

fulfill located
Bunker 4-18-79

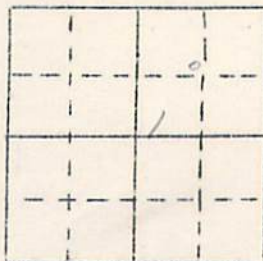
IOWA GEOLOGICAL SURVEY
In Cooperation with U. S. Geological Survey

W-1333

RECORD OF WELL

Location:

Town: Marion (N E)
(S W); County Linn
NWSENE NW sec. 1 T. 83 N., R. 7 W. Rapids Twp.
SE-NW-NE



Well name and number Marion City Well #1

Owner City of Marion Address _____

Tenant _____ Address _____

Contractor Thorpe Well Co. Address Des Moines

Drillers _____

Drilling dates Jan. 20, 1941 - Feb. 28, 1941

Well data:
Elevations: Drilling curb 786.4 feet; Land surface 785.6 feet
top 786'

Determined by _____

Topographic position Valley of Indian Creek

Total depth: Reported _____ feet, Measured 437' feet

Drilling method cable

Hole and casing data 128' of 12" O.W.I. 0-128' 22'2" of 20" casing 6'-22'8"
(Give amount, size, kind, and depth of all casing; type and

position of seals and packers; cementing; how finished--perforated pipe, screen,
gravel pack, open hole, etc.)

Original depth to water _____ ft. above _____ ft. below _____ Date _____

Original elevation of water level _____ ft.; Source of data _____

Sources of water: Principal Chickasaw; Others _____

Production data:

Static depth to water 8.75

Date _____

Pumping level 99.2

Measuring point _____

at 798 g.p.m.Specific capacity _____ g.p.m. per ft. drawdown; Temperature 52° °F.Pump data; Type pump Turbine Column Dia. _____ Length 185'9"Cylinder or bowls: Dia. _____ Length _____ Suction pipe 20Power Electricity Airline _____

Estimated rate of production: _____ g.p.m. for _____ hrs. a day

Use of water _____

WATER ANALYSES (in parts per million)

Date sampled	<u>Feb. 28, 1941</u>	<u>March, 1941</u>		
Sampled by	<u>D.A.D.</u>	<u>A.P. Gerardi</u>		
Total solids	<u>293</u>	<u>244</u>		
Insoluble matter	<u>39.0</u>	<u>11.5</u>		
Alkalinity (Meo)	<u>226.0</u>	<u>228.0</u>		
Alkalinity (Phn)	<u>0.0</u>	<u>0.0</u>		
pH	<u>7.3</u>	<u>7.3</u>		
Fe ₂ O ₃ + Mn ₂ O ₃ + Al ₂ O ₃	<u>4.5</u>	<u>4.0</u>		
Alkali as sodium	<u>1.6</u>	<u>2.0</u>		
Calcium	<u>67.2</u>	<u>63.6</u>		
Magnesium	<u>18.0</u>	<u>17.5</u>		
Iron (unfiltered)	<u>0.6</u>	<u>0.2</u>		
Manganese	<u>0.00</u>	<u>0.00</u>		
Nitrate	<u>0.00</u>	<u>0.00</u>		
Fluoride	<u>1.0</u>	<u>1.0</u>		
Chloride	<u>6.0</u>	<u>5.0</u>		
Sulfate	<u>10.4</u>	<u>11.3</u>		
Bicarbonate	<u>275.7</u>	<u>278.2</u>		
Hardness (ppm)	<u>244</u>	<u>231</u>		
Hardness (gpg)	<u>14.3</u>	<u>13.5</u>		

Remarks _____

Laboratory data:

Sample storage location _____

Sample range 0-437No. spls. 87No. dupls. & cond. 87 6Spls. prepared by Summerford

