



# DrillRight™

TECHNOLOGY, INC.

Survey Calculation Program

M.W.D. OPERATOR: S.Miller / C.Swenson

DIRECTIONAL DRILLERS: J.Ferguson / W.Swenson

Client : **Sandridge Energy**

Well Name: **Marks 1-24H**

Minimum Curvature Calculation

Magnetic Declination: 

6.74
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Job #: 

DR-1207114
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Vertical Section Azimuth 

179.9
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No.	Survey Depth	INC	AZM	TVD	N-S	E-W	Vertical Section	DLS/100
Tie	0	0.00	0.00	0.00	0.00	0.00	0.00	
1	1174	0.9	10.0	1173.95	9.08	1.60	-9.08	0.08
2	1521	0.7	22.8	1520.92	13.72	2.90	-13.71	0.08
3	1994	0.7	48.5	1993.88	18.30	6.18	-18.29	0.07
4	2468	1.0	0.3	2467.84	24.35	8.37	-24.34	0.16
5	2943	0.9	343.9	2942.77	32.08	7.36	-32.07	0.06
6	3419	0.6	3.2	3418.73	38.16	6.46	-38.15	0.08
7	3892	0.9	356.5	3891.69	44.34	6.37	-44.33	0.07
8	4073	1.5	172.0	4072.67	43.41	6.61	-43.40	1.33
9	4105	3.0	173.8	4104.65	42.17	6.76	-42.15	4.69
10	4421	2.9	166.6	4420.23	26.17	9.51	-26.15	0.12
11	4452	2.8	163.7	4451.19	24.68	9.90	-24.66	0.57
12	4484	4.0	163.2	4483.14	22.86	10.44	-22.84	3.75
13	4515	5.0	159.7	4514.04	20.56	11.23	-20.54	3.34
14	4547	6.3	161.0	4545.88	17.59	12.28	-17.57	4.08
15	4579	8.3	165.1	4577.62	13.70	13.45	-13.67	6.45
16	4611	10.4	171.7	4609.20	8.61	14.46	-8.58	7.36
17	4642	11.0	175.6	4639.66	2.89	15.09	-2.86	3.03
18	4674	11.8	177.3	4671.03	-3.42	15.48	3.45	2.71
19	4705	14.2	175.9	4701.23	-10.38	15.90	10.41	7.81
20	4736	15.7	178.6	4731.18	-18.37	16.27	18.40	5.33
21	4768	17.6	183.7	4761.84	-27.53	16.07	27.55	7.49
22	4799	19.8	187.2	4791.20	-37.41	15.11	37.44	7.96
23	4831	20.7	191.6	4821.23	-48.33	13.29	48.35	5.53
24	4863	22.1	191.4	4851.02	-59.77	10.96	59.79	4.38
25	4893	24.5	190.0	4878.57	-71.43	8.77	71.45	8.21
26	4924	26.5	189.9	4906.55	-84.58	6.46	84.59	6.45
27	4956	28.2	190.1	4934.97	-99.05	3.91	99.06	5.32
28	4988	29.8	188.5	4962.96	-114.36	1.40	114.37	5.56
29	5020	31.7	186.5	4990.46	-130.58	-0.72	130.58	6.74
30	5051	33.9	184.8	5016.52	-147.29	-2.37	147.29	7.69
31	5083	35.7	183.4	5042.79	-165.51	-3.67	165.50	6.15
32	5115	37.9	182.3	5068.41	-184.65	-4.62	184.64	7.18
33	5146	40.9	181.5	5092.37	-204.31	-5.26	204.30	9.81
34	5178	44.6	180.9	5115.86	-226.03	-5.72	226.02	11.63



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Minimum Curvature Calculation

Magnetic Declination: 6.74  
Job #: DR-1207114  
Vertical Section Azimuth 179.9

No.	Survey Depth	INC	AZM	TVD	N-S	E-W	Vertical Section	DLS/100
35	5210	47.1	181.3	5138.15	-248.98	-6.16	248.97	7.86
36	5241	49.0	181.7	5158.87	-272.03	-6.76	272.02	6.20
37	5273	49.2	181.7	5179.82	-296.21	-7.48	296.19	0.63
38	5304	49.5	181.6	5200.02	-319.72	-8.16	319.70	1.00
39	5336	50.0	182.2	5220.69	-344.12	-8.97	344.11	2.12
40	5368	49.7	181.9	5241.33	-368.57	-9.84	368.55	1.18
41	5400	51.3	181.3	5261.68	-393.25	-10.53	393.23	5.21
42	5432	55.7	180.5	5280.71	-418.96	-10.93	418.94	13.90
43	5463	59.9	179.8	5297.22	-445.19	-10.99	445.17	13.68
44	5495	64.3	180.3	5312.19	-473.46	-11.02	473.44	13.82
45	5526	68.7	181.2	5324.55	-501.88	-11.40	501.86	14.44
46	5558	73.3	181.9	5334.97	-532.12	-12.22	532.10	14.52
47	5590	77.5	181.7	5343.03	-563.06	-13.19	563.04	13.14
48	5621	81.2	180.5	5348.76	-593.52	-13.77	593.49	12.53
49	5644	83.9	179.9	5351.74	-616.32	-13.85	616.30	12.02
50	5691	86.4	180.2	5355.72	-663.15	-13.89	663.12	5.36
51	5787	88.9	179.5	5359.65	-759.06	-13.64	759.04	2.70
52	5882	91.4	179.6	5359.40	-854.05	-12.90	854.03	2.63
53	5977	92.5	179.4	5356.17	-948.99	-12.07	948.97	1.18
54	6073	92.1	178.7	5352.32	-1044.90	-10.48	1044.88	0.84
55	6168	91.9	179.2	5349.00	-1139.82	-8.74	1139.81	0.57
56	6263	90.8	179.2	5346.77	-1234.79	-7.41	1234.77	1.16
57	6358	91.0	179.2	5345.27	-1329.77	-6.08	1329.75	0.21
58	6454	89.0	179.9	5345.27	-1425.76	-5.33	1425.75	2.21
59	6548	90.0	179.6	5346.09	-1519.75	-4.92	1519.74	1.11
60	6643	87.8	179.2	5347.92	-1614.72	-3.93	1614.71	2.35
61	6738	86.5	179.5	5352.64	-1709.60	-2.85	1709.59	1.40
62	6833	84.8	178.9	5359.85	-1804.31	-1.53	1804.30	1.90
63	6927	87.1	179.9	5366.48	-1898.06	-0.55	1898.06	2.67
64	7022	90.4	179.7	5368.56	-1993.03	-0.22	1993.02	3.48
65	7118	92.0	179.3	5366.55	-2089.00	0.62	2089.00	1.72
66	7214	92.5	178.1	5362.78	-2184.90	2.80	2184.90	1.35
67	7309	87.1	179.0	5363.11	-2279.83	5.20	2279.84	5.76
68	7403	90.5	179.9	5365.08	-2373.79	6.10	2373.80	3.74
69	7499	91.4	179.5	5363.49	-2469.77	6.61	2469.78	1.03



