



# Weatherford®

## SURVEY REPORT

Report Date: **9/11/2012**  
 Customer: **Anadarko**  
 Job Name: **4027076**  
 Well Name: **Cannon 37C-3HZ**

Field: **Wattenberg**  
 Rig: **H&P Flex # 307**  
 Rig Loc: **Weld County**

Survey Calculation Method: <b>Minimum Curvature</b>						
Magnetic Reference	Target Direction	Total Magnetic Field	Magnetic Dip Angle	Magnetic Declination	Grid Convergence	Total Correction
<b>True North</b>	<b>179.65 deg</b>	<b>52906 nT</b>	<b>66.94 deg</b>	<b>8.70 deg</b>	<b>0.00 deg</b>	<b>8.70 deg</b>
<b>Survey Tie-On</b>	Depth	INC	AZ	TVD	NS	EW
	<b>749.00 ft</b>	<b>0.12 deg</b>	<b>57.17 deg</b>	<b>749.00 ft</b>	<b>0.77 ft</b>	<b>-0.26 ft</b>

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head			
				NS (ft)	EW (ft)	Vsect (ft)	Dogleg (deg/100ft)
949.00	0.25	292.61	949.00	1.05	-0.49	-1.05	0.17
1039.00	0.56	310.60	1039.00	1.41	-1.00	-1.42	0.37
1130.00	1.93	9.37	1129.98	3.21	-1.09	-3.22	1.88
1221.00	4.06	17.55	1220.85	7.80	0.13	-7.80	2.38
1314.00	6.03	16.38	1313.48	15.62	2.50	-15.61	2.12
1406.00	6.60	14.38	1404.92	25.38	5.18	-25.35	0.66
1501.00	6.56	14.05	1499.30	35.94	7.85	-35.89	0.06
1596.00	6.59	5.01	1593.68	46.63	9.64	-46.57	1.09
1691.00	6.13	1.30	1688.09	57.13	10.24	-57.07	0.65
1786.00	5.90	3.14	1782.57	67.08	10.62	-67.01	0.32
1881.00	5.97	13.19	1877.06	76.76	12.01	-76.69	1.09
1975.00	5.43	13.92	1970.60	85.84	14.20	-85.75	0.58
2070.00	4.87	10.40	2065.21	94.17	16.01	-94.07	0.68
2165.00	6.32	14.24	2159.76	103.20	18.02	-103.09	1.58
2260.00	5.36	12.02	2254.26	112.61	20.23	-112.49	1.04
2355.00	6.32	16.41	2348.77	121.97	22.63	-121.83	1.11
2449.00	5.40	14.73	2442.28	131.21	25.22	-131.05	1.00
2545.00	6.99	12.44	2537.71	141.28	27.63	-141.11	1.68
2640.00	5.60	10.21	2632.14	151.49	29.69	-151.31	1.49
2734.00	4.69	3.87	2725.76	159.84	30.77	-159.65	1.14
2829.00	6.31	10.97	2820.32	168.84	32.02	-168.64	1.85
2924.00	5.98	9.76	2914.77	178.84	33.85	-178.63	0.37
3018.00	5.45	7.70	3008.31	188.09	35.28	-187.87	0.60
3113.00	6.16	19.46	3102.82	197.37	37.58	-197.13	1.45
3208.00	4.69	21.42	3197.39	205.79	40.70	-205.54	1.56
3303.00	5.68	19.71	3292.01	213.83	43.71	-213.56	1.05
3399.00	6.32	11.49	3387.48	223.48	46.36	-223.19	1.11
3494.00	4.96	11.26	3482.02	232.63	48.20	-232.34	1.43
3589.00	3.65	356.56	3576.75	239.68	48.82	-239.38	1.79
3683.00	1.86	331.73	3670.64	244.01	47.92	-243.71	2.25
3777.00	0.80	261.11	3764.62	245.25	46.55	-244.97	1.88
3873.00	0.74	261.92	3860.61	245.06	45.28	-244.78	0.06
3967.00	0.90	267.49	3954.60	244.95	43.94	-244.67	0.19
4062.00	0.38	142.99	4049.60	244.66	43.38	-244.39	1.22
4157.00	0.20	1.16	4144.60	244.58	43.57	-244.30	0.58