Washed range _____

by _____

Driller's log and cond. _____

Insoluble residues: Prepared by _____

Studied by _____

Strip log _____

Microscopic study March - Davisstrip log Davis

Gen. log _____

Correl. by Davis

IOWA GEOLOGICAL SURVEY
Iowa City, Iowa

DRILLER'S LOG

Marion City Well #1

Marion, Linn County, Iowa
February 27, 1941

<u>Description</u>	<u>From</u>	<u>To</u>
Cinders	0	3
Clay	3	8
Yellow clay	8	13
Clay gravel	13	15
Sand gravel	15	20
B. lime	20	25
Lime	25	40
Lime - shale	40	45
B. lime	45	50
Lime	50	65
Lime - shale	65	70
Lime hard	70	75
	75	80
Shale	80	85
Lime - (hard 100-105)	85	170
Gray lime	170	200
Light blue lime	200	205
Brown lime	205	210
B. lime	210	225
Lite lime	225	230
Lime	230	260
Gray lime	260	265
Lite lime	265	280
Gray lime	280	290
Lite lime	290	345
Gray lime	345	360
Lite lime	360	395
Light brown lime	395	400
Lite lime	400	425
Gray lime	425	430
Lime dark	430	435
Shale	435	437
Total depth		437.5

From: Guy Elom, driller for Thorpe Well Co.
Ray McGraw, driller.

Name of Well Marion City Well No. 1 Survey No. W-1333
Location SE $\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 1, T83N, R7W, Linn County
Drilled by Thorpe Well Co., Des Moines Date Jan 20 to Feb. 28, 1941
Total Depth 437 ft, Curb Elevation 786 ft, Static Level 8.75 ft.
Pumping Test 42 Hours Min; Gal. per Min. 798, Drawdown 90.45 ft. in 42 min. Hours
Casing Data _____

No.	Rock Unit	Description of Formations	Thick.	From (feet)	To
PLEISTOCENE SYSTEM					
	Recent				
1.	Soil, cinders, and sand.		3	0	3
2.	Sand, medium-grained, angular to subround; 40% silt and clay, light brown to dark buff.		12	3	15
DEVONIAN SYSTEM					
	Wapsipinicon formation				
3.	Dolomite, pale buff to light drabish gray, fine to medium-grained, crystalline, granular.		10	15	25
4.	Dolomite, light yellowish buff, fine to medium- grained, saccharoidal.		10	25	35
5.	Dolomite, pale buff to drab, fine-grained, saccharoidal, argillaceous.		10	35	45
6.	Dolomite, light gray, fine-grained, dense, with imbedded subround quartz grains, 1/2-1/4 mm.; 15% dolomite, light buff, fine-grained, saccharoidal.		5	45	50
7.	Dolomite, light gray, fine-grained to litho- graphic, with black specks; 3% dolomite, pale buff, saccharoidal.		5	50	55
8.	Dolomite, light gray, fine grained to litho- graphic, hard, dense; 10% dolomite, drabish gray, fine-grained, saccharoidal; 15% shale, drab, pyritic; trace of sand, subround; trace of black chert.		5	55	60

Notes:

No.	Rock Unit	Thick.	From (feet)	To
9.	Dolomite, light to medium gray, fine-grained, dense and white to pale gray, very fine-grained saccharoidal; trace of chert, black; trace of sand.	15	60	75
10.	Limestone, pale to light gray, fine to coarse-grained, crystalline; 10% to 20% dolomite light yellowish gray, fine-grained and pale gray, medium to coarse grained, crystalline; trace of shale, pale green and sand in lower part.	10	75	85