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70	7594	89.3	181.1	5362.91	-2564.76	6.11	2564.77	2.78
71	7689	88.6	180.9	5364.65	-2659.73	4.45	2659.74	0.77
72	7784	88.7	180.6	5366.88	-2754.70	3.21	2754.70	0.33
73	7879	90.3	180.3	5367.71	-2849.69	2.46	2849.69	1.71
74	7911	88.4	179.8	5368.08	-2881.68	2.43	2881.68	6.14
75	7942	89.6	179.6	5368.62	-2912.68	2.60	2912.68	3.92
76	7974	90.1	179.5	5368.70	-2944.68	2.85	2944.68	1.59
77	8005	89.9	178.7	5368.70	-2975.67	3.33	2975.67	2.66
78	8037	89.0	178.1	5369.01	-3007.66	4.23	3007.66	3.38
79	8068	90.4	178.2	5369.17	-3038.64	5.23	3038.65	4.53
80	8100	91.7	178.3	5368.58	-3070.62	6.20	3070.63	4.07
81	8132	92.5	179.1	5367.41	-3102.59	6.93	3102.60	3.53
82	8163	91.4	178.2	5366.36	-3133.56	7.66	3133.57	4.58
83	8195	90.2	178.7	5365.91	-3165.55	8.53	3165.56	4.06
84	8227	90.9	178.4	5365.60	-3197.54	9.34	3197.55	2.38
85	8258	91.4	178.7	5364.98	-3228.52	10.12	3228.53	1.88
86	8290	90.4	178.4	5364.48	-3260.50	10.93	3260.52	3.26
87	8322	86.8	178.0	5365.26	-3292.47	11.93	3292.49	11.32
88	8354	87.3	178.6	5366.91	-3324.42	12.88	3324.43	2.44
89	8386	89.8	178.8	5367.72	-3356.40	13.61	3356.41	7.84
90	8417	91.1	178.8	5367.47	-3387.39	14.26	3387.41	4.19
91	8449	92.4	178.3	5366.50	-3419.36	15.07	3419.38	4.35
92	8480	94.1	178.2	5364.74	-3450.30	16.01	3450.32	5.49
93	8513	94.6	178.1	5362.24	-3483.18	17.07	3483.21	1.54
94	8545	93.9	178.3	5359.86	-3515.08	18.08	3515.11	2.27
95	8576	93.7	178.9	5357.81	-3546.00	18.83	3546.03	2.04
96	8608	93.9	178.4	5355.69	-3577.92	19.58	3577.95	1.68
97	8640	92.9	178.9	5353.79	-3609.86	20.34	3609.89	3.49
98	8672	91.5	179.3	5352.56	-3641.83	20.84	3641.86	4.55
99	8703	90.4	179.9	5352.05	-3672.82	21.05	3672.85	4.04
100	8734	90.4	179.8	5351.83	-3703.82	21.14	3703.85	0.32
101	8797	91.2	181.1	5350.95	-3766.81	20.64	3766.84	2.42
102	8829	90.4	181.4	5350.51	-3798.80	19.94	3798.83	2.67
103	8860	91.0	182.8	5350.13	-3829.78	18.81	3829.80	4.91
104	8892	91.0	183.0	5349.57	-3861.73	17.19	3861.76	0.62



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Magnetic Declination: 6.74

Job #: DR-1207114

Vertical Section Azimuth 179.9

No.	Survey Depth	INC	AZM	TVD	N-S	E-W	Vertical Section	DLS/100
105	8924	91.0	182.6	5349.01	-3893.69	15.63	3893.71	1.25
106	9019	89.7	182.5	5348.43	-3988.59	11.40	3988.60	1.37
107	9114	92.5	180.9	5346.61	-4083.52	8.58	4083.53	3.39
108	9209	91.6	180.1	5343.21	-4178.45	7.75	4178.46	1.27
109	9304	92.1	181.2	5340.14	-4273.40	6.68	4273.40	1.27
110	9333	90.2	181.1	5339.56	-4302.38	6.09	4302.39	6.56
111	9429	89.3	180.1	5339.98	-4398.37	5.09	4398.38	1.40
112	9524	89.0	179.6	5341.39	-4493.36	5.34	4493.37	0.61
PTB	9803	89.0	179.6	5346.26	-4772.31	7.28	4772.32	0.00