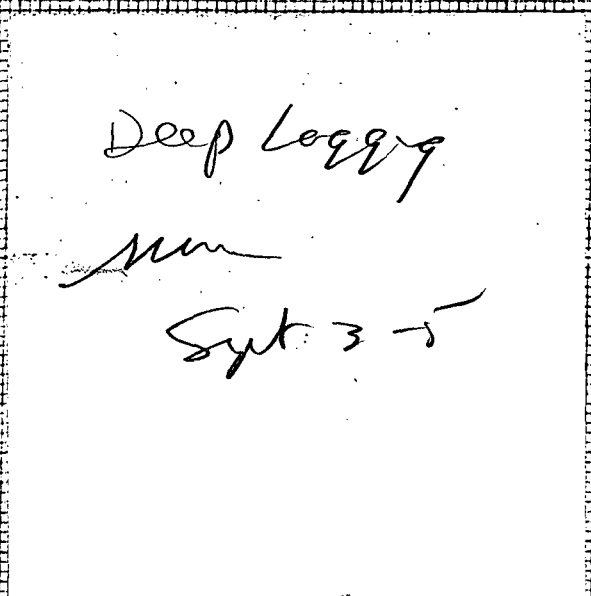
4/25/86

GL01909

R. Crowden
COLOG, Inc.

COMPARISON BETWEEN
FLUID RESISTIVITY (MLP)
CALIBRATION CURVE
AND
FLUID RESISTIVITY
DATA FROM
CLACKAMAS GEOTHERMAL
TEST WELL LOG VALUES



TEMPERATURE (°C)

90
80
70
60
50
40
30
20
10

CALIBRATION CURVE
(TAP WATER)

CLACKAMAS DATA

APPARENT FLUID RESISTIVITY

10 20 30 40 50 60

OHM-M

AMPAD 22-116 - CROSS SECTION - 20 SQUARES TO INCH

POLYNOMIAL

DEGREE PATTERN

1

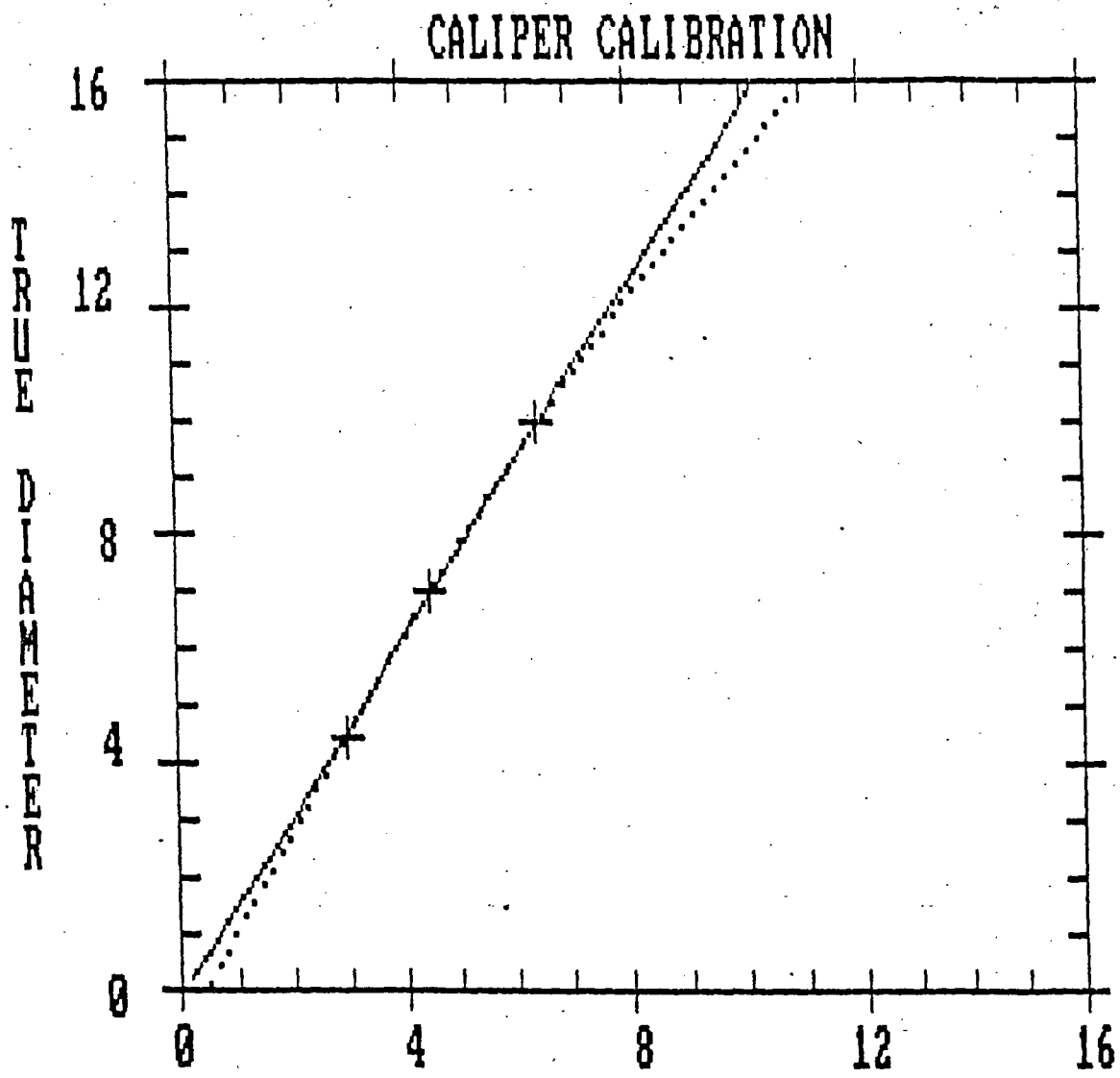
2

PLEASE SELECT DEGREE

(1 or 2)

D E F A U L T = 1

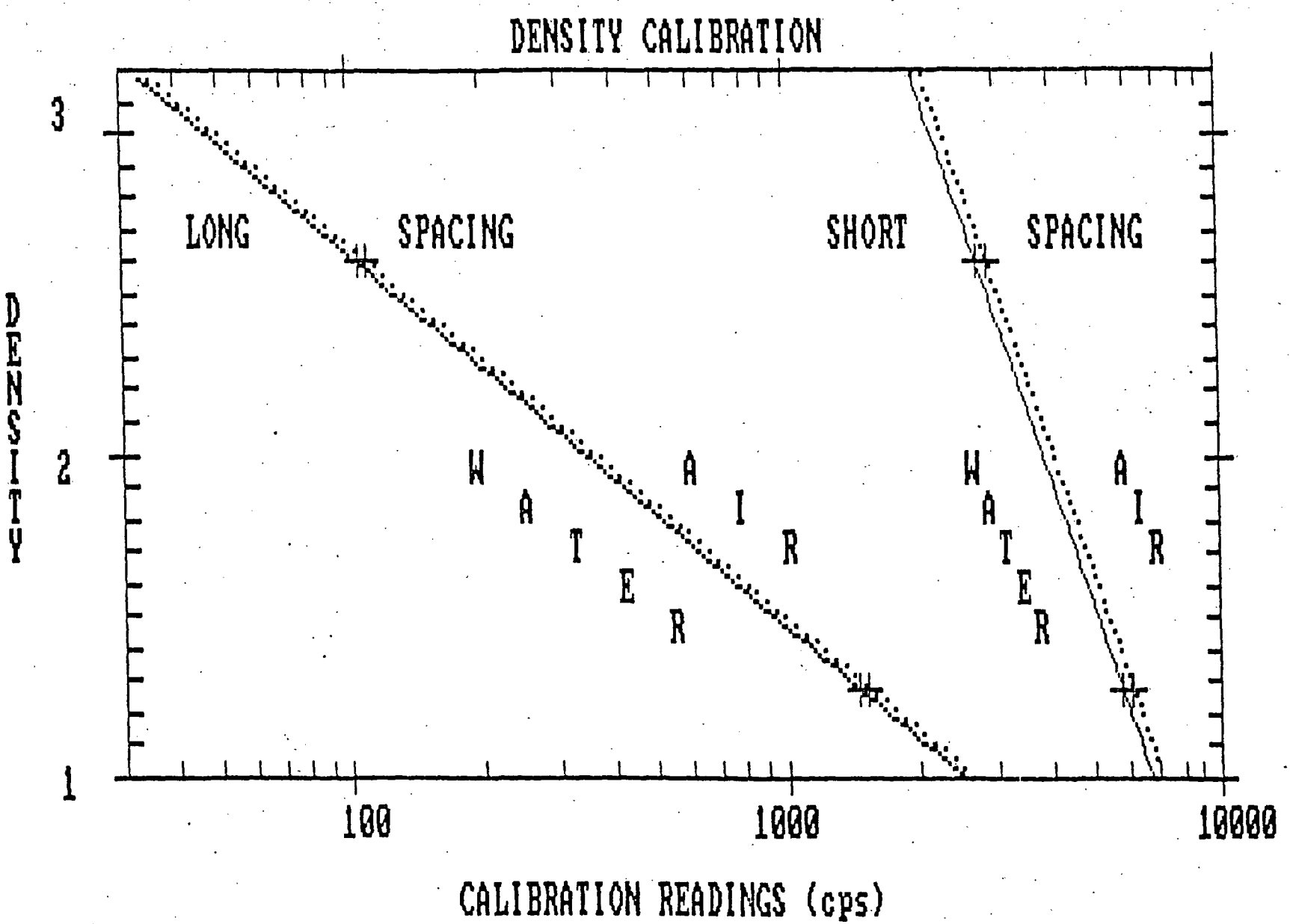
1



Input file c:ctghlggc.rmc

*Clackamas Geothermal Test well #1

COLOR, INC



CYGH 1

Color, Inc

CLACKAMAS GEOTHERMAL TEST WELL NO. 1 (CTGH-1)
SONIC LOG TABULAR PRINTOUT
LOGGED BY: COLOG, INC.
DATE: SEPTEMBER 6, 1986

(SCI)

Note: Sonic deltat (DT) is in microsec. Used a 1-foot spacing between the 2 receivers (3' and 4' from transmitter, respectively). Therefore deltat is microsec/ft and 1/deltat is velocity in ft/sec.

DEPTH	AMP	DT
4220.0	24.73%	0.0000
4220.5	43.34%	0.0000
4221.0	61.95%	0.0000
4221.5	58.55%	0.0000
4222.0	58.81%	0.0000
4222.5	60.72%	0.0000
4223.0	14.72%	0.0000
4223.5	34.39%	0.0000
4224.0	54.06%	0.0000
4224.5	73.73%	0.0000
4225.0	28.38%	21.7827
4225.5	60.62%	54.2059
4226.0	73.43%	81.9915
4226.5	37.32%	7.5380
4227.0	65.42%	8.1980
4227.5	39.58%	8.8587
4228.0	38.98%	9.5193
4228.5	71.72%	8.3906
4229.0	75.15%	6.7017
4229.5	69.91%	5.0141
4230.0	72.49%	200.0000
4230.5	31.24%	53.8847
4231.0	73.84%	77.1531
4231.5	76.70%	82.5144
4232.0	71.50%	83.7582
4232.5	69.19%	86.7295
4233.0	48.77%	74.3073
4233.5	70.00%	73.9961
4234.0	29.52%	59.2250
4234.5	52.78%	4.7907
4235.0	24.75%	6.5574
4235.5	40.41%	8.4421
4236.0	67.05%	27.5547
4236.5	47.16%	46.6774
4237.0	23.68%	65.7999
4237.5	33.11%	81.5975
4238.0	61.36%	83.6622
4238.5	67.63%	81.7832
4239.0	66.43%	79.0529
4239.5	64.92%	76.9548
4240.0	67.65%	75.1555
4240.5	67.94%	78.0892
4241.0	66.00%	79.3414
4241.5	65.30%	80.6865
4242.0	63.05%	81.4067
4242.5	56.05%	82.4476
4243.0	44.02%	82.0963
4243.5	38.58%	81.7446
4244.0	36.54%	81.3933

4244.5	34.27%	81.1390
4245.0	36.70%	81.3367
4245.5	39.33%	81.0072
4246.0	44.11%	80.0522
4246.5	42.96%	78.9286
4247.0	48.89%	77.9952
4247.5	56.97%	78.1880
4248.0	57.88%	78.4016
4248.5	56.73%	79.1833
4249.0	55.47%	79.9651
4249.5	55.99%	81.0254
4250.0	56.64%	82.8811
4250.5	57.18%	84.8173
4251.0	46.47%	86.8538
4251.5	21.43%	87.7596
4252.0	40.80%	79.2059
4252.5	51.48%	65.4236
4253.0	52.56%	61.5514
4253.5	53.07%	60.6730
4254.0	58.49%	58.5148
4254.5	64.35%	55.1295
4255.0	66.31%	52.0276
4255.5	18.68%	54.2997
4256.0	17.55%	53.8260
4256.5	16.42%	54.0742
4257.0	44.50%	54.4092
4257.5	37.73%	55.0303
4258.0	48.57%	20.2770
4258.5	45.30%	15.8201
4259.0	53.73%	36.6994
4259.5	69.65%	53.8879
4260.0	28.82%	54.4556
4260.5	66.63%	54.7317
4261.0	69.57%	53.5108
4261.5	68.37%	54.3088
4262.0	63.36%	54.9552
4262.5	27.09%	27.7856
4263.0	47.86%	56.0831
4263.5	63.65%	57.3240
4264.0	64.74%	23.9585
4264.5	63.65%	26.6663
4265.0	61.71%	32.9452
4265.5	59.77%	56.2939
4266.0	60.08%	34.2702
4266.5	61.72%	5.2198
4267.0	63.46%	50.1506
4267.5	65.17%	71.3925
4268.0	63.40%	72.8242
4268.5	56.59%	73.8324
4269.0	14.69%	72.8568
4269.5	15.00%	72.0011
4270.0	15.31%	74.3826
4270.5	21.10%	76.7642
4271.0	43.95%	72.6158
4271.5	45.74%	69.0774
4272.0	13.27%	63.8702

4272.5	37.40%	63.1055
4273.0	52.15%	63.1970
4273.5	55.70%	62.3218
4274.0	63.05%	59.7357
4274.5	25.63%	62.9492
4275.0	68.87%	66.9469
4275.5	66.10%	62.1562
4276.0	62.73%	32.9251
4276.5	61.01%	71.3912
4277.0	48.02%	62.9592
4277.5	28.58%	35.4949
4278.0	63.78%	47.4202
4278.5	63.04%	0.8834
4279.0	60.18%	17.4463
4279.5	62.27%	38.1851
4280.0	66.18%	190.0000
4280.5	67.28%	71.2056
4281.0	64.59%	74.6925
4281.5	63.23%	73.2357
4282.0	60.45%	67.0548
4282.5	58.16%	83.2466
4283.0	59.04%	82.5624
4283.5	60.80%	70.1866
4284.0	22.86%	26.9022
4284.5	40.31%	61.1122
4285.0	57.76%	74.3575
4285.5	69.46%	63.1951
4286.0	16.00%	53.9180
4286.5	65.05%	54.1323
4287.0	39.50%	54.3367
4287.5	69.77%	54.4467
4288.0	70.84%	54.5566
4288.5	69.14%	54.6577
4289.0	15.88%	54.7408
4289.5	41.76%	54.3747
4290.0	71.36%	53.2900
4290.5	71.16%	51.3131
4291.0	70.34%	51.8987
4291.5	71.34%	52.4841
4292.0	75.34%	52.3991
4292.5	77.50%	33.2864
4293.0	70.23%	14.1739
4293.5	19.59%	3.3829
4294.0	65.46%	2.5240
4294.5	17.47%	1.6651
4295.0	39.76%	0.8068
4295.5	42.52%	0.6023
4296.0	19.45%	20.7589
4296.5	46.57%	40.8954
4297.0	52.69%	61.0519
4297.5	53.94%	75.8981
4298.0	56.77%	76.7278
4298.5	19.33%	78.3477
4299.0	49.58%	20.2570
4299.5	78.06%	48.7051
4300.0	77.93%	77.1531

4300.5	75.76%	15.6796
4301.0	60.55%	52.2585
4301.5	58.38%	3.4933
4302.0	56.96%	25.1355
4302.5	54.85%	46.7777
4303.0	50.88%	68.3196
4303.5	48.20%	85.7157
4304.0	46.35%	84.3379
4304.5	47.00%	81.5963
4305.0	54.57%	78.9801
4305.5	58.22%	10.2791
4306.0	70.44%	80.0441
4306.5	73.06%	81.6477
4307.0	71.83%	79.6344
4307.5	70.11%	78.1368
4308.0	69.75%	75.7402
4308.5	74.48%	71.8304
4309.0	76.45%	70.8417
4309.5	75.31%	69.7048
4310.0	64.09%	66.5779
4310.5	57.68%	55.1320
4311.0	68.93%	52.0553
4311.5	60.99%	51.6384
4312.0	61.82%	52.7504
4312.5	59.85%	58.4922
4313.0	59.66%	71.4716
4313.5	61.40%	78.6036
4314.0	63.17%	82.5260
4314.5	62.42%	82.4858
4315.0	59.54%	80.0542
4315.5	67.05%	79.1532
4316.0	72.44%	78.5748
4316.5	71.89%	35.5751
4317.0	71.29%	65.8904
4317.5	70.53%	71.6246
4318.0	69.86%	70.4834
4318.5	70.50%	13.6117
4319.0	71.23%	38.2051
4319.5	70.98%	62.8187
4320.0	69.74%	86.0720
4320.5	68.78%	95.8191
4321.0	69.76%	93.2694
4321.5	70.69%	90.4612
4322.0	71.47%	89.1381
4322.5	72.81%	94.3610
4323.0	74.55%	97.1052
4323.5	77.79%	99.2797
4324.0	74.69%	96.6672
4324.5	69.80%	93.2596
4325.0	61.32%	93.8783
4325.5	58.33%	94.4974
4326.0	54.74%	94.2167
4326.5	56.04%	92.0146
4327.0	57.44%	89.5151
4327.5	59.14%	87.7559
4328.0	61.01%	84.8373

4328.5	63.68%	80.5938
4329.0	58.85%	77.5647
4329.5	36.17%	74.4327
4330.0	58.97%	70.7262
4330.5	62.13%	66.6683
4331.0	65.43%	63.1248
4331.5	69.87%	60.4321
4332.0	71.91%	58.5412
4332.5	71.90%	55.4381
4333.0	71.16%	50.9624
4333.5	63.80%	50.6936
4334.0	26.30%	50.7764
4334.5	59.59%	51.0385
4335.0	66.62%	53.0992
4335.5	66.88%	57.4182
4336.0	65.49%	69.4187
4336.5	63.74%	21.2006
4337.0	66.70%	79.1005
4337.5	68.48%	81.1821
4338.0	58.05%	81.6891
4338.5	55.10%	77.9913
4339.0	57.06%	74.0488
4339.5	52.71%	74.5150
4340.0	54.62%	75.8795
4340.5	57.84%	77.3413
4341.0	53.45%	78.8846
4341.5	53.79%	78.5936
4342.0	59.80%	78.7855
4342.5	62.02%	79.3564
4343.0	65.04%	81.4407
4343.5	67.64%	82.9640
4344.0	65.27%	88.9354
4344.5	65.15%	91.9393
4345.0	67.37%	89.7134
4345.5	69.63%	86.7972
4346.0	66.80%	85.9841
4346.5	63.05%	88.9756
4347.0	59.88%	83.8636
4347.5	55.85%	78.4581
4348.0	54.47%	75.1003
4348.5	57.28%	73.1617
4349.0	60.54%	76.5885
4349.5	61.72%	78.8295
4350.0	62.68%	74.6202
4350.5	62.60%	74.7126
4351.0	65.33%	76.7654
4351.5	70.78%	78.4694
4352.0	69.57%	78.4192
4352.5	63.39%	77.4982
4353.0	71.00%	79.0215
4353.5	72.12%	81.1697
4354.0	75.11%	83.5417
4354.5	19.17%	84.7275
4355.0	42.72%	85.3088
4355.5	66.28%	84.4885
4356.0	68.91%	78.7291

4356.5	68.60%	72.2169
4357.0	67.89%	72.3976
4357.5	65.46%	75.9135
4358.0	52.56%	76.1866
4358.5	69.55%	76.3262
4359.0	68.48%	77.7234
4359.5	67.12%	78.4204
4360.0	63.76%	78.6117
4360.5	47.97%	76.8169
4361.0	47.59%	73.8130
4361.5	51.95%	23.6097
4362.0	55.09%	81.6289
4362.5	50.12%	79.6711
4363.0	49.94%	79.4412
4363.5	52.77%	79.3436
4364.0	56.44%	66.4926
4364.5	60.77%	49.3475
4365.0	68.02%	84.8123
4365.5	74.37%	82.7380
4366.0	71.43%	79.7479
4366.5	64.11%	80.5146
4367.0	62.89%	81.7192
4367.5	62.87%	82.9244
4368.0	64.26%	75.5232
4368.5	66.89%	70.1565
4369.0	69.07%	70.3547
4369.5	69.01%	72.9296
4370.0	68.22%	75.4417
4370.5	67.46%	70.7889
4371.0	71.64%	69.6045
4371.5	70.18%	72.2520
4372.0	68.69%	76.0740
4372.5	64.75%	79.7455
4373.0	56.92%	74.6210
4373.5	51.52%	75.0583
4374.0	47.97%	75.6970
4374.5	47.72%	69.2029
4375.0	49.46%	60.4949
4375.5	51.76%	56.1433
4376.0	54.18%	54.3490
4376.5	55.00%	53.6614
4377.0	55.13%	54.9299
4377.5	55.21%	55.3876
4378.0	49.86%	56.6616
4378.5	44.55%	59.1943
4379.0	45.24%	58.0004
4379.5	46.24%	57.9778
4380.0	44.19%	59.3530
4380.5	44.02%	60.1962
4381.0	43.79%	59.1598
4381.5	31.68%	55.7794
4382.0	21.59%	54.4855
4382.5	37.05%	55.0275
4383.0	19.21%	55.2534
4383.5	68.62%	54.3603
4384.0	73.43%	53.6774

4384.5	74.89%	54.1150
4385.0	74.32%	54.3484
4385.5	70.39%	53.4424
4386.0	74.31%	52.2760
4386.5	69.78%	51.5042
4387.0	72.27%	51.1486
4387.5	67.33%	50.4254
4388.0	63.61%	50.1159
4388.5	60.06%	35.0130
4389.0	62.48%	40.1024
4389.5	66.31%	23.4993
4390.0	67.98%	6.8862
4390.5	68.53%	78.1067
4391.0	68.04%	80.2950
4391.5	64.77%	38.1449
4392.0	60.95%	36.2176
4392.5	58.54%	86.5388
4393.0	60.91%	83.9364
4393.5	63.27%	85.8412
4394.0	66.05%	88.1335
4394.5	68.31%	89.6792
4395.0	69.29%	89.6171
4395.5	63.82%	88.9706
4396.0	60.53%	86.7571
4396.5	62.10%	83.4722
4397.0	68.97%	79.5021
4397.5	67.06%	75.1907
4398.0	66.16%	70.5731
4398.5	66.37%	67.4563
4399.0	63.09%	64.7485
4399.5	56.88%	61.3406
4400.0	46.03%	61.1292
4400.5	61.76%	64.4994
4401.0	68.07%	62.0470
4401.5	70.98%	61.2446
4402.0	71.53%	60.9874
4402.5	67.17%	60.8447
4403.0	68.06%	56.5524
4403.5	70.94%	52.9462
4404.0	71.35%	49.9423
4404.5	66.54%	48.6210
4405.0	61.45%	49.2847
4405.5	61.96%	53.0566
4406.0	62.88%	56.5950
4406.5	61.63%	65.3884
4407.0	64.61%	65.8527
4407.5	62.17%	69.5216
4408.0	57.15%	71.5731
4408.5	25.63%	72.1366
4409.0	62.15%	70.9690
4409.5	59.69%	69.5054
4410.0	59.94%	68.0021
4410.5	59.47%	69.5090
4411.0	54.75%	69.9899
4411.5	52.91%	69.0781
4412.0	55.85%	69.4952

4412.5	53.40%	69.9219
4413.0	54.59%	67.1250
4413.5	56.43%	65.4348
4414.0	53.26%	63.3156
4414.5	49.50%	64.2076
4415.0	51.08%	36.4786
4415.5	52.53%	58.4220
4416.0	52.71%	65.3746
4416.5	52.66%	66.4092
4417.0	52.60%	66.7725
4417.5	52.51%	63.9329
4418.0	52.42%	67.5736
4418.5	52.33%	68.6270
4419.0	52.29%	69.2151
4419.5	52.25%	70.2155
4420.0	52.22%	71.7050
4420.5	52.20%	73.2659
4421.0	52.22%	67.7524
4421.5	52.23%	62.8890
4422.0	52.24%	60.1761
4422.5	52.24%	59.4197
4423.0	52.24%	59.5583
4423.5	52.25%	59.8140
4424.0	52.27%	60.0696
4424.5	52.26%	60.3253
4425.0	52.19%	60.3896

CLACKAMAS GEOTHERMAL TEST WELL NO. 1 (CTGH-1)
TEMPERATURE & FLUID RESISTIVITY
LOGGED BY: COLOG, INC.
DATE: SEPTEMBER 5, 1986

JLS

DEPTH	F-RES	TEMP-K	TEMP-C	TEMP-F
10	0.000	285.70	12.69	54.85
20	0.000	286.26	13.26	55.86
30	32.275	285.87	12.87	55.17
40	32.817	285.41	12.41	54.33
50	33.681	285.03	12.03	53.65
60	33.739	284.91	11.91	53.43
70	33.868	284.86	11.86	53.34
80	33.928	284.80	11.80	53.23
90	34.213	284.68	11.68	53.03
100	34.251	284.54	11.54	52.76
110	34.240	284.44	11.44	52.59
120	34.230	284.36	11.36	52.45
130	34.219	284.29	11.29	52.32
140	34.208	284.19	11.19	52.13
150	34.318	284.04	11.04	51.87
160	34.257	283.96	10.96	51.72
170	34.866	283.86	10.86	51.54
180	34.944	283.79	10.79	51.42
190	34.905	283.67	10.67	51.21
200	35.410	283.49	10.49	50.89
210	35.289	283.42	10.42	50.76
220	35.394	283.39	10.39	50.70
230	35.392	283.40	10.40	50.72
240	35.485	283.12	10.12	50.22
250	36.569	282.10	9.10	48.38
260	37.273	281.55	8.55	47.38
270	37.310	281.83	8.83	47.90
280	37.167	281.45	8.44	47.20
290	38.004	281.05	8.05	46.48
300	38.052	281.15	8.15	46.66
310	38.044	281.25	8.25	46.86
320	37.350	281.72	8.72	47.70
330	37.368	281.79	8.79	47.83
340	37.383	281.91	8.90	48.03
350	37.079	281.94	8.94	48.10
360	36.928	282.03	9.02	48.24
370	36.870	282.16	9.16	48.50
380	36.895	282.25	9.25	48.65
390	36.730	282.36	9.36	48.85
400	36.603	282.39	9.39	48.91
410	36.698	282.30	9.30	48.75
420	36.845	282.07	9.07	48.33
430	36.909	282.03	9.03	48.25
440	36.931	281.98	8.98	48.16
450	37.119	281.85	8.85	47.93
460	37.214	281.81	8.81	47.85
470	37.295	281.80	8.80	47.85
480	37.338	281.80	8.80	47.85
490	37.361	281.71	8.71	47.67

DEPTH	F-RES	TEMP-K	TEMP-C	TEMP-F
500	37.393	281.62	8.62	47.52
510	37.648	281.45	8.45	47.21
520	37.454	281.46	8.46	47.23
530	37.493	281.54	8.54	47.38
540	37.598	281.54	8.54	47.38
550	37.641	281.54	8.54	47.36
560	37.662	281.48	8.48	47.26
570	37.759	281.65	8.65	47.56
580	37.913	281.67	8.67	47.61
590	37.845	281.71	8.71	47.67
600	37.751	281.73	8.73	47.71
610	37.715	281.76	8.76	47.76
620	37.640	281.80	8.80	47.83
630	37.659	281.81	8.81	47.86
640	37.553	281.86	8.86	47.95
650	37.560	281.90	8.90	48.01
660	37.567	281.93	8.93	48.07
670	37.575	282.00	9.00	48.19
680	37.582	282.02	9.01	48.23
690	37.448	282.07	9.07	48.33
700	37.297	282.18	9.18	48.52
710	37.243	282.19	9.19	48.54
720	37.314	282.26	9.26	48.67
730	37.281	282.32	9.32	48.77
740	37.189	282.47	9.47	49.04
750	37.098	282.54	9.54	49.17
760	37.007	282.57	9.57	49.23
770	36.916	282.63	9.63	49.34
780	36.825	282.69	9.69	49.45
790	36.706	282.88	9.88	49.79
800	36.633	283.08	10.08	50.15
810	36.408	283.16	10.16	50.29
820	36.186	283.29	10.29	50.52
830	36.254	283.46	10.46	50.82
840	35.964	283.65	10.65	51.16
850	35.776	283.87	10.87	51.57
860	35.687	284.02	11.01	51.83
870	35.171	284.16	11.16	52.09
880	35.157	284.42	11.42	52.56
890	34.831	284.42	11.42	52.56
900	34.782	284.44	11.44	52.59
910	34.294	284.66	11.66	52.99
920	34.258	284.67	11.67	53.01
930	34.189	284.66	11.66	52.98
940	34.301	284.74	11.74	53.13
950	34.075	284.99	11.99	53.59
960	33.905	285.16	12.16	53.90
970	33.617	285.29	12.29	54.11
980	33.632	285.35	12.35	54.22
990	33.619	285.22	12.22	54.00
1000	33.605	285.22	12.22	54.00
1010	33.591	285.40	12.40	54.32
1020	33.334	285.49	12.49	54.49
1030	33.263	285.60	12.60	54.68

DEPTH	F-RES	TEMP-K	TEMP-C	TEMP-F
1040	33.313	285.72	12.72	54.89
1050	33.306	285.77	12.77	54.98
1060	33.298	285.76	12.76	54.97
1070	33.291	285.72	12.72	54.89
1080	33.283	285.66	12.66	54.78
1090	33.276	285.68	12.68	54.82
1100	33.269	285.78	12.78	55.00
1110	33.261	285.85	12.85	55.13
1120	33.101	285.98	12.98	55.36
1130	32.944	286.09	13.09	55.56
1140	32.807	286.22	13.22	55.79
1150	32.651	286.42	13.42	56.15
1160	32.393	286.56	13.56	56.41
1170	32.336	286.70	13.70	56.66
1180	32.372	286.83	13.83	56.89
1190	32.062	286.99	13.99	57.19
1200	31.931	287.04	14.04	57.26
1210	32.088	287.18	14.18	57.52
1220	31.938	287.16	14.15	57.48
1230	31.781	287.32	14.32	57.78
1240	31.624	287.47	14.47	58.05
1250	31.467	287.66	14.66	58.39
1260	31.305	287.82	14.82	58.68
1270	31.190	287.88	14.88	58.78
1280	31.016	288.08	15.08	59.14
1290	30.892	288.34	15.34	59.61
1300	30.771	288.50	15.50	59.90
1310	30.638	288.56	15.56	60.00
1320	30.512	288.72	15.72	60.30
1330	30.194	288.89	15.89	60.59
1340	30.197	289.11	16.11	60.99
1350	30.108	289.19	16.19	61.14
1360	29.979	289.23	16.23	61.22
1370	29.849	289.36	16.36	61.45
1570	27.405	292.83	19.83	67.69
1580	27.304	292.98	19.98	67.97
1590	27.204	293.10	20.10	68.19
1600	27.104	293.26	20.26	68.47
1610	27.004	293.51	20.51	68.92
1620	26.957	293.64	20.64	69.15
1630	26.833	293.89	20.89	69.60
1640	26.777	294.19	21.19	70.14
1650	26.629	294.36	21.36	70.44
1660	26.499	294.61	21.61	70.89
1670	26.364	294.89	21.89	71.40
1680	26.230	295.35	22.35	72.24
1690	26.095	295.48	22.48	72.46
1700	25.960	295.90	22.90	73.22
1710	25.826	295.96	22.96	73.33
1720	25.691	296.06	23.06	73.51
1730	25.629	296.22	23.22	73.80
1740	25.490	296.34	23.34	74.02
1750	25.412	296.61	23.61	74.50
1760	25.268	296.69	23.69	74.65

DEPTH	F-RES	TEMP-K	TEMP-C	TEMP-F
1770	25.203	296.80	23.80	74.83
1780	25.139	296.85	23.85	74.92
1790	25.074	297.08	24.08	75.34
1800	25.010	297.15	24.15	75.46
1810	24.945	297.34	24.34	75.81
1820	24.881	297.45	24.44	76.00
1830	24.816	297.60	24.60	76.29
1840	24.752	297.94	24.94	76.90
1850	24.644	297.92	24.92	76.85
1860	24.397	298.15	25.15	77.27
1870	24.444	298.50	25.50	77.89
1880	24.330	298.65	25.65	78.16
1890	24.171	298.64	25.64	78.14
1900	24.066	298.79	25.79	78.41
1910	23.962	298.92	25.92	78.66
1920	23.858	299.16	26.16	79.08
1930	23.754	299.25	26.25	79.25
1940	23.650	299.64	26.64	79.96
1950	23.546	299.71	26.71	80.07
1960	23.442	299.84	26.84	80.31
1970	23.337	299.94	26.94	80.49
1980	23.233	300.25	27.25	81.05
1990	23.112	300.57	27.57	81.63
2000	22.972	300.90	27.90	82.22
2010	22.879	301.30	28.30	82.93
2020	22.762	301.36	28.36	83.04
2030	22.646	301.61	28.61	83.50
2040	22.529	301.90	28.90	84.01
2050	22.412	302.09	29.09	84.36
2060	22.296	302.36	29.36	84.84
2070	22.179	302.45	29.45	85.01
2080	22.063	302.69	29.69	85.43
2090	21.946	302.66	29.66	85.39
2100	21.811	302.86	29.86	85.74
2110	21.788	303.13	30.13	86.23
2120	21.718	303.15	30.15	86.27
2130	21.634	303.35	30.35	86.64
2140	21.550	303.54	30.54	86.97
2150	21.465	303.58	30.58	87.04
2160	21.381	304.02	31.02	87.84
2170	21.297	303.94	30.94	87.68
2180	21.213	304.14	31.13	88.04
2190	21.129	304.42	31.42	88.55
2200	21.044	304.59	31.59	88.86
2210	20.960	304.69	31.69	89.05
2220	20.876	305.00	32.00	89.59
2230	20.792	305.34	32.33	90.20
2240	20.708	305.29	32.29	90.12
2250	20.624	305.57	32.57	90.62
2260	20.539	305.74	32.74	90.93
2270	20.455	306.03	33.03	91.46
2280	20.371	306.12	33.12	91.62
2290	20.279	306.49	33.49	92.28
2300	20.191	306.74	33.74	92.73

DEPTH	F-RES	TEMP-K	TEMP-C	TEMP-F
2310	20.122	307.11	34.11	93.40
2320	20.052	307.06	34.06	93.30
2330	19.983	307.39	34.39	93.90
2340	19.913	307.31	34.31	93.75
2350	19.844	307.60	34.60	94.27
2360	19.775	307.98	34.98	94.97
2370	19.705	308.02	35.02	95.04
2380	19.636	308.32	35.32	95.57
2390	19.566	308.45	35.45	95.82
2400	19.497	308.73	35.73	96.31
2410	19.428	308.90	35.90	96.62
2420	19.358	309.10	36.10	96.97
2430	19.306	309.29	36.29	97.32
2440	19.079	309.49	36.49	97.68
2450	18.724	309.92	36.92	98.46
2460	18.661	310.07	37.07	98.73
2470	18.717	310.30	37.30	99.15
2480	18.641	310.52	37.51	99.53
2490	18.565	310.73	37.73	99.91
2500	18.489	311.00	38.00	100.40
2510	18.414	311.46	38.46	101.23
2520	18.338	311.51	38.51	101.32
2530	18.262	311.77	38.77	101.78
2540	18.186	311.96	38.96	102.14
2550	18.110	312.14	39.14	102.46
2560	18.035	312.41	39.41	102.94
2570	17.959	312.56	39.56	103.21
2580	17.883	312.76	39.76	103.56
2590	17.807	312.99	39.99	103.98
2600	17.732	313.18	40.18	104.32
2610	17.656	313.38	40.38	104.68
2620	17.580	313.53	40.53	104.95
2630	17.504	313.73	40.73	105.31
2640	17.429	313.90	40.90	105.61
2650	17.353	314.10	41.10	105.97
2660	17.277	314.29	41.29	106.33
2670	17.199	314.53	41.53	106.75
2680	17.212	314.74	41.74	107.13
2690	17.154	314.98	41.98	107.56
2700	17.093	315.21	42.21	107.97
2710	17.032	315.39	42.39	108.30
2720	16.971	315.59	42.59	108.65
2730	16.910	315.83	42.83	109.09
2740	16.849	315.98	42.98	109.36
2750	16.788	316.26	43.26	109.87
2760	16.727	316.39	43.39	110.11
2770	16.666	316.59	43.59	110.47
2780	16.605	316.89	43.89	111.00
2790	16.544	317.15	44.15	111.46
2800	16.483	317.41	44.40	111.93
2810	16.422	317.63	44.63	112.34
2820	16.361	317.87	44.87	112.76
2830	16.300	318.17	45.17	113.31
2840	16.239	318.36	45.36	113.65

DEPTH	F-RES	TEMP-K	TEMP-C	TEMP-F
2850	16.178	318.61	45.61	114.10
2860	16.117	318.78	45.78	114.40
2870	16.055	319.00	46.00	114.79
2880	16.051	319.15	46.15	115.07
2890	15.988	319.36	46.36	115.45
2900	15.924	319.54	46.54	115.78
2910	15.861	319.74	46.74	116.13
2920	15.797	319.94	46.94	116.49
2930	15.734	320.10	47.10	116.77
2940	15.671	320.38	47.38	117.28
2950	15.607	320.55	47.55	117.59
2960	15.544	320.79	47.79	118.03
2970	15.480	321.28	48.28	118.91
2980	15.417	321.56	48.56	119.42
2990	15.354	321.79	48.79	119.81
3000	15.290	321.99	48.99	120.17
3010	15.227	322.22	49.21	120.59
3020	15.163	322.45	49.45	121.00
3030	15.100	322.61	49.61	121.30
3040	15.037	322.76	49.76	121.57
3050	14.973	322.97	49.97	121.94
3060	14.910	323.18	50.18	122.32
3070	14.846	323.39	50.39	122.69
3080	14.783	323.61	50.61	123.10
3090	14.720	323.85	50.85	123.53
3100	14.656	324.07	51.07	123.93
3110	14.593	324.28	51.28	124.30
3120	14.617	324.68	51.68	125.02
3130	14.544	324.94	51.94	125.49
3140	14.505	325.11	52.11	125.80
3150	14.465	325.33	52.33	126.20
3160	14.425	325.52	52.52	126.54
3170	14.386	325.77	52.77	126.98
3180	14.346	326.02	53.01	127.43
3190	14.306	326.23	53.23	127.82
3200	14.267	326.40	53.40	128.12
3210	14.227	326.69	53.69	128.63
3220	14.187	326.93	53.93	129.08
3230	14.148	327.11	54.11	129.41
3240	14.108	327.37	54.37	129.87
3250	14.068	327.55	54.55	130.18
3260	14.029	327.74	54.74	130.53
3270	13.989	328.02	55.02	131.04
3280	13.949	328.07	55.07	131.12
3290	13.910	328.25	55.25	131.44
3300	13.870	328.46	55.46	131.83
3310	13.830	328.63	55.63	132.14
3320	13.791	328.88	55.88	132.59
3330	13.751	328.95	55.95	132.72
3340	13.711	329.05	56.05	132.90
3350	13.672	329.38	56.38	133.48
3360	13.632	329.69	56.69	134.05
3370	13.592	329.95	56.95	134.52
3380	13.552	330.20	57.20	134.97

DEPTH	F-RES	TEMP-K	TEMP-C	TEMP-F
3390	13.513	330.39	57.39	135.30
3400	13.473	330.63	57.63	135.73
3410	13.433	330.82	57.82	136.07
3420	12.953	331.23	58.23	136.81
3430	12.905	331.42	58.42	137.16
3440	12.858	331.59	58.59	137.45
3450	12.811	331.99	58.99	138.18
3460	12.763	332.26	59.26	138.67
3470	12.716	332.61	59.61	139.29
3480	12.668	332.80	59.80	139.64
3490	12.621	333.28	60.28	140.50
3500	12.574	333.37	60.37	140.66
3510	12.526	333.62	60.62	141.11
3520	12.479	334.01	61.01	141.82
3530	12.431	334.04	61.04	141.88
3540	12.384	334.43	61.43	142.58
3550	12.336	334.73	61.73	143.11
3560	12.289	334.77	61.77	143.18
3570	12.242	334.95	61.95	143.52
3580	12.194	335.36	62.36	144.25
3590	12.147	335.56	62.56	144.61
3600	12.099	335.74	62.74	144.92
3610	12.052	336.11	63.11	145.59
3620	12.005	336.39	63.39	146.10
3630	11.957	336.57	63.57	146.43
3640	11.910	336.77	63.76	146.78
3650	11.664	337.04	64.04	147.27
3660	11.512	337.37	64.37	147.86
3670	11.571	337.55	64.55	148.20
3680	11.538	337.84	64.84	148.71
3690	11.504	337.93	64.93	148.88
3700	11.470	338.18	65.18	149.33
3710	11.436	338.41	65.41	149.73
3720	11.402	338.58	65.58	150.04
3730	11.368	338.80	65.80	150.43
3740	11.334	338.99	65.99	150.77
3750	11.300	339.37	66.37	151.47
3760	11.266	339.44	66.44	151.59
3770	11.232	339.62	66.62	151.92
3780	11.199	339.91	66.91	152.44
3790	11.165	340.25	67.25	153.04
3800	11.131	340.37	67.37	153.27
3810	11.097	340.58	67.58	153.65
3820	11.063	341.00	68.00	154.40
3830	11.029	341.19	68.19	154.74
3840	10.995	341.67	68.67	155.60
3850	10.961	341.65	68.65	155.57
3860	10.927	342.18	69.18	156.53
3870	10.893	342.33	69.33	156.80
3880	10.860	342.53	69.53	157.15
3890	10.826	342.81	69.81	157.66
3900	10.792	342.91	69.91	157.84
3910	10.758	343.17	70.17	158.31
3920	10.724	343.42	70.42	158.76

DEPTH	F-RES	TEMP-K	TEMP-C	TEMP-F
3930	10.690	343.86	70.86	159.55
3940	10.656	344.07	71.07	159.92
3950	10.626	344.12	71.12	160.02
3960	10.606	344.28	71.28	160.31
3970	10.587	344.68	71.68	161.02
3980	10.568	344.88	71.88	161.39
3990	10.548	345.01	72.01	161.62
4000	10.529	345.17	72.17	161.90
4010	10.510	345.30	72.30	162.13
4020	10.490	345.51	72.51	162.52
4030	10.471	345.67	72.67	162.81
4040	10.452	345.73	72.73	162.91
4050	10.432	346.02	73.02	163.43
4060	10.413	346.18	73.18	163.73
4070	10.394	346.33	73.33	164.00
4080	10.374	346.63	73.63	164.53
4090	10.355	346.62	73.62	164.52
4100	10.336	346.80	73.80	164.85
4110	10.316	347.00	74.00	165.20
4120	10.297	347.10	74.10	165.39
4130	10.278	347.22	74.22	165.60
4140	10.258	347.39	74.39	165.90
4150	10.239	347.62	74.62	166.31
4160	10.220	347.77	74.77	166.59
4170	10.200	347.96	74.96	166.94
4180	10.181	348.29	75.29	167.52
4190	10.162	348.52	75.52	167.94
4200	10.142	348.74	75.74	168.34
4210	10.123	349.10	76.10	168.97
4220	10.104	349.15	76.15	169.07
4230	10.084	349.87	76.87	170.37
4240	10.065	350.14	77.14	170.85
4250	10.001	350.20	77.20	170.96
4260	9.964	350.50	77.50	171.50
4270	9.940	350.78	77.78	172.00
4280	9.915	351.00	78.00	172.40
4290	9.890	350.40	77.40	171.33
4300	9.866	351.45	78.45	173.21
4310	9.841	351.68	78.68	173.62
4320	9.816	351.95	78.95	174.10
4330	9.791	352.05	79.05	174.28
4340	9.767	352.21	79.21	174.58
4350	9.742	352.40	79.40	174.92
4360	9.717	352.61	79.61	175.29
4370	9.693	352.83	79.82	175.68
4380	9.668	353.01	80.01	176.02
4390	9.643	353.27	80.27	176.49
4400	9.618	353.47	80.47	176.84
4410	9.594	353.54	80.54	176.98
4420	9.569	353.75	80.75	177.34
4430	9.544	353.84	80.84	177.51
4440	9.519	354.05	81.05	177.89
4450	9.495	354.26	81.26	178.28
4460	9.470	354.53	81.53	178.75

DEPTH	F-RES	TEMP-K	TEMP-C	TEMP-F
4470	9.445	354.71	81.71	179.07
4480	9.421	354.89	81.89	179.40
4490	9.396	355.08	82.08	179.75
4500	9.371	355.28	82.28	180.10
4510	9.346	355.54	82.54	180.58
4520	9.322	355.75	82.75	180.95
4530	9.297	355.85	82.85	181.13
4540	9.272	356.01	83.01	181.43
4550	9.248	356.29	83.29	181.92
4560	9.223	356.45	83.45	182.20
4570	9.162	356.61	83.61	182.50
4580	9.107	356.70	83.70	182.67
4590	9.052	356.93	83.93	183.08
4600	8.997	357.10	84.10	183.39
4610	8.942	357.24	84.24	183.64
4620	8.887	357.44	84.44	183.98
4630	8.832	357.67	84.67	184.40
4640	8.777	357.83	84.83	184.69
4650	8.722	358.04	85.04	185.07
4660	8.667	358.30	85.30	185.54
4670	8.612	358.47	85.47	185.84
4680	8.557	358.54	85.54	185.97
4690	8.502	358.67	85.67	186.20
4700	8.447	358.85	85.85	186.53
4710	8.392	359.26	86.26	187.28
4720	8.337	359.37	86.37	187.47
4730	8.282	359.55	86.55	187.79
4740	8.227	359.67	86.67	188.01
4750	8.105	359.86	86.86	188.35

CLACKAMAS GEOTHERMAL TEST WELL NO. 1 (CTGH-1)
ELECTRIC LOG TABULAR PRINTOUT (JLE)
LOGGED BY: COLOG, INC.
DATE: SEPTEMBER 5, 1986

DEPTH	SP-1	LAT	SP-2	IP-1	16-1	64-1	SP-3	IP-2	16-2	64-2
4200.0	0.00	0.00	0.00	0.52	0.00	0.34	0.00	0.00	0.00	0.00
4200.5	0.00	0.00	0.00	0.50	0.00	0.29	0.00	0.00	0.00	0.00
4201.0	0.00	0.00	0.00	0.47	0.00	0.26	0.00	0.00	0.00	0.00
4201.5	0.00	0.00	0.00	0.45	0.00	0.23	0.00	0.00	0.00	0.00
4202.0	0.00	0.00	0.00	0.41	0.00	0.21	0.00	0.00	0.00	0.00
4202.5	0.00	0.00	0.00	0.34	0.00	0.18	0.00	0.00	0.00	0.00
4203.0	0.00	0.00	0.00	0.34	0.00	0.15	0.00	0.00	0.00	0.00
4203.5	0.00	0.00	0.00	0.37	0.00	0.19	0.00	0.00	0.00	0.00
4204.0	0.00	0.00	0.00	0.38	0.00	0.27	0.00	0.00	0.00	0.00
4204.5	0.00	0.00	0.04	0.36	0.00	0.47	0.00	0.00	0.00	0.00
4205.0	0.00	0.00	0.06	0.33	0.00	1.32	18.21	0.00	0.00	0.00
4205.5	0.00	0.00	0.06	0.29	0.00	5.17	17.75	0.00	0.00	0.00
4206.0	0.00	0.00	0.08	0.24	0.00	6.20	17.22	0.00	0.00	0.00
4206.5	0.00	0.00	0.13	0.21	0.00	6.93	15.81	0.00	0.00	0.00
4207.0	2.03	0.00	0.44	0.19	0.01	7.02	17.81	0.00	0.00	0.00
4207.5	1.45	0.00	6.56	0.18	0.04	7.12	23.84	0.00	0.00	0.00
4208.0	1.47	0.00	5.96	0.17	0.11	7.26	29.96	0.00	0.00	6.85
4208.5	2.23	0.00	6.17	0.16	0.88	7.38	40.88	0.00	0.00	6.94
4209.0	3.64	0.00	6.80	0.15	4.06	7.47	45.67	0.00	0.00	7.00
4209.5	4.98	0.00	7.55	0.15	4.87	7.57	45.24	0.00	0.00	7.07
4210.0	6.19	0.00	8.96	0.15	5.19	7.71	45.21	0.00	4.46	7.13
4210.5	8.31	0.00	11.93	0.15	5.31	7.84	47.75	0.00	4.88	7.22
4211.0	9.50	0.00	12.55	0.15	5.35	7.99	48.83	0.02	5.27	7.39
4211.5	9.70	0.00	13.63	0.14	5.30	8.17	50.90	0.02	5.53	7.55
4212.0	9.41	0.00	14.23	0.14	5.19	8.92	52.12	0.09	5.36	7.78
4212.5	8.80	0.00	13.95	0.14	5.11	9.50	52.58	0.16	5.20	8.21
4213.0	7.62	0.00	13.14	0.14	5.09	9.62	52.68	0.16	5.20	8.58
4213.5	7.56	0.67	12.45	0.15	5.35	9.61	52.55	0.15	5.27	8.92
4214.0	7.90	3.71	12.30	0.15	5.53	9.63	52.32	0.15	5.35	9.32
4214.5	8.32	5.50	12.39	0.15	5.66	9.68	52.06	0.15	5.40	9.61
4215.0	8.77	6.16	12.65	0.15	5.80	9.75	51.76	0.15	5.45	9.68
4215.5	9.24	6.12	13.26	0.15	6.77	9.85	51.55	0.16	5.51	9.52
4216.0	9.33	5.76	13.59	0.16	7.14	10.23	51.78	0.17	5.57	9.39
4216.5	8.86	5.23	14.10	0.17	7.33	10.87	52.23	0.18	5.97	9.41
4217.0	8.13	4.48	14.04	0.19	7.56	12.58	53.02	0.19	6.80	10.18
4217.5	7.41	3.88	13.47	0.23	7.81	12.77	53.06	0.21	7.28	11.05
4218.0	7.24	4.31	11.87	0.29	8.06	12.87	52.77	0.27	7.50	12.08
4218.5	7.28	5.68	11.78	0.35	8.31	12.93	52.33	0.33	7.64	12.62
4219.0	7.36	6.35	11.85	0.42	8.80	12.99	51.83	0.36	7.83	12.80
4219.5	7.44	6.80	11.94	0.47	10.53	13.03	51.52	0.38	8.53	12.93
4220.0	7.47	7.11	12.15	0.52	13.35	12.93	51.48	0.40	10.91	13.01
4220.5	7.48	7.45	12.30	0.55	14.92	12.70	51.56	0.48	11.54	13.08
4221.0	7.43	8.26	12.39	0.57	16.24	12.22	51.63	0.51	12.80	13.03
4221.5	7.38	10.61	12.43	0.58	16.88	11.67	51.63	0.54	14.69	12.73
4222.0	7.33	10.77	12.46	0.59	16.72	11.19	51.62	0.55	16.71	12.34
4222.5	7.28	10.45	12.49	0.59	16.55	10.72	51.61	0.56	16.73	11.87
4223.0	7.23	9.89	12.45	0.61	17.11	10.16	51.82	0.58	16.60	11.38
4223.5	7.16	9.85	12.40	0.62	18.95	9.63	51.96	0.60	17.43	10.89
4224.0	7.09	10.51	12.29	0.64	20.74	8.54	52.04	0.62	18.99	10.39

4224.5	7.09	12.47	12.19	0.65	20.96	7.09	52.11	0.60	20.55	9.28
4225.0	7.19	14.84	12.23	0.63	21.26	6.44	52.19	0.63	21.03	7.37
4225.5	7.31	18.31	12.35	0.60	22.07	6.47	52.28	0.65	21.16	6.55
4226.0	7.45	19.08	12.55	0.58	23.25	6.58	52.37	0.61	21.30	6.39
4226.5	7.60	19.51	12.77	0.57	26.05	6.72	52.37	0.54	22.65	6.33
4227.0	7.81	20.28	13.03	0.56	27.29	6.88	52.38	0.53	25.72	6.25
4227.5	8.08	20.86	13.28	0.55	28.04	7.02	52.40	0.53	27.49	6.47
4228.0	8.22	22.28	13.34	0.54	29.58	7.11	52.43	0.52	29.45	6.68
4228.5	8.33	24.27	13.33	0.54	29.87	7.13	52.47	0.52	30.03	6.90
4229.0	8.35	24.43	13.31	0.53	29.53	7.06	52.51	0.53	30.20	7.04
4229.5	8.40	24.12	13.29	0.54	29.13	6.98	53.11	0.57	29.60	7.10
4230.0	8.57	23.91	13.28	0.55	28.65	6.89	53.37	0.59	29.07	7.09
4230.5	8.76	23.88	13.29	0.55	28.38	6.80	53.35	0.59	28.85	7.07
4231.0	9.14	24.14	13.31	0.54	25.95	6.70	53.30	0.57	28.51	6.98
4231.5	10.36	24.59	13.39	0.53	21.39	6.58	53.24	0.52	28.02	6.86
4232.0	10.71	25.55	13.62	0.55	18.12	6.47	53.32	0.51	22.38	6.74
4232.5	10.77	20.11	14.74	0.57	14.03	6.34	53.42	0.51	18.99	6.59
4233.0	10.82	10.87	15.53	0.57	8.80	6.18	53.56	0.52	13.45	6.42
4233.5	10.69	6.50	15.60	0.56	6.48	6.02	54.14	0.54	7.96	6.23
4234.0	10.60	6.30	15.57	0.56	5.95	5.89	55.20	0.57	6.36	6.05
4234.5	10.62	6.60	15.47	0.57	5.41	5.76	55.41	0.60	5.83	5.92
4235.0	10.95	6.79	15.41	0.60	4.99	5.65	55.63	0.59	5.29	5.83
4235.5	11.42	6.60	15.44	0.62	4.78	5.58	55.80	0.58	4.84	5.73
4236.0	11.70	6.38	15.68	0.63	4.51	5.51	55.77	0.56	4.59	5.60
4236.5	11.75	6.14	16.09	0.61	4.52	5.50	55.74	0.55	4.49	5.48
4237.0	11.73	5.90	16.44	0.60	4.56	5.47	55.71	0.56	4.53	5.36
4237.5	11.69	5.69	16.50	0.56	4.58	5.40	55.68	0.56	4.59	5.31
4238.0	11.67	5.44	16.43	0.56	4.60	5.36	55.65	0.55	4.60	5.31
4238.5	11.74	5.32	16.36	0.59	4.62	5.39	55.64	0.55	4.59	5.33
4239.0	11.81	5.19	16.33	0.58	4.63	5.51	55.77	0.63	4.59	5.36
4239.5	11.88	5.08	16.45	0.57	4.63	5.63	55.91	0.65	4.65	5.40
4240.0	11.97	5.26	16.67	0.56	4.64	5.73	56.04	0.65	4.72	5.51
4240.5	12.04	5.34	16.88	0.54	4.83	5.83	56.13	0.60	4.81	5.63
4241.0	12.05	5.23	16.93	0.53	4.92	5.91	56.22	0.55	4.90	5.77
4241.5	11.97	5.05	16.92	0.50	4.91	5.99	56.30	0.50	4.98	5.93
4242.0	11.89	4.90	16.89	0.49	4.89	6.05	56.40	0.49	4.97	6.05
4242.5	11.81	4.91	16.84	0.47	4.88	6.07	56.50	0.49	4.96	6.05
4243.0	12.33	4.99	16.76	0.42	4.86	6.10	56.61	0.48	4.95	6.03
4243.5	13.17	4.90	16.81	0.38	4.87	6.15	56.70	0.47	4.94	6.01
4244.0	13.15	4.68	17.23	0.35	4.81	6.19	56.77	0.40	4.93	5.99
4244.5	12.85	4.31	17.99	0.31	4.68	6.23	56.83	0.35	4.89	6.01
4245.0	12.57	3.95	17.87	0.28	4.85	6.27	56.83	0.30	4.84	6.02
4245.5	12.45	3.88	17.63	0.26	4.86	6.31	56.80	0.26	4.78	6.02
4246.0	12.52	3.86	17.44	0.25	4.76	6.37	56.77	0.24	4.72	6.02
4246.5	12.59	3.85	17.34	0.25	4.66	6.49	56.74	0.24	4.64	6.10
4247.0	12.65	3.87	17.36	0.24	4.56	6.66	56.76	0.24	4.56	6.17
4247.5	12.69	3.89	17.42	0.24	4.47	6.96	56.78	0.24	4.50	6.28
4248.0	12.65	3.89	17.43	0.26	4.42	7.34	56.81	0.24	4.48	6.42
4248.5	12.52	3.87	17.41	0.28	4.37	7.71	56.80	0.24	4.45	6.56
4249.0	12.39	3.86	17.36	0.30	4.35	7.92	56.72	0.25	4.42	6.68
4249.5	12.26	3.85	17.28	0.31	4.36	8.02	56.63	0.25	4.40	6.89
4250.0	12.09	3.83	17.11	0.32	4.38	8.04	56.51	0.24	4.37	7.33
4250.5	11.76	3.80	16.92	0.31	4.46	8.05	56.33	0.24	4.35	7.69
4251.0	11.30	3.85	16.64	0.30	4.54	8.07	56.16	0.24	4.34	7.83
4251.5	10.94	3.89	16.24	0.30	4.64	8.08	56.06	0.24	4.34	7.96
4252.0	10.70	3.94	15.70	0.30	4.80	8.07	55.96	0.23	4.37	8.06

4252.5	10.56	4.04	15.40	0.30	4.92	8.06	55.52	0.24	4.50	8.12
4253.0	10.56	4.07	15.37	0.31	5.01	8.04	55.09	0.29	4.67	8.18
4253.5	10.62	4.02	15.52	0.34	5.11	8.04	54.89	0.36	4.88	8.24
4254.0	10.69	3.89	15.64	0.42	5.22	8.16	54.74	0.41	5.05	8.29
4254.5	10.81	3.69	15.72	0.47	5.55	8.46	54.74	0.39	5.18	8.31
4255.0	10.58	3.32	15.46	0.50	5.95	9.81	54.73	0.41	5.32	8.33
4255.5	9.75	3.10	15.06	0.52	6.44	10.49	54.61	0.46	5.40	8.45
4256.0	9.40	3.05	14.53	0.53	6.84	10.87	54.42	0.50	5.50	8.67
4256.5	8.97	3.52	14.35	0.54	7.21	11.18	54.21	0.50	5.66	8.99
4257.0	8.79	5.51	14.25	0.56	7.56	11.37	53.85	0.51	6.27	10.46
4257.5	9.27	6.73	14.13	0.58	7.91	11.33	53.69	0.54	6.94	11.05
4258.0	9.35	8.83	14.04	0.63	8.22	11.12	53.57	0.54	7.64	11.27
4258.5	9.34	8.92	14.14	0.83	8.52	10.80	53.73	0.61	8.33	11.43
4259.0	9.33	8.58	14.25	0.69	10.99	10.10	53.95	0.69	8.93	11.43
4259.5	9.33	8.44	14.36	0.48	15.60	9.41	54.18	0.72	9.69	11.37
4260.0	9.32	8.32	14.47	0.41	17.28	8.82	54.43	0.57	14.80	11.22
4260.5	9.31	8.27	14.47	0.48	17.71	8.38	54.65	0.55	16.43	10.59
4261.0	9.33	8.25	14.47	0.47	17.59	7.98	54.68	0.53	17.61	9.96
4261.5	9.39	8.37	14.47	0.46	16.96	7.88	54.70	0.53	17.79	9.19
4262.0	9.51	8.61	14.45	0.45	16.63	7.91	54.70	0.52	17.64	8.50
4262.5	9.62	8.86	14.44	0.44	16.31	7.87	54.67	0.46	17.39	8.20
4263.0	9.64	9.27	14.43	0.43	15.83	7.82	54.49	0.40	16.91	8.05
4263.5	9.70	10.15	14.42	0.43	15.46	7.79	54.31	0.38	16.16	7.95
4264.0	9.84	12.94	14.41	0.43	14.97	7.78	54.32	0.36	15.62	7.89
4264.5	9.97	15.37	14.40	0.41	14.25	7.80	54.38	0.38	14.96	7.85
4265.0	10.01	15.61	14.56	0.40	14.14	7.84	54.41	0.44	14.22	7.81
4265.5	10.00	15.94	14.73	0.41	14.37	7.86	54.42	0.46	13.80	7.81
4266.0	10.00	16.90	14.93	0.43	14.26	7.76	54.44	0.43	13.96	7.84
4266.5	10.01	19.01	15.05	0.48	13.69	7.61	54.51	0.41	14.14	7.78
4267.0	10.05	20.84	15.75	0.50	12.85	7.43	54.58	0.45	14.00	7.71
4267.5	10.80	21.50	16.28	0.51	11.90	7.27	54.66	0.52	13.55	7.63
4268.0	12.12	22.50	16.71	0.50	10.57	7.11	55.04	0.54	11.66	7.52
4268.5	12.59	22.20	17.31	0.46	8.29	7.00	56.02	0.53	9.72	7.41
4269.0	13.54	20.87	18.22	0.45	7.04	6.91	56.64	0.49	8.71	7.23
4269.5	13.75	11.45	18.53	0.47	6.34	6.83	56.98	0.45	7.25	7.09
4270.0	13.71	8.83	18.61	0.51	5.94	6.75	57.16	0.45	6.47	7.01
4270.5	13.68	8.06	18.60	0.55	5.48	6.64	57.23	0.51	5.60	6.90
4271.0	13.69	7.79	18.60	0.58	5.05	6.55	57.27	0.56	5.32	6.76
4271.5	13.70	7.83	18.60	0.58	4.92	6.46	57.32	0.55	5.06	6.65
4272.0	13.74	7.81	18.60	0.58	4.83	6.41	57.32	0.55	4.86	6.42
4272.5	13.76	7.53	18.61	0.58	4.87	6.38	57.30	0.55	4.75	6.23
4273.0	13.61	7.03	18.63	0.58	5.29	6.36	57.28	0.63	4.73	6.22
4273.5	13.45	6.52	18.67	0.55	5.34	6.36	57.27	0.63	4.73	6.22
4274.0	13.37	6.41	18.69	0.50	5.42	6.35	57.27	0.57	4.93	6.26
4274.5	13.29	6.27	18.67	0.48	5.48	6.36	57.27	0.45	5.17	6.31
4275.0	13.22	5.57	18.59	0.46	5.52	6.40	57.28	0.42	5.35	6.32
4275.5	13.18	5.42	18.45	0.44	5.79	6.44	57.29	0.40	5.57	6.33
4276.0	13.24	5.47	18.28	0.39	6.50	6.47	57.31	0.38	6.09	6.30
4276.5	13.34	5.61	18.04	0.28	6.66	6.58	57.32	0.35	6.49	6.27
4277.0	13.58	6.33	17.69	0.22	6.66	6.69	57.26	0.28	6.68	6.32
4277.5	13.71	7.71	17.64	0.20	6.64	6.81	57.20	0.23	6.80	6.54
4278.0	13.68	7.91	18.05	0.18	6.62	6.97	57.14	0.18	6.86	6.70
4278.5	13.58	7.65	18.75	0.17	6.57	7.18	57.13	0.17	6.81	6.77
4279.0	13.08	5.99	18.95	0.16	6.52	7.40	57.13	0.17	6.66	6.72
4279.5	11.85	4.71	18.90	0.16	7.17	7.63	57.29	0.16	6.75	6.76
4280.0	11.97	5.40	18.62	0.16	7.31	7.93	57.50	0.16	7.07	6.93

4280.5	12.26	6.85	17.76	0.17	7.05	8.12	57.44	0.16	7.09	7.24
4281.0	12.69	7.45	17.26	0.17	6.72	8.30	56.95	0.16	7.12	7.58
4281.5	12.86	7.54	17.30	0.18	6.40	8.42	56.29	0.16	7.03	7.84
4282.0	12.81	7.30	17.64	0.19	6.22	8.37	56.30	0.18	6.61	8.04
4282.5	12.62	6.81	17.83	0.28	6.16	8.20	56.36	0.21	6.18	8.19
4283.0	12.34	6.09	17.80	0.39	6.20	8.04	56.46	0.26	5.95	8.23
4283.5	12.20	5.97	17.62	0.48	6.19	7.84	56.67	0.34	5.97	8.18
4284.0	12.25	6.14	17.36	0.51	5.91	7.72	56.52	0.45	5.99	8.08
4284.5	12.19	6.02	17.32	0.54	5.49	7.57	56.36	0.53	5.90	7.96
4285.0	11.90	5.41	17.41	0.66	5.21	7.36	56.26	0.56	5.41	7.73
4285.5	11.64	4.55	17.33	0.79	5.32	7.01	56.16	0.54	5.29	7.45
4286.0	11.83	4.54	17.16	0.78	5.47	6.61	56.06	0.55	5.25	7.11
4286.5	12.79	4.70	17.09	0.75	5.60	6.89	56.06	0.57	5.21	6.88
4287.0	13.14	4.77	17.17	0.70	5.58	7.61	56.15	0.65	5.26	6.71
4287.5	12.83	4.37	17.97	0.68	5.51	8.15	56.23	0.67	5.39	6.77
4288.0	12.39	3.93	18.20	0.70	6.55	8.31	56.32	0.66	5.37	7.40
4288.5	11.79	3.60	18.06	0.72	7.32	8.28	56.38	0.61	5.42	7.98
4289.0	11.61	4.66	17.54	0.73	7.84	7.87	56.38	0.67	5.79	8.30
4289.5	11.56	6.62	17.23	0.70	8.11	6.51	56.39	0.67	6.51	8.36
4290.0	11.55	8.59	17.11	0.59	8.33	6.19	56.39	0.62	8.25	7.91
4290.5	11.49	10.29	17.13	0.53	10.51	6.36	56.36	0.57	9.15	7.17
4291.0	11.41	10.85	17.17	0.53	15.20	6.54	56.31	0.53	11.76	6.35
4291.5	11.32	11.00	17.20	0.62	22.39	6.74	56.26	0.51	16.05	6.07
4292.0	11.32	10.92	17.23	0.73	26.29	6.94	56.20	0.67	20.47	6.07
4292.5	11.37	10.80	17.22	0.67	27.22	7.16	56.17	0.91	23.47	6.26
4293.0	11.47	10.70	17.17	0.63	27.45	7.34	56.21	0.72	25.65	6.50
4293.5	11.52	10.76	17.03	0.56	27.61	7.41	56.24	0.56	27.11	6.79
4294.0	11.59	11.05	16.80	0.60	27.57	7.44	56.22	0.57	27.60	7.17
4294.5	11.59	11.50	16.81	0.65	27.27	7.35	56.18	0.62	27.68	7.30
4295.0	11.56	13.67	16.83	0.67	26.85	7.26	56.14	0.64	27.61	7.29
4295.5	11.57	15.90	16.85	0.65	25.85	7.12	56.14	0.56	27.38	7.25
4296.0	11.75	19.37	16.85	0.61	21.34	6.87	56.14	0.48	26.87	7.13
4296.5	12.94	20.89	16.85	0.57	18.29	6.71	56.23	0.54	26.18	6.97
4297.0	15.08	20.43	17.26	0.53	15.36	6.57	56.39	0.67	24.69	6.80
4297.5	15.04	13.22	18.15	0.49	9.16	6.38	56.55	0.67	20.41	6.63
4298.0	14.61	9.14	19.96	0.46	7.26	6.11	56.90	0.59	15.47	6.45
4298.5	13.90	6.43	20.37	0.43	5.91	5.72	58.76	0.52	8.52	6.19
4299.0	13.46	4.77	20.16	0.41	5.36	5.43	58.95	0.45	6.64	5.92
4299.5	13.38	5.37	19.65	0.38	4.82	5.41	58.81	0.36	5.96	5.69
4300.0	13.27	5.64	18.70	0.36	4.41	5.40	58.49	0.29	5.32	5.52
4300.5	13.11	5.99	18.68	0.34	4.34	5.53	58.11	0.26	4.88	5.40
4301.0	12.95	6.10	18.50	0.39	4.40	5.68	57.46	0.29	4.42	5.31
4301.5	12.90	6.12	18.33	0.43	4.62	5.84	57.00	0.36	4.43	5.31
4302.0	13.08	5.95	18.41	0.46	4.69	6.14	56.92	0.48	4.54	5.37
4302.5	13.33	5.78	18.57	0.48	4.78	6.67	56.91	0.53	4.65	5.61
4303.0	13.41	5.59	18.73	0.51	4.94	7.34	56.94	0.52	4.77	5.88
4303.5	13.44	5.38	18.80	0.53	5.12	7.81	56.94	0.53	4.87	6.24
4304.0	13.17	5.18	18.62	0.56	5.41	7.89	56.82	0.54	4.98	6.86
4304.5	12.20	5.95	18.30	0.59	5.64	7.72	56.63	0.60	5.14	7.44
4305.0	12.15	7.53	17.59	0.64	5.45	7.53	56.49	0.65	5.64	7.75
4305.5	12.89	9.41	17.43	0.63	4.92	7.29	56.38	0.65	5.67	7.59
4306.0	13.36	8.03	17.74	0.59	4.42	7.00	56.30	0.65	5.26	7.34
4306.5	13.21	6.48	18.71	0.55	4.88	6.30	56.26	0.67	4.73	7.01
4307.0	12.96	3.29	18.60	0.60	5.55	5.85	57.04	0.63	5.25	6.69
4307.5	12.97	2.59	18.44	0.67	5.87	5.63	57.18	0.59	5.88	6.48
4308.0	13.02	2.57	18.18	0.75	5.69	5.54	57.22	0.55	5.89	6.23

