

WRD Exp. (66)  
Aug. 1964

Verified ?

U. S. DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Water Resources Division Well Schedule Form

MASTER CARD

Record by D. BARONSON Source of data FILE Date 6/30/65 Map 1:63360

State IOWA COUNTY (or town) CALHOUN 113

Latitude: 42° 16' 26" N Longitude: 099° 22' 22" W Sequential number: 7

Lat-long accuracy: 2' 86' 31' Sec. 12 SW SW NE 5

Local well number: 018631W12a.c.c. Other number: W-2975

Local name: 02875 47 CITY 3 Name of place: FARNHAMVILLE #3

Owner or name: FARNHAMVILLE IA Address: FARNHAMVILLE IA

Ownership: County, Fed Gov't, City, Corp of Co, Private, State Agency, Water Dist. (1)

Use of water: (A) Air cond, (C) Comm, Sewatering, (F) Fire, (H) Hum, (I) Irr, (L) Liv, (P) P.S., (S) Stock, (T) Instir, (U) Unused (F)

Use of well: (A) Anode, (B) Drain, (C) Seismic, (D) Obs, (E) Oil-gas, (F) Recharge, (G) Spring, (H) Test, (I) Unused, (J) Withdrawn, (K) Waste, (L) Destroyed (W)

DATA AVAILABLE: Well data (1) Freq. w/ft meas.: INTERMITTENT (1) Field aquifer char. (1)

Hyd. lab. data: (1)

Qual. water data: type: COMPLETE (1)

Freq. sampling: INTERMITTENT (1) Pumpage inventory: yes (1) no (1) period: (1)

Aperture cards: (1)

Log data: GEOLOGIST LOG - DRILLER'S LOG (1)

WELL-DESCRIPTION CARD

DEPTH AS ON MASTER CARD Depth well: 195 ft. 195 ft. (1) (6)

Depth cased; (1st perf.) 117.4 ft. Casing type: STEEL Diam. 10 in. (1)

Finish: (1) porous gravel, (2) concrete, (part.), (3) gravel w. holes, (4) screen, (5) perfor., (6) screen, (7) ad. pt., (8) shored, (9) other (5)

Method: (A) air bored, (B) cable, (C) aug, (D) jetted, (E) air rot., (F) reverse trenching, (G) driven, (H) drive wash, (I) other (C)

Data Drilled: AUG. 1947 3:47 Pump intake setting: (1) ft. (1)

Driller: THORPE WELL CO. (ED. EAGEE) Address: DES MOINES, IOWA

Lift: (A) air, (B) bucket, (C) cent. jet, (D) multiple, (E) multiple, (F) nose, (G) piston, (H) rot., (I) submerg, (J) curb, (K) other (D)

Power: (1) diesel, (2) elec, (3) gas, (4) gasoline, (5) hand, (6) gas, (7) wind, (8) H.P. (1)

Trans. or meter no. (1)

Descrip. of well: CURB 1.5 ft above 1st. lev. Alt. of well: 1191.5

Alt. 1st. lev.: 1140 Accuracy: 117.40 (1) HAND-LEVEL (1)

Water Level: 35.35 ft. above 1st. lev. 37 ft. above 2nd. lev. Accuracy: REPORTED (1)

Date meas.: (1) Yield: 150 gpm. 115.0 Method: (1)

Drawdown: 20 ft. 2.0 Accuracy: REPT (1) 6 Pumping period: (1)

QUALITY OF WATER DATA: Iron 2.6 ppm. (1) Sulfate 133.9 ppm. (1) Chloride 6.0 ppm. (1) Hard. 255.2 ppm. (1)

Sp. Conduct: 1299  $\mu\text{mhos/cm}$  (1) Temp. (1) Date sampled: 6/3/59 (1) 6:57 (1)

Taste, color, etc. (1)

