MD Reference:</b>	RKB 25' @ 5068.00ft (H&P 308)
<b>Well:</b>	Camp 4N-25HZ ReLoc	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan B Rev 3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual Field Surveys	<b>Database:</b>	Sperry Compass 2003.16 Network

<b>Project</b>	Weld County, CO (NAD 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		Using geodetic scale factor

Site	Sec. 25-T3N-R66W				
Site Position:		Northing:	1,313,128.73ft	Latitude:	40° 11' 25.410 N
From:	Lat/Long	Easting:	3,214,243.39ft	Longitude:	104° 43' 59.210 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	0.50 °

Well	Camp 4N-25HZ ReLoc					
Well Position	+N/-S	0.00 ft	Northing:	1,313,135.62 ft	Latitude:	40° 11' 25.479 N
	+E/-W	0.00 ft	Easting:	3,214,227.96 ft	Longitude:	104° 43' 59.408 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	5,043.00 ft	Ground Level:	5,043.00 ft

<b>Wellbore</b>	Plan B Rev 3				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2011	2011-11-21	8.75	66.86	52,937

<b>Design</b>	Actual Field Surveys				
<b>Audit Notes:</b>	MS Energy Rate Gyro Surveys to 835 MD				
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<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	359.91	

<b>Survey Program</b>	<b>Date</b>	2012-02-23			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
125.00	860.00	MS Gyro Surveys (Plan B Rev 3)	GyroFlex	Explorer	
961.00	11,270.00	Sperry MWD Surveys (Plan B Rev 3)	MWD	MWD - Standard	

# Halliburton Company

## Survey Report - Geographic

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Camp 4N-25HZ ReLoc
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	RKB 25' @ 5068.00ft (H&P 308)
<b>Site:</b>	Sec. 25-T3N-R66W	<b>MD Reference:</b>	RKB 25' @ 5068.00ft (H&P 308)
<b>Well:</b>	Camp 4N-25HZ ReLoc	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan B Rev 3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual Field Surveys	<b>Database:</b>	Sperry Compass 2003.16 Network

