



**Job Number:** 05152013  
**Company:** Nighthawk Productions  
**Lease/Well:** Taos 1-10  
**Location:** Limon CO  
**Rig Name:** Extreme #11  
**RKB:**  
**G.L. or M.S.L.:**

**State/Country:** Colorado/USA  
**Declination:** 7.81  
**Grid:**  
**File name:** C:\WINSERVE\05152013.SVY  
**Date/Time:** 25-May-13 / 08:45  
**Curve Name:** Taos 1-10 as drilled

WINSERVE SURVEY CALCULATIONS  
*Minimum Curvature Method*  
*Vertical Section Plane 113.14*  
*Vertical Section Referenced to Wellhead*  
*Rectangular Coordinates Referenced to Wellhead*

<i>Measured Depth FT</i>	<i>Incl Angle Deg</i>	<i>Drift Direction Deg</i>	<i>True Vertical Depth</i>	<i>N-S FT</i>	<i>E-W FT</i>	<i>Vertical Section FT</i>	<i>C L O S U R E Distance FT</i>	<i>Direction Deg</i>	<i>Dogleg Severity Deg/100</i>
VES Gyro survey Tie in									
256.00	.57	89.84	256.00	.34	.90	.69	.96	69.16	.00
347.00	.80	131.70	346.99	-.08	1.83	1.71	1.83	92.46	.59
408.00	.70	146.90	407.98	-.67	2.35	2.42	2.44	106.01	.36
469.00	.80	133.50	468.98	-1.28	2.86	3.13	3.13	114.09	.33
561.00	1.50	134.00	560.96	-2.56	4.19	4.86	4.91	121.39	.76
652.00	1.30	136.30	651.93	-4.13	5.76	6.92	7.09	125.64	.23
746.00	1.80	120.00	745.90	-5.64	7.78	9.37	9.61	125.95	.70
838.00	2.30	107.10	837.84	-6.91	10.79	12.64	12.81	122.61	.74
940.00	2.60	101.30	939.75	-7.96	15.02	16.94	17.00	117.93	.38
1026.00	2.50	102.00	1025.66	-8.73	18.77	20.69	20.70	114.96	.12
1111.00	2.20	109.60	1110.59	-9.67	22.12	24.14	24.14	113.61	.51
1197.00	2.30	105.40	1196.52	-10.68	25.33	27.49	27.49	112.85	.22

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
1282.00	2.40	109.20	1281.45	-11.72	28.66	30.96	30.96	112.23	.22
1368.00	1.90	113.80	1367.39	-12.88	31.66	34.18	34.19	112.14	.61
1453.00	1.80	122.40	1452.35	-14.17	34.08	36.91	36.91	112.57	.35
1539.00	1.50	119.10	1538.31	-15.44	36.21	39.36	39.36	113.09	.37
1626.00	1.80	114.50	1625.28	-16.56	38.44	41.86	41.86	113.30	.38
1712.00	1.50	124.00	1711.24	-17.75	40.61	44.31	44.32	113.61	.47
1797.00	1.30	113.80	1796.22	-18.76	42.41	46.37	46.37	113.86	.38
1883.00	1.50	109.90	1882.19	-19.54	44.36	48.47	48.47	113.77	.26
1968.00	1.20	114.70	1967.17	-20.29	46.22	50.47	50.47	113.70	.38
2054.00	1.60	127.00	2053.14	-21.39	47.99	52.54	52.54	114.02	.58
2139.00	1.50	135.60	2138.11	-22.90	49.72	54.72	54.74	114.73	.30
2225.00	1.70	129.80	2224.08	-24.52	51.49	56.98	57.03	115.46	.30
2310.00	1.40	122.80	2309.04	-25.89	53.33	59.21	59.28	115.89	.42
2395.00	2.00	102.40	2394.01	-26.77	55.65	61.69	61.75	115.69	.99
2483.00	2.00	98.70	2481.95	-27.33	58.67	64.69	64.72	114.98	.15
2568.00	2.10	98.90	2566.90	-27.79	61.67	67.63	67.65	114.26	.12
2654.00	2.30	98.00	2652.84	-28.28	64.94	70.83	70.83	113.53	.24
2740.00	2.00	96.60	2738.78	-28.69	68.14	73.93	73.93	112.83	.35
2825.00	2.30	103.60	2823.72	-29.26	71.27	77.03	77.04	112.32	.47
2911.00	2.30	114.00	2909.65	-30.37	74.52	80.46	80.47	112.17	.48
2996.00	2.40	116.80	2994.58	-31.87	77.67	83.94	83.95	112.31	.18
3081.00	2.40	118.40	3079.50	-33.51	80.82	87.49	87.50	112.52	.08
3167.00	2.20	118.60	3165.43	-35.16	83.86	90.93	90.93	112.75	.23
3252.00	2.50	126.60	3250.36	-37.05	86.78	94.35	94.35	113.12	.52
3337.00	1.30	116.60	3335.31	-38.58	89.13	97.12	97.12	113.41	1.46
3425.00	1.30	117.00	3423.29	-39.48	90.91	99.11	99.11	113.48	.01
3512.00	1.40	107.30	3510.27	-40.25	92.80	101.15	101.16	113.45	.29
3602.00	1.40	124.00	3600.24	-41.19	94.76	103.33	103.33	113.49	.45
3688.00	1.50	133.00	3686.21	-42.55	96.46	105.42	105.43	113.80	.29
3773.00	1.50	131.60	3771.18	-44.04	98.10	107.52	107.54	114.18	.04
3859.00	1.40	142.50	3857.15	-45.62	99.59	109.50	109.54	114.61	.34
3944.00	1.10	122.40	3942.14	-46.88	100.91	111.21	111.27	114.92	.62
4030.00	1.30	124.40	4028.12	-47.88	102.41	112.98	113.05	115.06	.24
4115.00	1.80	107.10	4113.09	-48.82	104.48	115.26	115.32	115.04	.80