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		Vsect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
4252.00	0.69	320.96	4239.59	245.19	43.22	-244.92	0.58
4346.00	1.09	328.14	4333.58	246.38	42.39	-246.12	0.44
4440.00	0.80	244.93	4427.57	246.87	41.32	-246.61	1.35
4535.00	1.09	268.83	4522.56	246.57	39.82	-246.32	0.51
4630.00	1.05	152.66	4617.55	245.77	39.31	-245.53	1.91
4724.00	0.97	145.03	4711.54	244.36	40.17	-244.11	0.17
4819.00	0.58	55.98	4806.53	243.97	41.03	-243.71	1.18
4913.00	0.73	23.83	4900.53	244.78	41.66	-244.52	0.42
5008.00	1.41	143.21	4995.52	244.40	42.61	-244.13	1.98
5103.00	1.00	164.58	5090.49	242.66	43.53	-242.39	0.63
5198.00	0.63	178.44	5185.49	241.34	43.76	-241.07	0.44
5292.00	0.49	213.29	5279.48	240.49	43.55	-240.22	0.38
5387.00	0.51	230.60	5374.48	239.88	43.00	-239.62	0.16
5482.00	0.29	215.02	5469.47	239.42	42.54	-239.15	0.26
5576.00	0.20	286.27	5563.47	239.27	42.25	-239.01	0.31
5672.00	0.22	241.79	5659.47	239.23	41.92	-238.97	0.17
5767.00	0.73	187.99	5754.47	238.54	41.68	-238.28	0.66
5863.00	0.97	200.01	5850.46	237.17	41.32	-236.92	0.31
5958.00	1.21	205.76	5945.44	235.51	40.60	-235.26	0.28
6052.00	0.56	185.90	6039.43	234.16	40.13	-233.91	0.75
6147.00	0.72	193.72	6134.42	233.12	39.94	-232.87	0.19
6242.00	0.91	191.80	6229.42	231.80	39.64	-231.56	0.20
6337.00	1.22	209.70	6324.40	230.19	38.98	-229.94	0.47
6432.00	1.06	194.02	6419.38	228.46	38.27	-228.22	0.37
6526.00	3.83	171.93	6513.29	224.50	38.50	-224.26	3.06
6558.00	8.07	178.32	6545.11	221.20	38.72	-220.96	13.39
6590.00	11.85	178.16	6576.62	215.67	38.89	-215.43	11.81
6621.00	14.64	179.45	6606.79	208.57	39.03	-208.32	9.05
6654.00	17.06	177.90	6638.54	199.56	39.25	-199.31	7.44
6685.00	20.44	177.11	6667.89	189.60	39.69	-189.36	10.93
6717.00	21.54	177.91	6697.76	178.15	40.18	-177.90	3.55
6749.00	20.72	177.59	6727.61	166.63	40.63	-166.38	2.59
6780.00	19.75	176.39	6756.70	155.92	41.19	-155.67	3.40
6812.00	20.49	175.45	6786.74	144.94	41.98	-144.68	2.52
6843.00	23.52	178.41	6815.48	133.35	42.58	-133.08	10.41
6875.00	26.88	183.72	6844.44	119.74	42.29	-119.48	12.65
6907.00	30.00	185.38	6872.57	104.55	41.07	-104.30	10.06
6938.00	32.82	183.45	6899.03	88.45	39.84	-88.20	9.66
6970.00	35.57	182.12	6925.49	70.49	38.97	-70.25	8.91
7001.00	39.53	181.32	6950.07	51.61	38.41	-51.37	12.87
7033.00	42.93	180.02	6974.13	30.52	38.17	-30.29	10.96
7064.00	46.89	179.14	6996.08	8.64	38.34	-8.41	12.93
7096.00	49.77	178.78	7017.35	-15.26	38.77	15.49	9.04
7128.00	51.42	178.64	7037.67	-39.98	39.33	40.22	5.17
7159.00	53.40	179.18	7056.57	-64.53	39.80	64.78	6.53
7191.00	57.02	179.81	7074.83	-90.81	40.02	91.05	11.43
7222.00	61.47	179.96	7090.68	-117.44	40.08	117.69	14.36
7254.00	66.47	179.77	7104.72	-146.19	40.14	146.43	15.63
7285.00	70.39	180.66	7116.11	-175.01	40.03	175.25	12.92
7318.00	73.62	180.75	7126.31	-206.39	39.65	206.63	9.79