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	1,313,135.62	3,214,227.96	40° 11' 25.479 N	104° 43' 59.408 W
<b>Tie-on to Surface @ 0.00ft</b>									
125.00	1.61	279.93	124.98	0.30	-1.73	1,313,135.91	3,214,226.23	40° 11' 25.482 N	104° 43' 59.431 W
<b>First Gyro Survey @ 125.00ft</b>									
225.00	0.17	3.88	224.97	0.69	-3.10	1,313,136.29	3,214,224.85	40° 11' 25.486 N	104° 43' 59.448 W
325.00	0.05	77.21	324.97	0.85	-3.05	1,313,136.45	3,214,224.91	40° 11' 25.488 N	104° 43' 59.448 W
425.00	0.40	357.43	424.97	1.21	-3.02	1,313,136.81	3,214,224.93	40° 11' 25.491 N	104° 43' 59.447 W
525.00	0.36	8.32	524.97	1.87	-2.99	1,313,137.47	3,214,224.95	40° 11' 25.498 N	104° 43' 59.447 W
625.00	0.22	31.22	624.97	2.34	-2.85	1,313,137.94	3,214,225.09	40° 11' 25.503 N	104° 43' 59.445 W
725.00	0.12	113.84	724.97	2.47	-2.65	1,313,138.07	3,214,225.29	40° 11' 25.504 N	104° 43' 59.443 W
825.00	0.15	232.01	824.97	2.34	-2.66	1,313,137.94	3,214,225.28	40° 11' 25.503 N	104° 43' 59.443 W
860.00	0.12	215.08	859.97	2.28	-2.72	1,313,137.88	3,214,225.23	40° 11' 25.502 N	104° 43' 59.443 W
<b>Final Gyro Survey @ 860.00ft - Tie-on to Gyro Surveys @ 860.00ft</b>									
961.00	0.51	19.01	960.96	2.62	-2.63	1,313,138.22	3,214,225.31	40° 11' 25.505 N	104° 43' 59.442 W
<b>First Sperry MWD Survey @ 961.00ft</b>									
1,053.00	2.22	13.81	1,052.93	4.74	-2.07	1,313,140.35	3,214,225.85	40° 11' 25.526 N	104° 43' 59.435 W
1,114.00	2.28	6.61	1,113.89	7.09	-1.65	1,313,142.70	3,214,226.25	40° 11' 25.549 N	104° 43' 59.430 W
1,206.00	2.32	7.30	1,205.81	10.76	-1.21	1,313,146.37	3,214,226.67	40° 11' 25.586 N	104° 43' 59.424 W
1,301.00	2.51	2.85	1,300.73	14.74	-0.86	1,313,150.36	3,214,226.98	40° 11' 25.625 N	104° 43' 59.419 W
1,396.00	2.17	3.16	1,395.65	18.62	-0.65	1,313,154.23	3,214,227.15	40° 11' 25.663 N	104° 43' 59.417 W
1,491.00	2.17	7.11	1,490.58	22.20	-0.33	1,313,157.82	3,214,227.44	40° 11' 25.699 N	104° 43' 59.413 W
1,586.00	2.32	0.96	1,585.51	25.90	-0.08	1,313,161.53	3,214,227.66	40° 11' 25.735 N	104° 43' 59.409 W
1,681.00	2.59	359.95	1,680.42	29.97	-0.05	1,313,165.59	3,214,227.66	40° 11' 25.776 N	104° 43' 59.409 W
1,776.00	0.91	2.27	1,775.37	32.87	-0.02	1,313,168.49	3,214,227.66	40° 11' 25.804 N	104° 43' 59.409 W
1,871.00	0.65	11.97	1,870.37	34.15	0.12	1,313,169.78	3,214,227.79	40° 11' 25.817 N	104° 43' 59.407 W
1,967.00	0.47	356.98	1,966.36	35.08	0.21	1,313,170.70	3,214,227.87	40° 11' 25.826 N	104° 43' 59.406 W
2,062.00	0.31	3.92	2,061.36	35.73	0.21	1,313,171.35	3,214,227.87	40° 11' 25.832 N	104° 43' 59.406 W
2,157.00	0.25	353.41	2,156.36	36.19	0.20	1,313,171.81	3,214,227.86	40° 11' 25.837 N	104° 43' 59.406 W
2,252.00	0.28	52.24	2,251.36	36.54	0.36	1,313,172.16	3,214,228.01	40° 11' 25.840 N	104° 43' 59.404 W
2,347.00	0.47	92.97	2,346.35	36.66	0.94	1,313,172.29	3,214,228.58	40° 11' 25.842 N	104° 43' 59.396 W
2,442.00	1.66	84.77	2,441.34	36.76	2.70	1,313,172.41	3,214,230.34	40° 11' 25.843 N	104° 43' 59.374 W
2,537.00	1.22	30.32	2,536.31	37.76	4.58	1,313,173.42	3,214,232.21	40° 11' 25.853 N	104° 43' 59.349 W
2,633.00	2.15	321.40	2,632.28	40.05	3.97	1,313,175.71	3,214,231.59	40° 11' 25.875 N	104° 43' 59.357 W
2,728.00	2.03	298.90	2,727.21	42.26	1.38	1,313,177.89	3,214,228.98	40° 11' 25.897 N	104° 43' 59.391 W
2,823.00	2.04	191.88	2,822.18	41.42	-0.44	1,313,177.03	3,214,227.17	40° 11' 25.889 N	104° 43' 59.414 W
2,918.00	2.06	196.23	2,917.12	38.12	-1.26	1,313,173.73	3,214,226.37	40° 11' 25.856 N	104° 43' 59.425 W
3,013.00	2.28	193.22	3,012.05	34.64	-2.17	1,313,170.25	3,214,225.49	40° 11' 25.822 N	104° 43' 59.436 W
3,108.00	0.80	170.43	3,107.01	32.15	-2.49	1,313,167.75	3,214,225.19	40° 11' 25.797 N	104° 43' 59.441 W
3,203.00	0.38	56.21	3,202.01	31.67	-2.12	1,313,167.27	3,214,225.57	40° 11' 25.792 N	104° 43' 59.436 W
3,298.00	0.03	258.92	3,297.01	31.84	-1.88	1,313,167.45	3,214,225.81	40° 11' 25.794 N	104° 43' 59.433 W
3,393.00	0.93	184.96	3,392.01	31.07	-1.97	1,313,166.67	3,214,225.72	40° 11' 25.786 N	104° 43' 59.434 W
3,488.00	0.47	242.59	3,487.00	30.12	-2.39	1,313,165.72	3,214,225.32	40° 11' 25.777 N	104° 43' 59.439 W
3,583.00	0.69	297.85	3,582.00	30.21	-3.24	1,313,165.80	3,214,224.46	40° 11' 25.778 N	104° 43' 59.450 W
3,678.00	0.87	261.55	3,676.99	30.37	-4.46	1,313,165.95	3,214,223.24	40° 11' 25.779 N	104° 43' 59.466 W
3,773.00	1.79	259.02	3,771.96	29.98	-6.63	1,313,165.55	3,214,221.08	40° 11' 25.776 N	104° 43' 59.494 W
3,868.00	0.72	190.93	3,866.94	29.11	-8.20	1,313,164.66	3,214,219.52	40° 11' 25.767 N	104° 43' 59.514 W
3,963.00	0.35	267.78	3,961.94	28.52	-8.60	1,313,164.06	3,214,219.12	40° 11' 25.761 N	104° 43' 59.519 W
4,058.00	1.23	7.24	4,056.93	29.52	-8.76	1,313,165.06	3,214,218.95	40° 11' 25.771 N	104° 43' 59.521 W
4,154.00	1.16	1.72	4,152.91	31.51	-8.60	1,313,167.06	3,214,219.09	40° 11' 25.791 N	104° 43' 59.519 W
4,249.00	0.96	344.71	4,247.89	33.24	-8.78	1,313,168.78	3,214,218.89	40° 11' 25.808 N	104° 43' 59.522 W
4,344.00	0.63	286.84	4,342.89	34.16	-9.49	1,313,169.70	3,214,218.18	40° 11' 25.817 N	104° 43' 59.531 W
4,439.00	1.06	262.67	4,437.87	34.20	-10.87	1,313,169.72	3,214,216.80	40° 11' 25.817 N	104° 43' 59.548 W
4,534.00	1.69	196.91	4,532.85	32.74	-12.14	1,313,168.26	3,214,215.54	40° 11' 25.803 N	104° 43' 59.565 W
4,629.00	1.56	202.01	4,627.81	30.20	-13.04	1,313,165.71	3,214,214.67	40° 11' 25.778 N	104° 43' 59.576 W
4,724.00	1.18	232.92	4,722.79	28.42	-14.30	1,313,163.91	3,214,213.42	40° 11' 25.760 N	104° 43' 59.593 W

