

Job Number: SVGJ-110869 State/Country: Colorado/USA (N 40 8 13) (W 104 36 56)
 Company: Anadarko Petroleum Corporation Declination: 8.70° East To True - NAD 27
 Lease/Well: GUEST 11-13A Grid: Referenced To True North
 Location: Weld County, CO File name: F:\SURVEY\2011SU~1\ANADARKO\LORENZ\GU1113A.SVY
 Rig Name: Cable Wireline Date/Time: 27-Sep-11 / 15:38
 RKB: 0' Curve Name: Surface - 7500' M.D. (Rate Gyro) (API 05-123-20962)
 G.L. or M.S.L.: GL

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane .00

Vertical Section Referenced to offset from Wellhead: EW =.00 Ft , NS=.00 Ft
 Rectangular Coordinates Referenced to Wellhead

Measured	Incl	Drift	TRUE	N-S	E-W	Vertical	CLOSURE	CLOSURE	Dogleg
Depth	Angle	Direction	Vertical	FT	FT	Section	Distance	Direction	Severity
FT	Deg	Deg	Depth			FT	FT	Deg	Deg/100
0	0	0	0	0	0	0	0	0	0
100	0.25	336.5	100	0.2	-0.09	0.2	0.22	336.5	0.25
200	0.25	330.75	200	0.59	-0.28	0.59	0.65	334.59	0.03
300	0.3	310.62	300	0.95	-0.59	0.95	1.12	328.37	0.11
400	0.27	286.2	400	1.19	-1.01	1.19	1.56	319.59	0.12
500	0.34	192.5	500	0.96	-1.3	0.96	1.62	306.52	0.45
600	0.5	194.93	599.99	0.25	-1.48	0.25	1.5	279.69	0.16
700	1.01	233.55	699.98	-0.69	-2.3	-0.69	2.4	253.23	0.69
800	1.95	229.94	799.95	-2.31	-4.31	-2.31	4.89	241.8	0.94
900	2.21	248.36	899.88	-4.12	-7.4	-4.12	8.47	240.92	0.71
1000	2.24	265.49	999.81	-4.98	-11.15	-4.98	12.21	245.91	0.66
1100	2.11	269.43	1099.74	-5.15	-14.93	-5.15	15.8	250.96	0.2
1200	2.04	267.67	1199.67	-5.25	-18.55	-5.25	19.28	254.21	0.09
1300	2.05	268.25	1299.61	-5.37	-22.12	-5.37	22.76	256.35	0.02
1400	2.12	265.98	1399.54	-5.56	-25.75	-5.56	26.35	257.82	0.11
1500	2.11	263.82	1499.48	-5.88	-29.43	-5.88	30.01	258.69	0.08
1600	2.12	261.92	1599.41	-6.34	-33.09	-6.34	33.69	259.15	0.07
1700	1.91	262.13	1699.35	-6.83	-36.57	-6.83	37.2	259.42	0.21
1800	1.68	262.26	1799.3	-7.26	-39.67	-7.26	40.33	259.64	0.23
1900	1.3	268.51	1899.26	-7.48	-42.26	-7.48	42.92	259.96	0.41
2000	1.27	271.82	1999.24	-7.48	-44.5	-7.48	45.13	260.46	0.08
2100	1.16	259.89	2099.21	-7.62	-46.61	-7.62	47.23	260.71	0.28
2200	0.89	238.34	2199.2	-8.21	-48.26	-8.21	48.96	260.35	0.47
2300	0.98	218.29	2299.19	-9.28	-49.46	-9.28	50.32	259.37	0.34
2400	1.04	227.24	2399.17	-10.57	-50.65	-10.57	51.74	258.21	0.17
2500	1.2	236.34	2499.15	-11.77	-52.19	-11.77	53.5	257.29	0.24
2600	1.26	236.05	2599.13	-12.96	-53.97	-12.96	55.51	256.5	0.06
2700	1.6	216.08	2699.1	-14.7	-55.71	-14.7	57.62	255.21	0.6
2800	1.72	213.6	2799.06	-17.08	-57.36	-17.08	59.85	253.42	0.14
2900	1.79	203.29	2899.01	-19.77	-58.81	-19.77	62.04	251.42	0.32
3000	1.96	195.88	2998.96	-22.85	-59.89	-22.85	64.1	249.12	0.3
3100	1.99	194.23	3098.9	-26.17	-60.79	-26.17	66.18	246.7	0.06
3200	1.9	195.29	3198.84	-29.46	-61.65	-29.46	68.33	244.46	0.1
3300	1.69	198.86	3298.79	-32.45	-62.57	-32.45	70.48	242.59	0.24
3400	1.49	203.9	3398.75	-35.04	-63.57	-35.04	72.58	241.14	0.24
3500	1.49	202.25	3498.72	-37.43	-64.59	-37.43	74.65	239.91	0.04
3600	1.51	203.92	3598.68	-39.83	-65.62	-39.83	76.76	238.74	0.05