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		Vsect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
7349.00	76.81	179.88	7134.22	-236.36	39.48	236.60	10.64
7381.00	79.31	178.95	7140.84	-267.66	39.81	267.90	8.31
7412.00	80.51	178.14	7146.27	-298.17	40.58	298.41	4.65
7444.00	82.63	178.26	7150.96	-329.81	41.57	330.06	6.64
7560.00	89.32	179.69	7159.10	-445.43	43.64	445.69	5.90
7655.00	89.94	178.49	7159.71	-540.42	45.15	540.68	1.42
7750.00	90.06	178.23	7159.71	-635.38	47.86	635.66	0.30
7844.00	91.23	178.00	7158.65	-729.32	50.96	729.62	1.27
7939.00	92.16	179.92	7155.84	-824.26	52.68	824.57	2.24
8034.00	91.48	179.59	7152.82	-919.21	53.09	919.52	0.80
8129.00	91.48	180.48	7150.37	-1014.18	53.03	1014.48	0.94
8224.00	90.74	180.71	7148.53	-1109.15	52.04	1109.45	0.82
8319.00	90.06	180.02	7147.87	-1204.15	51.44	1204.44	1.02
8414.00	91.66	180.17	7146.44	-1299.13	51.28	1299.42	1.69
8509.00	90.55	179.19	7144.61	-1394.11	51.81	1394.40	1.56
8604.00	90.86	180.02	7143.44	-1489.10	52.47	1489.39	0.93
8699.00	90.43	180.34	7142.37	-1584.09	52.17	1584.38	0.56
8794.00	91.97	181.22	7140.38	-1679.06	50.87	1679.34	1.87
8889.00	91.66	180.54	7137.37	-1774.00	49.42	1774.27	0.79
8983.00	92.46	182.96	7133.99	-1867.89	46.55	1868.14	2.71
9079.00	91.76	181.47	7130.46	-1963.75	42.84	1963.97	1.71
9174.00	91.36	181.51	7127.87	-2058.68	40.37	2058.89	0.42
9268.00	90.86	181.32	7126.05	-2152.63	38.05	2152.83	0.57
9363.00	90.43	182.45	7124.98	-2247.58	34.93	2247.75	1.27
9459.00	90.18	183.01	7124.47	-2343.46	30.35	2343.61	0.64
9553.00	90.06	180.68	7124.27	-2437.41	27.33	2437.53	2.48
9648.00	89.20	181.04	7124.89	-2532.40	25.90	2532.51	0.98
9743.00	90.12	179.56	7125.45	-2627.39	25.40	2627.50	1.83
9837.00	91.05	179.30	7124.49	-2721.38	26.34	2721.49	1.03
9933.00	90.74	178.73	7122.99	-2817.35	27.99	2817.47	0.68
10028.00	90.12	178.27	7122.28	-2912.32	30.48	2912.45	0.81
10123.00	91.66	177.80	7120.80	-3007.25	33.73	3007.40	1.69
10218.00	90.86	177.97	7118.71	-3102.16	37.24	3102.33	0.86
10314.00	87.59	174.29	7120.01	-3197.90	43.71	3198.11	5.13
10409.00	88.21	173.36	7123.49	-3292.28	53.93	3292.55	1.18
10504.00	90.43	173.48	7124.62	-3386.65	64.81	3386.98	2.34
10599.00	91.85	174.89	7122.73	-3481.13	74.43	3481.52	2.11
10693.00	93.57	176.40	7118.29	-3574.75	81.56	3575.18	2.43
10788.00	93.21	176.48	7112.67	-3669.40	87.45	3669.87	0.39
10883.00	91.66	175.30	7108.63	-3764.07	94.25	3764.57	2.05
10978.00	90.93	175.09	7106.49	-3858.71	102.21	3859.26	0.80
11074.00	89.69	174.13	7105.97	-3954.28	111.23	3954.88	1.63
11169.00	88.52	171.29	7107.45	-4048.49	123.28	4049.17	3.23
11264.00	87.28	171.05	7110.93	-4142.30	137.85	4143.06	1.33
11359.00	86.21	170.37	7116.33	-4235.90	153.16	4236.76	1.33
11425.00	86.05	170.64	7120.78	-4300.85	164.02	4301.77	0.47
11477.00	86.05	170.64	7124.36	-4352.03	172.46	4353.00	0.00

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		Vsect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		

\*Weatherford M/LWD surveys from 949 ft MD to 11425 ft MD.\*

\*TD at 11477.00 ft MD.\*

The total correction is 8.70 deg relative to True North.