Finished " " Mar 21-1945

Test pumped Mar 23-53 @ 75 to 80 g/m (Total cost of pump & new piping: $3000

Shaft broke Oct 6 - wrote to Thorpe Bros. Well abandoned 1 Ea. HTH Oct 13 - Pump not returned as yet.

IOWA STATE DEPARTMENT OF HEALTH
DIVISION OF PUBLIC HEALTH ENGINEERING AND INDUSTRIAL HYGIENE
GROUND WATER

Town Callender County Webster Date 1/27 19 45

WELL NO. 1 Active Yes Standby Abandoned Replaced by No.

LOCATION: Street In city park S.E. Quarter N.W. Quarter Sec. 12 T 87 N.R. 30 East West

Lot Block Township

Thorpe cleaning & recasing well down 1500? to top Mar-1964 - preliminary test pumping SC-128 PL-122 @ 82 gpm - Submersible @ 309

OWNERSHIP Municipal Well digging started Dec. 10, 1938
Date Installed Finished Dec. 21, 19 38
Equipment installed June 28, 1939

CONTRACTOR Thorpe Bros. Address Des Moines, Ia.

Oct 6-1945

DATE RECONDITIONED 19 41 Contractor Globe Machinery & Supply Address Des Moines, Ia.

CONSTRUCTION EMPLOYED: Curb elevation 1152 ft. = elevation of curb. Cased to 440 ft.
6" open hole on down to 727 ft. 2½" drop pipe
well

CURB ELEVATION 1152 ft. (Same) REFERENCE (1952)
New depth - 1185

TYPE OF CONSTRUCTION Deep well drilled Depth 727 ft. Diameter 8 in.
Steel (standard weight) casing
CASING: Material to 440 ft. depth Condition Good

SCREEN: Material Bronze Length 246 ft. Diameter 2 in. Slot Opening in.
1 1/2" vertical pipe screened — pressure drain
WELL ~~SCREENED~~ VENTED Yes How back 3/8" pipe through screen Approved (?)
WELL ~~VENTED~~ SEALED Yes How 2'x2'x8" concrete pedestal Approved Yes
- has foot valve. (90 Mar-53)

TYPE OF PUMP V.T. Make Peerless Capacity 15 GPM Lubricated Water
25 g/m without head.
DEPTH TO ~~CYLINDER~~ Bottom Bowls 364' ~~372~~ 360 210 ft. Tail Pipe 10' ft. pipe ft.

PUMP CONTROL: Manual Automatic Yes Semi-Automatic

STATIC LEVEL 110-111 ~~94~~ ft. Pumping Level 195 320 ft. Drawdown @65 226 ft.

OPTIMUM SPECIFIC YIELD 78 ~~54~~ GPM Drawdown 65 ~~202~~ ft. Time 30 min. ~~Hrs.~~
Drawdown below drop pipe (246 ft.) in 4 hrs. at 15 g.p.m. No drawdown at 13 g.p.m.
RATE OF DRAWDOWN Fast Rate of Recovery Fast

TEMPERATURE OF WATER °F Where Measured Temp. of Atmosphere °F

DRAWDOWN GAUGE INSTALLED Yes

TOPOGRAPHICAL POSITION OF WELL Flat 210 21' 186

WELL SITE INVESTIGATED (?) Approved Why not

WELL CONSTRUCTION REVIEWED Approved Why not WW 142

PIT CONSTRUCTION: Purpose Size and Description

CONDITION: Drainage Facilities

PUMP INSTALLATION: Approved Yes Why Not

CUTTINGS FROM WELL PRESERVED: Where St Peters

DEPTH TO BED ROCK 1st. Depth to Water-bearing Stratum 285 ft. to limestone giving 3 g.p.m.

SOURCE OF WATER: Principal Formation New Richmond Shale and limestone Other

CONSTRUCTION EMPLOYED: Curb elevation 1152 ft. = elevation of curb. Cased to 440 ft. 6" open hole on down to 727 ft. 2½" drop pipe

CURB ELEVATION 1152 ft. REFERENCE Same (1952) New depth - 1785

TYPE OF CONSTRUCTION Deep well drilled Depth 727 ft. Diameter 8 in.

CASING: Material Steel (standard weight) casing to 440 ft. depth Condition Good

SCREEN: Material Bronze Length 246 ft. Diameter 2 in. Slot Opening in.

WELL ~~STEAMED~~ VENTED Yes How 1 1/2" vertical pipe screened — pressure drain back 3/8" pipe through screen Approved (?)

WELL ~~VENTED~~ SEALED Yes How 2'x2'x8" concrete pedestal Approved Yes (90 Mar-55)

TYPE OF PUMP V.T. Make Peerless - has foot valve. Capacity 15 GPM Lubricated Water

DEPTH TO Bottom Bowls ~~364' 372~~ 360 210 ft. Tail Pipe 10' drop pipe 25 g/m without head. ft.

PUMP CONTROL: Manual Automatic Yes Semi-Automatic

STATIC LEVEL 110-111 ~~94~~ ft. Pumping Level 195 320 ft. Drawdown @ 65 226 ft.