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
4201.00	1.60	101.90	4199.05	-49.46	106.95	117.78	117.83	114.82	.29
4288.00	1.70	103.40	4286.01	-50.01	109.39	120.24	120.28	114.57	.13
4374.00	1.80	95.50	4371.97	-50.43	111.98	122.79	122.81	114.25	.30
4459.00	1.60	93.60	4456.93	-50.64	114.49	125.18	125.19	113.86	.24
4545.00	1.50	74.30	4542.90	-50.41	116.77	127.19	127.19	113.35	.61
4634.00	1.90	72.70	4631.86	-49.65	119.30	129.22	129.22	112.60	.45
4720.00	1.80	77.40	4717.82	-48.94	121.98	131.40	131.43	111.86	.21
4807.00	1.80	79.50	4804.78	-48.39	124.66	133.64	133.72	111.21	.08
4893.00	2.00	70.20	4890.73	-47.63	127.40	135.87	136.01	110.50	.43
4980.00	1.80	103.40	4977.68	-47.44	130.15	138.32	138.53	110.02	1.27
5067.00	2.00	106.60	5064.64	-48.19	132.94	141.18	141.40	109.92	.26
5147.00	2.20	106.20	5144.58	-49.01	135.75	144.09	144.33	109.85	.25
5233.00	2.00	109.10	5230.52	-49.97	138.75	147.23	147.48	109.80	.26
5318.00	2.00	109.80	5315.47	-50.95	141.55	150.19	150.44	109.80	.03
5404.00	2.00	112.80	5401.42	-52.04	144.35	153.19	153.44	109.83	.12
5489.00	1.90	115.90	5486.37	-53.23	146.98	156.08	156.32	109.91	.17
5575.00	1.80	106.10	5572.33	-54.23	149.56	158.84	159.09	109.93	.39
5660.00	1.40	96.60	5657.29	-54.72	151.88	161.16	161.43	109.81	.56
5746.00	1.60	105.20	5743.26	-55.16	154.08	163.36	163.65	109.70	.35
5831.00	2.70	115.70	5828.20	-56.34	157.03	166.53	166.83	109.74	1.37
5917.00	2.80	126.50	5914.10	-58.46	160.54	170.60	170.85	110.01	.61
6004.00	1.60	140.30	6001.04	-60.66	163.02	173.75	173.95	110.41	1.50
6090.00	1.40	141.10	6087.01	-62.40	164.45	175.74	175.89	110.78	.23
6175.00	1.70	135.10	6171.98	-64.10	165.99	177.83	177.94	111.12	.40
6261.00	1.30	131.90	6257.95	-65.66	167.62	179.94	180.02	111.39	.48
6346.00	1.30	128.60	6342.93	-66.90	169.09	181.78	181.85	111.59	.09
6431.00	1.80	123.30	6427.90	-68.24	170.96	184.02	184.08	111.76	.61
6517.00	1.60	127.20	6513.86	-69.71	173.05	186.52	186.56	111.94	.27
6603.00	1.40	124.50	6599.83	-71.03	174.87	188.71	188.74	112.11	.25
6690.00	2.30	106.10	6686.78	-72.11	177.42	191.49	191.52	112.12	1.23
6776.00	2.10	101.00	6772.72	-72.89	180.63	194.74	194.78	111.98	.33
6864.00	2.00	101.50	6860.66	-73.51	183.71	197.82	197.87	111.81	.12
6949.00	2.10	106.60	6945.61	-74.25	186.66	200.82	200.88	111.69	.24
7035.00	2.50	122.20	7031.54	-75.70	189.76	204.24	204.30	111.75	.86

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
7123.00	2.50	120.80	7119.46	-77.70	193.03	208.03	208.08	111.93	.07
7210.00	2.40	117.50	7206.38	-79.52	196.27	211.73	211.77	112.05	.20
7295.00	1.80	106.60	7291.32	-80.72	199.13	214.83	214.87	112.07	.84
7381.00	1.70	116.40	7377.28	-81.67	201.57	217.45	217.49	112.06	.37
7466.00	1.50	138.80	7462.25	-83.07	203.43	219.71	219.74	112.21	.77
7552.00	1.20	114.00	7548.22	-84.28	205.00	221.62	221.65	112.35	.76
7641.00	1.10	107.00	7637.21	-84.91	206.66	223.41	223.43	112.34	.19
7728.00	1.90	103.60	7724.18	-85.49	208.86	225.66	225.69	112.26	.92
7771.00	2.40	110.30	7767.15	-85.97	210.40	227.26	227.29	112.23	1.30
7813.00	2.90	111.90	7809.10	-86.68	212.21	229.20	229.23	112.22	1.20
7855.00	3.00	115.20	7851.04	-87.54	214.19	231.36	231.39	112.23	.47
7898.00	2.60	111.30	7893.99	-88.37	216.12	233.46	233.49	112.24	1.03
7941.00	2.20	113.60	7936.96	-89.06	217.78	235.26	235.29	112.24	.96
Bit Projection to TD									
8005.00	2.20	113.60	8000.91	-90.04	220.04	237.72	237.75	112.26	.00