4308.5	13.11	2.63	18.23	0.80	5.54	5.48	57.13	0.62	5.67	5.95
4309.0	13.16	2.93	18.35	0.81	5.41	5.54	56.96	0.69	5.42	5.76
4309.5	13.07	3.26	18.57	0.73	5.44	5.68	56.85	0.82	5.18	5.67
4310.0	12.78	3.57	18.48	0.62	5.58	5.86	56.82	0.71	5.32	5.61
4310.5	12.80	3.88	18.27	0.65	5.72	6.13	56.87	0.66	5.98	5.72
4311.0	12.83	4.21	18.21	0.72	5.87	6.42	56.98	0.67	6.27	5.84
4311.5	12.81	4.73	18.28	0.78	6.03	6.69	57.09	0.72	6.30	6.08
4312.0	12.78	6.89	18.40	0.83	6.40	6.91	57.09	0.80	6.48	6.55
4312.5	12.60	7.31	18.47	0.80	7.07	7.19	57.00	0.96	6.86	7.22
4313.0	11.97	7.11	18.45	0.82	7.66	7.13	56.88	0.94	7.67	7.20
4313.5	11.62	7.36	17.98	0.87	8.37	6.92	56.75	0.90	8.33	7.17
4314.0	11.45	8.29	17.51	0.92	8.89	6.70	56.61	0.86	9.05	7.13
4314.5	11.53	10.92	17.31	0.87	8.68	6.32	56.47	0.86	9.19	6.67
4315.0	12.15	12.21	17.26	0.82	8.44	5.88	56.31	0.93	8.88	6.32
4315.5	12.79	11.31	17.37	0.81	8.19	5.24	56.31	0.99	8.55	5.95
4316.0	12.93	9.40	17.74	0.86	7.94	4.89	56.54	0.76	8.21	5.46
4316.5	12.76	6.23	18.24	0.82	7.44	4.71	56.74	0.65	7.30	5.00
4317.0	12.47	4.37	18.36	0.73	6.80	4.83	56.77	0.71	6.96	4.77
4317.5	12.28	3.24	18.34	0.61	6.67	4.95	56.73	0.77	6.82	4.75
4318.0	12.23	3.49	18.05	0.57	6.51	5.08	56.68	0.68	6.48	4.85
4318.5	12.30	4.65	17.90	0.59	6.21	5.22	56.55	0.56	6.24	4.99
4319.0	12.42	5.33	17.91	0.59	5.67	5.46	56.48	0.40	5.89	5.22
4319.5	12.58	5.97	18.00	0.56	5.66	5.71	56.59	0.44	5.53	5.38
4320.0	12.88	6.34	18.19	0.50	5.94	6.06	56.80	0.53	5.62	5.51
4320.5	13.41	6.66	18.45	0.44	6.25	6.80	57.04	0.56	5.73	5.65
4321.0	13.48	7.36	18.85	0.42	6.38	6.76	57.34	0.53	5.83	6.18
4321.5	13.18	8.12	19.06	0.41	6.34	6.72	57.42	0.47	5.89	6.47
4322.0	12.72	8.39	19.03	0.35	6.20	6.69	57.35	0.33	5.94	6.73
4322.5	13.32	10.93	18.73	0.28	5.84	6.55	57.23	0.25	5.86	6.68
4323.0	13.74	11.58	18.42	0.24	5.30	6.50	57.05	0.26	5.04	6.62
4323.5	13.76	10.23	19.09	0.27	4.49	6.53	57.04	0.28	4.32	6.50
4324.0	13.77	8.05	19.16	0.36	4.63	6.54	57.20	0.31	4.98	6.44
4324.5	13.79	3.33	19.11	0.43	5.41	6.58	57.45	0.42	5.35	6.44
4325.0	13.76	2.96	18.91	0.52	5.19	6.61	57.69	0.54	5.02	6.42
4325.5	13.62	2.89	18.69	0.51	4.67	6.65	57.72	0.52	4.45	6.41
4326.0	13.32	2.88	18.93	0.50	4.26	6.78	57.75	0.48	4.03	6.43
4326.5	13.00	2.85	19.33	0.51	4.22	6.89	57.72	0.49	3.87	6.44
4327.0	12.84	2.99	19.41	0.58	4.22	6.92	57.63	0.55	3.85	6.52
4327.5	12.76	3.27	19.11	0.67	4.22	6.80	57.45	0.62	3.88	6.63
4328.0	12.44	3.45	18.59	0.70	4.20	6.58	57.13	0.63	3.95	6.76
4328.5	12.05	4.02	18.30	0.64	4.19	6.21	56.62	0.63	4.05	6.68
4329.0	12.13	4.91	18.02	0.70	4.23	5.74	56.41	0.66	4.15	6.50
4329.5	12.33	5.06	17.96	0.86	4.32	5.14	56.19	0.71	4.20	6.12
4330.0	12.81	5.04	17.95	0.82	4.46	4.82	56.34	0.78	4.31	5.72
4330.5	13.50	4.75	18.05	0.79	4.61	4.59	56.37	0.67	4.50	5.32
4331.0	13.68	4.32	18.29	0.78	4.85	4.56	56.39	0.71	4.72	4.84
4331.5	13.74	4.03	18.64	0.78	5.12	4.57	56.41	0.91	4.98	4.59
4332.0	13.67	3.86	19.04	0.80	5.29	4.63	56.43	0.84	5.17	4.34
4332.5	13.53	3.76	19.19	0.83	5.45	4.77	56.67	0.77	5.36	4.24
4333.0	13.27	3.84	19.17	0.95	5.59	4.92	56.81	0.72	5.56	4.54
4333.5	12.62	3.97	19.10	1.00	5.74	5.22	56.80	0.84	5.76	4.96
4334.0	11.66	4.65	18.70	1.02	6.13	5.54	56.65	0.88	5.98	5.34
4334.5	11.54	6.97	17.94	1.04	6.68	5.96	56.57	0.84	6.28	5.70
4335.0	11.50	8.35	17.52	1.24	7.92	6.22	56.50	0.86	6.70	5.95
4335.5	11.62	9.49	17.24	1.51	8.36	6.30	56.42	1.11	7.23	6.06
4336.0	11.80	9.75	17.27	1.66	8.84	6.28	56.38	1.09	7.95	6.06

4336.5	11.99	9.79	17.36	1.82	9.65	6.09	56.34	0.97	8.73	6.04
4337.0	12.25	9.80	17.48	1.58	11.80	5.88	56.35	0.79	9.88	6.01
4337.5	12.80	9.69	17.64	0.64	12.56	5.61	56.37	0.82	11.22	5.94
4338.0	13.13	8.86	17.82	1.01	12.33	5.38	56.39	0.89	12.42	5.81
4338.5	12.85	6.51	18.10	0.88	11.68	5.23	56.59	0.91	12.39	5.66
4339.0	12.58	4.13	18.54	0.87	10.27	5.18	56.68	0.87	10.79	5.43
4339.5	11.90	3.27	18.23	0.86	8.33	5.17	56.61	0.81	8.52	5.30
4340.0	11.55	3.15	17.79	0.77	6.32	5.16	56.49	0.65	7.41	5.17
4340.5	11.79	3.38	17.53	0.73	6.04	5.13	56.33	0.68	6.72	5.06
4341.0	12.15	3.87	17.50	0.75	5.76	5.11	56.15	0.80	6.10	5.09
4341.5	12.71	4.96	17.89	0.82	5.47	5.11	55.95	1.07	5.76	5.13
4342.0	13.05	5.42	18.63	0.85	5.31	5.12	56.30	0.80	5.45	5.16
4342.5	13.64	5.99	19.08	0.78	5.19	5.16	56.89	0.64	5.21	5.23
4343.0	14.36	6.38	19.40	0.71	5.08	5.15	57.41	0.85	5.04	5.34
4343.5	14.62	6.47	19.73	0.65	4.98	5.12	57.86	0.99	4.95	5.30
4344.0	14.71	6.47	20.26	0.79	4.73	5.09	58.17	0.92	4.87	5.27
4344.5	14.70	6.47	20.45	0.83	4.43	5.06	58.28	0.84	4.73	5.22
4345.0	14.68	6.42	20.32	0.88	4.13	5.00	58.37	0.73	4.29	5.16
4345.5	14.61	6.32	20.20	0.95	3.84	4.99	58.50	0.64	4.07	5.11
4346.0	14.54	5.96	20.07	0.96	3.62	4.99	58.54	0.68	3.95	5.07
4346.5	14.45	5.21	19.92	0.87	3.46	4.96	58.46	0.73	3.82	5.04
4347.0	14.34	4.70	19.89	0.82	3.36	4.92	58.38	0.79	3.71	5.01
4347.5	14.24	4.31	19.92	0.80	3.27	4.87	58.36	0.78	3.63	4.99
4348.0	14.15	3.98	19.92	0.79	3.23	4.83	58.34	0.75	3.57	4.96
4348.5	14.07	3.72	19.77	0.79	3.19	4.79	58.31	0.71	3.51	4.92
4349.0	13.97	3.56	19.53	0.83	3.16	4.77	58.20	0.71	3.45	4.89
4349.5	13.85	3.46	19.42	0.86	3.13	4.77	58.06	0.79	3.40	4.87
4350.0	13.74	3.46	19.53	0.86	3.11	4.76	57.92	0.86	3.34	4.85
4350.5	13.66	3.48	19.62	0.83	3.08	4.76	57.79	0.84	3.33	4.82
4351.0	13.60	3.52	19.51	0.80	3.12	4.77	57.71	0.79	3.32	4.77
4351.5	13.59	3.59	19.36	0.76	3.18	4.78	57.57	0.79	3.36	4.72
4352.0	13.58	3.71	19.31	0.74	3.32	4.76	57.44	0.83	3.38	4.68
4352.5	13.57	3.83	19.30	0.73	3.40	4.73	57.34	0.83	3.40	4.67
4353.0	13.58	3.86	19.34	0.75	3.49	4.70	57.28	0.75	3.42	4.67
4353.5	13.62	3.78	19.38	0.78	3.60	4.69	57.22	0.80	3.45	4.67
4354.0	13.73	3.71	19.43	0.82	3.72	4.69	57.24	1.02	3.49	4.66
4354.5	13.54	3.67	19.39	0.88	3.84	4.73	57.34	0.96	3.55	4.66
4355.0	13.31	3.87	19.35	0.86	3.86	4.77	57.34	0.78	3.61	4.68
4355.5	12.88	4.05	19.19	0.84	3.83	4.77	57.34	0.70	3.68	4.71
4356.0	13.13	4.21	18.89	0.82	3.82	4.77	57.35	0.74	3.77	4.73
4356.5	13.89	4.35	19.17	0.80	3.87	4.79	57.35	0.86	3.82	4.75
4357.0	13.94	4.42	19.61	0.78	3.92	4.81	57.28	0.72	3.83	4.79
4357.5	13.93	4.40	19.74	0.76	3.98	4.80	57.21	0.65	3.83	4.85
4358.0	13.85	4.02	19.70	0.75	4.05	4.80	57.14	0.77	3.81	4.91
4358.5	13.68	3.60	19.53	0.73	4.10	4.79	57.07	0.84	3.79	4.92
4359.0	13.28	3.53	19.34	0.72	4.14	4.81	57.00	0.76	3.75	4.93
4359.5	12.92	3.50	18.90	0.78	4.18	4.83	56.91	0.84	3.70	4.94
4360.0	12.89	3.50	18.61	0.78	4.20	4.85	56.82	0.72	3.79	4.92
4360.5	13.06	3.49	18.67	0.73	4.18	4.89	56.73	0.65	3.90	4.91
4361.0	13.20	3.55	18.81	0.63	4.15	4.93	56.77	0.61	4.01	4.89
4361.5	13.28	3.64	18.97	0.56	4.13	4.97	56.83	0.64	4.12	4.93
4362.0	13.37	3.74	19.09	0.62	4.13	5.02	57.05	0.67	4.18	4.99
4362.5	14.14	3.84	19.42	0.68	4.14	5.08	57.28	0.77	4.22	5.03
4363.0	14.29	3.88	19.91	0.71	4.12	5.13	57.46	0.70	4.26	5.07
4363.5	14.38	3.88	20.18	0.67	4.10	5.21	57.58	0.58	4.30	5.11
4364.0	14.45	3.86	20.36	0.59	4.08	5.29	57.73	0.45	4.33	5.14

4364.5	14.50	3.74	20.48	0.50	4.06	5.36	57.98	0.41	4.33	5.18
4365.0	14.51	3.62	20.51	0.42	4.09	5.43	58.18	0.37	4.32	5.21
4365.5	14.47	3.52	20.48	0.34	4.13	5.48	58.31	0.35	4.32	5.25
4366.0	14.41	3.48	20.39	0.28	4.17	5.52	58.29	0.32	4.33	5.32
4366.5	14.29	3.52	20.30	0.25	4.21	5.55	58.20	0.28	4.34	5.40
4367.0	14.16	3.60	20.21	0.23	4.23	5.55	58.14	0.26	4.36	5.48
4367.5	13.97	3.67	20.12	0.22	4.26	5.59	58.10	0.22	4.37	5.57
4368.0	13.74	3.73	20.03	0.22	4.28	5.79	57.99	0.19	4.36	5.70
4368.5	13.48	3.74	19.93	0.21	4.31	6.04	57.82	0.19	4.36	5.85
4369.0	13.39	3.71	19.81	0.20	4.33	6.36	57.62	0.18	4.35	6.01
4369.5	13.49	3.64	19.53	0.19	4.35	6.75	57.40	0.18	4.35	6.17
4370.0	13.37	3.51	19.32	0.18	4.36	7.19	57.17	0.18	4.36	6.46
4370.5	12.91	3.50	19.30	0.18	4.38	7.68	56.93	0.17	4.42	7.07
4371.0	12.32	3.50	19.23	0.17	4.39	7.82	56.72	0.17	4.49	7.29
4371.5	12.37	3.61	18.84	0.16	4.42	7.87	56.66	0.16	4.57	7.45
4372.0	12.51	3.95	18.46	0.15	4.44	7.91	56.73	0.15	4.65	7.59
4372.5	12.64	4.06	18.54	0.14	4.46	8.01	56.65	0.14	4.54	7.72
4373.0	12.74	4.01	18.62	0.14	4.48	8.15	56.56	0.13	4.54	7.78
4373.5	12.67	3.92	18.68	0.13	4.55	8.18	56.63	0.13	4.67	7.85
4374.0	12.60	3.83	18.72	0.13	4.64	8.23	56.71	0.13	4.86	7.93
4374.5	12.54	3.75	18.65	0.13	4.86	8.34	56.75	0.13	5.08	8.08
4375.0	12.49	3.67	18.58	0.12	5.10	8.44	56.78	0.14	5.18	8.18
4375.5	12.41	3.62	18.53	0.12	5.32	8.99	56.85	0.15	5.22	8.26
4376.0	12.77	3.57	18.59	0.13	5.56	9.62	56.97	0.16	5.31	8.38
4376.5	13.73	3.52	18.94	0.20	5.78	10.96	57.08	0.20	5.51	8.66
4377.0	13.74	3.47	19.84	0.27	5.97	13.04	57.21	0.25	5.74	9.66
4377.5	13.41	3.42	19.82	0.37	6.10	13.95	57.28	0.36	6.02	10.91
4378.0	12.24	3.21	19.07	0.44	6.52	14.70	57.22	0.46	6.30	11.81
4378.5	12.21	3.90	18.34	0.49	8.27	15.75	57.02	0.43	7.18	13.61
4379.0	12.34	5.63	18.17	0.53	8.84	16.00	56.75	0.40	8.21	14.69
4379.5	12.47	7.32	18.25	0.57	9.04	15.81	56.42	0.48	8.50	15.47
4380.0	12.63	8.48	18.43	0.76	9.27	15.56	56.09	0.55	8.90	15.93
4380.5	12.81	8.69	18.61	0.87	10.90	14.48	55.83	0.62	9.55	16.13
4381.0	12.80	8.75	18.67	0.87	14.79	13.31	55.67	0.60	11.23	15.87
4381.5	12.79	8.57	18.76	0.85	16.47	11.97	55.67	0.64	13.69	15.11
4382.0	12.71	7.87	18.84	0.82	17.66	10.15	55.68	0.70	16.02	14.04
4382.5	12.61	7.90	18.76	0.90	18.92	8.81	55.66	0.78	16.89	11.96
4383.0	12.54	8.06	18.68	0.91	20.74	8.11	55.64	0.92	19.55	10.83
4383.5	12.51	8.40	18.61	0.81	21.91	7.58	55.62	0.86	19.91	9.92
4384.0	12.39	8.75	18.67	0.74	23.02	7.13	55.63	0.75	20.56	9.23
4384.5	12.03	9.10	18.58	0.65	24.06	7.08	55.70	0.67	21.34	7.62
4385.0	11.92	10.76	18.12	0.58	24.34	7.10	55.76	0.71	23.99	7.01
4385.5	11.83	13.17	18.01	0.56	24.36	7.19	55.71	0.71	24.34	6.90
4386.0	11.61	19.56	17.76	0.57	25.79	7.41	55.62	0.70	24.10	6.99
4386.5	11.56	20.36	17.53	0.58	28.27	7.61	55.54	0.69	24.67	7.14
4387.0	11.64	21.11	17.66	0.56	29.58	7.61	55.51	0.69	26.79	7.39
4387.5	11.90	24.92	17.98	0.52	30.98	7.58	55.48	0.60	30.44	7.44
4388.0	12.37	30.95	18.21	0.47	31.19	7.59	55.64	0.55	31.01	7.50
4388.5	12.24	33.88	18.21	0.43	32.49	7.60	55.90	0.56	31.04	7.54
4389.0	11.87	35.70	17.93	0.40	32.48	7.58	55.84	0.52	31.69	7.58
4389.5	11.44	36.89	17.58	0.34	28.94	7.54	55.67	0.47	32.87	7.61
4390.0	10.88	37.46	17.14	0.32	26.21	7.54	55.50	0.40	32.97	7.62
4390.5	10.64	35.38	16.79	0.31	23.26	7.56	55.27	0.36	30.62	7.63
4391.0	10.53	32.12	16.62	0.30	19.21	7.59	55.05	0.33	25.14	7.65
4391.5	10.91	26.87	16.68	0.30	12.97	7.54	54.84	0.31	20.57	7.61
4392.0	12.49	22.77	16.92	0.31	10.38	7.49	54.70	0.30	17.26	7.57

4392.5	12.83	14.11	17.65	0.31	7.11	7.44	54.64	0.28	14.58	7.53
4393.0	12.79	10.61	18.73	0.31	6.39	7.38	54.61	0.26	9.94	7.49
4393.5	12.99	9.09	19.01	0.32	5.89	7.33	55.04	0.26	9.76	7.47
4394.0	13.73	8.24	19.30	0.34	5.17	7.27	56.22	0.28	9.39	7.46
4394.5	14.11	7.43	19.73	0.35	4.73	7.23	56.87	0.31	8.39	7.44
4395.0	14.31	6.75	20.06	0.35	4.40	7.21	57.28	0.33	6.08	7.42
4395.5	14.30	6.36	20.10	0.36	4.11	7.26	57.48	0.34	5.51	7.39
4396.0	13.89	5.84	19.93	0.37	3.96	7.32	57.42	0.34	4.88	7.34
4396.5	12.99	5.46	19.33	0.39	3.91	7.38	57.31	0.36	4.55	7.30
4397.0	12.53	5.10	18.97	0.42	3.92	7.46	57.05	0.38	4.31	7.27
4397.5	11.92	4.86	18.64	0.42	3.96	7.54	56.69	0.38	4.13	7.27
4398.0	11.02	4.82	17.92	0.37	4.06	7.64	56.09	0.39	4.10	7.27
4398.5	11.06	4.88	16.88	0.35	4.19	7.76	55.67	0.39	4.14	7.29
4399.0	11.71	5.01	17.48	0.34	4.42	7.92	55.30	0.37	4.26	7.37
4399.5	12.26	5.29	18.10	0.34	4.65	8.10	54.98	0.35	4.46	7.46
4400.0	12.81	5.23	18.64	0.36	4.91	8.36	54.77	0.35	4.66	7.56
4400.5	12.90	4.65	18.91	0.33	5.23	8.79	54.77	0.35	4.86	7.67
4401.0	12.97	3.63	18.98	0.35	5.62	9.33	54.92	0.36	5.06	7.95
4401.5	13.02	3.89	18.98	0.39	5.73	9.86	55.33	0.37	5.27	8.27
4402.0	13.00	4.36	18.98	0.38	5.95	10.15	55.64	0.38	5.67	8.73
4402.5	12.97	4.99	18.97	0.36	6.42	10.50	55.72	0.38	6.08	9.31
4403.0	12.94	5.54	18.96	0.35	7.23	10.85	55.80	0.38	6.52	10.04
4403.5	12.89	5.63	18.96	0.34	7.93	11.11	55.76	0.38	6.99	10.36
4404.0	12.82	5.71	18.94	0.35	8.37	11.29	55.66	0.37	7.46	10.67
4404.5	12.72	5.79	18.85	0.37	8.92	11.46	55.56	0.36	8.07	10.91
4405.0	12.63	5.95	18.76	0.39	9.74	11.59	55.46	0.35	8.75	11.10
4405.5	12.53	6.16	18.66	0.40	10.05	11.62	55.36	0.35	9.31	11.29
4406.0	12.34	6.37	18.55	0.41	10.19	11.65	55.29	0.37	9.80	11.43
4406.5	12.16	6.50	18.40	0.42	10.27	11.67	55.24	0.43	10.02	11.53
4407.0	11.96	6.67	18.23	0.42	10.34	11.63	55.20	0.45	10.12	11.55
4407.5	11.78	6.88	18.06	0.42	10.36	11.59	55.17	0.45	10.22	11.57
4408.0	11.65	7.05	17.87	0.38	10.39	11.54	55.14	0.43	10.30	11.56
4408.5	11.63	7.32	17.67	0.41	10.39	11.48	55.17	0.40	10.34	11.53
4409.0	11.69	7.62	17.79	0.48	10.37	11.42	55.05	0.39	10.30	11.48
4409.5	11.83	8.23	17.96	0.52	10.34	11.34	54.86	0.37	10.27	11.42
4410.0	11.90	8.97	18.18	0.49	10.29	11.20	54.69	0.39	10.25	11.35
4410.5	11.93	9.74	18.35	0.47	10.21	11.01	54.52	0.49	10.24	11.28
4411.0	11.94	10.48	18.37	0.45	10.11	10.97	54.43	0.50	10.23	11.17
4411.5	11.95	10.97	18.36	0.42	9.94	10.94	54.34	0.50	10.13	11.05
4412.0	11.94	11.35	18.33	0.41	9.76	10.81	54.25	0.48	10.00	10.95
4412.5	11.93	11.56	18.33	0.46	9.54	10.64	54.23	0.45	9.79	10.85
4413.0	11.91	11.79	18.34	0.52	9.33	10.48	54.27	0.48	9.52	10.75
4413.5	11.88	12.08	18.34	0.56	9.20	10.28	54.31	0.51	9.35	10.62
4414.0	11.85	12.56	18.39	0.54	9.11	10.06	54.34	0.63	9.19	10.48
4414.5	11.82	12.89	18.38	0.55	9.01	9.92	54.38	0.64	9.08	10.35
4415.0	11.78	12.86	18.22	0.61	8.94	9.84	54.34	0.67	8.98	10.23
4415.5	11.76	12.76	18.04	0.78	8.88	9.77	54.29	0.73	8.90	10.11
4416.0	11.73	12.43	18.03	0.78	8.85	9.70	54.25	0.65	8.83	9.99
4416.5	11.69	12.43	18.14	0.79	8.82	9.64	54.20	0.62	8.75	9.90
4417.0	11.65	12.54	18.08	0.84	8.80	9.63	54.26	0.78	8.72	9.81
4417.5	11.60	12.47	17.96	0.91	8.77	9.54	54.33	0.74	8.70	9.72
4418.0	11.54	12.25	17.88	0.84	8.75	9.34	54.40	0.61	8.70	9.64
4418.5	11.49	12.02	17.83	0.76	8.73	8.33	54.48	0.56	8.70	9.56
4419.0	11.46	12.08	17.79	0.63	8.71	7.49	54.56	0.70	8.67	9.45
4419.5	11.45	12.38	17.75	0.75	8.67	7.03	54.61	0.91	8.64	9.11
4420.0	11.50	12.58	17.69	0.82	8.59	6.65	54.58	0.89	8.60	8.60

4420.5	11.55	12.50	17.60	0.97	8.51	6.31	54.55	0.86	8.55	7.84
4421.0	11.65	12.36	17.65	0.95	8.41	6.12	54.60	0.83	8.42	6.91
4421.5	12.11	12.19	17.72	0.90	8.16	6.00	54.68	0.87	8.30	6.39
4422.0	12.43	11.92	18.01	0.85	7.86	5.97	54.76	1.00	8.18	6.17
4422.5	12.51	11.18	18.43	0.68	7.56	5.94	54.83	0.95	7.83	5.97
4423.0	12.46	10.03	18.54	0.85	7.33	5.91	54.89	0.91	7.39	5.86
4423.5	12.32	9.37	18.55	0.95	7.17	5.92	54.95	0.93	7.15	5.81
4424.0	11.60	9.05	18.43	0.85	7.11	5.92	55.00	0.91	7.01	5.87
4424.5	11.08	8.97	18.26	0.87	7.13	5.93	54.90	0.84	6.87	5.94
4425.0	10.58	9.59	17.94	0.99	7.08	5.96	54.67	0.87	6.84	5.97
4425.5	10.17	10.69	17.68	1.04	7.03	5.98	54.37	0.93	6.86	5.94
4426.0	10.24	12.64	16.91	1.07	7.00	5.95	53.95	0.99	6.89	5.87
4426.5	10.43	14.12	16.30	1.04	6.96	5.88	53.55	1.06	6.92	5.80
4427.0	11.81	15.42	16.26	1.00	6.27	5.78	53.16	1.09	6.92	5.73
4427.5	12.65	14.27	16.94	0.95	5.66	5.67	52.92	1.11	6.80	5.68
4428.0	12.72	9.67	18.22	0.85	5.29	5.50	52.95	0.96	6.38	5.64
4428.5	12.80	7.38	18.88	0.94	5.00	5.33	54.08	0.89	5.79	5.60
4429.0	12.88	5.97	18.83	0.77	4.75	5.17	54.92	0.94	5.49	5.51
4429.5	12.90	5.23	18.85	0.85	4.55	5.06	55.06	1.01	5.19	5.41
4430.0	12.89	5.05	18.92	0.89	4.32	4.96	55.18	1.07	4.89	5.27
4430.5	12.87	5.09	18.94	0.92	4.09	4.86	55.27	1.00	4.60	5.13
4431.0	12.91	5.15	18.95	0.89	3.95	4.77	55.32	0.87	4.32	5.01
4431.5	13.08	5.23	18.95	0.84	3.85	4.75	55.38	0.83	4.04	4.99
4432.0	13.39	5.40	18.97	0.78	3.80	4.73	55.53	0.87	3.75	4.97
4432.5	13.80	5.65	19.22	0.71	3.76	4.68	55.67	0.96	3.47	4.93
4433.0	13.91	5.85	20.11	0.89	3.70	4.63	55.83	0.97	3.38	4.89
4433.5	13.79	5.87	20.18	0.90	3.63	4.59	56.01	0.90	3.55	4.86
4434.0	13.42	5.72	19.97	0.83	3.59	4.56	56.07	0.77	3.62	4.83
4434.5	13.26	5.50	19.61	0.70	3.56	4.53	56.07	0.79	3.67	4.80
4435.0	13.16	5.26	19.32	0.70	3.52	4.52	56.05	0.84	3.66	4.78
4435.5	13.12	5.04	19.13	0.81	3.48	4.50	55.90	0.80	3.62	4.76
4436.0	13.15	4.68	19.08	0.89	3.43	4.47	55.63	0.71	3.56	4.71
4436.5	13.19	4.32	19.04	0.88	3.38	4.44	55.45	0.74	3.51	4.66
4437.0	13.24	3.93	19.04	0.86	3.34	4.41	55.31	0.85	3.45	4.61
4437.5	13.25	3.81	19.10	0.79	3.29	4.34	55.19	0.96	3.42	4.56
4438.0	13.21	3.72	19.19	0.74	3.24	4.25	55.06	0.92	3.36	4.51
4438.5	13.09	3.63	19.22	0.75	3.18	4.17	55.13	0.91	3.29	4.46
4439.0	13.31	3.58	19.25	0.77	3.12	4.09	55.26	0.94	3.26	4.41
4439.5	13.57	3.54	19.29	0.81	3.09	4.02	55.41	0.87	3.30	4.36
4440.0	13.89	3.51	19.47	0.86	3.07	4.01	55.55	0.96	3.29	4.31
4440.5	13.91	3.49	19.64	0.85	3.08	4.01	55.64	1.07	3.29	4.26
4441.0	13.79	3.47	19.65	0.77	3.10	4.01	55.68	1.04	3.30	4.21
4441.5	13.65	3.45	19.59	0.76	3.16	4.01	55.71	0.86	3.30	4.21
4442.0	13.66	3.44	19.50	0.76	3.22	4.04	55.71	0.76	3.27	4.20
4442.5	13.71	3.45	19.47	0.75	3.27	4.07	55.69	0.69	3.30	4.19
4443.0	13.86	3.52	19.57	0.69	3.33	4.11	55.73	0.76	3.38	4.15
4443.5	14.12	3.63	19.79	0.80	3.40	4.14	55.82	0.97	3.47	4.09
4444.0	14.42	3.73	20.30	0.78	3.48	4.17	55.92	0.82	3.54	4.11
4444.5	14.91	3.82	20.58	0.73	3.58	4.18	56.01	0.74	3.60	4.18
4445.0	15.00	3.99	20.54	0.66	3.66	4.19	56.13	0.69	3.66	4.25
4445.5	14.61	4.30	20.49	0.62	3.61	4.19	56.27	0.70	3.63	4.29
4446.0	14.30	4.38	20.36	0.67	3.43	4.21	56.35	0.75	3.53	4.33
4446.5	14.34	4.27	20.22	0.70	3.31	4.23	56.37	0.79	3.41	4.31
4447.0	14.27	4.07	20.09	0.73	3.33	4.22	56.37	0.79	3.28	4.28
4447.5	14.04	3.70	20.00	0.82	3.40	4.17	56.21	0.68	3.18	4.20
4448.0	13.88	3.20	19.91	0.82	3.54	4.12	56.06	0.68	3.20	4.12

4448.5	13.65	2.77	19.87	0.76	3.49	4.09	55.91	0.71	3.30	4.07
4449.0	13.49	2.68	19.84	0.75	3.42	4.12	55.87	0.76	3.48	4.14
4449.5	13.36	2.75	19.81	0.78	3.34	4.15	55.86	0.83	3.51	4.22
4450.0	13.27	3.07	19.77	0.85	3.26	4.20	55.88	0.86	3.55	4.30
4450.5	13.26	3.34	19.70	0.87	3.19	4.26	55.92	0.72	3.52	4.33
4451.0	13.34	3.50	19.65	0.83	3.33	4.31	55.92	0.69	3.45	4.35
4451.5	13.32	3.49	19.63	0.79	3.48	4.36	55.89	0.77	3.42	4.35
4452.0	13.14	3.52	19.67	0.84	3.72	4.38	55.87	0.82	3.58	4.34
4452.5	13.00	3.75	19.63	0.89	3.90	4.40	55.83	0.84	3.79	4.34
4453.0	12.91	3.99	19.58	0.97	3.87	4.36	55.79	0.77	4.03	4.33
4453.5	13.37	4.06	19.55	1.01	3.83	4.31	55.75	0.72	4.10	4.33
4454.0	13.79	3.89	19.70	0.98	3.78	4.26	55.73	0.71	3.99	4.33
4454.5	13.95	3.64	20.21	0.91	3.80	4.21	55.75	0.92	3.84	4.34
4455.0	13.99	3.34	20.34	0.91	3.85	4.15	56.39	0.91	3.76	4.33
4455.5	13.97	3.09	20.38	0.96	3.99	4.16	56.95	0.85	3.71	4.33
4456.0	13.95	3.16	20.37	0.97	4.17	4.21	57.22	0.89	3.86	4.32
4456.5	13.99	3.79	20.35	0.95	4.29	4.26	57.26	0.93	4.02	4.32
4457.0	14.09	4.29	20.34	0.86	4.26	4.30	57.20	1.05	4.19	4.33
4457.5	14.20	4.43	20.33	0.80	4.23	4.33	57.14	1.07	4.26	4.34
4458.0	14.16	4.44	20.37	0.79	4.26	4.35	57.08	1.05	4.31	4.41
4458.5	14.00	4.50	20.45	0.83	4.29	4.35	57.04	1.01	4.37	4.49
4459.0	13.71	4.55	20.50	0.86	4.43	4.34	57.01	0.92	4.45	4.57
4459.5	13.68	4.63	20.41	0.89	4.47	4.32	57.01	0.78	4.51	4.64
4460.0	13.70	4.74	20.03	0.90	4.41	4.28	57.04	0.89	4.53	4.66
4460.5	13.86	4.83	20.11	0.88	4.36	4.26	57.07	0.94	4.47	4.66
4461.0	14.06	4.80	20.20	0.80	4.31	4.26	57.05	0.96	4.42	4.63
4461.5	14.82	4.52	20.45	0.76	4.25	4.47	57.02	0.94	4.36	4.60
4462.0	15.52	4.32	20.88	0.75	4.18	4.60	57.35	0.82	4.32	4.57
4462.5	15.54	4.23	21.74	0.76	4.12	4.71	57.80	0.81	4.34	4.55
4463.0	15.21	4.23	22.06	0.71	4.07	4.73	58.20	0.83	4.28	4.53
4463.5	14.45	4.24	22.04	0.67	4.02	4.70	58.47	0.91	4.16	4.53
4464.0	13.37	4.20	21.40	0.69	3.96	4.66	58.38	0.88	4.03	4.53
4464.5	12.58	4.22	20.48	0.69	3.86	4.61	58.23	0.79	3.91	4.54
4465.0	12.31	4.31	19.64	0.66	3.75	4.58	57.79	0.78	3.80	4.61
4465.5	12.37	4.28	19.22	0.57	3.61	4.57	57.13	0.76	3.71	4.70
4466.0	12.81	4.25	19.07	0.50	3.45	4.55	56.39	0.71	3.62	4.70
4466.5	14.03	4.14	19.23	0.47	3.31	4.54	55.76	0.58	3.51	4.66
4467.0	14.87	3.94	19.74	0.41	3.20	4.51	55.93	0.46	3.39	4.60
4467.5	14.75	3.53	20.75	0.36	3.11	4.49	56.56	0.40	3.27	4.55
4468.0	14.47	3.06	20.93	0.32	2.98	4.67	57.25	0.34	3.14	4.54
4468.5	14.33	2.76	20.59	0.26	2.87	4.86	57.65	0.30	2.98	4.57
4469.0	14.27	2.91	20.39	0.22	2.79	4.97	57.88	0.26	2.83	4.63
4469.5	14.22	3.05	20.35	0.18	2.87	5.08	57.73	0.22	2.72	4.69
4470.0	13.98	3.15	20.25	0.16	3.10	5.27	57.37	0.18	2.67	4.85
4470.5	13.40	3.33	20.10	0.14	3.32	5.50	57.09	0.16	2.74	5.03
4471.0	12.87	3.78	19.79	0.14	3.48	5.95	56.96	0.14	2.90	5.22
4471.5	12.62	4.22	19.36	0.14	3.76	6.29	56.91	0.12	3.14	5.43
4472.0	13.32	4.33	19.33	0.14	3.86	6.60	56.87	0.12	3.37	5.74
4472.5	13.66	4.15	19.49	0.14	3.91	6.93	56.81	0.12	3.61	6.05
4473.0	13.61	3.87	19.83	0.17	3.93	7.19	56.74	0.12	3.85	6.36
4473.5	13.55	3.54	20.19	0.20	3.91	7.42	56.70	0.14	3.95	6.70
4474.0	13.22	3.20	20.31	0.19	3.90	7.57	56.74	0.16	4.04	7.08
4474.5	12.88	2.99	20.24	0.18	3.91	7.68	56.78	0.17	4.14	7.43
4475.0	12.45	2.80	20.04	0.20	3.91	7.81	56.80	0.19	4.24	7.52
4475.5	11.72	2.73	19.79	0.27	4.12	7.83	56.70	0.21	4.25	7.58
4476.0	11.22	2.73	19.65	0.31	4.25	7.81	56.51	0.24	4.26	7.61

4476.5	11.15	2.80	19.40	0.31	4.30	7.79	56.25	0.29	4.32	7.63
4477.0	11.61	2.97	18.72	0.33	4.35	7.77	56.08	0.34	4.39	7.62
4477.5	12.25	3.18	18.55	0.39	4.39	7.75	55.90	0.39	4.57	7.63
4478.0	12.78	3.26	18.51	0.46	4.46	7.73	55.68	0.44	4.75	7.65
4478.5	12.92	3.19	18.59	0.52	4.53	7.80	55.57	0.47	4.90	7.71
4479.0	12.94	3.12	19.13	0.56	4.79	8.35	55.81	0.51	5.05	7.79
4479.5	12.90	3.12	19.70	0.63	5.36	8.87	56.09	0.54	5.24	7.93
4480.0	12.91	3.27	19.89	0.69	6.09	11.22	56.27	0.57	5.44	8.30
4480.5	12.92	3.49	19.83	0.71	6.59	14.06	56.44	0.64	5.77	8.79
4481.0	12.73	3.97	19.70	0.71	7.07	14.63	56.49	0.70	6.19	9.49
4481.5	12.41	4.74	19.62	0.71	7.68	14.13	56.48	0.72	6.79	11.58
4482.0	12.17	6.78	19.37	0.71	8.57	12.79	56.47	0.73	8.88	13.53
4482.5	12.35	9.62	18.81	0.71	9.94	11.10	56.49	0.75	9.96	14.71
4483.0	12.52	10.13	18.55	0.72	14.24	8.01	56.54	0.74	11.09	14.25
4483.5	12.57	9.28	18.49	0.71	18.78	5.03	56.45	0.64	12.38	10.59
4484.0	12.46	8.87	18.48	0.69	25.87	4.40	56.31	0.59	16.49	8.07
4484.5	12.69	8.89	18.52	0.66	32.96	4.43	56.26	0.60	20.73	5.74
4485.0	12.56	10.03	18.59	0.63	42.08	4.99	56.31	0.61	26.52	4.63
4485.5	12.49	10.30	18.63	0.59	44.08	5.71	56.41	0.55	32.30	4.57
4486.0	12.71	10.85	18.65	0.55	41.04	6.32	56.50	0.51	44.70	4.62
4486.5	13.51	12.82	18.58	0.52	39.31	6.84	56.44	0.47	42.62	5.41
4487.0	14.63	16.04	18.64	0.47	40.94	7.09	56.43	0.44	40.04	5.82
4487.5	15.07	20.24	18.93	0.38	39.55	7.60	56.54	0.42	39.83	6.25
4488.0	15.35	20.87	19.92	0.31	37.35	8.22	56.67	0.39	40.94	6.90
4488.5	15.42	21.84	21.32	0.28	37.48	8.41	56.97	0.34	40.76	7.76
4489.0	15.16	27.41	21.43	0.30	39.41	8.43	58.52	0.30	39.17	8.07
4489.5	14.62	39.77	21.42	0.35	38.23	8.36	59.26	0.28	37.55	8.32
4490.0	13.57	45.89	21.55	0.39	36.25	8.24	59.38	0.36	38.79	8.35
4490.5	12.84	48.56	21.36	0.42	33.01	8.11	59.14	0.38	39.38	8.37
4491.0	13.37	42.09	19.92	0.43	25.52	7.95	58.88	0.36	37.43	8.34
4491.5	14.08	32.37	19.78	0.43	21.16	7.77	58.53	0.35	33.51	8.24
4492.0	14.61	13.58	20.41	0.44	8.21	7.53	58.29	0.35	14.69	8.04
4492.5	15.16	3.67	21.24	0.47	6.60	7.33	58.34	0.38	12.20	7.84
4493.0	15.26	3.54	21.89	0.50	5.83	7.13	58.71	0.45	6.86	7.65
4493.5	15.10	3.62	22.08	0.54	5.46	6.95	59.44	0.49	6.01	7.44
4494.0	14.89	3.96	22.10	0.58	4.96	6.66	60.44	0.53	5.59	7.23
4494.5	14.54	4.71	21.80	0.63	4.63	6.17	60.60	0.56	5.12	7.09
4495.0	13.89	5.26	21.18	0.69	4.32	5.68	60.60	0.60	4.88	6.93
4495.5	13.43	5.68	20.80	0.72	4.27	5.28	60.56	0.64	4.69	6.69
4496.0	12.60	5.99	20.56	0.67	4.27	4.91	60.53	0.69	4.47	6.38
4496.5	11.89	5.97	20.26	0.68	4.35	4.76	60.43	0.75	4.38	6.02
4497.0	11.74	5.85	19.14	0.67	4.42	4.70	60.22	0.79	4.40	5.50
4497.5	12.10	5.63	18.79	0.66	4.60	4.69	60.02	0.75	4.51	4.88
4498.0	12.45	5.42	18.86	0.67	4.90	4.79	59.80	0.69	4.61	4.86
4498.5	12.57	5.26	19.28	0.72	5.21	5.01	59.59	0.66	4.78	4.91
4499.0	12.91	5.22	19.89	0.77	5.53	5.39	59.42	0.69	4.97	4.96
4499.5	13.23	5.21	20.09	0.82	5.94	5.76	59.34	0.72	5.16	5.17
4500.0	13.21	5.35	20.25	0.72	6.40	6.09	60.16	0.72	5.46	5.49
4500.5	13.19	5.74	20.35	0.61	6.82	6.58	61.44	0.71	5.78	5.78
4501.0	13.18	6.90	20.36	0.58	7.13	6.98	61.97	0.69	6.09	6.01
4501.5	13.11	8.69	20.34	0.59	7.40	7.35	61.98	0.73	6.37	6.24
4502.0	12.81	9.54	20.26	0.58	8.02	7.52	61.97	0.72	6.94	6.75
4502.5	12.66	10.51	19.94	0.55	11.07	7.55	61.97	0.70	7.90	7.13
4503.0	13.28	11.02	19.80	0.52	11.40	7.51	62.62	0.66	8.86	7.26
4503.5	13.48	10.23	20.15	0.53	9.43	7.42	63.69	0.61	12.14	7.33
4504.0	13.39	6.15	20.56	0.45	9.25	7.32	63.86	0.53	11.33	7.34

4504.5	13.11	4.72	20.66	0.46	9.59	7.21	63.10	0.45	9.08	7.34
4505.0	11.99	4.55	20.63	0.53	9.36	7.09	66.82	0.41	9.80	7.35
4505.5	11.04	4.97	20.03	0.68	8.97	7.00	68.29	0.61	10.10	7.33
4506.0	10.32	5.39	19.01	0.70	8.50	6.90	70.14	0.89	9.88	7.29
4506.5	9.80	5.48	18.02	0.54	7.56	6.80	70.39	0.75	9.30	7.24
4507.0	9.44	5.28	17.24	0.50	6.84	6.79	70.46	0.54	8.33	7.18
4507.5	9.26	5.08	16.74	0.50	6.51	6.78	70.17	0.47	6.97	7.08
4508.0	9.37	5.01	16.45	0.53	6.10	6.78	69.38	0.49	6.31	6.97
4508.5	9.60	5.18	16.88	0.59	5.63	6.92	66.52	0.53	5.82	6.83
4509.0	9.86	5.70	17.54	0.64	5.29	7.07	65.77	0.63	5.50	6.80
4509.5	10.07	6.70	17.71	0.68	4.91	7.06	67.45	0.66	5.35	6.84
4510.0	10.42	6.97	17.73	0.67	4.67	7.02	67.65	0.66	5.20	6.87
4510.5	10.52	6.81	17.88	0.63	4.57	6.80	68.84	0.67	5.08	6.91
4511.0	10.46	6.61	17.84	0.60	4.56	6.25	67.96	0.68	4.96	6.92
4511.5	10.37	6.46	17.70	0.63	4.55	5.17	71.38	0.69	4.83	6.91
4512.0	10.59	6.35	17.50	0.70	4.56	4.47	74.43	0.71	4.71	6.79
4512.5	11.15	6.32	18.23	0.81	4.57	4.16	75.59	0.76	4.67	6.54
4513.0	11.57	6.26	19.05	0.91	4.59	3.92	77.47	0.85	4.64	5.81
4513.5	11.88	5.72	19.24	0.92	4.69	3.82	80.89	0.87	4.64	4.46
4514.0	12.33	5.29	19.40	0.87	4.80	3.76	87.21	0.84	4.69	4.11
4514.5	12.87	5.01	19.65	0.82	4.91	3.70	87.79	0.81	4.74	3.97
4515.0	14.11	4.85	20.12	0.77	4.96	3.69	86.88	0.76	4.78	3.85
4515.5	15.00	4.78	20.64	0.72	5.00	3.71	85.72	0.97	4.83	3.76
4516.0	15.01	4.64	21.55	0.67	5.03	3.76	84.34	0.92	4.89	3.67
4516.5	14.98	4.28	22.15	0.72	5.06	3.98	84.78	0.83	4.94	3.60
4517.0	14.88	3.96	22.27	0.80	5.10	4.83	86.88	0.82	4.98	3.53
4517.5	14.34	3.95	22.31	0.88	5.20	5.28	88.68	0.79	5.00	3.76
4518.0	13.27	4.93	22.30	0.87	5.37	5.44	88.18	0.68	5.02	4.09
4518.5	12.85	6.12	22.10	0.80	5.74	5.48	87.79	0.72	5.14	4.87
4519.0	13.10	11.64	20.55	0.79	6.64	5.53	90.51	0.82	5.54	5.25
4519.5	12.74	13.91	20.71	0.87	5.44	5.58	89.17	0.90	6.21	5.39
4520.0	11.43	10.82	21.05	0.88	3.93	5.59	85.22	0.92	5.49	5.44
4520.5	10.96	8.41	20.01	0.76	5.76	5.60	86.68	0.81	4.37	5.45
4521.0	11.70	4.75	19.23	0.72	6.38	5.59	88.78	0.77	5.72	5.47
4521.5	12.73	2.76	19.27	0.75	6.15	5.55	91.51	0.81	6.49	5.43
4522.0	13.40	2.79	19.79	0.82	5.78	5.49	93.64	0.88	6.44	5.37
4522.5	13.74	3.20	20.77	0.86	5.40	5.36	94.38	0.85	6.13	5.30
4523.0	14.10	3.62	21.28	0.89	5.07	5.21	95.41	0.80	5.70	5.24
4523.5	14.38	3.51	21.73	0.73	4.86	5.08	95.55	0.76	5.16	5.18
4524.0	14.70	3.41	22.34	0.77	4.62	4.93	95.55	0.74	4.83	5.11
4524.5	14.83	3.41	22.48	0.90	4.37	4.72	95.49	0.74	4.60	5.01
4525.0	14.45	3.95	22.56	0.93	4.20	4.56	95.42	0.85	4.35	4.91
4525.5	14.32	5.17	22.96	0.94	4.07	4.53	95.32	0.94	4.17	4.80
4526.0	14.26	5.34	22.72	0.95	3.95	4.48	95.21	0.99	3.99	4.67
4526.5	13.97	5.23	22.40	0.96	3.84	4.41	95.11	0.95	3.81	4.54
4527.0	13.54	5.03	22.37	0.99	3.69	4.37	94.49	0.91	3.77	4.46
4527.5	13.46	4.83	22.31	0.95	3.55	4.35	93.54	0.86	3.71	4.41
4528.0	13.64	4.61	21.95	0.84	3.45	4.35	93.91	0.80	3.59	4.36
4528.5	14.35	4.41	21.60	0.78	3.43	4.36	94.30	0.76	3.48	4.36
4529.0	13.93	4.32	21.58	0.83	3.41	4.37	94.98	0.74	3.46	4.38
4529.5	13.58	4.30	21.94	0.89	3.40	4.38	95.33	0.74	3.45	4.41
4530.0	13.37	4.50	22.28	0.90	3.43	4.41	95.52	0.75	3.50	4.43
4530.5	13.20	4.59	21.55	0.88	3.47	4.44	95.67	0.77	3.61	4.44
4531.0	13.00	4.50	21.40	0.83	3.54	4.47	95.47	0.79	3.72	4.45
4531.5	12.97	4.38	21.45	0.77	3.59	4.50	95.10	0.84	3.59	4.47
4532.0	13.31	4.22	21.45	0.70	3.58	4.52	94.51	0.87	3.48	4.48

4532.5	13.81	4.08	21.36	0.68	3.57	4.55	94.56	0.79	3.75	4.48
4533.0	13.76	3.96	21.42	0.63	3.55	4.58	95.22	0.71	3.87	4.49
4533.5	13.45	3.79	21.71	0.56	3.54	4.63	95.84	0.64	3.79	4.49
4534.0	12.94	3.74	21.94	0.49	3.60	4.68	96.38	0.54	3.71	4.50
4534.5	12.74	3.81	21.76	0.38	3.69	4.73	96.78	0.48	3.74	4.54
4535.0	13.08	4.22	21.40	0.33	3.75	4.79	97.13	0.40	3.86	4.57
4535.5	13.32	4.27	21.08	0.26	3.78	4.85	97.37	0.31	4.06	4.64
4536.0	13.23	3.85	21.04	0.22	3.66	4.91	97.35	0.24	3.98	4.71
4536.5	13.15	3.34	21.25	0.18	3.82	4.99	97.29	0.20	3.78	4.78
4537.0	13.04	3.20	21.17	0.15	3.90	5.06	97.20	0.17	3.76	4.86
4537.5	12.90	3.27	20.61	0.13	3.94	5.13	97.11	0.15	4.05	4.94
4538.0	12.81	3.84	20.00	0.11	3.95	5.22	97.06	0.13	4.11	5.03
4538.5	12.83	4.20	19.68	0.10	3.87	5.33	97.04	0.11	4.02	5.15
4539.0	12.78	4.12	19.67	0.10	3.79	5.53	96.95	0.10	3.93	5.27
4539.5	12.79	4.04	19.65	0.11	3.74	5.73	95.99	0.08	3.82	5.41
4540.0	13.14	4.05	19.83	0.16	3.73	5.93	94.42	0.11	3.69	5.56
4540.5	13.54	4.02	20.20	0.43	3.73	6.20	93.92	0.25	3.57	5.71
4541.0	14.15	4.05	20.59	0.47	3.77	6.62	93.65	0.44	3.56	5.80
4541.5	14.96	4.00	21.08	0.48	3.80	7.08	94.03	0.48	3.55	5.92
4542.0	14.78	3.55	21.86	0.58	3.84	7.54	95.17	0.50	3.56	6.12
4542.5	14.47	3.05	21.88	0.67	3.87	7.65	96.06	0.52	3.57	6.36
4543.0	14.07	2.99	21.48	0.73	3.90	7.69	96.41	0.55	3.62	6.65
4543.5	13.47	3.17	20.94	0.71	3.93	7.64	96.70	0.78	3.69	7.06
4544.0	13.10	3.45	20.51	0.69	3.96	7.47	96.96	0.73	3.76	7.47
4544.5	12.91	3.52	20.14	0.75	4.06	7.16	97.21	0.72	3.83	7.69
4545.0	12.73	3.49	19.87	0.84	4.24	6.73	97.42	0.80	3.92	7.68
4545.5	12.71	3.39	19.87	0.91	4.47	6.05	97.52	0.96	4.05	7.42
4546.0	13.41	3.28	20.07	0.87	4.72	4.21	97.62	1.04	4.23	7.01
4546.5	13.68	3.16	20.61	0.81	5.02	3.22	97.64	0.96	4.47	6.34
4547.0	13.98	3.11	21.20	0.79	5.47	2.80	97.63	0.86	4.74	5.25
4547.5	14.27	3.10	21.52	0.80	6.05	2.94	97.59	0.78	5.18	4.27
4548.0	14.67	3.24	21.82	0.85	6.86	3.15	97.54	0.85	5.63	3.43
4548.5	14.98	3.52	22.21	0.93	8.21	3.67	97.48	0.98	6.18	2.82
4549.0	14.91	4.07	22.11	0.94	9.27	4.19	97.29	0.96	6.73	2.61
4549.5	14.84	7.01	21.90	0.91	10.50	4.68	97.12	0.95	8.73	2.70
4550.0	14.75	8.50	21.80	0.92	12.99	5.14	97.17	0.89	11.05	3.16
4550.5	14.69	9.89	21.75	0.90	16.89	5.70	97.78	0.89	14.09	3.73
4551.0	14.76	11.63	21.73	0.85	21.16	5.81	98.10	0.91	17.12	4.26
4551.5	14.95	13.61	21.76	0.80	24.71	5.74	98.07	0.92	20.15	4.74
4552.0	15.15	14.75	21.84	0.76	29.46	5.68	98.00	0.90	23.18	5.18
4552.5	15.35	16.18	21.91	0.72	39.13	5.62	97.86	0.79	24.89	5.45
4553.0	15.66	19.41	22.05	0.66	43.69	5.56	97.76	0.70	28.40	5.56
4553.5	16.21	20.38	22.34	0.61	46.94	5.48	97.75	0.66	39.03	5.59
4554.0	16.83	18.73	22.92	0.55	43.69	5.41	97.87	0.64	45.53	5.55
4554.5	16.87	16.24	23.37	0.38	41.40	5.33	97.92	0.58	47.00	5.43
4555.0	16.84	10.24	23.41	0.36	15.12	5.23	97.91	0.50	46.81	5.28
4555.5	16.82	3.62	23.36	0.26	6.58	5.14	97.92	0.44	36.37	5.18
4556.0	16.89	2.82	23.31	0.18	5.75	5.04	98.19	0.39	11.86	5.07
4556.5	16.97	2.99	24.13	0.16	5.14	5.10	98.26	0.35	6.75	4.99
4557.0	17.10	3.57	24.27	0.18	4.74	5.19	98.25	0.24	5.84	4.90
4557.5	17.14	4.03	24.31	0.23	4.44	5.30	98.13	0.15	5.19	4.87
4558.0	17.04	4.50	24.31	0.32	4.19	5.40	97.88	0.13	4.57	4.87
4558.5	16.62	4.98	24.31	0.38	3.93	5.48	97.60	0.30	4.20	4.91
4559.0	16.18	5.41	23.58	0.46	3.74	5.58	97.81	0.35	3.99	5.00
4559.5	15.82	5.69	23.10	0.66	3.68	5.76	98.42	0.35	3.82	5.12
4560.0	15.76	5.64	23.03	0.69	3.63	6.04	98.42	0.46	3.65	5.28

4560.5	15.74	5.14	23.03	0.67	3.57	6.31	98.29	0.64	3.56	5.53
4561.0	15.69	4.87	23.05	0.65	3.55	6.43	98.10	0.71	3.60	5.84
4561.5	15.68	4.65	23.09	0.62	3.54	6.34	97.97	0.73	3.71	6.08
4562.0	15.84	4.58	23.15	0.70	3.53	6.04	97.85	0.72	3.75	6.26
4562.5	16.16	4.64	23.33	0.80	3.51	5.15	97.74	0.67	3.69	6.21
4563.0	16.43	4.67	23.54	0.88	3.50	4.20	97.68	0.64	3.59	6.13
4563.5	16.34	4.57	23.66	0.93	3.56	3.44	97.64	0.78	3.50	5.68
4564.0	16.03	4.22	23.26	0.93	3.63	2.86	97.61	0.84	3.51	5.00
4564.5	15.74	3.88	22.75	0.90	3.69	2.31	97.58	0.74	3.63	4.29
4565.0	15.06	3.60	22.47	0.86	3.75	2.12	97.53	0.76	3.79	3.44
4565.5	14.65	3.34	22.09	0.80	3.91	2.19	97.49	0.84	4.03	2.38
4566.0	14.55	3.10	21.63	0.75	4.12	2.48	97.44	0.86	4.26	2.13
4566.5	14.69	2.90	21.72	0.78	4.36	3.33	97.38	0.86	4.44	2.15
4567.0	15.18	2.73	22.15	0.81	4.61	4.26	97.28	0.88	4.59	2.42
4567.5	15.60	2.62	22.98	0.85	5.15	5.22	97.15	0.93	4.55	2.73
4568.0	14.70	2.53	22.86	0.85	5.86	6.20	96.71	0.97	4.76	3.63
4568.5	14.34	4.04	22.29	0.82	7.01	6.94	95.57	0.90	5.79	4.54
4569.0	14.28	7.19	21.47	0.78	8.59	7.21	90.52	0.88	7.02	5.63
4569.5	14.22	11.18	21.40	0.74	11.49	7.12	88.51	0.85	8.59	6.49
4570.0	14.21	12.54	21.33	0.78	32.43	7.03	90.14	0.77	10.22	6.85
4570.5	14.24	13.55	21.33	0.89	52.30	6.85	88.26	0.74	18.94	6.85
4571.0	14.29	13.30	21.35	0.96	66.95	6.67	88.35	0.76	35.17	6.75
4571.5	14.76	11.69	21.60	0.99	80.90	6.46	86.12	0.79	51.41	6.54
4572.0	15.15	5.69	22.66	0.96	73.82	6.19	83.10	0.82	67.63	6.27
4572.5	15.30	2.46	22.71	0.92	15.04	5.93	82.25	0.84	80.59	6.02
4573.0	15.45	1.60	22.77	0.89	9.94	5.67	82.71	0.78	43.10	5.78
4573.5	15.64	1.14	23.08	0.86	7.49	5.51	81.03	0.74	15.63	5.49
4574.0	15.86	1.28	23.55	0.77	5.94	5.39	84.17	0.81	11.25	5.33
4574.5	15.86	1.69	23.47	0.69	4.98	5.29	82.50	0.87	6.86	5.25
4575.0	15.64	2.69	23.37	0.79	4.39	5.21	80.99	0.88	5.79	5.18
4575.5	15.48	5.28	23.18	0.81	4.23	5.16	80.83	0.89	4.94	5.12
4576.0	15.24	6.54	22.81	0.79	4.11	5.13	80.29	0.88	4.20	5.12
4576.5	15.14	6.92	22.60	0.77	4.00	5.11	78.56	0.85	3.91	5.12
4577.0	15.09	7.10	22.47	0.75	3.95	5.09	71.10	0.80	3.84	5.12
4577.5	14.86	7.07	22.53	0.73	3.91	5.07	67.23	0.87	3.80	5.11
4578.0	14.45	6.98	22.42	0.74	3.87	5.04	65.04	0.86	3.74	5.08
4578.5	14.24	6.73	22.11	0.72	3.84	5.01	63.54	0.80	3.69	5.05
4579.0	14.30	6.30	21.62	0.69	3.80	4.99	62.12	0.83	3.67	5.01
4579.5	14.76	5.62	21.78	0.54	3.74	4.97	61.48	0.91	3.67	4.95
4580.0	15.05	5.21	22.14	0.47	3.67	4.99	60.89	0.82	3.69	4.92
4580.5	15.17	4.86	22.60	0.45	3.69	5.01	60.46	0.72	3.70	4.91
4581.0	15.29	4.55	22.71	0.44	3.71	5.04	65.48	0.66	3.69	4.90
4581.5	15.37	4.34	22.82	0.46	3.73	5.07	69.50	0.52	3.70	4.88
4582.0	15.45	4.15	22.91	0.51	3.74	5.11	68.48	0.47	3.77	4.89
4582.5	15.58	3.98	22.96	0.50	3.75	5.18	69.26	0.45	3.75	4.96
4583.0	15.65	3.88	23.02	0.48	3.78	5.34	67.73	0.45	3.72	5.00
4583.5	15.68	3.89	23.10	0.50	3.81	5.50	65.01	0.45	3.70	5.03
4584.0	15.72	3.92	23.19	0.65	3.76	5.64	73.58	0.44	3.68	5.08
4584.5	15.95	3.93	23.30	0.82	3.72	5.74	73.23	0.42	3.66	5.15
4585.0	16.11	3.90	23.41	0.85	3.67	5.78	71.72	0.40	3.64	5.23
4585.5	16.00	3.82	23.42	0.83	3.62	6.00	70.89	0.50	3.62	5.30
4586.0	15.71	3.74	23.35	0.80	3.59	6.21	82.25	0.60	3.60	5.37
4586.5	15.30	3.67	22.94	0.77	3.57	6.26	84.63	0.82	3.56	5.46
4587.0	15.00	3.64	22.19	0.78	3.54	5.90	88.74	0.85	3.53	5.56
4587.5	14.92	3.62	21.84	0.86	3.55	5.17	92.79	0.82	3.53	5.84
4588.0	14.89	3.60	21.83	0.93	3.59	4.10	93.11	0.83	3.54	6.12

4588.5	14.86	3.58	21.92	0.91	3.63	3.40	93.12	0.85	3.54	6.04
4589.0	14.85	3.56	22.05	0.85	3.72	3.01	93.99	0.87	3.53	5.85
4589.5	14.85	3.53	22.18	0.79	3.83	2.87	93.87	0.88	3.50	5.36
4590.0	14.85	3.47	22.30	0.77	3.95	2.78	95.71	0.77	3.46	3.00
4590.5	14.83	3.38	22.32	0.88	4.07	2.70	96.81	0.78	3.42	2.72
4591.0	14.78	3.30	22.38	0.90	4.19	2.74	96.91	0.88	3.49	2.64
4591.5	14.83	3.28	22.44	0.90	4.33	2.79	95.32	0.86	3.61	2.61
4592.0	15.01	3.36	22.48	0.89	4.61	3.14	73.83	0.83	3.75	2.57
4592.5	16.07	3.27	23.34	0.92	4.86	3.87	57.05	0.79	3.88	2.59
4593.0	16.38	3.12	23.94	0.96	5.19	4.89	57.19	0.83	4.02	2.71
4593.5	16.54	2.88	24.18	0.91	5.62	5.46	57.32	0.87	4.17	3.18
4594.0	16.19	3.12	23.93	0.86	5.80	5.62	57.45	0.87	4.44	3.91
4594.5	15.83	4.25	23.60	0.85	6.51	5.74	57.72	0.81	4.91	4.73
4595.0	15.94	12.57	23.58	0.85	6.79	5.58	57.84	0.75	5.54	5.53
4595.5	16.64	15.02	23.79	0.85	6.63	5.44	57.94	0.78	6.58	5.85
4596.0	16.84	14.11	24.51	0.85	6.43	5.31	58.03	0.82	6.60	5.76
4596.5	16.51	12.13	24.44	0.92	6.69	5.11	58.04	0.86	6.26	5.63
4597.0	15.91	4.57	23.50	0.98	7.05	4.86	58.03	0.89	6.19	5.39
4597.5	15.15	2.84	22.87	1.03	7.28	4.71	57.95	0.92	6.57	5.24
4598.0	14.92	2.74	22.50	0.99	6.73	4.56	57.76	0.89	7.05	5.12
4598.5	14.66	2.46	22.36	0.95	5.79	4.46	57.30	0.86	7.24	5.05
4599.0	14.06	2.12	22.29	0.90	5.04	4.41	56.67	0.83	5.21	4.98
4599.5	13.77	1.96	22.21	0.85	4.59	4.37	55.93	0.86	4.52	4.91
4600.0	13.59	2.07	22.01	0.89	4.40	4.33	55.42	1.06	4.18	4.81
4600.5	13.47	2.29	21.35	0.95	4.32	4.30	54.97	1.06	4.07	4.71
4601.0	13.36	2.81	21.14	0.87	4.25	4.27	54.66	0.98	3.98	4.59
4601.5	13.28	5.68	20.93	0.82	4.23	4.24	54.36	0.94	3.94	4.46
4602.0	13.20	6.28	20.85	0.91	4.21	4.21	54.19	0.90	3.90	4.33
4602.5	13.15	6.32	20.88	0.92	4.18	4.20	53.99	0.87	3.90	4.26
4603.0	13.11	5.97	20.99	0.86	4.16	4.21	53.72	0.93	3.92	4.21
4603.5	13.08	5.78	21.08	0.79	4.17	4.22	53.47	1.00	3.97	4.16
4604.0	13.09	5.65	21.12	0.80	4.18	4.22	53.36	1.00	4.03	4.11
4604.5	13.10	5.59	21.09	0.92	4.20	4.22	53.30	0.83	4.08	4.07
4605.0	13.12	5.50	21.05	0.96	4.17	4.23	53.26	0.77	4.12	4.02
4605.5	13.13	5.33	21.03	0.98	4.12	4.26	53.23	0.82	4.15	4.00
4606.0	13.15	4.79	21.04	0.88	3.97	4.30	53.21	0.84	4.13	4.10
4606.5	13.18	4.32	21.10	0.80	3.86	4.35	53.22	0.79	4.10	4.17
4607.0	13.19	4.20	21.17	0.74	3.79	4.38	53.25	0.75	3.97	4.21
4607.5	13.20	4.10	21.27	0.71	3.73	4.42	53.93	0.83	3.82	4.24
4608.0	13.21	3.99	21.39	0.69	3.66	4.46	54.52	0.81	3.67	4.30
4608.5	13.28	3.91	21.49	0.68	3.61	4.50	54.88	0.77	3.56	4.35
4609.0	13.40	3.83	21.59	0.66	3.56	4.57	54.82	0.73	3.54	4.40
4609.5	13.54	3.75	21.68	0.74	3.51	4.61	54.75	0.79	3.53	4.45
4610.0	13.68	3.74	21.74	0.85	3.47	4.61	54.67	0.90	3.53	4.48
4610.5	13.83	3.77	21.78	0.97	3.48	4.62	54.63	0.81	3.53	4.52
4611.0	13.99	3.80	21.89	0.99	3.49	4.62	54.63	0.77	3.52	4.56
4611.5	14.20	3.86	22.02	0.94	3.49	4.61	54.61	0.80	3.51	4.59
4612.0	14.36	3.91	22.17	0.88	3.48	4.59	54.58	0.97	3.50	4.59
4612.5	14.43	3.92	22.17	0.83	3.46	4.58	54.57	0.81	3.48	4.59
4613.0	14.41	3.88	22.08	0.76	3.44	4.49	54.58	0.77	3.52	4.57
4613.5	14.37	3.80	21.97	0.77	3.46	4.40	54.59	0.91	3.55	4.50
4614.0	14.32	3.73	21.94	0.80	3.50	4.31	54.60	0.98	3.59	4.44
4614.5	14.18	3.69	21.97	0.77	3.53	4.24	54.62	0.93	3.53	4.39
4615.0	14.05	3.64	22.05	0.80	3.55	4.19	54.66	0.88	3.48	4.35
4615.5	13.90	3.49	21.98	0.99	3.56	4.21	54.71	0.78	3.43	4.24
4616.0	13.75	3.45	21.82	0.94	3.58	4.23	54.74	0.81	3.39	4.13

4616.5	13.60	3.58	21.49	0.90	3.60	4.26	54.71	0.86	3.36	4.03
4617.0	13.56	3.78	21.44	0.89	3.63	4.28	54.69	0.92	3.37	3.92
4617.5	13.60	3.98	21.65	0.87	3.66	4.32	54.65	0.93	3.39	3.97
4618.0	15.07	4.06	22.04	0.84	3.71	4.44	54.60	0.78	3.42	4.05
4618.5	15.77	4.06	22.96	0.69	3.82	4.56	54.77	0.73	3.46	4.13
4619.0	16.19	4.05	24.79	0.60	3.96	4.65	55.49	0.74	3.54	4.22
4619.5	16.46	4.04	24.90	0.50	4.05	4.74	56.67	0.73	3.63	4.31
4620.0	16.72	4.47	25.04	0.42	3.98	4.81	57.48	0.64	3.71	4.41
4620.5	16.99	4.80	25.15	0.37	3.70	4.89	57.72	0.53	3.68	4.58
4621.0	16.79	4.44	24.84	0.32	3.58	4.93	57.86	0.44	3.47	4.70
4621.5	16.39	4.10	23.61	0.34	3.86	4.98	57.83	0.38	3.69	4.81
4622.0	16.03	4.40	23.57	0.39	3.97	5.02	57.77	0.33	3.87	4.90
4622.5	16.03	4.53	23.63	0.41	3.97	5.08	57.67	0.28	3.85	4.95
4623.0	16.05	4.26	23.70	0.47	3.96	5.19	57.50	0.27	3.80	4.99
4623.5	16.10	3.94	23.81	0.58	3.95	5.30	57.19	0.42	3.89	5.05
4624.0	16.13	3.69	23.94	0.70	3.94	5.45	57.17	0.46	4.02	5.18
4624.5	16.17	3.60	24.10	0.69	3.92	5.67	57.24	0.59	3.95	5.40
4625.0	16.23	3.53	24.34	0.68	3.89	6.06	57.31	0.68	3.87	5.60
4625.5	16.41	3.56	24.62	0.70	3.85	6.59	57.40	0.74	3.80	5.76
4626.0	16.57	3.60	24.94	0.78	3.83	6.71	57.47	0.79	3.73	6.07
4626.5	16.70	3.71	25.17	0.80	3.82	6.63	57.48	0.77	3.69	6.21
4627.0	16.66	3.84	25.16	0.77	3.82	6.34	57.48	0.69	3.66	6.33
4627.5	16.51	3.94	25.11	0.78	3.84	5.16	57.44	0.61	3.66	5.77
4628.0	16.09	3.93	24.80	0.83	3.85	3.65	57.41	0.64	3.66	4.82
4628.5	15.65	3.82	24.12	0.81	3.84	2.88	57.13	0.69	3.68	3.87
4629.0	15.65	3.67	23.54	0.77	3.84	2.65	56.62	0.76	3.70	3.10
4629.5	15.55	3.50	23.47	0.72	3.84	2.53	55.78	0.81	3.72	2.68
4630.0	15.91	3.32	23.76	0.73	3.95	2.41	55.89	0.79	3.77	2.46
4630.5	16.26	3.08	24.23	0.77	4.05	2.30	56.31	0.77	3.83	2.40
4631.0	16.83	2.88	24.52	0.78	4.17	2.30	56.71	0.82	3.90	2.36
4631.5	17.20	2.74	24.80	0.76	4.30	2.86	57.12	0.87	4.06	2.35
4632.0	17.29	2.67	25.01	0.74	4.61	3.64	57.42	0.86	4.34	2.91
4632.5	17.39	2.86	25.16	0.71	4.99	4.76	57.62	0.82	4.62	3.61
4633.0	17.37	3.13	25.08	0.76	5.59	5.91	57.69	0.78	4.94	4.41
4633.5	17.32	4.38	24.79	0.88	6.35	6.17	57.74	0.74	5.26	5.84
4634.0	17.27	8.82	24.46	0.93	7.08	6.30	57.79	0.69	6.19	6.39
4634.5	17.20	11.96	24.19	0.87	8.07	6.13	57.72	0.70	6.68	6.35
4635.0	17.16	17.00	24.28	0.83	11.40	5.90	57.59	0.74	8.21	6.24
4635.5	17.19	15.76	24.51	0.81	18.71	5.66	57.68	0.81	12.10	6.08
4636.0	17.42	13.65	24.83	0.80	25.36	5.46	57.83	0.79	18.90	5.84
4636.5	17.62	3.67	25.20	0.79	13.99	5.26	57.98	0.74	26.44	5.61
4637.0	17.78	2.11	25.40	0.69	8.33	5.23	58.09	0.67	15.32	5.41
4637.5	17.86	1.70	25.45	0.50	6.11	5.22	58.15	0.58	7.87	5.29
4638.0	17.87	1.71	25.34	0.31	5.43	5.22	58.17	0.51	6.35	5.24
4638.5	17.82	1.75	25.10	0.24	4.89	5.22	58.13	0.47	5.51	5.21
4639.0	17.69	1.82	24.86	0.18	4.44	5.26	57.95	0.37	4.95	5.22
4639.5	17.50	1.93	24.69	0.15	4.15	5.35	57.73	0.21	4.59	5.24
4640.0	17.30	2.57	24.49	0.15	3.98	5.54	57.50	0.17	4.36	5.26
4640.5	17.24	3.81	24.40	0.17	3.87	5.67	57.32	0.15	4.14	5.29
4641.0	17.25	5.22	24.30	0.21	3.79	5.83	57.16	0.14	3.98	5.35
4641.5	17.21	6.07	24.03	0.23	3.72	6.08	56.94	0.12	3.86	5.42
4642.0	17.04	5.97	23.80	0.22	3.68	6.25	56.83	0.14	3.81	5.48
4642.5	16.82	5.65	23.71	0.21	3.68	6.49	56.78	0.15	3.78	5.64
4643.0	16.61	5.30	23.64	0.21	3.69	6.63	56.74	0.15	3.72	5.85
4643.5	16.40	4.91	23.62	0.22	3.70	6.65	56.71	0.14	3.71	6.02
4644.0	16.26	4.44	23.61	0.23	3.72	6.51	56.69	0.13	3.69	6.23