# Halliburton Company

## Survey Report - Geographic

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Camp 4N-25HZ ReLoc
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	RKB 25' @ 5068.00ft (H&P 308)
<b>Site:</b>	Sec. 25-T3N-R66W	<b>MD Reference:</b>	RKB 25' @ 5068.00ft (H&P 308)
<b>Well:</b>	Camp 4N-25HZ ReLoc	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan B Rev 3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual Field Surveys	<b>Database:</b>	Sperry Compass 2003.16 Network

### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
4,819.00	0.43	214.81	4,817.78	27.53	-15.29	1,313,163.02	3,214,212.44	40° 11' 25.751 N	104° 43' 59.605 W
4,915.00	0.37	121.83	4,913.78	27.07	-15.23	1,313,162.56	3,214,212.50	40° 11' 25.747 N	104° 43' 59.605 W
5,010.00	0.57	108.98	5,008.77	26.76	-14.52	1,313,162.25	3,214,213.21	40° 11' 25.744 N	104° 43' 59.596 W
5,105.00	0.68	92.87	5,103.77	26.58	-13.51	1,313,162.08	3,214,214.22	40° 11' 25.742 N	104° 43' 59.582 W
5,200.00	0.87	117.27	5,198.76	26.22	-12.31	1,313,161.73	3,214,215.43	40° 11' 25.738 N	104° 43' 59.567 W
5,295.00	1.07	145.92	5,293.75	25.15	-11.17	1,313,160.68	3,214,216.58	40° 11' 25.728 N	104° 43' 59.552 W
5,390.00	1.00	147.40	5,388.73	23.72	-10.23	1,313,159.25	3,214,217.53	40° 11' 25.714 N	104° 43' 59.540 W
5,486.00	0.40	76.56	5,484.72	23.09	-9.45	1,313,158.63	3,214,218.32	40° 11' 25.708 N	104° 43' 59.530 W
5,581.00	0.19	174.03	5,579.72	23.01	-9.11	1,313,158.56	3,214,218.66	40° 11' 25.707 N	104° 43' 59.526 W
5,676.00	0.66	73.74	5,674.72	23.01	-8.57	1,313,158.56	3,214,219.20	40° 11' 25.707 N	104° 43' 59.519 W
5,772.00	1.21	39.85	5,770.71	23.94	-7.39	1,313,159.50	3,214,220.37	40° 11' 25.716 N	104° 43' 59.504 W
5,866.00	0.99	11.54	5,864.69	25.50	-6.59	1,313,161.06	3,214,221.16	40° 11' 25.731 N	104° 43' 59.493 W
5,961.00	0.72	358.78	5,959.68	26.90	-6.44	1,313,162.47	3,214,221.30	40° 11' 25.745 N	104° 43' 59.491 W
6,057.00	0.98	336.03	6,055.67	28.25	-6.78	1,313,163.82	3,214,220.94	40° 11' 25.759 N	104° 43' 59.496 W
6,152.00	1.31	324.89	6,150.65	29.88	-7.74	1,313,165.44	3,214,219.97	40° 11' 25.775 N	104° 43' 59.508 W
6,247.00	1.36	318.06	6,245.63	31.61	-9.12	1,313,167.15	3,214,218.58	40° 11' 25.792 N	104° 43' 59.526 W
6,342.00	0.99	312.92	6,340.61	33.01	-10.47	1,313,168.54	3,214,217.21	40° 11' 25.806 N	104° 43' 59.543 W
6,437.00	0.82	302.35	6,435.59	33.93	-11.65	1,313,169.45	3,214,216.03	40° 11' 25.815 N	104° 43' 59.558 W
6,518.00	1.05	302.08	6,516.58	34.64	-12.76	1,313,170.15	3,214,214.90	40° 11' 25.822 N	104° 43' 59.573 W
6,592.00	2.86	342.32	6,590.54	36.75	-13.90	1,313,172.26	3,214,213.75	40° 11' 25.843 N	104° 43' 59.588 W
6,656.00	2.64	335.74	6,654.47	39.62	-14.99	1,313,175.11	3,214,212.63	40° 11' 25.871 N	104° 43' 59.602 W
6,688.00	2.36	335.17	6,686.44	40.89	-15.57	1,313,176.38	3,214,212.04	40° 11' 25.883 N	104° 43' 59.609 W
6,720.00	2.49	6.79	6,718.41	42.18	-15.76	1,313,177.66	3,214,211.84	40° 11' 25.896 N	104° 43' 59.612 W
6,751.00	6.16	359.53	6,749.32	44.51	-15.70	1,313,179.99	3,214,211.88	40° 11' 25.919 N	104° 43' 59.611 W
6,783.00	9.05	1.77	6,781.03	48.74	-15.63	1,313,184.23	3,214,211.91	40° 11' 25.961 N	104° 43' 59.610 W