SILURIAN SYSTEM

Niggaran series

Gower formation

11.	Dolomite, pale to light gray, medium-grained, crystalline, dense, saccharoidal in part.	30	85	115
12.	Dolomite, pale to light gray, medium-grained, crystalline, saccharoidal in part; trace of clay, pale green.	10	115	125
13.	Dolomite, pale to light gray, medium-grained, crystalline, saccharoidal in part; 5% to 10% dolomite, pale yellowish gray to light gray, fine-grained to lithographic.	10	125	135
14.	Dolomite, pale to light gray, medium-grained, crystalline, saccharoidal in part; trace of authigenic quartz crystals.	35	135	170
15.	Dolomite, medium gray, fine to medium-grained, crystalline, porous; 30% dolomite, pale drabish gray, medium-grained, saccharoidal; trace of authigenic quartz crystals.	5	170	175
16.	Dolomite, light to medium drabish gray, brownish in part, medium grained, crystalline, saccharoidal to dense; trace of chert, white, in upper 10 feet; trace of authigenic quartz crystals.	25	175	200

Hopkinton formation

17.	Dolomite, pale yellowish buff, medium to fine-grained, saccharoidal and crystalline dense; trace to 5% dolomite, medium gray, medium-grained, crystalline; trace of chert, white.	20	200	220
18.	Dolomite, pale yellow to pale yellowish buff, fine to medium-grained, saccharoidal and crystalline dense, vesicular; in lower part, 2% to 5% dolomite, yellowish pink, fine to medium-grained, saccharoidal.	40	220	260

No.	Rock Unit	Thick	From (feet)	To
19.	Dolomite, light gray, fine to medium-grained, saccharoidal to crystalline dense, vesicular.	10	260	270
20.	No sample interval.	10	270	280
21.	Dolomite, light gray, fine to medium-grained, saccharoidal to crystalline dense, vesicular; 10% dolomite, white to pale gray, fine-grained, saccharoidal; 2% dolomite, light drabish gray to pale yellow, to pale brown; trace of authigenic quartz crystals.	10	280	290
22.	No sample interval.	5	290	295
23.	Dolomite, white to pale gray, fine-grained, saccharoidal; 15% to 20% dolomite, pale drabish gray to pale grayish yellow, fine-grained, crystalline, dense; trace of chert, white.	20	295	315
<i>Alexandrian series</i>				
<i>Rankakee-Edgewood formations</i>				
24.	Dolomite, pale yellowish gray to light drabish gray, medium grained, crystalline, dense, vesicular, saccharoidal in part; 10% to 20% chert, white to pale drabish gray, pyritic.	15	315	330
25.	Dolomite, pale grayish yellow, medium-grained, crystalline, dense, vesicular.	15	330	345
26.	Dolomite, pale drabish gray, fine to medium-grained, crystalline, dense to saccharoidal, porous, vesicular.	10	345	355
27.	Dolomite, pale grayish yellow, fine to medium-grained, crystalline, dense, vesicular; trace to 1% chert, white.	50	355	405
28.	Dolomite, pale grayish yellow, saccharoidal to crystalline dense, vesicular; 15% chert, pale gray, fossiliferous and pyritic.	10	405	415
29.	No sample interval.	15	415	430
30.	Dolomite, light drab, fine to medium-grained, saccharoidal and crystalline; 25% dolomite, light bluish gray, fine-grained, saccharoidal, argillaceous; 5% chert, pale drabish gray.	4	430	434
<i>ORDOVICIAN SYSTEM</i>				
<i>Maquoketa formation</i>				
31.	Shale, pale gray, calcareous.	3	434	437
Total Depth.				437

SERIES	FORMATION	MATERIAL & DIST. FROM SURFACE IN FEET	TOTAL DEPTH	LENGTH SECTION	DIAM. BORE	Q.D. OF CASIN	FINISH I.D.	TYPE CASIN	WT. PE FOOT
DEVONIAN	DRIFT	Fill 3'							
		Brown clay 8'							
		Yellow clay-sandy 13'	20" Q.D.						
		Clay & gravel 12'							
	UPPER DEVONIAN	Sand & Gravel 20'				22' 22' 20" 20"		5th	
		Broken limestone							
		45'	12.09" I.D.						
		Broken limestone and shale 50'							
		Limestone 65'	19"			500 gpm		-58	
		Limestone & Shale 70'				600 gpm		-67	
		Hard limestone 80'							
		Shale 85'				700 gpm		-88	
		Hard limestone 128' 5"				800 gpm		-117	
						128' 5" 128' 5" 19" 12.75 12.09		GWI	45"
		Brown limestone 170'	12"						
		Limestone 200'							
		Estimated 2							
SILURIAN	NIAGARIAN	Light brown limestone							
		320'							
		Gray limestone							
		420'							
		Limestone 434'							
	MAQUOKETA	SHALE 437' 5"				437' 5" 309' 12" 12"			