4644.5	16.21	4.02	23.62	0.35	3.73	6.37	56.66	0.11	3.68	6.46
4645.0	16.26	3.68	23.63	0.53	3.73	6.21	56.64	0.09	3.69	6.64
4645.5	16.31	3.27	23.63	0.70	3.73	6.02	56.61	0.15	3.70	6.49
4646.0	16.36	3.11	23.62	0.68	3.73	5.83	56.62	0.35	3.72	6.28
4646.5	16.13	3.40	23.59	0.59	3.77	5.68	56.66	0.44	3.73	6.00
4647.0	15.89	3.44	23.51	0.60	3.81	5.59	56.70	0.57	3.74	5.75
4647.5	15.86	3.36	23.43	0.69	3.86	5.52	56.73	0.54	3.75	5.59
4648.0	15.94	3.19	23.35	0.66	3.92	5.46	56.73	0.53	3.79	5.44
4648.5	16.13	2.82	23.34	0.61	3.99	5.89	56.73	0.62	3.86	5.26
4649.0	16.30	2.45	23.45	0.61	4.24	6.97	56.73	0.72	3.93	5.34
4649.5	16.46	2.45	23.74	0.78	4.35	9.09	56.74	0.73	4.03	6.02
4650.0	17.07	2.55	24.44	0.83	4.64	8.85	56.83	0.71	4.22	6.96
4650.5	17.23	2.66	24.47	0.78	4.98	7.46	57.16	0.75	4.49	8.22
4651.0	17.10	3.33	24.07	0.77	5.63	5.68	57.32	0.80	4.84	9.14
4651.5	16.97	5.59	24.05	0.83	6.73	5.09	57.27	0.84	5.18	7.84
4652.0	16.88	8.12	24.11	0.91	7.53	4.61	56.95	0.88	5.75	5.44
4652.5	16.81	8.12	24.16	0.97	8.77	4.80	56.70	0.96	6.38	4.93
4653.0	16.77	7.21	24.15	0.86	12.72	5.05	56.60	0.75	7.05	4.66
4653.5	16.76	6.77	24.09	0.66	22.85	5.33	56.50	0.99	8.14	4.87
4654.0	16.70	7.08	23.75	0.82	24.28	5.63	56.49	0.92	18.34	5.07
4654.5	16.67	7.56	23.44	0.82	27.35	5.92	56.49	0.83	23.53	5.34
4655.0	16.76	7.75	23.57	0.79	27.68	6.13	56.48	0.76	26.35	5.68
4655.5	16.86	7.96	23.64	0.69	27.93	6.22	56.47	0.76	27.22	6.06
4656.0	16.94	8.31	23.64	0.70	28.98	6.16	56.46	0.82	27.53	6.20
4656.5	16.99	8.82	23.63	0.76	29.49	6.05	56.44	0.91	28.74	6.29
4657.0	16.97	10.01	23.58	0.72	29.45	5.94	56.43	0.78	29.61	6.33
4657.5	16.95	11.95	23.38	0.66	29.45	5.74	56.43	0.66	29.69	6.27
4658.0	16.38	16.82	23.00	0.71	29.18	5.50	56.38	0.68	29.42	6.08
4658.5	15.32	24.39	22.27	0.79	26.61	5.28	56.31	0.72	28.56	5.89
4659.0	15.21	28.18	21.74	1.02	23.89	5.15	56.25	0.81	23.34	5.70
4659.5	15.11	26.72	21.88	0.90	16.86	5.06	56.20	0.84	19.79	5.49
4660.0	14.61	14.16	21.75	0.84	9.77	4.99	55.64	0.74	12.98	5.26
4660.5	13.83	10.37	21.11	0.87	6.62	4.92	55.20	0.85	6.72	5.12
4661.0	13.72	4.92	20.88	0.89	6.00	4.88	54.73	0.82	6.32	5.06
4661.5	13.67	5.11	20.80	0.80	5.53	4.84	54.35	0.79	5.99	5.05
4662.0	13.80	5.71	20.77	0.91	4.68	4.80	54.03	0.79	4.86	5.00
4662.5	14.18	6.10	21.10	1.04	3.98	4.74	53.86	0.85	4.20	4.96
4663.0	14.59	6.20	21.99	0.95	3.80	4.66	53.83	0.96	3.89	4.91
4663.5	14.97	6.13	22.06	0.89	3.77	4.61	54.54	1.02	3.66	4.88
4664.0	14.95	6.02	22.10	0.93	3.73	4.59	54.99	0.86	3.48	4.86
4664.5	14.88	5.97	21.79	0.99	3.69	4.58	55.34	0.84	3.39	4.83
4665.0	14.78	6.12	21.62	0.92	3.67	4.55	55.22	0.81	3.34	4.81
4665.5	15.05	6.28	21.64	0.83	3.66	4.50	55.07	0.85	3.38	4.76
4666.0	15.86	6.01	22.07	0.77	3.62	4.49	54.97	0.89	3.41	4.70
4666.5	16.95	5.38	23.27	0.48	3.58	4.51	55.00	0.93	3.41	4.63
4667.0	17.19	4.40	24.06	0.87	3.56	4.57	55.24	0.97	3.39	4.56
4667.5	16.96	3.94	23.82	0.78	3.57	4.65	55.89	0.93	3.38	4.51
4668.0	15.57	3.88	22.33	0.48	3.56	4.61	56.56	0.89	3.39	4.46
4668.5	13.65	3.97	20.54	0.95	3.63	4.56	56.59	0.83	3.40	4.42
4669.0	13.15	4.21	19.98	1.11	3.68	4.55	56.46	0.89	3.40	4.40
4669.5	12.95	4.53	19.82	1.14	3.72	4.50	54.54	1.07	3.42	4.38
4670.0	13.08	4.73	19.91	1.03	3.76	4.45	53.41	1.07	3.44	4.34
4670.5	13.23	4.70	20.07	0.91	3.79	4.36	53.34	0.97	3.48	4.30
4671.0	13.49	4.32	20.55	0.90	3.83	4.25	53.48	0.94	3.51	4.26
4671.5	15.05	3.95	21.79	0.95	3.86	4.15	53.63	1.04	3.53	4.22
4672.0	15.69	3.55	22.57	1.00	3.88	4.08	53.87	0.89	3.54	4.18

4672.5	15.79	3.39	22.68	0.96	3.85	4.04	54.17	0.92	3.56	4.14
4673.0	15.69	3.43	22.68	0.95	3.81	3.99	55.49	1.01	3.57	4.10
4673.5	15.81	3.49	22.75	1.04	3.73	3.95	56.14	1.10	3.53	4.07
4674.0	16.26	3.56	23.12	1.05	3.64	3.97	56.32	1.10	3.48	4.03
4674.5	16.53	3.63	23.61	0.94	3.54	3.99	56.45	1.03	3.42	4.00
4675.0	16.61	3.67	23.82	1.07	3.44	3.99	56.48	0.93	3.34	4.02
4675.5	16.69	3.71	23.71	1.03	3.35	3.99	56.43	0.84	3.26	4.05
4676.0	16.69	3.75	23.50	0.95	3.31	3.99	56.33	0.81	3.25	4.09
4676.5	16.69	3.78	23.33	0.84	3.31	3.98	56.27	1.06	3.24	4.08
4677.0	16.68	3.82	23.23	0.83	3.30	3.99	56.23	1.04	3.23	4.06
4677.5	16.63	3.83	23.18	0.90	3.30	4.03	56.29	0.96	3.19	4.05
4678.0	16.57	3.77	23.17	1.00	3.30	4.06	56.36	0.91	3.14	4.03
4678.5	16.53	3.70	23.15	0.74	3.30	4.10	56.42	0.95	3.09	4.01
4679.0	16.51	3.62	23.13	0.75	3.30	4.13	56.49	1.00	3.04	4.01
4679.5	16.50	3.53	23.13	0.80	3.31	4.16	56.52	0.92	2.98	4.04
4680.0	16.49	3.44	23.13	0.85	3.31	4.19	56.52	0.92	2.98	4.05
4680.5	16.50	3.38	23.11	0.91	3.32	4.22	56.52	0.89	2.99	4.06
4681.0	16.51	3.33	23.07	0.91	3.33	4.24	56.53	0.83	3.00	4.07
4681.5	16.53	3.28	23.05	0.87	3.37	4.27	56.53	0.71	3.01	4.09
4682.0	16.55	3.25	23.04	0.80	3.41	4.29	56.48	0.95	3.02	4.12
4682.5	16.58	3.23	23.04	0.72	3.46	4.31	56.43	1.00	3.03	4.16
4683.0	16.60	3.21	23.05	0.68	3.49	4.34	56.38	0.83	3.04	4.25
4683.5	16.62	3.20	23.01	0.65	3.49	4.40	56.30	0.78	3.06	4.34
4684.0	16.63	3.21	22.93	0.69	3.49	4.46	56.23	0.69	3.07	4.42
4684.5	16.64	3.21	22.86	0.70	3.50	4.52	56.15	0.71	3.08	4.49
4685.0	16.63	3.22	22.81	0.68	3.50	4.59	56.09	0.76	3.10	4.56
4685.5	16.62	3.24	22.77	0.66	3.50	4.67	56.03	0.80	3.12	4.62
4686.0	16.60	3.26	22.74	0.61	3.50	4.74	55.96	0.77	3.13	4.69
4686.5	16.58	3.27	22.71	0.52	3.50	4.82	55.91	0.71	3.13	4.76
4687.0	16.52	3.24	22.65	0.41	3.49	4.92	55.85	0.62	3.13	4.83
4687.5	16.44	3.22	22.55	0.34	3.48	5.01	55.79	0.54	3.13	4.91
4688.0	16.24	3.20	22.37	0.36	3.48	5.14	55.62	0.45	3.15	4.99
4688.5	16.08	3.18	22.17	0.43	3.48	5.26	55.45	0.44	3.19	5.03
4689.0	16.05	3.20	21.84	0.36	3.52	5.37	55.38	0.44	3.23	5.06
4689.5	16.03	3.24	21.74	0.29	3.55	5.48	55.45	0.41	3.27	5.08
4690.0	16.02	3.26	21.69	0.29	3.57	5.58	55.59	0.23	3.33	5.15
4690.5	16.01	3.27	21.65	0.36	3.59	5.69	55.69	0.22	3.38	5.23
4691.0	16.01	3.27	21.65	0.37	3.63	5.84	55.75	0.24	3.44	5.32
4691.5	15.97	3.26	21.64	0.30	3.67	5.99	55.94	0.26	3.50	5.43
4692.0	15.94	3.26	21.63	0.22	3.73	6.19	56.52	0.33	3.56	5.57
4692.5	15.91	3.29	21.64	0.16	3.80	6.41	57.33	0.30	3.63	5.73
4693.0	15.89	3.38	21.67	0.15	3.86	6.68	58.24	0.23	3.70	5.89
4693.5	15.87	3.48	21.74	0.16	3.93	6.84	59.33	0.19	3.78	6.07
4694.0	15.85	3.61	21.84	0.18	4.01	6.97	59.84	0.16	3.83	6.26
4694.5	15.89	3.69	22.01	0.29	4.08	7.06	60.21	0.14	3.88	6.49
4695.0	16.43	3.65	22.57	0.35	4.17	7.44	60.67	0.13	4.01	6.70
4695.5	17.46	3.42	23.85	0.38	4.27	7.90	61.57	0.17	4.13	6.87
4696.0	17.94	3.07	24.27	0.41	4.36	8.37	62.44	0.25	4.25	6.91
4696.5	18.25	3.03	24.40	0.44	4.55	8.09	63.01	0.34	4.40	6.91
4697.0	18.34	3.15	24.36	0.48	4.75	7.46	63.96	0.47	4.56	7.32
4697.5	18.24	3.47	23.03	0.71	4.88	6.44	65.51	0.63	4.65	7.94
4698.0	15.84	3.82	21.90	0.80	5.05	5.36	67.01	0.71	4.77	8.30
4698.5	15.39	4.18	21.09	0.68	5.50	4.89	68.27	0.77	4.91	7.93
4699.0	15.18	4.39	20.85	0.55	6.12	4.98	69.13	0.81	5.16	7.57
4699.5	15.50	4.48	21.13	0.61	6.80	5.01	68.80	0.81	5.58	7.14
4700.0	16.73	4.58	22.76	0.75	7.44	3.75	68.60	0.77	6.33	5.77

4700.5	17.39	4.37	23.38	0.71	8.48	2.22	68.50	0.74	6.64	5.01
4701.0	17.84	3.79	23.26	0.65	9.86	1.87	68.53	0.70	6.89	4.99
4701.5	18.11	3.25	23.00	0.80	11.43	2.21	69.85	0.78	7.63	5.03
4702.0	18.03	3.99	22.68	0.95	10.39	2.64	71.32	0.95	10.03	2.17
4702.5	17.49	6.01	22.52	0.86	8.95	3.27	73.32	0.93	11.12	1.80
4703.0	16.89	7.21	22.26	0.98	10.58	4.33	74.19	0.78	10.28	1.97
4703.5	16.88	6.28	22.11	1.00	12.80	5.15	74.64	0.56	8.71	2.31
4704.0	17.05	5.24	23.53	0.96	14.88	5.25	75.30	0.75	9.22	3.08
4704.5	19.05	4.19	24.97	0.83	14.30	5.37	76.47	0.91	11.40	4.97
4705.0	20.44	12.32	25.45	0.73	15.63	5.50	77.62	0.78	14.38	5.15
4705.5	20.63	15.90	25.50	0.66	30.20	5.68	78.47	0.73	14.24	5.23
4706.0	20.45	18.57	25.29	0.63	46.58	5.76	80.57	0.66	14.11	5.29
4706.5	19.45	15.21	24.44	0.68	62.79	5.78	83.90	0.54	15.20	5.39
4707.0	18.72	13.31	23.04	0.78	67.78	5.51	85.09	0.90	32.13	5.67
4707.5	18.31	11.49	22.93	0.84	58.22	5.12	85.35	0.92	68.34	5.97
4708.0	18.22	12.20	23.00	0.87	48.79	4.97	85.49	0.83	62.97	5.86
4708.5	18.21	13.36	23.19	0.86	39.36	4.84	85.67	0.83	52.21	5.67
4709.0	18.29	18.92	23.26	0.82	11.55	4.71	85.94	0.87	51.35	5.47
4709.5	18.31	9.72	23.23	0.73	6.10	4.60	86.28	0.94	8.77	5.27
4710.0	18.32	4.24	23.00	0.68	5.37	4.51	89.73	0.92	7.40	5.06
4710.5	17.87	1.52	22.65	0.84	4.81	4.46	90.43	0.81	6.92	4.83
4711.0	17.36	1.77	22.25	0.81	4.40	4.41	91.00	0.72	5.44	4.59
4711.5	16.93	2.81	21.88	0.76	4.10	4.35	91.35	0.64	4.80	4.39
4712.0	16.48	5.01	21.44	0.75	3.82	4.28	92.21	0.78	4.29	4.29
4712.5	16.68	5.31	22.11	0.85	3.70	4.23	91.87	0.84	3.80	4.25
4713.0	17.36	5.40	22.69	0.82	3.64	4.18	91.85	0.88	3.65	4.22
4713.5	17.39	5.44	22.75	0.79	3.61	4.13	94.11	0.91	3.51	4.19
4714.0	17.38	5.54	22.80	0.76	3.60	4.15	94.63	0.96	3.36	4.15
4714.5	17.60	5.64	23.07	0.73	3.58	4.18	94.96	1.07	3.27	4.12
4715.0	18.09	5.87	23.52	0.83	3.57	4.21	95.19	0.99	3.27	4.08
4715.5	18.23	5.62	23.73	0.91	3.55	4.24	95.36	0.83	3.27	4.06
4716.0	18.18	4.87	23.58	0.88	3.52	4.29	95.46	0.85	3.25	4.04
4716.5	17.25	4.33	23.05	0.85	3.49	4.34	95.39	0.89	3.18	4.05
4717.0	16.20	4.06	22.19	0.83	3.46	4.36	95.33	0.93	3.10	4.06
4717.5	15.18	4.02	20.85	0.81	3.43	4.35	95.24	0.94	3.04	4.08
4718.0	15.04	4.00	20.45	0.83	3.40	4.33	95.15	0.93	3.05	4.09
4718.5	15.21	3.98	20.58	0.89	3.40	4.31	95.07	0.85	3.06	4.11
4719.0	15.53	3.95	20.91	1.01	3.41	4.31	94.99	0.81	3.13	4.12
4719.5	15.94	3.89	21.14	1.13	3.43	4.31	94.91	0.79	3.21	4.12
4720.0	16.22	3.78	21.43	1.14	3.46	4.32	94.96	0.90	3.30	4.11
4720.5	16.39	3.65	21.81	1.08	3.53	4.29	95.24	0.88	3.38	4.10
4721.0	16.44	3.52	21.97	1.03	3.54	4.27	95.59	0.81	3.46	4.09
4721.5	16.57	3.35	22.01	0.97	3.44	4.25	95.74	0.74	3.47	4.08
4722.0	16.85	3.18	22.12	0.86	3.34	4.21	95.49	0.79	3.46	4.09
4722.5	17.19	3.06	22.41	0.76	3.38	4.17	95.06	0.83	3.43	4.10
4723.0	16.83	2.99	22.56	0.75	3.41	4.13	94.50	0.75	3.40	4.10
4723.5	16.34	3.02	21.80	0.81	3.59	4.08	93.86	0.67	3.40	4.07
4724.0	16.20	3.18	21.20	0.88	3.74	4.02	93.37	0.64	3.39	4.08
4724.5	16.37	3.35	21.16	0.83	3.71	4.00	92.74	0.64	3.39	4.10
4725.0	16.62	3.44	21.53	0.72	3.69	3.99	91.34	0.65	3.37	4.10
4725.5	16.78	3.49	21.83	0.64	3.65	4.00	92.30	0.68	3.35	4.07
4726.0	16.95	3.51	22.06	0.62	3.62	4.02	92.60	0.75	3.33	4.07
4726.5	17.47	3.49	22.27	0.62	3.58	4.04	92.29	0.75	3.35	4.10
4727.0	17.67	3.47	22.55	0.61	3.58	4.11	91.80	0.67	3.37	4.10
4727.5	17.05	3.47	22.47	0.60	3.59	4.20	91.17	0.64	3.40	4.10
4728.0	16.08	3.47	22.17	0.58	3.61	4.29	90.45	0.71	3.42	4.10

4728.5	15.68	3.53	20.65	0.55	3.57	4.43	90.43	0.67	3.43	4.10
4729.0	15.57	3.60	20.13	0.51	3.54	4.47	93.23	0.62	3.43	4.11
4729.5	15.46	3.74	20.08	0.49	3.61	4.50	93.82	0.58	3.44	4.07
4730.0	15.36	3.86	20.05	0.59	3.67	4.51	93.65	0.52	3.46	4.06
4730.5	15.22	3.91	20.03	0.74	3.71	4.52	93.36	0.49	3.49	4.09
4731.0	15.02	3.90	20.01	0.71	3.80	4.56	93.08	0.49	3.56	4.13
4731.5	14.74	3.86	19.92	0.69	3.91	4.62	92.55	0.50	3.67	4.26
4732.0	15.15	3.78	20.48	0.86	3.98	4.77	91.71	0.54	3.82	4.38
4732.5	16.75	3.70	21.48	0.80	3.93	4.94	90.49	0.60	3.96	4.53
4733.0	17.97	3.62	22.53	0.73	3.85	4.81	89.23	0.58	3.89	4.66
4733.5	18.19	3.56	23.02	0.85	3.68	4.61	87.88	0.55	3.73	4.77
4734.0	18.12	3.50	22.79	0.95	3.56	4.33	85.98	0.58	3.58	4.83
4734.5	17.71	3.45	22.36	0.95	3.45	4.12	81.54	0.85	3.47	4.79
4735.0	17.30	3.41	21.74	0.90	3.50	3.99	80.75	0.91	3.40	4.65
4735.5	16.98	3.37	21.31	0.80	3.56	4.00	80.70	0.90	3.38	4.46
4736.0	16.85	3.34	21.27	0.78	3.63	4.02	60.80	0.84	3.39	4.27
4736.5	16.69	3.32	20.98	0.88	3.73	4.07	58.10	0.78	3.62	4.08
4737.0	16.44	3.29	20.69	0.92	3.83	4.13	56.20	0.85	3.85	3.94
4737.5	16.23	3.23	20.66	0.90	3.93	4.20	54.93	0.94	3.89	3.97
4738.0	16.23	3.17	20.79	0.92	4.05	4.30	54.37	0.91	3.93	4.03
4738.5	16.41	3.08	20.92	0.97	4.19	4.39	54.23	0.87	3.97	4.08
4739.0	16.66	3.03	20.62	1.00	4.34	4.51	54.12	0.90	4.01	4.23
4739.5	16.78	3.06	20.21	0.99	4.53	4.64	54.05	0.96	4.22	4.49
4740.0	16.61	3.45	19.80	0.95	4.71	4.81	54.05	1.02	4.43	4.67
4740.5	16.25	4.98	19.55	0.91	4.95	4.87	54.05	0.95	4.60	4.83
4741.0	15.93	5.96	19.45	0.85	5.26	4.84	54.04	1.06	4.79	4.97
4741.5	15.69	6.66	19.47	0.76	5.60	4.77	53.85	0.93	5.04	4.96
4742.0	15.48	7.07	19.42	0.66	5.97	4.70	53.67	0.85	5.42	4.91
4742.5	15.37	6.75	18.96	0.75	6.15	4.59	53.46	0.78	5.81	4.86
4743.0	15.18	6.16	18.07	1.01	6.22	4.48	53.23	1.02	6.09	4.83
4743.5	14.50	5.24	17.75	1.21	5.98	4.37	52.91	0.85	6.21	4.81
4744.0	14.03	4.72	17.69	1.07	5.69	4.23	52.32	0.85	6.32	4.77
4744.5	13.84	4.69	18.50	0.91	5.24	4.09	52.26	0.92	6.40	4.72
4745.0	14.08	4.64	19.39	0.73	4.87	3.98	52.05	1.06	6.22	4.65
4745.5	15.27	4.54	20.44	0.91	4.57	3.90	50.94	1.10	5.85	4.58
4746.0	16.62	4.05	21.47	0.96	4.32	3.84	50.92	1.03	5.38	4.52
4746.5	17.48	3.78	22.11	0.98	4.09	3.89	51.33	0.91	4.81	4.47
4747.0	17.56	3.66	21.84	0.94	3.87	4.00	52.16	0.75	4.21	4.41
4747.5	16.66	3.84	21.15	0.90	3.72	4.05	53.53	1.01	3.96	4.34
4748.0	15.74	4.18	19.77	0.84	3.57	4.09	54.68	1.08	3.73	4.28
4748.5	14.76	4.57	18.27	0.79	3.56	4.12	55.19	1.02	3.53	4.24
4749.0	13.49	4.64	17.77	0.72	3.57	4.14	55.11	0.96	3.39	4.21
4749.5	13.09	4.66	17.53	0.73	3.59	4.17	54.73	0.84	3.32	4.20
4750.0	12.81	4.74	17.41	0.75	3.61	4.21	53.93	0.79	3.32	4.22
4750.5	12.74	4.84	17.39	0.76	3.62	4.25	52.54	0.75	3.32	4.25
4751.0	12.95	4.74	17.44	0.75	3.63	4.30	51.47	0.73	3.33	4.29
4751.5	13.33	4.56	17.61	0.71	3.64	4.37	50.39	0.74	3.35	4.34
4752.0	13.58	4.33	18.07	0.69	3.62	4.45	50.13	0.75	3.36	4.39
4752.5	13.97	4.08	18.86	0.67	3.59	4.52	50.13	0.72	3.37	4.46
4753.0	14.29	3.69	19.30	0.65	3.57	4.57	50.42	0.70	3.37	4.56
4753.5	14.67	3.44	19.66	0.65	3.56	4.61	50.84	0.77	3.39	4.59
4754.0	15.02	3.27	19.97	0.65	3.55	4.66	51.29	0.77	3.42	4.62
4754.5	15.28	3.17	20.39	0.65	3.53	4.69	51.83	0.74	3.45	4.64
4755.0	16.10	3.13	20.95	0.63	3.48	4.76	52.40	0.71	3.49	4.67
4755.5	16.36	3.17	20.97	0.61	3.42	4.86	53.01	0.69	3.54	4.71
4756.0	16.41	3.19	20.87	0.60	3.34	4.95	53.40	0.66	3.57	4.77

4756.5	16.39	3.14	20.82	0.59	3.27	5.06	53.64	0.63	3.55	4.85
4757.0	16.37	3.09	20.81	0.58	3.27	5.19	53.75	0.60	3.53	4.93
4757.5	16.35	3.07	20.85	0.57	3.28	5.28	53.75	0.59	3.52	5.01
4758.0	16.32	3.07	20.86	0.56	3.33	5.32	53.77	0.57	3.51	5.07
4758.5	16.30	3.13	20.83	0.55	3.46	5.36	53.79	0.57	3.56	5.13
4759.0	16.13	3.12	20.58	0.54	3.53	5.40	53.71	0.57	3.65	5.19
4759.5	15.07	3.11	19.92	0.53	3.49	5.44	53.37	0.59	3.69	5.29
4760.0	14.20	3.47	18.67	0.52	3.36	5.54	53.41	0.63	3.72	5.37
4760.5	13.51	3.56	17.39	0.50	3.17	5.73	53.31	0.61	3.66	5.44
4761.0	12.46	3.13	16.73	0.46	3.16	5.93	52.87	0.59	3.44	5.51
4761.5	11.90	2.64	16.20	0.39	3.73	6.11	51.33	0.54	3.19	5.61
4762.0	11.41	2.59	15.82	0.30	4.25	6.38	50.37	0.45	3.27	5.71
4762.5	11.21	2.72	15.70	0.24	4.52	6.68	49.49	0.40	4.03	5.86
4763.0	11.11	2.89	15.63	0.22	4.68	7.10	48.72	0.38	4.31	6.04
4763.5	11.24	3.08	15.65	0.21	4.92	7.54	48.33	0.26	4.49	6.29
4764.0	11.71	3.29	15.83	0.20	5.17	8.00	48.08	0.22	4.68	6.57
4764.5	12.09	3.72	16.45	0.19	5.44	8.46	47.97	0.20	4.93	6.92
4765.0	12.11	4.43	16.52	0.18	5.78	8.92	47.97	0.18	5.19	7.37
4765.5	11.91	4.83	16.50	0.17	6.05	9.39	48.05	0.17	5.33	8.16
4766.0	11.67	4.90	16.42	0.17	6.23	10.06	48.15	0.15	5.48	8.76
4766.5	11.41	4.92	15.82	0.17	6.53	10.50	48.43	0.14	5.95	9.27
4767.0	11.11	4.69	15.37	0.16	7.14	10.85	48.63	0.14	6.58	9.58
4767.5	10.86	4.42	15.19	0.16	7.95	11.06	48.71	0.14	7.04	9.93
4768.0	10.83	4.41	15.10	0.16	8.74	11.26	48.35	0.14	7.47	10.42
4768.5	11.05	4.59	15.19	0.16	8.95	11.16	47.88	0.14	8.21	11.07
4769.0	11.27	4.90	15.30	0.16	8.90	11.07	47.32	0.14	8.66	11.14
4769.5	12.08	4.89	15.58	0.17	8.84	10.96	47.36	0.14	8.75	11.08
4770.0	12.98	4.79	16.88	0.19	8.73	10.72	47.68	0.15	8.72	11.01
4770.5	13.33	4.65	17.27	0.25	8.62	10.41	48.04	0.15	8.61	10.87
4771.0	13.52	4.66	17.59	0.32	8.52	10.14	48.41	0.15	8.51	10.69
4771.5	13.49	5.61	17.95	0.40	8.40	9.98	48.97	0.16	8.53	10.45
4772.0	13.18	6.17	17.73	0.47	7.90	9.82	49.71	0.19	8.48	10.16
4772.5	12.86	6.76	17.37	0.46	7.48	9.68	51.72	0.36	7.90	9.87
4773.0	12.91	6.80	17.15	0.44	7.19	9.80	55.87	0.38	7.04	9.60
4773.5	13.16	6.64	16.99	0.44	6.99	11.18	62.07	0.38	6.84	9.72
4774.0	13.87	6.31	17.19	0.62	6.89	12.55	66.90	0.38	6.79	10.56
4774.5	14.30	6.06	17.44	0.78	7.44	13.55	68.66	0.56	7.22	11.45
4775.0	14.62	6.69	17.79	0.77	8.77	13.83	74.05	0.58	7.83	12.34
4775.5	14.39	7.75	18.92	0.73	9.28	13.90	74.05	0.62	8.43	13.15
4776.0	14.01	10.24	18.89	0.64	9.54	13.68	73.57	0.62	9.39	13.76
4776.5	13.25	12.47	18.13	0.59	9.84	13.33	73.06	0.57	10.27	13.88
4777.0	12.86	14.15	17.68	0.73	12.87	11.85	75.46	0.55	11.82	13.91
4777.5	12.67	14.06	17.26	0.63	15.16	10.35	78.89	0.67	14.79	13.41
4778.0	12.59	13.89	17.08	0.54	17.97	9.63	79.63	0.74	17.19	12.55
4778.5	12.52	13.76	17.01	0.52	22.92	9.42	79.44	0.69	18.66	11.74
4779.0	12.45	13.46	16.94	0.66	25.90	9.21	79.03	0.63	22.05	10.99
4779.5	12.31	13.23	16.86	0.62	26.99	8.99	78.63	0.48	24.75	9.65
4780.0	12.08	13.13	16.74	0.54	27.85	8.80	81.12	0.48	25.85	9.24
4780.5	11.85	13.44	16.63	0.39	28.95	8.74	82.55	0.41	27.31	9.05
4781.0	11.62	14.31	16.50	0.43	29.44	8.74	78.51	0.46	28.12	8.89
4781.5	11.38	18.14	16.32	0.46	29.78	8.74	79.15	0.50	28.44	8.73
4782.0	11.14	19.27	16.12	0.41	30.45	8.69	80.82	0.41	28.90	8.64
4782.5	11.02	20.13	15.86	0.35	31.09	8.62	81.76	0.36	29.78	8.64
4783.0	10.94	21.34	15.52	0.32	31.57	8.51	82.80	0.34	31.00	8.61
4783.5	10.87	27.32	15.35	0.50	31.24	8.38	82.81	0.32	31.40	8.57
4784.0	10.76	30.87	15.27	0.54	30.56	8.26	82.31	0.25	31.34	8.52

4784.5	10.61	33.36	15.20	0.57	29.73	8.16	84.72	0.17	30.88	8.49
4785.0	10.25	32.94	14.97	0.64	28.44	8.15	85.11	0.41	29.57	8.45
4785.5	9.53	20.41	14.58	0.00	26.00	8.14	84.96	0.00	28.24	8.33
4786.0	7.47	16.07	13.82	0.00	14.70	8.04	83.19	0.00	20.51	8.03
4786.5	6.54	16.01	13.03	0.00	13.53	7.89	80.56	0.00	14.00	7.77
4787.0	4.83	15.73	11.77	0.00	12.25	7.75	67.13	0.00	13.76	7.65
4787.5	6.52	14.50	10.31	0.00	9.59	7.53	60.45	0.00	13.28	7.58
4788.0	7.37	11.72	9.67	0.00	7.55	7.13	46.61	0.00	9.77	7.52
4788.5	7.85	11.26	11.65	0.00	6.59	6.16	44.62	0.00	8.09	7.44
4789.0	8.98	11.35	12.18	0.00	6.14	5.40	43.73	0.00	6.96	7.27
4789.5	10.07	11.16	13.02	0.00	5.81	4.76	41.63	0.00	6.46	6.95
4790.0	10.75	10.57	14.09	0.00	5.54	4.52	43.38	0.00	5.85	6.40
4790.5	11.44	9.77	16.23	0.00	5.30	0.00	0.00	0.00	5.50	4.67
4791.0	12.21	9.18	17.63	0.00	5.18	0.00	0.00	0.00	5.22	3.06
4791.5	12.98	8.26	18.30	0.00	5.10	0.00	0.00	0.00	5.02	0.53
4792.0	13.39	6.67	18.55	0.00	5.08	0.00	0.00	0.00	4.84	0.00
4792.5	13.43	6.08	18.50	0.00	5.06	0.00	0.00	0.00	4.70	0.00
4793.0	13.45	5.90	18.32	0.00	5.09	0.00	0.00	0.00	4.65	0.00
4793.5	13.46	5.73	18.16	0.00	5.32	0.00	0.00	0.00	4.82	0.00
4794.0	13.47	5.95	18.11	0.00	6.18	0.00	0.00	0.00	5.18	0.00
4794.5	13.47	7.33	18.07	0.00	7.06	0.00	0.00	0.00	6.07	0.00
4795.0	13.48	9.04	18.05	0.00	7.61	0.00	0.00	0.00	6.93	0.00
4795.5	13.49	10.68	18.04	0.00	8.08	0.00	0.00	0.00	7.44	0.00
4796.0	13.50	11.86	18.05	0.00	8.70	0.00	0.00	0.00	8.03	0.00
4796.5	13.51	11.91	18.06	0.00	9.54	0.00	0.00	0.00	8.64	0.00
4797.0	13.52	11.35	18.07	0.00	8.70	0.00	0.00	0.00	9.18	0.00
4797.5	13.52	10.19	18.08	0.00	7.14	0.00	0.00	0.00	8.89	0.00
4798.0	13.53	7.51	18.09	0.00	5.84	0.00	0.00	0.00	6.95	0.00
4798.5	13.52	3.95	18.10	0.00	4.92	0.00	0.00	0.00	6.00	0.00
4799.0	13.49	4.06	18.11	0.00	4.82	0.00	0.00	0.00	5.60	0.00
4799.5	13.51	4.23	18.11	0.00	4.76	0.00	0.00	0.00	5.05	0.00
4800.0	13.52	4.34	18.12	0.00	4.72	0.00	0.00	0.00	0.13	0.00

PRUETT INDUSTRIES INC
8915 ROSEDALE HWY, BAKERSFIELD, CA. 93308
(805) 589-2768

SUB-SURFACE TEMPERATURE SURVEY

CO.	THERMAL POWER		RUN 1A FIELD	OREGON	WELL #1-CTGH
EFF DEPTH			WELL STAT	STATIC	TOOL HUNG
CASING		-	CASING PRESS		ON BOTTOM 7:15PM
LINER		-	TUBING PRESS		OFF BOTTOM 7:20PM
DATE	082786		ELEMENT RANGE	90 - 426	ZERO POINT
ELEVATION			ZONE		SHUT-IN
MAX TEMP			PICK-UP	4804'	ON-PROD
PERF		-	CAL SER NO.	10419	MPP
TUBING		-			
UNITS	ENGLISH		PURPOSE	STATIC TEMPERATURE TRAVERSE	

SURVEY DATA

CO. THERMAL POWER RUN 1A FIELD OREGON WELL #1-CTGH

TIME	DEPTH	P/T	GRAD	TIME	DEPTH	P/T	GRAD
1:00	100	90.1	0.000	1:00	2900	109.9	0.000
1:00	500	90.1	0.000	1:00	2920	110.7	0.000
1:00	1000	90.1	0.000	1:00	2940	111.6	0.000
1:00	1500	90.1	0.000	1:00	2960	112.6	0.000
1:00	2000	90.1	0.000	1:00	2980	113.8	0.000
1:00	2400	90.1	0.000	1:00	3000	115.2	0.000
1:00	2420	90.1	0.000	1:00	3020	116.5	0.000
1:00	2440	91.2	0.000	1:00	3040	117.7	0.000
1:00	2460	92.3	0.000	1:00	3060	118.4	0.000
1:00	2480	92.9	0.000	1:00	3080	119.0	0.000
1:00	2500	93.5	0.000	1:00	3100	119.8	0.000
1:00	2520	94.0	0.000	1:00	3120	120.7	0.000
1:00	2540	94.6	0.000	1:00	3140	121.7	0.000
1:00	2560	95.2	0.000	1:00	3160	122.8	0.000
1:00	2580	95.6	0.000	1:00	3180	123.9	0.000
1:00	2600	96.3	0.000	1:00	3200	124.7	0.000
1:00	2620	97.1	0.000	1:00	3220	125.8	0.000
1:00	2640	97.9	0.000	1:00	3240	126.7	0.000
1:00	2660	98.6	0.000	1:00	3260	127.7	0.000
1:00	2680	99.4	0.000	1:00	3280	128.2	0.000
1:00	2700	99.8	0.000	1:00	3300	129.3	0.000
1:00	2720	100.6	0.000	1:00	3320	130.3	0.000
1:00	2740	101.2	0.000	1:00	3340	131.4	0.000
1:00	2760	102.2	0.000	1:00	3360	132.3	0.000
1:00	2780	103.1	0.000	1:00	3380	133.0	0.000
1:00	2800	104.7	0.000	1:00	3400	134.1	0.000
1:00	2820	105.9	0.000	1:00	3420	135.2	0.000
1:00	2840	107.1	0.000	1:00	3440	136.1	0.000
1:00	2860	108.1	0.000	1:00	3460	137.4	0.000
1:00	2880	109.1	0.000	1:00	3480	138.8	0.000

SURVEY DATA

CO. THERMAL POWER RUN 1A FIELD OREGON WELL #1-CTGH

TIME	DEPTH	P/T	GRAD	TIME	DEPTH	P/T	GRAD
1:00	3500	140.4	0.000	1:00	4180	176.9	0.000
1:00	3520	141.5	0.000	1:00	4200	177.8	0.000
1:00	3540	142.9	0.000	1:00	4220	178.6	0.000
1:00	3560	144.4	0.000	1:00	4240	179.8	0.000
1:00	3580	145.3	0.000	1:00	4260	180.6	0.000
1:00	3600	146.5	0.000	1:00	4280	181.3	0.000
1:00	3620	147.6	0.000	1:00	4300	182.3	0.000
1:00	3640	148.4	0.000	1:00	4320	183.2	0.000
1:00	3660	149.5	0.000	1:00	4340	183.9	0.000
1:00	3680	150.7	0.000	1:00	4360	184.7	0.000
1:00	3700	152.0	0.000	1:00	4380	185.7	0.000
1:00	3720	153.0	0.000	1:00	4400	186.7	0.000
1:00	3740	154.1	0.000	1:00	4420	187.7	0.000
1:00	3760	155.1	0.000	1:00	4440	188.6	0.000
1:00	3780	155.8	0.000	1:00	4460	189.6	0.000
1:00	3800	157.0	0.000	1:00	4480	190.4	0.000
1:00	3820	158.1	0.000	1:00	4500	191.3	0.000
1:00	3840	159.1	0.000	1:00	4520	192.3	0.000
1:00	3860	160.3	0.000	1:00	4540	193.3	0.000
1:00	3880	161.0	0.000	1:00	4560	194.3	0.000
1:00	3900	162.2	0.000	1:00	4580	195.1	0.000
1:00	3920	163.2	0.000	1:00	4600	196.1	0.000
1:00	3940	164.3	0.000	1:00	4620	197.3	0.000
1:00	3960	165.1	0.000	1:00	4640	198.2	0.000
1:00	3980	166.2	0.000	1:00	4660	199.4	0.000
1:00	4000	168.4	0.000	1:00	4680	200.4	0.000
1:00	4020	169.4	0.000	1:00	4700	201.7	0.000
1:00	4040	170.3	0.000	1:00	4720	202.9	0.000
1:00	4060	171.3	0.000	1:00	4740	203.7	0.000
1:00	4080	172.2	0.000	1:00	4760	204.6	0.000
1:00	4100	173.2	0.000	1:00	4780	205.6	0.000
1:00	4120	174.0	0.000	1:00	4804	208.2	0.000
1:00	4140	174.9	0.000	1:00	4804	208.2	0.000
1:00	4160	175.9	0.000	0:00	0	0.0	0.000

TEMPERATURE READINGS TO 2420 FT. WERE BELOW THE MINIMUM RANGE OF THE TOOL
BY P.E. AND E.D. PRUETT

CLAGGETT GEOTHERMAL TEST WELL #1 (CTGH-1)
DEVIATION SURVEY
SEPTEMBER 5, 1986
COLOG, INC.
GOLDEN, CO

R. BATES R. CROWDER

NOTE: Entire log run inside steel casing. Angle values are valid. Deviation values should NOT be relied upon due to magnetic influence of casing.

DEPTH	ANGLE	DIRECTION
75	1.5	192
100	1.5	197
125	0.8	109
150	0.7	206
175	0.6	292
200	0.9	279
225	0.6	309
250	0.6	128
275	0.1	217
300	0.4	270
325	0.3	318
350	0.6	257
375	0.5	304
400	0.4	262
425	0.6	329
450	1.4	200
475	2.1	12
500	2.3	4
525	2.4	327
550	2.5	359
575	2.5	1
600	2.6	360
625	2.4	2
650	2.3	161
675	2.3	359
700	2.2	4
725	2.2	306
750	2.3	1
775	2.5	6
800	2.4	333
825	2.0	30
850	2.4	265
875	2.1	16
900	2.3	142
925	2.5	121
950	2.8	171
975	3.1	330
1000	2.9	87
1025	3.0	245
1050	3.1	88
1075	2.9	26
1100	2.9	239

1125	2.9	78
1150	2.9	11
1175	3.1	72
1200	3.1	155
1225	2.8	41
1250	2.6	230
1275	2.8	296
1300	2.7	270
1325	2.6	175
1350	2.7	71
1375	2.9	225
1400	2.7	307
1425	2.3	5
1450	1.6	332
1475	1.3	142
1500	1.0	146
1525	0.7	153
1550	0.3	147
1575	0.3	92
1600	0.4	108
1625	0.4	70
1650	0.5	222
1675	0.4	146
1700	0.4	32
1725	0.4	297
1750	0.3	126
1775	0.2	50
1800	0.2	195
1825	0.4	144
1850	0.4	180
1875	0.4	159
1900	0.5	15
1925	0.4	48
1950	0.5	47
1975	0.3	310
2000	0.2	346
2025	0.4	48
2050	0.5	127
2075	0.3	75
2100	0.2	144
2125	0.2	169
2150	0.4	203
2175	0.5	183
2200	0.6	228
2225	0.8	176
2250	0.6	151
2275	0.8	133
2300	0.6	140
2325	0.5	329
2350	1.1	172
2375	0.7	286
2400	0.6	356
2425	0.6	152
2450	0.8	359
2475	0.7	177
2500	0.6	226

2525	0.8	142
2550	1.0	177
2575	0.7	319
2600	0.6	120
2625	0.8	208
2650	1.0	222
2675	0.6	146
2700	0.6	113
2725	0.7	194
2750	0.8	92
2775	0.6	47
2800	0.7	209
2825	0.9	3
2850	0.9	174
2875	0.8	36
2900	0.8	24
2925	0.9	296
2950	0.9	48
2975	1.1	271
3000	1.1	59
3025	1.2	318
3050	1.1	334
3075	1.2	325
3100	1.2	341
3125	1.3	107
3150	1.0	206
3175	0.9	263
3200	0.6	68
3225	0.8	329
3250	0.7	359
3275	0.8	38
3300	0.6	287
3325	0.8	274
3350	0.8	324
3375	0.7	64
3400	0.6	316
3425	0.6	272
3450	0.7	126
3475	0.7	335
3500	0.6	0
3525	0.7	168
3550	0.7	158
3575	0.4	95
3600	0.7	153
3625	0.7	244
3650	0.7	159
3675	0.7	202
3700	0.5	111
3725	0.3	147
3750	0.5	156
3775	0.5	327
3800	0.3	89
3825	0.4	99
3850	0.4	91
3875	0.4	65
3900	0.4	325

3925	0.7	161
3950	0.4	315
3975	0.3	270
4000	0.3	60
4025	0.6	163
4050	0.6	292
4075	0.4	14
4100	0.6	204
4125	0.3	136
4150	0.3	296
4175	0.7	109
4200	0.3	297
4225	0.5	99
4250	0.7	128
4275	0.4	78
4300	0.5	220
4325	0.4	110
4350	0.5	309
4375	0.4	116
4400	0.5	180
4425	0.7	188
4450	0.6	68
4475	0.8	173
4500	0.9	70
4525	0.9	80
4550	1.0	152
4575	0.8	235
4600	0.9	221
4625	1.0	149
4650	1.1	198
4675	1.0	232
4700	0.7	254
4725	1.0	222
4750	0.9	328
4775	0.9	47
4800	1.0	28

PRUETT INDUSTRIES INC
8915 ROSEDALE HWY, BAKERSFIELD,CA. 93308
(805) 589-2768

SUB-SURFACE PRESSURE SURVEY

CO.	THERMAL POWER	RUN 01	FIELD OREGON	WELL	#1-CTGH
EFF DEPTH		WELL STAT	STATIC	TOOL HUNG	
CASING	-	CASING PRESS		ON BOTTOM	7:15PM
LINER	-	TUBING PRESS		OFF BOTTOM	7:20PM
DATE	082786	ELEMENT RANGE	0 - 2111	ZERO POINT	
ELEVATION		ZONE		SHUT-IN	
MAX TEMP		PICK-UP	4804'	ON-PROD	
PERF	-	CAL SER NO.	29491	MPP	
TUBING	-				
UNITS	ENGLISH	PURPOSE	STATIC PRESSURE GRADIENT		

SURVEY DATA

CO. THERMAL POWER — RUN 01 FIELD OREGON — WELL #1-CTGH

TIME	DEPTH	P/T	GRAD	TIME	DEPTH	P/T	GRAD
1:00	100	20.7	0.000	1:00	3000	1295.0	.439
1:00	1000	417.7	.441	1:00	4000	1729.1	.434
1:00	2100	899.5	.438	1:00	4804	2073.0	.428

APPROX. FLUID LEVEL 50 FT.
BY P.E. AND E.D. PRUETT

COLOG INC.
d.b.a. COLORADO WELL LOGGING
1019-8th ST., SUITE 306 • GOLDEN, CO 80401 • (303) 279-0171 • TELEX: 45-0286

September 25, 1986

Mr. Joe Iovenitti
Thermal Power Co.
Suite 120
3333 Mendocino Avenue
Santa Rosa, CA 95401

Re: Borehole Geophysical Logging for Clackamas Geothermal Test Well No. 1, September 3-5, 1986.

Dear Joe,

The following letter serves as a report on the final logging program for Thermal Power's Clackamas Geothermal Test Well recorded September 3-5, 1986. I've also attached the original analog data in final form for both logging trips, a copy of the deviation data, and a tabular printout of the digitized log values including the temperature in degrees F.

Colog mobilized September 1-3 to the Clackamas job site and was on site ready to start the logging operations at noon, Sept. 3rd. HQ drilling pipe had parted and was left in the well as casing from approx. 830-4200 ft. HQ casing had been run back down to 830 ft. and the well then drilled from 4200 ft. to approximately 4800 ft. The drilling crew had run NX drill pipe into the well to T.D. and had started circulating (pumping cool water down the well; it did not return to the surface.) prior to Colog's arrival on-site. The drill pipe was pulled from the well and a MRT survey was recorded by the drillers prior to Colog starting logging operations. This MRT survey indicated that the well had been cooled to 153 degrees F, a level acceptable by Colog's downhole probes.

At 23:30 Colog started to rig up and then preceded to run the dual G-G density and caliper log in the well. The dual G-G function on the logging probe failed due to excessive borehole temperature before a density log could be obtained on the open portion of the drill hole (4200-4800 ft.). A caliper log was obtained in this portion of the well, and both caliper and density logs were recorded inside the drill pipe from 900 to 775 ft. These logs were recorded through this interval of drill pipe to investigate the area in which the HQ drill rods had parted at 830 ft. No gaps were apparent on the caliper log. It is possible from the density logs that the joint may be slightly thicker i.e. there is an overlap at the joint that shows as apparent higher density. This probe was out of the drill hole at 03:30 and the three MRT's on the cable immediately above the probe showed 184,188, and 217 degrees F. These temperatures all greatly exceed the dual density tool manufacturer's temperature rating of approx. 150 degrees F. Apparently the borehole temperature rebounded rapidly.

Colog next attempted the full-wave form sonic log. The probe centralizers had to be removed to get the tool down the HX (pipe ID - 3.5", tool OD 2.60") drill pipe because of the grease on the inside of the pipe. Sonic data was recorded going downward from 4225 to 4425'. The tool then failed due to the excessive borehole temperatures. Because of the way the tool failed, the digital full wave form data was lost, and only the analog Delta T and Amplitude data was salvaged. The Delta T data showed formation values of 50 to 100 micro sec./ft. (20,000 to 10,000 ft./sec.). The 100 micro sec./ft. occurred at 4320 ft. and is indicative of high porosity. Numerous cycle skips probably are indicative of fractures in the formation and should be correlated with the core.

Colog next attempted to record the 16-64" resistivity and SP logs. This data could not be collected, because of an apparent short that had developed in the cable. A 6 ft. lateral resistivity and SP log were recorded with this same probe. However, because of the problems demonstrated on the normal resistivity logs this data is questionable. Colog was out of the well at 11:30 and the drillers immediately started to 'trip' the NX pipe back into the well and cool the well. A short in the logging cable was found and repaired. No prints of these logs have been provided.

Cool water was pumped down the well bore for approximately 10 hours and the NX pipe was left in the well to T.D. At 23:30, Colog attempted the gamma-neutron log. This probe was lowered to the bottom of the well as fast as possible and then logged upwards. The probe failed because of the excessive borehole temperatures after logging from 4800 to 4650 feet. The gamma function never completely failed but, is very questionable from 4450 to approx. 4100 feet. The neutron log was totally dead from 4650 to 4520 feet and partially functional to 4100 feet. Data was recorded up to 3500 feet and then the probe was lowered back down to 3950 feet. It was then logged downward until it failed because of the borehole temperature at 4466 feet. The probe was then brought back to 3500 feet and logged out to the surface. At approximately 3000 feet, the gamma function died off to zero. The tool was turned off and initialized again and the gamma function started working. The logs were repeated over the questioned area and then logged to the surface. It is not known why the gamma function died at this point, however, it may have been a result of the high temperatures at depth. A composite gamma-neutron log is attached to this report. Baseline shifts occur in both the gamma and neutron logs where the hole diameter and casing changes. For example, at 4200 ft. the hole diameter decreases form approx. 3.5" to 3" and the neutron log is shifted to the right (less water effect because of smaller borehole - therefore greater count rate). The gamma log also shifts to the right at this point because it is no longer looking through two layers of casing; the NX and the HX. These same type changes also occur at the bottom of the surface casing.

A deviation log was to be the next log recorded in the well. However, a problem developed with the module and the temperature and fluid resistivity logs were recorded while a loose connection on the deviation module was repaired. The temperature and fluid resistivity logs were recorded downward to 4875 feet through the drill pipe. The maximum bottom hole temperature was 361 degrees Kelvin (88 degrees C or 190 degrees F). The temperature log showed only small changes including a cooling trend down to approximately 750 feet with gradual warming to depth. There were several zones that had significantly different temperature gradients including 860-1060 feet in which there was only a very slight increase in borehole temperature. The fluid resistivity log showed an apparent decrease in water quality with depth. From approx. 40 ohm-m at the surface to 9 ohm-m at the bottom of the well. This shift is almost entirely a function of the increase in borehole temperature. A copy of a calibration curve for the Fluid resistivity measurement (in tap water) versus temperature is attached. I have very limited experience with MRT surveys and based upon the variation between the apparent temperatures that were read with the three different MRTs used each time, I question their accuracy to greater than 10%. I have more experience with calibration of Colog's temperature tool and believe it to be accurate to within 1%.

The deviation log was recorded after the T,FR logs by logging downward through the drill pipe at 25 foot intervals. The directional deviation data is erroneous because of the steel casing and pipe in the well bore. The steel casing and pipe is randomly magnetized and the direction Colog's tool measures is magnetically based. It is obvious when the direction changes 180 degrees in 25 feet and the angle doesn't change that the steel is influencing the readings. The steel pipe doesn't effect the vertical angle reading. Overall, this was a very straight borehole.

Upon completion of the deviation survey, 600 feet of drill pipe was then pulled out of the well leaving the bottom 4200-4800 feet open. The 16-64" normal resistivities, SP, IP, and a 6 ft. lateral resistivity were recorded in this portion of the well. All of the resistivity data was consistent between the different types of measurements and the pre and post logging calibrations checks were the same. Additionally, Colog's equipment manufacture specifies that the 16" short normal resistivity log should indicate approx. 5.1 ohm-m for every ohm of load used in calibration, and the 64" long normal resistivity should indicate approximately 20 ohm-M for every ohm of load. This is consistent with the field calibration checks. The small variation between actual and theoretical resistivities is due to the cable length, variation within the load resistors (nominal 10% resistors), and contact resistance. Therefore, I believe the tool to be working correctly and the data to be valid. Please note that the previous 6 foot lateral resistivity and SP data showed the same shape of curve, however, the logging scales were substantially

different. I don't believe the original 6 foot lateral quantitative data to be valid because of the cable problems that were found after it was recorded.

It is somewhat disconcerting to see resistivity values in the 4 to 10 ohm-M range. The core samples were altered however, the neutron data indicates that the formation has very low hydrogen content (no water) and these resistivity values seem unrealistically low. The 9 ohm-M borehole fluid values would mean that apparent formation resistivity values of 9 ohm-M would indicate 100% porosity. For the apparent formation resistivity to be less than this value, the formation needs to be more conductive than the borehole fluid, i.e. contain saline formation water, disseminated sulfide, or some other conductive material.

The neutron logs suggest that there is very little formation water available. The slower sonic delta T's correspond to the lower resistivity values and also indicate higher porosity. Therefore, I am inclined to believe the porosity is dry. G-G density data in this area would have been very beneficial. The increase in borehole temperature will decrease the apparent resistivity some, however, I don't believe it would be significant enough to cause these extremely low values. At best, I think that the temperature correction would only increase these values by 20-25 ohm-M. One temperature correction formula for normal resistivity logs was obtained from literature and states that R1(T1+7) = R2(T2+7) with the temperature in degrees F. Five ohm-M at 200 degrees F would equal approx. 20 ohm-M at 50 degrees F with this formula. I haven't seen enough information to know the limits, if any, for this formula. More investigation, including some core resistivity measurements, needs to be made to explain this result. It should be noted that the higher resistivity layers correspond to the higher (lower apparent porosity) neutron values and faster sonic velocity values, which is consistent.

The gamma, neutron, dual G-G density, caliper, and sonic logs were simultaneously recorded in digital and analog format. The digital sonic data was lost when the tool failed from the temperature. This was a very different shut-down than the up-hole logging equipment was designed for. The deviation data was also recorded digitally. The temperature, fluid resistivity, 16-64" normal resistivity, 6 ft. lateral resistivity, spontaneous potential, and induced potential logs were record only in analog form and then digitized.

The logging program for the well was effected by the overall borehole conditions. Significant data was not obtainable after the HQ drill pipe was parted and left in the well. This includes continuous resistivities from the surface to the bottom interval, density, and sonic data. Density and complete sonic, gamma, and neutron data could not be collected in the open portion of the well (4200-4800 ft.) because of the borehole temperatures. The

temperature in this drill hole rebounded very rapidly after the cooling attempts.

A major conclusion does seem to be apparent from the well log data collected. The well below 2000 feet appears to have a very low porosity, little permeability, and low potential as a natural geothermal aquifer. This is demonstrated by the lack of thermal gradient changes in the temperature log (which indicates lack of aquifer systems in this area), the overall low formation temperature, the high neutron count values (indicative of low formation water), and the lack of SP change which suggests little permeability. The low resistivity values are consistent with major clay alteration which would further reduce any permeability, however, they still need more explanation. They don't seem realistic with the known core and neutron values.

It was not practical to link the logging data from the first trip with these last logs primarily because of the lack of data that could be collected through the cased portion of the well. I will work with this data in more detail when I receive additional information, including a comprehensive geologic description, and ideally some resistivity and porosity values from the core and/or several pieces of the cores that we could test.

If you have any questions about this report or some additional information, please call.

Thanks again,

Robert E. Crowder
President / Geophysicist

enclosures
therma18.inv

COLOG INC.
d.b.a. COLORADO WELL LOGGING
1019-8th ST., SUITE 306 • GOLDEN, CO 80401 • (303) 279-0171 • TELEX: 45-0286

June 23, 1986

Mr. Joe Iovenitti
Thermal Power Co.
Suite 120
3333 Mendocino Avenue
Santa Rosa, CA 95401

Re: Borehole Geophysical Logging for Clackamas Geothermal Well-Shallow Logging Run.

Dear Joe,

The following letter serves as a report on the shallow logging run for Thermal Power's Clackamas Geothermal Well recorded June 13th, 1986.

The Clackamas Geothermal Well was drilled to 517 feet at 8 3/4 inches and was then logged before running 7" casing and begining core drilling. The logging suite consisted of Temperature, Fluid Resistivity, Gamma, Guard Resistivity, Dual G-G Density, Caliper, 16-64" (short and long) Normal Resistivity, Spontaneous Potential, and Deviation. Drilling was completed June 12th, 1986 and the well had not been circulated for 14.5 hours prior to logging.

The initial logging run consisted of Temperature and Fluid Resistivity. This probe was recorded from the surface (measured at ground level) downward. The temperature log was recorded at a very sensitive scale - 2.0 degrees Kelvin full scale (273 degrees Kelvin = zero degrees Celcius) to help identify near surface hydrologic effects. Depth was set to the temperature log, the fluid resistivity log was offset slightly due to recorder pen configuration. Key points on the temperature log include overall cooling with depth - the bottom hole temperature was 282 degrees Kelvin (9 degrees C, 48 degrees F) versus a fluid temperature at 18 feet (fluid level) of 289 degrees Kelvin. There was a major cooling zone, 3 degrees K, at 130-135 feet. This is indicative of a significant fracture zone. The temperature gradient from 30 to 126 feet and 444 to 490 feet are nearly the same - rapid cooling with depth. The zone from 126 to 355 feet shows significant temperature changes foot by foot, including the zone at 130-135 discussed earlier and a zone from 200-298 which warmed slightly.

The fluid resistivity was approximately 19-20 ohm-M except for the zone at 130 feet in which the fluid resistivity increased to 23 ohm-M. This indicates that this zone was making fresh water.

The second logging run in the well recorded Spontaneous Potential and 16-64" normal resistivity. The depth was set with respect to the 16" normal resistivity log and the other logs were offset slightly due to recorder pen configuration. The initial logging run showed resistivities from 300 to 7000 ohm-M. The log appears to have some high frequency noise superimposed on top of the log response. This noise is a result of the very high resistivity scale used. The SP log also showed what appeared to be noise. The SP and 16-64" logs were repeated to verify the data. The SP log was repeated with a different probe, module, and surface electrode. Therefore, I have a high degree of confidence that the log is valid. Considering that the fresh water (low TDS) used was also the same type of water encountered in the borehole and the unaltered andesidic formations drilled, this SP response is not unusual.

With the rerun of the SP log, a single point resistance log was attempted. However, the formation resistivity was too high and this log could not be recorded. It has a maximum full scale of 1000 ohms with up to 1000 ohms displacement.

A deviation survey was recorded with the rerun of the SP log. This log was run at this time because the deviation can not accurately be made through steel casing. Steel casing has an artificial magnetic field that distorts apparent tool orientation. Digital inclination and orientation readings were made every 10 feet. The borehole was near vertical at the top of the well and from 290-430 feet. There was a small (up to 1.5 degree) inclination to the north from 80-290 feet and an inclination to the south below 430 feet. The bottom 20 feet are inclined up to 2.6 degrees. A magnetic declination of minus 20 degrees East was used for the deviation survey.

The next logging run recorded gamma ray and guard resistivity both digitally and analog. The gamma log was uneventfull and repeatible. The gamma log was also the basis for depth calculation. The guard resistivity log showed the same basic signatures as the normal resistivity log but at much lower resistivity values. This is a result of tool design. Highly resistive formations require more power to focus the current at depth. In this case, the tool was seeing very shallow effects of the borehole wall. It is valuable to more accurately pick bed boundaries, but doesn't approximate formation resistivity.

The last logging run recorded dual G-G density and caliper. This log was also simultaneously recorded in both digital and analog format. There was a mistake in recording the analog caliper calibration initially, but was detected during logging and upon post-logging calibration. A repeat section was made and the calibration repeated. The digital data was not effected by this mistake. The only effect of this is that the caliper log doesn't fall exactly on even lines; e.g. 4" is not on the 4th line of the paper.

The dual density data shows lower density (higher apparent porosity) to the right. The depth was set to the long spaced G-G detector. On the analog, the short (near) spaced G-G log is offset downward because of recorder pen configuration. The short spaced G-G log also goes off scale frequently on the analog. It was recorded only to help correlate formation breaks and validate the long density log. It should be noted that the lower density zones were frequently associated with small washouts and significant borehole rugosity.

The following steps will be made to this data for the final report:

1. Attempt to correct the normal resistivity data for borehole fluid resistivity and better approximate formation resistivity.

2. Digitize the analog data not recorded digitally in the field. Replot this data corrected for probe offset.

3. Compensate the dual density data.

4. Make a plan and profile view plot of the deviation data.

5. Integrate this log data with data from the next logging phases.

It is anticipated that most of the processing of this data will be done shortly. I am forwarding several copies of the final analog prints recorded in the field. I will also forward copies of the initial processed logs. If you have any questions about this letter or the data, please call.

Sincerely,

Robert E. Crowder
President

thermall.rep

To: J. Ioveniti

From: D. GOODWIN/A. MCDANNEL

Re: Summary of Field Operations for CTGH-1 Shallow Logging Run

Geophysical borehole surveys were run in CTGH-1 on the morning of June 13, 1986. Surveys were performed by Colorado Well Logging employees Robert E. Crowder, Jr., and Robert E. Crowder, Sr. The surveys prescribed by the CTGH-1 Logging Program (temperature, fluid resistance, sp, 16"-64" resistivity, natural gamma, gamma-gamma density, guard resistivity, caliper), along with a deviation survey and an additional sp survey, were completed in five logging runs.

Three maximum recording thermometers (MRT) were run with the logging tool during the first trip. Due to a sustained temperature reversal with depth an ambient temperature which was greater than downhole temperatures, MRT's were not included in subsequent trips.

The hole was open and unobstructed to its total depth of 517 feet. Hole diameter was 8 3/4 inches. Thirty-five feet of 10 3/4 inch diameter casing was in the top part of the hole. Static water level was 18 feet below ground level.

Trip (1) Temperature and Fluid Resistance 0'-517'

3 Maximum Registering thermometers (reading 50°, 52°, and 55°F)

06:38 - 07:03 Log on RIH @ 20 fpm

07:03 - 07:11 Stop on 60 Hom

07:11 - 07:20 POH

Comments: MRT results: 1 broken - hit casing shoe @ 35' hard.
60°F - casing open to hole fluids
55°F - thermometer isolated from fluids

It was decided not to run MRTs on later trips due to ~~the~~ sustained temperature reversal below a maximum temperature at the top of the hole fluid column.

Trip (2) Spontaneous Potential and 16-64 Resistivity 35'-517'

07:40 - 07:54 RIH to BH

07:54 - 08:15 Logging OOH @ 25 fpm

08:15 - 08:22 RIH to relog 16-64 resistivity without S.P. - potential noise interference between the two instruments

08:22 - 08:40 POH logging 16-64 resistivity only 517'-475', turn on S.P. @ 475' - looks the same as 1st pass (logging rates: 517'-450' @ 25 fpm, 450'-35' @ 30 fpm)

Trip (3) Spontaneous Potential, Single Point Resistivity, and Deviation Tool 35'-517'

09:02 - 09:10 RIH to BH

09:10 - 09:30 POH logging @ 25 fpm

Comments: Using new S.P. tool (Trip(2) tool appeared to drift but Trip(3) S.P. had similar response: noisy, flat, drifting).

No Single Point Resistivity record (Maximum deflection for tool is 1,000Ω and formation resistivity is >1,000Ω).

Using 20°E declination with Deviation Tool.

Trip (4) Natural Gamma 0'-514' and
Guard Resistivity 18'-514'

09:50 - 10:00 RIH to BH

10:00 - 10:22 POH, logging @ 25 fpm

10:22 - 10:25 RIH to 150' to check for repeatability

10:25 - 10:30 Relogging 150' to surface @ 25 fpm (same response)

Comments: Sampling analog record at 0.5' spacing for digital record of log.

Trip (5) Caliper and Gamma-Gamma Density 35'-517'

10:30 - 11:05 Calibrating both tools

11:05 - 11:15 RIH to BH

11:15 - 11:40 POH, logging @ 20 fpm

Comments: Caliper anal functioning, readings systematically narrower than hole by 2"-3"

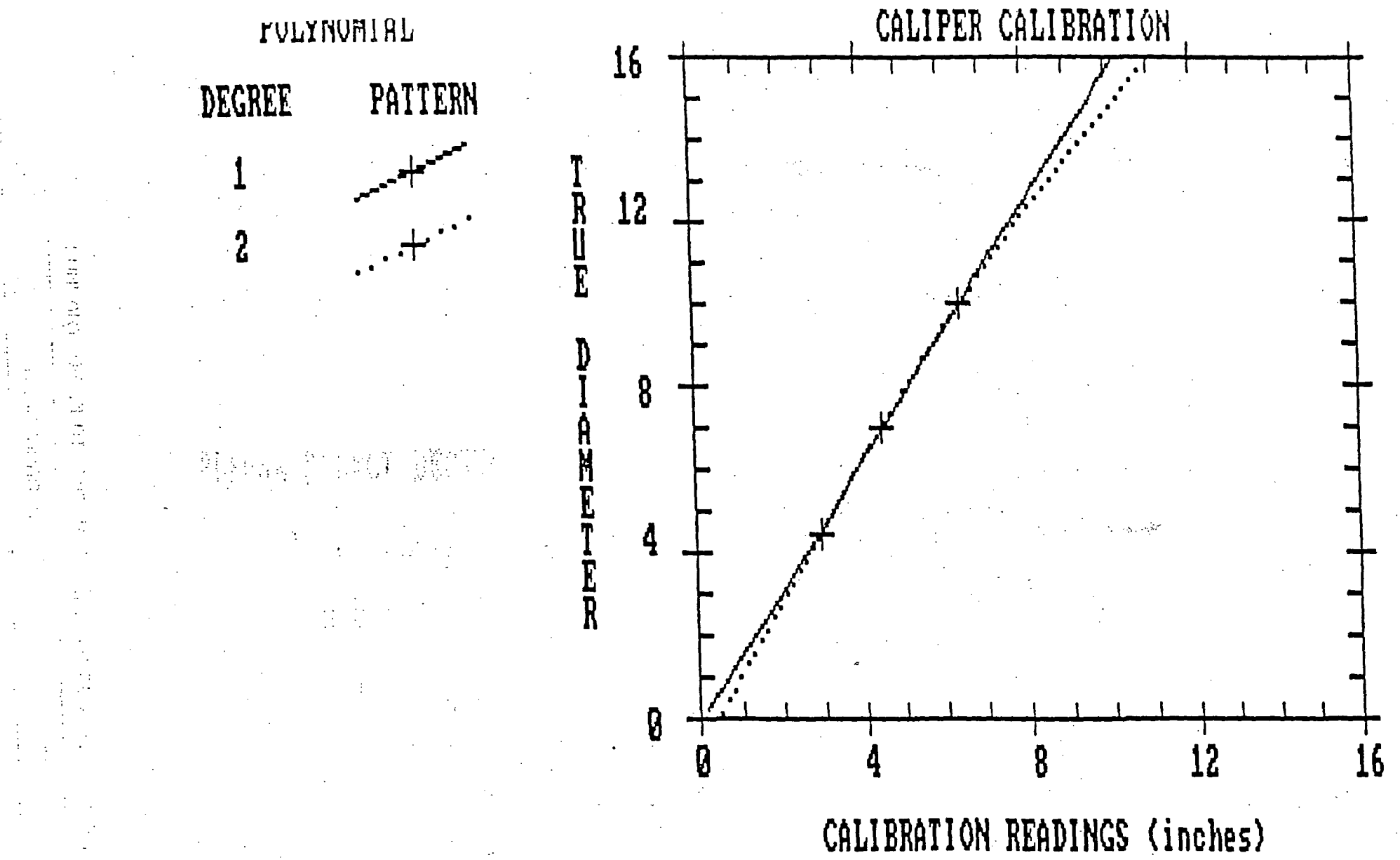
11:40 - 11:53 Recalibrate caliper and RIH to 150'

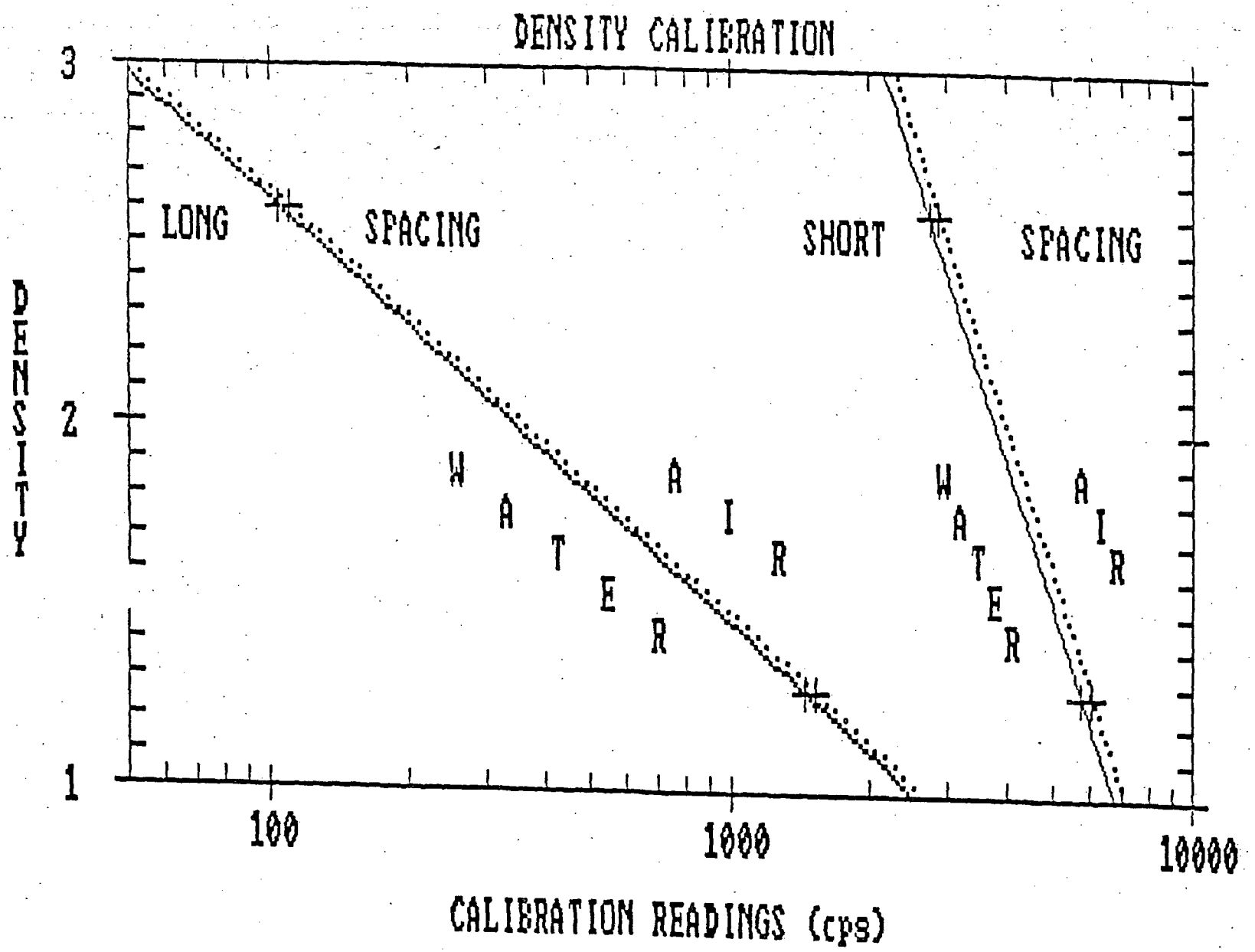
11:53 - 11:59 POH; relogging hole @ 20fpm from 150' to 35'

Comments: Good repeatability on both gamma-gamma resistivity and caliper. Caliper scale adjusted to accurately reflect hole diameter. Digital record again sampled at 0.5' spacing.

11:59 - 12:15 Recalibrate gamma-gamma resistivity tool

12:15 - 12:30 Logging operations complete, Rig down and mo to Detroit to copy field logs.


POLYNOMIAL
DEGREE
PATTERN
1
2
CALIPER CALIBRATION
TRUE DIAMETER
CALIBRATION READINGS (inches)
0
4
8
12
16


DENSITY CALIBRATION
3
2
1
DENSITY
LONG
SPACING
SHORT
SPACING
WATER
AIR
WATER
AIR
100
1000
10000
CALIBRATION READINGS (cps)

Selected Mineralogical Analysis of Secondary Minerals in CTGH-1 bore
- Mr. Keith Barger, USGS - Menlo Park.

SECONDARY MINERALS FROM CTGH-1 DRILL CORE
8/11/86

Samples from Al Waibel:

2508	smectite, chabazite, analcime-wairakite?, scolecite-mesolite?, thompsonite?
2813.3	smectite, chabazite, analcime-wairakite?, scolecite-mesolite?
2907	smectite, erionite
3291	smectite, ß-cristobalite?, stilbite-stellerite?
3329.5	smectite, ß-cristobalite, heulandite

Samples from Joe Iovenitti (analyses are from crumbs in bottom of sample sacks)

2071	smectite, chabazite (not-X-rayed - botryoidal silica? probably ß-cristobalite)
2574	smectite, analcime-wairakite?, scolecite-mesolite?, thompsonite?
3225	smectite, heulandite, ß-cristobalite
3329	not-Xrayed (no crumbs available but core appears to contain silica - ß-cristobalite? and clay - smectite)
3329.7	smectite

Notes:
1. Mineral identified as analcime-wairakite? lies somewhere within the analcime-wairakite solid solution series but need chemistry to pinpoint.
2. Scolecite-mesolite? are very similar structurally and have virtually identical X-ray patterns (along with natrolite - Na-rich). Scolecite contains Ca and mesolite has both Ca and Na.
3. Stilbite-stellerite? are also difficult to distinguish in X-ray. Stellerite is the Ca-rich mineral.
4. Thompsonite? is queried because it occurred with scolecite-mesolite? and all but 2 of the thompsonite peaks are masked by other minerals.

