

Company: Sunburst INC
Field: Wattenberg
City/Blk/Par: LARIMER, CO
Well Name: VADER 33-15
Rlg: Ensign 7-396

Job Number: 207-1152
Magnetic Decl.: 9.09
Grid Corr.:
Total Survey Corr.: 9.09
Target Info: 50' SOUTH, 300' EAST @ 5000' TVD
Calculation Method
Proposed Azimuth 99.46
Depth Reference RKB
Tie Into SURFACE
Minimum Curvature

page 7

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth (ft)	TVD (ft)	VS (ft)	Coordinates N/S (ft)	E/W (ft)	DLS (°/100)	Bld Rate (°/100)	Wbk Rate (°/100)	Remarks
0	Tie In	0	0.00	0.00		0.00	0.00	0.00	0.00				SURFACE
1	MWD	86	0.70	342.50	86	86.00	-0.24	0.50	N	0.16	W	0.81	398.3 DP= 61.08
2	MWD	177	0.90	350.90	91	176.99	-0.72	1.74	N	0.44	W	0.25	9.2 DP= 62.46
3	MWD	267	1.60	314.40	90	266.97	-1.97	3.31	N	1.45	W	1.14	-40.6 DP= 67.25
4	MWD	359	1.60	290.50	92	358.93	-4.29	4.66	N	3.57	W	0.72	-26.0 DP= 68.02
5	MWD	450	2.00	241.80	91	449.89	-6.79	4.36	N	6.16	W	1.68	-53.5 DP= 67.78
6	MWD	543	1.80	204.20	93	542.85	-8.45	2.26	N	8.19	W	1.33	-40.4 SURFACE TD
7	MWD	611	1.70	201.90	88	610.81	-8.94	0.35	N	9.00	W	0.18	-0.1 DP= 67.54
8	MWD	705	2.10	270.10	94	704.77	-10.94	0.94	S	11.24	W	2.29	0.4
9	MWD	798	0.90	159.10	93	797.75	-12.25	1.62	S	12.69	W	2.76	-1.3
10	MWD	891	1.20	313.60	93	890.75	-12.68	1.63	S	13.13	W	2.20	0.3
11	MWD	985	1.10	6.50	94	984.73	-13.55	0.06	S	13.74	W	1.09	-0.1
12	MWD	1078	2.90	87.70	93	1077.68	-11.29	0.92	N	11.29	W	3.16	1.9
13	MWD	1171	4.00	120.20	93	1170.52	-5.95	0.61	S	6.14	W	2.37	1.2
14	MWD	1265	3.70	129.10	94	1264.31	-0.25	4.18	S	0.95	W	0.71	-0.3
15	MWD	1359	4.80	138.70	94	1358.05	5.43	9.04	S	4.00	E	1.39	1.2
16	MWD	1455	4.90	145.80	96	1453.71	11.37	15.45	S	8.96	E	0.63	0.1
17	MWD	1548	4.40	139.60	93	1546.40	16.84	21.45	S	13.50	E	0.76	-0.5
18	MWD	1642	5.50	123.80	94	1640.05	23.71	26.71	S	19.58	E	1.85	1.2
19	MWD	1737	8.70	129.90	95	1734.31	34.05	33.85	S	28.88	E	3.46	3.4
20	MWD	1830	8.70	109.50	93	1826.27	47.04	40.71	S	40.91	E	3.30	0.0
21	MWD	1924	7.70	102.50	94	1919.31	60.33	44.45	S	53.76	E	1.50	-1.1
22	MWD	2018	5.60	81.40	94	2012.68	70.99	45.12	S	64.45	E	3.39	-2.2
23	MWD	2112	4.00	83.70	94	2106.35	78.50	44.08	S	72.24	E	1.71	-1.7
24	MWD	2205	4.00	73.20	93	2199.12	84.53	42.79	S	78.57	E	0.79	0.0
25	MWD	2299	4.70	72.70	94	2292.85	90.91	40.69	S	85.38	E	0.75	0.7
26	MWD	2392	3.50	48.10	93	2385.62	96.09	37.66	S	91.14	E	2.28	-1.3
27	MWD	2486	3.30	50.20	94	2479.45	99.64	34.02	S	95.35	E	0.25	-0.2
28	MWD	2580	0.80	339.60	94	2573.40	101.08	31.67	S	97.20	E	3.33	-2.7
29	MWD	2674	4.40	142.60	94	2667.32	103.39	33.92	S	99.16	E	5.50	3.8
30	MWD	2768	5.50	130.30	94	2760.97	109.89	39.70	S	104.79	E	1.62	1.2
31	MWD	2862	5.00	137.90	94	2854.57	116.96	45.65	S	110.97	E	0.91	-0.5
32	MWD	2956	4.30	118.70	94	2948.27	123.50	50.38	S	116.81	E	1.80	-0.7
33	MWD	3050	3.60	112.20	94	3042.05	129.71	53.19	S	122.63	E	0.88	-0.7
34	MWD	3143	6.20	100.60	93	3134.70	137.58	55.22	S	130.27	E	2.98	2.8