6,815.00	11.18	1.83	6,812.53	54.36	-15.46	1,313,189.85	3,214,212.04	40° 11' 26.017 N	104° 43' 59.608 W
6,847.00	13.65	358.66	6,843.78	61.24	-15.45	1,313,196.72	3,214,211.99	40° 11' 26.085 N	104° 43' 59.607 W
6,878.00	16.38	355.12	6,873.72	69.25	-15.90	1,313,204.73	3,214,211.46	40° 11' 26.164 N	104° 43' 59.613 W
6,910.00	18.18	354.34	6,904.28	78.72	-16.78	1,313,214.19	3,214,210.50	40° 11' 26.257 N	104° 43' 59.625 W
6,942.00	20.34	352.75	6,934.48	89.20	-17.97	1,313,224.66	3,214,209.22	40° 11' 26.361 N	104° 43' 59.640 W
6,973.00	22.81	352.96	6,963.31	100.51	-19.39	1,313,235.96	3,214,207.71	40° 11' 26.473 N	104° 43' 59.658 W
7,005.00	26.44	356.48	6,992.39	113.78	-20.59	1,313,249.22	3,214,206.39	40° 11' 26.604 N	104° 43' 59.674 W
7,037.00	28.35	357.42	7,020.80	128.49	-21.37	1,313,263.91	3,214,205.49	40° 11' 26.749 N	104° 43' 59.684 W
7,069.00	30.91	358.32	7,048.62	144.29	-21.95	1,313,279.72	3,214,204.77	40° 11' 26.905 N	104° 43' 59.691 W
7,100.00	34.22	359.33	7,074.74	160.97	-22.29	1,313,296.39	3,214,204.29	40° 11' 27.070 N	104° 43' 59.696 W
7,132.00	39.39	1.37	7,100.36	180.14	-22.15	1,313,315.55	3,214,204.26	40° 11' 27.259 N	104° 43' 59.694 W
7,164.00	44.59	4.92	7,124.13	201.49	-20.94	1,313,336.92	3,214,205.28	40° 11' 27.471 N	104° 43' 59.678 W
7,195.00	50.69	7.87	7,145.01	224.24	-18.36	1,313,359.69	3,214,207.66	40° 11' 27.695 N	104° 43' 59.645 W
7,227.00	57.83	8.69	7,163.69	249.92	-14.62	1,313,385.40	3,214,211.19	40° 11' 27.949 N	104° 43' 59.597 W
7,259.00	63.18	10.92	7,179.45	277.36	-9.86	1,313,412.87	3,214,215.70	40° 11' 28.220 N	104° 43' 59.535 W
7,291.00	68.74	11.81	7,192.48	305.99	-4.10	1,313,441.52	3,214,221.22	40° 11' 28.503 N	104° 43' 59.461 W
7,322.00	73.03	10.84	7,202.63	334.71	1.65	1,313,470.32	3,214,226.72	40° 11' 28.787 N	104° 43' 59.387 W
7,354.00	79.20	9.87	7,210.30	365.25	7.22	1,313,500.91	3,214,232.03	40° 11' 29.089 N	104° 43' 59.315 W
7,374.00	83.59	7.93	7,213.29	384.78	10.28	1,313,520.47	3,214,234.92	40° 11' 29.282 N	104° 43' 59.276 W
7,420.00	89.63	5.85	7,216.01	430.35	15.78	1,313,566.07	3,214,240.02	40° 11' 29.732 N	104° 43' 59.205 W
<b>7" Casing Point @ 7420.00ft - 7" Intermediate Casing</b>									
7,515.00	90.87	5.43	7,215.60	524.89	25.12	1,313,660.68	3,214,248.54	40° 11' 30.666 N	104° 43' 59.085 W
7,611.00	92.04	5.45	7,213.16	620.42	34.22	1,313,756.29	3,214,256.81	40° 11' 31.610 N	104° 43' 58.967 W
7,706.00	91.24	4.63	7,210.44	715.01	42.56	1,313,850.95	3,214,264.34	40° 11' 32.545 N	104° 43' 58.860 W
7,801.00	89.26	3.27	7,210.03	809.78	49.10	1,313,945.76	3,214,270.06	40° 11' 33.482 N	104° 43' 58.776 W
7,897.00	90.12	3.62	7,210.55	905.60	54.87	1,314,041.63	3,214,275.00	40° 11' 34.429 N	104° 43' 58.701 W
7,992.00	88.64	1.55	7,211.57	1,000.49	59.16	1,314,136.55	3,214,278.46	40° 11' 35.366 N	104° 43' 58.646 W
8,087.00	89.14	1.81	7,213.41	1,095.43	61.94	1,314,231.51	3,214,280.43	40° 11' 36.304 N	104° 43' 58.610 W
8,182.00	90.56	1.97	7,213.66	1,190.38	65.07	1,314,326.47	3,214,282.74	40° 11' 37.243 N	104° 43' 58.570 W
8,278.00	90.25	0.37	7,212.98	1,286.35	67.03	1,314,422.46	3,214,283.87	40° 11' 38.191 N	104° 43' 58.545 W