DATA
 Driller: Thorpe Well Co.
 Started Jan. 20, 1941
 Finished Feb. 21, 1941
 Tested 41 hrs.
 436 gpm 21 hrs.
 800± gpm 20 hrs.

IOWA GEOLOGICAL SURVEY
Iowa City, Iowa

PUMPING TEST

Marion City Well #1

Marion, Linn County, Iowa
February 28, 1941

These data which were taken from the original records of the engineer and the drillers on the test, have been corrected to compensate for the error introduced by the settling of the weir box during the test. The water level measurements from 3:55 p.m. February 27, 1941 to 3:30 p.m. February 28, 1941 have been converted from the "drawdown" figures of the engineer to the true water level measurements by the addition of 9.75 feet to each figure.

Time	Weir head	G. P. M.	Water level	Specific capacity	Remarks
2-27-41					
0 3:40			9.75		Measuring point = top of 12" casing, 0.8 foot above ground.
15 3:55	4 3/4	344	33.00 23.25	14.8	
30 4:10	4 3/4	344	35.58 25.83	13.3	
60 4:40	4 3/4	344	37.00 27.25	12.6	
90 5:10	5 5/8	436	45.67 35.92	12.1	
120 5:40	5 5/8	436	47.00 37.25	11.7	
140 6:00	5 5/8	436	47.33 37.58	11.6	
170 6:30	5 5/8	436	47.86 38.11	11.4	
200 7:00	5 5/8	436	48.27 38.52	11.3	Back end of weir box settling, gage reading and G.P.M. corrected.
230 7:30	5 5/8	436	48.50 38.75	11.2	
260 8:00	5 5/8	436	49.00 39.25	11.1	
290 8:30	5 5/8	436	49.25 39.50	11.0	
320 9:00	5 5/8	436	49.25 39.50	11.0	
350 9:30	5 5/8	436	49.33 39.58	11.0	
380 10:00	5 5/8	436	49.50 39.75	11.0	
410 10:30	5 5/8	436	49.25 39.50	11.0	
440 11:00	5 5/8	436	49.17 39.42	11.0	
470 11:30	5 5/8	436	50.00 40.25	10.8	
500 12:00	5 5/8	436	50.00 40.25	10.8	
2-28-41					
530 12:30	5 5/8	436	50.17 40.42	10.8	
560 1:00	5 5/8	436	50.17	10.8	
590 1:30	5 5/8	436	50.17	10.8	
620 2:00	5 5/8	436	50.17	10.8	
650 2:30	5 5/8	436	50.17	10.8	
680 3:00	5 5/8	436	50.17	10.8	
710 3:30	5 5/8	436	50.17	10.8	
740 4:00	5 5/8	436	50.17	10.8	
770 4:30	5 5/8	436	50.17	10.8	
800 5:00	5 5/8	436	50.17	10.8	
830 5:30	5 5/8	436	50.17	10.8	
860 6:00	5 5/8	436	50.17	10.8	