35	MWD	3237	7.40	98.70	94	3228.04	148.71	57.07	S	141.25	E	1.30	1.3
36	MWD	3331	7.70	103.70	94	3321.22	161.04	59.47	S	153.35	E	0.77	0.3
37	MWD	3425	7.40	112.70	94	3414.41	173.21	63.30	S	165.05	E	1.30	-0.3
38	MWD	3518	6.00	119.50	93	3506.77	183.61	68.01	S	174.81	E	1.73	-1.5
39	MWD	3612	5.60	128.00	94	3600.30	192.25	73.25	S	182.70	E	1.01	-0.4
40	MWD	3706	4.50	118.80	94	3693.93	199.76	77.85	S	189.54	E	1.45	-1.2
41	MWD	3799	4.10	133.50	93	3786.67	205.96	81.90	S	195.15	E	1.26	-0.4
42	MWD	3893	6.00	121.90	94	3880.30	213.29	86.81	S	201.76	E	2.28	2.0
43	MWD	3986	5.10	129.30	93	3972.87	221.36	91.99	S	209.09	E	1.23	-1.0
44	MWD	4079	5.10	149.00	93	4065.51	227.63	98.15	S	214.42	E	1.87	0.0
45	MWD	4173	6.40	151.80	94	4159.03	233.54	106.35	S	219.04	E	1.41	1.4
46	MWD	4266	6.90	148.10	93	4251.41	240.40	115.66	S	224.45	E	0.71	0.5
47	MWD	4360	8.30	144.40	94	4344.58	248.94	125.98	S	231.38	E	1.58	1.5
48	MWD	4452	7.80	133.90	92	4435.68	258.79	135.70	S	239.74	E	1.69	-0.5
49	MWD	4546	7.00	139.20	94	4528.90	268.45	144.46	S	248.08	E	1.12	-0.9
50	MWD	4639	7.90	144.50	93	4621.11	277.33	153.96	S	255.50	E	1.22	1.0
51	MWD	4733	6.10	156.60	94	4714.41	284.60	163.80	S	261.23	E	2.47	-1.9
52	MWD	4827	6.00	175.20	94	4807.90	288.52	173.28	S	263.63	E	2.08	-0.1
53	MWD	4921	5.10	187.20	94	4901.46	289.90	182.32	S	263.51	E	1.56	-1.0
54	MWD	5015	6.80	169.50	94	4994.96	291.96	191.94	S	264.01	E	2.64	1.8
55	MWD	5108	6.90	167.00	93	5087.29	295.98	202.80	S	266.27	E	0.34	0.1
56	MWD	5202	3.60	167.60	94	5180.89	299.23	211.18	S	268.17	E	3.51	-3.5
57	MWD	5295	3.30	200.20	93	5273.73	299.82	216.55	S	267.87	E	2.10	-0.3
58	MWD	5388	5.50	226.90	93	5366.45	296.61	222.11	S	263.69	E	3.17	2.4
59	MWD	5482	4.30	226.70	94	5460.11	291.74	227.60	S	257.84	E	1.28	-1.3
60	MWD	5575	3.90	237.50	93	5552.87	287.28	231.69	S	252.63	E	0.93	-0.4
61	MWD	5669	0.50	171.20	94	5646.80	285.03	233.82	S	250.00	E	3.97	-3.6
62	MWD	5765	1.20	5.20	96	5742.79	285.09	233.23	S	250.15	E	1.76	0.7
63	MWD	5859	2.10	305.60	94	5836.76	283.47	231.25	S	248.84	E	1.93	1.0
64	MWD	5952	2.00	266.30	93	5929.70	280.36	230.36	S	245.84	E	1.49	-0.1
65	MWD	6046	0.60	274.70	94	6023.67	278.27	230.42	S	243.71	E	1.50	-1.5
66	MWD	6140	1.70	349.90	94	6117.66	277.31	229.01	S	242.98	E	1.76	1.2
67	MWD	6234	2.20	56.40	94	6211.61	278.16	226.64	S	244.23	E	2.32	0.5
68	MWD	6327	1.60	335.40	93	6304.58	278.74	224.47	S	245.18	E	2.70	-0.6
69	MWD	6421	2.90	290.30	94	6398.51	275.67	222.45	S	242.40	E	2.24	1.4
70	MWD	6515	4.00	284.40	94	6492.34	270.07	220.81	S	237.00	E	1.23	1.2
71	MWD	6608	2.80	227.80	93	6585.19	265.43	221.53	S	232.17	E	3.65	-1.3
72	MWD	6702	3.20	272.40	94	6679.08	261.40	222.96	S	227.85	E	2.45	0.4
73	MWD	6796	4.40	271.80	94	6772.87	255.22	222.74	S	221.62	E	1.28	1.3
74	MWD	6889	3.70	270.90	93	6865.64	248.72	222.58	S	215.06	E	0.76	-0.8
75	MWD	6983	3.20	267.70	94	6959.47	243.15	222.64	S	209.40	E	0.57	-0.5