# Halliburton Company

## Survey Report - Geographic

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Camp 4N-25HZ ReLoc
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	RKB 25' @ 5068.00ft (H&P 308)
<b>Site:</b>	Sec. 25-T3N-R66W	<b>MD Reference:</b>	RKB 25' @ 5068.00ft (H&P 308)
<b>Well:</b>	Camp 4N-25HZ ReLoc	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan B Rev 3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual Field Surveys	<b>Database:</b>	Sperry Compass 2003.16 Network

### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
8,373.00	88.52	0.17	7,214.00	1,381.34	67.48	1,314,517.44	3,214,283.49	40° 11' 39.130 N	104° 43' 58.539 W
8,468.00	89.38	0.17	7,215.75	1,476.33	67.76	1,314,612.42	3,214,282.96	40° 11' 40.068 N	104° 43' 58.535 W
8,563.00	87.16	0.58	7,218.61	1,571.28	68.38	1,314,707.36	3,214,282.76	40° 11' 41.007 N	104° 43' 58.527 W
8,659.00	87.40	0.15	7,223.17	1,667.17	68.99	1,314,803.25	3,214,282.54	40° 11' 41.954 N	104° 43' 58.519 W
8,754.00	87.84	358.79	7,227.11	1,762.08	68.12	1,314,898.15	3,214,280.84	40° 11' 42.892 N	104° 43' 58.531 W
8,849.00	88.46	358.78	7,230.18	1,857.01	66.10	1,314,993.05	3,214,278.00	40° 11' 43.830 N	104° 43' 58.557 W
8,944.00	88.58	357.44	7,232.63	1,951.92	62.97	1,315,087.93	3,214,274.05	40° 11' 44.768 N	104° 43' 58.597 W
9,039.00	88.77	357.08	7,234.83	2,046.79	58.43	1,315,182.75	3,214,268.69	40° 11' 45.706 N	104° 43' 58.655 W
9,135.00	88.45	356.78	7,237.16	2,142.62	53.29	1,315,278.53	3,214,262.72	40° 11' 46.653 N	104° 43' 58.722 W
9,230.00	89.20	356.91	7,239.11	2,237.45	48.06	1,315,373.32	3,214,256.68	40° 11' 47.590 N	104° 43' 58.789 W
9,325.00	90.93	357.73	7,239.00	2,332.35	43.62	1,315,468.16	3,214,251.41	40° 11' 48.528 N	104° 43' 58.846 W
9,420.00	91.92	358.17	7,236.64	2,427.25	40.22	1,315,563.03	3,214,247.20	40° 11' 49.466 N	104° 43' 58.890 W
9,515.00	90.68	358.03	7,234.48	2,522.18	37.08	1,315,657.92	3,214,243.23	40° 11' 50.404 N	104° 43' 58.931 W
9,610.00	91.42	358.36	7,232.74	2,617.11	34.08	1,315,752.82	3,214,239.41	40° 11' 51.342 N	104° 43' 58.969 W
9,706.00	90.25	358.99	7,231.34	2,713.07	31.86	1,315,848.76	3,214,236.37	40° 11' 52.290 N	104° 43' 58.998 W
9,801.00	89.94	359.38	7,231.19	2,808.06	30.51	1,315,943.73	3,214,234.19	40° 11' 53.229 N	104° 43' 59.015 W
9,896.00	89.81	359.12	7,231.39	2,903.06	29.27	1,316,038.70	3,214,232.13	40° 11' 54.167 N	104° 43' 59.031 W
9,991.00	90.25	358.96	7,231.34	2,998.04	27.68	1,316,133.67	3,214,229.72	40° 11' 55.106 N	104° 43' 59.052 W
10,086.00	88.70	358.35	7,232.21	3,093.01	25.45	1,316,228.61	3,214,226.66	40° 11' 56.044 N	104° 43' 59.080 W
10,181.00	89.20	358.35	7,233.95	3,187.95	22.71	1,316,323.52	3,214,223.11	40° 11' 56.983 N	104° 43' 59.116 W
10,276.00	90.06	358.62	7,234.57	3,282.92	20.20	1,316,418.45	3,214,219.78	40° 11' 57.921 N	104° 43' 59.148 W
10,371.00	90.49	358.81	7,234.11	3,377.89	18.07	1,316,513.40	3,214,216.83	40° 11' 58.860 N	104° 43' 59.176 W
10,467.00	89.07	358.83	7,234.48	3,473.87	16.09	1,316,609.35	3,214,214.02	40° 11' 59.808 N	104° 43' 59.201 W
10,562.00	87.77	358.81	7,237.10	3,568.81	14.14	1,316,704.27	3,214,211.24	40° 12' 0.746 N	104° 43' 59.226 W
10,657.00	87.04	358.89	7,241.40	3,663.69	12.23	1,316,799.13	3,214,208.52	40° 12' 1.684 N	104° 43' 59.251 W
10,752.00	88.21	358.71	7,245.34	3,758.59	10.25	1,316,894.00	3,214,205.71	40° 12' 2.622 N	104° 43' 59.276 W
10,847.00	88.45	358.96	7,248.11	3,853.53	8.32	1,316,988.92	3,214,202.96	40° 12' 3.560 N	104° 43' 59.301 W
10,942.00	88.95	358.97	7,250.26	3,948.49	6.60	1,317,083.85	3,214,200.42	40° 12' 4.498 N	104° 43' 59.323 W
11,037.00	88.45	359.01	7,252.42	4,043.45	4.93	1,317,178.79	3,214,197.93	40° 12' 5.437 N	104° 43' 59.345 W
11,132.00	88.45	359.30	7,254.99	4,138.40	3.53	1,317,273.73	3,214,195.70	40° 12' 6.375 N	104° 43' 59.363 W
11,224.00	88.70	359.28	7,257.27	4,230.37	2.39	1,317,365.67	3,214,193.77	40° 12' 7.284 N	104° 43' 59.378 W
<b>Final Sperry MWD Survey @ 11224.00ft</b>									
11,270.00	88.70	359.28	7,258.32	4,276.35	1.81	1,317,411.65	3,214,192.79	40° 12' 7.738 N	104° 43' 59.385 W
<b>Straight Line Projection to TD @ 11270.00ft</b>									