Marion City Well #1

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Time	Weir head	G. P. M.	Water level	Specific capacity	Remarks
890 6:30	5 5/8	436	50.25 40.50	10.7	
920 7:00	5 5/8	436	50.25 "	10.7	
950 7:30	5 5/8	436	50.25 "	10.7	
980 8:00	5 5/8	436	50.25 "	10.7	
1010 8:30	5 5/8	436	50.67 40.92	10.6	
1040 9:00	5 5/8	436	50.75 41.00	10.6	
1070 9:30	5 5/8	436	50.75 "	10.6	
1100 10:00	5 5/8	436	50.75 "	10.6	
1130 10:30	5 5/8	436	50.75 "	10.6	
1160 11:00	5 5/8	436	50.46 40.71	10.7	
1190 11:30	5 5/8	436	50.45 40.70	10.7	
1220 12:00	5 5/8	436	50.50 40.75	10.7	
1250 12:30	5 5/8	436	50.50 "	10.7	
1280 1:00	5 5/8	436	50.50 "	10.7	Speeded up at 1:30. Stick read 7 1/4". Jacked up back end and stick read 7". This probably OK. Clouded up with speed.
1295 1:15	7	590	65.50 55.75	10.6	
1310 1:30	7 1/4	619	68.75 59.00	10.5	Speeded up at 1:30.
1340 2:00	8 7/8	813	92.00 82.25	9.9	
1370 2:30	8 3/4	798	93.33 83.58	9.5	
1410 3:00	8 3/4	798	94.50 84.75	9.4	
1430 3:30	8 3/4	798	94.50 84.75	9.4	
1460 4:00	8 3/4	798	95.08 85.33		
1490 4:30	8 3/4	798	95.50 85.75		
1520 5:00	8 3/4	798	95.75 86.00		
1550 5:30	8 3/4	798	96.00 86.25		
1580 6:00	8 3/4	798	96.50 86.75		
1610 6:30	8 3/4	798	96.75 87.00		
1640 7:00	8 5/8	783	96.83 87.08		Gage reading and G.P.M. corrected for 1/8" settlement of weir box.
1670 7:30	8 5/8	783	96.50 86.75		
1700 8:00	8 5/8	783	96.58 86.83		
1730 8:30	8 5/8	783	96.75 87.00		
1760 9:00	8 5/8	783	96.83 87.08		
1790 9:30	8 5/8	783	96.75 87.00		
1820 10:00	8 5/8	783	96.83 87.08		
1850 10:30	8 5/8	783	96.83 87.08		
1880 11:00	8 5/8	783	96.75 87.00		
1910 11:30	8 5/8	783	96.75 87.00		
✓ 1940 12:00	8 5/8	783	96.83 87.08		
3-1-41					
1970 12:30	8 3/8	752	96.75 87.00		
2000 1:00	8 3/8	752	96.75 87.00		
2030 1:30	8 3/8	752	96.92 87.17		
2060 2:00	8 3/8	752	96.83 87.08		
2090 2:30	8 3/8	752	96.92 87.17		

Time	Weir head	G. P. M.	Water level	Specific capacity	Remarks
2120 3:00	8 3/8	752	96.83	87.08	
2150 3:30	8 3/8	752	96.83	87.08	
2180 4:00	8 3/8	752	96.83	87.08	
2210 4:30	8 3/8	752	96.92	87.17	
2240 5:00	8 3/8	752	97.17	87.42	
2270 5:30	8 1/8	732	97.00	87.25	
2300 6:00	8 1/8	732	97.25	87.50	
2330 6:30	8 1/8	732	97.33	87.58	
2360 7:00	8 1/8	732	97.25	87.50	
2390 7:30	8 1/8	732	97.67	87.92	
2420 8:00	8 1/8	732	97.83	88.08	
2450 8:30	8 1/8	732	98.21	88.46	
2465 8:45			99.2	88.45	Pump stopped at 8:45 a.m.

"At end of test gage stick read 1/8" when water was level with weir. Therefore, at least last readings are 1/8" high and should be corrected. Believe this error started about 2:00 p.m. February 28, 1941 as water started to run over back of tank which it had not been doing, indicating some settlement of the back at this time." --Engineer.

During the pumping test the back end of the weir box settled and to compensate for the settlement, corrections have been made in the above gage readings and in G. P. M.

The corrections were made by the engineer on the test and are as follows:

6:30 p.m., 2-27-41 to
10:00 p.m., 2-27-41 - 1/8" subtracted from
observed gage reading.