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Santa Rosa Office

ATTACHMENT NO. 1

CTGH-1 DATA LISTING - 27 OCTOBER 1986

1. Cutting Description Log: 0 - 527'
2. Core Description Log: 527 - 4796'
3. Core Recovery Log: 527 - 4800'
4. Summary Wellsite "Mud Log": 0 - 4800'
5. Geophysical Borehole Logs

A. Shallow Logging Run (TD = 517')

(i) Temperature: 6 - 516.5'
(ii) Fluid Resistivity: 16 - 514'
(iii) Caliper: 10 - 514'
(iv) Gamma-Gamma Density Uncompensated and Compensated

Uncompensated: 30 - 516'
Compensated: 0 - 510'

(v) Guard Resistivity: 20 - 514'
(vi) Natural Gamma: 0 - 510'
(vii) Spontaneous Potential: 35 - 516'
(viii) 16-64" Resistivity: 35 - 516'
(ix) Deviation Survey
(x) Tabulated data sheets on the following surveys: spontaneous potential, 16-64" resistivity, fluid resistivity, temperature, long-spaced density (uncompensated), natural gamma, guard resistivity, caliper, dual density (compensated) at 0.5 feet increments and deviation at generally 10 foot increments.
(xi) Plots of Wellbore Deviation
(xii) Density Calibration Plot
(xiii) Caliper Calibration Plot
(xiv) Shallow Logging Run Report by Goodwin and McDannell (Drillsite Geologists)
(xv) Shallow Logging Run Report by Colorado Well Logging

B. Deep Logging Run (TD = 4800')

(i) Temperature: 0 - 4785'
(ii) Fluid Resistivity: 0 - 4785'
(iii) Gamma Gamma Density Uncompensated: 775 - 900'
(iv) Sonic: 4225 - 4425'
(v) Natural Gamma: 0 - 4800'
(vi) Neutron: 0 - 4800'
(vii) Induced Polarization: 4200 - 4799'
(viii) Spontaneous Potential: 4200 - 4798'
(ix) 16-64" Resistivity: 4200 - 4799'
(x) 6' Lateralog: 4200 - 4798'

(xi) Caliper: 760 - 885': 4100 - 4800'
(xii) Caliper Calibration Plot
(xiii) Density Calibration Plot
(xiv) Tabulated data sheets on the following surveys: spontaneous potential, 6' lateralog, induced polarization, 16-64" resistivity and sonic at 0.5 foot increments; inclination at 25-foot increments; and temperature and fluid resistivity at 10-foot increments
(xv) Deep Logging Report by Colorado Well Logging

6. Temperature and Pressure Survey by Pruett Wireline Industries, Inc.
7. Actual Gradient Hole Completion Configuration Schematic
8. Actual Gradient Hole Casing Head, Access Gate, Cellar Schematic
9. A Preliminary Review of the Secondary Mineralogy in Drillhole CTGH-1 by Columbia Geoscience
10. Selected Mineralogical Analysis of Secondary Minerals in CTGH-1 by Mr. Keith Barger, USGS, Menlo Park
11. Temperature Survey by Dr. David Blackwell
12. CTHG-1 Drilling and Completion History
13. Daily Drilling Report

JLI/ma
JLI095

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Clackamas Thermal Gradient Hole CTGH-1

DRILLING AND COMPLETION HISTORY

DATE	ACTIVITY
7 June 1986	Spudded 1030 hours with Boyles Bros. rotary rig. Drilled 12-1/4" hole to 35' but could not run a 10-3/4" conductor below 12'.
8 June 1986	Moved rig 6' and drilled a 8-3/4" hole to 35'; opened hole to 12-1/4". Ran 10-3/4", 40.5 lbs K-55 conductor to 28'.
9 June 1986	Completed running conductor to 35'. Cemented conductor with 16 sacks Portland cement, 16 sacks construction cement and 3% $CaCl_2$. Cement in place at 1430 hours. Waiting on cement.
10 - 12 June 1986	Drilled 8-3/4" hole from 35 - 517'. Lost 50% ($\pm$1000 gals) of drilling mud at 400 - 410' and 60 barrels at 425'.
13 June 1986	Geophysical borehole logging conducted. Circulated hole clean in preparation for running 7", 26 lbs K-55 buttress casing. Ran casing which became stuck at 488'; unable to circulate casing to bottom or pull up. Rigged up Halliburton cementers. Pumped 5 barrels of water ahead of 13.5 pound per gallon slurry of 122 cubic feet of Class G cement, mixed 1:1 with perlit plus 40% silica flour and 2% gel. Followed with 15.5 pound per gallon tail slurry of 32 cubic feet of Class G cement plus 40% silica flour. Displaced slurries with 19 barrels of water. Obtained good cement returns at surface. Plug bumped at 4000 psig and held. Cement level dropped in 7" to 10-3/4" annulus. Cement operation witnessed and approved by BLM.
14 June 1986	Outside cement job completed with four barrels of Class G cement mixed 1:1 with perlite; filled 7" to 10-3/4" annulus to surface. Released rotary rig. Dug cellar.
15 June 1986	Completed cellar construction. Welded LARKIN casing head to 7" casing. Set up BOPE and notified BLM and DOGAMI for BOP test.

16 June 1986	Leak in 8-5/8" x 6" Series 900 flange in 7" Larkin casing head precluded successful BOPE test. Waiting on air delivery of replacement flange.
17 June 1986	Reworked threads on 8-5/8" x 6" 900-series flange but would not seat properly. Air delivered flange seated and sealed in Larkin head. Rigged BOPE including Hydril MSP 2000 unit, Shaffer dougle gate with blind and rod rams, remote hydraulic controls.
18 June 1986	BOPE tested and approved by BLM.
19 June 1986	Stabilized Boyles Bros. core rig over BOPE and cellar; built rig floor.
20 June 1986	Drilled float collar at 466' and cement to 488' with 6" bit. Cleaned out hole to 517' and drilled to 527'. Circulated 30 minutes and pulled out of hole (POH). Left fish (6" bit and 4.5' joint) on bottom. Called for an overshot.
21 June 1986	Recovered fish. Ran 4.5" core guide string to 526' and hung string from 7" casing head.
22 - 24 June 1986	Cored ahead with 3.937" diamond corehead (HX size) from 527 - 744' with full core recovery. Lost total fluid return at 530' (22 June). Attempted to plug LCZ from shoe of 7" (488') with LCM and mud on 24 June with no success.
25 - 30 June 1986	Cored from 854' to 1316' with no fluid returns. Tripped out of hole for new HX bit at 1271'. Experienced mud thinning due to water inflow on 25 June; greased rods on 27th. Core recovery virtually 100%.
1 - 5 July 1986	Cored from 1316' to 1775' with no fluid returns where tripped for new bit. Core recovery 100%.
6 - 12 July 1986	Cored from 1775' to 2336' with no fluid returns and 100% core recovery. Wireline broke pulling core at 2336'; POH for repair and new bit. H_2S detection equipment installed and operating on 8 July. All three crews trained in H_2S safety and equipment. Electronic failure of H_2S detection equipment on 9 July (2083'). Repaired and operating by 2500'. Maximum recording thermometer temperatures (MRT) at 2130' and 2243' were 75° and 69°F respectively.
13 - 14 July 1986	Cored from 2366' to 2466' with no fluid returns and 100% core recovery.

15 July 1986	Cored to 2476'. Core barrel jammed in core rods at ±500' depth upon core retrieval. Wireline broke, POH 17 stands and retrieved core barrel. Laid down one joint of bad core rod. Ran in hole (RIH) and washed bridge from 1776' to 1780' and 5' of fill on bottom. Cored to 2535' with no fluid returns and 100% core recovery. MRT at 2544' was 96°F.
16 July 1986	Cored to 2594' with no fluid returns and 100% core recovery. Upon core retrieval at 2584', barrel became stuck at 400' and wireline broke. POH; laid down one bad joint of core rod. MRT at 2584' was 99°F.
17 - 28 July 1986	Cored from 2594' to 3721' with no fluid returns and 100% core recovery. POH to change bit after 1385' and 340 hours; only one-third worn. MRT data as follows: 3059' - 119°F; 3159' - 124°F; 3254' - 131°F; 3641' - 138°F and 3711' - 137°F.
29 July - August 1986	Cored from 3721' to 4203' with no fluid returns and 100% core recovery. HX core rods parted while coring at 4203'. Waiting on NX rods to run fishing spear.
5 - 7 August, 1986	Waiting on NX rods. RIH with NX open ended and found HX rods parted at 823'. RIH to retrieve core barrel at 4193'.
8 - 10 August 1986	Recovered core barrel after two attempts. RIH with 2.875" diamond corehead (NX size) and NCC rods. Milled out HX bit at 4203' and cored ahead to 4226'. POH to replace bit. MRT at 4216' was 177°F.
11 - 17 August 1986	Cored from 4226' to 4780' with no fluid returns and 100% core recovery. Received a U. S. Forest Service order for complete shutdown of rig operations because of a Class E fire risk. MRT data as follows: 4296' - 178°F; 4383' - 183°F; and 4540' - 182°F.
18 August 1986	Cored from 4780' to 4800' with no fluid returns and 100% core recovery. Could not obtain exception to shutdown order in spite of about 900 barrels water supply on the drillsite which is located in a clear-cut. POH to 4150'. Closed blind rams and Hydril on NCC rods; closed Kelly valve and shutdown operations at 1200 hrs.
27 August 1986	Ran a Pruett wireline temperature/pressure survey after nine-day shutdown with U. S. Forest Service approval. Recorded maximum hole temperature of 210°F at total depth.

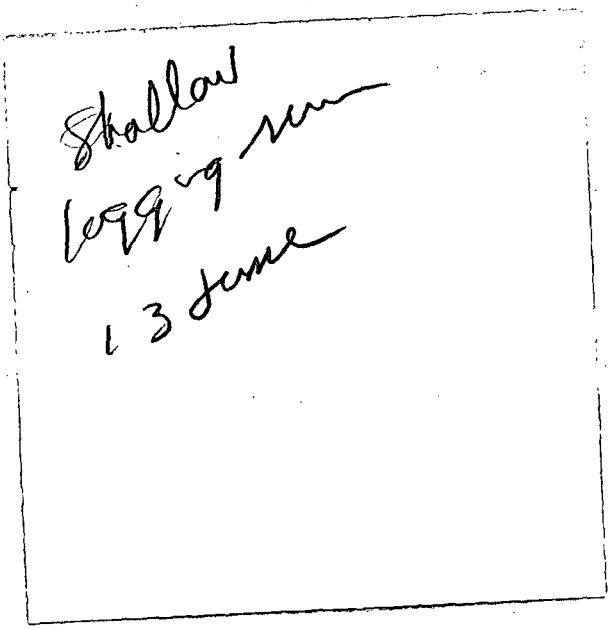
30 August 1986	Class E fire risk condition lifted. Drillsite operations scheduled to resume 2 September.
2 September 1986	Started operations at 2000 hours. Ran NCC rods and NX bit string from 4250' to 4800'. Hole clear to bottom. Initiated hole cooling for geophysical logging operation. MRT at 4800' is 204°F.
3 September 1986	Cooled borehole with 8 hour circulation to about 153°F. NCC rods POH.
4 September 1986	Ran gamma-gamma density/caliper, sonic and spontaneous potential/16'-64' resistivity logs. Temperature in hole rebounded quickly, to over 185°F which caused the density and sonic tools to fail. Found erratic readings from resistivity tool; cablehead problem. POH, ran NCC rods into hole to initiate cooling again.
5 - 7 September 1986	Completed borehole geophysical logging. Laid down NCC rods, pumped out cellar and removed BOPE. Bolted 1-1/4" plate flange to Larkin casing head. Flange includes a 3" full opening gate to allow logging tool access. Rigged down, cleaned cellar and pits. Released rig on 1300 hours, 7 September 1986.

JLI/ma
October 28, 1986

JLI092

CTGA-1

Tabulated Data for SP, short normal and long normal resistivity (16-fluid resistivity, temperature (°K and °F) and long-spaced density (repeat log only).



(FT)	MV	OHM-M	OHM-M	OHM-M	°K	°F	CPS
DEPTH	SP	SN16	LN64	FRES	TEMP K	TEMP F	LSD
35.00	47.40	36.62	45.91	18.93	289.08	60.94	415.28
35.50	46.48	34.57	52.63	18.95	289.06	60.91	494.63
36.00	47.81	28.75	18.74	19.06	289.05	60.90	501.60
36.50	49.26	27.72	-1.30	19.33	289.05	60.90	500.08
37.00	58.97	33.07	-11.64	19.71	289.05	60.90	449.34
37.50	74.34	52.62	-7.48	19.87	289.06	60.90	293.26
38.00	93.01	90.95	-10.51	20.00	289.05	60.90	212.99
38.50	98.20	142.58	-11.18	20.15	289.05	60.88	217.15
39.00	107.18	205.02	1.38	20.11	289.04	60.86	207.83
39.50	117.17	274.09	20.47	20.00	289.02	60.84	145.72
40.00	118.41	368.17	69.22	20.26	289.01	60.82	142.67
40.50	104.52	514.70	137.01	20.51	289.00	60.80	153.97
41.00	91.68	637.65	210.14	20.63	289.00	60.80	144.97
41.50	87.36	698.88	288.67	20.36	289.00	60.80	118.34
42.00	82.08	757.18	515.59	20.05	288.99	60.78	104.29
42.50	71.85	819.78	622.93	19.98	288.97	60.74	97.42
43.00	59.59	849.85	683.57	20.03	288.96	60.72	97.21
43.50	49.34	863.42	712.24	19.97	288.95	60.70	105.29
44.00	39.61	866.72	733.20	19.65	288.94	60.70	131.23
44.50	28.95	861.74	753.20	19.46	288.94	60.70	164.11
45.00	19.47	816.38	767.76	19.48	288.94	60.69	198.07
45.50	13.80	745.00	782.99	19.46	288.93	60.68	219.56
46.00	7.66	686.65	806.49	19.47	288.93	60.67	236.67
46.50	2.99	651.05	841.55	19.43	288.92	60.66	260.31
47.00	-2.25	622.51	854.19	19.40	288.92	60.65	277.55
47.50	-7.57	599.97	867.35	19.65	288.91	60.63	264.74
48.00	-12.65	580.14	868.60	19.86	288.90	60.63	228.37
48.50	-19.16	575.23	864.21	19.93	288.91	60.63	218.59
49.00	-24.04	575.05	858.93	19.94	288.91	60.64	218.73

50.00	-32.27	543.82	821.09	19.74	288.88	60.57	201.49
51.00	-33.56	539.41	851.99	19.94	288.87	60.56	198.92
51.50	-34.01	540.02	848.80	19.95	288.86	60.54	187.63
52.00	-35.55	536.71	853.62	19.56	288.85	60.53	162.67
52.50	-37.14	534.13	876.44	19.37	288.84	60.50	172.36
53.00	-36.83	531.82	901.50	19.25	288.83	60.49	194.34
53.50	-35.84	528.18	938.23	19.37	288.82	60.48	207.64
54.00	-36.79	524.46	974.76	19.45	288.82	60.47	210.09
54.50	-37.51	535.81	1009.29	19.37	288.81	60.46	258.72
55.00	-37.71	549.49	1044.98	19.50	288.81	60.45	323.83
55.50	-38.27	566.83	1079.18	19.90	288.80	60.44	305.09
56.00	-38.84	577.67	1101.37	20.16	288.79	60.42	241.12
56.50	-38.49	589.89	1106.30	20.14	288.78	60.40	185.86
57.00	-38.84	601.47	1104.05	20.18	288.77	60.38	145.23
57.50	-38.66	632.65	1096.44	19.98	288.76	60.36	110.19
58.00	-38.47	649.49	1082.44	20.17	288.75	60.34	112.79
58.50	-38.95	673.64	1068.66	20.32	288.74	60.32	128.69
59.00	-39.41	705.52	1049.67	20.32	288.73	60.31	118.95
59.50	-39.32	755.75	1032.49	20.34	288.72	60.30	104.44
60.00	-39.67	807.13	1016.78	20.40	288.71	60.28	120.50
60.50	-39.83	842.73	1026.22	20.42	288.71	60.27	120.26
61.00	-39.88	861.18	1040.31	20.47	288.70	60.25	123.67
61.50	-40.31	869.70	1028.27	20.62	288.69	60.24	118.76
62.00	-40.26	872.96	1011.70	20.66	288.68	60.22	119.01
62.50	-39.60	873.95	996.76	20.34	288.67	60.21	125.95
63.00	-39.09	861.19	967.56	20.34	288.66	60.19	142.06
63.50	-38.75	844.71	939.32	20.44	288.65	60.17	153.23
64.00	-38.40	806.23	913.20	20.12	288.64	60.16	175.67
64.50	-38.80	725.25	894.69	19.99	288.64	60.14	198.94
65.00	-39.18	668.53	884.69	20.17	288.63	60.13	211.88
65.50	-39.32	626.28	880.51	20.24	288.62	60.12	210.65
66.00	-39.84	595.25	883.35	20.11	288.61	60.11	206.92
66.50	-40.48	561.83	884.38	19.91	288.61	60.09	219.30
67.00	-40.71	541.54	880.27	19.69	288.60	60.08	237.66
67.50	-40.05	518.07	882.50	19.48	288.59	60.07	263.49
68.00	-39.74	493.69	876.64	19.40	288.59	60.05	315.76
68.50	-39.17	477.96	861.23	19.73	288.58	60.04	391.92
69.00	-39.11	475.04	848.75	19.86	288.57	60.03	434.54
69.50	-38.93	477.10	833.57	19.95	288.56	60.01	371.86
70.00	-38.57	477.66	816.27	19.94	288.56	60.00	322.97
70.50	-38.34	480.04	805.80	19.97	288.55	59.99	237.79
71.00	-38.13	476.09	797.21	20.00	288.54	59.98	246.26
71.50	-38.09	472.93	787.32	20.17	288.54	59.96	275.35
72.00	-37.86	471.33	778.46	20.30	288.53	59.95	332.81
72.50	-37.08	470.86	773.59	20.36	288.52	59.94	318.75
73.00	-35.79	465.12	775.70	20.38	288.51	59.92	255.66
73.50	-34.55	459.47	780.33	20.43	288.51	59.91	229.10
74.00	-34.65	453.55	783.87	20.49	288.50	59.90	235.71
74.50	-34.31	443.73	788.21	20.49	288.49	59.88	246.86
75.00	-34.64	435.92	796.80	20.54	288.49	59.87	260.77
75.50	-34.63	431.59	805.29	20.68	288.48	59.86	260.56
76.00	-34.60	432.40	812.06	20.85	288.47	59.85	240.92
76.50	-34.42	435.70	817.41	20.91	288.47	59.84	227.32
77.00	-34.41	435.75	824.27	20.97	288.46	59.82	231.60
77.50	-34.58	433.55	835.98	20.96	288.45	59.81	247.47
78.00	-34.89	429.49	847.82	20.93	288.44	59.79	286.32
78.50	-34.99	427.88	860.83	20.88	288.43	59.78	324.23
79.00	-34.30	430.25	879.07	20.84	288.43	59.77	341.78
79.50	-33.98	434.01	901.16	20.81	288.42	59.75	346.83
80.00	-33.98	445.57	926.69	20.67	288.41	59.74	346.83
80.50	-34.10	456.38	953.33	20.78	288.40	59.72	353.10
81.00	-33.96	469.79	980.17	20.99	288.39	59.71	346.00
81.50	-34.26	484.89	1002.99	21.08	288.39	59.69	276.78
82.00	-34.30	507.84	1019.42	21.16	288.38	59.68	187.20
82.50	-34.07	535.35	1034.68	21.25	288.37	59.67	129.81
83.00	-34.59	578.41	1049.04	21.35	288.36	59.65	95.94
83.50	-35.00	634.81	1062.03	21.35	288.35	59.63	96.41
84.00	-35.37	695.91	1074.65	21.50	288.34	59.61	104.95
84.50	-34.94	771.15	1087.71	21.56	288.33	59.58	107.58
85.00	-33.98	890.91	1101.42	21.57	288.32	59.57	103.24
85.50	-33.39	969.75	1116.42	21.67	288.31	59.56	95.54
86.00	-33.64	1071.17	1136.04	21.59	288.30	59.55	100.14
86.50	-33.08	1108.42	1155.21	21.49	288.29	59.53	104.97
87.00	-33.20	1127.50	1173.31	21.65	288.29	59.51	110.56
87.50	-33.14	1116.32	1196.11	21.65	288.28	59.50	113.10
88.00	-29.61	1075.74	1222.50	20.99	288.27	59.49	119.58
88.50	-15.19	1021.55	1246.67	20.67	288.27	59.48	162.53
89.00	-12.90	963.85	1197.49	20.52	288.27	59.48	243.64
89.50	-6.24	854.94	1046.16	20.45	288.26	59.47	308.45
90.00	-1.59	751.56	1021.14	20.50	288.26	59.47	376.68
90.50	11.74	677.38	1056.21	20.78	288.26	59.46	470.02
91.00	-9.64	627.06	1071.78	20.90	288.25	59.45	489.85
91.50	-3.36	605.21	1097.96	20.96	288.25	59.44	433.81
92.00	0.79	585.36	1073.57	21.05	288.24	59.44	308.66
92.50	9.28	570.65	1005.41	21.16	288.24	59.42	224.96
93.00	-5.18	578.87	955.81	21.38	288.23	59.41	169.17
93.50	15.83	583.36	919.62	21.41	288.22	59.39	163.62
94.00	17.55	572.97	905.84	21.02	288.21	59.37	190.24
94.50	27.58	557.97	776.17	20.84	288.20	59.36	221.60
95.00	36.30	544.78	771.67	20.87	288.20	59.35	243.06
95.50	43.05	531.33	820.08	20.95	288.19	59.34	268.66
96.00	42.15	510.14	845.05	21.03	288.19	59.33	303.00
96.50	43.49	477.78	864.22	21.02	288.18	59.32	326.13
97.00	48.23	462.63	854.70	21.12	288.18	59.32	352.64
97.50	49.96	459.13	866.75	21.20	288.17	59.30	339.36
98.00	48.26	443.41	872.22	21.21	288.17	59.30	313.39

100.50	57.88	508.06	898.24	21.97	288.14	59.25	163.02
101.00	57.60	528.26	886.97	22.03	288.13	59.23	138.77
101.50	59.59	554.73	879.95	21.97	288.12	59.22	119.22
102.00	63.69	589.73	904.58	21.76	288.12	59.21	120.73
102.50	66.85	636.06	858.15	21.50	288.11	59.19	135.29
103.00	68.00	661.09	869.91	21.32	288.10	59.18	149.35
103.50	69.21	672.04	893.87	21.13	288.09	59.17	185.10
104.00	69.13	674.30	934.70	21.08	288.09	59.15	238.21
104.50	66.48	669.32	898.14	21.16	288.08	59.15	282.56
105.00	63.21	651.97	967.91	21.20	288.08	59.14	295.64
105.50	64.25	645.41	1036.70	21.16	288.07	59.13	310.64
106.00	65.15	641.79	1013.78	21.43	288.07	59.12	338.19
106.50	62.32	635.64	1068.45	21.47	288.06	59.11	355.52
107.00	61.30	631.70	1026.37	21.43	288.05	59.10	346.43
107.50	50.95	634.92	1000.21	21.39	288.05	59.09	373.09
108.00	37.30	643.71	998.25	21.40	288.04	59.08	430.76
108.50	60.31	648.39	975.91	21.49	288.04	59.07	494.31
109.00	70.25	652.63	940.08	21.53	288.03	59.05	436.13
109.50	71.64	646.40	885.01	21.44	288.02	59.04	333.02
110.00	69.28	651.63	868.60	21.40	288.02	59.03	250.00
110.50	67.38	660.13	886.22	21.29	288.01	59.01	277.85
111.00	67.60	630.73	874.89	21.33	288.00	59.00	303.74
111.50	68.55	600.94	867.32	21.36	287.99	58.99	346.23
112.00	66.05	582.89	807.94	21.48	286.99	57.19	435.00
112.50	41.25	573.30	829.27	21.49	287.94	58.90	411.48
113.00	64.18	553.36	839.35	21.33	287.93	58.88	348.51
113.50	63.16	527.92	820.04	21.25	287.93	58.87	305.23
114.00	70.72	506.20	777.26	21.24	287.92	58.85	295.39
114.50	73.38	493.38	700.61	21.13	287.91	58.83	305.93
115.00	72.96	477.70	731.39	21.09	287.90	58.82	319.71
115.50	72.58	460.21	726.12	21.06	287.89	58.80	306.77
116.00	71.50	440.72	787.13	21.33	287.88	58.79	268.22
116.50	66.16	436.62	799.13	21.49	287.88	58.78	255.69
117.00	64.28	423.77	764.56	21.42	287.87	58.76	251.75
117.50	68.89	414.97	823.28	21.30	287.86	58.75	269.41
118.00	68.47	411.78	788.65	21.36	287.85	58.73	306.20
118.50	69.69	393.09	764.16	21.48	287.84	58.72	304.81
119.00	72.34	394.91	793.48	21.68	287.84	58.70	241.49
119.50	69.08	396.00	748.45	21.95	287.83	58.69	224.69
120.00	70.02	413.71	658.06	22.21	287.82	58.67	229.96
120.50	63.95	400.70	701.68	22.22	287.81	58.65	209.39
121.00	86.06	411.91	750.05	22.07	287.80	58.64	235.17
121.50	88.53	416.59	763.51	22.41	287.79	58.62	278.95
122.00	87.56	399.87	815.24	22.40	287.78	58.60	288.41
122.50	88.49	409.34	745.29	22.32	287.77	58.58	237.75
123.00	87.99	417.04	718.48	22.28	287.76	58.57	216.87
123.50	87.29	415.08	733.75	22.13	287.75	58.55	241.71
124.00	85.48	413.16	700.34	22.00	287.74	58.54	262.32
124.50	86.51	431.84	758.03	22.02	287.73	58.52	267.74
125.00	87.40	456.53	775.71	22.15	287.72	58.49	274.31
125.50	90.41	478.26	783.95	22.36	287.71	58.47	261.96
126.00	89.61	500.42	753.93	22.60	287.69	58.44	236.24
126.50	90.44	524.97	777.00	22.87	287.67	58.41	174.02
127.00	89.53	546.50	859.70	23.02	287.64	58.36	133.39
127.50	91.34	570.97	938.47	23.08	287.61	58.30	128.68
128.00	93.55	598.58	921.37	23.27	287.56	58.20	124.91
128.50	95.08	648.79	910.43	23.16	287.51	58.13	119.74
129.00	96.23	712.51	932.94	22.95	287.46	58.03	112.72
129.50	97.02	747.59	931.93	22.67	287.37	57.87	119.31
130.00	94.92	788.03	932.13	22.61	287.21	57.57	140.63
130.50	92.30	832.41	1001.75	22.61	287.00	57.20	149.92
131.00	89.53	872.20	1213.41	22.68	286.66	56.58	146.25
131.50	92.96	883.23	1268.02	22.77	286.59	56.45	123.16
132.00	95.76	901.07	1249.16	22.80	286.52	56.33	110.76
132.50	98.82	920.41	1232.46	22.88	286.44	56.20	101.54
133.00	99.38	953.61	1185.44	22.88	286.28	55.90	94.28
133.50	99.45	981.73	1158.13	22.82	286.11	55.61	94.32
134.00	100.08	1027.30	1119.82	22.65	285.68	54.83	97.30
134.50	100.65	1051.95	1111.96	22.35	285.20	53.96	102.90
135.00	90.56	1065.74	1019.48	21.58	284.85	53.34	134.61
135.50	69.74	1005.96	987.92	21.19	284.42	52.55	182.17
136.00	99.77	928.73	968.02	21.20	284.36	52.45	229.05
136.50	102.19	837.24	958.95	21.49	284.34	52.41	254.22
137.00	101.00	769.36	972.15	21.30	284.34	52.42	249.52
137.50	95.06	709.91	951.85	21.07	284.35	52.43	255.51
138.00	89.88	654.87	921.43	20.89	284.34	52.42	265.38
138.50	102.52	616.63	904.88	20.99	284.33	52.40	268.40
139.00	102.93	571.13	876.38	21.04	284.34	52.41	254.05
139.50	101.56	552.97	721.05	21.17	284.38	52.48	241.19
140.00	101.66	547.53	861.81	21.27	284.42	52.55	244.02
140.50	102.47	543.72	952.75	21.20	284.40	52.52	236.87
141.00	102.50	539.39	866.07	21.14	284.37	52.46	228.92
141.50	94.39	538.41	798.22	21.03	284.35	52.43	198.83
142.00	96.96	541.49	855.85	20.82	284.34	52.40	190.04
142.50	101.41	542.11	880.91	20.84	284.33	52.39	200.49
143.00	95.39	520.33	841.01	20.88	284.32	52.38	208.43
143.50	92.78	550.01	831.42	20.92	284.32	52.38	219.56
144.00	91.49	568.66	789.47	21.08	284.32	52.38	228.55
144.50	102.93	555.65	766.03	20.91	284.32	52.38	230.82
145.00	102.72	532.46	843.32	20.96	284.33	52.39	215.08
145.50	99.53	553.08	914.70	21.00	284.34	52.41	193.53
146.00	98.15	566.62	867.46	21.06	284.35	52.42	166.93
146.50	95.39	578.29	872.44	21.14	284.35	52.43	150.63
147.00	92.94	582.01	995.50	21.08	284.35	52.44	150.54
147.50	96.34	593.05	1028.28	20.90	284.36	52.44	160.75
148.00	97.53	603.43	995.94	20.83	284.34	52.45	158.08

150.00	92.35	710.59	938.08	20.62	284.36	52.44	150.62
150.50	90.90	722.30	921.05	20.62	284.35	52.44	
151.00	95.93	735.91	937.67	20.81	284.35	52.43	
151.50	98.00	716.63	949.44	20.62	284.35	52.43	
152.00	98.00	723.20	963.53	20.25	284.34	52.42	
152.50	95.14	693.90	972.41	20.08	284.34	52.40	
153.00	93.56	633.45	979.60	20.09	284.33	52.39	
153.50	91.86	601.60	957.82	20.10	284.32	52.38	
154.00	88.57	580.37	949.62	19.93	284.31	52.36	
154.50	89.49	569.63	964.55	19.85	284.30	52.34	
155.00	89.05	560.01	974.35	20.19	284.29	52.32	
155.50	86.86	553.68	907.27	20.59	284.27	52.29	
156.00	86.59	560.29	1038.72	20.72	284.25	52.25	
156.50	77.72	568.72	1028.60	20.66	284.23	52.22	
157.00	87.05	567.02	996.49	20.47	284.23	52.21	
157.50	89.72	564.38	968.56	20.85	284.22	52.19	
158.00	88.40	573.56	1006.57	21.07	284.22	52.19	
158.50	85.41	590.87	1129.49	21.15	284.22	52.20	
159.00	86.14	617.73	1074.53	21.16	284.22	52.20	
159.50	90.68	642.79	998.33	21.17	284.22	52.19	
160.00	91.81	693.85	1037.13	21.20	284.21	52.18	
160.50	90.53	719.85	1141.49	21.20	284.21	52.17	
161.00	90.11	747.10	1067.71	21.18	284.20	52.16	
161.50	91.13	772.69	1006.18	21.14	284.20	52.15	
162.00	92.94	842.48	959.96	20.91	284.19	52.15	
162.50	93.82	890.59	933.64	20.46	284.19	52.14	
163.00	94.18	875.70	923.32	20.25	284.19	52.13	
163.50	94.13	837.69	934.30	20.31	284.18	52.13	
164.00	91.72	827.86	983.96	20.29	284.18	52.12	
164.50	91.31	790.32	990.58	20.23	284.18	52.12	
165.00	92.30	729.56	961.52	20.19	284.18	52.12	
165.50	93.39	658.83	876.75	20.14	284.18	52.12	
166.00	88.87	605.59	790.63	20.25	284.18	52.12	
166.50	87.54	563.74	746.86	20.20	284.18	52.13	
167.00	79.08	539.33	805.17	20.00	284.18	52.13	
167.50	90.70	526.68	811.06	19.98	284.17	52.11	
168.00	92.01	502.27	735.45	20.04	284.16	52.08	
168.50	89.79	476.59	753.08	20.05	284.14	52.05	
169.00	90.00	443.66	673.55	20.39	284.11	52.00	
169.50	90.64	437.31	754.49	20.54	284.09	51.97	
170.00	90.53	426.14	766.69	20.29	284.08	51.94	
170.50	90.25	421.26	747.16	20.06	284.07	51.92	
171.00	92.31	416.85	744.40	20.13	284.06	51.90	
171.50	95.74	408.05	743.03	20.23	284.05	51.88	
172.00	95.73	407.74	737.32	20.28	284.02	51.84	
172.50	95.64	398.62	741.99	20.24	284.00	51.80	
173.00	95.90	418.62	749.77	20.13	283.98	51.77	
173.50	95.70	428.04	745.95	20.05	283.98	51.76	
174.00	95.18	425.93	716.42	20.07	283.98	51.77	
174.50	94.81	428.62	733.59	20.07	284.00	51.80	
175.00	93.98	433.96	776.68	20.07	284.03	51.85	
175.50	94.64	441.29	793.66	20.06	284.06	51.90	
176.00	96.52	442.98	805.45	20.02	284.08	51.95	
176.50	95.42	449.38	842.34	20.00	284.11	52.00	
177.00	94.19	459.17	821.74	20.46	284.14	52.04	
177.50	93.86	474.38	818.76	20.63	284.16	52.09	
178.00	91.68	487.54	924.23	20.70	284.19	52.14	
178.50	89.44	518.83	859.41	20.73	284.21	52.19	
179.00	92.40	547.02	928.85	20.58	284.23	52.22	
179.50	91.66	561.83	971.81	20.38	284.25	52.25	
180.00	83.85	588.72	1007.40	20.14	284.26	52.27	
180.50	56.53	628.55	1019.92	20.03	284.28	52.29	
181.00	69.15	664.50	959.38	20.10	284.29	52.33	
181.50	91.61	728.85	962.35	20.10	284.32	52.37	
182.00	90.47	744.49	968.29	20.26	284.35	52.42	
182.50	90.27	762.91	1070.30	20.24	284.35	52.44	
183.00	89.14	790.79	1082.56	20.45	284.34	52.40	
183.50	87.13	782.56	1058.84	20.74	284.32	52.37	
184.00	82.99	779.40	1052.31	20.83	284.31	52.35	
184.50	83.59	767.27	1094.30	20.67	284.30	52.34	
185.00	81.20	752.25	1068.33	20.33	284.30	52.34	
185.50	76.86	751.24	1014.51	20.38	284.29	52.32	
186.00	75.29	746.58	1076.40	20.46	284.28	52.30	
186.50	77.03	739.06	1102.32	20.39	284.27	52.28	
187.00	77.14	718.49	1031.27	20.09	284.27	52.28	
187.50	77.16	699.36	985.03	20.46	284.27	52.28	
188.00	76.14	683.89	1062.06	20.65	284.27	52.28	
188.50	81.12	669.82	1082.87	20.71	284.27	52.28	
189.00	85.19	643.95	1050.50	20.69	284.27	52.29	
189.50	83.45	651.02	1030.57	20.55	284.28	52.30	
190.00	81.70	652.75	1080.43	20.29	284.29	52.32	
190.50	83.14	606.34	1069.92	20.07	284.29	52.32	
191.00	84.30	589.12	1063.38	20.00	284.29	52.33	
191.50	85.20	603.72	1043.98	19.91	284.30	52.34	
192.00	84.54	610.45	1191.77	20.24	284.31	52.36	
192.50	82.51	595.76	1119.22	20.51	284.32	52.38	
193.00	78.35	595.60	1083.62	20.61	284.33	52.39	
193.50	78.40	603.43	1045.84	20.75	284.33	52.40	
194.00	81.62	598.04	1085.42	20.74	284.33	52.40	
194.50	81.65	585.81	1085.30	20.65	284.33	52.39	
195.00	80.20	585.47	1056.53	20.62	284.33	52.39	
195.50	84.72	597.06	1103.03	20.48	284.32	52.38	
196.00	85.37	636.53	1145.58	20.33	284.32	52.38	
196.50	82.68	625.83	1150.97	20.07	284.31	52.36	
197.00	83.92	629.60	1155.63	19.72	284.29	52.32	
197.50	83.57	640.44	1135.85	19.54	284.25	52.25	

199.50	81.14	757.47	1122.32	19.57	284.30	52.33
200.00	82.04	798.76	1141.58	19.60	284.40	52.52
200.50	84.45	816.11	1102.19	19.75	284.54	52.77
201.00	82.78	827.88	997.82	19.69	284.68	53.02
201.50	80.28	867.95	1112.59	19.53	284.77	53.18
202.00	77.30	883.25	1078.86	19.42	284.85	53.32
202.50	78.55	827.02	1106.71	19.62	284.88	53.38
203.00	78.63	800.18	1054.83	19.80	284.88	53.39
203.50	82.42	759.35	1137.25	19.91	284.89	53.39
204.00	82.17	729.34	1044.02	19.93	284.88	53.39
204.50	81.08	693.70	1026.77	19.97	284.88	53.38
205.00	85.62	656.09	1042.49	19.93	284.88	53.38
205.50	87.53	649.12	1003.07	19.80	284.88	53.38
206.00	86.26	636.64	1028.62	19.66	284.88	53.38
206.50	84.79	602.92	1072.76	19.50	284.88	53.38
207.00	83.53	608.63	1131.87	19.59	284.87	53.37
207.50	83.14	575.60	987.90	19.72	284.85	53.32
208.00	79.66	569.00	989.54	19.83	284.68	53.02
208.50	85.75	573.75	1051.81	19.92	284.52	52.73
209.00	86.14	570.05	1028.28	19.92	284.40	52.53
209.50	86.38	565.79	983.93	19.85	284.38	52.48
210.00	85.12	578.86	993.66	19.91	284.38	52.48
210.50	86.03	591.28	1035.07	19.81	284.38	52.49
211.00	88.50	587.51	1000.28	19.56	284.40	52.51
211.50	84.17	596.52	991.76	19.74	284.41	52.54
212.00	75.51	613.65	1019.99	19.68	284.44	52.59
212.50	80.80	624.66	960.39	19.62	284.50	52.69
213.00	80.25	635.85	1003.79	19.92	284.52	52.73
213.50	87.85	642.48	1042.40	19.79	284.50	52.70
214.00	87.96	650.14	1043.48	19.84	284.46	52.63
214.50	87.98	672.69	1094.77	19.93	284.43	52.57
215.00	89.28	668.10	1186.03	19.79	284.40	52.52
215.50	87.60	707.45	1214.64	19.84	284.37	52.47
216.00	84.28	713.19	1217.38	19.95	284.36	52.44
216.50	87.39	729.80	1322.26	19.82	284.35	52.43
217.00	88.99	751.99	1236.46	19.46	284.35	52.43
217.50	83.86	799.61	1151.58	19.20	284.35	52.43
218.00	83.31	853.65	1294.47	19.24	284.35	52.44
218.50	81.38	902.44	1326.91	19.09	284.36	52.44
219.00	89.44	944.56	1342.87	19.06	284.29	52.33
219.50	90.60	983.03	1362.91	19.13	284.21	52.17
220.00	90.61	997.97	1390.04	19.18	284.14	52.05
220.50	91.52	996.82	1402.81	19.18	284.13	52.03
221.00	93.49	972.81	1336.12	19.16	284.14	52.05
221.50	93.85	977.62	1301.62	19.18	284.17	52.11
222.00	91.67	961.69	1298.64	19.25	284.22	52.20
222.50	87.81	938.35	1288.96	19.27	284.32	52.37
223.00	75.60	914.71	1268.63	19.59	284.39	52.50
223.50	72.00	887.99	1266.89	19.56	284.41	52.54
224.00	90.03	859.22	1261.75	19.37	284.41	52.54
224.50	87.15	830.80	1175.84	19.37	284.40	52.51
225.00	84.97	802.54	1208.57	19.27	284.39	52.49
225.50	81.25	741.91	1230.95	19.24	284.39	52.50
226.00	76.22	712.88	1185.85	19.59	284.40	52.51
226.50	81.39	701.51	1117.45	19.77	284.40	52.51
227.00	78.81	692.65	1118.94	19.88	284.38	52.48
227.50	82.00	678.73	1234.17	19.63	284.34	52.41
228.00	83.39	641.35	948.84	19.40	284.31	52.36
228.50	71.29	651.15	943.28	19.35	284.24	52.23
229.00	84.99	636.90	1034.92	19.32	284.17	52.11
229.50	76.98	620.66	910.82	19.35	284.11	51.99
230.00	74.03	606.69	918.21	19.33	284.07	51.93
230.50	81.92	600.64	991.50	19.27	284.03	51.86
231.00	82.62	608.22	937.28	19.10	283.99	51.77
231.50	86.22	602.45	924.36	18.97	283.95	51.72
232.00	87.91	552.08	950.67	18.90	283.96	51.72
232.50	91.65	558.14	942.81	18.82	283.98	51.77
233.00	91.35	551.32	933.39	18.72	284.02	51.83
233.50	90.90	527.23	930.77	18.71	284.00	51.81
234.00	91.82	538.97	918.86	18.73	283.97	51.74
234.50	92.74	528.80	938.94	18.78	283.96	51.72
235.00	92.70	527.30	940.93	18.83	283.97	51.74
235.50	101.26	521.48	935.51	19.19	284.00	51.79
236.00	103.12	515.42	948.13	19.20	284.06	51.90
236.50	100.33	516.42	934.54	19.18	284.13	52.03
237.00	100.19	515.44	870.78	19.21	284.18	52.12
237.50	98.69	505.28	866.01	19.18	284.21	52.18
238.00	97.29	501.86	813.96	19.17	284.24	52.22
238.50	96.95	510.72	700.51	19.11	284.25	52.25
239.00	91.03	513.96	877.70	19.33	284.26	52.26
239.50	70.77	509.39	900.65	19.25	284.26	52.27
240.00	93.22	504.05	879.89	19.12	284.27	52.29
240.50	96.69	502.13	871.99	19.17	284.28	52.30
241.00	100.91	497.81	888.37	19.08	284.28	52.31
241.50	99.04	491.50	886.42	19.18	284.27	52.29
242.00	101.45	454.30	873.29	19.37	284.20	52.16
242.50	101.39	463.94	847.65	19.42	284.14	52.04
243.00	100.98	495.32	830.97	19.40	284.09	51.95
243.50	102.72	487.57	854.03	19.40	284.03	51.86
244.00	103.07	496.09	888.26	19.35	283.99	51.77
244.50	102.03	506.87	885.05	19.27	283.94	51.69
245.00	100.76	496.18	832.80	19.17	283.89	51.59
245.50	96.20	499.02	815.73	19.41	283.85	51.54
246.00	99.57	498.00	850.02	19.26	283.83	51.50
246.50	92.72	498.71	793.54	19.05	283.82	51.47
247.00	98.95	497.50	824.73	19.01	283.80	51.44

249.00	93.22	506.82	821.11	19.29	283.69	51.24
249.50	93.75	513.68	797.97	19.17	283.65	51.16
250.00	86.36	508.68	809.86	19.03	283.64	51.15
250.50	76.74	507.83	885.17	19.03	283.65	51.17
251.00	85.79	517.80	961.13	19.10	283.67	51.21
251.50	91.24	521.29	967.19	18.92	283.74	51.32
252.00	100.39	538.77	896.54	18.86	283.78	51.40
252.50	100.34	530.47	977.09	19.08	283.77	51.39
253.00	94.38	533.29	972.51	19.14	283.74	51.33
253.50	91.95	543.03	958.22	18.99	283.74	51.33
254.00	89.35	555.56	1012.51	18.94	283.74	51.33
254.50	90.98	586.23	1017.97	18.97	283.73	51.31
255.00	91.71	614.36	949.83	19.06	283.74	51.32
255.50	96.01	621.57	1023.50	19.60	283.77	51.38
256.00	91.28	646.38	1069.46	19.89	283.80	51.44
256.50	90.78	694.09	1000.42	19.85	283.86	51.55
257.00	99.73	708.44	1100.08	19.83	283.89	51.60
257.50	98.43	740.45	1254.83	19.72	283.90	51.62
258.00	96.76	773.78	1087.06	19.62	283.91	51.63
258.50	98.74	752.08	1075.97	19.67	283.91	51.63
259.00	101.34	775.79	1096.23	19.38	283.91	51.63
259.50	103.91	790.88	1111.44	19.16	283.90	51.63
260.00	104.42	769.62	1157.54	19.08	283.90	51.63
260.50	104.60	753.24	1176.61	19.10	283.90	51.61
261.00	104.64	772.48	1048.23	19.37	283.88	51.58
261.50	100.02	750.36	1186.74	19.35	283.85	51.54
262.00	94.68	722.95	1153.06	18.87	283.80	51.44
262.50	96.72	712.17	1108.10	18.76	283.78	51.41
263.00	102.13	687.97	1148.34	18.78	283.78	51.41
263.50	95.17	668.58	1182.00	18.82	283.80	51.44
264.00	100.09	674.30	1127.87	18.88	283.86	51.55
264.50	103.88	652.63	1144.25	18.96	283.84	51.50
265.00	102.99	658.90	1183.94	19.10	283.80	51.45
265.50	101.96	626.93	1223.46	19.20	283.82	51.48
266.00	97.53	606.29	1172.08	19.21	283.90	51.61
266.50	93.62	601.19	1079.94	19.17	283.97	51.74
267.00	105.96	597.58	1041.92	19.19	284.01	51.81
267.50	108.38	592.11	1036.76	19.47	284.07	51.92
268.00	107.52	586.63	1050.33	19.50	284.11	52.00
268.50	106.44	587.93	1058.27	19.12	284.07	51.92
269.00	109.83	592.00	1007.18	18.77	284.03	51.85
269.50	111.35	580.79	1004.76	18.85	284.01	51.81
270.00	105.50	577.00	1047.51	19.00	283.98	51.77
270.50	104.06	582.35	1041.80	18.95	283.94	51.69
271.00	106.58	579.06	1016.76	18.92	283.93	51.67
271.50	105.68	571.36	1007.10	18.97	283.92	51.65
272.00	102.52	567.84	1113.44	19.06	283.91	51.64
272.50	104.34	558.89	1107.15	19.16	283.92	51.65
273.00	107.93	552.60	1066.63	19.21	284.00	51.79
273.50	106.33	580.80	1108.54	19.28	284.10	51.98
274.00	101.52	591.08	1136.50	19.26	284.16	52.09
274.50	103.31	591.88	1062.18	18.97	284.19	52.14
275.00	109.86	598.10	1072.10	18.90	284.21	52.18
275.50	112.15	611.71	1226.34	18.84	284.24	52.23
276.00	111.29	630.18	1045.71	18.86	284.25	52.24
276.50	109.55	650.24	1016.61	18.88	284.21	52.17
277.00	111.40	664.28	1004.27	18.90	284.08	51.95
277.50	114.47	684.44	999.56	18.94	284.07	51.92
278.00	114.74	671.91	979.39	18.92	284.09	51.97
278.50	114.69	672.54	964.13	18.89	284.15	52.06
279.00	115.04	696.46	1084.06	18.85	284.16	52.09
279.50	115.44	674.35	1140.53	19.00	284.18	52.12
280.00	115.13	620.07	1119.76	19.35	284.19	52.15
280.50	113.91	618.08	1069.16	19.61	284.23	52.21
281.00	113.64	612.71	1074.63	19.48	284.25	52.24
281.50	113.74	602.68	1123.11	19.32	284.26	52.26
282.00	109.98	591.63	1127.90	19.25	284.26	52.27
282.50	108.69	579.30	1106.58	19.13	284.27	52.28
283.00	102.86	585.28	1094.04	19.01	284.27	52.29
283.50	108.92	580.46	1085.97	18.97	284.28	52.31
284.00	112.81	580.79	1053.58	18.94	284.29	52.33
284.50	112.29	583.85	1105.25	18.97	284.30	52.34
285.00	112.51	599.55	1127.77	19.06	284.31	52.36
285.50	112.81	607.44	1159.32	19.08	284.32	52.37
286.00	109.72	607.48	1178.23	19.01	284.30	52.35
286.50	108.90	609.61	1193.92	18.86	284.25	52.25
287.00	110.33	620.33	1200.80	18.82	284.21	52.18
287.50	110.97	639.60	1240.82	18.97	284.22	52.19
288.00	115.28	666.17	1244.11	19.09	284.24	52.24
288.50	116.36	714.81	1255.38	19.15	284.27	52.29
289.00	116.68	762.34	1332.97	19.11	284.26	52.27
289.50	115.89	786.54	1393.01	19.00	284.24	52.22
290.00	114.35	793.21	1466.92	18.85	284.22	52.19
290.50	100.82	891.52	1507.88	18.73	284.20	52.16
291.00	91.42	950.79	1557.10	18.67	284.20	52.16
291.50	115.44	998.41	1690.02	18.66	284.25	52.25
292.00	116.84	1040.43	1718.86	18.70	284.20	52.17
292.50	115.61	1096.23	1813.85	18.77	284.07	51.92
293.00	114.89	1152.90	2036.06	18.88	284.00	51.81
293.50	115.93	1214.85	2086.80	18.90	284.04	51.87
294.00	111.17	1223.16	2093.58	18.91	284.13	52.03
294.50	112.22	1262.27	2191.38	18.87	284.19	52.14
295.00	114.66	1304.20	2171.12	18.78	284.20	52.17
295.50	112.81	1326.66	2344.30	18.80	284.19	52.15
296.00	111.31	1344.65	2543.13	18.96	284.15	52.06

298.50	107.11	1407.63	2569.97	19.21	284.08	51.94
299.00	107.97	1433.99	2518.77	19.27	284.06	51.92
299.50	104.79	1462.05	2519.63	19.40	284.06	51.90
300.00	101.77	1473.99	2516.20	19.51	284.05	51.89
300.50	107.58	1476.69	2494.52	19.43	284.05	51.88
301.00	110.35	1469.68	2499.57	19.46	284.05	51.88
301.50	106.46	1463.21	2463.50	19.72	284.05	51.88
302.00	103.84	1473.41	2449.60	19.84	284.05	51.88
302.50	109.33	1444.09	2387.57	19.86	284.05	51.88
303.00	105.96	1432.33	2244.39	19.51	284.04	51.88
303.50	106.70	1385.05	2126.13	19.18	284.04	51.86
304.00	98.81	1339.11	1914.33	18.87	284.03	51.85
304.50	102.97	1287.43	1865.80	18.76	284.02	51.83
305.00	108.60	1239.97	1766.91	18.78	283.99	51.78
305.50	109.40	1189.17	1715.32	18.80	283.96	51.72
306.00	110.42	1134.26	1639.05	18.76	283.92	51.66
306.50	112.01	1074.37	1611.35	18.70	283.85	51.53
307.00	111.54	996.96	1584.01	18.71	283.78	51.39
307.50	111.16	921.64	1591.86	18.78	283.77	51.39
308.00	111.33	867.63	1501.13	18.78	283.82	51.47
308.50	110.27	836.60	1456.16	18.77	283.97	51.74
309.00	114.15	816.13	1466.73	18.75	284.04	51.87
309.50	114.92	802.87	1420.28	18.73	284.08	51.94
310.00	114.97	797.62	1368.69	18.71	284.09	51.97
310.50	114.99	802.86	1351.86	18.66	284.10	51.97
311.00	114.86	809.67	1337.88	18.75	284.09	51.95
311.50	114.28	805.73	1337.02	18.83	284.05	51.89
312.00	112.94	781.26	1346.54	18.85	284.00	51.80
312.50	113.11	782.28	1349.19	18.80	283.98	51.76
313.00	112.24	786.32	1350.57	18.86	283.97	51.75
313.50	113.81	787.12	1350.58	19.07	283.97	51.75
314.00	111.74	787.88	1344.92	19.07	283.98	51.76
314.50	104.02	788.48	1244.74	18.88	283.98	51.77
315.00	95.87	788.14	1329.97	18.89	284.00	51.79
315.50	105.75	784.15	1301.66	19.13	284.02	51.84
316.00	111.29	779.79	1296.36	19.16	284.04	51.86
316.50	109.93	773.88	1253.23	19.12	284.02	51.84
317.00	110.06	767.45	1281.13	19.09	283.95	51.71
317.50	111.73	759.42	1302.80	19.03	283.92	51.66
318.00	110.96	735.79	1256.01	19.02	283.90	51.62
318.50	108.91	737.15	1290.21	19.02	283.88	51.59
319.00	108.20	722.34	1306.90	19.05	283.87	51.57
319.50	110.57	728.53	1284.85	18.91	283.86	51.55
320.00	111.32	708.30	1266.97	18.75	283.85	51.54
320.50	109.30	717.02	1321.07	18.84	283.85	51.52
321.00	110.01	725.05	1351.53	18.86	283.84	51.51
321.50	113.13	712.83	1380.24	18.81	283.83	51.50
322.00	110.29	735.93	1405.66	18.79	283.82	51.47
322.50	99.56	750.67	1407.64	18.79	283.79	51.43
323.00	106.49	756.03	1448.82	18.83	283.76	51.37
323.50	110.67	765.23	1558.21	18.93	283.73	51.31
324.00	111.08	784.81	1453.90	19.01	283.70	51.25
324.50	100.04	820.64	1506.95	19.15	283.66	51.19
325.00	97.30	875.20	1484.80	19.28	283.62	51.12
325.50	109.64	895.52	1548.40	19.38	283.60	51.07
326.00	110.72	919.93	1511.55	19.45	283.59	51.05
326.50	105.75	955.71	1590.68	19.42	283.57	51.03
327.00	109.49	993.08	1656.75	19.20	283.56	51.02
327.50	111.16	1009.69	1709.34	19.17	283.56	51.01
328.00	110.18	1067.26	1837.40	19.31	283.56	51.01
328.50	107.84	1080.29	1852.70	19.44	283.57	51.03
329.00	106.82	1124.01	1880.32	19.54	283.59	51.06
329.50	108.32	1150.54	2063.03	19.59	283.63	51.13
330.00	104.21	1188.82	2006.84	19.56	283.64	51.16
330.50	104.81	1218.32	1931.88	19.67	283.65	51.17
331.00	113.81	1244.03	2051.48	19.69	283.65	51.17
331.50	108.28	1275.42	2101.52	19.60	283.64	51.15
332.00	106.80	1260.81	2135.50	19.56	283.61	51.10
332.50	111.03	1252.05	2095.13	19.61	283.56	51.02
333.00	110.80	1268.58	2071.00	19.74	283.52	50.93
333.50	112.55	1266.33	2026.52	19.81	283.48	50.86
334.00	111.20	1234.02	1974.32	19.74	283.45	50.80
334.50	111.45	1216.14	1947.46	19.66	283.42	50.75
335.00	113.71	1203.76	1964.98	19.70	283.40	50.72
335.50	112.91	1186.19	1968.40	19.58	283.39	50.69
336.00	111.10	1146.11	1902.93	19.15	283.37	50.66
336.50	108.35	1108.01	1842.99	18.94	283.34	50.61
337.00	113.27	1081.28	1778.14	18.92	283.29	50.52
337.50	114.52	1054.53	1712.79	18.93	283.24	50.44
338.00	114.33	1047.11	1654.54	18.93	283.19	50.35
338.50	114.20	1042.67	1609.20	18.94	283.15	50.26
339.00	114.21	1031.77	1549.46	19.01	283.12	50.22
339.50	113.85	1006.98	1503.62	19.04	283.11	50.19
340.00	113.63	964.94	1474.70	19.04	283.10	50.18
340.50	113.64	934.22	1458.90	19.02	283.10	50.18
341.00	111.82	902.34	1449.20	19.02	283.10	50.18
341.50	113.47	862.63	1442.91	19.03	283.11	50.19
342.00	112.87	827.98	1392.53	19.06	283.12	50.22
342.50	111.61	800.59	1342.09	19.01	283.15	50.27
343.00	109.92	787.41	1337.25	18.89	283.19	50.34
343.50	109.14	781.15	1349.73	18.80	283.22	50.40
344.00	108.55	774.00	1350.94	18.78	283.26	50.47
344.50	108.88	766.00	1313.38	18.82	283.29	50.53
345.00	108.61	766.34	1246.07	18.81	283.34	50.60
345.50	106.95	754.28	1250.47	19.11	283.36	50.66
346.00	99.20	730.27	1216.25	19.21	283.39	50.70

348.00	95.23	741.01	1130.64	18.86	283.36	50.64
348.50	107.61	730.71	1157.89	18.86	283.37	50.66
349.00	105.55	739.18	1185.79	18.96	283.38	50.69
349.50	85.09	732.59	1195.53	19.01	283.40	50.71
350.00	105.90	732.44	1147.68	19.03	283.40	50.73
350.50	113.13	741.85	1102.00	18.99	283.41	50.75
351.00	109.98	679.86	1109.48	19.12	283.42	50.76
351.50	110.45	654.64	1122.02	19.06	283.43	50.78
352.00	112.95	636.66	1138.09	18.90	283.45	50.80
352.50	114.42	631.98	1101.78	18.73	283.46	50.82
353.00	113.48	629.82	1072.03	18.72	283.47	50.84
353.50	111.14	622.28	1090.22	18.76	283.48	50.86
354.00	110.64	600.38	1038.72	18.81	283.49	50.87
354.50	111.71	600.43	1073.57	18.81	283.49	50.89
355.00	111.99	600.49	1141.51	18.85	283.50	50.90
355.50	111.57	601.11	1088.94	18.97	283.50	50.91
356.00	110.67	605.44	1075.62	19.07	283.51	50.91
356.50	108.99	609.57	1038.02	19.15	283.50	50.91
357.00	109.94	613.69	967.69	19.22	283.50	50.91
357.50	107.86	621.55	1035.80	19.08	283.51	50.91
358.00	105.43	620.90	1069.95	18.96	283.51	50.91
358.50	109.11	635.03	997.73	19.01	283.51	50.91
359.00	110.66	641.27	1030.15	19.08	283.51	50.91
359.50	109.86	635.93	1063.15	19.11	283.51	50.91
360.00	110.06	636.12	1026.30	19.05	283.51	50.91
360.50	109.88	632.09	1099.85	19.04	283.50	50.89
361.00	104.92	658.51	1151.82	19.11	283.49	50.87
361.50	104.54	675.54	1152.73	19.12	283.48	50.86
362.00	106.99	678.31	1093.12	18.88	283.47	50.85
362.50	103.69	664.74	1062.54	18.70	283.47	50.85
363.00	85.51	672.54	1028.04	18.68	283.47	50.84
363.50	107.94	666.05	877.90	18.74	283.47	50.84
364.00	112.47	673.73	1014.57	18.84	283.47	50.84
364.50	103.87	677.29	1028.66	18.96	283.47	50.84
365.00	101.50	665.85	969.93	19.05	283.47	50.84
365.50	102.84	639.45	1138.88	19.08	283.47	50.84
366.00	98.63	633.88	989.19	19.11	283.47	50.84
366.50	103.72	630.81	963.55	19.24	283.46	50.84
367.00	98.91	624.19	1111.29	19.46	283.47	50.84
367.50	93.24	631.23	1064.61	19.44	283.47	50.84
368.00	100.14	654.83	995.49	19.41	283.47	50.84
368.50	101.32	641.78	937.87	19.36	283.47	50.84
369.00	86.52	672.72	867.82	19.30	283.47	50.84
369.50	99.01	666.47	915.78	19.25	283.47	50.84
370.00	109.69	630.19	899.88	19.03	283.47	50.84
370.50	108.41	633.17	896.02	18.81	283.47	50.84
371.00	105.91	607.61	956.79	18.57	283.47	50.84
371.50	107.68	580.93	961.77	18.54	283.47	50.85
372.00	109.90	556.27	964.98	18.66	283.48	50.86
372.50	109.61	525.74	951.47	18.84	283.48	50.87
373.00	109.04	529.99	855.93	18.99	283.48	50.87
373.50	108.66	506.73	936.98	19.12	283.48	50.87
374.00	108.40	476.81	924.79	19.14	283.48	50.86
374.50	107.78	470.23	831.56	18.97	283.48	50.87
375.00	103.80	463.30	833.88	18.67	283.48	50.87
375.50	104.74	455.65	861.16	18.42	283.48	50.87
376.00	103.31	444.91	669.73	18.31	283.48	50.87
376.50	97.82	422.72	631.05	18.54	283.49	50.87
377.00	89.78	408.68	727.81	18.44	283.49	50.88
377.50	70.89	417.66	772.48	18.27	283.49	50.88
378.00	76.77	382.45	768.34	18.23	283.49	50.89
378.50	44.06	368.63	679.82	18.26	283.49	50.89
379.00	46.23	384.16	666.88	18.26	283.50	50.89
379.50	106.68	351.23	723.74	18.26	283.50	50.89
380.00	77.46	336.12	768.65	18.28	283.50	50.89
380.50	83.14	342.01	796.42	18.30	283.50	50.89
381.00	99.61	355.37	849.61	18.31	283.50	50.89
381.50	106.70	354.43	895.30	18.29	283.50	50.89
382.00	104.65	335.08	938.25	18.28	283.50	50.89
382.50	100.46	330.28	783.35	18.28	283.50	50.90
383.00	78.37	334.06	839.56	18.30	283.50	50.90
383.50	76.92	344.17	784.51	18.40	283.50	50.90
384.00	90.06	374.03	728.59	18.52	283.50	50.90
384.50	112.84	392.27	761.71	18.64	283.50	50.90
385.00	113.01	410.59	924.86	18.61	283.50	50.90
385.50	109.34	474.91	875.28	18.55	283.50	50.90
386.00	107.25	433.30	733.92	18.67	283.50	50.90
386.50	102.44	468.74	824.58	18.72	283.50	50.90
387.00	101.61	445.33	828.56	18.72	283.50	50.90
387.50	104.76	437.63	888.97	18.63	283.50	50.90
388.00	101.72	425.03	917.67	18.53	283.50	50.90
388.50	109.51	464.70	957.33	18.45	283.50	50.90
389.00	108.58	478.30	957.79	18.44	283.50	50.91
389.50	102.65	430.80	957.73	18.46	283.50	50.91
390.00	83.03	432.60	952.85	18.63	283.51	50.91
390.50	85.89	487.76	949.68	18.84	283.51	50.91
391.00	87.73	518.71	958.91	18.91	283.51	50.91
391.50	88.68	548.24	958.05	18.99	283.51	50.91
392.00	95.13	585.30	948.98	19.03	283.51	50.91
392.50	107.66	588.44	935.37	18.95	283.51	50.91
393.00	109.50	605.08	918.32	18.78	283.51	50.91
393.50	108.58	664.88	890.55	18.59	283.51	50.91
394.00	118.55	646.47	810.54	18.63	283.51	50.91
394.50	118.03	628.39	983.95	18.81	283.51	50.91
395.00	125.73	604.70	986.35	18.83	283.51	50.92
395.50	129.34	594.92	981.90	18.92	283.51	50.93

397.50	122.83	574.40	1123.75	18.83	283.52	50.93
398.00	112.31	587.54	1066.14	18.80	283.52	50.94
398.50	97.51	600.02	1120.89	18.72	283.52	50.94
399.00	92.73	608.00	1073.59	18.66	283.52	50.94
399.50	85.90	625.43	1021.84	18.58	283.52	50.94
400.00	79.13	650.01	1007.96	18.50	283.53	50.94
400.50	80.23	684.97	1243.63	18.54	283.53	50.94
401.00	100.65	713.18	1242.30	18.61	283.53	50.94
401.50	115.27	749.32	1322.41	18.75	283.53	50.94
402.00	106.91	768.30	1343.14	18.89	283.53	50.94
402.50	115.21	806.29	1476.29	19.00	283.53	50.94
403.00	135.22	824.96	1494.76	19.00	283.53	50.94
403.50	132.22	884.49	1590.72	19.06	283.53	50.95
404.00	132.02	969.21	1872.85	19.10	283.53	50.95
404.50	134.21	1012.78	1891.46	19.13	283.53	50.95
405.00	132.79	1049.05	1925.86	19.39	283.53	50.95
405.50	133.47	1122.24	1981.98	19.57	283.53	50.95
406.00	133.49	1218.75	2033.29	18.86	283.53	50.96
406.50	131.51	1254.93	2118.40	18.55	283.53	50.96
407.00	128.24	1283.95	2338.32	18.77	283.53	50.96
407.50	127.42	1377.80	2441.58	18.83	283.54	50.96
408.00	126.68	1442.93	2619.58	18.84	283.54	50.97
408.50	115.32	1457.90	2725.84	18.83	283.54	50.98
409.00	119.44	1479.19	2782.35	18.84	283.54	50.98
409.50	121.28	1496.43	2701.06	18.93	283.54	50.98
410.00	115.76	1532.91	2940.14	19.00	283.54	50.98
410.50	99.31	1589.99	3063.29	19.04	283.54	50.98
411.00	80.78	1616.36	2953.29	19.06	283.55	50.98
411.50	90.96	1632.53	2979.65	19.10	283.55	50.98
412.00	100.85	1631.71	3044.82	19.07	283.54	50.98
412.50	89.05	1644.30	2997.07	19.11	283.55	50.98
413.00	87.86	1629.93	2952.99	19.09	283.55	50.99
413.50	77.41	1668.65	3010.24	19.09	283.55	50.99
414.00	83.46	1677.46	3202.16	19.18	283.56	51.00
414.50	96.94	1659.62	3245.35	19.30	283.56	51.00
415.00	102.23	1664.62	3194.16	19.21	283.56	51.01
415.50	104.22	1698.62	3244.59	19.12	283.56	51.01
416.00	92.83	1694.03	3307.14	19.23	283.56	51.02
416.50	101.45	1677.67	3307.02	19.09	283.57	51.02
417.00	105.35	1707.78	3380.60	18.99	283.57	51.03
417.50	100.05	1759.57	3471.81	19.09	283.57	51.03
418.00	95.71	1782.59	3533.23	19.27	283.57	51.03
418.50	103.99	1784.24	3330.38	19.41	283.58	51.03
419.00	100.90	1788.93	3519.42	19.26	283.58	51.04
419.50	110.60	1831.57	3480.65	19.11	283.58	51.04
420.00	106.61	1839.72	3279.14	18.88	283.58	51.04
420.50	108.65	1844.44	3258.37	18.83	283.58	51.05
421.00	108.29	1845.20	3238.84	18.83	283.58	51.05
421.50	111.43	1813.06	3116.14	18.92	283.58	51.05
422.00	108.05	1779.48	3067.19	19.08	283.59	51.06
422.50	97.13	1775.50	3029.86	19.22	283.59	51.06
423.00	90.97	1746.45	2829.28	19.26	283.59	51.07
423.50	100.96	1654.35	2768.30	19.29	283.60	51.07
424.00	104.31	1623.51	2501.98	19.31	283.60	51.07
424.50	107.00	1612.30	2452.45	19.33	283.60	51.08
425.00	98.16	1536.25	2417.16	19.33	283.60	51.08
425.50	95.24	1463.52	2253.41	19.34	283.60	51.08
426.00	88.83	1379.68	2006.45	19.35	283.60	51.09
426.50	88.06	1278.34	1878.03	19.32	283.60	51.09
427.00	96.70	1178.47	1808.05	19.23	283.61	51.09
427.50	95.58	1103.99	1774.02	19.21	283.61	51.10
428.00	94.29	1034.13	1699.43	19.19	283.62	51.12
428.50	94.83	991.81	1521.42	19.19	283.63	51.14
429.00	90.28	902.40	1694.53	19.19	283.64	51.16
429.50	82.84	871.64	1821.58	19.18	283.65	51.17
430.00	87.80	835.74	1530.71	19.12	283.66	51.18
430.50	87.90	803.22	1482.69	19.06	283.66	51.18
431.00	99.89	798.01	1490.17	19.00	283.66	51.19
431.50	100.31	790.65	1397.29	18.94	283.66	51.20
432.00	90.42	769.22	1561.87	18.84	283.67	51.20
432.50	87.52	773.99	1575.58	18.80	283.67	51.21
433.00	87.49	813.77	1386.69	18.74	283.68	51.22
433.50	87.37	778.66	1398.59	18.67	283.68	51.22
434.00	92.62	738.71	1340.19	18.65	283.68	51.23
434.50	99.44	746.60	1420.43	18.66	283.68	51.23
435.00	104.68	740.45	1316.26	18.67	283.68	51.23
435.50	111.77	770.88	1372.39	18.68	283.68	51.23
436.00	111.36	785.41	1318.46	18.62	283.69	51.24
436.50	97.61	757.75	1297.34	18.63	283.69	51.24
437.00	83.02	756.85	1407.44	18.82	283.69	51.25
437.50	94.16	745.41	1436.50	19.23	283.70	51.25
438.00	98.26	767.07	1452.75	19.25	283.70	51.25
438.50	89.15	762.22	1256.87	19.02	283.70	51.26
439.00	104.76	772.51	1208.19	18.96	283.70	51.26
439.50	108.65	774.53	1293.59	19.14	283.70	51.27
440.00	108.22	743.13	1269.11	19.09	283.71	51.27
440.50	103.75	765.02	1356.95	19.07	283.71	51.28
441.00	104.35	778.59	1364.83	19.19	283.71	51.28
441.50	104.36	783.95	1357.21	19.27	283.71	51.29
442.00	103.33	775.10	1371.69	19.17	283.72	51.29
442.50	110.60	742.83	1353.71	19.09	283.72	51.30
443.00	109.89	725.97	1359.41	19.11	283.72	51.30
443.50	101.46	753.72	1249.78	19.23	283.72	51.30
444.00	99.72	767.49	1412.78	19.26	283.72	51.29
444.50	103.45	781.02	1387.61	19.24	283.71	51.28
445.00	105.22	779.75	1474.33	19.30	283.71	51.27