# Halliburton Company

## Survey Report - Geographic

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Camp 4N-25HZ ReLoc
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	RKB 25' @ 5068.00ft (H&P 308)
<b>Site:</b>	Sec. 25-T3N-R66W	<b>MD Reference:</b>	RKB 25' @ 5068.00ft (H&P 308)
<b>Well:</b>	Camp 4N-25HZ ReLoc	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan B Rev 3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual Field Surveys	<b>Database:</b>	Sperry Compass 2003.16 Network

### Targets

Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Camp 4N-25HZ_Plan	- survey misses target center by 83.81ft at 11270.00ft MD (7258.32 TVD, 4276.35 N, 1.81 E)	0.00	0.00	7,339.00	4,297.38	-6.70	1,317,432.60	3,214,184.10	40° 12' 7.946 N	104° 43' 59.495 W
- Point										
Camp 4N-25HZ_Plan	- survey misses target center by 58.66ft at 8547.31ft MD (7217.89 TVD, 1555.60 N, 68.23 E)	0.00	0.00	7,265.72	1,554.38	34.30	1,314,690.18	3,214,248.82	40° 11' 40.840 N	104° 43' 58.966 W
- Point										
Camp 4N-25HZ_Plan	- survey misses target center by 75.20ft at 9697.23ft MD (7231.39 TVD, 2704.30 N, 32.02 E)	0.00	0.00	7,296.44	2,704.38	-5.70	1,315,839.74	3,214,198.88	40° 11' 52.204 N	104° 43' 59.482 W
- Point										
Camp 2 Pad_Section	- survey misses target center by 16.89ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)	0.00	0.00	0.00	-7.02	15.37	1,313,128.73	3,214,243.39	40° 11' 25.410 N	104° 43' 59.210 W
- Polygon										
Point 1				0.00	4,754.05	-491.88	1,317,885.04	3,213,695.01		
Point 2				0.00	4,772.21	2,218.97	1,317,926.64	3,216,405.49		
Point 3				0.00	4,829.49	4,863.89	1,318,006.78	3,219,049.70		
Point 4				0.00	2,195.11	4,867.13	1,315,372.64	3,219,075.72		
Point 5				0.00	-444.27	4,870.62	1,312,733.50	3,219,102.03		
Point 6				0.00	-476.49	2,189.99	1,312,678.11	3,216,421.90		
Point 7				0.00	-508.69	-490.62	1,312,622.73	3,213,741.78		
Point 8				0.00	2,122.70	-491.26	1,315,253.90	3,213,718.38		
Point 9				0.00	4,754.05	-491.88	1,317,885.04	3,213,695.01		
Camp 2 Pad_Setback	- survey misses target center by 16.89ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)	0.00	0.00	0.00	-7.02	15.37	1,313,128.73	3,214,243.39	40° 11' 25.410 N	104° 43' 59.210 W
- Polygon										
Point 1				0.00	4,290.07	-35.86	1,317,425.04	3,214,155.01		
Point 2				0.00	4,312.21	2,214.99	1,317,466.64	3,216,405.48		
Point 3				0.00	4,373.47	4,399.91	1,317,546.79	3,218,589.70		
Point 4				0.00	2,199.09	4,407.13	1,315,372.64	3,218,615.72		
Point 5				0.00	19.71	4,414.59	1,313,193.50	3,218,642.03		
Point 6				0.00	-16.49	2,193.97	1,313,138.10	3,216,421.90		
Point 7				0.00	-52.67	-26.64	1,313,082.73	3,214,201.78		
Point 8				0.00	2,118.72	-31.26	1,315,253.90	3,214,178.38		
Point 9				0.00	4,290.07	-35.86	1,317,425.04	3,214,155.01		

### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,420.00	7,216.01	7" Intermediate Casing	7	8-3/4

# Halliburton Company

## Survey Report - Geographic

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Camp 4N-25HZ ReLoc
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	RKB 25' @ 5068.00ft (H&P 308)
<b>Site:</b>	Sec. 25-T3N-R66W	<b>MD Reference:</b>	RKB 25' @ 5068.00ft (H&P 308)
<b>Well:</b>	Camp 4N-25HZ ReLoc	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan B Rev 3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual Field Surveys	<b>Database:</b>	Sperry Compass 2003.16 Network

### Targets

Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Camp 4N-25HZ_Plan	- survey misses target center by 83.81ft at 11270.00ft MD (7258.32 TVD, 4276.35 N, 1.81 E)	0.00	0.00	7,339.00	4,297.38	-6.70	1,317,432.60	3,214,184.10	40° 12' 7.946 N	104° 43' 59.495 W
- Point										
Camp 4N-25HZ_Plan	- survey misses target center by 58.66ft at 8547.31ft MD (7217.89 TVD, 1555.60 N, 68.23 E)	0.00	0.00	7,265.72	1,554.38	34.30	1,314,690.18	3,214,248.82	40° 11' 40.840 N	104° 43' 58.966 W
- Point										
Camp 4N-25HZ_Plan	- survey misses target center by 75.20ft at 9697.23ft MD (7231.39 TVD, 2704.30 N, 32.02 E)	0.00	0.00	7,296.44	2,704.38	-5.70	1,315,839.74	3,214,198.88	40° 11' 52.204 N	104° 43' 59.482 W
- Point										
Camp 2 Pad_Section	- survey misses target center by 16.89ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)	0.00	0.00	0.00	-7.02	15.37	1,313,128.73	3,214,243.39	40° 11' 25.410 N	104° 43' 59.210 W
- Polygon										
Point 1				0.00	4,754.05	-491.88	1,317,885.04	3,213,695.01		
Point 2				0.00	4,772.21	2,218.97	1,317,926.64	3,216,405.49		
Point 3				0.00	4,829.49	4,863.89	1,318,006.78	3,219,049.70		
Point 4				0.00	2,195.11	4,867.13	1,315,372.64	3,219,075.72		
Point 5				0.00	-444.27	4,870.62	1,312,733.50	3,219,102.03		
Point 6				0.00	-476.49	2,189.99	1,312,678.11	3,216,421.90		
Point 7				0.00	-508.69	-490.62	1,312,622.73	3,213,741.78		
Point 8				0.00	2,122.70	-491.26	1,315,253.90	3,213,718.38		
Point 9				0.00	4,754.05	-491.88	1,317,885.04	3,213,695.01		
Camp 2 Pad_Setback	- survey misses target center by 16.89ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)	0.00	0.00	0.00	-7.02	15.37	1,313,128.73	3,214,243.39	40° 11' 25.410 N	104° 43' 59.210 W
- Polygon										
Point 1				0.00	4,290.07	-35.86	1,317,425.04	3,214,155.01		
Point 2				0.00	4,312.21	2,214.99	1,317,466.64	3,216,405.48		
Point 3				0.00	4,373.47	4,399.91	1,317,546.79	3,218,589.70		
Point 4				0.00	2,199.09	4,407.13	1,315,372.64	3,218,615.72		
Point 5				0.00	19.71	4,414.59	1,313,193.50	3,218,642.03		
Point 6				0.00	-16.49	2,193.97	1,313,138.10	3,216,421.90		
Point 7				0.00	-52.67	-26.64	1,313,082.73	3,214,201.78		
Point 8				0.00	2,118.72	-31.26	1,315,253.90	3,214,178.38		
Point 9				0.00	4,290.07	-35.86	1,317,425.04	3,214,155.01		

### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,420.00	7,216.01	7" Intermediate Casing	7	8-3/4

### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,186.24	5,185.00	Shannon			
	7,476.00	Codell Target			
	7,471.00	Codell			
4,734.21	4,733.00	Sussex			
4,119.08	4,118.00	Parkman			
7,418.50	7,216.00	Nio B			
	7,448.00	Fort Hays			