OPTIMUM SPECIFIC YIELD 78 ~~54~~ GPM Drawdown 65 ~~202~~ ft. Time 30 min. ~~Hrs.~~

Drawdown below drop pipe (246 ft.) in 4 hrs. at 15 g.p.m. No drawdown at 13 g.p.m.

RATE OF DRAWDOWN Fast Rate of Recovery Fast

TEMPERATURE OF WATER °F Where Measured Temp. of Atmosphere °F

DRAWDOWN GAUGE INSTALLED Yes

TOPOGRAPHICAL POSITION OF WELL Flat 210 24 186

WELL SITE INVESTIGATED (?) Approved Why not

WELL CONSTRUCTION REVIEWED Approved Why not KL 1-12

PIT CONSTRUCTION: Purpose Size and Description

CONDITION: Drainage Facilities

PUMP INSTALLATION: Approved Yes Why Not

CUTTINGS FROM WELL PRESERVED: Where St Peters

DEPTH TO BED ROCK Depth to 1st Water-bearing Stratum 285 ft. to limestone giving 3 g.p.m

SOURCE OF WATER: Principal Formation New Richmond Shale and limestone Other

Field Tests Mar 2-3 when testing well.

Total Hardness 258 grains ppm. Total Iron Few 16 ppm. Sulfates ppm. Fluorine 1.1 ppm.

Manganese ppm. pH CO₂ ppm. Total Alk: 340 Temp: 58°

REMARKS: Air line on drawndown gauge 342 ft. deep. Test capacity of well is below desired capacity but is ample to meet the requirements of the town. Currie Engineering Co. ran the test pumping. E. F. Smith, engineer.

Mineral analysis collected Dec. 23, 1938 indicates fluorine content of 1.8 p.p.m..

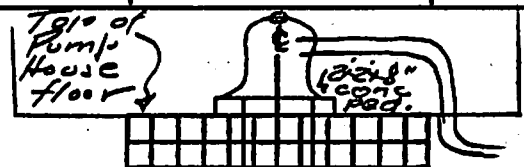
Mineral analysis collected Jan. 27, 1945 -- Determinations not completed.

well sterilized - before & after pump installed.

New stainless steel pump drive shaft installed - New rubber bearings - 3 new bronze sampling tap installed - Vent pipe repaired - Pump base set in cone, finished Oct 30-45 [illegible]

Cost of rehab $1,300

Formation	Material and distance from surface in ft.	Series	Position, kind and extent of casing, liners, shoes, etc.	Scale: Horizontal _____ Vertical _____	Position of seals, screens, static level, etc.



Depth of Strata	Material	Total Depth
2	Top Soil	2
33	Gray Mud	35
2	Sandy Mud	37
3	Gray Mud	40
5	Sand & Water	45
45	Sandy Gray Drift	90
7	Sand & Gravel	97
21	Yellow Mud	118
17	Dark Shale	135
5	Black Shale & Slate	140
20	Gray Shale	160
30	Black Shale	190
10	Gray Shale	200
10	Dark Shale	210
65	Gray Shale	275
22	Lime (Brown & Gray) hard	297
3	Shale (Green & Red)	300
5	Brown Dolomite limestone	305
12	Gray Limestone	317
10	Greene Shale	327
5	Gray Limestone	332
8	Gray Shale & Limestone	340
40	Limestone(Gray)	380
90	Gray Limstone & Dolomite	470
15	Brown Limestone	485
90	Gray hard limestone	575
25	Brown Limstone	600
45	Dark Gray Limestone	645
20	Flaky Limestone	665
47	Gray Limestone	712
3	Hard Brown Dolomite	715
4	Gray Shale	719
1	Hard Gray Lime-Stone.	720
7	Green Shale	727

Casing perforated at 277 to 297 ft. & again at 420 to 440 ft.

Outside packers are in place at 277 ft. and 282 ft.

8" casing

440 ft. = end of 8" casing

Below 440 ft. open hole of sufficient diameter to receive a 6" pipe

277 Open hole

727 to 1010 - Lime rock
1010 to 1105 - Grey Brown Lime stone
1105 to 1110 - Dark Gray shale.
1110 to 1230 (Dec 8-52) Grey Brown Limestone

Shale Concreted out @ 725 when well was at 1470 (to stop caving)

727 ft.

727

Thorpe Well Company
Log Callender Well

Amount in ft.		Total Depth
2	Top Soil	2
18	Grey Clay	20
15	Grey Mud	35
2	Sandy Mud	37
3	Grey Mud	40
10	Sand and Water	50
40	Grey Mud	90
7	Sand and Gravel	97
21	Yellow Mud	118
17	Blue Gumbo	135
5	Slate	140
20	Blue Gumbo	160
117	Grey Shale	278
8	Grey lime-Hard Bands	286
12	Lime	298
3	Shale	301
17	Grey Lime	318
3	Green Shale	321
12	Green Lime	333
8	Blue Shale	341
20	Grey Lime	361
20	Lime	381
15	Sharp Grey Lime	396
55	Lime and Dolomite	451
90	Grey Lime	541
35	Dark Grey Lime-Hard	576
45	Dark Grey Lime-Hard	621
95	Grey Lime	716
12	Green Shale	727