Well Number 42, 16, 26 @ 099, 24, 22

HYDROGEOLOGIC CARD

SAVE AS ON MASTER CARD

Physiographic Province: CENTRAL LOWLAND Section: WESTERN

LAKE B Drainage Basin: RACCOON RJA Subbasin: 26

Top of well site: local depression, flat surface, hilltop, hillside, terrace, valley flat, UPLAND F

MAJOR AQUIFER: CRETACEOUS LOWER K1 DAKOTA SANDSTONE D1

Lithology: COARSE SANDST 4V Origin: MARINE 6 Aquifer Thickness: 29 ft

29 Length of well open to: 20 ft 20 Depth to top of: 170 ft 170

MINOR AQUIFER: \_\_\_\_\_

Lithology: \_\_\_\_\_ Origin: \_\_\_\_\_ Aquifer Thickness: \_\_\_\_\_

Length of well open to: \_\_\_\_\_ ft \_\_\_\_\_ Depth to top of: \_\_\_\_\_ ft \_\_\_\_\_

Intervals Screened: 174'6" - 195'

Depth to consolidated rock: 170 ft 170 Source of data: \_\_\_\_\_

Depth to basement: \_\_\_\_\_ ft \_\_\_\_\_ Source of data: \_\_\_\_\_

Surface material: SANDY SILT 8.7 Infiltration characteristics: POOR 7

Coefficient of storage: \_\_\_\_\_

Coefficient of permeability: \_\_\_\_\_

Perm: \_\_\_\_\_

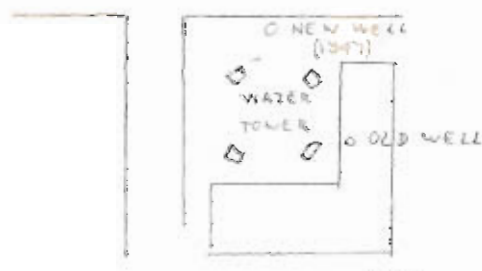
CASING:

10" PIPE FROM SURFACE TO 170'4"

20'6" OF 6" SCREEN FROM 174'6" TO 195'

19.5' OF 5" PIPE WELDED TO TOP OF SCREEN

GRAVEL PACKED



# THORPE WELL COMPANY

2340 SIXTH AVENUE  
DES MOINES, IOWA

Drilled for Town of Farnhamville at Farnhamville, Ia

Well is located \_\_\_\_\_ miles N-E-S-W and \_\_\_\_\_ miles N-E-S-W from \_\_\_\_\_

in the \_\_\_\_\_  $\frac{1}{4}$  \_\_\_\_\_  $\frac{1}{4}$  Section \_\_\_\_\_ Township \_\_\_\_\_ Range \_\_\_\_\_

Drilling started July 1947 Completed August 1947

Well No. \_\_\_\_\_ Kind of Well Gravel pack Depth 195' Size hole started 16 in.

Finish 10" G. P. M. 150 Static head 40' Drawdown 20'

Water was first encountered at \_\_\_\_\_ in \_\_\_\_\_ Approx. Amt. \_\_\_\_\_ Temp. \_\_\_\_\_

Remarks 10" pipe cemented from 35' to surface

RECORD OF PERMANENT PIPE					TEMPORARY PIPE	
SIZE PIPE	AMOUNT OF PIPE	DEPTH TO BOTTOM OF PIPE	DEPTH TO TOP OF PIPE	MAKE OF PIPE	SIZE PIPE	AMOUNT
10"	173'2"	170'4"	surface			
6"	20'6"	195'		Everdur screen with 19'6" of 5" pipe welded on top of screen		





Fairbairnville, Iowa

Sept. 2, 1947

New town well. (1947)

Loc. SW $\frac{1}{4}$  SW $\frac{1}{2}$  NE $\frac{1}{4}$  Sec. 12, T. 86 N. R. 31 W.