447.00	92.34	787.95	1559.43	19.45	283.68	51.22
447.50	87.60	808.82	1509.99	19.43	283.67	51.21
448.00	83.92	859.25	1585.92	19.41	283.66	51.20
448.50	83.90	897.87	1587.04	19.41	283.66	51.18
449.00	104.44	920.53	1753.72	19.39	283.65	51.17
449.50	102.38	969.82	1688.90	19.36	283.65	51.17
450.00	99.11	1049.51	1916.15	19.32	283.64	51.16
450.50	83.32	1099.27	1817.98	19.27	283.64	51.15
451.00	58.31	1134.10	1918.44	19.28	283.63	51.14
451.50	68.50	1173.19	2175.90	19.27	283.63	51.13
452.00	66.62	1207.02	2195.28	19.29	283.62	51.12
452.50	71.52	1279.34	2190.81	19.38	283.62	51.11
453.00	64.86	1345.69	2355.59	19.72	283.61	51.10
453.50	70.68	1375.00	2460.60	19.79	283.61	51.09
454.00	71.58	1445.17	2570.75	19.69	283.60	51.09
454.50	91.78	1440.31	2726.06	19.61	283.59	51.07
455.00	79.07	1530.31	2693.70	19.57	283.58	51.05
455.50	92.60	1600.04	2994.21	19.51	283.57	51.02
456.00	96.47	1605.59	2990.10	19.43	283.56	51.00
456.50	83.80	1647.74	2918.96	19.47	283.55	50.98
457.00	79.29	1668.93	2917.64	19.86	283.53	50.96
457.50	99.11	1696.61	3071.17	19.77	283.52	50.94
458.00	101.37	1711.39	2910.60	19.84	283.51	50.92
458.50	85.86	1709.91	2904.90	20.00	283.50	50.90
459.00	85.14	1705.33	2873.35	20.06	283.49	50.89
459.50	101.65	1710.36	2833.95	20.04	283.48	50.87
460.00	95.33	1661.25	2716.45	20.03	283.48	50.86
460.50	90.48	1629.16	2625.39	20.09	283.46	50.84
461.00	87.45	1604.70	2734.82	20.12	283.45	50.82
461.50	86.55	1503.54	2563.70	19.72	283.44	50.80
462.00	88.03	1484.17	2301.57	19.38	283.44	50.78
462.50	82.02	1440.82	2643.69	19.09	283.42	50.76
463.00	85.81	1394.88	2573.88	18.90	283.41	50.75
463.50	83.33	1354.33	2527.13	18.84	283.41	50.73
464.00	82.65	1295.03	2459.62	18.86	283.40	50.71
464.50	94.16	1290.49	2409.97	18.89	283.39	50.70
465.00	85.13	1233.05	2349.75	18.94	283.39	50.69
465.50	81.84	1228.00	2234.80	19.01	283.38	50.68
466.00	89.73	1239.79	2183.39	19.05	283.37	50.67
466.50	82.42	1209.08	2105.46	18.97	283.36	50.66
467.00	90.88	1184.01	1901.79	18.97	283.36	50.64
467.50	92.13	1159.48	1818.71	19.03	283.35	50.63
468.00	93.01	1128.04	1785.96	19.14	283.35	50.62
468.50	100.95	1093.61	1708.95	19.40	283.34	50.61
469.00	101.35	1046.47	1823.02	19.47	283.33	50.60
469.50	101.65	1045.41	1939.83	19.27	283.33	50.59
470.00	103.46	1000.47	1672.38	19.35	283.32	50.58
470.50	89.76	970.13	1704.23	19.39	283.32	50.57
471.00	104.58	925.17	1731.07	19.37	283.31	50.56
471.50	99.52	897.79	1643.99	19.20	283.30	50.54
472.00	100.19	877.45	1771.99	19.17	283.28	50.51
472.50	98.03	859.02	1691.73	19.19	283.27	50.49
473.00	100.31	888.21	1718.45	19.24	283.26	50.47
473.50	105.84	883.25	1740.78	19.27	283.25	50.44
474.00	102.46	862.27	1760.93	19.33	283.24	50.43
474.50	110.95	867.23	1735.44	19.31	283.23	50.41
475.00	107.77	865.01	1832.77	19.22	283.22	50.39
475.50	105.79	883.44	1873.20	19.13	283.21	50.38
476.00	103.54	919.28	1815.25	19.11	283.21	50.37
476.50	102.53	947.64	1884.52	19.16	283.20	50.36
477.00	104.63	991.90	1838.12	19.21	283.19	50.35
477.50	106.18	1030.57	1928.42	19.25	283.19	50.34
478.00	101.72	1062.78	1999.73	19.24	283.19	50.33
478.50	100.07	1107.58	1956.75	19.33	283.18	50.32
479.00	100.16	1191.73	2175.05	19.40	283.18	50.32
479.50	95.55	1198.46	2260.37	19.45	283.17	50.31
480.00	94.44	1245.13	2226.25	19.55	283.17	50.30
480.50	95.98	1287.12	2441.49	19.72	283.16	50.29
481.00	90.62	1308.01	2379.01	19.89	283.16	50.28
481.50	66.35	1373.18	2668.57	19.67	283.15	50.27
482.00	78.18	1388.43	2535.67	19.47	283.15	50.26
482.50	75.12	1398.11	2594.29	19.49	283.14	50.24
483.00	92.93	1484.94	2828.66	19.49	283.13	50.23
483.50	84.66	1483.50	2865.72	19.47	283.12	50.21
484.00	69.07	1534.29	2734.26	19.52	283.11	50.20
484.50	84.02	1534.67	2700.45	19.53	283.10	50.19
485.00	71.34	1600.00	2778.67	19.53	283.10	50.18
485.50	80.30	1596.89	2740.21	19.49	283.09	50.16
486.00	75.40	1588.46	2915.48	19.46	283.09	50.15
486.50	76.87	1640.16	2861.50	19.43	283.08	50.15
487.00	73.60	1654.28	2846.52	19.41	283.08	50.14
487.50	67.00	1610.35	2869.00	19.39	283.07	50.13
488.00	82.28	1584.33	2691.95	19.33	283.07	50.13
488.50	86.84	1586.12	2700.35	19.28	283.07	50.12
489.00	81.50	1548.57	2560.91	19.35	283.06	50.12
489.50	84.25	1564.35	2516.88	19.59	283.06	50.11
490.00	83.07	1537.49	2445.09	19.74	283.06	50.10
490.50	84.16	1488.46	2287.87	19.77	283.06	50.10
491.00	88.35	1424.47	2270.88	19.83	283.05	50.10
491.50	86.54	1346.13	2348.91	19.87	283.05	50.09
492.00	90.79	1302.63	2325.54	19.85	283.05	50.09
492.50	87.47	1228.11	2087.16	19.62	283.05	50.08
493.00	81.59	1143.87	1865.06	19.42	283.05	50.08
493.50	83.53	1088.84	1836.27	19.29	283.04	50.08
494.00	82.44	1042.56	2048.38	19.21	283.04	50.07
494.50	80.71	1003.35	1881.44	19.13	283.04	50.07

496.50	92.38	916.23	1878.44	19.09	283.03	50.06
497.00	98.64	940.95	1837.24	19.13	283.03	50.05
497.50	103.19	952.67	1896.86	19.18	283.03	50.05
498.00	107.24	953.76	1967.97	19.27	283.03	50.05
498.50	105.25	962.12	1950.14	19.37	283.03	50.04
499.00	102.98	972.14	1930.85	19.43	283.02	50.04
499.50	106.29	981.17	1981.86	19.39	283.02	50.04
500.00	105.43	969.98	1995.25	19.28	283.02	50.03
500.50	104.17	1005.03	2081.39	19.34	283.01	50.03
501.00	111.15	1027.11	2134.35	19.91	283.01	50.02
501.50	112.80	1088.61	2169.29	19.92	283.01	50.01
502.00	111.89	1139.40	2216.17	19.89	283.00	50.01
502.50	111.61	1172.41	2297.02	19.85	283.00	50.00
503.00	112.12	1191.84	2443.16	19.80	283.00	49.99
503.50	112.39	1229.57	2421.71	19.72	282.99	49.99
504.00	111.78	1307.99	2440.79	19.61	282.99	49.98
504.50	111.61	1376.04	2491.78	19.54	282.98	49.97
505.00	109.98	1461.74	2550.37	19.50	283.00	50.00
505.50	108.47	1531.71	2617.80	19.54	283.00	50.00
506.00	106.87	1568.92	2781.21	19.65	283.00	50.00
506.50	103.97	1621.83	2894.11	19.77	283.00	49.99
507.00	102.25	1659.41	2876.02	19.85	283.00	49.99
507.50	102.27	1663.15	2945.01	19.91	282.99	49.99
508.00	99.80	1684.45	2957.53	19.92	282.99	49.98
508.50	98.05	1695.40	2999.82	20.02	282.99	49.98
509.00	96.88	1682.63	2874.96	19.94	282.99	49.97
509.50	94.99	1682.04	2852.94	19.40	282.98	49.97
510.00	92.03	1653.86	2747.62	19.76	282.98	49.96
510.50	89.24	1632.94	2687.64	19.96	282.98	49.96
511.00	78.14	1625.51	2727.71	20.04	282.98	49.96
511.50	73.61	1590.55	2674.10	20.04	282.98	49.96
512.00	66.55	1507.68	2598.73	20.00	282.97	49.95
512.50	76.56	1439.64	2460.98	20.02	282.97	49.94
513.00	92.15	1378.40	2463.39	19.99	282.97	49.94
513.50	103.48	1329.20	2465.80	19.99	282.96	49.94
514.00	103.84	1266.84	2468.22	20.28	282.96	49.93
514.50	103.75	1265.84	2470.63	23.70	282.96	49.92
515.00	103.66	1262.33	2473.04	23.70	282.96	49.92
515.50	103.57	1241.78	2475.45	23.71	282.96	49.92
516.00	103.48	1234.29	2477.86	23.71	282.97	49.94

CTGH-1

o dual density

o Caliper

Depth (Ft.)	Speed (Ft/min.)	LSD (CPS)	Caliper (inches)	SSD (CPS)
1004.5	0.0	0.00000	2.93455	2.16732
1004.5	0.0	3.32834	2.93393	6.65668
1004.5	0.0	8.09848	2.93489	1.61970
1007.0	0.0	1.64366	4.46252	3.28731
1007.0	0.0	6.58762	4.46311	3.29381
1007.0	0.0	3.20873	4.46334	0.00000
1010.0	0.0	3.72335	6.44606	1.86168
1010.0	0.0	6.46374	6.44553	2.93807
1010.0	0.0	7.05136	6.46139	2.93807
5000.0	0.0	127.306	0.42907	2907.41
5000.0	0.0	123.151	0.42897	2933.83
8000.0	0.0	1464.78	0.43030	6070.14
8000.0	0.0	1528.35	0.42968	6093.36
8000.0	0.0	1468.82	0.43027	6206.53
515.5	14.7	256.809	4.98543	3708.09
515.0	18.1	303.742	5.05416	4214.57
514.5	19.6	237.732	5.37087	4098.55
514.0	19.6	197.273	5.52562	3869.32
513.5	19.8	133.197	5.68400	3593.61
513.0	19.8	110.979	5.63564	3015.77
512.5	19.6	108.652	5.64191	3287.56
512.0	19.7	94.5455	5.69190	3077.02
511.5	19.8	114.112	5.71506	2697.50
511.0	19.7	228.697	5.63596	3001.88
510.5	19.4	271.056	5.66574	4648.29
510.0	19.8	143.099	5.69956	3486.61
509.5	19.8	87.3767	5.67154	2776.20
509.0	19.7	90.5694	5.66850	2842.49
508.5	19.6	100.379	5.67972	2996.74
508.0	19.7	119.278	5.66136	2873.33
507.5	19.7	139.670	5.58140	3249.71
507.0	19.7	141.975	5.56173	3280.25
506.5	19.7	136.732	5.55556	3321.39
506.0	19.7	142.886	5.55786	3318.42
505.5	19.8	112.910	5.58563	3238.33
505.0	19.6	124.543	5.57903	3209.62
504.5	19.8	134.855	5.58849	3412.78
504.0	19.4	96.7677	5.63000	2938.65
503.5	19.7	109.396	5.62550	2914.09
503.0	19.3	121.329	5.62718	3031.98
502.5	19.7	181.136	5.63850	3077.37
502.0	19.8	305.766	5.70832	3776.59
501.5	19.6	369.498	5.90254	4242.83
501.0	19.6	318.743	5.92074	4612.25
500.5	19.6	256.947	5.88821	3660.07
500.0	19.7	231.145	5.81957	3728.04
499.5	19.4	261.822	5.71787	3536.24
499.0	19.7	318.763	5.53732	4036.99
498.5	19.7	335.490	5.45643	4107.56
498.0	19.6	316.234	5.50010	4297.22
497.5	19.6	284.502	5.62769	3918.03
497.0	19.7	291.466	5.69376	4073.75
496.5	19.7	307.218	5.98273	4309.07
496.0	19.6	242.887	5.82452	3861.64

Margin notes: Caliper Calibration (rows 1007.0); Alum. Blks (rows 5000.0); Lucite Blocks (rows 8000.0)

495.5	19.4	262.248	5.75576	3694.96
495.0	19.8	264.607	5.73271	3864.34
494.5	19.7	284.890	5.73983	3992.22
494.0	19.6	240.718	5.88934	3869.95
493.5	19.8	176.311	5.78843	3592.50
493.0	19.4	128.336	5.73437	2967.34
492.5	19.7	106.619	5.67176	2897.82
492.0	19.4	124.030	5.61916	3013.86
491.5	19.6	121.285	5.59576	3059.44
491.0	19.7	131.265	5.60461	3123.18
490.5	19.6	130.080	5.57167	3172.96
490.0	19.7	149.838	5.51946	3339.52
489.5	19.6	126.271	5.55725	3135.51
489.0	19.6	106.134	5.55904	3178.03
488.5	19.4	126.532	5.61601	3393.71
488.0	19.6	113.036	5.64934	3085.52
487.5	19.7	98.4002	5.63759	2918.54
487.0	19.7	77.7676	5.65808	2881.98
486.5	19.3	101.010	5.65387	2795.29
486.0	19.6	106.024	5.65852	3099.22
485.5	19.6	114.305	5.67096	2774.36
485.0	19.6	108.947	5.64824	3002.86
484.5	19.3	115.382	5.64317	2917.52
484.0	19.6	146.751	5.54446	3054.63
483.5	19.8	122.793	5.48055	3389.75
483.0	19.4	120.675	5.49637	3492.90
482.5	19.6	121.296	5.56174	3111.29
482.0	19.6	121.548	5.58000	2965.16
481.5	19.6	154.163	5.52462	3025.45
481.0	19.3	205.635	5.41680	3707.29
480.5	19.7	193.424	5.50123	3855.13
480.0	19.8	139.414	5.61373	3260.43
479.5	19.3	202.310	5.51045	3519.40
479.0	19.6	245.752	5.40000	4222.88
478.5	19.6	210.519	5.55504	3980.49
478.0	19.7	200.201	5.61823	3414.13
477.5	19.4	266.002	5.57310	3667.72
477.0	19.4	307.559	5.47363	4123.16
476.5	19.7	290.775	5.62634	4405.75
476.0	19.8	247.906	5.79157	3910.67
475.5	19.3	243.258	5.73377	3489.16
475.0	19.6	212.794	5.78133	3716.06
474.5	19.4	204.329	5.82170	3508.67
474.0	19.7	216.080	5.76655	3598.46
473.5	19.4	244.900	5.60481	3876.87
473.0	19.4	282.704	5.60608	4086.54
472.5	19.8	215.329	5.69477	3862.46
472.0	19.4	232.285	5.82213	3699.60
471.5	19.7	239.031	5.84847	3465.64
471.0	19.6	335.196	5.73063	4186.58
470.5	19.3	261.429	5.70895	3775.92
470.0	19.6	191.641	5.66293	3996.60
469.5	19.6	203.883	5.55218	3438.11
469.0	19.6	266.354	5.34653	4287.15

468.5	19.6	155.880	5.46698	3643.78
468.0	19.4	148.046	5.56718	3326.75
467.5	19.8	152.695	5.56689	3330.86
467.0	19.6	148.143	5.52673	3359.89
466.5	19.3	151.330	5.59989	3222.72
466.0	19.4	134.464	5.63357	3227.13
465.5	19.7	161.516	5.49582	3427.81
465.0	19.4	163.868	5.51395	3673.48
464.5	19.3	136.769	5.55071	3471.42
464.0	19.6	154.550	5.53993	3704.56
463.5	19.4	128.569	5.67086	3776.62
463.0	19.7	112.028	5.73003	3158.93
462.5	19.3	96.0392	5.73785	2750.70
462.0	19.4	96.7441	5.73859	2726.18
461.5	19.9	114.271	5.62816	3000.59
461.0	19.4	141.577	5.55597	3323.31
460.5	19.4	125.363	5.55622	3122.20
460.0	19.7	120.650	5.55585	3146.83
459.5	19.6	131.227	5.55004	2969.25
459.0	19.6	139.327	5.49489	3396.17
458.5	19.4	125.050	5.50951	3169.48
458.0	19.7	139.092	5.51777	3085.32
457.5	19.6	143.133	5.49564	3297.38
457.0	19.4	131.255	5.50592	3295.54
456.5	19.3	124.919	5.58706	2996.76
456.0	19.8	124.207	5.58589	3241.66
455.5	19.4	111.517	5.62280	3033.13
455.0	19.2	102.545	5.67087	2975.66
454.5	19.7	118.482	5.68713	2844.90
454.0	19.7	168.686	5.62822	3122.03
453.5	19.8	209.689	5.54066	3628.48
453.0	20.1	260.647	5.39801	4078.13
452.5	20.1	200.906	5.40892	4032.33
452.0	20.1	173.383	5.49340	3729.77
451.5	20.1	159.842	5.55639	3521.97
451.0	19.8	149.963	5.64498	3281.54
450.5	20.1	174.067	5.63320	3135.09
450.0	20.3	189.399	5.59681	3456.19
449.5	19.9	201.039	5.60859	3579.73
449.0	20.1	176.250	5.59102	3373.94
448.5	19.9	207.414	5.59324	3532.97
448.0	19.8	214.276	5.63737	3631.77
447.5	19.8	218.779	5.68161	3680.01
447.0	20.1	193.836	5.76507	3507.53
446.5	20.2	197.381	5.90877	3340.29
446.0	19.8	211.103	5.76971	3373.54
445.5	19.8	237.538	5.80729	3584.48
445.0	20.1	229.055	5.83161	3468.15
444.5	20.1	243.180	5.80294	3586.59
444.0	19.8	288.265	5.76530	3826.50
443.5	19.7	275.510	5.70139	4031.73
443.0	20.3	236.902	5.67603	3947.68
442.5	19.9	229.900	5.71023	3513.55
442.0	19.8	266.813	5.62290	3504.14

441.5	19.7	376.301	5.49440	4277.42
441.0	19.8	294.483	5.54483	3956.55
440.5	19.9	335.766	5.55379	4085.05
440.0	19.7	339.479	5.66465	4801.30
439.5	20.1	237.655	5.94548	4140.13
439.0	20.2	208.082	5.80950	3847.50
438.5	19.8	262.000	5.75368	3531.84
438.0	20.2	484.977	5.41454	4695.18
437.5	20.1	399.255	5.55234	4740.04
437.0	20.1	337.756	5.65317	4599.30
436.5	19.8	327.419	5.87144	4012.05
436.0	19.8	334.422	5.70568	4041.26
435.5	20.1	299.113	5.74000	4338.50
435.0	19.9	301.446	5.77500	4038.29
434.5	19.8	305.214	5.98124	4243.08
434.0	19.8	272.481	6.33692	4002.27
433.5	19.9	243.553	6.17137	3643.06
433.0	19.9	266.534	6.12164	3803.26
432.5	19.7	270.233	6.21056	3707.13
432.0	20.1	208.897	6.58088	3644.37
431.5	19.9	215.024	6.49769	3709.85
431.0	19.9	243.985	6.23012	3513.66
430.5	19.7	248.497	6.04810	3597.86
430.0	19.9	238.472	6.06300	3601.75
429.5	20.1	238.339	6.03906	3654.99
429.0	19.9	262.329	5.99589	3697.95
428.5	19.8	246.996	5.93597	3760.66
428.0	19.9	179.239	5.72614	3584.14
427.5	19.9	173.340	5.62436	3520.49
427.0	19.8	135.034	5.58890	3197.16
426.5	19.9	135.837	5.59129	3339.99
426.0	19.8	104.195	5.65945	2900.33
425.5	20.1	96.9029	5.67800	2742.42
425.0	19.7	105.474	5.69626	2791.05
424.5	19.9	92.8729	5.69070	2826.09
424.0	20.2	99.2487	5.68888	2878.90
423.5	19.7	124.019	5.66692	2930.27
423.0	19.8	125.176	5.61082	3300.76
422.5	20.1	103.748	5.66064	3095.72
422.0	19.9	114.104	5.66538	2988.32
421.5	20.1	111.451	5.62603	3155.65
421.0	19.8	103.620	5.66344	3196.74
420.5	20.1	87.9440	5.68797	2811.44
420.0	20.2	83.9938	5.68651	2645.13
419.5	19.8	91.6561	5.68710	2774.34
419.0	19.9	103.298	5.68468	2882.40
418.5	19.9	84.5897	5.67092	2833.75
418.0	20.2	111.453	5.67043	2971.62
417.5	19.8	135.847	5.66749	3313.65
417.0	19.9	122.024	5.66913	3369.34
416.5	20.1	122.813	5.67341	3789.37
416.0	20.1	99.732	5.70191	3086.87
415.5	19.8	97.3236	5.70092	3000.19
415.0	19.9	100.314	5.70151	3089.26

414.5	19.9	112.960	5.70149	3182.94
414.0	19.9	130.539	5.68877	3222.26
413.5	19.8	113.017	5.64009	3381.77
413.0	20.2	114.446	5.69367	3112.28
412.5	19.9	119.248	5.66260	2854.54
412.0	19.8	109.757	5.62992	3210.56
411.5	19.8	97.6668	5.66468	2879.82
411.0	20.2	100.984	5.66999	2852.80
410.5	19.9	109.355	5.67047	3002.60
410.0	19.8	119.533	5.68013	3032.39
409.5	19.8	144.688	5.68830	2899.27
409.0	19.9	105.263	5.69378	2954.39
408.5	20.1	131.535	5.68418	2952.15
408.0	19.8	165.061	5.86943	3404.97
407.5	19.8	122.973	5.98108	3581.76
407.0	19.9	85.1909	5.87177	2755.57
406.5	20.1	90.6588	5.82567	2713.05
406.0	19.8	108.564	5.81187	2819.29
405.5	19.9	127.634	5.76243	2995.68
405.0	20.2	129.937	5.78219	3123.63
404.5	19.8	122.807	5.76856	3192.31
404.0	19.9	138.493	5.80720	3165.65
403.5	20.2	151.515	5.77592	3156.00
403.0	19.9	184.080	5.74543	3317.21
402.5	19.7	231.609	5.91204	3668.25
402.0	19.9	292.329	6.07947	4029.72
401.5	20.1	300.747	6.23360	4580.50
401.0	20.2	207.952	6.40859	4092.66
400.5	19.8	154.141	6.05564	3157.02
400.0	20.2	155.595	6.09660	3097.69
399.5	20.1	143.680	6.03795	3205.02
399.0	20.2	158.557	6.04151	3179.31
398.5	19.7	195.539	5.90804	3288.56
398.0	20.1	222.943	5.72760	3831.24
397.5	20.2	241.784	5.80768	3717.08
397.0	19.9	260.473	5.73993	3509.25
396.5	19.9	248.424	5.80706	3829.13
396.0	19.9	257.055	5.75587	3568.85
395.5	19.9	281.653	5.79912	3816.26
395.0	19.7	332.788	5.64921	4055.51
394.5	19.8	271.174	5.49032	4353.91
394.0	20.1	183.202	5.59103	3569.07
393.5	19.9	173.756	5.62761	3482.76
393.0	19.8	170.100	5.66617	3434.54
392.5	20.2	183.585	5.66778	3563.18
392.0	19.8	226.379	5.70354	3594.28
391.5	19.8	313.245	5.89990	3654.75
391.0	19.8	397.421	5.71875	4483.95
390.5	20.1	360.687	5.78880	4726.46
390.0	20.1	419.818	5.81986	4484.07
389.5	19.7	474.232	5.83803	4890.89
389.0	20.1	392.504	5.86508	5058.94
388.5	20.1	272.640	5.82409	4207.43
388.0	20.1	245.399	5.91613	3710.71

387.5	20.1	269.049	5.96016	3733.14
387.0	19.9	392.602	5.86299	4687.85
386.5	19.8	280.933	5.87136	4759.73
386.0	20.3	180.267	5.80603	3588.55
385.5	19.9	182.272	5.77803	3363.26
385.0	20.1	219.922	5.65164	3685.21
384.5	19.9	237.546	5.69771	3994.84
384.0	19.8	363.487	5.81706	3878.04
383.5	19.9	505.874	5.93196	5028.86
383.0	19.9	482.322	6.74842	4300.70
382.5	19.9	762.984	7.42715	5218.04
382.0	19.9	818.257	6.81267	5397.70
381.5	20.1	942.412	6.52846	5628.73
381.0	19.9	600.680	6.89932	5056.46
380.5	19.9	527.429	6.82314	4332.01
380.0	20.2	562.405	6.77300	5378.11
379.5	19.8	410.605	8.04079	5080.22
379.0	20.2	396.907	6.93561	4330.39
378.5	20.1	396.744	6.23914	4567.34
378.0	20.1	300.056	6.63437	4015.75
377.5	20.1	371.050	6.87190	4121.64
377.0	20.1	297.534	6.35487	4649.14
376.5	20.2	236.247	5.96133	3965.82
376.0	19.7	179.928	5.96695	3372.65
375.5	20.1	203.247	5.90714	3371.43
375.0	19.9	213.290	5.76907	3377.77
374.5	19.9	278.242	5.67788	3686.04
374.0	19.9	333.012	5.70731	4064.26
373.5	19.9	486.120	6.04818	4133.57
373.0	20.2	1037.87	6.80041	5574.21
372.5	19.9	610.316	6.59771	5736.01
372.0	20.3	396.629	5.94342	4420.44
371.5	19.9	286.977	5.84332	4623.02
371.0	20.3	205.663	5.87235	3699.18
370.5	19.9	166.970	5.85269	3149.53
370.0	20.1	158.950	5.87906	3207.33
369.5	20.1	141.697	5.86561	3092.13
369.0	19.9	126.888	5.82029	3134.27
368.5	19.9	131.414	5.81853	3015.91
368.0	20.1	166.260	5.71390	3121.61
367.5	20.3	239.560	5.52736	3685.98
367.0	19.8	254.277	5.65159	3729.63
366.5	20.1	274.504	5.55003	3839.66
366.0	20.1	249.847	5.59330	4225.61
365.5	20.1	272.877	5.63143	3756.19
365.0	20.2	353.085	5.51534	4258.79
364.5	19.9	348.648	5.51380	4584.07
364.0	19.9	331.446	5.53434	4483.39
363.5	20.2	251.246	5.59842	4372.23
363.0	19.9	180.295	5.73578	3467.50
362.5	19.9	167.064	5.63041	3317.42
362.0	20.1	222.405	5.54572	3611.34
361.5	20.1	237.808	5.60959	3805.60
361.0	19.8	229.914	5.67889	3911.10

360.5	19.9	228.506	5.81977	3581.50
360.0	20.1	227.660	5.65674	3485.79
359.5	19.9	326.695	5.48902	4148.82
359.0	19.9	278.591	5.51711	4110.16
358.5	20.1	223.581	5.66497	3538.57
358.0	19.9	243.641	5.67871	3660.64
357.5	20.1	260.310	5.66790	3907.38
357.0	19.8	246.043	5.68399	3783.56
356.5	20.3	271.207	5.67402	4092.09
356.0	19.9	284.386	5.69046	4010.80
355.5	19.9	312.218	5.71796	4167.30
355.0	20.1	292.206	5.75071	4145.16
354.5	20.1	287.302	5.82909	4330.97
354.0	20.1	294.631	5.72436	4408.29
353.5	19.8	272.366	5.69608	4237.17
353.0	19.9	232.234	5.74302	3496.19
352.5	20.2	254.056	5.75010	3521.25
352.0	20.2	257.389	5.63357	3683.35
351.5	20.1	285.069	5.53990	4094.62
351.0	20.1	290.924	5.51321	4221.81
350.5	20.1	269.013	5.63859	3773.73
350.0	20.1	309.414	5.55494	3955.38
349.5	19.9	333.585	5.55289	4526.05
349.0	19.7	208.305	5.57468	4340.92
348.5	20.3	207.426	5.64981	3704.87
348.0	19.8	155.835	5.66451	3133.04
347.5	19.9	207.019	5.61078	3543.32
347.0	20.1	253.207	5.59727	3627.07
346.5	20.1	351.102	5.46322	4090.21
346.0	19.9	343.053	5.37702	4635.33
345.5	19.8	245.560	5.51803	4150.30
345.0	20.1	235.960	5.54507	3816.49
344.5	20.1	225.941	5.54490	3974.90
344.0	19.8	213.102	5.61490	3963.02
343.5	20.1	217.478	5.71848	3696.46
343.0	20.1	216.213	5.57485	3763.47
342.5	19.9	203.678	5.66084	3735.16
342.0	19.8	149.304	5.69036	3567.83
341.5	19.9	178.977	5.63365	3119.71
341.0	20.2	188.768	5.47091	3755.14
340.5	19.9	163.407	5.43361	3743.57
340.0	19.8	114.756	5.49413	3348.86
339.5	20.1	106.561	5.58743	3027.95
339.0	19.9	114.337	5.54431	3147.39
338.5	20.1	159.585	5.50333	3683.93
338.0	19.9	185.162	5.49062	4208.97
337.5	20.2	136.323	5.54149	4009.41
337.0	20.1	92.9255	5.66981	3386.01
336.5	19.9	92.8562	5.74556	2734.17
336.0	20.1	95.5817	5.67920	2811.12
335.5	19.8	96.5433	5.67648	3029.30
335.0	20.1	96.5010	5.69633	2670.79
334.5	19.9	82.7343	5.71613	2674.62
334.0	20.1	93.3401	5.72149	2663.98

333.5	20.2	94.4229	5.70206	2733.51
333.0	19.8	96.5395	5.68495	2793.53
332.5	20.1	93.4324	5.67346	2960.51
332.0	19.9	100.082	5.69583	2653.45
331.5	20.1	73.6598	5.69499	2752.69
331.0	20.1	78.0508	5.69703	2832.22
330.5	19.9	88.5740	5.71779	2738.98
330.0	20.1	116.552	5.70089	2712.99
329.5	20.2	96.0944	5.69154	2858.12
329.0	20.1	131.696	5.66564	2956.67
328.5	19.8	119.143	5.59371	3308.57
328.0	20.1	133.742	5.70264	3433.59
327.5	20.1	124.638	5.77781	2999.39
327.0	19.9	116.884	5.83001	2880.89
326.5	20.1	123.087	5.80483	2959.54
326.0	20.2	149.905	5.72090	2991.96
325.5	19.9	183.260	5.57057	3496.23
325.0	20.1	185.641	5.53796	3704.17
324.5	20.1	174.478	5.61888	3475.20
324.0	20.1	236.318	5.57435	3666.00
323.5	20.1	243.186	5.63797	4166.72
323.0	19.8	225.378	5.57311	3736.08
322.5	20.1	253.658	5.49022	4128.26
322.0	20.3	257.484	5.59393	4075.12
321.5	19.9	265.532	5.63440	3608.04
321.0	19.9	234.370	5.65107	3733.37
320.5	20.2	238.127	5.72377	3740.27
320.0	19.8	202.776	5.77540	3391.94
319.5	19.8	232.588	5.70547	3439.99
319.0	20.1	213.382	5.67784	3562.87
318.5	19.9	225.024	5.79572	3744.07
318.0	20.1	199.836	5.83004	3554.77
317.5	19.8	159.813	5.83665	3385.13
317.0	20.1	167.751	5.71859	3255.73
316.5	20.2	218.760	5.58369	3900.56
316.0	19.9	237.035	5.51415	3872.03
315.5	19.9	218.538	5.53205	4072.80
315.0	20.1	225.989	5.67326	3656.17
314.5	20.1	228.976	5.54927	3615.24
314.0	19.9	245.190	5.54115	4017.90
313.5	19.9	225.404	5.59605	3696.22
313.0	19.8	209.053	5.61629	3929.17
312.5	20.1	212.823	5.65654	3649.44
312.0	19.8	251.858	5.75557	3720.75
311.5	19.9	254.528	5.62050	3810.52
311.0	20.1	256.690	5.60226	4252.71
310.5	19.8	210.583	5.60861	4073.50
310.0	19.9	203.496	5.71497	4149.14
309.5	19.9	216.956	5.67957	3602.80
309.0	19.9	173.191	5.64538	3589.31
308.5	19.8	187.029	5.71582	3373.92
308.0	20.1	218.905	5.57437	3412.10
307.5	20.1	248.937	5.48202	4041.69
307.0	20.1	198.318	5.48232	3973.43

306.5	19.8	165.933	5.47579	3987.13
306.0	20.1	209.377	5.45145	4275.18
305.5	19.9	173.831	5.48039	4196.87
305.0	20.2	117.938	5.54562	3820.30
304.5	19.8	117.248	5.67469	3228.74
304.0	20.1	107.380	5.70002	2723.48
303.5	20.2	75.7986	5.69369	2606.25
303.0	19.9	88.5294	5.70346	2706.83
302.5	20.1	91.5180	5.66019	2766.10
302.0	20.1	124.861	5.64512	3183.27
301.5	19.9	90.4147	5.69273	2686.61
301.0	19.9	77.0122	5.69209	2646.36
300.5	19.8	107.731	5.67300	2890.37
300.0	20.2	96.0064	5.69305	2860.86
299.5	20.3	97.3185	5.69278	2711.62
299.0	19.8	99.659	5.70464	2910.84
298.5	20.1	89.3427	5.69113	2666.88
298.0	20.1	96.1345	5.67126	2894.12
297.5	20.1	102.354	5.69089	2774.48
297.0	19.9	125.181	5.61455	2858.52
296.5	19.9	146.857	5.55383	3507.16
296.0	20.1	94.7769	5.60083	2837.77
295.5	20.1	111.119	5.60881	3104.63
295.0	20.1	119.549	5.63886	3119.34
294.5	19.8	126.050	5.62398	2867.18
294.0	20.1	130.064	5.57174	3177.75
293.5	20.1	106.586	5.62722	3345.86
293.0	19.7	124.875	5.61736	3104.51
292.5	20.2	158.377	5.52220	3843.66
292.0	20.2	173.733	5.51741	4084.80
291.5	19.8	171.409	5.82926	3832.61
291.0	20.2	164.828	6.06069	3440.69
290.5	19.9	170.360	6.02536	3070.32
290.0	19.9	146.681	5.88887	3044.48
289.5	19.9	191.246	5.76768	3241.75
289.0	19.9	293.763	5.69148	3666.00
288.5	20.1	319.685	5.58931	4279.50
288.0	20.1	258.007	5.73198	4267.38
287.5	19.9	205.683	5.86806	3529.09
287.0	19.9	174.007	6.02954	3228.57
286.5	20.2	206.864	5.95768	3147.72
286.0	19.9	249.039	5.76130	3294.87
285.5	19.7	279.806	5.59954	3885.21
285.0	19.9	261.474	5.58627	3945.93
284.5	20.2	277.264	5.62949	3917.98
284.0	19.9	302.898	5.68168	3983.08
283.5	20.1	278.832	5.69190	3775.97
283.0	19.9	247.707	5.73609	3944.57
282.5	20.1	217.361	6.04264	3642.70
282.0	20.1	197.698	6.07920	3235.11
281.5	19.7	179.600	5.81430	3257.88
281.0	20.3	262.796	5.61159	3842.87
280.5	20.1	243.818	5.59198	4084.99
280.0	19.8	306.257	5.64978	3908.69

279.5	20.1	242.154	5.67776	4238.37
279.0	19.9	214.059	5.64657	3451.95
278.5	20.1	190.708	5.58058	3633.60
278.0	19.9	168.089	5.60512	3672.74
277.5	20.1	154.275	5.62797	3321.33
277.0	20.2	187.360	5.60111	3540.83
276.5	19.7	199.598	5.63630	3936.37
276.0	19.9	194.718	5.99178	3757.58
275.5	20.2	189.829	6.01039	3227.09
275.0	20.2	245.657	5.86183	3612.24
274.5	19.9	281.320	5.76064	3924.98
274.0	20.1	307.994	5.80722	4568.47
273.5	20.1	255.848	5.89096	4312.04
273.0	20.5	207.709	5.73549	3375.10
272.5	19.9	308.951	5.57058	4195.51
272.0	19.8	281.728	5.61222	4184.61
271.5	20.1	300.505	5.70328	3847.22
271.0	19.9	477.358	5.67586	4339.80
270.5	19.9	616.638	5.64075	5339.90
270.0	19.9	374.652	5.60073	5317.88
269.5	20.2	209.258	5.69753	3941.66
269.0	19.6	190.939	5.76307	3256.91
268.5	20.1	200.418	5.61914	3708.75
268.0	20.3	217.671	5.70473	3521.94
267.5	20.1	260.607	5.82211	3568.55
267.0	20.1	280.452	5.69694	4179.57
266.5	19.8	278.442	5.74628	3931.42
266.0	20.2	326.026	5.75258	3882.30
265.5	20.1	320.866	5.74331	3892.16
265.0	19.9	426.608	5.70520	4413.76
264.5	20.1	490.361	5.65191	4980.86
264.0	19.9	439.150	5.64854	5113.69
263.5	20.1	286.182	5.78087	4506.68
263.0	19.8	198.860	5.79797	3313.49
262.5	20.1	257.590	5.67454	3541.01
262.0	20.2	374.624	5.55373	4402.52
261.5	19.8	368.688	5.55838	4728.83
261.0	19.9	246.126	5.59459	4456.42
260.5	20.1	188.092	5.80527	3494.92
260.0	20.1	141.550	5.75683	3020.63
259.5	20.2	140.864	5.66519	3239.20
259.0	19.8	140.211	5.68012	3348.56
258.5	20.1	120.804	5.74302	3117.58
258.0	19.9	126.930	5.79074	2921.44
257.5	20.1	137.605	5.73355	2878.76
257.0	20.1	205.082	5.59009	3555.19
256.5	19.9	276.789	5.58347	4116.90
256.0	20.1	356.204	5.62388	4277.22
255.5	19.8	383.770	5.63262	4729.16
255.0	20.1	290.779	5.77669	4320.88
254.5	20.2	240.408	5.86003	3514.50
254.0	19.8	265.911	5.78592	3383.28
253.5	20.1	260.385	5.73586	3925.24
253.0	20.1	248.343	5.90620	4015.31

252.5	20.1	256.687	6.00350	3371.29
252.0	19.7	257.246	5.94448	3433.11
251.5	19.9	243.404	5.92214	3790.14
251.0	20.2	244.340	5.97322	3587.80
250.5	20.1	240.565	6.01537	3239.19
250.0	20.1	234.455	5.91760	3335.85
249.5	19.8	264.949	5.78884	3501.74
249.0	20.2	318.090	5.72144	4087.84
248.5	20.2	340.072	5.72643	4359.85
248.0	19.8	268.264	5.78833	4510.75
247.5	19.8	274.129	5.91957	3904.16
247.0	20.1	254.533	5.97605	3676.36
246.5	19.8	284.116	5.91929	3795.96
246.0	20.1	263.714	6.03271	3865.08
245.5	20.1	237.206	6.21093	3543.57
245.0	20.2	239.742	6.36559	3276.48
244.5	20.1	264.073	6.22311	3295.76
244.0	19.9	289.904	6.00081	3413.30
243.5	20.3	300.347	6.01921	4106.11
243.0	19.9	309.919	5.93010	3931.33
242.5	19.8	336.821	5.82738	4302.12
242.0	19.9	354.244	5.90540	3973.83
241.5	20.2	295.527	5.86330	4565.14
241.0	19.9	263.321	5.87372	3868.48
240.5	19.8	276.174	5.89192	3641.73
240.0	20.1	302.047	5.81391	3997.57
239.5	19.9	254.609	5.84904	3998.61
239.0	19.8	298.538	6.19247	3821.69
238.5	20.1	283.674	5.95782	3891.92
238.0	19.8	293.419	5.92103	4229.86
237.5	20.2	337.527	5.92871	3826.43
237.0	20.2	385.977	5.89795	4104.82
236.5	19.8	478.769	5.93145	4670.14
236.0	20.1	339.400	6.13965	4464.67
235.5	20.2	251.277	6.23493	4006.81
235.0	19.9	330.680	6.19786	3687.83
234.5	19.9	329.596	6.12844	4310.57
234.0	19.9	329.740	6.04249	4521.88
233.5	20.2	331.397	5.95354	4251.45
233.0	19.9	307.630	5.86110	4398.17
232.5	20.1	306.728	5.83737	4314.63
232.0	20.1	277.778	5.98914	3936.14
231.5	19.9	212.327	5.89157	3511.99
231.0	19.9	209.304	5.83620	3570.99
230.5	19.9	243.202	5.80210	3789.00
230.0	20.2	236.306	5.86242	3930.57
229.5	20.1	230.247	5.91037	3525.66
229.0	19.8	229.095	5.99286	3484.94
228.5	20.1	207.343	6.06530	3451.13
228.0	20.2	223.106	6.00910	3276.70
227.5	20.2	293.085	5.76985	3808.75
227.0	19.7	320.617	5.58239	4431.14
226.5	20.2	272.856	5.62892	4541.53
226.0	20.1	265.299	5.63966	3977.44

225.5	20.1	215.122	5.74402	4298.63
225.0	19.7	209.259	5.76033	3529.13
224.5	20.2	202.216	5.80748	3562.33
224.0	19.8	198.524	5.66801	3546.61
223.5	20.1	144.005	5.69399	3787.85
223.0	20.1	120.197	5.72085	3073.13
222.5	20.2	136.791	5.69008	3476.25
222.0	19.9	132.159	5.71724	3639.18
221.5	19.9	109.890	5.74443	3181.79
221.0	20.2	93.7669	5.73327	2761.74
220.5	20.1	138.570	5.65977	3115.38
220.0	19.8	173.696	5.63260	3497.57
219.5	19.8	180.590	5.60649	3887.73
219.0	20.2	182.707	5.65306	3835.50
218.5	19.9	157.604	5.78427	3375.86
218.0	19.8	146.118	5.88782	3083.97
217.5	20.1	153.201	5.87121	2981.37
217.0	20.1	159.450	5.80481	2921.65
216.5	20.1	183.801	5.69784	3198.01
216.0	19.9	178.355	5.69794	3281.06
215.5	19.8	180.981	5.69930	3762.87
215.0	19.9	167.869	5.73047	3238.05
214.5	20.2	197.355	5.71991	3309.60
214.0	19.7	225.916	5.69674	3719.13
213.5	20.1	215.728	5.72472	3657.04
213.0	20.6	264.506	5.73908	3683.23
212.5	20.2	249.184	5.74998	4362.46
212.0	20.2	203.498	5.77894	3909.34
211.5	20.5	214.827	5.88599	3506.74
211.0	20.3	227.813	5.75277	3451.53
210.5	20.5	267.372	5.83198	3834.83
210.0	20.3	230.505	5.84250	3695.79
209.5	20.5	245.687	5.81159	3831.61
209.0	20.5	279.256	5.81379	3876.73
208.5	20.3	321.999	5.81888	4207.49
208.0	20.5	326.269	5.79615	4680.01
207.5	20.7	272.355	5.81185	4336.14
207.0	20.5	195.433	5.88300	3746.13
206.5	20.2	162.517	5.91546	3382.16
206.0	20.3	189.335	5.84349	3319.49
205.5	20.9	214.176	6.01228	3285.20
205.0	20.3	233.443	5.81608	3488.10
204.5	20.5	220.968	5.71518	3908.41
204.0	20.5	240.674	5.78325	3901.75
203.5	20.5	207.924	5.79025	4022.90
203.0	20.6	139.285	5.78129	3492.49
202.5	20.5	119.323	5.77174	2804.10
202.0	20.3	126.912	5.69939	3113.12
201.5	21.0	109.124	5.71241	3097.59
201.0	20.2	114.182	5.73418	2924.88
200.5	20.3	125.178	5.73032	3074.33
200.0	20.5	216.996	5.72379	3027.44
199.5	20.7	420.641	5.68860	4003.29
199.0	20.5	542.344	5.69035	5649.18

198.5	20.3	336.869	5.85407	4671.81
198.0	20.5	239.850	6.12973	4117.07
197.5	20.7	216.174	6.52350	3606.92
197.0	20.5	185.350	6.32594	3503.81
196.5	20.1	206.407	6.32504	3189.87
196.0	20.6	167.709	6.28359	3210.53
195.5	20.7	179.887	6.15864	3351.27
195.0	20.2	197.958	6.11533	3377.71
194.5	20.3	228.597	6.29570	3613.37
194.0	20.6	284.091	6.33878	3699.57
193.5	20.5	403.668	6.43438	4236.09
193.0	20.2	485.062	6.70483	5196.12
192.5	20.6	378.742	6.54931	4789.62
192.0	20.7	260.953	6.54855	4027.61
191.5	20.3	223.152	6.47699	4350.77
191.0	20.1	204.506	6.48873	3552.17
190.5	20.3	191.503	6.18366	3236.60
190.0	20.9	216.201	6.05294	3204.21
189.5	20.3	251.159	6.00913	3773.61
189.0	20.2	276.498	6.04594	4153.05
188.5	20.6	239.702	6.08693	4006.75
188.0	20.5	246.257	5.93512	3530.34
187.5	20.3	228.390	5.79486	4066.72
187.0	20.5	151.177	5.73638	3676.33
186.5	20.6	124.526	5.75325	3068.49
186.0	20.5	126.762	5.82497	3042.98
185.5	20.6	149.426	5.79366	2981.05
185.0	20.2	220.364	5.75143	3470.56
184.5	20.6	272.095	5.75713	3867.78
184.0	20.6	203.151	5.94674	3712.72
183.5	20.2	188.213	5.71438	3572.61
183.0	20.5	205.951	5.55035	3862.79
182.5	20.5	221.986	5.56738	4201.42
182.0	20.3	207.515	5.56625	4114.95
181.5	20.5	188.090	5.62812	3851.33
181.0	20.6	180.230	5.73478	3442.40
180.5	20.3	193.013	5.88895	3440.26
180.0	20.5	162.304	5.98887	3242.80
179.5	20.5	199.986	5.95115	3089.75
179.0	20.5	258.078	5.82647	3624.85
178.5	20.6	301.447	5.66325	4369.22
178.0	20.5	253.022	5.83669	4055.63
177.5	20.6	245.446	5.90043	4028.65
177.0	20.6	271.402	5.93386	3662.18
176.5	20.7	265.402	5.89207	3807.74
176.0	20.5	274.981	5.91764	3787.24
175.5	20.3	260.550	5.92439	3802.59
175.0	20.7	278.278	5.98782	3680.60
174.5	20.6	276.172	6.02012	3937.06
174.0	20.6	248.864	6.06903	3855.70
173.5	20.3	270.413	6.01636	3709.27
173.0	20.6	275.031	5.99708	3783.60
172.5	20.3	263.102	5.97001	4024.33
172.0	20.3	243.370	5.93837	4120.94

171.5	20.7	301.392	5.93286	3599.55
171.0	20.5	290.127	5.95144	3651.99
170.5	20.6	317.051	5.97032	4218.52
170.0	20.6	265.026	6.04148	3935.33
169.5	20.5	274.061	6.18447	3818.76
169.0	20.5	260.638	6.31892	3889.04
168.5	20.6	242.088	6.14904	4032.70
168.0	20.2	206.047	6.10918	3556.61
167.5	20.5	243.965	6.10740	3651.82
167.0	20.9	242.770	6.07769	3804.10
166.5	20.5	222.098	5.96742	3969.23
166.0	20.3	234.985	5.96102	3669.22
165.5	20.6	280.307	5.91394	4122.08
165.0	20.5	209.736	5.84213	3877.98
164.5	20.6	173.515	5.79956	4215.71
164.0	20.3	136.958	5.86207	3400.31
163.5	20.6	125.511	5.86853	2818.11
163.0	20.6	103.045	5.86834	2804.54
162.5	20.5	116.481	5.86840	2787.21
162.0	20.6	123.680	5.86854	2778.63
161.5	20.3	133.882	5.91102	2918.21
161.0	20.6	125.823	6.04875	2846.51
160.5	20.3	131.235	6.64903	2909.85
160.0	20.5	183.711	6.43895	3039.26
159.5	20.6	266.226	5.98553	3615.48
159.0	20.5	285.005	5.70859	4111.65
158.5	20.7	243.582	5.78991	3942.98
158.0	20.5	252.615	5.89340	4384.12
157.5	21.0	320.960	5.83171	3806.87
157.0	20.3	439.165	5.89278	4459.07
156.5	20.5	369.906	6.06688	4578.89
156.0	20.3	262.883	6.24573	3800.99
155.5	20.9	251.773	6.21702	3924.11
155.0	20.5	251.849	6.23693	3731.19
154.5	20.9	278.247	6.17427	3803.18
154.0	20.7	265.376	6.20255	4061.43
153.5	20.3	214.400	6.06886	3757.94
153.0	20.7	192.445	6.03927	3320.33
152.5	20.3	192.818	6.37837	3600.67
152.0	20.9	167.649	6.09007	3502.38
151.5	20.6	170.135	5.96105	3491.99
151.0	20.5	171.824	5.95906	3250.27
150.5	20.5	172.053	5.95774	3066.86
150.0	20.6	177.646	5.95977	3216.29
149.5	20.6	136.408	5.97493	3266.17
149.0	20.3	164.085	6.02659	3150.15
148.5	20.5	166.772	6.02727	3094.48
148.0	20.7	171.752	5.98594	3204.58
147.5	20.6	201.936	6.07130	3269.97
147.0	20.5	202.269	6.18833	3359.30
146.5	20.5	219.831	6.16649	3477.03
146.0	20.6	186.344	6.17717	3537.76
145.5	20.3	227.146	6.18172	3741.64
145.0	20.3	221.771	6.05919	3274.80

144.5	20.5	216.079	5.99118	3337.88
144.0	20.7	199.972	5.99916	3737.24
143.5	20.6	189.518	6.03927	3549.53
143.0	20.9	219.505	5.98956	3376.95
142.5	20.3	241.552	5.98867	3690.34
142.0	20.6	258.812	5.99015	3682.35
141.5	20.5	239.158	5.98940	3975.74
141.0	20.3	247.990	5.99741	3529.77
140.5	20.7	266.000	6.00467	3904.67
140.0	20.7	248.586	6.02961	4053.49
139.5	20.6	257.149	6.02614	4283.71
139.0	20.2	244.839	6.02016	3908.51
138.5	20.6	242.926	5.96894	3621.12
138.0	20.5	286.282	5.93638	3888.67
137.5	20.5	222.481	5.91799	4032.04
137.0	20.5	135.087	5.92321	3513.69
136.5	20.5	98.4645	5.90030	2825.17
136.0	20.7	89.3750	5.89742	2682.59
135.5	20.6	86.0822	5.89009	2683.70
135.0	20.5	90.8903	5.88652	2737.73
134.5	20.5	88.3694	5.89581	2693.13
134.0	20.5	97.9192	5.89061	2656.06
133.5	20.5	111.248	5.87557	2775.03
133.0	20.6	137.955	5.84790	3027.94
132.5	20.6	143.233	5.83449	3252.15
132.0	20.2	123.652	5.85898	3334.65
131.5	20.6	108.590	5.87356	3026.70
131.0	20.3	98.7167	5.86730	2932.59
130.5	20.6	116.352	5.86776	2852.37
130.0	20.7	133.299	5.86709	2977.87
129.5	20.3	131.098	5.86766	2915.20
129.0	20.7	147.140	5.86757	3028.87
128.5	20.9	147.583	5.88906	3079.99
128.0	20.5	191.384	5.90567	3264.56
127.5	20.5	258.819	5.95561	3953.94
127.0	20.7	275.761	6.05348	3625.38
126.5	20.5	272.080	6.07507	4094.46
126.0	20.6	278.424	6.06102	4350.80
125.5	20.3	270.821	5.94426	4105.04
125.0	20.6	233.655	5.91878	3820.82
124.5	20.9	200.428	6.03138	3541.37
124.0	20.6	240.054	6.44883	3364.16
123.5	20.5	281.308	6.38470	3504.77
123.0	20.5	264.790	6.24486	4653.33
122.5	20.3	210.792	6.23781	3925.92
122.0	20.3	209.883	6.17366	3499.93
121.5	20.3	221.630	6.07435	3388.80
121.0	20.9	198.302	5.99708	3653.63
120.5	20.5	216.435	5.85003	3499.27
120.0	20.3	259.196	5.85428	3986.65
119.5	20.6	265.242	6.21451	4514.90
119.0	20.6	240.767	6.09233	3854.40
118.5	20.6	246.397	5.95813	3420.73
118.0	20.1	284.891	6.56690	3658.27

117.5	20.6	267.506	6.45292	4011.28
117.0	20.9	273.924	6.38802	3792.47
116.5	20.5	317.570	6.22590	4197.06
116.0	20.6	313.802	6.44265	4275.20
115.5	20.6	320.207	6.37961	4558.47
115.0	20.6	315.190	6.29408	4291.17
114.5	20.5	323.217	6.21598	4186.17
114.0	20.5	400.935	5.97719	4078.77
113.5	20.7	460.480	5.89358	5037.20
113.0	20.9	311.029	6.04019	4491.01
112.5	20.6	293.933	6.01271	4286.11
112.0	20.6	246.964	5.93328	3933.69
111.5	20.6	237.545	5.85944	3631.84
111.0	20.6	310.414	5.78705	3696.93
110.5	20.5	422.353	5.75873	4773.47
110.0	20.5	614.962	5.74739	5298.68
109.5	20.7	528.922	5.74111	5331.87
109.0	20.5	364.650	5.79410	5055.40
108.5	20.5	346.044	5.82915	3884.52
108.0	19.9	374.084	5.80141	4480.02
107.5	20.3	396.275	5.84961	4900.23
107.0	20.7	331.524	5.80919	4207.81
106.5	20.3	356.875	5.90038	4397.13
106.0	20.5	327.534	5.97380	4420.65
105.5	21.0	270.099	6.01041	4140.82
105.0	20.3	192.469	6.20019	3390.41
104.5	20.5	144.928	6.32990	3044.88
104.0	20.5	123.922	6.38299	2993.98
103.5	20.6	120.372	6.35577	2864.28
103.0	20.5	117.701	6.22173	2930.04
102.5	20.3	156.057	6.11852	3006.32
102.0	20.7	167.355	6.07851	3168.73
101.5	20.6	225.902	6.07970	3432.02
101.0	20.3	274.297	6.06656	3929.96
100.5	20.5	275.516	6.05875	3848.76
100.0	20.3	268.154	6.20011	3640.52
99.5	20.6	292.913	6.15742	3644.06
99.0	20.5	345.212	6.02241	3950.45
98.5	20.2	351.215	5.88567	4334.75
98.0	20.6	367.719	5.94814	4233.28
97.5	20.5	329.901	5.85207	4288.02
97.0	20.6	274.823	5.92335	4448.31
96.5	20.5	262.402	5.98117	3600.19
96.0	20.6	189.663	6.00759	3285.24
95.5	20.3	159.955	6.32529	3351.97
95.0	20.3	137.845	5.89738	3315.23
94.5	20.5	197.420	5.70824	3427.16
94.0	20.9	283.599	5.75440	3851.63
93.5	20.3	265.152	6.09498	4231.20
93.0	20.6	394.251	5.88296	3792.61
92.5	20.5	626.558	5.89358	5025.59
92.0	20.5	505.913	6.50129	5187.18
91.5	20.5	345.717	6.77354	4375.83
91.0	20.3	297.542	6.39477	4478.79

90.5	20.6	192.095	6.07280	4214.36
90.0	20.6	124.237	5.96827	3049.76
89.5	20.5	107.343	5.86832	2746.48
89.0	20.3	115.623	5.83542	2842.05
88.5	20.6	108.023	5.83597	2830.60
88.0	20.3	95.7314	5.83568	2817.52
87.5	20.5	91.4489	5.83635	2783.73
87.0	20.3	81.5867	5.84541	2739.49
86.5	20.7	88.7636	5.83656	2861.57
86.0	20.6	103.845	5.81663	2828.13
85.5	20.5	94.0353	5.81303	2917.15
85.0	20.7	92.1463	5.83570	2660.90
84.5	20.3	111.096	5.84298	2794.91
84.0	20.6	158.678	5.87107	3032.73
83.5	20.6	236.286	5.97268	3353.31
83.0	20.5	301.337	6.10384	3647.87
82.5	20.7	393.129	6.30892	4430.56
82.0	20.6	345.523	6.54802	4554.92
81.5	20.3	367.884	6.30857	4901.38
81.0	20.6	376.299	6.14996	4182.81
80.5	20.6	351.890	5.95749	4312.06
80.0	20.6	320.257	6.05803	4573.97
79.5	20.6	235.972	6.04198	3812.59
79.0	20.7	251.484	6.06497	3663.29
78.5	20.9	236.074	6.02596	3562.51
78.0	20.5	240.062	6.00800	3529.30
77.5	20.6	278.793	5.98724	3511.79
77.0	20.5	309.865	6.01700	4175.64
76.5	20.6	238.652	6.15466	3906.24
76.0	20.6	245.030	6.18512	3580.20
75.5	20.5	265.680	6.04521	3701.01
75.0	20.6	265.128	6.05806	3733.47
74.5	20.6	270.137	6.13718	3498.42
74.0	20.6	410.752	6.38483	3754.37
73.5	20.6	387.016	6.21920	4941.19
73.0	20.5	247.633	6.21896	3680.89
72.5	20.6	228.333	6.31507	3583.69
72.0	20.5	212.104	6.21736	3362.58
71.5	20.5	222.296	6.24744	3360.90
71.0	2.4	375.677	6.17060	3930.57
70.5	9.4	442.061	5.96348	4304.98
70.0	20.6	423.714	5.98481	4905.35
69.5	20.3	318.415	6.02691	4463.90
69.0	18.9	264.329	5.99639	4142.22
68.5	18.8	231.137	6.02154	3677.42
68.0	18.8	210.158	6.03490	3449.44
67.5	18.6	218.100	6.29171	3291.06
67.0	18.9	191.042	6.29018	3309.02
66.5	18.8	187.244	6.16884	3425.36
66.0	18.9	195.168	6.05594	3322.95
65.5	18.6	177.878	6.01141	3237.01
65.0	19.0	167.787	6.00833	3300.03
64.5	18.9	122.914	6.01898	3119.35
64.0	19.4	114.301	5.97517	2788.54

63.5	19.7	96.9094	5.86171	2716.74
63.0	19.6	101.343	5.81137	2981.22
62.5	19.6	93.3022	5.80540	2934.36
62.0	19.6	95.7226	5.80494	2797.38
61.5	19.3	115.191	5.82957	2909.22
61.0	19.6	108.539	5.82659	2769.94
60.5	19.3	119.266	5.79948	2897.12
60.0	19.3	113.173	5.76984	3323.46
59.5	19.7	115.775	5.77454	3444.82
59.0	19.8	148.194	5.79315	3337.45
58.5	19.3	159.116	5.84325	3265.83
58.0	19.7	182.813	5.97078	3212.57
57.5	19.6	255.032	6.26500	3269.52
57.0	19.6	387.626	6.46315	4567.60
56.5	19.2	279.937	7.20195	4261.63
56.0	19.6	253.364	7.44929	3614.05
55.5	19.6	298.813	7.22955	3785.62
55.0	19.2	371.017	6.91401	4926.73
54.5	19.4	220.525	6.68283	4292.26
54.0	19.7	203.265	6.38843	3506.00
53.5	19.3	175.427	6.32527	3282.99
53.0	19.3	173.645	6.26108	3176.72
52.5	19.3	203.635	6.13691	3402.10
52.0	19.8	207.192	6.00066	3511.05
51.5	19.7	192.039	5.98445	3430.79
51.0	19.4	208.569	5.98472	3303.89
50.5	19.7	193.564	5.93515	3907.39
50.0	19.4	223.537	5.89349	3437.87
49.5	19.6	271.302	5.83132	3862.54
49.0	19.4	395.376	6.10206	4234.86
48.5	19.3	419.720	6.17164	5007.57
48.0	19.6	233.686	6.05563	3878.38
47.5	19.6	208.416	5.97173	3734.39
47.0	19.4	244.982	5.92974	4032.62
46.5	19.6	206.440	5.94165	3926.08
46.0	19.4	156.819	5.97036	3403.03
45.5	19.3	119.454	5.92347	2974.53
45.0	19.3	103.692	5.91242	2707.22
44.5	19.4	103.061	5.93804	2675.88
44.0	19.6	102.908	5.95007	2680.25
43.5	19.4	113.065	5.97593	2993.92
43.0	19.7	121.457	5.92885	2764.32
42.5	19.4	125.986	5.87304	2815.73
42.0	19.4	128.188	5.82407	3217.14
41.5	19.3	143.232	5.87183	3574.74
41.0	19.6	122.610	5.90837	2887.94
40.5	19.4	129.510	5.90266	3002.83
40.0	19.7	162.475	5.78518	3132.56
39.5	19.2	217.209	5.69591	3495.38
39.0	19.7	373.218	6.04640	3829.63
38.5	19.4	1150.24	8.59016	5387.74
38.0	19.2	1856.73	9.7940	6185.67
37.5	19.4	1859.51	9.08620	6132.78
37.0	19.3	1328.42	7.58739	6013.44

36.5	19.7	494.082	6.83469	4918.87
36.0	19.4	141.666	6.79075	1775.42
35.5	18.9	226.383	6.78888	1162.58
35.0	19.2	528.233	6.77726	1908.67
34.5	19.3	571.868	6.77012	2002.54
34.0	19.3	552.125	6.76918	1924.18
33.5	19.0	582.575	6.76947	1989.59
33.0	19.4	542.591	6.76953	1960.78
32.5	19.6	554.121	6.76928	1981.46
32.0	19.4	553.118	6.76905	1884.93
31.5	19.2	377.661	6.76968	1885.10
31.0	19.4	291.191	6.76904	1755.77
30.5	19.3	221.572	6.76933	1743.34
30.0	19.3	176.485	6.76920	1543.62
29.5	19.3	147.107	6.76299	1514.87
29.0	19.2	211.478	6.74518	1621.55
28.5	19.6	224.794	6.73849	1658.02
28.0	19.4	160.518	6.73801	1697.26
27.5	19.3	132.515	6.73869	1508.58
27.0	19.3	143.781	6.73812	1486.83
26.5	19.0	131.355	6.73833	1399.16
26.0	19.3	130.466	6.73835	1423.98
25.5	19.3	148.800	6.73879	1338.58
25.0	19.4	195.756	6.73849	1588.39
24.5	19.3	230.091	6.73894	1532.39
24.0	19.0	232.740	6.73903	1580.29
23.5	19.3	230.633	6.73827	1633.30
23.0	19.3	274.224	6.73883	1684.71
22.5	19.4	279.461	6.73767	1619.44
22.0	19.3	265.092	6.73819	1684.38
21.5	19.3	266.206	6.73822	1705.17
21.0	19.4	282.564	6.73797	1717.17
20.5	19.6	268.579	6.73794	1683.83
20.0	19.2	285.351	6.73789	1696.03
19.5	19.3	285.399	6.73751	1706.88
19.0	19.3	286.507	6.73872	1720.98
18.5	19.0	295.625	6.73827	1767.18
18.0	19.4	325.649	6.73823	1643.44
17.5	19.3	331.894	6.73843	1721.16
17.0	19.7	330.129	6.73782	1813.06
16.5	19.3	221.988	6.73803	1733.09
16.0	19.2	160.133	6.73777	1502.69
15.5	19.3	188.726	6.73765	1573.13
15.0	19.3	199.565	6.73516	1703.22
14.5	19.4	269.287	6.73018	1674.61
14.0	19.2	276.293	6.71153	1771.11
13.5	19.3	202.080	6.70841	1761.08
13.0	19.6	156.260	6.70863	1599.80
12.5	19.3	169.844	6.70853	1572.20
12.0	19.3	139.685	6.69842	1609.91
11.5	19.2	157.668	6.67837	1691.29
11.0	13.6	148.092	6.67853	1563.59
10.5	16.4	169.083	6.67801	1630.11
10.0	16.3	166.703	6.67752	1672.00

9.5	15.9	139.721	6.66559	1643.20
1010.0	0.0	2.93824	6.53582	1.76294
1010.0	0.0	5.28852	6.53543	2.93807
1007.5	0.0	5.89449	4.53876	5.30504
1007.5	0.0	8.26251	4.53966	4.13126
1007.0	0.0	5.30473	4.56442	1.76824
1004.5	0.0	5.88547	2.99570	2.35419
1004.5	0.0	4.12395	2.99576	0.58914
149.5	15.0	199.435	0.48905	3399.40
149.0	18.4	174.218	0.48878	3463.19
148.5	18.8	189.154	0.48845	3569.97
148.0	21.0	206.085	0.48876	3717.89
150.0	0.0	183.871	1.02983	3414.05
150.0	0.0	144.185	5.58154	3205.70
150.0	0.0	147.341	5.58456	3105.38
150.0	0.0	146.829	5.59669	3188.07
150.0	0.3	146.988	5.60153	3086.76
150.0	0.3	166.081	5.61482	3112.42
150.0	0.4	154.903	5.62760	3118.81
150.0	0.4	133.727	5.66630	3148.81
150.0	0.3	162.939	5.67412	3065.50
150.0	0.0	148.967	5.66875	3168.35
150.0	0.3	151.684	5.67779	3108.73
150.0	0.5	155.545	5.68984	3179.34
150.0	0.7	150.112	5.69467	3257.75
150.0	0.5	159.668	5.70493	3108.73
150.0	0.5	164.484	5.72181	3094.86
150.0	0.4	149.603	5.72853	2984.26
150.0	0.4	169.248	5.73048	3159.83
150.0	0.0	161.755	5.72389	3129.40
150.0	0.0	152.170	5.72161	3110.68
150.0	0.0	167.449	5.73396	3169.01
149.5	13.9	158.389	5.75952	3120.93
149.0	16.4	154.681	5.83275	3280.52
148.5	18.6	169.054	5.85616	3268.19
148.0	20.6	143.324	5.95352	3096.78
147.5	20.5	153.964	5.95653	3125.26
147.0	20.6	152.745	5.88340	3168.09
146.5	20.6	198.059	6.03948	3254.77
146.0	20.3	194.096	6.15405	3237.87
145.5	20.2	247.172	6.09552	3508.59
145.0	20.3	220.538	6.13615	3546.36
144.5	20.5	233.405	6.11534	3688.97
144.0	20.2	203.482	5.95698	3326.73
143.5	20.6	208.818	5.90853	3414.35
143.0	20.3	186.535	5.92124	3814.32
142.5	20.3	187.958	5.97519	3492.26
142.0	20.6	221.753	5.91834	3386.13
141.5	20.3	244.345	5.90827	3728.71
141.0	20.3	228.649	5.88908	3612.79
140.5	20.2	261.514	5.89969	3960.45
140.0	20.5	224.849	5.91400	3526.26
139.5	20.2	274.113	5.91838	4013.94
139.0	20.5	274.745	5.97605	4069.74

138.5	20.1	260.589	5.96593	4284.56
138.0	20.1	247.704	5.91579	3832.62
137.5	20.5	251.475	5.87946	3588.09
137.0	20.1	267.405	5.82478	3918.75
136.5	20.3	213.882	5.82931	4255.55
136.0	20.3	152.507	5.83275	3594.08
135.5	20.5	100.120	5.78016	2801.24
135.0	20.3	102.219	5.75185	2825.82
134.5	20.2	93.7044	5.74859	2800.03
134.0	20.3	89.4063	5.78825	2781.89
133.5	20.2	101.802	5.81854	2697.76
133.0	20.2	109.752	5.79098	2688.57
132.5	20.3	119.562	5.75790	2787.08
132.0	20.2	134.267	5.75806	3123.47
131.5	20.5	158.675	5.78298	3316.93
131.0	19.9	141.149	5.80170	3403.56
130.5	20.6	129.800	5.80428	3098.20
130.0	20.3	102.693	5.81412	2967.77
129.5	20.3	122.979	5.80973	2806.41
129.0	20.3	124.314	5.81846	2873.81
128.5	20.2	132.311	5.79454	2864.02
128.0	20.3	130.537	5.75819	3148.09
127.5	20.3	134.938	5.82806	3170.34
127.0	20.2	184.116	5.90325	3216.93
126.5	20.1	261.207	5.93089	3992.25
126.0	20.2	262.924	6.03150	3535.09
125.5	20.1	282.542	6.07859	4290.03
125.0	20.1	260.434	5.98999	4449.03
124.5	20.2	265.031	5.88490	4146.95
124.0	20.3	242.644	5.87784	3871.15
123.5	20.3	194.876	6.01858	3392.91
123.0	20.1	260.296	6.40478	3370.94
122.5	20.1	306.924	6.31425	3493.34
122.0	20.2	296.001	6.16764	4686.92
121.5	20.1	201.153	6.20942	3823.79
121.0	19.8	205.354	6.10912	3456.46
120.5	20.2	252.250	6.03150	3402.65
120.0	20.2	207.269	5.90006	3733.67
119.5	20.1	244.285	5.87792	3677.47
119.0	20.1	336.954	6.16758	4421.92
118.5	20.3	289.148	6.27198	4471.15
118.0	20.1	261.730	6.15374	3794.74
117.5	20.3	244.607	5.98870	3333.33
117.0	19.8	269.652	6.54294	3633.25
116.5	20.2	270.815	6.41830	4215.68
116.0	20.3	319.675	6.32645	3972.23
115.5	19.8	327.975	6.19717	4255.25
115.0	20.3	292.386	6.44805	4223.35
114.5	20.3	294.198	6.31367	4114.00
114.0	20.2	311.801	6.33319	4354.03
113.5	20.1	321.999	6.21217	4087.11
113.0	20.1	450.631	5.94432	4235.03
112.5	20.3	445.786	5.87325	4979.64
112.0	20.2	320.863	6.06909	4284.54

111.5	20.2	301.394	6.00123	4196.28
111.0	20.1	276.024	5.90847	3879.96
110.5	20.2	239.640	5.83601	3690.18
110.0	20.1	324.632	5.78112	3704.82
109.5	20.2	443.390	5.74070	4942.60
109.0	20.1	562.831	5.72542	5398.97
108.5	20.2	511.289	5.72074	5238.62
108.0	19.9	352.026	5.78183	5027.97
107.5	20.3	337.086	5.80075	3786.42
107.0	20.2	376.684	5.78880	4338.89
106.5	20.1	339.769	5.83885	4785.43
106.0	20.1	304.126	5.83199	4058.15
105.5	19.9	297.975	6.00206	4429.80
105.0	20.2	276.367	6.06851	4364.68
104.5	19.9	239.006	6.23668	3654.06
104.0	20.1	171.020	6.36382	3152.52
103.5	20.1	149.346	6.39035	3056.79
103.0	20.1	118.605	6.39569	2931.15
102.5	20.2	119.530	6.35571	2785.60
102.0	19.8	116.185	6.24244	3010.75
101.5	20.1	150.520	6.16585	3024.77
101.0	20.2	169.503	6.12226	3079.54
100.5	20.2	202.272	6.12557	3269.53
100.0	20.1	247.398	6.14438	3569.69
99.5	20.1	267.398	6.03033	3913.48
99.0	19.9	296.754	6.19245	3617.41
98.5	19.9	316.402	6.18635	3712.07
98.0	20.1	340.901	5.96815	4002.03
97.5	19.7	364.808	5.96186	4464.75
97.0	20.3	314.619	5.96239	4165.56
96.5	20.1	325.519	5.87017	4398.01
96.0	20.1	258.860	5.92397	4206.14
95.5	19.9	246.047	5.98828	3533.26
95.0	20.2	206.617	6.00168	3281.45
94.5	20.1	172.491	6.27013	3276.05
94.0	19.9	154.674	5.90556	3772.83
93.5	20.2	190.292	5.79288	3389.20
93.0	20.2	231.904	5.80323	3723.82
92.5	19.9	299.574	6.05728	4117.57
92.0	20.2	452.258	5.84510	3950.09
91.5	19.9	714.334	5.93285	5307.55
91.0	20.2	494.955	6.55236	5162.26
90.5	20.3	339.942	6.77087	4222.26
90.0	19.9	313.570	6.40969	4220.87
89.5	20.5	205.784	6.22547	4064.40
89.0	20.2	121.416	5.97270	3291.95
88.5	20.3	116.774	5.86413	2855.47
88.0	20.1	114.611	5.81637	2894.74
87.5	20.1	105.853	5.81916	2907.87
87.0	20.2	101.586	5.82470	2954.90
86.5	20.1	95.4933	5.83127	2724.65
86.0	19.9	90.8635	5.83469	2759.74
85.5	20.3	116.774	5.83185	2821.13
85.0	20.1	104.347	5.82130	2775.21

84.5	20.2	101.324	5.82613	2807.35
84.0	20.2	84.1696	5.84073	2672.06
83.5	20.1	114.169	5.83758	2733.27
83.0	20.2	136.813	5.85243	2942.15
82.5	19.9	217.807	5.99618	3306.02
82.0	20.3	303.464	6.14678	3789.40
81.5	20.3	350.338	6.29994	4377.52
81.0	20.1	361.379	6.46043	4419.78
80.5	19.9	337.064	6.39617	4913.22
80.0	20.1	359.744	6.22459	4071.82
79.5	20.3	342.332	5.99499	4217.92
79.0	20.1	319.809	6.06410	4504.60
78.5	20.1	254.138	6.03269	3809.33
78.0	19.9	235.602	6.08479	3626.61
77.5	20.6	229.877	6.00934	3595.28
77.0	20.1	228.552	6.00737	3483.24
76.5	20.2	254.799	5.99503	3464.30
76.0	20.2	267.863	6.02861	4059.78
75.5	19.9	260.376	6.14849	3818.64
75.0	20.1	239.247	6.16182	3554.63
74.5	20.2	229.569	6.05677	3512.96
74.0	19.9	228.332	6.06075	3564.87
73.5	20.2	237.957	6.20940	3538.49
73.0	19.9	350.619	6.56875	3668.12
72.5	20.2	337.032	6.11827	4827.35
72.0	20.1	258.555	6.19979	3759.42
71.5	20.2	230.680	6.16309	3697.34
71.0	19.9	246.309	6.12953	3325.50
70.5	20.2	276.807	6.14351	3524.59
70.0	20.5	420.127	5.98283	4486.43
69.5	19.9	455.982	6.03354	4697.84
69.0	19.8	372.625	6.13579	4551.97
68.5	20.2	306.497	6.12510	4399.83
68.0	20.3	260.268	6.00176	4181.92
67.5	19.8	224.619	6.05647	3776.02
67.0	19.9	216.682	6.04764	3461.35
66.5	20.1	199.755	6.37179	3333.33
66.0	20.2	221.327	6.32284	3427.15
65.5	19.9	205.236	6.16216	3555.09
65.0	19.8	178.362	5.99270	3311.07
64.5	20.3	153.252	5.99813	3202.96
64.0	20.2	148.899	5.97134	3208.67
63.5	20.3	121.700	5.94266	3022.55
63.0	19.9	120.534	5.83597	2894.69
62.5	20.1	113.581	5.75386	3128.33
62.0	20.5	132.437	5.70782	3068.69
61.5	19.8	112.112	5.69984	3040.79
61.0	19.9	130.851	5.69577	3163.69
60.5	20.2	88.6903	5.76624	2985.91
60.0	20.1	124.344	5.78889	2877.18
59.5	19.9	137.264	5.72858	3145.58
59.0	20.2	99.855	5.75997	3081.59
58.5	20.3	109.610	5.82380	2991.18
58.0	20.1	147.099	5.78955	3299.81