10:00 p.m., 2-27-41 to
1:00 p.m., 2-28-41 (Inc.) - 1/4" subtracted from
observed gage reading.

7:00 p.m., 2-28-41 to
8:30 a.m., 3-1-41 (Inc.) - 1/8" subtracted from
observed reading.

D. A. Davis

Recovery Measurements March 1, 1941

Time	Water level	Remarks
24 65 8:45	99.2	Measuring point = top 12" casing, 0.8 foot above ground.
24 66 46	56.30 46.55	
67 47	49.95 40.20	
68 48	46.17 36.42	
69 49	43.56 33.81	
24 70 50	41.42 31.67	
71 51	40.00 30.25	
72 52	38.88 29.13	
73 53	37.77 28.02	
74 54	35.90 26.15	
75 55	35.90 26.15	
76 56	35.40 25.65	
77 57	34.78 25.03	
78 58	34.21 24.46	
79 59	33.68 23.93	
24 80 9:00	33.22 23.47	
81 01	32.75 23.00	
82 02	32.30 22.55	
83 03	31.91 22.16	
84 04	31.56 21.81	
85 05	31.10 21.35	
86 06	30.81 21.06	
87 07	30.44 20.69	
88 08	30.13 20.38	
89 09	29.80 20.05	
24 90 10	29.48 19.73	
91 11	29.95 20.20	
92 12	28.45 18.70	
93 13	27.99 18.24	
94 14	27.53 17.78	
95 15	27.10 17.35	
25 00 16	26.66 16.91	
17	26.24 16.49	
18	25.88 16.13	
19	25.55 15.80	
25 10 20	25.18 15.43	
21	24.87 15.12	
22	24.48 14.73	
23	24.26 14.51	
24	23.99 14.24	
25 20 25	23.75 14.00	
26	23.46 13.71	
27	23.22 13.47	
28	22.95 13.20	
29	22.73 12.98	
25 30 30	22.46 12.71	

Marion City Well #1

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Time	Water level	Remarks
2532 9:52	22.25 12.50	
4 54	22.01 12.26	
6 56	21.81 12.06	
8 58	21.57 11.82	
2540 10:00	21.42 11.67	
46 06	20.75 11.00	
50 10	20.42 10.67	
56 16	19.90 10.15	
60 20	19.63 9.88	
65 25	19.23 9.48	
70 30	18.85 9.10	
80 40	18.22 8.47	
90 50	17.70 7.95	
2600 11:00	17.13 7.38	
11:03		Start pulling pump line. Line raised about 2 feet.
2612 11:12	16.60 6.85	
28 11:28	15.87 6.12	
46 11:46	15.25 5.50	
2667 12:07	14.52 4.77	
2690 12:30	13.94 4.19	
2720 1:00	13.31 3.56	
50 1:30	12.80 3.05	
83 2:03	12.25 2.50	
2808 2:28	11.97 2.22	
2 32		Bowls out. 10 "10 in." (9 1/2")
2840 3:00	11.66 1.91	Steel tape measurement.
70 3:30	11.39 1.64	" " "
2900 4:00	11.14 1.39	" " "
2930 4:30	10.94 1.19	" " "

Weir Table

Gage	G. P. M.
5	369.86
1/4	396.09
1/2	422.73
5/8	436.33
3/4	449.89
7/8	463.55
6	477.29
1/4	505.04
1/2	533.24
5/8	547.40
3/4	561.63
7/8	575.91
7	590.27
1/4	619.35
1/2	648.52
5/8	663.19
3/4	677.92
7/8	692.84
8	707.68
1/4	737.49
1/2	767.50
5/8	782.70
3/4	797.81
7/8	812.95

[illegible]