# Halliburton Company

## Survey Report - Geographic

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Camp 4N-25HZ ReLoc
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	RKB 25' @ 5068.00ft (H&P 308)
<b>Site:</b>	Sec. 25-T3N-R66W	<b>MD Reference:</b>	RKB 25' @ 5068.00ft (H&P 308)
<b>Well:</b>	Camp 4N-25HZ ReLoc	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan B Rev 3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual Field Surveys	<b>Database:</b>	Sperry Compass 2003.16 Network

### Targets

#### Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Camp 4N-25HZ_Plan - survey misses target center by 83.81ft at 11270.00ft MD (7258.32 TVD, 4276.35 N, 1.81 E) - Point	0.00	0.00	7,339.00	4,297.38	-6.70	1,317,432.60	3,214,184.10	40° 12' 7.946 N	104° 43' 59.495 W
Camp 4N-25HZ_Plan - survey misses target center by 58.66ft at 8547.31ft MD (7217.89 TVD, 1555.60 N, 68.23 E) - Point	0.00	0.00	7,265.72	1,554.38	34.30	1,314,690.18	3,214,248.82	40° 11' 40.840 N	104° 43' 58.966 W
Camp 4N-25HZ_Plan - survey misses target center by 75.20ft at 9697.23ft MD (7231.39 TVD, 2704.30 N, 32.02 E) - Point	0.00	0.00	7,296.44	2,704.38	-5.70	1,315,839.74	3,214,198.88	40° 11' 52.204 N	104° 43' 59.482 W
Camp 2 Pad_Section - survey misses target center by 16.89ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E) - Polygon	0.00	0.00	0.00	-7.02	15.37	1,313,128.73	3,214,243.39	40° 11' 25.410 N	104° 43' 59.210 W
Point 1			0.00	4,754.05	-491.88	1,317,885.04	3,213,695.01		
Point 2			0.00	4,772.21	2,218.97	1,317,926.64	3,216,405.49		
Point 3			0.00	4,829.49	4,863.89	1,318,006.78	3,219,049.70		
Point 4			0.00	2,195.11	4,867.13	1,315,372.64	3,219,075.72		
Point 5			0.00	-444.27	4,870.62	1,312,733.50	3,219,102.03		
Point 6			0.00	-476.49	2,189.99	1,312,678.11	3,216,421.90		
Point 7			0.00	-508.69	-490.62	1,312,622.73	3,213,741.78		
Point 8			0.00	2,122.70	-491.26	1,315,253.90	3,213,718.38		
Point 9			0.00	4,754.05	-491.88	1,317,885.04	3,213,695.01		
Camp 2 Pad_Setback - survey misses target center by 16.89ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E) - Polygon	0.00	0.00	0.00	-7.02	15.37	1,313,128.73	3,214,243.39	40° 11' 25.410 N	104° 43' 59.210 W
Point 1			0.00	4,290.07	-35.86	1,317,425.04	3,214,155.01		
Point 2			0.00	4,312.21	2,214.99	1,317,466.64	3,216,405.48		
Point 3			0.00	4,373.47	4,399.91	1,317,546.79	3,218,589.70		
Point 4			0.00	2,199.09	4,407.13	1,315,372.64	3,218,615.72		
Point 5			0.00	19.71	4,414.59	1,313,193.50	3,218,642.03		
Point 6			0.00	-16.49	2,193.97	1,313,138.10	3,216,421.90		
Point 7			0.00	-52.67	-26.64	1,313,082.73	3,214,201.78		
Point 8			0.00	2,118.72	-31.26	1,315,253.90	3,214,178.38		
Point 9			0.00	4,290.07	-35.86	1,317,425.04	3,214,155.01		

### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,420.00	7,216.01	7" Intermediate Casing	7	8-3/4
7,166.63	7,126.00	Sharon Springs		
	7,315.00	Nio C		
7,286.99	7,191.00	Nio A		
10,714.12	7,244.00	Nio B Target		



# Halliburton Company

## Survey Report - Geographic

<b>Company:</b>	Anadarko Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Camp 4N-25HZ ReLoc
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	RKB 25' @ 5068.00ft (H&P 308)
<b>Site:</b>	Sec. 25-T3N-R66W	<b>MD Reference:</b>	RKB 25' @ 5068.00ft (H&P 308)
<b>Well:</b>	Camp 4N-25HZ ReLoc	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan B Rev 3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual Field Surveys	<b>Database:</b>	Sperry Compass 2003.16 Network

### Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
0.00	0.00	0.00	0.00	Tie-on to Surface @ 0.00ft
125.00	124.98	0.30	-1.73	First Gyro Survey @ 125.00ft
860.00	859.97	2.28	-2.72	Final Gyro Survey @ 860.00ft
860.00	859.97	2.28	-2.72	Tie-on to Gyro Surveys @ 860.00ft
961.00	960.96	2.62	-2.63	First Sperry MWD Survey @ 961.00ft
7,420.00	7,216.01	430.35	15.78	7" Casing Point @ 7420.00ft
11,224.00	7,257.27	4,230.37	2.39	Final Sperry MWD Survey @ 11224.00ft
11,270.00	7,258.32	4,276.35	1.81	Straight Line Projection to TD @ 11270.00ft

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------