57.5	20.2	178.817	5.78336	3286.80
57.0	20.1	207.264	6.04274	3415.68
56.5	19.9	321.775	6.86859	4068.40
56.0	20.2	346.111	7.20008	5028.96
55.5	19.9	259.495	7.52804	4308.69
55.0	20.1	190.421	7.59941	3476.63
54.5	20.2	225.139	7.43912	3350.56
54.0	20.1	190.214	7.18401	3687.80
53.5	20.1	173.067	6.78880	3531.64
53.0	20.1	150.352	6.60192	3241.92
52.5	20.1	181.448	6.40979	3245.67
52.0	20.2	206.402	6.32672	3331.53
51.5	20.1	202.804	6.21614	3425.89
51.0	20.3	198.734	6.09678	3643.23
50.5	20.5	203.869	6.02228	3394.78
50.0	20.2	217.676	5.99366	3598.54
49.5	20.1	231.624	5.97938	3821.13
49.0	20.1	205.895	5.90690	3440.99
48.5	20.2	253.498	6.05956	3957.77
48.0	19.8	273.798	6.48705	3934.07
47.5	20.1	286.138	6.34094	4383.86
47.0	20.2	234.992	6.05296	3816.72
46.5	20.1	223.717	5.96340	3679.04
46.0	20.2	214.194	6.06385	3694.16
45.5	20.2	176.938	6.13630	3706.94
45.0	20.1	135.524	6.07331	3230.11
44.5	19.9	117.782	5.99160	2792.39
44.0	19.9	90.8970	5.93551	2676.49
43.5	20.2	102.276	5.87646	2642.24
43.0	20.5	98.4628	5.79585	2743.50
42.5	19.9	116.912	5.76555	2778.37
42.0	20.1	129.050	5.67682	2963.99
41.5	20.1	162.035	5.80501	3345.51
41.0	19.9	151.423	5.72230	3495.57
40.5	20.5	125.161	5.77355	2848.39
40.0	19.9	175.867	5.80431	2989.75
39.5	20.3	232.704	5.75715	3856.63
39.0	20.2	210.712	5.76060	4231.24
38.5	19.9	186.788	5.76658	3165.86
38.0	20.3	403.687	6.84806	3654.16
37.5	19.9	1102.63	9.6368	5727.14
37.0	19.7	1736.21	9.8661	6130.06
36.5	20.1	1831.23	8.63729	6127.43
36.0	19.9	913.108	7.26977	6142.20
35.5	20.2	445.964	6.71819	3896.72
35.0	20.2	215.120	6.71652	1625.35
34.5	20.1	320.742	6.71635	1520.60
34.0	19.9	503.869	6.71718	1887.59
33.5	20.2	528.195	6.71697	1903.93
33.0	20.2	516.598	6.71646	1831.95
32.5	19.9	535.133	6.70849	1829.90
32.0	20.3	505.714	6.70497	1835.97
31.5	20.1	522.565	6.70602	1897.44
31.0	20.2	489.923	6.70489	1780.55

30.5	19.9	350.232	6.70551	1764.79
30.0	19.9	262.539	6.70523	1692.20
29.5	20.5	201.232	6.70500	1666.67
29.0	20.1	166.837	6.70480	1523.32
28.5	19.8	139.617	6.69754	1365.52
28.0	20.1	184.221	6.69991	1481.39
27.5	20.3	210.733	6.70062	1527.82
27.0	20.2	170.717	6.70014	1569.26
26.5	20.3	126.114	6.70048	1402.33
26.0	19.9	145.765	6.70048	1315.91
25.5	20.3	118.938	6.70062	1402.29
25.0	20.2	112.994	6.70030	1309.52
24.5	19.8	170.905	6.69699	1366.55
24.0	20.3	214.364	6.68555	1439.79
23.5	20.3	214.872	6.68577	1562.05
23.0	19.9	217.450	6.68591	1622.15
22.5	19.9	247.674	6.68582	1606.46
22.0	20.3	262.760	6.68524	1613.70
21.5	20.3	267.222	6.68568	1660.37
21.0	19.7	282.234	6.68494	1620.30
20.5	20.1	296.976	6.68469	1642.95
20.0	19.9	281.119	6.68500	1664.03
19.5	20.3	293.253	6.68605	1663.69
19.0	20.2	289.505	6.68555	1666.55
18.5	19.9	317.450	6.68523	1732.21
18.0	19.9	327.721	6.68537	1798.66
17.5	19.8	331.042	6.68516	1755.47
17.0	20.2	338.380	6.68527	1716.32
16.5	20.1	316.849	6.68491	1747.74
16.0	20.3	294.057	6.68549	1810.48
15.5	19.9	207.812	6.68463	1693.93
15.0	20.1	166.374	6.68538	1548.09
14.5	20.3	208.564	6.68445	1620.70
14.0	20.2	241.696	6.68242	1758.03
13.5	20.2	255.906	6.67866	1754.68
13.0	20.1	236.166	6.66202	1803.85
12.5	20.2	169.815	6.65553	1714.52
12.0	20.2	153.315	6.65539	1716.16
11.5	19.9	158.924	6.65512	1725.75
11.0	20.2	162.281	6.65546	1626.69
10.5	20.2	147.850	6.65531	1599.10
10.0	20.1	150.846	6.65489	1651.15
9.5	20.1	145.234	6.65485	1633.03
9.0	19.8	124.657	6.65420	1614.93
1004.5	0.0	3716.42	2.96536	1385.49
1004.5	0.0	3707.43	2.96512	1390.36
1004.5	0.0	3701.74	2.96492	1359.46
1007.0	0.0	3665.98	2.82979	1517.66
1007.0	0.0	3729.81	4.50902	1332.67
1007.0	0.0	3765.54	4.50875	1379.15
1010.0	0.0	3759.55	6.44612	1387.35
1010.0	0.0	3632.25	6.44708	1365.11
5000.0	0.0	113.069	0.40253	2812.70
5000.0	0.0	113.680	0.40238	2822.61

5000.0	0.0	124.666	0.40284	2810.86
8000.0	0.0	1511.56	0.40253	5907.99
8000.0	0.0	1508.81	0.39862	5913.36
8000.0	0.0	1465.18	0.39750	5862.35

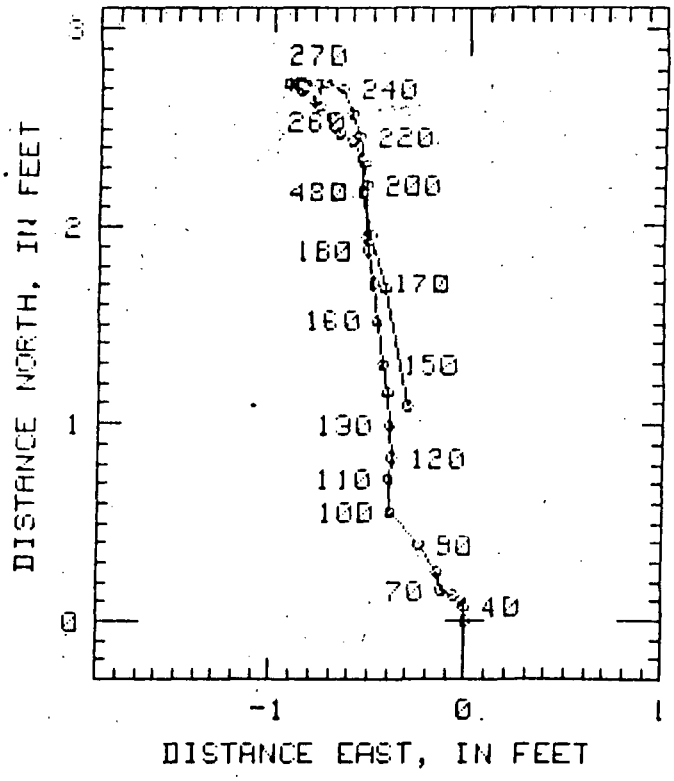
DRIFT SURVEY

Clackmas Geothemal Hole CTGH No. 1

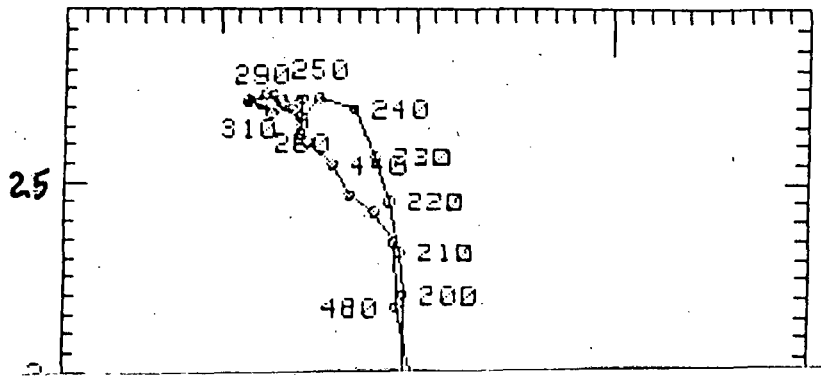
Declination = 0 deg E Depth correction = 0 ft

OBSERVED			COMPUTED			DISTANCE FROM COLLAR		
DEPTH	INCL	AZIM	DEPTH	AZIM	CUM AZIM	RADIAL	NORTH	EAST
0.0	.1	358.0	0.0	358.0	0.0	0.0	0.0	0.0
40.0	.1	358.0	40.0	358.0	358.0	.1	.1	-.0
50.0	.3	332.0	50.0	332.0	351.6	.1	.1	-.0
60.0	.4	279.0	60.0	279.0	334.6	.1	.1	-.1
70.0	.4	304.0	70.0	304.0	321.1	.2	.2	-.1
80.0	.9	8.0	80.0	8.0	330.4	.3	.3	-.1
90.0	1.4	297.0	90.0	297.0	328.0	.5	.4	-.2
100.0	1.4	341.0	100.0	341.0	325.0	.7	.6	-.4
110.0	.7	28.0	110.0	28.0	331.1	.8	.7	-.4
120.0	.6	346.0	120.0	346.0	335.1	.9	.8	-.4
130.0	1.3	360.0	130.0	0.0	338.2	1.1	1.0	-.4
140.0	.6	350.0	140.0	350.0	340.7	1.2	1.2	-.4
150.0	1.0	350.0	150.0	350.0	341.6	1.4	1.3	-.4
160.0	1.5	351.0	160.0	351.0	342.9	1.6	1.5	-.5
170.0	.7	6.0	170.0	6.0	344.2	1.8	1.7	-.5
180.0	1.3	341.0	180.0	341.0	344.7	1.9	1.9	-.5
183.0	1.3	360.0	183.0	0.0	344.9	2.0	1.9	-.5
200.0	.5	356.0	200.0	356.0	346.5	2.3	2.2	-.5
210.0	.8	355.0	210.0	355.0	347.0	2.4	2.3	-.5
220.0	.8	343.0	220.0	343.0	347.1	2.5	2.5	-.6
230.0	.6	341.0	230.0	341.0	346.8	2.6	2.6	-.6
240.0	1.0	333.0	240.0	333.0	346.3	2.8	2.7	-.7
250.0	.8	227.0	250.0	227.0	344.7	2.8	2.7	-.7
260.0	.1	118.0	260.0	118.0	343.5	2.8	2.7	-.8
270.0	.6	351.0	270.0	351.0	343.8	2.8	2.7	-.8
280.0	1.0	213.0	280.0	213.0	342.6	2.8	2.7	-.8
283.0	.4	319.0	283.0	319.0	342.1	2.8	2.7	-.9
290.0	.2	306.0	290.0	306.0	341.8	2.9	2.7	-.9
300.0	.2	275.0	300.0	275.0	341.2	2.9	2.7	-.9
310.0	.2	113.0	310.0	113.0	341.2	2.9	2.7	-.9
320.0	.2	64.0	320.0	64.0	341.8	2.9	2.7	-.9
330.0	.1	353.0	330.0	353.0	342.2	2.9	2.7	-.9
340.0	.2	122.0	340.0	122.0	342.4	2.9	2.7	-.9
350.0	.1	142.0	350.0	142.0	342.7	2.8	2.7	-.8
360.0	.1	8.0	360.0	8.0	342.8	2.8	2.7	-.8
370.0	.1	176.0	370.0	176.0	342.9	2.8	2.7	-.8
380.0	.1	147.0	380.0	147.0	342.9	2.8	2.7	-.8
390.0	.2	102.0	390.0	102.0	343.2	2.8	2.7	-.8
410.0	.2	198.0	410.0	198.0	343.5	2.8	2.7	-.8
420.0	.1	193.0	420.0	193.0	343.2	2.7	2.6	-.8
430.0	.3	121.0	430.0	121.0	343.4	2.7	2.6	-.8
440.0	.7	137.0	440.0	137.0	344.4	2.6	2.5	-.7
450.0	.4	173.0	450.0	173.0	344.9	2.6	2.5	-.7
460.0	.7	97.0	460.0	97.0	346.1	2.5	2.4	-.6
470.0	.9	189.0	470.0	189.0	346.7	2.4	2.3	-.6
480.0	1.1	169.0	480.0	169.0	345.9	2.2	2.2	-.5
490.0	1.5	165.0	490.0	165.0	345.8	2.0	1.9	-.5
500.0	1.7	165.0	500.0	165.0	345.9	1.7	1.7	-.4
516.0	2.6	172.0	515.9	172.0	344.2	1.1	1.1	-.3

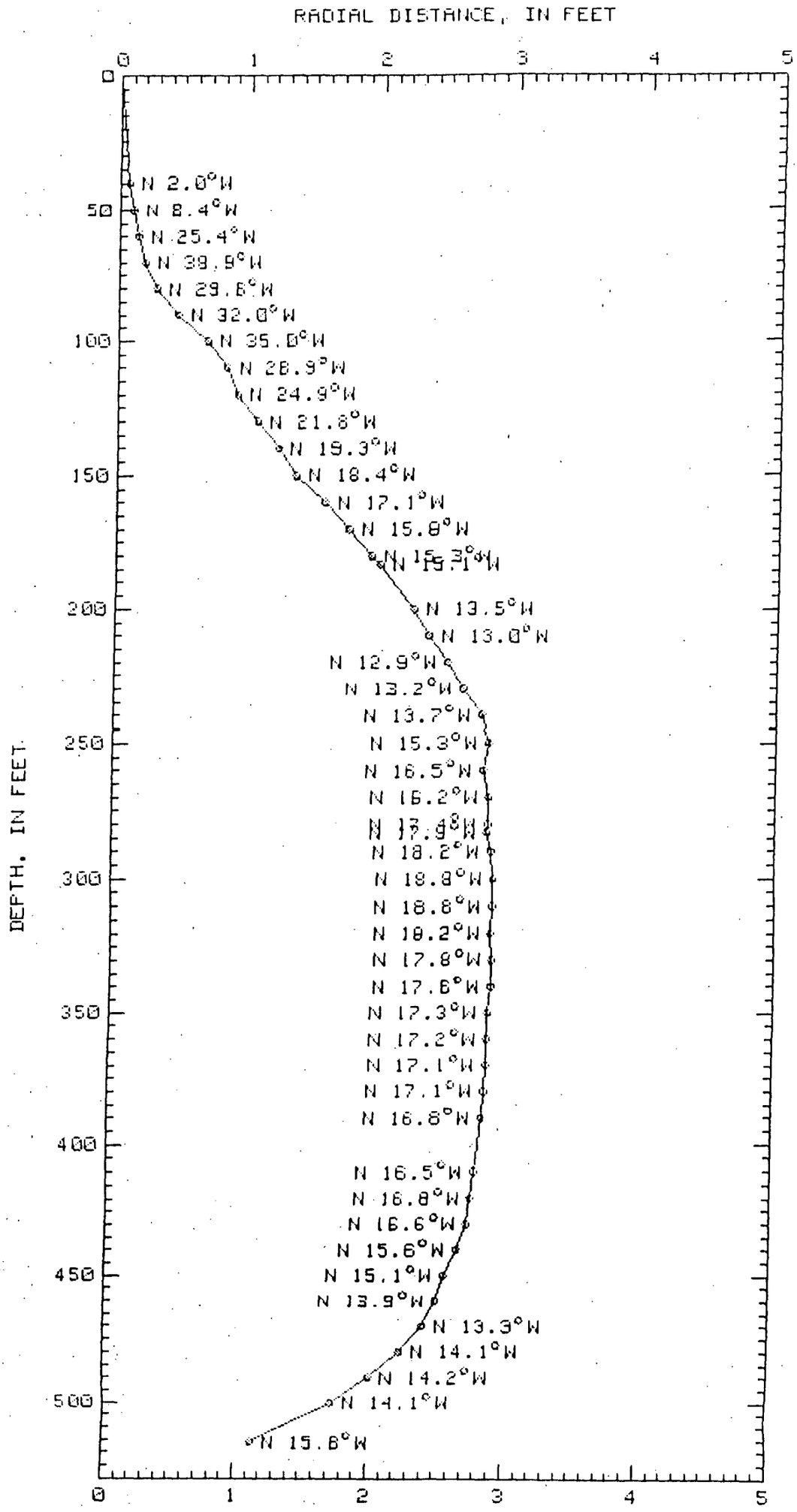
READING	DEPTH	INCL	AZIM
0	0.00	.1	358
1	40.00	.1	358
2	40.00	.7	137
3	50.00	.3	332
4	60.00	.4	279
5	70.00	.4	304
6	80.00	.9	8
7	90.00	1.4	297
8	100.00	1.4	341
9	110.00	.7	28
10	120.00	.6	346
11	130.00	1.3	360
12	140.00	.6	350
13	150.00	1.0	350
14	160.00	1.5	351
15	170.00	.7	6
16	180.00	1.3	341
17	183.00	1.3	360
18	200.00	.5	356
19	210.00	.8	355
20	220.00	.8	343
21	230.00	.6	341
22	240.00	1.0	333
23	250.00	.8	227
24	260.00	.1	118
25	270.00	.6	351
26	280.00	1.0	213
27	283.00	.4	319
28	290.00	.2	306
29	300.00	.2	275
30	310.00	.2	113
31	320.00	.2	64
32	330.00	.1	353
33	340.00	.2	122
34	350.00	.1	142
35	360.00	.1	8
36	370.00	.1	176
37	380.00	.1	147
38	390.00	.2	102
39	410.00	.2	198
40	420.00	.1	193
41	430.00	.3	121
42	440.00	.7	137
43	450.00	.4	173
44	460.00	.7	97
45	470.00	.9	189
46	480.00	1.1	169
47	490.00	1.5	165
48	500.00	1.7	165
49	516.00	2.6	172



Clackmas Geothemal Hole CTGH No. 1



25


RADIAL DISTANCE, IN FEET
0
1
2
3
4
5
DEPTH, IN FEET
0
50
100
150
200
250
300
350
400
450
500
N 2.0°W
N 8.4°W
N 25.4°W
N 38.9°W
N 29.8°W
N 32.0°W
N 35.0°W
N 28.9°W
N 24.9°W
N 21.8°W
N 19.3°W
N 18.4°W
N 17.1°W
N 15.8°W
N 15.3°W
N 15.1°W
N 13.5°W
N 13.0°W
N 12.9°W
N 13.2°W
N 13.7°W
N 15.3°W
N 16.5°W
N 16.2°W
N 17.8°W
N 18.2°W
N 18.8°W
N 18.8°W
N 18.2°W
N 17.8°W
N 17.8°W
N 17.3°W
N 17.2°W
N 17.1°W
N 17.1°W
N 16.8°W
N 16.5°W
N 16.8°W
N 16.6°W
N 15.6°W
N 15.1°W
N 13.9°W
N 13.3°W
N 14.1°W
N 14.2°W
N 14.1°W
N 15.8°W

POLYNOMIAL

DEGREE PATTERN

1

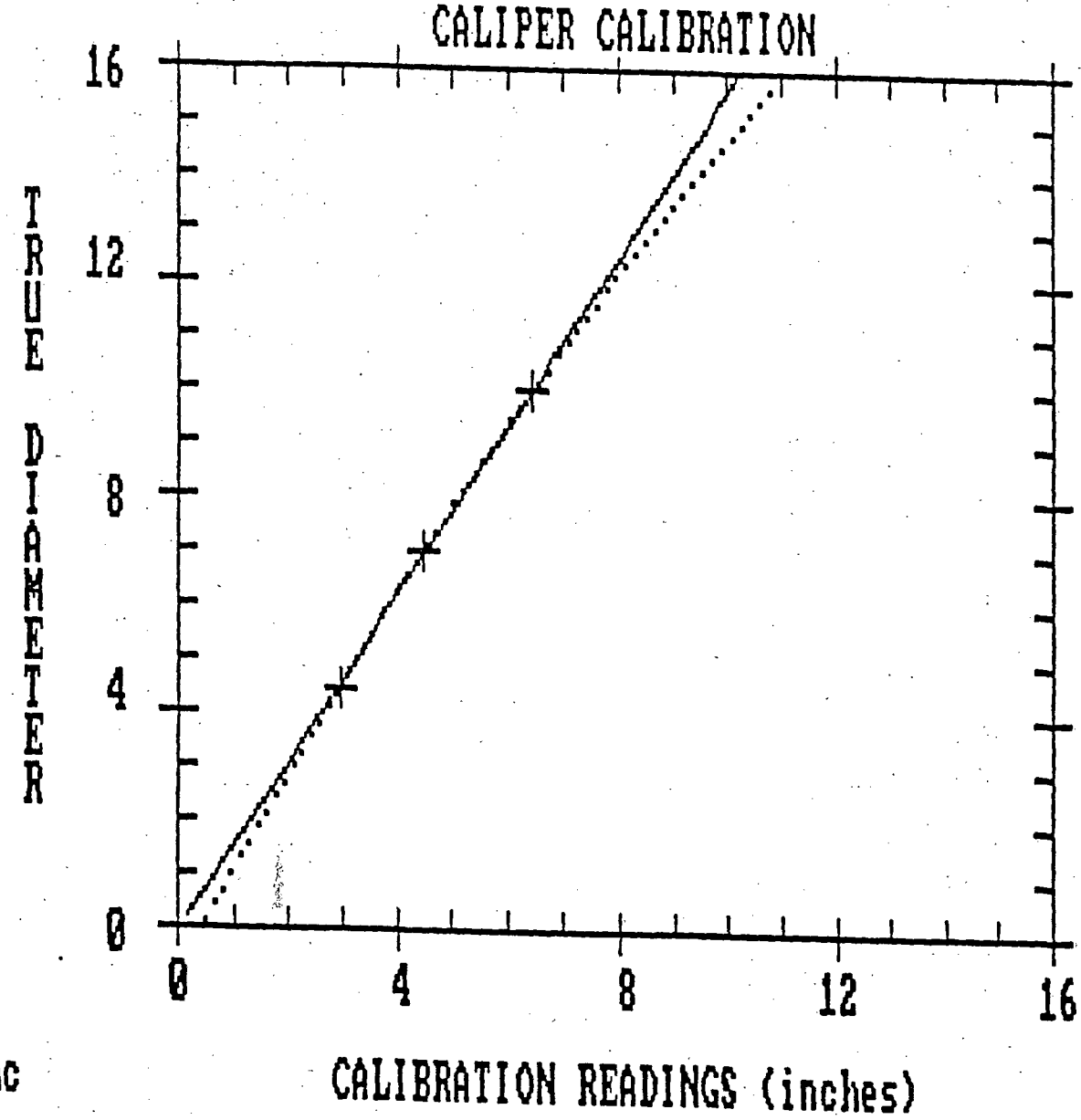
2

PLEASE SELECT DEGREE

(1 or 2)

D E F A U L T = 1

1

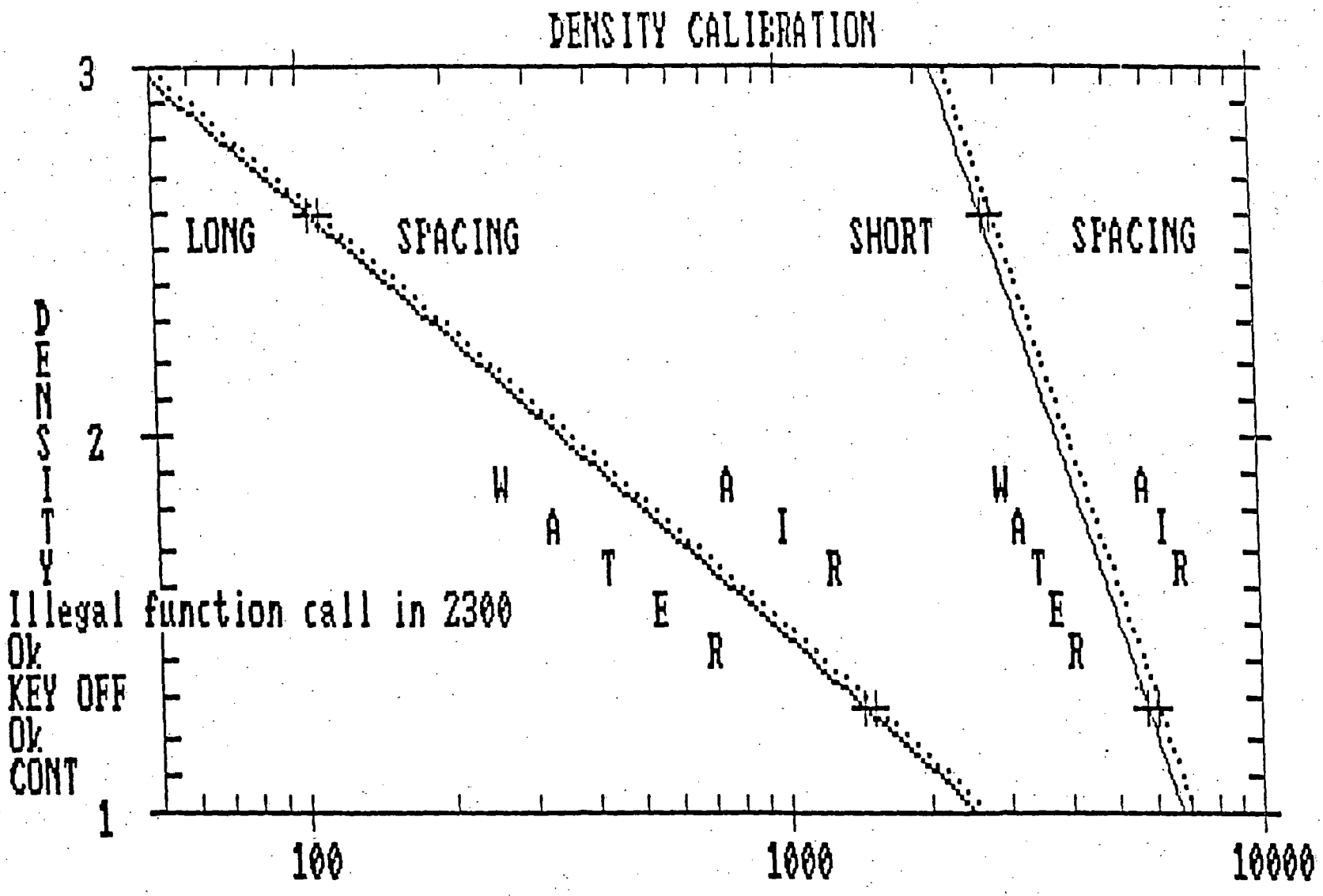


Input file c:ctghlggc.rmc

Hit any key to continue, but if you want a SCREEN DUMP hit PrtSc first.

SUMMARY OF PLOT INFORMATION NEEDED FOR GRAPHER

CLACKAMAS CTGH NO. 1 (REPEAT)



Illegal function call in 2300
Ok
KEY OFF
Ok
CONT

Hit any key to continue, but if you want a SCREEN DUMP hit PrtSc first.

CTaH-1

Ft. Depth	Ft/min speed	CPS Gamma	OHM-M Guard
509.5	11.5	190.158	25.0248
509.0	14.0	195.681	24.7535
508.5	15.7	224.055	29.9511
508.0	15.9	215.417	29.8523
507.5	16.1	232.697	28.8153
507.0	19.3	242.990	23.4127
506.5	20.1	239.967	23.1655
506.0	19.9	205.338	28.8145
505.5	19.8	229.621	29.1835
505.0	20.1	240.651	28.6645
504.5	20.1	230.452	37.9671
504.0	21.8	234.813	36.0798
503.5	23.6	241.080	30.2668
503.0	24.3	235.342	29.8753
502.5	24.8	234.200	26.6919
502.0	25.1	235.325	34.5304
501.5	24.7	224.530	23.9037
501.0	24.7	214.405	24.2861
500.5	24.7	213.777	24.7947
500.0	24.7	208.409	33.0119
499.5	24.7	213.572	20.9961
499.0	24.7	211.312	28.8307
498.5	24.7	201.993	17.6313
498.0	24.7	196.625	14.8896
497.5	24.7	176.121	25.3098
497.0	24.8	163.529	26.8908
496.5	24.7	154.423	28.1338
496.0	24.7	164.578	27.0911
495.5	24.8	162.137	27.5943
495.0	24.9	165.180	21.6793
494.5	24.5	160.727	19.4114
494.0	24.8	159.487	23.4683
493.5	24.8	158.864	22.8156
493.0	24.7	159.077	16.2324
492.5	24.5	158.150	27.7734
492.0	24.9	150.748	27.4086
491.5	24.8	151.461	29.7316
491.0	24.8	155.413	25.3528
490.5	24.7	155.396	28.0134
490.0	24.8	155.763	38.1356
489.5	24.7	161.341	34.9476
489.0	24.7	160.501	18.1279
488.5	24.8	185.800	26.2645
488.0	24.7	208.232	27.4919
487.5	24.9	213.593	22.9670
487.0	24.7	212.473	25.2143
486.5	25.1	218.249	29.2447
486.0	24.8	234.660	27.1631
485.5	24.8	234.318	38.2425
485.0	24.8	236.447	30.4003
484.5	24.8	237.872	21.3511
484.0	24.7	236.302	31.7183
483.5	24.3	238.277	28.2181
483.0	24.8	233.147	23.8998

482.5	24.9	233.737	24.3839
482.0	24.7	236.727	26.5459
481.5	24.7	223.452	38.5404
481.0	24.7	226.524	31.9076
480.5	24.8	220.580	22.9942
480.0	24.7	221.442	29.0627
479.5	24.5	221.839	25.4892
479.0	24.8	216.536	18.7330
478.5	24.8	215.916	33.4364
478.0	24.7	215.326	33.2489
477.5	24.9	213.888	24.0864
477.0	24.7	209.334	30.4363
476.5	24.7	203.522	28.4022
476.0	24.4	200.220	27.9141
475.5	24.7	206.399	28.7196
475.0	24.8	206.243	38.3941
474.5	24.5	196.555	24.1325
474.0	24.8	189.856	23.2442
473.5	24.7	183.874	25.5714
473.0	24.5	177.035	25.8484
472.5	24.5	165.941	22.1824
472.0	24.5	159.095	25.6071
471.5	24.9	156.346	23.6649
471.0	24.8	151.696	30.7666
470.5	24.5	140.537	34.4573
470.0	24.8	145.986	27.7988
469.5	24.8	144.450	33.1233
469.0	24.8	143.804	28.6299
468.5	24.4	145.416	27.6266
468.0	24.9	148.447	27.2248
467.5	24.9	152.923	28.2464
467.0	24.7	155.753	28.0043
466.5	24.8	147.481	21.7524
466.0	24.5	153.746	23.6889
465.5	24.8	158.562	26.3074
465.0	24.7	174.853	25.9849
464.5	25.1	173.231	28.0737
464.0	24.9	178.354	18.5874
463.5	24.5	194.876	30.2394
463.0	24.8	201.864	29.7332
462.5	24.9	205.007	29.4503
462.0	24.8	208.150	32.7389
461.5	24.5	207.218	22.6605
461.0	24.7	206.199	22.4719
460.5	24.8	206.328	28.6123
460.0	24.9	204.432	28.6509
459.5	24.4	203.793	23.1884
459.0	24.9	218.155	30.0467
458.5	24.7	232.023	30.0326
458.0	24.7	234.123	38.5151
457.5	24.5	235.677	33.7981
457.0	24.7	239.427	21.8086
456.5	25.1	244.870	31.2421
456.0	24.5	250.166	19.1284

455.5	24.9	265.902	25.4734
455.0	24.7	278.008	27.3267
454.5	24.5	285.739	21.2857
454.0	24.3	285.436	22.7328
453.5	24.7	276.934	28.3286
453.0	24.8	271.735	26.7023
452.5	24.4	266.689	27.1963
452.0	24.5	267.232	26.0285
451.5	24.7	256.531	29.0264
451.0	24.7	249.199	29.5060
450.5	24.5	256.452	25.7310
450.0	24.7	254.791	28.7017
449.5	24.5	240.676	27.1855
449.0	25.2	227.046	24.0724
448.5	25.1	216.472	21.2228
448.0	25.3	211.582	30.7846
447.5	25.3	207.833	22.7810
447.0	25.3	201.360	30.5992
446.5	24.9	195.766	16.1590
446.0	25.2	193.535	26.3673
445.5	25.5	190.095	24.7229
445.0	25.9	183.879	37.3491
444.5	25.5	178.455	21.2349
444.0	25.5	168.401	18.6094
443.5	25.3	147.715	29.2675
443.0	25.5	141.360	27.2665
442.5	25.2	150.720	24.9457
442.0	25.5	147.868	29.7240
441.5	25.5	145.381	21.0952
441.0	25.1	148.516	25.2292
440.5	25.3	146.311	18.0936
440.0	25.3	151.433	21.1972
439.5	25.3	151.847	16.4005
439.0	25.1	143.162	29.0425
438.5	25.1	135.241	25.6301
438.0	25.5	144.143	27.6418
437.5	25.3	147.856	29.2346
437.0	25.3	140.958	25.4349
436.5	25.2	142.807	26.3968
436.0	25.2	135.039	16.2417
435.5	25.2	137.543	26.4505
435.0	25.2	136.612	36.2166
434.5	25.3	137.871	35.6863
434.0	25.6	137.975	22.4611
433.5	25.1	135.471	20.3063
433.0	25.3	141.153	23.1680
432.5	25.1	137.343	24.6197
432.0	25.5	136.716	25.3345
431.5	25.1	143.213	29.1921
431.0	25.3	142.845	25.3122
430.5	25.5	136.535	22.7850
430.0	25.1	141.474	25.0182
429.5	25.3	135.339	31.3533
429.0	25.3	138.431	25.1235

428.5	25.5	138.970	31.9064
428.0	25.1	135.630	31.8218
427.5	25.1	132.963	23.9419
427.0	25.5	130.273	27.0522
426.5	25.6	135.322	25.3696
426.0	25.2	141.329	26.7472
425.5	25.2	144.401	20.6628
425.0	25.3	148.136	22.9865
424.5	25.3	150.572	31.2067
424.0	25.3	152.661	26.5275
423.5	25.1	152.912	24.9356
423.0	25.3	183.370	23.9051
422.5	25.3	202.371	27.2898
422.0	25.5	221.047	27.9164
421.5	25.3	226.646	33.0387
421.0	25.2	236.229	29.2172
420.5	25.2	243.608	20.2497
420.0	25.1	246.944	25.8242
419.5	25.5	249.200	32.7997
419.0	25.6	250.565	33.4206
418.5	25.3	253.637	27.0636
418.0	25.5	252.671	37.5626
417.5	25.3	252.697	33.7587
417.0	25.3	255.223	14.4386
416.5	25.1	250.931	26.8538
416.0	25.2	257.634	32.5036
415.5	25.5	267.666	33.1256
415.0	25.5	267.987	36.8066
414.5	25.1	265.393	25.4777
414.0	25.3	262.477	26.9074
413.5	25.1	247.945	23.1244
413.0	25.5	243.107	31.9668
412.5	25.1	245.293	23.5356
412.0	25.1	243.148	22.2698
411.5	25.7	242.686	39.6962
411.0	25.1	242.824	23.3175
410.5	25.5	242.044	26.3091
410.0	25.1	239.462	29.2129
409.5	25.3	235.289	27.4725
409.0	25.3	233.558	29.6760
408.5	25.2	231.505	32.7126
408.0	25.5	231.581	16.2964
407.5	25.3	240.873	25.8911
407.0	25.3	248.676	26.8971
406.5	25.3	250.171	23.0868
406.0	25.2	249.957	24.8330
405.5	25.3	246.548	27.9647
405.0	25.1	242.144	27.4273
404.5	25.5	236.751	27.0476
404.0	25.6	220.566	25.8859
403.5	25.2	196.657	26.0439
403.0	25.2	191.964	23.9158
402.5	25.3	204.501	25.6956
402.0	25.2	221.405	22.5583

401.5	25.3	215.225	18.4178
401.0	25.2	205.618	23.5472
400.5	25.5	197.799	23.1315
400.0	25.3	194.201	26.0462
399.5	25.2	180.191	28.6682
399.0	25.3	167.373	19.1078
398.5	25.2	158.093	30.9494
398.0	25.3	150.147	27.6962
397.5	25.1	143.626	23.0690
397.0	25.2	139.448	20.9041
396.5	25.7	136.842	34.3053
396.0	25.1	134.940	20.8786
395.5	25.1	128.830	22.6935
395.0	25.2	122.803	24.9938
394.5	25.2	120.642	18.0062
394.0	25.2	114.461	24.2592
393.5	25.2	107.795	23.0258
393.0	25.3	107.589	26.9815
392.5	25.7	112.319	22.8889
392.0	25.1	109.712	28.2631
391.5	25.3	111.816	28.7575
391.0	25.3	113.189	22.7253
390.5	25.2	112.996	19.4821
390.0	25.2	120.504	29.4118
389.5	25.1	139.122	32.5733
389.0	25.5	152.866	25.3054
388.5	25.3	157.260	30.5525
388.0	25.5	156.528	20.2233
387.5	25.3	141.215	20.1861
387.0	25.3	114.456	29.7644
386.5	25.3	99.739	22.7082
386.0	25.2	94.4599	23.6967
385.5	25.3	91.4041	28.8731
385.0	25.6	89.1285	27.8501
384.5	25.2	83.4598	21.0775
384.0	25.3	84.3121	24.9377
383.5	25.3	91.0595	27.8600
383.0	25.5	90.4786	21.9855
382.5	25.1	84.9235	18.0505
382.0	25.2	87.3748	27.8264
381.5	25.6	98.0325	24.8075
381.0	25.3	112.955	20.9680
380.5	25.2	109.261	21.9048
380.0	25.3	98.2973	26.8012
379.5	25.2	91.4485	20.9424
379.0	25.2	75.1170	19.5661
378.5	25.1	69.0520	26.7514
378.0	25.3	65.3367	15.7938
377.5	25.7	61.6971	32.1163
377.0	25.2	59.7668	30.8695
376.5	25.3	60.7015	27.1145
376.0	25.3	69.1733	25.4626
375.5	25.3	67.8952	30.7145
375.0	25.2	69.4338	19.5213

374.5	25.2	69.5456	19.2485
374.0	25.3	65.2405	31.8246
373.5	25.3	77.8784	28.8438
373.0	25.3	81.6274	27.5269
372.5	25.2	77.9712	24.6154
372.0	25.3	88.1099	23.8826
371.5	25.1	98.4968	27.6899
371.0	25.1	102.433	20.4203
370.5	25.5	95.9912	29.6008
370.0	25.6	99.885	20.4190
369.5	25.3	100.470	14.5725
369.0	25.2	96.3988	26.3292
368.5	25.3	84.6013	30.4321
368.0	25.5	83.8474	23.4619
367.5	25.2	96.6312	24.9839
367.0	25.2	108.787	21.0013
366.5	25.3	128.493	18.2815
366.0	25.6	133.815	24.9398
365.5	25.2	133.983	27.9441
365.0	25.2	138.168	19.7628
364.5	25.2	141.613	22.6441
364.0	25.3	147.598	20.0873
363.5	25.2	149.091	26.6978
363.0	25.5	133.432	26.3223
362.5	25.7	123.763	23.6887
362.0	25.2	120.430	31.1904
361.5	25.6	118.676	19.6229
361.0	25.3	124.131	17.3899
360.5	25.5	122.873	23.0868
360.0	25.2	123.445	27.0750
359.5	25.1	128.149	24.4927
359.0	25.3	133.208	29.0949
358.5	25.7	146.859	29.6684
358.0	25.3	148.521	27.6590
357.5	25.5	139.427	20.1560
357.0	25.3	129.495	29.8339
356.5	25.3	123.278	23.2438
356.0	25.2	124.088	29.0186
355.5	25.1	127.168	23.7994
355.0	25.7	133.523	26.8839
354.5	25.2	133.055	20.4569
354.0	25.6	134.018	15.4044
353.5	25.3	126.506	24.4456
353.0	25.3	121.251	13.7775
352.5	25.2	119.134	20.9890
352.0	25.1	118.056	10.4167
351.5	25.6	116.804	28.8487
351.0	25.5	115.593	29.1691
350.5	25.3	114.434	32.9544
350.0	25.6	113.364	22.7273
349.5	25.3	114.276	30.2496
349.0	25.3	118.052	25.5867
348.5	25.2	122.660	25.0627
348.0	25.5	126.898	30.8880

347.5	25.7	128.293	21.0748
347.0	25.6	129.222	24.6305
346.5	25.6	133.830	14.2540
346.0	25.3	134.507	27.2887
345.5	25.3	134.835	19.6279
345.0	25.6	133.834	19.1939
344.5	25.2	134.426	32.3064
344.0	25.5	141.431	26.9121
343.5	25.7	145.300	21.9241
343.0	25.5	148.394	28.1114
342.5	25.6	148.200	26.9432
342.0	25.2	141.635	17.1057
341.5	25.3	139.150	31.5861
341.0	25.1	154.730	21.7562
340.5	25.3	161.806	24.2346
340.0	25.6	157.895	27.5648
339.5	25.3	154.440	30.3846
339.0	25.6	151.341	25.7821
338.5	25.5	150.082	26.6163
338.0	25.3	149.584	26.3461
337.5	25.3	148.304	26.6186
337.0	25.2	151.470	25.4641
336.5	25.6	162.056	26.7714
336.0	25.7	172.268	32.6264
335.5	25.2	186.296	20.4516
335.0	25.5	197.692	23.4314
334.5	25.6	204.500	35.6181
334.0	25.5	198.841	32.9927
333.5	25.5	187.119	22.6284
333.0	25.1	182.852	29.4811
332.5	25.7	181.467	20.6115
332.0	25.6	182.125	18.9098
331.5	25.6	183.556	26.6046
331.0	25.3	191.833	25.2411
330.5	25.2	201.710	22.8542
330.0	25.5	206.265	31.4846
329.5	25.2	206.885	24.7103
329.0	25.5	203.828	25.3474
328.5	25.6	205.944	16.7912
328.0	25.3	209.617	24.7872
327.5	25.5	212.386	24.0178
327.0	25.5	211.695	23.8875
326.5	25.5	206.812	25.3550
326.0	25.2	201.363	29.7151
325.5	25.2	200.094	28.2375
325.0	25.5	203.323	28.8613
324.5	25.7	202.183	23.7676
324.0	25.5	197.755	27.6382
323.5	25.5	188.384	23.1654
323.0	25.3	183.944	22.6282
322.5	25.3	171.436	28.0899
322.0	25.1	176.581	22.9768
321.5	25.2	173.614	18.9484
321.0	25.7	173.733	24.7306

320.5	25.2	170.198	21.3602
320.0	25.6	167.001	29.6348
319.5	25.3	151.415	26.7296
319.0	25.2	146.294	27.0133
318.5	25.2	144.759	23.4885
318.0	25.1	136.743	19.1371
317.5	25.3	131.780	33.8519
317.0	25.3	133.509	21.2730
316.5	25.3	128.956	22.6678
316.0	25.3	129.574	23.3938
315.5	25.3	130.403	31.3402
315.0	25.3	129.085	23.9521
314.5	24.9	125.741	30.0791
314.0	25.3	126.327	28.0374
313.5	25.5	129.063	29.8717
313.0	25.1	131.347	24.4402
312.5	25.3	142.265	23.8011
312.0	25.3	143.121	23.5314
311.5	25.3	152.045	24.0117
311.0	25.3	154.113	20.9914
310.5	25.2	161.820	21.7014
310.0	25.5	164.379	25.4194
309.5	25.5	153.063	21.0637
309.0	25.3	149.302	31.5457
308.5	25.2	151.266	29.2113
308.0	25.3	156.053	23.0493
307.5	25.5	155.101	28.7381
307.0	25.1	156.388	28.9482
306.5	25.6	151.925	27.1901
306.0	25.7	153.616	29.0672
305.5	25.2	160.728	23.1819
305.0	25.3	164.551	19.8350
304.5	25.3	157.209	24.1463
304.0	25.3	157.285	24.0261
303.5	25.1	156.861	33.3187
303.0	25.3	148.087	36.2148
302.5	25.5	162.828	26.4415
302.0	25.5	200.511	23.7760
301.5	25.3	208.177	30.5117
301.0	25.2	211.341	24.9833
300.5	25.2	209.471	28.7711
300.0	25.2	211.009	22.0863
299.5	24.9	218.597	28.4115
299.0	25.2	214.042	14.4853
298.5	25.5	217.827	34.4358
298.0	25.3	223.498	26.0892
297.5	25.5	219.653	27.1072
297.0	25.2	228.138	23.8011
296.5	25.2	236.811	29.1775
296.0	25.2	230.980	24.8735
295.5	25.1	230.840	25.8808
295.0	25.3	235.910	25.7389
294.5	25.5	237.680	27.4216
294.0	25.5	239.114	22.0694

293.5	25.3	229.042	21.0452
293.0	25.1	227.504	28.0136
292.5	25.2	222.971	26.7835
292.0	24.8	216.861	25.7005
291.5	25.3	221.045	29.4390
291.0	25.6	223.235	23.0048
290.5	25.2	222.177	20.1613
290.0	25.1	222.532	29.6033
289.5	25.2	218.844	25.6959
289.0	25.2	212.794	23.0027
288.5	25.3	215.766	31.2949
288.0	25.2	204.126	24.2718
287.5	25.6	192.346	19.7109
287.0	25.5	179.706	23.0619
286.5	25.3	167.515	31.0693
286.0	25.2	168.409	23.9444
285.5	25.1	170.453	14.7390
285.0	25.3	162.457	19.2257
284.5	25.2	147.165	25.9653
284.0	25.2	130.476	31.9208
283.5	25.6	125.476	17.7085
283.0	25.2	124.157	19.0213
282.5	25.5	121.843	29.1121
282.0	25.3	121.575	22.2346
281.5	25.5	117.652	13.7705
281.0	25.3	114.865	19.6716
280.5	25.1	114.130	23.5492
280.0	25.6	113.578	20.7848
279.5	25.6	113.079	28.3773
279.0	25.3	114.939	34.8827
278.5	25.3	110.394	24.9527
278.0	25.2	112.925	26.4242
277.5	25.3	120.612	18.8020
277.0	25.2	124.340	35.2142
276.5	25.2	118.970	17.6189
276.0	25.7	116.768	21.3599
275.5	25.2	119.381	24.1682
275.0	25.5	118.851	20.3891
274.5	25.3	134.849	29.3151
274.0	25.2	133.634	30.1104
273.5	25.3	139.317	18.1159
273.0	25.2	148.920	29.4142
272.5	25.5	152.458	31.7979
272.0	25.5	137.276	14.0166
271.5	25.2	127.762	17.3611
271.0	25.2	128.306	23.0336
270.5	25.3	119.717	27.7579
270.0	25.3	117.514	26.0395
269.5	24.9	115.233	24.1410
269.0	25.1	108.674	34.5904
268.5	25.5	120.504	24.8646
268.0	25.2	110.325	17.9043
267.5	25.3	109.261	21.4082
267.0	25.2	113.658	25.2767

266.5	25.2	116.313	26.7311
266.0	25.2	104.628	19.4224
265.5	25.1	109.325	22.7433
265.0	25.2	124.583	16.6798
264.5	25.7	125.865	22.2165
264.0	25.1	111.320	24.7948
263.5	25.2	121.714	22.7830
263.0	25.3	119.140	23.0800
262.5	25.3	116.297	18.1850
262.0	25.1	114.543	22.0619
261.5	25.2	113.989	23.8541
261.0	25.6	116.688	15.4824
260.5	25.3	120.567	24.9034
260.0	25.3	123.014	35.9562
259.5	25.3	119.916	32.3625
259.0	25.2	122.128	19.1449
258.5	25.2	146.952	26.8422
258.0	25.2	143.516	26.4663
257.5	25.3	131.950	22.1051
257.0	25.7	132.389	20.3550
256.5	25.2	132.105	23.1442
256.0	25.2	146.539	22.7407
255.5	25.3	159.536	24.5981
255.0	25.5	150.775	30.5245
254.5	25.1	159.767	23.4823
254.0	25.1	164.675	27.5150
253.5	25.3	167.151	23.9419
253.0	25.2	163.491	19.9283
252.5	25.7	147.603	29.2624
252.0	25.3	138.704	22.4972
251.5	25.3	129.493	27.5150
251.0	25.3	122.430	19.4602
250.5	25.1	117.994	25.8440
250.0	25.3	119.299	18.7186
249.5	25.7	117.021	19.3424
249.0	25.3	110.329	20.9433
248.5	25.3	108.962	24.7995
248.0	25.5	110.035	22.2832
247.5	25.3	105.825	19.9670
247.0	25.1	103.469	17.0039
246.5	25.1	107.232	23.2242
246.0	25.6	106.690	15.6386
245.5	25.3	105.268	18.0459
245.0	25.6	105.250	16.2449
244.5	25.2	106.009	19.8965
244.0	25.3	103.341	23.2518
243.5	25.2	102.902	21.2784
243.0	25.2	105.986	19.2543
242.5	25.3	109.193	23.2820
242.0	25.7	104.488	21.6600
241.5	25.3	101.930	15.5092
241.0	25.5	101.431	17.9902
240.5	25.2	101.598	16.6945
240.0	25.3	102.202	24.9484

239.5	25.1	102.330	15.2491
239.0	25.2	95.1036	15.4083
238.5	25.6	95.3437	20.3973
238.0	25.2	91.4513	27.8330
237.5	25.6	99.3195	25.8420
237.0	25.1	94.8276	17.2414
236.5	25.5	105.071	22.0826
236.0	25.3	102.773	20.3269
235.5	25.1	98.7110	19.0328
235.0	25.5	103.445	20.4673
234.5	25.7	102.946	25.2789
234.0	25.2	102.616	26.6332
233.5	25.2	103.291	16.6740
233.0	25.3	110.400	21.3438
232.5	25.3	110.422	21.5499
232.0	25.2	105.635	20.0674
231.5	25.1	108.311	14.4755
231.0	25.5	107.598	19.2140
230.5	25.5	106.127	22.8230
230.0	25.2	100.529	23.2297
229.5	25.3	100.398	23.3867
229.0	25.3	108.454	18.9231
228.5	25.3	113.324	22.2222
228.0	25.1	113.741	29.3907
227.5	25.3	119.445	24.9742
227.0	25.6	124.161	25.4777
226.5	25.2	124.056	24.0385
226.0	25.6	123.783	16.6667
225.5	25.5	122.592	17.8833
225.0	25.3	125.342	21.4023
224.5	25.2	122.517	23.2138
224.0	25.2	125.368	22.6853
223.5	25.5	131.634	27.4238
223.0	25.2	126.767	22.8484
222.5	25.5	129.429	30.4960
222.0	25.2	132.991	27.3855
221.5	25.3	140.174	27.0636
221.0	25.3	138.233	18.0273
220.5	25.2	156.824	33.7750
220.0	25.3	148.525	40.6883
219.5	25.7	147.697	28.4345
219.0	25.2	162.499	19.9014
218.5	25.2	185.476	18.7970
218.0	25.5	176.909	31.7134
217.5	25.6	171.856	22.7642
217.0	25.2	182.416	29.8737
216.5	25.2	193.297	25.7158
216.0	25.6	191.714	37.2572
215.5	25.3	192.729	26.9884
215.0	25.3	186.087	22.3579
214.5	25.5	180.092	31.3719
214.0	25.5	172.682	21.5834
213.5	25.3	161.025	27.3973
213.0	24.9	151.703	23.0800

212.5	25.2	149.629	27.5815
212.0	25.5	143.787	20.8388
211.5	25.2	141.913	24.5700
211.0	25.5	139.085	22.7476
210.5	25.5	143.185	20.4186
210.0	25.5	142.161	26.9659
209.5	25.3	130.304	23.1919
209.0	25.2	131.539	20.7006
208.5	25.5	128.552	21.5257
208.0	26.1	115.897	25.0223
207.5	25.9	120.751	25.4950
207.0	25.9	124.843	20.0955
206.5	25.9	123.615	20.7756
206.0	26.0	122.722	28.1715
205.5	25.6	119.878	17.9324
205.0	25.7	119.344	27.6221
204.5	26.1	116.564	27.7107
204.0	25.6	113.550	23.8053
203.5	26.1	108.200	28.8210
203.0	25.9	113.961	24.8437
202.5	25.9	116.325	21.6587
202.0	25.7	119.888	29.6451
201.5	25.7	122.805	25.4565
201.0	26.0	128.798	29.9529
200.5	26.5	128.277	37.3293
200.0	25.7	132.160	29.7775
199.5	25.7	132.084	19.9601
199.0	26.1	132.572	20.8560
198.5	26.1	159.845	26.4092
198.0	25.7	186.187	22.6853
197.5	25.6	189.400	24.8161
197.0	26.0	183.916	14.9740
196.5	26.2	189.056	23.8663
196.0	25.9	194.389	25.1082
195.5	25.7	197.641	23.9404
195.0	26.0	165.481	27.4348
194.5	26.0	140.273	31.1343
194.0	25.6	136.082	36.1508
193.5	25.9	131.849	21.4535
193.0	26.4	126.140	17.5439
192.5	25.3	119.097	22.2534
192.0	25.1	120.704	26.5025
191.5	25.2	124.905	21.8690
191.0	25.3	120.988	25.8153
190.5	25.1	120.139	19.7597
190.0	25.1	120.720	21.2898
189.5	25.2	120.601	15.8452
189.0	25.6	115.627	15.3374
188.5	25.2	110.639	28.3236
188.0	25.3	111.810	28.2144
187.5	25.3	123.067	28.7405
187.0	25.3	124.978	25.0475
186.5	25.2	125.313	27.6362
186.0	25.1	122.041	28.6967

185.5	25.3	128.022	26.0242
185.0	25.3	123.740	23.9112
184.5	25.3	116.335	18.7333
184.0	25.3	120.951	22.3392
183.5	25.2	134.911	26.0089
183.0	25.2	126.882	22.1356
182.5	25.2	128.373	30.0739
182.0	25.3	153.031	23.7379
181.5	25.5	165.935	19.8054
181.0	25.3	165.462	28.3944
180.5	25.5	143.830	22.1408
180.0	25.1	134.554	19.2678
179.5	25.5	134.837	28.8307
179.0	25.3	150.129	27.5360
178.5	25.1	162.307	18.4440
178.0	25.3	173.543	21.5037
177.5	25.6	170.308	13.8181
177.0	25.2	162.087	26.8701
176.5	25.2	153.255	18.7954
176.0	25.3	132.776	22.4003
175.5	25.5	122.929	16.6442
175.0	25.2	124.140	26.6713
174.5	25.1	118.286	17.2444
174.0	25.6	113.584	23.7853
173.5	25.5	110.823	16.9999
173.0	25.2	110.245	17.3205
172.5	25.2	112.059	29.8711
172.0	25.2	99.797	21.9910
171.5	25.2	95.7583	20.7303
171.0	24.9	95.3122	25.0822
170.5	25.2	94.1370	20.7846
170.0	25.5	91.0302	18.3211
169.5	25.3	94.0939	17.6426
169.0	25.3	94.0769	27.8481
168.5	25.1	95.5398	31.6754
168.0	25.3	93.9683	17.8906
167.5	25.5	94.2081	17.6240
167.0	25.1	97.7678	24.2277
166.5	25.3	97.7732	20.4761
166.0	25.5	91.7920	24.9248
165.5	25.2	91.6667	26.9630
165.0	25.5	94.4936	23.1939
164.5	25.3	96.2173	25.3850
164.0	25.3	97.2342	22.4719
163.5	25.3	112.011	27.5719
163.0	25.2	111.656	34.0271
162.5	25.2	115.931	28.4042
162.0	25.6	119.025	25.0670
161.5	25.2	127.237	20.4516
161.0	25.3	130.269	25.0850
160.5	25.1	138.259	22.0807
160.0	25.5	137.806	18.2007
159.5	25.2	171.238	31.3188
159.0	25.1	186.356	20.5047

158.5	25.5	186.119	24.0819
158.0	25.5	188.561	27.5648
157.5	25.5	186.451	27.2384
157.0	25.2	179.231	18.8650
156.5	25.3	167.035	23.8014
156.0	25.3	154.312	19.9169
155.5	24.9	146.221	20.8514
155.0	25.2	131.796	18.4162
154.5	25.6	126.774	13.8444
154.0	25.2	133.076	29.4044
153.5	25.2	133.951	20.2822
153.0	25.2	130.094	21.4048
152.5	25.3	128.615	19.0602
152.0	25.2	116.977	22.7651
151.5	25.1	120.572	27.0483
151.0	25.5	115.250	22.4514
150.5	25.6	116.150	29.0167
150.0	25.2	116.081	24.9914
149.5	25.2	114.618	18.6646
149.0	25.2	132.413	30.3899
148.5	25.5	164.557	15.4381
148.0	25.2	163.475	19.6850
147.5	24.9	158.745	28.4495
147.0	25.6	165.766	20.9169
146.5	25.3	168.314	23.1223
146.0	25.2	160.190	21.5889
145.5	25.1	165.490	22.9729
145.0	25.2	165.955	17.4231
144.5	25.3	171.876	19.7832
144.0	24.9	166.823	23.9051
143.5	25.2	159.777	21.9354
143.0	25.6	141.496	19.2274
142.5	25.2	124.960	32.1880
142.0	25.3	120.642	19.8481
141.5	25.3	116.584	13.6356
141.0	25.3	115.375	17.3626
140.5	25.3	118.063	17.4909
140.0	25.1	123.224	17.8723
139.5	25.1	132.600	22.8330
139.0	25.5	154.511	27.0766
138.5	25.3	148.787	18.1238
138.0	25.5	136.793	17.9241
137.5	25.2	136.062	17.4332
137.0	25.2	116.633	28.7231
136.5	25.2	122.753	27.2596
136.0	25.1	116.204	27.3422
135.5	25.6	119.874	25.5232
135.0	25.5	126.257	28.1138
134.5	25.2	126.973	30.3556
134.0	25.2	136.389	28.3470
133.5	25.3	139.785	20.1613
133.0	25.3	133.900	21.2540
132.5	25.2	143.179	27.5023
132.0	25.1	194.805	26.1352

131.5	25.5	210.286	32.6825
131.0	25.3	221.282	19.8498
130.5	25.5	225.311	27.2921
130.0	25.5	224.874	19.5472
129.5	25.3	222.127	23.9952
129.0	25.2	220.562	16.9794
128.5	25.1	214.440	19.8413
128.0	25.2	206.561	28.0505
127.5	25.7	189.069	24.1114
127.0	25.2	183.562	17.6664
126.5	25.3	180.749	24.7250
126.0	25.3	188.783	20.9662
125.5	25.2	193.418	20.9711
125.0	25.2	191.571	17.8072
124.5	25.1	175.842	14.6463
124.0	25.6	159.300	24.2676
123.5	25.5	163.051	19.2108
123.0	25.2	149.052	25.9673
122.5	25.5	139.233	25.6257
122.0	25.5	132.753	26.1301
121.5	25.3	123.678	21.4729
121.0	24.9	120.534	17.5577
120.5	25.2	114.926	21.8267
120.0	25.6	109.149	23.4823
119.5	25.3	103.540	21.7707
119.0	25.3	104.554	15.6440
118.5	25.5	89.7828	20.3631
118.0	25.3	95.4839	17.2043
117.5	25.1	100.096	23.2223
117.0	25.1	94.3476	17.6902
116.5	25.2	90.2120	21.5387
116.0	25.5	101.473	19.8122
115.5	25.2	106.781	28.9273
115.0	25.3	98.0155	18.9819
114.5	25.2	99.1506	14.7339
114.0	25.3	98.5230	22.1976
113.5	25.1	98.0475	16.9033
113.0	24.9	96.5804	23.2242
112.5	25.3	98.5183	20.7972
112.0	25.5	97.8176	19.1288
111.5	25.3	95.9097	17.4230
111.0	25.2	103.564	21.3027
110.5	25.3	105.729	17.3611
110.0	25.3	108.619	13.7492
109.5	25.1	113.177	21.2260
109.0	25.2	116.520	22.7701
108.5	25.6	126.118	16.9946
108.0	25.5	132.962	14.7929
107.5	25.3	143.014	20.2497
107.0	25.2	161.812	25.0809
106.5	25.3	172.396	16.5347
106.0	25.3	149.244	16.7126
105.5	25.2	139.846	20.9900
105.0	25.2	139.664	28.1418

104.5	25.6	143.211	24.7800
104.0	25.3	164.921	21.8150
103.5	25.5	147.121	24.5909
103.0	25.3	136.123	24.4200
102.5	25.2	138.039	18.6425
102.0	25.3	133.456	21.0582
101.5	25.1	129.360	14.2893
101.0	25.5	128.445	14.5960
100.5	25.5	133.655	23.3494
100.0	25.2	149.411	23.1979
99.5	25.3	152.226	23.3000
99.0	25.3	168.028	12.7616
98.5	25.5	167.535	25.2484
98.0	25.2	156.301	17.2995
97.5	25.1	157.073	15.3492
97.0	25.6	144.808	30.4401
96.5	25.6	123.067	14.9125
96.0	25.5	116.271	25.8975
95.5	25.5	114.857	26.0658
95.0	25.3	113.396	15.3584
94.5	25.2	111.720	26.1909
94.0	25.1	103.219	24.3759
93.5	25.3	103.120	22.2889
93.0	25.7	102.360	22.7273
92.5	25.5	99.983	14.0484
92.0	25.5	105.510	13.6682
91.5	25.3	113.363	17.3205
91.0	25.3	128.214	26.9746
90.5	25.1	151.186	23.3213
90.0	24.9	153.755	20.2515
89.5	25.3	158.281	29.8966
89.0	25.6	135.890	30.6480
88.5	25.1	130.126	21.9048
88.0	25.3	125.187	22.8598
87.5	25.2	114.810	19.1205
87.0	25.5	115.754	27.1762
86.5	25.1	115.199	27.5719
86.0	25.1	120.202	24.0404
85.5	25.5	165.950	21.4850
85.0	25.3	196.776	24.6631
84.5	25.3	212.739	25.5820
84.0	25.5	218.994	23.0855
83.5	25.2	221.453	18.1661
83.0	25.5	237.975	19.1005
82.5	25.1	231.859	17.9288
82.0	25.2	226.390	19.8208
81.5	25.6	233.252	20.8805
81.0	25.3	227.428	20.5585
80.5	25.7	225.533	29.7099
80.0	25.5	213.818	17.3515
79.5	25.5	182.980	14.0081
79.0	25.5	145.747	17.3611
78.5	25.2	125.000	11.6589
78.0	25.7	114.220	21.4575

77.5	25.7	108.663	18.4324
77.0	25.1	107.871	24.9462
76.5	25.3	107.719	15.8800
76.0	25.6	100.606	17.9349
75.5	25.5	97.4371	23.0104
75.0	25.5	101.388	22.5518
74.5	25.2	98.1472	13.1085
74.0	25.6	97.9297	18.8987
73.5	25.9	100.744	19.8495
73.0	25.2	101.709	12.6925
72.5	25.6	99.3246	19.0493
72.0	25.5	99.1349	25.6003
71.5	25.5	102.342	23.9641
71.0	25.2	103.079	18.4227
70.5	25.2	100.421	20.1914
70.0	25.6	109.082	19.6313
69.5	25.5	114.064	17.1695
69.0	25.5	108.312	23.1362
68.5	25.3	111.304	15.6399
68.0	25.3	111.092	11.1521
67.5	25.3	117.680	20.2741
67.0	24.9	119.631	11.3270
66.5	25.3	122.444	20.1140
66.0	25.7	116.196	21.7922
65.5	25.1	115.661	18.5379
65.0	25.7	108.547	26.3273
64.5	25.6	104.364	20.0366
64.0	25.5	112.559	16.4005
63.5	25.2	112.981	29.7543
63.0	25.3	117.418	23.8152
62.5	25.5	119.151	11.3063
62.0	26.0	116.428	22.7432
61.5	25.2	129.730	23.6510
61.0	25.5	132.816	11.8727
60.5	25.5	140.950	21.0748
60.0	25.3	158.408	17.6382
59.5	25.5	177.333	20.3019
59.0	25.2	187.701	22.7469
58.5	25.5	191.160	27.6793
58.0	25.6	192.653	22.6856
57.5	25.3	192.166	22.7830
57.0	25.5	188.394	30.0691
56.5	25.1	185.192	20.4726
56.0	25.3	191.957	29.8202
55.5	25.2	189.379	19.9896
55.0	25.2	185.401	23.4173
54.5	25.7	207.930	21.2898
54.0	25.3	189.765	25.0259
53.5	25.5	168.051	29.9786
53.0	25.5	144.891	23.0616
52.5	25.5	122.407	21.5183
52.0	25.3	119.393	22.3023
51.5	25.2	120.802	29.6083
51.0	25.5	118.286	23.1605

50.5	25.7	114.251	28.5016
50.0	25.3	114.533	22.4913
49.5	25.5	124.799	21.1667
49.0	25.5	129.779	30.6910
48.5	25.5	126.029	14.2495
48.0	25.6	131.757	19.3356
47.5	25.2	131.570	24.7440
47.0	25.6	134.724	17.3837
46.5	25.9	149.015	17.7591
46.0	25.3	137.922	28.7138
45.5	25.5	152.657	22.8371
45.0	25.5	149.803	24.0096
44.5	25.3	136.498	22.9546
44.0	25.2	136.411	28.4189
43.5	25.3	140.276	28.2607
43.0	25.7	147.721	33.8782
42.5	25.5	153.114	30.8900
42.0	25.5	146.653	23.5433
41.5	25.3	144.373	28.4777
41.0	25.6	175.800	19.4449
40.5	25.3	191.663	23.0250
40.0	25.3	190.029	20.6647
39.5	25.3	188.121	21.4261
39.0	25.6	228.189	23.9638
38.5	25.3	259.810	17.8374
38.0	25.3	228.583	22.7994
37.5	25.5	224.027	24.6557
37.0	25.6	218.853	21.2823
36.5	25.5	215.899	13.7955
36.0	25.2	212.095	16.0205
35.5	25.3	200.831	15.5817
35.0	25.7	189.640	15.5655
34.5	25.2	142.759	21.3730
34.0	25.7	92.7033	10.6461
33.5	25.3	76.6009	14.8316
33.0	25.5	69.0759	10.9511
32.5	25.5	83.2045	17.1733
32.0	25.3	82.1394	17.5117
31.5	25.7	33.2563	12.4489
31.0	25.6	44.5017	21.4795
30.5	25.3	38.4881	25.0259
30.0	25.5	37.4979	22.2515
29.5	25.5	38.4515	23.4355
29.0	25.5	39.3788	18.6694
28.5	25.1	38.7664	21.5369
28.0	25.2	39.0244	23.5772
27.5	25.9	38.1204	14.4977
27.0	25.5	40.8092	15.6277
26.5	25.3	39.5308	12.1633
26.0	25.6	41.7131	17.9872
25.5	25.5	41.2050	11.4924
25.0	25.6	42.6164	13.9726
24.5	25.2	44.0592	12.6839
24.0	25.3	42.5642	9.5164

23.5	26.0	43.2059	14.6461
23.0	25.3	44.6559	7.71407
22.5	25.7	43.7944	15.5790
22.0	25.5	44.1484	11.3201
21.5	25.5	45.3262	15.3226
21.0	25.5	48.0655	14.4878
20.5	25.3	48.9380	16.1427
20.0	25.6	268.479	13.4553
19.5	25.6	428.628	17.4936
19.0	25.3	407.535	17.2429
18.5	25.6	389.010	10.4502
18.0	25.5	1239.68	14.8731
17.5	25.3	2388.42	10.2946
17.0	24.9	2503.29	17.1072
16.5	25.2	2458.75	9.6339
16.0	25.7	2442.58	19.6665
15.5	25.5	2641.09	15.6417
15.0	25.3	2004.59	16.1482
14.5	25.5	1579.92	16.3737
14.0	25.3	2546.20	14.0425
13.5	25.3	2762.82	17.0634
13.0	25.1	2703.38	17.4354
12.5	25.2	2329.68	13.7186
12.0	25.6	12192.6	16.3272
11.5	24.9	14860.5	16.7062
11.0	25.5	14867.3	20.9037
10.5	25.3	14867.3	16.0310
10.0	25.3	14870.7	10.2669
9.5	25.5	14870.7	22.0985
9.0	25.1	14867.3	15.9426
8.5	25.5	14867.3	12.9199
8.0	25.9	14870.7	15.4839
7.5	25.1	14870.7	15.2014
7.0	25.5	14867.3	11.3535
6.5	25.1	14870.7	16.9463
6.0	25.2	14867.3	19.8687
5.5	25.1	14867.3	18.3808
5.0	24.7	14870.7	18.2760
150.0	0.0	116.237	27.6194
150.0	0.0	116.118	21.1230
150.0	0.0	115.525	23.4687
149.5	14.3	117.165	27.1361
149.0	19.4	163.936	24.3841
148.5	21.8	164.994	28.2828
148.0	21.9	161.725	19.1527
147.5	24.0	163.326	22.5330
147.0	24.8	168.364	18.5201
146.5	24.4	163.301	23.0561
146.0	24.4	165.990	16.2324
145.5	24.5	164.962	22.2699
145.0	24.4	170.093	25.2738
144.5	24.4	168.510	29.6019
144.0	24.5	162.448	15.9758
143.5	24.5	152.268	26.9718

143.0	24.4	127.177	20.0017
142.5	24.4	121.796	22.2169
142.0	24.4	120.345	22.1948
141.5	24.5	112.330	19.2662
141.0	24.7	124.158	22.4449
140.5	24.1	120.843	27.0485
140.0	24.3	130.194	14.0438
139.5	24.7	148.721	29.5558
139.0	24.8	153.625	17.2258
138.5	24.7	140.392	26.8052
138.0	24.4	139.292	17.3721
137.5	24.3	120.391	21.5428
137.0	24.4	121.971	25.2896
136.5	24.4	120.509	22.7070
136.0	24.4	118.021	31.0139
135.5	24.8	126.829	28.0684
135.0	24.3	126.117	19.4916
134.5	24.5	134.633	30.6952
134.0	24.7	141.290	31.6725
133.5	24.7	139.717	32.3735
133.0	24.3	135.462	22.0462
132.5	24.3	182.250	36.6331
132.0	24.5	212.068	26.2002
131.5	24.8	224.748	24.9813
131.0	24.4	232.092	26.7156
130.5	24.4	231.707	31.3144
130.0	24.5	228.488	26.8160
129.5	24.3	226.894	31.0838
129.0	24.4	222.371	24.2272
128.5	24.3	213.370	17.2655
128.0	24.7	201.569	26.1573
127.5	24.3	186.606	22.1857
127.0	24.5	182.796	20.9996
126.5	24.4	185.155	24.0462
126.0	24.4	193.011	19.4618
125.5	24.4	194.094	21.1516
125.0	24.3	184.684	13.1331
124.5	24.3	164.590	23.4172
124.0	24.7	162.660	14.8687
123.5	24.3	156.510	19.8777
123.0	24.4	141.485	13.5950
122.5	24.5	136.650	18.7862
122.0	24.5	126.490	20.9357
121.5	24.4	122.441	20.6300
121.0	24.4	119.398	16.0051
120.5	24.5	109.722	19.0972
120.0	24.8	106.346	18.7862
119.5	24.9	105.548	18.8058
119.0	25.1	95.3537	25.1387
118.5	24.9	92.9167	19.1667
118.0	25.2	99.825	13.1245
117.5	25.1	97.6802	13.9654
117.0	24.9	92.0597	13.4998
116.5	25.1	95.9883	24.9656

116.0	25.1	109.216	15.2737
115.5	25.1	100.561	20.3417
115.0	25.1	99.1556	12.5397
114.5	24.8	99.4635	15.3283
114.0	24.8	100.176	21.8506
113.5	24.8	98.9706	19.4076
113.0	25.1	96.8850	19.9681
112.5	25.2	98.6555	22.6891
112.0	24.8	96.0191	21.3566
111.5	25.2	100.700	15.1822
111.0	25.1	105.058	15.6104
110.5	25.1	107.751	24.3309
110.0	24.9	110.979	26.2401
109.5	24.9	114.536	27.4749
109.0	25.1	122.432	18.6104
108.5	25.3	131.720	25.4777
108.0	25.1	140.045	22.5460
107.5	24.9	154.545	21.0438
107.0	25.1	171.009	20.4050
106.5	25.1	159.986	19.1304
106.0	24.9	141.429	12.7108
105.5	24.8	139.634	20.8160
105.0	25.2	143.006	22.4954
104.5	24.9	158.057	21.3456
104.0	25.2	157.151	23.6827
103.5	25.1	140.632	23.7067
103.0	24.8	138.301	19.7348
102.5	25.1	134.378	17.7830
102.0	24.7	131.682	20.9153
101.5	25.1	128.085	26.4708
101.0	25.1	131.985	17.9995
100.5	25.1	143.502	19.3377
100.0	25.1	153.213	20.5885
99.5	24.9	163.930	9.8506
99.0	24.9	172.947	17.2876
98.5	25.1	162.060	16.5864
98.0	24.8	157.635	19.5362
97.5	24.9	149.113	17.6515
97.0	25.3	132.215	20.8623
96.5	25.1	117.600	20.1645
96.0	25.1	115.468	24.1949
95.5	25.1	115.947	28.9017
95.0	24.8	111.465	17.5850
94.5	24.9	105.214	22.7380
94.0	25.1	100.564	21.6732
93.5	25.1	106.480	14.3436
93.0	25.1	100.318	17.1615
92.5	25.1	104.147	19.2123
92.0	24.8	111.304	19.8758
91.5	24.9	121.272	15.5588
91.0	24.8	151.235	25.2058
90.5	24.5	152.495	17.9589
90.0	24.9	164.260	25.3357
89.5	25.2	146.568	28.6707

89.0	24.7	133.300	31.6192
88.5	25.2	130.161	28.8663
88.0	24.9	119.224	26.7212
87.5	25.1	117.944	26.0789
87.0	24.8	118.456	28.8527
86.5	24.5	121.280	22.5075
86.0	24.8	146.154	26.4423
85.5	25.2	192.609	30.0817
85.0	24.9	212.173	23.8035
84.5	24.9	222.052	22.1541
84.0	25.1	225.125	19.0582
83.5	25.1	235.156	25.9610
83.0	25.1	241.175	23.0947
82.5	24.7	234.616	24.2676
82.0	25.2	237.474	12.5068
81.5	25.1	236.792	17.3792
81.0	24.8	231.730	19.4093
80.5	25.1	227.118	15.7965
80.0	24.8	198.063	16.0051
79.5	25.1	159.385	21.9743
79.0	24.7	129.418	11.9515
78.5	24.8	122.961	16.0568
78.0	25.5	110.399	23.5237
77.5	25.2	109.832	19.6129
77.0	25.1	109.992	25.4022
76.5	25.1	104.425	19.2759
76.0	25.1	99.2412	22.1692
75.5	24.9	102.212	20.6153
75.0	24.7	100.900	18.5138
74.5	25.1	99.3707	17.4795
74.0	25.5	100.891	19.1619
73.5	24.9	101.831	11.2432
73.0	25.1	103.265	16.5433
72.5	24.9	100.092	21.7228
72.0	24.8	101.373	18.7569
71.5	25.1	104.744	17.4825
71.0	24.8	100.576	19.4899
70.5	25.1	106.314	21.2459
70.0	25.2	114.669	20.7702
69.5	24.8	110.244	14.8345
69.0	25.3	111.737	15.9865
68.5	24.9	110.473	15.9095
68.0	25.1	118.510	20.8351
67.5	24.8	119.764	16.7558
67.0	24.9	121.313	14.1255
66.5	25.5	120.432	25.4972
66.0	24.9	118.691	12.1824
65.5	25.1	111.668	26.2467
65.0	25.2	105.699	18.9983
64.5	24.9	111.870	39.6524
64.0	25.1	114.624	31.5323
63.5	24.8	117.131	28.3854
63.0	24.9	120.873	30.6007
62.5	25.3	118.457	23.9460

62.0	25.1	128.557	35.5721
61.5	24.9	133.650	22.0751
61.0	25.1	140.301	28.5058
60.5	25.1	153.961	21.0029
60.0	25.1	175.838	17.0968
59.5	24.9	190.400	20.3288
59.0	25.1	195.277	18.0449
58.5	25.3	196.924	17.2801
58.0	24.9	198.188	19.4717
57.5	25.3	193.839	22.0657
57.0	25.1	191.337	21.0885
56.5	25.1	189.997	31.5242
56.0	24.8	186.391	17.5762
55.5	24.9	174.638	17.9687
55.0	25.2	190.983	29.8411
54.5	25.2	183.710	29.6008
54.0	25.1	164.800	19.5180
53.5	24.9	149.128	22.7483
53.0	24.9	124.789	22.5443
52.5	25.1	119.718	24.0447
52.0	24.8	122.509	23.5393
51.5	24.9	122.604	30.0050
51.0	25.2	117.541	19.8344
50.5	25.1	115.693	21.6173
50.0	25.1	122.910	20.3718
49.5	25.1	131.930	30.0817
49.0	24.9	130.394	21.1954
48.5	25.2	130.833	14.2124
48.0	24.7	139.360	13.6461
47.5	25.1	135.756	23.9472
47.0	25.5	155.237	23.4681
46.5	25.1	146.202	30.6773
46.0	25.2	151.107	19.1380
45.5	25.1	155.073	27.5862
45.0	25.1	144.140	33.3618
44.5	24.9	143.277	21.4558
44.0	24.8	141.928	25.8333
43.5	25.1	157.062	16.2449
43.0	25.3	162.547	22.0115
42.5	25.1	165.049	27.4970
42.0	25.2	160.487	28.9687
41.5	25.1	193.676	24.5270
41.0	24.9	219.634	32.3356
40.5	24.8	221.649	16.6534
40.0	24.8	222.815	25.8087
39.5	25.5	238.633	13.4964
39.0	25.1	264.266	20.6256
38.5	25.1	243.374	28.4257
38.0	25.1	240.964	24.7347
37.5	25.1	224.071	21.5554
37.0	25.1	225.079	6.65668
36.5	24.7	226.232	14.3666
36.0	25.1	212.740	16.2088
35.5	25.3	201.497	11.9078

35.0	24.9	164.239	10.0452
34.5	25.3	104.756	14.7544
34.0	25.1	81.0916	11.7297
33.5	24.9	72.1064	20.3338
33.0	24.9	74.4556	11.7253
32.5	24.7	100.986	15.4308
32.0	25.2	40.6649	16.2338
31.5	25.2	42.8393	11.5782
31.0	24.8	39.2679	20.7987
30.5	24.8	38.3866	13.5593
30.0	24.9	38.0576	27.6374
29.5	25.1	39.7713	22.5284
29.0	24.7	39.2289	20.2926
28.5	24.9	38.8115	15.8571
28.0	25.2	38.8715	15.2280
27.5	25.2	39.9306	15.6250
27.0	25.1	40.1040	20.9767
26.5	24.9	40.2108	19.5528
26.0	24.7	40.8869	14.3315
25.5	24.8	41.6308	15.6507
25.0	24.5	43.4562	10.1266
24.5	24.8	42.9335	11.6930
24.0	25.6	42.8353	17.8496
23.5	24.9	43.9873	15.4472
23.0	25.2	44.0968	14.1443
22.5	24.9	44.0007	12.9668
22.0	24.9	45.2703	13.5135
21.5	24.9	46.0130	14.8681
21.0	24.5	47.5948	21.2477
20.5	25.1	83.1477	14.0229
20.0	25.2	325.343	11.2906
19.5	24.7	320.474	10.3413
19.0	25.1	319.583	14.1667
18.5	25.1	1047.55	8.44666
18.0	24.9	2847.25	14.1513
17.5	24.7	3077.64	14.4381
17.0	24.7	3071.25	13.6530
16.5	25.1	3098.19	15.8096
16.0	25.2	3262.09	15.6767
15.5	24.8	2921.66	13.3438
15.0	24.8	1896.34	14.4325
14.5	24.9	2892.67	12.3742
14.0	24.8	3490.52	16.3723
13.5	24.9	3537.37	11.5741
13.0	24.8	3425.88	15.8115
12.5	25.2	6744.37	12.8722
12.0	24.8	14810.2	11.8906
11.5	24.9	11.3148	19.3131
11.0	24.9	14830.3	15.6006
10.5	24.8	14833.6	14.2965
10.0	24.9	14830.3	19.6296
9.5	24.7	14833.6	14.1454
9.0	25.2	14830.3	21.4883
8.5	25.1	14837.0	16.3878

8.0	24.3	14833.6	11.4491
7.5	24.0	14830.3	20.2135

THERMAL POWER COMPANY

10 3/4 CSG	35
7" CSG.	
4.5" CSG.	488
" CSG.	526
LINER 3.5"	4209
TIE-BACK	

WELL NO. CTGH 1 AFE NO. ______

REPORT NO. 80 DATE 7 SEPT 86

TOTAL RIG DAYS 80 TIME FROM SPUD ______

DEPTH @ 2400 HRS. 4800 FOOTAGE DRLD. ______

HRS. DRILLED ______ HRS. TRIPPED ______ HRS. REPAIR ______ RIG NO. ______

HRS. OTHER ______ COOLING TOWER IN USE, YES ☐ NO ☐

MUD WT. ______ VIS. ______ W.L. ______ CK. ______ PH ______ CHL ______ YP ______

P.V. ______ GELS ______ % SAND ______ % SOLIDS ______ % LOST CIRC. MTL. ______

GALVONIC PROBE ______ CORRATOR ______ SULPHIDE ______ OXY. ______ AIR-H_2O RATIO /

FORM. DRLD. ______ FLOW LINE TEMP. ______ °F. SUCTION TEMP. ______ °F.