3700	1.47	202.03	3698.65	-42.23	-66.63	-42.23	78.89	237.63	0.06
3800	1.03	186.3	3798.63	-44.31	-67.21	-44.31	80.5	236.6	0.55
3900	1.19	146.03	3898.61	-46.07	-66.73	-46.07	81.08	235.38	0.78
4000	1.23	143.17	3998.59	-47.79	-65.5	-47.79	81.08	233.89	0.07
4100	1.21	145.82	4098.56	-49.52	-64.27	-49.52	81.13	232.39	0.06
4200	1.44	149.55	4198.54	-51.47	-63.04	-51.47	81.38	230.77	0.25
4300	1.57	149.19	4298.5	-53.73	-61.7	-53.73	81.82	228.95	0.13
4400	1.89	139.76	4398.46	-56.17	-59.93	-56.17	82.14	226.86	0.43
4500	2.49	127.17	4498.38	-58.74	-57.14	-58.74	81.95	224.21	0.77
4600	2.89	119.72	4598.27	-61.3	-53.22	-61.3	81.18	220.96	0.53
4700	3.19	114.74	4698.13	-63.72	-48.5	-63.72	80.08	217.28	0.4
4800	3.36	111.24	4797.97	-65.94	-43.24	-65.94	78.86	213.25	0.26
4900	3.83	106.25	4897.77	-67.94	-37.3	-67.94	77.51	208.77	0.56
5000	3.88	109.51	4997.55	-70	-30.91	-70	76.52	203.82	0.22
5100	3.59	109.5	5097.33	-72.18	-24.77	-72.18	76.31	198.94	0.29
5200	2.88	108.99	5197.17	-74.04	-19.44	-74.04	76.55	194.71	0.71
5300	2.03	109.11	5297.08	-75.44	-15.39	-75.44	76.99	191.53	0.85
5400	1.41	105.42	5397.04	-76.35	-12.53	-76.35	77.37	189.32	0.63
5500	0.57	98.43	5497.02	-76.75	-10.85	-76.75	77.51	188.05	0.85
5600	0.38	16.92	5597.02	-76.5	-10.27	-76.5	77.19	187.64	0.64
5700	0.72	306.13	5697.01	-75.81	-10.68	-75.81	76.56	188.02	0.69
5800	0.53	266.12	5797.01	-75.48	-11.65	-75.48	76.37	188.77	0.46
5900	0.45	260.03	5897	-75.57	-12.49	-75.57	76.6	189.39	0.1
6000	0.77	273.81	5997	-75.6	-13.55	-75.6	76.8	190.16	0.35
6100	1.04	273.44	6096.99	-75.5	-15.13	-75.5	77	191.33	0.27
6200	1.47	285.95	6196.96	-75.09	-17.27	-75.09	77.05	192.95	0.51
6300	2.12	286	6296.91	-74.23	-20.28	-74.23	76.95	195.28	0.65
6400	2.28	286.55	6396.84	-73.15	-23.96	-73.15	76.98	198.14	0.16
6500	2.56	286.3	6496.75	-71.96	-28.01	-71.96	77.22	201.27	0.28
6600	2.78	281.06	6596.64	-70.87	-32.54	-70.87	77.98	204.66	0.33
6700	2.98	274.02	6696.51	-70.22	-37.51	-70.22	79.61	208.11	0.41
6800	3.06	271.62	6796.38	-69.96	-42.77	-69.96	82	211.44	0.15
6900	2.99	263.88	6896.24	-70.17	-48.03	-70.17	85.03	214.39	0.41
7000	3.58	259.99	6996.07	-70.99	-53.7	-70.99	89.01	217.11	0.63
7100	4.72	259.12	7095.81	-72.31	-60.81	-72.31	94.48	220.07	1.14
7200	4.22	258.76	7195.5	-73.8	-68.46	-73.8	100.67	222.85	0.5
7300	3.59	266.94	7295.27	-74.68	-75.2	-74.68	105.98	225.2	0.84
7400	3.01	285.75	7395.11	-74.14	-80.85	-74.14	109.7	227.48	1.22
7500	2.83	294.82	7494.98	-72.39	-85.62	-72.39	112.12	229.79	0.5