UNITED STATES
 DEPARTMENT OF THE INTERIOR
 GEOLOGICAL SURVEY

 File No. { Washington
 District
 GPO C-9333

Pumping test on Marion City Well #1 Feb 27 to Mar. 1, 1941

Time	t_1	t_2	t_1/t_2	Depth to water								
2/27/41												
3:55P					Pumping started							
3-1-41									Total pumpage			
8:45A	2450	0		99.2	Pumping stopped				21 hr 5 min at 436 gpm	551	540	
46	2451	1	2451	56.30					1 hr at 600 gpm	36	000	
47	2452	2	1226	49.95					4 hr 30 min at 798 gpm	215	460	
48	2453	3	818	46.17					5 hr 30 min at 783 gpm	258	390	
49	2454	4	613	43.56					5 hr at 752 gpm	225	600	
50	2455	5	491	41.42					3 hr 45 min at 732 gpm	164	700	
51	2456	6	409	40.00								
52	2457	7	351	38.88					total 40 hrs 50 min - 1,451,690			
53	2458	8	307	37.77					- 593.9 gpm average			
54	2459	9	273	35.90								
55	2460	10	246	35.90					Static Water Level 9.75 feet			
56	2461	11	224	35.40					below M.P.			
57	2462	12	205	34.78								
58	2463	13	189	34.21								
59	2464	14	176	33.68								
9:00	2465	15	164	33.22								
01	2466	16	154	32.75								
02	2467	17	145	32.30								
03	2468	18	137	31.91								
04	2469	19	130	31.56								
05	2470	20	123	31.10								
06	2471	21	117	30.81								
07	2472	22	112	30.44								
08	2473	23	107	30.13								
09	2474	24	103	29.80								
10	2475	25	99	29.48								
12	2477	27	92	28.95								
14	2479	29	85.7	28.45								
16	2481	31	80	27.99								

UNITED STATES
 DEPARTMENT OF THE INTERIOR
 GEOLOGICAL SURVEY

 File No. { Washington
 District
 870 0-9333

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Time	t_1	t_2	t_1/t_2	Depth to Water	Time	t_1	t_2	t_1/t_2	Depth to Water
3-1-41 9:18	2483	33	75	27.53	11:28	2613	163	16.0	15.87
20	2485	35	71	27.10	11:46	2631	181	14.5	15.25
22	2487	37	67	26.66	12:07	2652	202	13.1	14.52
24	2489	39	64	26.24	12:30	2675	225	11.9	13.94
26	2491	41	61	25.88	11:00	2705	255	10.6	13.31
28	2493	43	58	25.55	1:30	2735	285	9.6	12.80
30	2495	45	55	25.18	2:03	2768	318	8.7	12.25
32	2497	47	53	24.87	2:28	2793	343	8.1	11.97
34	2499	49	51	24.48	3:00	2825	375	7.5	11.66
36	2501	51	49	24.26	3:30	2855	405	7.0	11.39
38	2503	53	47	23.99	4:00	2885	435	6.6	11.14
40	2505	55	45.6	23.75	4:30	2915	465	6.3	10.94
42	2507	57	44	23.46	Man 3 11:15A	5480	3030	1.81	8.60
44	2509	59	42.5	23.22					
46	2511	61	41	22.95					
48	2513	63	40	22.73					
50	2515	65	38.7	22.46					
52	2517	67	37.5	22.25					
54	2519	69	36.5	22.01					
56	2521	71	35.6	21.81					
58	2523	73	34.6	21.57					
10:00	2525	75	33.7	21.42					
:06	2531	81	31.2	20.75					
:10	2535	85	29.8	20.42					
:16	2541	91	28.0	19.90					
:20	2545	95	26.9	19.63					
:25	2550	100	25.5	19.23					
:30	2555	105	24.3	18.85					
:40	2565	115	22.3	18.22					
:50	2575	125	20.6	17.70					
11:00	2585	135	19.1	17.13					
11:12	2597	147	17.7	16.60					

Semi-Logarithmic.
2 Cycles x 10 to the inch.
MADE IN U.S.A.

NO. 5782