MAX. TEMP. ______ °F. DEVIATION SURVEYS: ______

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
												T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.

AIR COMP. NO ______ CFM ______ PSI ______ TEMP. °F ______ CHEM. ______ RATIO / RATE ______

DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ______

TOTAL STRING WT. ______ TOTAL PICKUP WT. ______ ROTARY TORQUE HIGH ______ AVERAGE ______ LOW ______

STEAM ENTRIES, DEPTH, LBS. ______

REMARKS FOR 24 HOUR PERIOD:

Rigged down core rig,
Cleaned cellar and pits
RELEASED RIG 1300 hrs
7 Sept 86

OPERATION @ 0600 HOURS FOLLOWING DAY: Will get location mulching and access trail ditching - drainage cost estimates plus HX and + 4.5

INOPERATIVE EQUIP'T, EXPLAIN csg costs to add in

COSTS	
TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	$ 3000 DEMOB
RIG	$ 750
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	
FUEL, WATER POWER	
MUD	
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	2400 < BAKER TANK + BOP RETURN
LOGGING SERVICES	
FISHING & DIRECTIONAL	
OTHER	BOYLES 250
DAILY TOTAL	$ 6700
FORWARD	$ 432,018
ACCU. TOTAL	$ 438,718
AFE	86 D001 4300 02

SUPERVISOR BOWDEN

DO 8 Sept 86

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO. ____

REPORT NO. 79 DATE 6 SEPT 86

TOTAL RIG DAYS 79 TIME FROM SPUD ____

DEPTH @ 2400 HRS. 4800 FOOTAGE DRLD. ____

HRS. DRILLED ____ HRS. TRIPPED ____

HRS. OTHER 24 COOLING TOWER IN USE, YES ☐ NO ☐

10 3/4" CSG. 35'
7" CSG. 488'
4.5 CSG. 526'
LINER 3.5 4205'
TIE-BACK ____

HRS. REPAIR ____ RIG NO. ____

MUD WT. ____ VIS. ____ W.L. ____ CK. ____ PH ____ CHL ____ YP ____

P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____

GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H_2O RATIO /

FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.

MAX. TEMP. ____ °F. DEVIATION SURVEYS: ____

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
												T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO / RATE ____

DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE HIGH ____ AVERAGE ____ LOW ____

STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Finished laying down NC rods.
Removed rig floor; pumped out cellar; removed BOP.

Installed 1¼" thick plate flange on Larkin casing head with ring groove and bolts.
6" long nipple and 3" full opening valve on top

Shut down rig at 2400 hrs 6 Sept 86

OPERATION @ 0600 HOURS FOLLOWING DAY: ____

INOPERATIVE EQUIP'T, EXPLAIN ____

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 3000
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	15,500 !
FISHING & DIRECTIONAL	
OTHER BOYLES	250
WELLHEAD	2150
DAILY TOTAL	$ 21,500
FORWARD	410,518
ACCU. TOTAL	432,018
AFE	86 HHO(4300 02

SUPERVISOR BOWDEN

DO 8 Sep 86

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO.
REPORT NO. 18 DATE 5 SEPT 86
TOTAL RIG DAYS 18 TIME FROM SPUD 7 1/2 mos
DEPTH @ 2400 HRS. 4800 FOOTAGE DRLD. 0
HRS. DRILLED — HRS. TRIPPED
HRS. OTHER 24 COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. VIS. W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H₂O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS:

10 3/4" CSG 35
7" CSG.
4.5" CSG. 488'
LINER 526'
TIE-BACK 5.5 4205'
HRS. REPAIR RIG NO.

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
												T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Accomplished geophysical bore hole logging: Welksity and Sonic. DD

Completed logging at 2400 hrs 5 Sept 86 No problems with HX rod break at 873'.

All core boxes, from 526' to 4800' shipped out to VORT Salt Lake City

OPERATION @ 0600 HOURS FOLLOWING DAY:
Laying down NCC rods

INOPERATIVE EQUIP'T, EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 3000
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	
FISHING & DIRECTIONAL	
OTHER	Bowers Pres 250
DAILY TOTAL	$ 3850
FORWARD	406,668
ACCU. TOTAL	410,518
AFE	86 D001 4300 02

SUPERVISOR BOWDEN

ND 6 Sept 86

THERMAL POWER COMPANY

WELL NO. CTGH-1	AFE NO.	10 3/4" CSG.	35
REPORT NO. 77	DATE 4 SEPT 86	7" CSG.	488
TOTAL RIG DAYS 77	TIME FROM SPUD	4.5" CSG.	526
DEPTH @ 2400 HRS. 4800	FOOTAGE DRLD.	LINER 3.5	4205
		TIE-BACK	

HRS. DRILLED ______ HRS. TRIPPED ______ HRS. REPAIR ______ RIG NO. ______

HRS. OTHER ______ COOLING TOWER IN USE, YES ☐ NO ☐

MUD WT. 8.4 VIS. 32 W.L. ______ CK. ______ PH ______ CHL ______ YP ______

P.V. ______ GELS ______ % SAND ______ % SOLIDS ______ % LOST CIRC. MTL. ______

GALVONIC PROBE ______ CORRATOR ______ SULPHIDE ______ OXY. ______ AIR-H_2O RATIO 1

FORM. DRLD. ______ FLOW LINE TEMP. ______ °F. SUCTION TEMP. ______ °F.

MAX. TEMP. ______ °F. DEVIATION SURVEYS: ______

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
												T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
				17	350			

AIR COMP. NO ______ CFM ______ PSI ______ TEMP. °F ______ CHEM. ______ RATIO 1 RATE ______

DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ______

TOTAL STRING WT. ______ TOTAL PICKUP WT. ______ ROTARY TORQUE HIGH ______ AVERAGE ______ LOW ______

STEAM ENTRIES, DEPTH, LBS. ______

REMARKS FOR 24 HOUR PERIOD:

Completed 11 hrs of borehole geophysical logging: SP, Resistivity, Caliper, etc

13 hrs RIH Coring BHA for additional logs

Geochemist DOGMAME onsite past two days sampling the rock cores per his DOE contract

USFS rep. onsite stating Access Period site requirements including mulching / trenching

OPERATION @ 0800 HOURS FOLLOWING DAY:

Logging.

INOPERATIVE EQUIP'T. EXPLAIN ______

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 3000
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	100
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	
FISHING & DIRECTIONAL	
OTHER Boyles	250
DAILY TOTAL	3950
FORWARD	402,718
ACCU. TOTAL	$ 406,668
AFE	86 D001 4300 02

SUPERVISOR R. ...

DO 5 Sept 86

THERMAL POWER COMPANY

WELL NO. CTGH AFE NO.
REPORT NO. 76 DATE 3 SEPT 86
TOTAL RIG DAYS 16 TIME FROM SPUD
DEPTH @ 2400 HRS. 4800 FOOTAGE DRLD.
HRS. DRILLED HRS. TRIPPED
HRS. OTHER COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. 8.4 VIS. 32 W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H,O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS:

10¾" CSG 35
7" CSG. 488
4.5" CSG. 526
LINER 3.5" 4205
TIE-BACK
HRS. REPAIR RIG NO.

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
												T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	310			

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

POH, dropped DX bit from string
RIH with NC tools open ended to
4800' TD. Circulated light drilling
fluid and water for 8 hours & cool
Slade for logs.
POH Rigging up loggers at 2400 hrs

OPERATION @ 0600 HOURS FOLLOWING DAY:
Logging Coalbed with final
geophysical program

INOPERATIVE EQUIP'T, EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 3000
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	
FUEL, WATER POWER	
MUD	100
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	4065 PRUETT 27 AUG 86
FISHING & DIRECTIONAL	
OTHER BOILES	250
DAILY TOTAL	$ 7715
FORWARD	345,023
ACCU TOTAL	$ 402,178
AFE 86 D00(4300 02	

SUPERVISOR

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO.
REPORT NO. 15 DATE 2 SEPT 86
TOTAL RIG DAYS 15 TIME FROM SPUD
DEPTH @ 2400 HRS. 4800 FOOTAGE DRLD. —
HRS. DRILLED HRS. TRIPPED HRS. REPAIR RIG NO.
HRS. OTHER COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. VIS. W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H,O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. 204 °F. DEVIATION SURVEYS:
three MRTs at 4800'

10¾" CSG 35'
7" CSG. 486'
4½" CSG. 526
LINER 35 4208
TIE-BACK

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
												T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Forest Service lifted Fire Precaution Class E on 8-30-86

Boyles Bros crews arrived back on offsite afternoon of 9-2-86. Started up rig at 2000 hrs.

RIH with wireline; found water level at 50-foot depth.

RIH with NCC rod-DX bit from 4150' to 4800'. No problems and no fill on bottom. Ran three MRTs @ 4800'; all recorded 204°F

OPERATION @ 0600 HOURS FOLLOWING DAY:
POOH and removed DX bit. Going in hole with open ended NCC rods to circulate & cool hole for final GP

INOPERATIVE EQUIPT. EXPLAIN Borehole Loss.

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	? OMISSION
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL 4200	? Hydrapx @ 300/day
FUEL, WATER POWER	
MUD	
SUPERVISION & LABOR	
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES 990	19, 20, 21 Aug @ 330/day
FISHING & DIRECTIONAL	
OTHER Lowes 250	
WATCHMAN 4000	16 days @ 250/day
DAILY TOTAL	
FORWARD $385,263	
ACCU. TOTAL	
AFE 86 D001 4300 02	

SUPERVISOR

THERMAL POWER COMPANY

WELL NO. CTAH-1 AFE NO. ____
REPORT NO. 34 DATE 27 Aug '86
TOTAL RIG DAYS 34 TIME FROM SPUD 818 +10hrs
DEPTH @ 2400 HRS. 4905 FOOTAGE DRLD. —
HRS. DRILLED — HRS. TRIPPED ____ HRS. REPAIR ____ RIG NO. ____
HRS. OTHER — COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. ____ VIS. ____ W.L. ____ CK. ____ PH ____ CHL ____ YP ____
P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____
GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H,O RATIO 1
FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.
MAX. TEMP. ____ °F. DEVIATION SURVEYS: ____

10¾ " CSG CSG. 35 feet
7 " CSG. 488
4.5 " CSG. 526
LINER 3.5 4205
TIE-BACK ____

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
—	—	—	—	—	—	—	—	—	—	—	—	T B G
—	—	—	—	—	—	—	—	—	—	—	—	T B G
—	—	—	—	—	—	—	—	—	—	—	—	T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—

AIR COMP. NO ___ CFM ____ PSI ___ TEMP. °F ___ CHEM. ____ RATIO 1 RATE ___
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE (MIN AVERAGE MAX) ____
STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Pruett Industries, Inc. ran a temperature-pressure survey from surface to total depth

Field readings are as follows:

DEPTH (ft)	TEMPERATURE (°F)	PRESSURE (PSI)
100	BTL*	22
1000	BTL	420
2100	78	902
3000	~~BTL~~ 120	1297
4000	171	1730
4800	210/208	2074

4800 feet pick-up.

* BTL = Below tool limit of 50°F
** Two temperature tools run.

OPERATION @ 0600 HOURS FOLLOWING DAY:
Suspended - shut down per USFS fire hazard condition "E"

COSTS

TANGIBLES
CASING ____
VALVES ____
1 Pruett Survey Total Costs reported as $4065 - to be added into Costs

TRANSPORTATION ____
LOGGING SERVICES ____
FISHING & DIRECTIONAL ____
OTHER Survey ____
DAILY TOTAL ____
FORWARD 385,263
ACCU. TOTAL ____
AFE 86 D001 4300 02

JLI 1.01.86

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO. ____
REPORT NO. 73 DATE 18 AUG 86
TOTAL RIG DAYS 73 TIME FROM SPUD 720 HOURS
DEPTH @ 2400 HRS. 4800 FOOTAGE DRLD. 40
HRS. DRILLED 13 HRS. TRIPPED ____
HRS. OTHER 11 COOLING TOWER IN USE, YES ☐ NO ☒

10¾" CSG. 35
7" CSG. 488
4.5" CSG. 526
LINER 3.5 4205
TIE-BACK ____
HRS. REPAIR / RIG NO. ____

MUD WT. 8.4 VIS. 45 W.L. ____ CK. ____ PH ____ CHL ____ YP ____
P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____
GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H_2O RATIO /
FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.
MAX. TEMP. 197 °F. DEVIATION SURVEYS: ____
MR [illegible] 4790

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
9	2.875	CHRS	NX	652301	—	4226	—	576	160½	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	300			

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO / RATE ____
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE (HIGH AVERAGE LOW) ____
STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Cored from 4760 to 4800 feet
Obtained 100% core recovery;
no drilling fluid returns
Received Forest Service order
to shut down rig and operations
due to high fire hazards. All
timber logging operations also
shut down today by this
Condition E determination
Pulled coring string off bottom
and into HX rods with NX bit
at 4150. Closed rams on NCC rod
string, Hydril and kelly cock.
Shut down at mid day Aug 18

OPERATION @ 0600 HOURS FOLLOWING DAY:

Suspended - shut down per USFS
Condition E

INOPERATIVE EQUIPT. EXPLAIN ____

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 3120
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	100
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	250

DAILY TOTAL 4400
FORWARD $ 380,863
ACCU. TOTAL $ 385,263
AFE 86-D001-4300-02
SUPERVISOR [illegible signature]

DO 19 Aug

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO. ____

REPORT NO. 72 DATE 17 Aug 80

TOTAL RIG DAYS 72 TIME FROM SPUD 71d + 10hrs

DEPTH @ 2400 HRS. 4760 FOOTAGE DRLD. 60

HRS. DRILLED 18 HRS. TRIPPED ____

HRS. OTHER 6 COOLING TOWER IN USE, YES ☐ NO ☒

10 3/4" CSG.	35
7" CSG.	488
4.5" CSG.	526
LINER	3.5 4205
TIE-BACK	

HRS. REPAIR ____ RIG NO. ____

MUD WT. 8.4 VIS. 45 W.L. ____ CK. ____ PH ____ CHL ____ YP ____

P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____

GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H_2O RATIO 1

FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.

MAX. TEMP. 195 °F. DEVIATION SURVEYS: ____

MRT AT 4750'

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
9	2.85"	Chris	NX	652301		4226		536	147.5	1000	963	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	300			

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO 1 RATE ____

DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE HIGH ____ AVERAGE ____ LOW ____

STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Cored from 4700 to 4760 feet

Recovered 100% cores; no drilling fluid returns

1 hr temperature survey

5 hrs recovering and repairing broken wire line and core barrel.

OPERATION @ 0600 HOURS FOLLOWING DAY:

Coring at 4780 feet

INOPERATIVE EQUIP'T, EXPLAIN ____

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 4875
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	200
FUEL, WATER POWER	
MUD	200
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	250
DAILY TOTAL	$ 6185
FORWARD	374,678
ACCU. TOTAL	380,863
AFE	86 D001 4300 02

SUPERVISOR Bowden

DD. 18 Aug

THERMAL POWER COMPANY

WELL NO. CTGH-1 AFE NO. ____
REPORT NO. 71 DATE 16 Aug 86
TOTAL RIG DAYS 71 TIME FROM SPUD 70 + 10 hrs
DEPTH @ 2400 HRS. 4700 FOOTAGE DRLD. 80
HRS. DRILLED 23 HRS. TRIPPED ____
HRS. OTHER 1 COOLING TOWER IN USE, YES ☐ NO ☒

10 3/4" CSG. 35
7" CSG. 488
4.5" CSG. 526
LINER 3.5 4205
TIE-BACK ____
HRS. REPAIR — RIG NO. ____

MUD WT. 8.4 VIS. 45 W.L. ____ CK. ____ PH ____ CHL ____ YP ____
P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____
GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H_2O RATIO 1
FORM. DRLD. — FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.
MAX. TEMP. 104 °F. DEVIATION SURVEYS: ____
MCT AT 4700 ±

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
4	2.875"	Chris	NX	65 2301		4226		476	129.5	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
I				5.75	350			

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO 1 RATE ____
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE HIGH ____ AVERAGE ____ LOW ____
STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Cored from 4620 to 4700'
Got 100% core recovery
no drilling fluid returns

OPERATION @ 0600 HOURS FOLLOWING DAY:

Coring at 4720'

INOPERATIVE EQUIP'T. EXPLAIN ____

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$6365
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	200
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	250
DAILY TOTAL	$7745
FORWARD	366,933
ACCU. TOTAL	374,678
AFE	86 D001 4300 02

SUPERVISOR [signature]

DD. 17 Aug

THERMAL POWER COMPANY

WELL NO. CTGH-1 AFE NO. ______

REPORT NO. 70 DATE 15 AUG 86

TOTAL RIG DAYS 10 TIME FROM SPUD 60+ days

4620 → DEPTH @ 2400 HRS. 4630 FOOTAGE DRLD. 90

HRS. DRILLED 22.5 HRS. TRIPPED ______

HRS. OTHER 1.5 COOLING TOWER IN USE, YES ☐ NO ☐

10 3/4" CSG. 35

7" CSG. 488

4.5" CSG. 526

LINER 3.5 4205

TIE-BACK ______

HRS. REPAIR ______ RIG NO. ______

MUD WT. ______ VIS. ______ W.L. ______ CK. ______ PH ______ CHL ______ YP ______

P.V. ______ GELS ______ % SAND ______ % SOLIDS ______ % LOST CIRC. MTL. ______

GALVONIC PROBE ______ CORRATOR ______ SULPHIDE ______ OXY. ______ AIR-H2O RATIO 1

FORM. DRLD. ______ FLOW LINE TEMP. ______ °F. SUCTION TEMP. ______ °F.

MAX. TEMP. 184 °F. DEVIATION SURVEYS: ______

MRT AT 4630

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
9	2.98	CHRS	NX	652301		4226		396	106.5	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	300			

AIR COMP. NO ______ CFM ______ PSI ______ TEMP. °F ______ CHEM. ______ RATIO 1 RATE ______

DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ______

TOTAL STRING WT. ______ TOTAL PICKUP WT. ______ ROTARY TORQUE HIGH ______ AVERAGE ______ LOW ______

STEAM ENTRIES, DEPTH, LBS. ______

REMARKS FOR 24 HOUR PERIOD:

Cored from 4530 to 4620'
Obtained 100% core recovery;
no drilling fluid returns

OPERATION @ 0600 HOURS FOLLOWING DAY:

Coring at 4640'

INOPERATIVE EQUIPT. EXPLAIN ______

COSTS

TANGIBLES

CASING	
VALVES	
FLANGES	
OTHER	

INTANGIBLE

LOCATION	
RIG MOVES	
RIG	$6347
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	200
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	BOYLES 250

DAILY TOTAL	$7827
FORWARD	359,106
ACCU. TOTAL	366,933
AFE	86 B001 4320 02

SUPERVISOR D.D. Kelly ← BRODEN

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO.
REPORT NO. 61 DATE 14 Aug 86
TOTAL RIG DAYS 61 TIME FROM SPUD 60 + 10 HRS
DEPTH @ 2400 HRS. 4530 FOOTAGE DRLD. 80
HRS. DRILLED 23.5 HRS. TRIPPED
HRS. OTHER 0.5 COOLING TOWER IN USE, YES ☐ NO ☒
MUD WT. 8.5 VIS. 45 W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H_2O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. 182 °F. DEVIATION SURVEYS:
MRT AT 4540

10¾" CSG	35
7" CSG.	488
4.5" CSG.	526
LINER	3.5" 4205
TIE-BACK	

HRS. REPAIR RIG NO.

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
9	7.875	CHRS	NX	652301		4226	—	306	85	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1					350-650			

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored 80', from 4450 to 4530'
Got 100% core recovery; No mud returns.
Squirrel Creek water supply continues adequate yield; enough to keep 500 barrel Baker tank full and to meet daily rig-coring requirement.
Forest Service visits drillsite every 2-3 days to ensure our water supply status and fire compliance.

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring at 4550 feet

INOPERATIVE EQUIP'T, EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	5320
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	200
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	BOILER 250
DAILY TOTAL	6700
FORWARD	352,406
ACCU. TOTAL	359,106
AFE	86 601 4300 0

SUPERVISOR BOWDEN

NO. 15

THERMAL POWER COMPANY

10¾" CSG.	35
7" CSG.	488
4.5" CSG.	526
LINER	3.5" 4205'
TIE-BACK	

WELL NO. CTGH-1 AFE NO. ____
REPORT NO. 68 DATE 13 Aug '86
TOTAL RIG DAYS 68 TIME FROM SPUD 68 D 10 h
DEPTH @ 2400 HRS. 4450 FOOTAGE DRLD. 79
HRS. DRILLED 23 HRS. TRIPPED ____ HRS. REPAIR ____ RIG NO. ____
HRS. OTHER 1 COOLING TOWER IN USE. YES ☐ NO ☐
MUD WT. 8.4 VIS. 45 W.L. ____ CK. ____ PH ____ CHL ____ YP ____
P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____
GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H_2O RATIO /
FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.
MAX. TEMP. 183 °F. DEVIATION SURVEYS: ____
@ 4470' · Fluid level = 60'

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
9	2.875"	Chris	NX	652301		4226	—	226	59.5	500-1000 lbs	300-400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	650			

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO / RATE ____
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE HIGH AVERAGE LOW ____
STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Cored from 4371 to 4450'. No fluid returns; 100% core recovery

Picked up torque at 4405-4407'; attempting to improve mud system

Worked BOPE and pipe rams.

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring @ 4470'.

INOPERATIVE EQUIPMENT ...

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	
ABATEMENT	
BITS	5315
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	200
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER Boyles Sup.	250
Trucking	2400
DAILY TOTAL	9095
FORWARD	343 311
ACCU. TOTAL	352 406
AFE	

Rowley / JLI

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO. ____

REPORT NO. 67 DATE 12 AUG 86

TOTAL RIG DAYS 67 TIME FROM SPUD 1601+ HRS

DEPTH @ 2400 HRS. 4371 FOOTAGE DRLD. 92

HRS. DRILLED 23 HRS. TRIPPED ____

HRS. OTHER 1 COOLING TOWER IN USE. YES ☐ NO ☒

10¾" CSG. 35
7" CSG. 488
4.5" CSG. 526
LINER 3.5" 4205
TIE-BACK ____

HRS. REPAIR ____ RIG NO. ____

MUD WT. 8.3 VIS. 45 W.L. ____ CK. ____ PH ____ CHL ____ YP ____

P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____

GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H₂O RATIO 1

FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.

MAX. TEMP. 182 °F. DEVIATION SURVEYS: ____

MRT AT 4383

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
9	2.875	CHRIS	NX	652301		4224		147	36.5	1000	400	B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
I				5-15	450			

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO 1 RATE ____

DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE (HIGH AVERAGE LOW) ____

STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Cored 92 feet from 4279 to 4371 feet
Obtained 100% core recovery.
No drilling fluid returns

OPERATION @ 0600 HOURS FOLLOWING DAY:

Coring NX hole at 4390'

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 6170
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	200
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	Boxes 250
DAILY TOTAL	7550
FORWARD	335,761
ACCU. TOTAL	343,311
AFE	80 DDT 4300 02

DDhi 13 Aug Bowden

THERMAL POWER COMPANY

10 3/4" CSG.	35'
7" CSG.	480'
4.5" CSG.	526'
LINER	3.5 4205'
TIE-BACK	

WELL NO. CTGH-1 AFE NO. ____
REPORT NO. 66 DATE 11 AUG 86
TOTAL RIG DAYS 66 TIME FROM SPUD 65D + 10 HRS
DEPTH @ 2400 HRS. 4279 FOOTAGE DRLD. 53
HRS. DRILLED 13.5 HRS. TRIPPED ____ HRS. REPAIR ____ RIG NO. ____
HRS. OTHER 10.5 COOLING TOWER IN USE. YES ☐ NO ☐
MUD WT. 8.5 VIS. 45 W.L. ____ CK. ____ PH ____ CHL ____ YP ____
P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____
GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H₂O RATIO 1
FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.
MAX. TEMP. 178 °F. DEVIATION SURVEYS: ____
At 4296'

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
9	7.875	Chris	NX	65301		4226	–	53	13.5	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
I				5-15	450			

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO 1 RATE ____
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE HIGH AVERAGE LOW ____
STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Cored from 4226 feet to 4279 feet.

Obtained 100% core recovery; no drilling fluid returns

Liquid level in core hole is 70 feet below surface

OPERATION @ 0600 HOURS FOLLOWING DAY:

Coring NX hole at 4300 feet

COSTS

TANGIBLES

CASING	
VALVES	
FLANGES	
OTHER	

INTANGIBLE

LOCATION	
RIG MOVES	
RIG	$ 3545
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	200
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	Boyles 250
DAILY TOTAL	$ 4925
FORWARD	330,836
ACCU. TOTAL	335,769
AFE	86 D01 4300 02

DO · 12 Aug

BOWDEN

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO. ____
REPORT NO. 65 DATE 10 Aug 86
TOTAL RIG DAYS 65 TIME FROM SPUD 60 + 10 DAYS
DEPTH @ 2400 HRS. 4226 FOOTAGE DRLD. 23'
HRS. DRILLED 4 HRS. TRIPPED ____
HRS. OTHER 20 COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. 8.4 VIS. 45 W.L. ____ CK. ____ PH ____ CHL ____ YP ____
P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____
GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H_2O RATIO 1
FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.
MAX. TEMP. ____ °F. DEVIATION SURVEYS: ____

CSG
" CSG. ____
" CSG. ____
" CSG. ____
LINER ____
TIE-BACK ____
HRS. REPAIR ____ RIG NO. ____

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
8	2.875"	CHRIS	NX	052302		4203	4226	23	4	500	300	T B G worn
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	600-800			

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO 1 RATE ____
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE (HIGH AVERAGE LOW) ____
STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

~~Milled out HX diamond corehead on bottom with NX diamond corehead (bit 8) and cored to 4226.~~

Recovered 100% core; had returns!

POH to replace worn bit 8

OPERATION @ 0600 HOURS FOLLOWING DAY:
RIH with new NX diamond core head and new core barrel

INOPERATIVE EQUIPMENT EXPLAIN

COSTS

TANGIBLES
CASING ____
VALVES ____
FLANGES ____
OTHER ____

INTANGIBLE
LOCATION ____
RIG MOVES ____
RIG $3057
ABATEMENT ____
BITS ____
DRILL EQUIP. MAIN. ____
DRILL. EQUIP. RENTAL 300
FUEL, WATER POWER ____
MUD 250
SUPERVISION & LABOR 300
CEMENT SERVICES ____
TRANSPORTATION ____
LOGGING SERVICES 330
FISHING & DIRECTIONAL ____
OTHER BOYLES 250

DAILY TOTAL 4487
FORWARD 326,349
ACCU. TOTAL 330,836
AFE 86 DOT 4300 02

DO 11 Aug
BOWDEN

THERMAL POWER COMPANY

10¾" CSG. 35
7" CSG. 488
4.5" CSG. 326 temporary
LINER
TIE-BACK

WELL NO. CTGH 1 AFE NO.
REPORT NO. 64 DATE 6 Aug 86 TIME FROM SPUD 630 + 10 wks
TOTAL RIG DAYS 64
DEPTH @ 2400 HRS. 4203 FOOTAGE DRLD. —
HRS. DRILLED — HRS. TRIPPED HRS. REPAIR RIG NO.
HRS. OTHER 24 COOLING TOWER IN USE. YES ☐ NO ☐
MUD WT. VIS. W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H_2O RATIO /
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS:

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
												T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.

AIR COMP. NO. CFM PSI TEMP. °F CHEM. RATIO / RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Started up rig at noon
RIH with new latch; found core barrel at 4193 feet
Latched to core barrel. POH slowly
Recovered core barrel

OPERATION @ 0600 HOURS FOLLOWING DAY:
RIH with new NX core head

COSTS

TANGIBLES
- CASING
- VALVES
- FLANGES
- OTHER

INTANGIBLE
- LOCATION
- RIG MOVES
- RIG $1500
- ABATEMENT
- BITS
- DRILL EQUIP. MAIN.
- DRILL. EQUIP. RENTAL 300
- FUEL, WATER POWER
- MUD
- SUPERVISION & LABOR 300
- CEMENT SERVICES
- TRANSPORTATION
- LOGGING SERVICES 330
- FISHING & DIRECTIONAL
- OTHER Boyles 250

DAILY TOTAL 2680
FORWARD 323,669
ACCU. TOTAL 326,349
AFE 8600C 4300 02

WO. 10 hrs Bowden

THERMAL POWER COMPANY

10¾" CSG. 35
7" CSG. 488
4½" CSG. 526 temporary
LINER ____
TIE-BACK ____

WELL NO. CTGH 1 AFE NO. ____
REPORT NO. 63 DATE 8 Mar 86
TOTAL RIG DAYS 63 TIME FROM SPUD 62D + 10 hrs
DEPTH @ 2400 HRS. 4203 FOOTAGE DRLD. —
HRS. DRILLED — HRS. TRIPPED ____ HRS. REPAIR ____ RIG NO. ____
HRS. OTHER 24 COOLING TOWER IN USE. YES ☐ NO ☑
MUD WT. ____ VIS. ____ W.L. ____ CK. ____ PH ____ CHL ____ YP ____
P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____
GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H₂O RATIO /
FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.
MAX. TEMP. ____ °F. DEVIATION SURVEYS: ____

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
												T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO / RATE ____
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE HIGH AVERAGE LOW ____
STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Ran latching assembly on NC rods to top of core barrel at 4193 feet. Latched & POH. No core barrel. Examined latch assembly, suspect release of core barrel at 823 feet

OPERATION @ 0600 HOURS FOLLOWING DAY:
Rig shut down. Latching assembly going to machine shop for modification.

COSTS

TANGIBLES
- CASING ____
- VALVES ____
- FLANGES ____
- OTHER ____

INTANGIBLE
- LOCATION ____
- RIG MOVES ____
- RIG $ 3000
- ABATEMENT ____
- BITS ____
- DRILL EQUIP. MAIN. ____
- DRILL. EQUIP. RENTAL 300
- FUEL, WATER POWER ____
- MUD —
- SUPERVISION & LABOR 300
- CEMENT SERVICES ____
- TRANSPORTATION ____
- LOGGING SERVICES 330
- FISHING & DIRECTIONAL ____
- OTHER Boyles 250

DAILY TOTAL $ 4180
FORWARD 319,489
ACCU. TOTAL 323,669
AFE 86 D01 4300 02

WD Ging
Bowden

THERMAL POWER COMPANY

WELL NO. CTGH-1 AFE NO. ______

REPORT NO. 62 DATE 7 Aug 86

TOTAL RIG DAYS 62 TIME FROM SPUD ______

DEPTH @ 2400 HRS. 4203' FOOTAGE DRLD. ______

HRS. DRILLED ______ HRS. TRIPPED 10

HRS. OTHER 10+4 COOLING TOWER IN USE. YES ☐ NO ☐

10 3/4" CSG 35

" CSG. 488

4 1/2" CSG. 526 temporary

LINER ______

TIE-BACK ______

HRS. REPAIR ______ RIG NO. ______

MUD WT. ______ VIS. ______ W.L. ______ CK. ______ PH ______ CHL ______ YP ______

P.V. ______ GELS ______ % SAND ______ % SOLIDS ______ % LOST CIRC. MTL. ______

GALVONIC PROBE ______ CORRATOR ______ SULPHIDE ______ OXY. ______ AIR-H_2O RATIO 1

FORM. DRLD. ______ FLOW LINE TEMP. ______ °F. SUCTION TEMP. ______ °F.

MAX. TEMP. ______ °F. DEVIATION SURVEYS: ______

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
												T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.

AIR COMP. NO ______ CFM ______ PSI ______ TEMP. °F ______ CHEM. ______ RATIO 1 RATE ______

DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ______

TOTAL STRING WT. ______ TOTAL PICKUP WT. ______ ROTARY TORQUE ______

STEAM ENTRIES, DEPTH, LBS. ______

REMARKS FOR 24 HOUR PERIOD:

12 hrs: Shut down, waiting on NX rods

12 hrs Unloaded truck

Picked up NX rods; RIH open ended. Found break in HX rods at 823' depth and at a connection per driller's record

POH, picked up latching assembly

OPERATION @ 0600 HOURS FOLLOWING DAY:

Running in hole at 2500' with NX rods and latching assembly

COSTS

TANGIBLES

CASING	
VALVES	
FLANGES	
OTHER	

INTANGIBLE

LOCATION	
RIG MOVES	
RIG	$ 1500
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	Boyle 250
DAILY TOTAL	2680
FORWARD	316,809
ACCU. TOTAL	$ 319,489
AFE	86 D01 4307 02

DO-8 Aug BRODER…

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO. ____
REPORT NO. 61 DATE 16 Feb 86
TOTAL RIG DAYS 61 TIME FROM SPUD 22 + 10 hrs
DEPTH @ 2400 HRS. 4403 FOOTAGE DRLD. 0
HRS. DRILLED ____ HRS. TRIPPED ____
HRS. OTHER 24 COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. ____ VIS. ____ W.L. ____ CK. ____ PH ____ CHL ____ YP ____
P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____
GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H$_2$O RATIO 1
FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.
MAX. TEMP. ____ °F. DEVIATION SURVEYS: ____

10 3/4" CSG. 35
7" CSG. 438
4.5" CSG. 326 temporary
LINER ____
TIE-BACK ____
HRS. REPAIR ____ RIG NO. ____

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
												T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO ____ RATE ____
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE ____ MIN AVERAGE MAX
STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Holes Shut down;
Waiting on DC rods

OPERATION @ 0600 HOURS FOLLOWING DAY:

As above

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 0
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	350
FISHING & DIRECTIONAL	
OTHER	Boiler 230
DAILY TOTAL	1180
FORWARD	315,629
ACCU. TOTAL	$ 316,809
AFE	86 001 4300 02

No. 7 Mud Boilers

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO. ____
REPORT NO. 60 DATE 5 Aug 86
TOTAL RIG DAYS 60 TIME FROM SPUD 59D + 10 HRS
DEPTH @ 2400 HRS. ____ FOOTAGE DRLD. ____
HRS. DRILLED ____ HRS. TRIPPED ____
HRS. OTHER ____ COOLING TOWER IN USE. YES ☐ NO ☐

10 3/4" CSG 35
7" CSG. 488
" CSG. ____
4 1/2" CSG. 526 temporary
LINER ____
TIE-BACK ____
HRS. REPAIR ____ RIG NO. ____

MUD WT. ____ VIS. ____ W.L. ____ CK. ____ PH ____ CHL ____ YP ____
P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____
GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H_2O RATIO 1
FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.
MAX. TEMP. ____ °F. DEVIATION SURVEYS: ____

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
7	3.937	Christ	MC	652958								T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO 1 RATE ____
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE HIGH AVERAGE LOW ____
STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Shut down; waiting on NX rods

OPERATION @ 0600 HOURS FOLLOWING DAY:

As above

COSTS

TANGIBLES
- CASING ____
- VALVES ____
- FLANGES ____
- OTHER ____

INTANGIBLE
- LOCATION ____
- RIG MOVES ____
- RIG $ 0
- ABATEMENT ____
- BITS ____
- DRILL EQUIP. MAIN. ____
- DRILL. EQUIP. RENTAL 300
- FUEL, WATER POWER ____
- MUD 0
- SUPERVISION & LABOR ____
- CEMENT SERVICES ____
- TRANSPORTATION ____
- LOGGING SERVICES 330
- FISHING & DIRECTIONAL ____
- OTHER Boyles 850

DAILY TOTAL 1480
FORWARD 314,149
ACCU. TOTAL 315,629
AFE 82001 4300 02

D.O. Chang
Bowden

THERMAL POWER COMPANY

10 3/4" CSG 35'
7" CSG. 488
4.5" CSG. 526 temporary
LINER
TIE-BACK

WELL NO. CTGH 1 AFE NO. ____
REPORT NO. 59 DATE 4 Aug 86
TOTAL RIG DAYS 59 TIME FROM SPUD 58D + 10 HRS
DEPTH @ 2400 HRS. 4203 FOOTAGE DRLD. 60
HRS. DRILLED 13.5 HRS. TRIPPED ____ HRS. REPAIR ____ RIG NO. ____
HRS. OTHER 10.5 COOLING TOWER IN USE. YES ☐ NO ☐
MUD WT. 8.4 VIS. 45 W.L. ____ CK. ____ PH ____ CHL ____ YP ____
P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____
GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H_2O RATIO 1
FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.
MAX. TEMP. 177 °F. DEVIATION SURVEYS: ____
MRT AT 4173'

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
7	5.957	CHRIS	MC	652958	–	3721	–	482	130	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				515	350			

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO 1 RATE ____
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE (HIGH AVERAGE LOW) ____
STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Cored 60 feet, from 4143 to 4203 feet

Recovered 100% cores; no mud returns

Sudden failure of HX core rods, while coring at 4203'. Core rod string weight suggests break at 1000-1200' depth range.

OPERATION @ 0600 HOURS FOLLOWING DAY:

Waiting on NX rods for fishing run with spear.

COSTS

TANGIBLES

CASING	
VALVES	
FLANGES	
OTHER	

INTANGIBLE

LOCATION	
RIG MOVES	
RIG	$ 4187
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	300
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	Rances 250

DAILY TOTAL	$ 5667
FORWARD	308,482
ACCU. TOTAL	$ 314,149
AFE	86 001 4300 02

DO 5 Aug
L. Owers

THERMAL POWER COMPANY

WELL NO. CTGH 1	AFE NO.	10 3/4" CSG.	35
REPORT NO. 58	DATE 3 AUG 86	7" CSG.	488
TOTAL RIG DAYS 58	TIME FROM SPUD 57D + 10 HRS	4.5" CSG.	526 Temporary
DEPTH @ 2400 HRS. 4143	FOOTAGE DRLD. 81	LINER	
HRS. DRILLED 23	HRS. TRIPPED	TIE-BACK	
HRS. OTHER 1	COOLING TOWER IN USE. YES ☐ NO ☐	HRS. REPAIR	RIG NO.

MUD WT. 8.4 VIS. 45 W.L. CK. PH CHL YP

P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.

GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H₂O RATIO 1

FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.

MAX. TEMP. 167 °F. DEVIATION SURVEYS:

MET AT 4133'

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
7	3.937	CHRIS	NC	652458	–	3721	–	422	116.5	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	350			

AIR COMP. NO. CFM PSI TEMP. °F CHEM. RATIO 1 RATE

DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW

STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored 81 feet, from 4062 to 4143 feet. Obtained 100% core recovery; no mud returns

Water level in core hole at 75 feet below ground surface

OPERATION @ 0600 HOURS FOLLOWING DAY: Coring at 4163 feet

INOPERATIVE EQUIPMENT ...

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 5609
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	300
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	380
FISHING & DIRECTIONAL	
OTHER	BOYLES 250
DAILY TOTAL	7089
FORWARD	301,393
ACCU. TOTAL	# 308,482
AFE	86-001 4300 02

DD 4 Aug
LOWERY

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO.
REPORT NO. 5 DATE 2 AUG 86
TOTAL RIG DAYS 5 TIME FROM SPUD 80 +/- HRS
DEPTH @ 2400 HRS. 4062 FOOTAGE DRLD. 80
HRS. DRILLED 23 HRS. TRIPPED HRS. REPAIR RIG NO.
HRS. OTHER 1 COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. 8.4 VIS. 48 W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H$_2$O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. 167 °F. DEVIATION SURVEYS: NRT AT 4052

$10^{3/4}$" CSG.	35
7" CSG.	488
4.5" CSG.	526 Temporary
LINER	
TIE-BACK	

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
1	3.751	CHRIS	MC	652858	-	3721	-	341	93	Tooth	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				545	3572			

AIR COMP. NO. CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored 80 feet, from 3982 & 4062 feet
Got 100% Core Recovery. No mud
returns

Water level at 70 feet below
surface

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring at 4083 feet

COSTS	
TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 5379
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	300
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	FORCES 250
DAILY TOTAL	$ 6859
FORWARD	294,534
ACCU. TOTAL	$ 301,393
AFE	86001 4300.02

DO slug
POWER

THERMAL POWER COMPANY

WELL NO. CTGH AFE NO.
REPORT NO. 56 DATE 1/14/86
TOTAL RIG DAYS 56 TIME FROM SPUD 550+10 MOS
DEPTH @ 2400 HRS. 3982 FOOTAGE DRLD. 81
HRS. DRILLED 23 HRS. TRIPPED
HRS. OTHER 1 COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. 8.4 VIS. 45 W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H,O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. 162 °F. DEVIATION SURVEYS:
MRT AT 3972

10¾" CSG @ 35
7" CSG. 488
4½" CSG. 526 Temporary
LINER
TIE-BACK
HRS. REPAIR RIG NO.

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
1	3.937"	CHRIS	MC	52958	—	3721	—	261	10.5	10m	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	350			

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored 81 feet from 3901 to 3982 feet
Recovered 100%; no drilling fluid
returns

Water level we control at 75'
below surface

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring at 4002 feet

COSTS

TANGIBLES
- CASING
- VALVES
- FLANGES
- OTHER

INTANGIBLE
- LOCATION
- RIG MOVES
- RIG $ 4880
- ABATEMENT
- BITS
- DRILL EQUIP. MAIN.
- DRILL. EQUIP. RENTAL 300
- FUEL, WATER POWER
- MUD 300
- SUPERVISION & LABOR 3302
- CEMENT SERVICES
- TRANSPORTATION
- LOGGING SERVICES 330
- FISHING & DIRECTIONAL
- OTHER MILES 250

DAILY TOTAL $ 10360
FORWARD 288174
ACCU. TOTAL $ 744,534
AFE 86001 4300.02

J.D. Young
LOWERY

THERMAL POWER COMPANY

WELL NO. CTGH-1 AFE NO.
REPORT NO. 33 DATE 21 JULY 1986
TOTAL RIG DAYS 33 TIME FROM SPUD 54 Hours
DEPTH @ 2400 HRS. 3901 FOOTAGE DRLD. 90
HRS. DRILLED 23 HRS. TRIPPED
HRS. OTHER 1 COOLING TOWER IN USE, YES ☐ NO ☒
MUD WT. VIS. W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H₂O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. 155 °F. DEVIATION SURVEYS:
MRT AT 3891'

10¾" CSG. 35
7" CSG. 488
4.5" CSG. 326 Temporary
LINER
TIE-BACK
HRS. REPAIR RIG NO.

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
7	3.937	CHRIS	MC	652958		3721	INC	180	47.5	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1								

AIR COMP. NO. CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cut 90 feet from 3811 to 3901 feet
Got 100% Core Recovery; No
drilling fluid returns

OPERATION @ 0600 HOURS FOLLOWING DAY:

Coring at 3921'

INCREMENTAL FOOTAGE FUEL USED

COSTS

TANGIBLES
- CASING
- VALVES
- FLANGES
- OTHER

INTANGIBLE
- LOCATION
- RIG MOVES
- RIG $ 4787
- ABATEMENT
- BITS
- DRILL EQUIP. MAIN.
- DRILL. EQUIP. RENTAL 300
- FUEL, WATER POWER
- MUD 300
- SUPERVISION & LABOR 300
- CEMENT SERVICES
- TRANSPORTATION
- LOGGING SERVICES 330
- FISHING & DIRECTIONAL
- OTHER BOYLE 750

DAILY TOTAL $ 6767
FORWARD 281,907
ACCU. TOTAL $ 288,174
AFE 86001 4300-02

DO Rig
Sawyer

THERMAL POWER COMPANY

10 3/4" CSG 35
7" CSG. 488
4.5" CSG. 526 temporary
LINER
TIE-BACK

WELL NO. CTGH 1 AFE NO.
REPORT NO. 54 DATE 30 Jan 1986
TOTAL RIG DAYS 54 TIME FROM SPUD 53 D + 10 HRS
DEPTH @ 2400 HRS. 3811 FOOTAGE DRLD. 88
HRS. DRILLED 23 1/2 HRS. TRIPPED HRS. REPAIR RIG NO.
HRS. OTHER 1/2 COOLING TOWER IN USE. YES ☐ NO ☐
MUD WT. 8.4 VIS. 45 W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H₂O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. 146 °F. DEVIATION SURVEYS:
MRT AT 3763'

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
7	3.95"	CHRG	MC	65 2958		3721	TNC	90	24 1/2	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	350			

AIR COMP. NO. CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored from 3723 to 3811 feet
Obtained 100% core recovery;
no drilling fluid returns

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring at 3831 feet

INOPERATIVE EQUIPMENT

COSTS

TANGIBLES

Item	Amount
CASING	
VALVES	
FLANGES	
OTHER	

INTANGIBLE

Item	Amount
LOCATION	
RIG MOVES	
RIG	$ 4621
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	300
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER Bowers	250
DAILY TOTAL	6101
FORWARD	275,806
ACCU. TOTAL	281,907
AFE	86001 4300.02

DO 31 Jan
Bowden

THERMAL POWER COMPANY

10 3/4" CSG. 35
7" CSG. 488
4.5" CSG. 526 Temporary
LINER
TIE-BACK

WELL NO. CTG#1 AFE NO.
REPORT NO. 53 DATE 26 JULY 1986
TOTAL RIG DAYS 33 TIME FROM SPUD 520+10 HRS
DEPTH @ 2400 HRS. 3723 FOOTAGE DRLD. 2
HRS. DRILLED 1 HRS. TRIPPED HRS. REPAIR RIG NO.
HRS. OTHER 23 COOLING TOWER IN USE, YES ☐ NO ☒
MUD WT. 8.4 VIS. 45 W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H,O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. NONE °F. DEVIATION SURVEYS:

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
7	3.937	Chds.	MT	652958		3721		2	1	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				515	550			

AIR COMP. NO. CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored only 2' (3721 - 23') with new 3.937" corehead

Ran new corehead - bit #7, corebarrel, latch couple and reamer shell

RIH Washed 8006965' interval and chased cavings to bottom

Worked BOP equipment

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring at 3743'

COSTS

TANGIBLES
CASING
VALVES
FLANGES
OTHER

INTANGIBLE
LOCATION
RIG MOVES
RIG $ 1982
ABATEMENT
BITS
DRILL EQUIP. MAIN.
DRILL. EQUIP. RENTAL 300
FUEL, WATER POWER
MUD 300
SUPERVISION & LABOR 300
CEMENT SERVICES
TRANSPORTATION
LOGGING SERVICES 330
FISHING & DIRECTIONAL
OTHER GOULES 250

DAILY TOTAL $ 3462
FORWARD $ 272,344
ACCU. TOTAL $ 275,806
AFE 86-401 4300 02

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO.
REPORT NO. 52 DATE 28 July 1986
TOTAL RIG DAYS 52 TIME FROM SPUD 51d + 10 hrs
DEPTH @ 2400 HRS. 3721 FOOTAGE DRLD. 80
HRS. DRILLED 23 HRS. TRIPPED
HRS. OTHER 1 COOLING TOWER IN USE, YES ☐ NO ☒
MUD WT. 8.4 VIS. 45 W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H_2O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. 137 °F. DEVIATION SURVEYS:
MRT AT 3711

10 3/4" CSG. 35
7 " CSG. 488
4.5" CSG. 526 temporary
LINER
TIE-BACK
HRS. REPAIR RIG NO.

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
6	5.937	CHRS	MC	052460		2336	3721	1385	370½	1800	400	T B G 1/3 worn
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	350			

AIR COMP. NO. CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored 80 feet, from 3641 to 3721 feet.
Got 100% core recovery; no drilling fluid returns

Water level in corehole is 65 feet

OPERATION @ 0600 HOURS FOLLOWING DAY:
Trip for new diamond corehead and new core barrel at 3721'

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 4821
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	300
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	Bakes 250
DAILY TOTAL	6301
FORWARD	266,043
ACCU. TOTAL	$ 272,344
AFE	86 D01 4300 02

D. Oliver 29 July
BOWDEN

THERMAL POWER COMPANY

WELL NO. CTGH-1 AFE NO. ____
REPORT NO. 51 DATE 27 JULY 1986
TOTAL RIG DAYS 51 TIME FROM SPUD 50D+10HRS
DEPTH @ 2400 HRS. 3641 FOOTAGE DRLD. 79
HRS. DRILLED 21 HRS. TRIPPED ____
HRS. OTHER 3 COOLING TOWER IN USE. YES ☐ NO ☒

10 3/4" CSG. 35
7" CSG. 488
4.5" CSG. 526 Temporary
LINER ____
TIE-BACK ____
HRS. REPAIR ____ RIG NO. ____

MUD WT. 8.4 VIS. 4 W.L. ____ CK. ____ PH ____ CHL ____ YP ____
P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____
GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H_2O RATIO 1
FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.
MAX. TEMP. 138 °F. DEVIATION SURVEYS: 3300' 3/4° N16°W
MRT AT 3641

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
6	3.937	CHRIS	NC	652460	—	2336	—	1306	217.5	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	350			

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO 1 RATE ____
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE HIGH AVERAGE LOW ____
STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Cored 79 feet, from 3562 to 3641 feet. 100% core recovery.
No mud returns
Corehole water level at 40 feet

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 4763
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	350
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	BOYLES 250
DAILY TOTAL	$ 6243
FORWARD	259,800
ACCU. TOTAL	266,043
AFE	86 DO1 4300 02

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring at 3661 feet

DO. 28 Ju[illegible]
BOWDEN

INOPERATIVE EQUIPMENT ...

THERMAL POWER COMPANY

10 3/4" CSG 58
7" CSG. 488
4.5" CSG. 526 temporary
LINER
TIE-BACK

WELL NO. CTGH-1 AFE NO.
REPORT NO. 50 DATE 26 JULY 1986
TOTAL RIG DAYS 50 TIME FROM SPUD 490 + 10 HRS
DEPTH @ 2400 HRS. 3562 FOOTAGE DRLD. 101
HRS. DRILLED 13 1/2 HRS. TRIPPED HRS. REPAIR RIG NO.
HRS. OTHER 1/2 COOLING TOWER IN USE. YES ☐ NO ☒
MUD WT. 8.9 VIS. 45 W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H₂O RATIO /
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. 131 °F. DEVIATION SURVEYS:
MC 3542

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
10	3.937	CHRIS	MC	1052460		2336	1227→		296	7600	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				515	350			

AIR COMP. NO. CFM PSI TEMP. °F CHEM. RATIO / RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored from 3461 to 3562 feet
Got 100% core recovery
no drilling fluid returns

Corehole water level at 10 feet

OPERATION @ 0600 HOURS FOLLOWING DAY:

Coring at 3582 feet

INOPERATIVE EQUIP. ...

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$6 5723
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	300
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	BOYLES 250
DAILY TOTAL	7203
FORWARD	$ 252,597
ACCU. TOTAL	259,800
AFE	86-DO1-4300-02

DO 27 July
Bowden

THERMAL POWER COMPANY

WELL NO. Cyclic 1 AFE NO.
REPORT NO. 49 DATE 25 July 1986
TOTAL RIG DAYS 49 TIME FROM SPUD 48 D + 11 HRS
DEPTH @ 2400 HRS. 3461 FOOTAGE DRLD. 106
HRS. DRILLED 24 HRS. TRIPPED
HRS. OTHER COOLING TOWER IN USE, YES ☐ NO ☑
MUD WT. 8.4 VIS. 45 W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H_2O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. 127 °F. DEVIATION SURVEYS:
MRT 3451

10¾" CSG	35
7" CSG.	488
4.5" CSG.	526 Temporary
LINER	
TIE-BACK	

HRS. REPAIR RIG NO.

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
6	5.937	CHRG	MC 62460			2336	INC	1126	473	1000		T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15		200		

AIR COMP. NO. CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Drill 106 feet, from 3355 to 3461
Got 100% core recovery; no mud returns

Borehole water level at 70 feet

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring below 3483 feet

INCORPORATING FORMER FUEL ...

COSTS

TANGIBLES
- CASING
- VALVES
- FLANGES
- OTHER

INTANGIBLE
- LOCATION
- RIG MOVES
- RIG $5492
- ABATEMENT
- BITS
- DRILL EQUIP. MAIN.
- DRILL. EQUIP. RENTAL 300
- FUEL, WATER POWER
- MUD 300
- SUPERVISION & LABOR 300
- CEMENT SERVICES
- TRANSPORTATION
- LOGGING SERVICES 330
- FISHING & DIRECTIONAL
- OTHER 250

DAILY TOTAL 6972
FORWARD $245,628
ACCU. TOTAL 252,597
AFE 86401 4300 02

DO 26 July
Bowden

THERMAL POWER COMPANY

WELL NO. CTGH-1 AFE NO. ____
REPORT NO. 48 DATE 24 July 1986
TOTAL RIG DAYS 48 TIME FROM SPUD 47D + 10 HRS
DEPTH @ 2400 HRS. 3355 FOOTAGE DRLD. 86
HRS. DRILLED 22 1/2 HRS. TRIPPED ____
HRS. OTHER 1 1/2 COOLING TOWER IN USE, YES ☐ NO ☑

10 3/4" CSG. 35
7" CSG. 488
4.5" CSG. 526 temporary
LINER ____
TIE-BACK ____
HRS. REPAIR ____ RIG NO. ____

MUD WT. 8.4 VIS. 43 W.L. 12 CK. 1/32 PH 6.5 CHL 1000 YP 10
P.V. 15 GELS 4 % SAND 0 % SOLIDS .5 % LOST CIRC. MTL. ____
GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H_2O RATIO 1
FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.
MAX. TEMP. 176 °F. DEVIATION SURVEYS: ____
3350

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
10	3.937	Chris	MC	652460		2336	TNC	1019	249	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	150			

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO 1 RATE ____
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE HIGH AVERAGE LOW ____
STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Cored from 3269 to 3355 feet
Obtained 100% core recovery;
no drilling fluid returns
Water level in corehole is 80 feet

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring at 3382 feet

COSTS

TANGIBLES
- CASING ____
- VALVES ____
- FLANGES ____
- OTHER ____

INTANGIBLE
- LOCATION ____
- RIG MOVES ____
- RIG $4543
- ABATEMENT ____
- BITS ____
- DRILL EQUIP. MAIN. ____
- DRILL. EQUIP. RENTAL 300
- FUEL, WATER POWER ____
- MUD 300
- SUPERVISION & LABOR 300
- CEMENT SERVICES ____
- TRANSPORTATION ____
- LOGGING SERVICES 330
- FISHING & DIRECTIONAL ____
- OTHER Boyles 250

DAILY TOTAL 6023
FORWARD 239,602
ACCU. TOTAL $245,625
AFE 86 001 4300 02

DO-25 Bowde

THERMAL POWER COMPANY

10 3/4" CSG. 35'
7" CSG. 488
4.5" CSG. 526 Temporary
LINER
TIE-BACK

WELL NO. CTGH-1 AFE NO.
REPORT NO. 47 DATE 23 July 1986
TOTAL RIG DAYS 47 TIME FROM SPUD 46D + 10 hrs
DEPTH @ 2400 HRS. 3269 FOOTAGE DRLD. 96
HRS. DRILLED 24 HRS. TRIPPED HRS. REPAIR RIG NO.
HRS. OTHER COOLING TOWER IN USE. YES ☐ NO ☒
MUD WT. VIS. W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H2O RATIO /
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. 131 °F. DEVIATION SURVEYS:
MRT AT 3259

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
10	3.937	Chris	MC	652460		2336	INC	933	226	1000	480	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	185			

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored from 3173 to 3269'
Got 100% core recovery; no drilling fluid returns
Liquid level in ~~hot~~ borehole at 60' depth

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring at 3290'

INOPERATIVE EQUIPMENT EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 4973
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	350
SUPERVISION & LABOR	
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	Boxes 250
DAILY TOTAL	6503
FORWARD	$ 233,099
ACCU. TOTAL	$ 239,602
AFE	86 DOT 4200 02

D. Lee 24 July
Bowden

THERMAL POWER COMPANY

WELL NO. CTGH-1 AFE NO.
REPORT NO. 46 DATE 7-22-86
TOTAL RIG DAYS 46 TIME FROM SPUD 45+10 hr
DEPTH @ 2400 HRS. 3173 FOOTAGE DRLD. 709
HRS. DRILLED 24 HRS. TRIPPED HRS. REPAIR RIG NO.
HRS. OTHER COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. 8.4 VIS. 45 W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H₂O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS: MRT @ 3159 - .124°

CSG
" CSG.
" CSG.
" CSG.
LINER
TIE-BACK

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
6	3.937	Chr	NC	652460		2336	inc	837	202.5	100	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				575	1750			

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE (MIN AVERAGE MAX)
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:
water level 80 feet
Cored 3069-3173'
No mud returns
100% recovery

OPERATION @ 0600 HOURS FOLLOWING DAY:
coring @ 3189

INOPERATIVE EQUIP. EXPL. ...

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	5388
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	350
SUPERVISION & LABOR	300 Boyle Bros 250
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	
FISHING & DIRECTIONAL	
OTHER	Geologists 330
DAILY TOTAL	10918
FORWARD	226,181
ACCU. TOTAL	233,099
AFE	

(D.D.H.)

THERMAL POWER COMPANY

CSG 10 3/4" - 35'
" CSG. ______
" CSG. 7" - 488
" CSG. cmt to surf.
LINER ______
TIE-BACK ______

WELL NO. CTGH-1 AFE NO. ______
REPORT NO. 45 DATE 7-21-86
TOTAL RIG DAYS 45 TIME FROM SPUD 44+10hr.
DEPTH @ 2400 HRS. 3069 FOOTAGE DRLD. 89
HRS. DRILLED 24 HRS. TRIPPED ______ HRS. REPAIR ______ RIG NO. ______
HRS. OTHER ______ COOLING TOWER IN USE. YES ☐ NO ☐
MUD WT. 9.4 VIS. 45 W.L. ______ CK. ______ PH ______ CHL ______ YP ______
P.V. ______ GELS ______ % SAND ______ % SOLIDS ______ % LOST CIRC. MTL. ______
GALVONIC PROBE ______ CORRATOR ______ SULPHIDE ______ OXY. ______ AIR-H_2O RATIO /
FORM. DRLD. ______ FLOW LINE TEMP. ______ °F. SUCTION TEMP. ______ °F.
MAX. TEMP. ______ °F. DEVIATION SURVEYS: 3059' - 119°F MRT

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
6	3.937	Chr.	NC	652460	—	2336	inc	733	178.5	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
I				5-15	250			

AIR COMP. NO ______ CFM ______ PSI ______ TEMP. °F ______ CHEM. ______ RATIO / RATE ______
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ______

TOTAL STRING WT. ______ TOTAL PICKUP WT. ______ ROTARY TORQUE HIGH AVERAGE LOW ______
STEAM ENTRIES, DEPTH, LBS. ______

REMARKS FOR 24 HOUR PERIOD:

Cored 2980' - 3069'

no mud returns
100% recovery

OPERATION @ 0600 HOURS FOLLOWING DAY:
coring @ 3089

INOPERATIVE EQUIPMENT EXPLAIN

COSTS

TANGIBLES
- CASING ______
- VALVES ______
- FLANGES ______
- OTHER ______

INTANGIBLE
- LOCATION ______
- RIG MOVES ______
- RIG 4501
- ABATEMENT ______
- BITS ______
- DRILL EQUIP. MAIN. ______
- DRILL. EQUIP. RENTAL 300
- FUEL, WATER POWER ______
- MUD 350
- SUPERVISION & LABOR 300 / Boyle Bros 250
- CEMENT SERVICES ______
- TRANSPORTATION ______
- LOGGING SERVICES ______
- FISHING & DIRECTIONAL ______
- OTHER geologists - 330

DAILY TOTAL 6031
FORWARD 220,150
ACCU. TOTAL 226,181
AFE ______

R.K.B. (JJH)

THERMAL POWER COMPANY

CSG 10 3/4, set @ 35'
" CSG.
" CSG. 7" set - 488'
" CSG.
LINER
TIE-BACK

WELL NO. CTGH #1 AFE NO.
REPORT NO. 44 DATE 7/20/86
TOTAL RIG DAYS 44 TIME FROM SPUD 43 D + 10 hrs
DEPTH @ 2400 HRS. 2980 FOOTAGE DRLD. 68'
HRS. DRILLED 15 HRS. TRIPPED HRS. REPAIR RIG NO.
HRS. OTHER 9 COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. 8.4 VIS. 45 W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H₂O RATIO /
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS: MRT 2942, 112°, fluid level @ 63'

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
6	3.937	CHRISTEN	NC	652460		2336	Incomp.	644	144.5	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	300			

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO / RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cores from 2912 to 2980, No mud returns. Core recovery 100%. 1 hr MRT survey and fluid level
8 hrs drilling with core at bottom, Got it out of the rods.
lost 4 foot of core out of inner barrel

OPERATION @ 0600 HOURS FOLLOWING DAY:

Coring at 2993'

INOPERATIVE EQUIP. EXPLAIN:

COSTS

TANGIBLES
- CASING
- VALVES
- FLANGES
- OTHER

INTANGIBLE
- LOCATION
- RIG MOVES
- RIG 3152
- ABATEMENT
- BITS
- DRILL EQUIP. MAIN.
- DRILL. EQUIP. RENTAL 300
- FUEL, WATER POWER
- MUD 350
- SUPERVISION & LABOR 300
- CEMENT SERVICES
- TRANSPORTATION
- LOGGING SERVICES
- FISHING & DIRECTIONAL
- OTHER supervisor - 250; 2-Geologists - 330

DAILY TOTAL 4682
FORWARD 215468
ACCU. TOTAL 220150
AFE

THERMAL POWER COMPANY

WELL NO. Eight 1 AFE NO.
REPORT NO. 43 DATE 19 July 1986
TOTAL RIG DAYS 43 TIME FROM SPUD 420 + 10 HRS
DEPTH @ 2400 HRS. 2912' FOOTAGE DRLD. 103
HRS. DRILLED 24 HRS. TRIPPED —
HRS. OTHER — COOLING TOWER IN USE, YES ☐ NO ☒
MUD WT. 8.4 VIS. 45 W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H₂O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. 114 °F. DEVIATION SURVEYS:
MRT AT 2903'

10¾" CSG @ 35
7" CSG. @ 488
4.5" CSG. @ 526 Temporary
LINER
TIE-BACK
HRS. REPAIR RIG NO.

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
6	3.937	CHRS	MC	654260	—	2336'	—	576	139	7000	400	I B G
												I B G
												I B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	300			

AIR COMP. NO. CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored from 2809 to 2912'
Recovered 100% cores from the 103-foot interval
No drilling fluid returns

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring at 2933' No rod chatter.

COSTS	
TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 4774
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	350
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	BOYLES 250
DAILY TOTAL	$ 6304
FORWARD	$ 209,164
ACCU. TOTAL	215,468
AFE	86.001.4300.02

DO 20 July
Bowden

THERMAL POWER COMPANY

10¾" CSG. 35
7⅝" CSG. 488
4½" CSG. 326 temporary
LINER
TIE-BACK

WELL NO. CTGH-1 AFE NO.
REPORT NO. 42 DATE 18 JULY 86
TOTAL RIG DAYS 42 TIME FROM SPUD 40D+10HRS
DEPTH @ 2400 HRS. 2809 FOOTAGE DRLD. 101
HRS. DRILLED 24 HRS. TRIPPED HRS. REPAIR — RIG NO.
HRS. OTHER — COOLING TOWER IN USE. YES ☐ NO ☒
MUD WT. 8.4 VIS. 45 W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H_2O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. 103 °F. DEVIATION SURVEYS:
AT 2802'

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
6	5.937	CHRIS	MC	6 2460		2336	INC	473	115½	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	225			

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored 101', from 2708' to 2809'. Got 100% core recovery; no drilling fluid returns

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring at 2831'. Some rod chatter

INOPERATIVE EQUIP'T. EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 4681
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	350
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	250
DAILY TOTAL	6211
FORWARD	202953
ACCU. TOTAL	$ 209,164
AFE	86-001-4300-02

SUPERVISOR

Dolin Bowden BOWDEN

THERMAL POWER COMPANY

WELL NO. CTGH-1 AFE NO. _____
REPORT NO. 41 DATE 11 Oct
TOTAL RIG DAYS 41 TIME FROM SPUD _____
DEPTH @ 2400 HRS. 2708 FOOTAGE DRLD. 114
HRS. DRILLED 23 1/2 HRS. TRIPPED _____
HRS. OTHER 1/2 COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. 8.4 VIS. 45 W.L. _____ CK. _____ PH _____ CHL _____ YP _____
P.V. _____ GELS _____ % SAND _____ % SOLIDS _____ % LOST CIRC. MTL. _____
GALVONIC PROBE _____ CORRATOR _____ SULPHIDE _____ OXY. _____ AIR-H_2O RATIO 1
FORM. DRLD. _____ FLOW LINE TEMP. _____ °F. SUCTION TEMP. _____ °F.
MAX. TEMP. 101 °F. DEVIATION SURVEYS: _____
2663' MCFS Water level 85'

10-¾" CSG 35
7" CSG. 488
4½" CSG. 526 temp
LINER _____
TIE-BACK _____
HRS. REPAIR _____ RIG NO. _____

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
6		CHRS	MC	652460		2336	INC	372	9½	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-13	175			

AIR COMP. NO ___ CFM _____ PSI ___ TEMP. °F ___ CHEM. _____ RATIO 1 RATE ___
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: _____
TOTAL STRING WT. _____ TOTAL PICKUP WT. _____ ROTARY TORQUE (HIGH AVERAGE LOW) _____
STEAM ENTRIES, DEPTH, LBS. _____

REMARKS FOR 24 HOUR PERIOD:

Cored from 2594 to 2708'
Recovered 114' or 100% Cores
No drilling fluid returns.

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring at 2733'

INOPERATIVE EQUIPT. EXPLAIN: _____

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	5
RIG	$ 5348
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	350
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	250
DAILY TOTAL	6878
FORWARD	196,075
ACCU. TOTAL	$ 202,953
AFE	86 DOT 4380-02

DO 18 July
Rainbow

THERMAL POWER COMPANY

WELL NO. CTGH-1 AFE NO.
REPORT NO. 49 DATE 7-16-86
TOTAL RIG DAYS 40 TIME FROM SPUD 294 10h
DEPTH @ 2400 HRS. 2594 FOOTAGE DRLD. 59
HRS. DRILLED 16 HRS. TRIPPED HRS. REPAIR RIG NO.
HRS. OTHER 8 COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. 8.4 VIS. 45 W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H,D RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS:
MRT @ 2584' = 199°F

10¾" CSG 35
7" CSG. 488
4.5" CSG. 526 Temp
LINER
TIE-BACK

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
6	3.937	CWS	NL	652460	—	2336	—	258	68	10-20	40-70	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				515	1500			

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO / RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored 2535 - 2594', NO mud returns, 100% core recovery

RIH w/ wireline to retrieve core @ 2584', core barrel stuck on way out at 400', pulled wireline in two, pulled 10 stands, retrieved core barrel, laid down 1 bad joint of core tubing, installed new wireline, RIH 10 stands to 2584', continued to core to 2594'.

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring @ 2613'

INOPERATIVE EQUIP'T. EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	2770
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	350
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	
Boyles 300 250	
DAILY TOTAL	4300
FORWARD	191775
ACCU. TOTAL	196075
AFE	Rob Beaston

JLI
17 July '86

THERMAL POWER COMPANY

WELL NO. CTGH-1 AFE NO. ______

REPORT NO. 39 DATE 7/15/86

TOTAL RIG DAYS 39 TIME FROM SPUD 38 D + 10 hrs

DEPTH @ 2400 HRS. 2535 FOOTAGE DRLD. 69

HRS. DRILLED 19 HRS. TRIPPED ~5 hrs HRS. REPAIR ______ RIG NO. ______

HRS. OTHER ______ COOLING TOWER IN USE, YES ☐ NO ☐

10 3/4" CSG. 35'
7" CSG. 488
4.5" CSG. 526 temporary
LINER ______
TIE-BACK ______

MUD WT. 8.4 VIS. 45 W.L. ______ CK. ______ PH ______ CHL ______ YP ______

P.V. ______ GELS ______ % SAND ______ % SOLIDS ______ % LOST CIRC. MTL. ______

GALVONIC PROBE ______ CORRATOR ______ SULPHIDE ______ OXY. ______ AIR-H_2O RATIO 1

FORM. DRLD. ______ FLOW LINE TEMP. ______ °F. SUCTION TEMP. ______ °F.

MAX. TEMP. ______ °F. DEVIATION SURVEYS: ______
MRT @ 2544 – 96°F

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
#6	3.737	CH	NC	652460		2336	—	199	52	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
#1				5-15	150			

AIR COMP. NO ______ CFM ______ PSI ______ TEMP. °F ______ CHEM. ______ RATIO 1 RATE ______

DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ______

TOTAL STRING WT. ______ TOTAL PICKUP WT. ______ ROTARY TORQUE (HIGH AVERAGE LOW) ______

STEAM ENTRIES, DEPTH, LBS. ______

REMARKS FOR 24 HOUR PERIOD:

5 hrs on trip. Run in hole with wireline to retrieve core at 2476. Pulled out of hole with core in a barrel hung up inside core tubing. Pull wire line into, pulled out of hole, 17 stands, retrieve core barrel, laid down 1 joint of bad core tubing. Run in hole at 2476. Washed cont bridge from 1776 to 1780. Washed out 5' of fill on bottom. 19 hrs coring from 2466' to 2535'. No mud problems at 100% core recovery.

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring at 2562'

INOPERATIVE EQUIPT. EXPLAIN

COSTS

TANGIBLES
- CASING ______
- VALVES ______
- FLANGES ______
- OTHER (Trucking) Moving Drill Cap - $940

INTANGIBLE
- LOCATION ______
- RIG MOVES ______
- RIG 3046
- ABATEMENT ______
- BITS ______
- DRILL EQUIP. MAIN. ______
- DRILL. EQUIP. RENTAL $300
- FUEL, WATER POWER ______
- MUD $250.
- SUPERVISION & LABOR $300.
- CEMENT SERVICES ______
- TRANSPORTATION ______
- LOGGING SERVICES $250
- FISHING & DIRECTIONAL Boyles Sup
- OTHER Unload/loading mud $750
- 2 G.C. trips – $330

DAILY TOTAL $5566
FORWARD $186209
ACCU. TOTAL $191775
AFE ______

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO. ______

REPORT NO. 38 DATE 14 JULY 1986

TOTAL RIG DAYS 38 TIME FROM SPUD 37D+10HRS

DEPTH @ 2400 HRS. 2466 FOOTAGE DRLD. 98'

HRS. DRILLED 24 HRS. TRIPPED ______

HRS. OTHER ______ COOLING TOWER IN USE. YES ☐ NO ☒

10 3/4" CSG 35
7" CSG. 488
4.5" CSG. 526 temporary
LINER ______
TIE-BACK ______

HRS. REPAIR ______ RIG NO. ______

MUD WT. 8.4 VIS. 45 W.L. ______ CK. ______ PH ______ CHL ______ YP ______

P.V. ______ GELS ______ % SAND ______ % SOLIDS ______ % LOST CIRC. MTL. ______

GALVONIC PROBE ______ CORRATOR ______ SULPHIDE ______ OXY. ______ AIR-H_2O RATIO 1

FORM. DRLD. ______ FLOW LINE TEMP. ______ °F. SUCTION TEMP. ______ °F.

MAX. TEMP. 85 °F. DEVIATION SURVEYS: ______

MRT AT 2395

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
6	3.931	CHCS	ML	652460		2336	TAC	130	33	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	150			

AIR COMP. NO ______ CFM ______ PSI ______ TEMP. °F ______ CHEM. ______ RATIO 1 RATE ______

DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ______

TOTAL STRING WT. ______ TOTAL PICKUP WT. ______ ROTARY TORQUE HIGH AVERAGE LOW ______

STEAM ENTRIES, DEPTH, LBS. ______

REMARKS FOR 24 HOUR PERIOD:

Cored from 2368 to 2466'
100% core recovery; no drilling fluid returns

Had cored to 2476'. Core barrel jammed in core rods at 2600' depth upon retrieval. Broke wireline again. POH

OPERATION @ 0600 HOURS FOLLOWING DAY:

INOPERATIVE EQUIPMENT EXPLAIN

COSTS

TANGIBLES

CASING	
VALVES	
FLANGES	
OTHER	

INTANGIBLE

LOCATION	
RIG MOVES	
RIG	$ 4106
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	350
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	BOYLES 250

DAILY TOTAL	5636
FORWARD	180,573
ACCU TOTAL	186,209
AFE	86001 4300 02

DD 15 July
BOWDEN

THERMAL POWER COMPANY

10 3/4" CSG.	35
7" CSG.	088
5" CSG.	526 temporary
LINER	
TIE-BACK	

WELL NO. CTGH 1 AFE NO. ____
REPORT NO. 37 DATE 13 July 1986
TOTAL RIG DAYS 37 TIME FROM SPUD ____
DEPTH @ 2400 HRS. 2368 FOOTAGE DRLD. 32
HRS. DRILLED 9 HRS. TRIPPED ____ HRS. REPAIR ____ RIG NO. ____
HRS. OTHER 15 COOLING TOWER IN USE. YES ☐ NO ☒
MUD WT. 8.4 VIS. 45 W.L. ____ CK. ____ PH ____ CHL ____ YP ____
P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____
GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H₂O RATIO 1
FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.
MAX. TEMP. ____ °F. DEVIATION SURVEYS: ____

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
6	3.937	LHMS	AC	652460		2336		32	9	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	150			

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO 1 RATE ____
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE (HIGH AVERAGE LOW) ____
STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Washed from 1000' to 2336' TD
No significant debris on bottom
Cored from 2336 to 2368'
Full core recovery obtained;
no drilling fluid returns

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring at 2385'

INOPERATIVE EQUIPT. EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$1340
ABATEMENT	
BITS	
DRILL. EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	350
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER Boyles	250
1" WATER LINE	500
DAILY TOTAL	3370
FORWARD	177,203
ACCU. TOTAL	$180573
AFE 86DO1	4300 02

DD 14 July
BOWDEN

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO. ____
REPORT NO. 36 DATE 12 July 1986
TOTAL RIG DAYS 36 TIME FROM SPUD 35D + 10 HRS
DEPTH @ 2400 HRS. 2336 FOOTAGE DRLD. 50

10 3/4" CSG 55'
7" CSG. 488
4 1/2" CSG. 526 temporary
LINER ____
TIE-BACK ____

HRS. DRILLED 8 HRS. TRIPPED ____ HRS. REPAIR ____ RIG NO. ____
HRS. OTHER 16 COOLING TOWER IN USE, YES ☐ NO ☒
MUD WT. 8.4 VIS. 43 W.L. ____ CK. ____ PH ____ CHL ____ YP ____
P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____
GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H_2O RATIO 1
FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.
MAX. TEMP. ____ °F. DEVIATION SURVEYS: ____
None

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
5	3.937	CHRIS	HC	652461		1775	2336	561	140	1000	400	T B G ½ worn
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
I				5-15	150			

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO 1 RATE ____
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE (HIGH AVERAGE LOW) ____ ____ ____
STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Cored from 2286 to 2336 *
when wireline parted pulling
core barrel off bottom
POH serviced core barrel; ran
new diamond core bit; greased rods
RIH Reamed and washed from
880' to 1000'

* full core recovery; no drilling
fluid returns

OPERATION @ 0600 HOURS FOLLOWING DAY:
Washing below 1800'

COSTS

TANGIBLES
- CASING ____
- VALVES ____
- FLANGES ____
- OTHER ____

INTANGIBLE
- LOCATION ____
- RIG MOVES ____
- RIG $ 2095
- ABATEMENT ____
- BITS ____
- DRILL EQUIP. MAIN. ____
- DRILL. EQUIP. RENTAL 300
- FUEL, WATER POWER ____
- MUD 300
- SUPERVISION & LABOR 300
- CEMENT SERVICES ____
- TRANSPORTATION ____
- LOGGING SERVICES 330
- FISHING & DIRECTIONAL ____
- OTHER Boxes 250

DAILY TOTAL 3575
FORWARD $ 173,628
ACCU. TOTAL $ 177,203
AFE 86D01 4300 02

DO 13 Jul
- Bowden

THERMAL POWER COMPANY

10 3/4" CSG.	35'
" CSG.	488
4.5" CSG.	526 temporary
LINER	
TIE-BACK	

WELL NO. CTGH 1 AFE NO.

REPORT NO. 35 DATE 11 JULY 1986

TOTAL RIG DAYS 35 TIME FROM SPUD 34D + 10 HRS

DEPTH @ 2400 HRS. 2286 FOOTAGE DRLD. 105

HRS. DRILLED 24 HRS. TRIPPED HRS. REPAIR RIG NO.

HRS. OTHER 0 COOLING TOWER IN USE, YES ☐ NO ☒

MUD WT. 8.4 VIS. 45 W.L. CK. PH CHL YP

P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.

GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H₂O RATIO 1

FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.

MAX. TEMP. 69 °F. DEVIATION SURVEYS:

MRT at 2243'

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
5	CHRIS	INC	65 2461			1775	INC	511	132	1000	400	T B G
3.937"												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				515	150			

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO 1 RATE

DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW

STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored from 2181 to 2286'

Recovered 105' = 100%

No fluid returns

OPERATION @ 0600 HOURS FOLLOWING DAY:

Coring at 2306'.

INOPERATIVE EQUIP'T, EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 4400
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	300
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER Boyles	250
DAILY TOTAL	5880
FORWARD	167,745
ACCU. TOTAL	$ 173,628
AFE	86 DOT 4300 02

SUPERVISOR

DO 12 July

BOWDEN

THERMAL POWER COMPANY

10 3/4 " CSG. 35
7 " CSG. 488
4.5 " CSG. 526 temporary
LINER
TIE-BACK

WELL NO. CTGH AFE NO.
REPORT NO. 34 DATE 10 July 1986
TOTAL RIG DAYS 34 TIME FROM SPUD 33D + 10 hrs
DEPTH @ 2400 HRS. 2181 FOOTAGE DRLD. 98
HRS. DRILLED 24 HRS. TRIPPED HRS. REPAIR — RIG NO.
HRS. OTHER COOLING TOWER IN USE. YES ☐ NO ☒
MUD WT. 8.4 VIS. 45 W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H₂O RATIO /
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. 75 °F. DEVIATION SURVEYS:
MRT 2130'

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
5	3.937	CHRIS	NIC	7461		1775	loc	406	108	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	150			

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO / RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored 98' from 2083 to 2181'
Recovered 100% ; NO DRLG FLUID returns

COSTS	
TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$4106
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	350
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	$ 250
DAILY TOTAL	5636
FORWARD	162112
ACCU. TOTAL	167,748
AFE	86-DOE 4700-02

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring at 2201' Some rod chatter.

INOPERATIVE EQUIPT. EXPLAIN

DO 11 July
Borden

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO. ______

REPORT NO. 33 DATE 9 July 1986

TOTAL RIG DAYS 33 TIME FROM SPUD 32D + 10 HRS

DEPTH @ 2400 HRS. 2083 FOOTAGE DRLD. 85

HRS. DRILLED 24 HRS. TRIPPED ______

HRS. OTHER ______ 0

10¾" CSG. 35

7" CSG. 488

4.5" CSG. 526 temporary

LINER ______

TIE-BACK ______

HRS. REPAIR ______ RIG NO. ______

YES ☐ NO ☒

MUD WT. 8 PH ___ CHL ___ YP ___

P.V. ___ % LOST CIRC. MTL. ___

GALVONIC PI ___ OXY. ___ AIR-H₂O RATIO 1

FORM. DRLD. ___ SUCTION TEMP. ___ °F.

MAX. TEMP. ___

*MRT @ ___

Pump Pressure → 0
Fluid level drop to 150'
may be due to water level
maintenance due to pump pressure
activity

BIT #	SIZE	M...	FT.	HRS.	WT.	RPM	COND
5	3.937		304	84	1000	400	T B G
							T B G
							T B G

PUMP	LINER	...PM	NOZZLE VEL.	ANNULUS VEL.
1				

AIR COMP. NO ___ ...EM. ___ RATIO 1 RATE ___

DRILLING ASS... ______

TOTAL STRING WT. ___ TOTAL PICKUP WT. ___ ROTARY TORQUE HIGH ___ AVERAGE ___ LOW ___

STEAM ENTRIES, DEPTH, LBS. ______

REMARKS FOR 24 HOUR PERIOD:

Cored 3.937" hole from 1998 to 2083' Obtained 100% recovery. No drilling fluid returns

H₂S detection equipment NOT OPERATING. Some minor electric outage. Will repair or replace and have it functioning by 2500' depth

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$3557
ABATEMENT	
BITS	
DRILL. EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	250
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	$250
DAILY TOTAL	$4987
FORWARD	157,131
ACCU. TOTAL	$162,112
AFE	86001-4300-02

OPERATION @ 0600 HOURS FOLLOWING DAY: Coring at 2103'. Pump pressure fell to zero at 2102' Fluid level fell to ±150'.

INOPERATIVE EQUIP'T. EXPLAIN

DD 10 July
Bowden

THERMAL POWER COMPANY

10 3/4" CSG. 35'
7" CSG. 488
7 5/8" CSG. 526 temporary
LINER
TIE-BACK

WELL NO. CTGH-1 AFE NO.
REPORT NO. 32 DATE 8 July 1986
TOTAL RIG DAYS 32 TIME FROM SPUD 31D + 10HRS
DEPTH @ 2400 HRS. 1998 FOOTAGE DRLD. 81
HRS. DRILLED 24 HRS. TRIPPED HRS. REPAIR RIG NO.
HRS. OTHER — COOLING TOWER IN USE. YES ☐ NO ☐
MUD WT. 8.5 VIS. 45 W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H_2O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS:

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
5	3.937	CI	NC	652461	—	1775	TNC	223	60	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	200			

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored from 1917 to 1998
100% core recovery; no drilling fluid returns
All training on H_2S safety and detection completed with all three drilling crews

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring at 2016

INOPERATIVE EQUIPT. EXPLAIN

COSTS

TANGIBLES
- CASING
- VALVES
- FLANGES
- OTHER

INTANGIBLE
- LOCATION
- RIG MOVES 8 2972
- RIG
- ABATEMENT
- BITS
- DRILL EQUIP. MAIN.
- DRILL. EQUIP. RENTAL 300
- FUEL, WATER POWER
- MUD 300
- SUPERVISION & LABOR 300
- CEMENT SERVICES
- TRANSPORTATION
- LOGGING SERVICES 330
- FISHING & DIRECTIONAL
- OTHER 250

DAILY TOTAL 4452
FORWARD 156679
ACCU. TOTAL 161,131
AFE 86 D01-4300-02

DD 9 July
BOWDEN

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO. ____

REPORT NO. 31 DATE 7 July 1986

TOTAL RIG DAYS 31 TIME FROM SPUD 30D + 10 HRS

DEPTH @ 2400 HRS. 1917 FOOTAGE DRLD. 89

HRS. DRILLED 24 HRS. TRIPPED ____

HRS. OTHER ____ COOLING TOWER IN USE. YES ☐ NO ☒

10 3/4" CSG 35
7" CSG. 488
4.5" CSG. 526 Temporary
LINER ____
TIE-BACK ____
HRS. REPAIR ____ RIG NO. ____

MUD WT. 8.4 VIS. 45 W.L. ____ CK. ____ PH ____ CHL ____ YP ____

P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____

GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H_2O RATIO 1

FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.

MAX. TEMP. 75 °F. DEVIATION SURVEYS: ____

MRT AT 1939

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
5	3.937"	CHRG	MC	652461		1775	INC	142	36	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	200			

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO 1 RATE ____

DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE (HIGH / AVERAGE / LOW) ____

STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Cored 89' from 1828 to 1917'
Obtained 100% core recovery
No drilling fluid returns

D. WALTERS EX LOG SMITH
on location July 7th
· installed H_2S detection system
· trained two crews on H_2S safety and detection system

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring at 1939'

INOPERATIVE EQUIP'T. EXPLAIN

COSTS

TANGIBLES

CASING	
VALVES	
FLANGES	
OTHER	

INTANGIBLE

LOCATION	
RIG MOVES	
RIG	$ 3266
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	200
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	250

DAILY TOTAL	4646
FORWARD	130,033
ACCU. TOTAL	134,679
AFE	86 DDT-4300-02

DD 8 July
BOWDEN

THERMAL POWER COMPANY

WELL NO. CTGH1 AFE NO.
REPORT NO. 29 DATE 5 JULY 1986
TOTAL RIG DAYS 29 TIME FROM SPUD 280+10hrs
DEPTH @ 2400 HRS. 1775 FOOTAGE DRLD. 10'
HRS. DRILLED 6 HRS. TRIPPED
HRS. OTHER 18 COOLING TOWER IN USE, YES ☐ NO ☒
MUD WT. 8.5 VIS. 45 W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H$_2$O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS:

10¾" CSG. 35
7" CSG. 486
4.5" CSG. 526 temporary
LINER
TIE-BACK
HRS. REPAIR RIG NO.

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
4	3 7/8	CHRS	MC	454930		1271	1775	504	116	1000	45	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE (HIGH AVERAGE LOW)
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored only 10' 1765-1775 when mistatch to core barrel occured. String rate load dropped. POH; picked up new core head. RIH. Had to wash down from 560 to 963'

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coming out of hole. Core barrel jammed at 1779'

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 1117
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	250
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	250
DAILY TOTAL	2547
FORWARD	144111
ACCU. TOTAL	$ 146658

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO. ____
REPORT NO. 28 DATE 4 JULY 1986
TOTAL RIG DAYS 28 TIME FROM SPUD 270+10 days
DEPTH @ 2400 HRS. 1765 FOOTAGE DRLD. 24 75
HRS. DRILLED 24 HRS. TRIPPED ____

10 3/4" CSG. 35
7" CSG. 488
4.5" CSG. 526 temporary
LINER ____
TIE-BACK ____

HRS. REPAIR ____ RIG NO. ____
HRS. OTHER ____ COOLING TOWER IN USE. YES ☐ NO ☐
MUD WT. ____ VIS. ____ W.L. ____ CK. ____ PH ____ CHL ____ YP ____
P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____
GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H_2O RATIO 1
FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.
MAX. TEMP. ____ °F. DEVIATION SURVEYS: ____

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
4	3.937	CHRIS	MC	454930	—	1271	INC	494	110	1800	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	150			

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO 1 RATE ____
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE (HIGH / AVERAGE / LOW) ____
STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Cored from 1690 to 1765'
Obtained 100% core recovery.
No drilling fluid returns!

OPERATION @ 0600 HOURS FOLLOWING DAY:
Trip for new core head, after reaching 1775' depth

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 2752
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	325
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER BOXES	250
DAILY TOTAL	4257
FORWARD	$ 139,854
ACCU. TOTAL	$ 144,111

DD 5 July Lwiden

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO.
REPORT NO. 27 DATE 3 JULY 1986
TOTAL RIG DAYS 27 TIME FROM SPUD 260 + 10 HRS
DEPTH @ 2400 HRS. 1690 FOOTAGE DRLD. 100'
HRS. DRILLED 23 HRS. TRIPPED
HRS. OTHER 1 COOLING TOWER IN USE, YES ☐ NO ☒
MUD WT. VIS. W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H₂O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS: 1620' · 1/2° N 29° E

10 3/4" CSG 35
7" CSG. 488
4.5" CSG. 526 temporary
LINER
TIE-BACK
HRS. REPAIR RIG NO.

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
4	3.937"	CHRO	MC	454430	-	1271	MC	419	86	1000	400	I 8 G
												I 8 G
												I 8 G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	150			

AIR COMP. NO. CFM PSI TEMP. °F CHEM. RATIO / RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored from 1590 to 1690'
100% core recovery; no drilling
fluid returns
1 hr - Survey at 1620'

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring at 1711'

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	3670
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	300
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER LOKES	250
DAILY TOTAL	5150
FORWARD	134,704
ACCU. TOTAL	139,854

No. 4 July
Bowden

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO. ______
REPORT NO. 26 DATE 2 JULY 1986
TOTAL RIG DAYS 26 TIME FROM SPUD 25D+10hrs
DEPTH @ 2400 HRS. 1590 FOOTAGE DRLD. 137
HRS. DRILLED 24 HRS. TRIPPED ______

10 3/4" CSG. 35
" CSG. ______
7" CSG. 488
4.5" CSG. 526 temporary.
LINER ______
TIE-BACK ______

HRS. REPAIR ______ RIG NO. ______
HRS. OTHER ______ COOLING TOWER IN USE. YES ☐ NO ☒
MUD WT. ______ VIS. ______ W.L. ______ CK. ______ PH ______ CHL ______ YP ______
P.V. ______ GELS ______ % SAND ______ % SOLIDS ______ % LOST CIRC. MTL. ______
GALVONIC PROBE ______ CORRATOR ______ SULPHIDE ______ OXY. ______ AIR-H_2O RATIO 1
FORM. DRLD. ______ FLOW LINE TEMP. ______ °F. SUCTION TEMP. ______ °F.
MAX. TEMP. 61 °F. DEVIATION SURVEYS: FLUID LEVEL 15'
MRT AT 1600'

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
4	3.937	CHRC	MC	434930		1271	IN	319	63	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	100-150			

AIR COMP. NO ______ CFM ______ PSI ______ TEMP. °F ______ CHEM. ______ RATIO 1 RATE ______
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ______

TOTAL STRING WT. ______ TOTAL PICKUP WT. ______ ROTARY TORQUE HIGH ______ AVERAGE ______ LOW ______
STEAM ENTRIES, DEPTH, LBS. ______

REMARKS FOR 24 HOUR PERIOD:

Cored 1453' to 1590' in
24 hrs of coring operations
137/24 hrs = 5.7083 feet/hour
as "coring operating rate"

OPERATION @ 0600 HOURS FOLLOWING DAY:

INOPERATIVE EQUIPT. EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$4894
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	200
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	BOYLES 250
DAILY TOTAL	6274
FORWARD	128,430
ACCU. TOTAL	$134,704
AFE	86 DD 1 4300-02

DO 3 July
BRUDER

THERMAL POWER COMPANY

WELL NO. CTG#1 AFE NO.
REPORT NO. 25 DATE 1 JULY 1986
TOTAL RIG DAYS 25 TIME FROM SPUD 240+10 HRS
DEPTH @ 2400 HRS. 1453' FOOTAGE DRLD. 137'
HRS. DRILLED 24 HRS. TRIPPED HRS. REPAIR / RIG NO.
HRS. OTHER COOLING TOWER IN USE, YES ☐ NO ☒
MUD WT. VIS. W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H₂O RATIO /
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. 67 °F. DEVIATION SURVEYS:

10¾" CSG	35
7" CSG.	488
4.5" CSG.	526 temporary
LINER	
TIE-BACK	

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
4	3.937"	CHRIS	MTC	454430	-	1271	-	182	39	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-75	25-50			

AIR COMP. NO. CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored 1316' - 1453'
100% core recovery
No drilling fluid returns
Liquid level in well bore at 40-45' depth.

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring at 1491'

INOPERATIVE EQUIP'T, EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 4847
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	450
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER Bowles	250
DAILY TOTAL	6277
FORWARD	$ 122,153
ACCU. TOTAL	$ 128,430
AFE	86 D01 4300-02

SUPERVISOR Bowden

DO 2 July 86

THERMAL POWER COMPANY

WELL NO. CIGH 1 AFE NO.
REPORT NO. 24 DATE 30 JUNE 1986
TOTAL RIG DAYS 24 TIME FROM SPUD 230 +10 HRS
DEPTH @ 2400 HRS. 1316 FOOTAGE DRLD. 71
HRS. DRILLED 15 HRS. TRIPPED 4
HRS. OTHER 5 COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. 8.4 ppg VIS. 45 sec W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H₂O RATIO /
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS:

10¾" CSG 35
7" CSG. 488
4.5" CSG. 326 temporary
LINER
TIE-BACK
HRS. REPAIR RIG NO.

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
4	3.937"	CHRIS	MC	454930	—	1271	INC	74		7000	400	T B G
								45	15			T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.

AIR COMP. NO. CFM PSI TEMP. °F CHEM. RATIO / RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Core bit no. 3 was 2/3 worn upon replacement at 1271' depth; had cored 412' total interval from 859' to 1271' in ± 85 hrs.

Core bit no. 4 has some diameter 3.937". Had to wash at 660' on way in. Cored 1245 to 1316' without drilling fluid returns. Obtained 100% core recovery

* BOWDEN thinks a water zone at 600', 660' and 680' is cause of both water and rock entry into corehole and is also the chief lost circulation zone.

OPERATION @ 0600 HOURS FOLLOWING DAY:
Lowing at 1348' depth.

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 3528
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	
FUEL, WATER POWER	
MUD	200
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER BOILER SUP	250
LEO GREASE	650
DAILY TOTAL	$ 5258
FORWARD	$ 116,895
ACCU. TOTAL	$ 122,153
AFE 86 DO1 4300-02	

DO, July 8
Bowden

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO.
REPORT NO. 23 DATE 24 JUNE 1986
TOTAL RIG DAYS 23 TIME FROM SPUD 22DY 10HRS
DEPTH @ 2400 HRS. 1245 FOOTAGE DRLD. 162
HRS. DRILLED 24 HRS. TRIPPED HRS. REPAIR RIG NO.
HRS. OTHER COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. 8.5 VIS. 45 W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H,O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS:

10¾" CSG 35
7" CSG. 488
4.5" CSG. 526 temporary
LINER
TIE-BACK

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
3	3.937	CHRIS	MC	66 1492	-	859	-	386	82	1000	480	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
				5-15	25-50			

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored 3.937" hole from 1083' to 1245'. No drilling fluid returns. Obtaining 100% core recovery.

DO reported to D. DAVIS - BLM

Progress to 0600 hrs 30 JUNE 1986

OPERATION @ 0600 HOURS FOLLOWING DAY:
Trip for new core head at 1271' depth

INOPERATIVE EQUIPT. EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 5483
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	300
FUEL, WATER POWER	
MUD	300
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER Bowles 500 250	
DAILY TOTAL	$ 6463
FORWARD	$ 109,932
ACCU. TOTAL	$ 116,895
AFE 86 DO1 4300-02	

SUPERVISOR Bob DEN

DO 30 June

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO. ______
REPORT NO. 22 DATE 28 JUNE 86
TOTAL RIG DAYS 22 TIME FROM SPUD 21D + 10 HRS
DEPTH @ 2400 HRS. 1083 FOOTAGE DRLD. 121
HRS. DRILLED 20 HRS. TRIPPED ______
HRS. OTHER 4 COOLING TOWER IN USE. YES ☐ NO ☐
MUD WT. 8.4 VIS. 45 W.L. – CK. – PH ___ CHL ___ YP ___
P.V. ___ GELS ___ % SAND ___ % SOLIDS ___ % LOST CIRC. MTL. ___
GALVONIC PROBE ___ CORRATOR ___ SULPHIDE ___ OXY. ___ AIR-H_2O RATIO 1
FORM. DRLD. ___ FLOW LINE TEMP. ___ °F. SUCTION TEMP. ___ °F.
MAX. TEMP. ___ °F. DEVIATION SURVEYS: ______

10 3/4" CSG. 35
7" CSG. 488
4.5" CSG. 526 temporary
LINER ______
TIE-BACK ______
HRS. REPAIR ______ RIG NO. ______

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
5	3.937			651492	–	859	–	221	58	1000	400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				5-15	25-50			

AIR COMP. NO ___ CFM ___ PSI ___ TEMP. °F ___ CHEM. ___ RATIO 1 RATE ___
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ______

TOTAL STRING WT. ___ TOTAL PICKUP WT. ___ ROTARY TORQUE (HIGH / AVERAGE / LOW) ___ ___ ___
STEAM ENTRIES, DEPTH, LBS. ______

REMARKS FOR 24 HOUR PERIOD:

Cored 3.937" hole from 962' to 1083'. Greased rods [illegible]
No drilling fluid returns

OPERATION @ 0600 HOURS FOLLOWING DAY:
CORING AT 1123

INOPERATIVE EQUIP'T. EXPLAIN

COSTS

TANGIBLES

CASING	
VALVES	
FLANGES	
OTHER	

INTANGIBLE

LOCATION	
RIG MOVES	
RIG	$ 4004
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	275
FUEL, WATER POWER	
MUD	250
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	BOYLES SUP 250

DAILY TOTAL	$ 5409
FORWARD	104,525
ACCU. TOTAL	$ 109,934
AFE	86 [illegible] 4300-02

BOWDEN
DD 29 [illegible]

THERMAL POWER COMPANY

WELL NO. CTG/H 1 AFE NO.
REPORT NO. 21 DATE 27 JUNE 1986
TOTAL RIG DAYS 21 TIME FROM SPUD 200 + 10 HRS
DEPTH @ 2400 HRS. 962 FOOTAGE DRLD. 44
HRS. DRILLED 13 HRS. TRIPPED HRS. REPAIR RIG NO.
HRS. OTHER 11 COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. VIS. W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H,O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS:

10 3/4" CSG 35
7" CSG. 488
4.5" CSG. 526 Temporary
LINER
TIE-BACK

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
2	3.937			65142	-	859	10C	103	34	1000	440	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
				25-35	50-100			

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored 3.937" hole from 918 to 962'. No drilling fluid returns

Pulled out to grease core rods at 947'.

Had to work back through two bridges at 600-620' and at 690-710'

At 962', hoisted in the inner core barrel; broke wire line in recovery attempt. POH

OPERATION @ 0600 HOURS FOLLOWING DAY:

INOPERATIVE EQUIPT. EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 2335
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	225
FUEL, WATER POWER	
MUD	150
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	Bores Sol. 250
DAILY TOTAL	$ 3640
FORWARD	$ 100,885
ACCU. TOTAL	$ 104,525
AFE	86 DOI 4300-02

BOWDEN
AD - 28 June

THERMAL POWER COMPANY

WELL NO. CTGH-1 AFE NO. ____
REPORT NO. 20 DATE 2-26-86
TOTAL RIG DAYS 20 TIME FROM SPUD 19d+10hr
DEPTH @ 2400 HRS. 918 FOOTAGE DRLD. 59
HRS. DRILLED 21 HRS. TRIPPED ____
HRS. OTHER 3 COOLING TOWER IN USE. YES ☐ NO ☐

10 3/4" CSG. 35'
7" CSG. 488
4.5" CSG. 526 TEMPORARY
LINER ____
TIE-BACK ____
HRS. REPAIR ____ RIG NO. ____

MUD WT. 8.4 VIS. 45 W.L. ____ CK. ____ PH ____ CHL ____ YP ____
P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____
GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H_2O RATIO 1
FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.
MAX. TEMP. 68 °F. DEVIATION SURVEYS: ____
MRT @ 918' = 68°F

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
3	3.937	CHRIS	NC	651492		859	INC	59	21	1000	3-400	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
2				25-35	50-100			

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO 1 RATE ____
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE (HIGH AVERAGE LOW) ____ ____ ____
STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

CORED FROM 859 TO 918 FT
TRIP FOR BIT CHANGE @ 859 FT
TRIP FOR MIS. @859 FT
1HR WASH & REDRILL FROM 900 TO 913 FT
2HR RIG MAINT.

[signature] 27 JUNE 86

OPERATION @ 0600 HOURS FOLLOWING DAY:
CORING @ 938 FT

INOPERATIVE ...

COSTS

TANGIBLES
CASING ____
VALVES ____
FLANGES ____
OTHER ____

INTANGIBLE
LOCATION ____
RIG MOVES ____
RIG 2165
ABATEMENT ____
BITS ____
DRILL EQUIP. MAIN. ____
DRILL. EQUIP. RENTAL 275
FUEL, WATER POWER ____
MUD 216
SUPERVISION & LABOR 300
CEMENT SERVICES ____
TRANSPORTATION ____
LOGGING SERVICES ____
FISHING & DIRECTIONAL R
OTHER BOYLES SUP. 250
2 GEOLOGISTS 330
DAILY TOTAL 3536
FORWARD 97349
ACCU. TOTAL 100,885
AFE ____

Buddy Bower

THERMAL POWER COMPANY

WELL NO. CTGH-1 AFE NO.
REPORT NO. 19 DATE 6.25.86
TOTAL RIG DAYS 19 TIME FROM SPUD 18d + 10h
DEPTH @ 2400 HRS. 859' FOOTAGE DRLD. 85'
HRS. DRILLED 24 HRS. TRIPPED
HRS. OTHER COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. 8.4 VIS. 45 W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H₂O RATIO 1/
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. 67 °F. DEVIATION SURVEYS: 733' = .2½° 532°E
met @ 865' = 67° F

10¾" CSG CSG. 351'
7 " CSG. 488'
4.5 " CSG. 526' (Temp)
LINER
TIE-BACK
HRS. REPAIR RIG NO.

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
2	3.937"	Chris.	NC	651489		588	859	271	67.5	1-2000	320	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
2				25-35	100			

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO / RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored 774 to 859'; No returns

Water flow into hole thinning mud, loosing lubricity. Rod vibration being monitored to determine if glazing is required.

JLI
26 June '86

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring @ 864'.

INOPERATIVE EQUIP'T, EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	
ABATEMENT	
BITS	2579
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	275
FUEL, WATER POWER	
MUD	626 (2 dmp)
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	
Boyles SUP	250
DAILY TOTAL	4360
FORWARD	93 989
ACCU. TOTAL	97 349
AFE	

SUPERVISOR Buddy Bowden

THERMAL POWER COMPANY

WELL NO. LTGH-1 AFE NO. ____
REPORT NO. 18 DATE 6/24/86
TOTAL RIG DAYS 18 TIME FROM SPUD 17d 10h
DEPTH @ 2400 HRS. 774 FOOTAGE DRLD. 80
HRS. DRILLED 19½ HRS. TRIPPED ____
HRS. OTHER 4½

CSG 10¾" CSG. 35
7" CSG. 488
4.5" CSG. 526 temporary
LINER ____
TIE-BACK ____

HRS. REPAIR ____ RIG NO. ____
COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. 8.4 VIS. 45 W.L. 12 CK. film PH 6.5 CHL 400 YP 10
P.V. 13 GELS 4/8 % SAND 0 % SOLIDS 0.5 % LOST CIRC. MTL. ____
GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H₂O RATIO /
FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.
MAX. TEMP. ____ °F. DEVIATION SURVEYS: 738' = 2½° No direction yet

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
2	3.937"	Chris	NC	651489		588	IWC	186	43½	1-2000	350	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				25-35	100			

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO / RATE ____
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE (HIGH / AVERAGE / LOW) ____
STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Cored from 694-774', No returns

3½ hrs Pulled bit to 7" casing shoe @ 488', mixed LCM & mud trying to plug LCZ, no success.

1½ hr rig maintenance

OPERATION @ 0600 HOURS FOLLOWING DAY:

Coring @ 797'

INOPERATIVE EQUIP'T. EXPLAIN ____

COSTS

TANGIBLES

CASING	
VALVES	
FLANGES	
OTHER	

INTANGIBLE

LOCATION	1200 (cellar)
RIG MOVES	
RIG	2991
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	275
FUEL, WATER POWER	
MUD	
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	1130 (trucking)
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	
Boyles Sup	250
DAILY TOTAL	6476
FORWARD	86513
ACCU. TOTAL	92989
AFE	

SUPERVISOR Buddy Bowden/JS 25 Jun

THERMAL POWER COMPANY

WELL NO. CTGH-1 AFE NO.
REPORT NO. 17 DATE 6/23/86
TOTAL RIG DAYS 17 TIME FROM SPUD 16 1/2 HRS
DEPTH @ 2400 HRS. 694 FOOTAGE DRLD. 97
HRS. DRILLED HRS. TRIPPED HRS. REPAIR RIG NO.
HRS. OTHER COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. 8.4 VIS. 60 W.L. 12 CK. thin PH 6.5 CHL 400 YP 10
P.V. 20 GELS 4/8 % SAND 0 % SOLIDS 0.5 % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H₂O RATIO /
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS:

10 3/4 " CSG	35
7 " CSG.	488
4.5 " CSG.	526 temporary
LINER	
TIE-BACK	

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
2	3.937	Christ.	NC	651489		588	INC	106	24	7-20	350	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1				255	100			

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO / RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Cored f 597 to 694'
No mud returns

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring at 719'

INOPERATIVE EQUIP'T, EXPLAIN

SUPERVISOR Bradley Bowden / JLI

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	2943
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	675
FUEL, WATER POWER	
MUD	696
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	
Boyles	250
DAILY TOTAL	5194
FORWARD	81319
ACCU. TOTAL	86513
AFE	

25/100

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO.
REPORT NO. 16 DATE 22 JUNE 1986
TOTAL RIG DAYS 16 TIME FROM SPUD 50+ Days
DEPTH @ 2400 HRS. 547 FOOTAGE DRLD. 20
HRS. DRILLED 22 HRS. TRIPPED HRS. REPAIR RIG NO.
HRS. OTHER 2 COOLING TOWER IN USE, YES ☐ NO ☒
MUD WT. 8.4 VIS. 45 W.L. 10 CK. 1/32 PH 6.5 CHL 400 YP 15
P.V. 20 GELS 4/8 % SAND 0 % SOLIDS 0.5 % LOST CIRC. MTL. ± 1
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H₂O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS:

10¾" CSG 35
7" CSG. 488
4.5" CSG. 526 Temporary
LINER
TIE-BACK

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
1	5.937	C	20305-454	—	527	588	61	22	30	350	I B G
			65 1490								T B G
											T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1	—	—		35	100	35	Small Triplex pump for coring	

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Lost mud circulation just below 530' ±

Initial Christensen diamond core head was worn at end of 61' run.

Using 10' core barrel

OPERATION @ 0600 HOURS FOLLOWING DAY:
Coring at 615' without returns

INOPERATIVE EQUIPT, EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 2291
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	
FUEL, WATER POWER	
MUD	750
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	Broyles 250
DAILY TOTAL	$ 3921
FORWARD	$ 77,398
ACCU. TOTAL	$ 81,319
AFE	86 D01-4300-02

SUPERVISOR [illegible]

NO. 23 June 1986

THERMAL POWER COMPANY

10¾" CSG.	35
7" CSG.	488
4.5" CSG.	526 temporary
LINER	
TIE-BACK	

WELL NO. CTGH 1 AFE NO.

REPORT NO. 15 DATE 21 JUNE 1986

TOTAL RIG DAYS 15 TIME FROM SPUD

DEPTH @ 2400 HRS. 527 FOOTAGE DRLD. 0

HRS. DRILLED 0 HRS. TRIPPED HRS. REPAIR RIG NO.

HRS. OTHER 13 COOLING TOWER IN USE, YES ☐ NO ☐

MUD WT. VIS. W.L. CK. PH CHL YP

P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.

GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H₂O RATIO 1

FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.

MAX. TEMP. °F. DEVIATION SURVEYS:

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
												T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO 1 RATE

DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW

STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Ran 5½" BOWEN overshot with 4½" grapples. Latched on to fish; POH with same.

Ran 26 joints of 4.5" core guide casing. Welded two straps at each coupling and slipped on 11 solid bar stabilizers. Hung this core guide string at 526' (to be recovered before running any protection casing); hung from 7" Larkin casinghead.

OPERATION @ 0600 HOURS FOLLOWING DAY: Coring at 534' without returns

INOPERATIVE EQUIP'T, EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	D 1625
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	
FUEL, WATER POWER	
MUD	350
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER Boyles	250
Fishing tools	2215
DAILY TOTAL	$5070
FORWARD	$72,328
ACCU. TOTAL	$77,398
AFE	86-D01-4200-02

SUPERVISOR BOWDEN DD 22 June 8

THERMAL POWER COMPANY

WELL NO. CTGH-1 AFE NO.
REPORT NO. 14 DATE 20 JUNE 1986
TOTAL RIG DAYS 14 TIME FROM SPUD 80 + 10 HRS
DEPTH @ 2400 HRS. 529 FOOTAGE DRLD. 12
HRS. DRILLED 2 HRS. TRIPPED HRS. REPAIR RIG NO.
HRS. OTHER 17 COOLING TOWER IN USE, YES ☐ NO ☒
MUD WT. 8.4 VIS. 45 W.L. — CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H₂O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS:

10¾" CSG	35
" CSG.	
7 " CSG.	488
" CSG.	
LINER	
TIE-BACK	

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
3	6"	HTC	RR162-OCS	NONE	517	529	12	2	5100	120	T B G	
											T B G	
											T B G	

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1	5"	6"	80	131	1000	131		

AIR COMP. NO. CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: 6" BIT 4.5" JOINT D.P. X SUB, T.L. 21'
TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Picked up 6" bit, drilling assembly and 3½" core rods RIH

Pulled float collar at 466' and cement in bottom joint of 7" to 488'.

Cleaned out 8¾" hole to 517' and drilled 6" hole to 529'. Circulated 30 minutes and POH

Found that 6" bit and 4.5 joint left on bottom. Shut down at 1900 hrs after calling for overshot

OPERATION @ 0600 HOURS FOLLOWING DAY:

INOPERATIVE EQUIP'T, EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 2250
ABATEMENT	
BITS	#3 300
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	225
FUEL, WATER POWER	
MUD	500
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330
FISHING & DIRECTIONAL	
OTHER	Boyles 250
	Machining 50
DAILY TOTAL	4205
FORWARD	68,123
ACCU. TOTAL	72,328
AFE	86-D01 4200-02

SUPERVISOR BORDEN 20 June 86

THERMAL POWER COMPANY

WELL NO. CTGH-1 AFE NO.
REPORT NO. 13 DATE 14 JUNE 1986
TOTAL RIG DAYS 13 TIME FROM SPUD 12d 10hrs
DEPTH @ 2400 HRS. 517' FOOTAGE DRLD. 0
HRS. DRILLED 0 HRS. TRIPPED
HRS. OTHER 17 COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. VIS. W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H_2O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS:

10¾" CSG 35
7" CSG. 488
" CSG.
LINER
TIE-BACK
HRS. REPAIR RIG NO.

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
												T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Aligned - stabilized core jig over BOP stack and cellar.
Built jig floor and doghouse
Commenced picking up core rods at 2345 hrs

OPERATION @ 0600 HOURS FOLLOWING DAY:
Cleaned out cement to 490'; cleaned out hole to 507'. Prep to set hole below 517' to seat 4.5" string

INOPERATIVE EQUIPT EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	2125
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	504
FUEL, WATER POWER	
MUD	
SUPERVISION & LABOR	WELDEL 844
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	700 GR/DSS, ADDL
FISHING & DIRECTIONAL	
OTHER	GEOL 1530 CATCH UP
DAILY TOTAL	5703
FORWARD	62,420
ACCU. TOTAL	68,123
AFE	86-DOE-4300-02

THERMAL POWER COMPANY

WELL NO. CTGH 1 AFE NO. ____
REPORT NO. 12 DATE 18 JUNE 1986
TOTAL RIG DAYS 12 TIME FROM SPUD 10 + 10 HRS
DEPTH @ 2400 HRS. 517 FOOTAGE DRLD. —
HRS. DRILLED — HRS. TRIPPED ____
HRS. OTHER 12 COOLING TOWER IN USE, YES ☐ NO ☐

10¾ CSG 35'
7" CSG. 488'
" CSG. ____
" CSG. ____
LINER ____
TIE-BACK ____
HRS. REPAIR ____ RIG NO. ____

MUD WT. ____ VIS. ____ W.L. ____ CK. ____ PH ____ CHL ____ YP ____
P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____
GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H_2O RATIO ____
FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.
MAX. TEMP. ____ °F. DEVIATION SURVEYS: ____

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
												T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO ____ / ____ RATE ____
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE (HIGH AVERAGE LOW) ____
STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

D/installed replacement flange in 7" LARKIN casing head / installed BOP: double gate and Hydril units and 40 gallon accumulator
Tested blind rams and pipe rams with 1000 psig (water) for 3 mins each
Tested Hydril with 1750 psig (water) for 30 mins.
Pressured accumulator to 2800 psig. At remote station worked blind rams, pipe rams and Hydril with less than 10% pressure bleed down
BOP TEST OBSERVED AND APPROVED BY DENNIS DAVIS BLM 18 JUNE 86
Rained all day at drillsite. Snowed at the higher elevations!

OPERATION @ 0600 HOURS FOLLOWING DAY:
Adjusting DC rig base and cables. Prep to clean out hole to 517', then run 4.5" casing core guide
INOPERATIVE EQUIP'T, EXPLAIN ____

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 1500
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	
FUEL, WATER POWER	
MUD	
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	
FISHING & DIRECTIONAL	
OTHER	250
DAILY TOTAL	$ 2050
FORWARD	60,370
ACCU. TOTAL	$ 62,420
AFE	86-209-430002

SUPERVISOR BOWDEN 18 June 86

THERMAL POWER COMPANY

WELL NO. CIGH 1 AFE NO.
REPORT NO. 11 DATE 17 JUNE 1986
TOTAL RIG DAYS 11 TIME FROM SPUD Rig + Derr
DEPTH @ 2400 HRS. FOOTAGE DRLD.
HRS. DRILLED 317 HRS. TRIPPED
HRS. OTHER 8 COOLING TOWER IN USE, YES ☐ NO ☑
MUD WT. VIS. W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H_2O RATIO /
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS:

10¾" CSG
10¾" CSG. 35
7" CSG. 488
" CSG.
LINER
TIE-BACK
HRS. REPAIR RIG NO.

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
												T P G
												T P G
												T P G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO / RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

8 hrs Worked on 8 3/8" x 6" 900 Series flange Recut threads, still would not seat.

Replacement flange on delivered in PORTLAND.

OPERATION @ 0600 HOURS FOLLOWING DAY:

Cus delivered flange seated and tested in Braden Casing head. Prep for BOP pressure test

INOPERATIVE EQUIP'T, EXPLAIN

COSTS

TANGIBLES	
CASING 10¾ and 7"	9 1405
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	1000
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	
FUEL, WATER POWER	
MUD	
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	300 + 1930 331 2260
FISHING & DIRECTIONAL	
OTHER	Boyles 250
DAILY TOTAL	3255
FORWARD	57115
ACCU. TOTAL	860,370
AFE	86-00-1-4300-02

SUPERVISOR BOWDEN D. B. Jene

THERMAL P WER COMPANY

WELL NO. CTGH 1 AFE NO. ______

REPORT NO. 10 DATE 16 JUNE 1986

TOTAL RIG DAYS ______ TIME FROM SPUD 90+10 hrs

DEPTH @ 2400 HRS. 317' FOOTAGE DRLD. ______

HRS. DRILLED 0 HRS. TRIPPED ______

HRS. OTHER 11 COOLING TOWER IN USE. YES ☐ NO ☐

MUD WT. ______ VIS. ______ W.L. ______ CK. ______

P.V. ______ GELS ______ % SAND ______ % SOLIDS ______

GALVONIC PROBE ______ CORRATOR ______ SULPHIDE ______

FORM. DRLD. ______ FLOW LINE TEMP. ______ °F. S

MAX. TEMP. ______ °F. DEVIATION SURVEYS: ______

10¾" CSG. 35

7 " CSG. 488

" CSG. ______

LINER ______

TIE-BACK ______

HRS. REPAIR ______ RIG NO. ______

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM

AIR COMP. NO ______ CFM ______ PSI ______ TEMP. °F ______ CHEM.

DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ______

TOTAL STRING WT. ______ TOTAL PICKUP WT. ______ ROTARY TORQUE ______

STEAM ENTRIES, DEPTH, LBS. ______

Dennis Dav's
- Accumulator not Oregon Spec
- requirement (1) hydraulic control
- not present → (2) electric remote
- (3) manual wheel pipe + blind rams
- was specified in drilling plan
- Cellar to small

REMARKS FOR 24 HOUR PERIOD:

Nippled up BOP's and 2" choke manifold

Could not obtain pressure buildup; found leak in 8 5/8" x 6" 900 series flange that screws into 7" LARKIN Head.

Must repair or recut threads on flange to proceed with the BLM required BOP test.

Ordered replacement flange from HOMCO - Farmington by air delivery.

OPERATION @ 0600 HOURS FOLLOWING DAY:

Seeking local thread checking capacity.

INOPERATIVE EQUIP'T. EXPLAIN ______

COSTS

TANGIBLES

CASING	
VALVES	
FLANGES	
OTHER	

INTANGIBLE

LOCATION	
RIG MOVES	
RIG	$ 1375
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	
FUEL, WATER POWER	
MUD	
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	2200
FISHING & DIRECTIONAL	
OTHER	Boyles 250

2900 logging
1200 geologist catch-up
4100
-2200 costed
1900

DAILY TOTAL $ 4125

FORWARD 52,990

ACCU. TOTAL $ 57,115

AFE 86-001-4300-02

SUPERVISOR BOWDEN DO. 17 June

THERMAL F WER COMPANY

WELL NO. CTGH-1 AFE NO.
REPORT NO. 9 DATE 15 JUNE 1986
TOTAL RIG DAYS 9 TIME FROM SPUD 82+10 Hrs
DEPTH @ 2400 HRS. 517 FOOTAGE DRLD. 0
HRS. DRILLED 0 HRS. TRIPPED
HRS. OTHER 12 COOLING TOWER IN USE, YES ☐ NO ☒
MUD WT. — VIS. W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H_2O RATIO /
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS:

10¾" CSG 35'
7" CSG. 488'
" CSG.
LINER
TIE-BACK
HRS. REPAIR RIG NO.

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
—												T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
—								

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO / RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Constructed cellar
Welded on LARKIN casing head to 7" casing
Set on BOP equipment

OPERATION @ 0600 HOURS FOLLOWING DAY:
Preparing to pressure test BOP

INOPERATIVE EQUIP'T, EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 1500
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	
FUEL, WATER POWER	
MUD	
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330 + 540
FISHING & DIRECTIONAL	
OTHER	Bayles Sup 250
DAILY TOTAL	$ 2050
FORWARD	+ 50940
ACCU. TOTAL	+ 52,990
AFE	86-D01-4300-02

SUPERVISOR Bonifas NO. 16 June

THERMAL POWER COMPANY

WELL NO. CTGH-1 AFE NO.
REPORT NO. 8 DATE 14 JUNE 86
TOTAL RIG DAYS 8 TIME FROM SPUD 7d+10hrs
DEPTH @ 2400 HRS. 317 FOOTAGE DRLD. 0
HRS. DRILLED 8 HRS. TRIPPED
HRS. OTHER 9 COOLING TOWER IN USE, YES ☐ NO ☑
MUD WT. — VIS. W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H₂O RATIO /
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS:

10¾ CSG CSG. 35'
7 " CSG. 488
" CSG.
LINER
TIE-BACK
HRS. REPAIR RIG NO.

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
												T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
—								

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO / RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Mixed 4 barrels of Class G cement and perlite 1:1 and filled annulus between 7" and 10¾" Cement level came to surface and remained there
Rigged down rotary tools
Cut off 7" casing
Pumped out pits
Digging cellar

OPERATION @ 0600 HOURS FOLLOWING DAY:

INOPERATIVE EQUIP'T, EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$ 1000
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	
FUEL, WATER POWER	
MUD	
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330+210
FISHING & DIRECTIONAL	
OTHER	BOYLES 250
DAILY TOTAL	1550
FORWARD	49,390
ACCU. TOTAL	$ 50,940
AFE	86-D01-4300-02

SUPERVISOR Brandon ND. 15 June

THERMAL P WER COMPANY

WELL NO. CTGH 1 AFE NO.
REPORT NO. 1 DATE 13 JUNE 1986
TOTAL RIG DAYS 1 TIME FROM SPUD 60+10 HRS
DEPTH @ 2400 HRS. 517' FOOTAGE DRLD. 0
HRS. DRILLED 0 HRS. TRIPPED
HRS. OTHER 19 COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. — VIS. W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H_2O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS:

$10\frac{3}{4}$" CSG 35'
7" " CSG. 488'
" CSG.
LINER
TIE-BACK
HRS. REPAIR RIG NO.

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
												T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Colorado Logging completed GR log 0600-1300 hrs.
Ran 8 3/4" bit to 517'. CO - no fill found on btm. POH
Ran 7" casing. Stopped at 70'. POH. removed centralizer from first joint
Ran 7" casing. Stopped at 488'. Tried to circulated csg to btm; no go
Rigged to cement. HALLIBURTON pumped 5 bbls water ahead of cement. Slurry of 122 cu ft Class G 11:1 perlite plus 40% silica flour, 2% gel at 13.5 ppg density Tailed 32 cu ft Class G plus 40% SiO2 at 15.5 ppg. Displaced w/ 19 bbls water CIP at 0130 hrs, 14 JUNE 86
Had good cement returns. Plug bumped at 1050 psig Held OK
Ran 519' of 7" 26 lbs K-55 BT&C Csg shoe at 488', float collar at 466'.
Cement dropped in annulus

OPERATION @ 0600 HOURS FOLLOWING DAY:
Prep to do outside cement job

INOPERATIVE EQUIP'T, EXPLAIN

COSTS 1 barrel of cement = 5.6146 ft

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$2375
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	
FUEL, WATER POWER	
MUD	
SUPERVISION & LABOR	300
CEMENT SERVICES	9471
TRANSPORTATION	
LOGGING SERVICES	300 + 210
FISHING & DIRECTIONAL	
OTHER	PARKES 250
DAILY TOTAL	12,696
FORWARD	$36,694
ACCU. TOTAL	$49,390
AFE	

SUPERVISOR BOWDEN DO-14 Jun

THERMAL POWER COMPANY

WELL NO. CTGH-1 AFE NO.
REPORT NO. 6 DATE 12 JUNE 86
TOTAL RIG DAYS 6 TIME FROM SPUD 5 or 10 days
DEPTH @ 2400 HRS. 517 FOOTAGE DRLD. 97
HRS. DRILLED 9.5 HRS. TRIPPED HRS. REPAIR RIG NO.
HRS. OTHER 3.5 COOLING TOWER IN USE, YES ☐ NO ☒
MUD WT. 8.8 VIS. 70 W.L. 10 CK. 2/32 PH 7 CHL 400 YP 22
P.V. 20 GELS 12/26 % SAND 0.5 % SOLIDS 5.0 % LOST CIRC. MTL. 6-8
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H_2O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS: 517' 2°

16" CSG
10 3/4" CSG. 35'
" CSG.
" CSG.
LINER
TIE-BACK

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
2	8 3/4	SMITH	AV607G	E-3	NONE	35	517	482	3.5	15,000	60	T 4 B 3 G W
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1	5"	6"	80	131	100	131		

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: 8 3/4" BIT ONE 6" DC 24 4.5" DCs
TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Drilled 8 3/4" hole 420' to 517'

Lost 10 barrels of mud at 425.

2 1/2 hrs circulating mud - conditioning hole at 517'

1/2 hr survey at 517'

Geophysical logging crew/truck enroute at 2100 hrs at drillsite

OPERATION @ 0600 HOURS FOLLOWING DAY:
Logging borehole, from 517 to 35'
HALLIBURTON on location

INOPERATIVE EQUIP'T, EXPLAIN

SUPERVISOR BOWDEN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	$1711
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	
FUEL, WATER POWER	
MUD	450
SUPERVISION & LABOR	BOWDEN 300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	300 +180
FISHING & DIRECTIONAL	
OTHER	BOYCES 250
DAILY TOTAL	3017
FORWARD	33,683
ACCU. TOTAL	36,694
AFE	86-401-4300-02

DO 13 June

THERMAL F WER COMPANY

WELL NO. CTGH-1 AFE NO.
REPORT NO. 5 DATE 6/11/86
TOTAL RIG DAYS 5 TIME FROM SPUD 41 10 HRS
DEPTH @ 2400 HRS. 420' FOOTAGE DRLD. 200'
HRS. DRILLED 11½ HRS. TRIPPED
HRS. OTHER ½ COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. 9.2 VIS. 61 W.L. 10 CK. 2 PH 7.2 CHL 400 YP 26
P.V. 18 GELS 12/21 % SAND 5 % SOLIDS 6 % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H₂O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS: 220' = ½°.

10¾" CSG CSG. 35'
" CSG.
" CSG.
LINER
TIE-BACK
HRS. REPAIR RIG NO.

5.71

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
2	8¾	Smith	F-3	AV6099	None	35'	—	385'	21	15-18000	65	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1	5"	6"	80	131	100	131		

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: 8¾" bit, 1 x 6" drill collar, 20 x 4½ DC total 420'
TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

drilled 8¾" hole from 220' to 420'

½ hr other = survey

400-410' lost 50% returns ~1000 gals

410' full returns

JLT

OPERATION @ 0600 HOURS FOLLOWING DAY:

INOPERATIVE EQUIP'T, EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	45
RIG MOVES	
RIG	2993
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	
FUEL, WATER POWER	
MUD	
SUPERVISION & LABOR	300
CEMENT SERVICES	190 (10¾" casing)
TRANSPORTATION	
LOGGING SERVICES	300 - 830 150
FISHING & DIRECTIONAL	
OTHER	
Boyles SVP.	250
DAILY TOTAL	4078
FORWARD	29605
ACCU. TOTAL	33683
AFE	

SUPERVISOR Ruthie Rowden

THERMAL P WER COMPANY

WELL NO. CTGH-1 AFE NO. 10

REPORT NO. 4 DATE 6/4/84

TOTAL RIG DAYS 4 TIME FROM SPUD 3 + 10 hrs

DEPTH @ 2400 HRS. 220' FOOTAGE DRLD. 195'

HRS. DRILLED 9½ HRS. TRIPPED ____

HRS. OTHER 2½ COOLING TOWER IN USE, YES ☐ NO ☐

MUD WT. 8.8 VIS. 40 W.L. ____ CK. ____ PH ____ CHL ____ YP ____

P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____

GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H,D RATIO ____

FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.

MAX. TEMP. ____ °F. DEVIATION SURVEYS: 160' = ½° ; 220' = No Data

10¾" CSG CSG. 35'

" CSG. ____

" CSG. ____

LINER ____

TIE-BACK ____

HRS. REPAIR ____ RIG NO. ____

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
2	8¾	Smith	F3	AV6059	None	35'	—	195'	9½	S-15000	65	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1	5"	6	80	114	100	114		

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO ____ RATE ____

DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: 1 x 8¾" bit, 1 x 6" DC, 10 x 4½ DC, Total Length 220'

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE (HIGH AVERAGE LOW) ____

STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Drilled 8¾" hole from 35' to 220'

2½ hrs running deviation survey problem with clock

Shut down 1900 hours

Geophysical borehole loggers called out 1700 hours

JLT

OPERATION @ 0600 HOURS FOLLOWING DAY:

INOPERATIVE EQUIP'T, EXPLAIN ____

SUPERVISOR Buddy Bowden

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	3096
RIG MOVES	
RIG	
ABATEMENT	
BITS	2500 (B.H.A)
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	
FUEL, WATER POWER	
MUD	200
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	300 (330 − 30 = 120)
FISHING & DIRECTIONAL	
OTHER	
Boyles Sup	250
DAILY TOTAL	6646
FORWARD	22946
ACCU. TOTAL	29605
AFE	

THERMAL POWER COMPANY

WELL NO. CTGH-1 AFE NO.
REPORT NO. 3 DATE 2 JUNE 86
TOTAL RIG DAYS 3 TIME FROM SPUD 20+10 HRS
DEPTH @ 2400 HRS. 35 FOOTAGE DRLD. 0
HRS. DRILLED 0 HRS. TRIPPED HRS. REPAIR RIG NO.
HRS. OTHER 9 COOLING TOWER IN USE, YES ☐ NO ☒
MUD WT. 8.8 VIS. 65 W.L. CK. PH CHL YP
P.V. GELS % SAND % SOLIDS % LOST CIRC. MTL.
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H,O RATIO /
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS:

CSG 10 3/4" at 35'
" CSG.
" CSG.
" CSG.
LINER
TIE-BACK

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND
												T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO / RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Started up rig at 9 am
Ran 12 1/4" air hammer and C.O. to 35'. POH.
Ran one joint of 10 3/4" K-55 40.5 lbs/ft conductor casing to 35'.
Blew hole dry with air
Cemented Conductor at 35' depth with slurry of 16 sax Portland Cement and 85 sax of Construction Cement plus 3% Ca Cl
CIP at 1430 hrs. Shut down rig at 1800 hrs WOC

OPERATION @ 0600 HOURS FOLLOWING DAY: Preparing to drill out with 8 3/4" bit

INOPERATIVE EQUIP'T, EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	Pit Liner $ 500
RIG MOVES	
RIG	1125
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	
FUEL, WATER POWER	
MUD	157
SUPERVISION & LABOR	300
CEMENT SERVICES	?
TRANSPORTATION	
LOGGING SERVICES	900 330 + 90
FISHING & DIRECTIONAL	
OTHER	Bowles Sup. 250
DAILY TOTAL	3232
FORWARD	19,727
ACCU. TOTAL	$ 22,959
AFE	86-DO1-4300-02

SUPERVISOR

THERMAL POWER COMPANY

WELL NO. CTGH-1 AFE NO. BELOW
REPORT NO. 2 DATE 8 JUNE 86
TOTAL RIG DAYS 1 + 10 HRS TIME FROM SPUD
DEPTH @ 2400 HRS. 35 FOOTAGE DRLD. 35
HRS. DRILLED 3 1/2 HRS. TRIPPED HRS. REPAIR RIG NO.
HRS. OTHER 11 COOLING TOWER IN USE, YES ☐ NO ☐
MUD WT. 8.6 PPG VIS. 54 W.L. 54 CK. 2/32 PH 6.8 CHL 400 YP 21
P.V. 17 GELS 9/12 % SAND 3 % SOLIDS 3.5 % LOST CIRC. MTL. NONE
GALVONIC PROBE CORRATOR SULPHIDE OXY. AIR-H,O RATIO 1
FORM. DRLD. FLOW LINE TEMP. °F. SUCTION TEMP. °F.
MAX. TEMP. °F. DEVIATION SURVEYS:

" CSG
" CSG.
" CSG.
" CSG.
LINER
TIE-BACK

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
2	8 3/4	SMITH		AB6779	NONE	0	35	35	3 1/2	ALL	60	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1	5"	6"	54	88		88		

AIR COMP. NO CFM PSI TEMP. °F CHEM. RATIO 1 RATE
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION:

TOTAL STRING WT. TOTAL PICKUP WT. ROTARY TORQUE HIGH AVERAGE LOW
STEAM ENTRIES, DEPTH, LBS.

REMARKS FOR 24 HOUR PERIOD:

Moved truck mtd rotary leg 6'
Spudded second conductor hole
Drilled 8 3/4" hole in 3 1/2 hrs POH
Ran 12 1/4" bit; reamed opened hole
bit stopped at 20'. POH
Ran 12 1/4" air hammer; opened holes 35'
POH
Ran 10 3/4" conductor; stopped at 24'
POH and ran 12 1/4" bit CO to 35' POH
Ran 10 3/4 conductor; stopped at 28'
Shut down at 2300 hrs
Filled first conductor hole w
cuttings from second hole

OPERATION @ 0600 HOURS FOLLOWING DAY:
Prep to CO again; leave straight
hole. Expect to cement 10 3/4"
conductor

INOPERATIVE EQUIP'T, EXPLAIN

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	
RIG MOVES	
RIG	1325
ABATEMENT	
BITS	
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	
FUEL, WATER POWER	
MUD	
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	
FISHING & DIRECTIONAL	
OTHER Boyles Rig Sup.	500
DAILY TOTAL	2175
FORWARD	17,552
ACCU. TOTAL	19,727
AFE	86-DOI-4300-02

SUPERVISOR BOWDEN DD 9 June

THERMAL P WER COMPANY

WELL NO. CTG#1 AFE NO. BELOW
REPORT NO. 1 DATE 7 JUNE 86
TOTAL RIG DAYS 0+10 HRS TIME FROM SPUD 10 HRS
DEPTH @ 2400 HRS. 35 FOOTAGE DRLD. 35
HRS. DRILLED 5 HRS HRS. TRIPPED ____
HRS. OTHER 5 HRS COOLING TOWER IN USE, YES ☐ NO ☑
MUD WT. 8.3 PPG VIS. 60 SEC W.L. — CK. — PH — CHL — YP —
P.V. ____ GELS ____ % SAND ____ % SOLIDS ____ % LOST CIRC. MTL. ____
GALVONIC PROBE ____ CORRATOR ____ SULPHIDE ____ OXY. ____ AIR-H_2O RATIO 1
FORM. DRLD. ____ FLOW LINE TEMP. ____ °F. SUCTION TEMP. ____ °F.
MAX. TEMP. ____ °F. DEVIATION SURVEYS: ____

CSG
" CSG. ____
" CSG. ____
" CSG. ____
LINER ____
TIE-BACK ____
HRS. REPAIR ____ RIG NO. ____

BIT #	SIZE	MAKE	TYPE	SER. NO.	JETS	IN	OUT	FT.	HRS.	WT.	RPM	COND.
1	12¼"	REED	S136J	784376	NONE	0	35	35	5	ALL	60	T B G
												T B G
												T B G

PUMP	LINER	STROKE	SPM	GPM	PSI	TOTAL GPM	NOZZLE VEL.	ANNULUS VEL.
1	5"	6"	54	88	0	88		

AIR COMP. NO ____ CFM ____ PSI ____ TEMP. °F ____ CHEM. ____ RATIO 1 RATE ____
DRILLING ASSEMBLY, TOTAL LENGTH AND DESCRIPTION: ____

TOTAL STRING WT. ____ TOTAL PICKUP WT. ____ ROTARY TORQUE (HIGH AVERAGE LOW) ____
STEAM ENTRIES, DEPTH, LBS. ____

REMARKS FOR 24 HOUR PERIOD:

Mixed Spud mud. Spudded 10:30 am 6-7-86
Drilled 12¼" hole from surface to 12' depth; stopped on boulder bed POH.
Ran 12¼" air hammer; drilled 12-35' depth "rough going." POH
Ran 12¼" bit and reamed 0-35'. POH.
Ran 10¾" conductor pipe 35' joint; stopped at 12'. POH.
Reamed hole w 12¼" bit to 35' POH
Ran 10¾" conductor; again stopped at 12' POH and shut down

OPERATION @ 0600 HOURS FOLLOWING DAY:
REVIEWING CONDUCTOR HOLE PROBLEM

INOPERATIVE EQUIP'T. EXPLAIN ____

COSTS

TANGIBLES	
CASING	
VALVES	
FLANGES	
OTHER	
INTANGIBLE	
LOCATION	7005
RIG MOVES	7000
RIG	1736
ABATEMENT	
BITS	761 600
DRILL EQUIP. MAIN.	
DRILL. EQUIP. RENTAL	
FUEL, WATER POWER	
MUD	411
SUPERVISION & LABOR	300
CEMENT SERVICES	
TRANSPORTATION	
LOGGING SERVICES	330 —
FISHING & DIRECTIONAL	
OTHER	WATER LINE 500
DAILY TOTAL	17,552
FORWARD	—
ACCU. TOTAL	$ 17,552
AFE	86-D01-4300-02A

SUPERVISOR BOWDEN 10:9 June