E. L. S. =

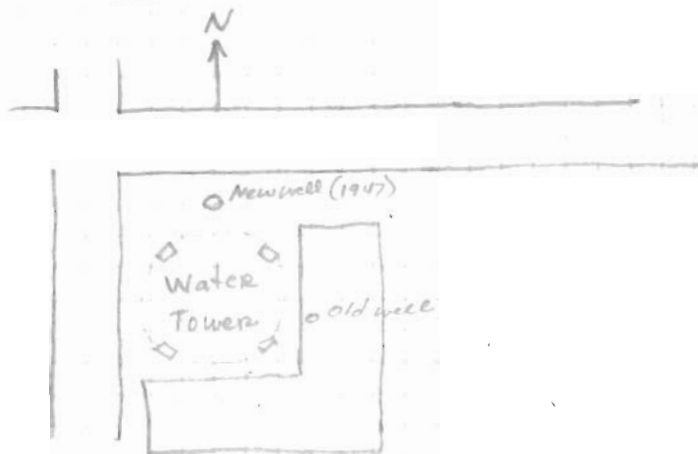
2  $\frac{1}{2}$ ' below T. Rail at C&NW Sta.

Thorpe well Company

T.D. 195'

10" pipe attached to 20' of 10" screen

SWL 35.35 at 3:00 PM Sept 2, 1947

M.P. Top concrete base 1' below B.M. at Station  
and 1  $\frac{1}{2}$ ' feet above L. SurfacePumped at rate of 110 gpm with drawdown.  
No pump in well as of this date.Picked up ~~water~~ ~~some~~ samples from well.Will need to obtain accurate construction data from  
Thorpe well Co.

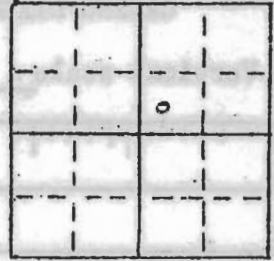
W. E. Hale



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

W-2975

RECORD OF WELL



Location:

Town: Fornhamville (NE)  
(SW): County Calhoun

SW 1/4 SW 1/4 NE 1/4 sec. 12 T 86 N., R. 31 W. Reading Twp.

Well name and number Town well #3 (1947)

Owner Town of Fornhamville

Address \_\_\_\_\_

Tenant \_\_\_\_\_

Address \_\_\_\_\_

Contractor Thorpe Well Co.

Address Thorpe Well Co.

Drillers Ed Eagee

Drilling dates Started July 1947 Finished August 1947

Well data:

Elevations: Drilling curb 1141.5 feet; Land surface 1140 feet

Hand level from C.N.W. R.R. station top rail = 1142.5

Determined by W.E. Hale

Topographic position Upland

Total depth: Reported 195 feet, Measured \_\_\_\_\_ feet

Drilling method Cable tool - Gravel pack

Hole and casing data 10" pipe set from surface to depth of 170' 4"  
20' 6" of 6-inch Everdur screens set from 174 1/2' to 195' and with  
19 1/2' of 5" pipe welded to top of screen.

Original depth to water 35.35 ft. <sup>above</sup> below top conc. pump base Date Sept. 2, 1947 at 3:00p

Original elevation of water level 1106.2 ft.; Source of data Obs W.E.H.

Sources of water: Principal Sand & gravel 175 - 195; Others \_\_\_\_\_

Production data:

Date \_\_\_\_\_

Static depth to water 35.35 Measuring point Top of concrete pump base E114.5  
 Pumping level \_\_\_\_\_ at 110 g.p.m.

60± 150

Specific capacity \_\_\_\_\_ g.p.m. per ft. drawdown; Temperature \_\_\_\_\_ °F.

Pump data: Type pump \_\_\_\_\_ Column Dia. \_\_\_\_\_ Length \_\_\_\_\_  
 Cylinder or bowls: Dia. \_\_\_\_\_ Length \_\_\_\_\_ Suction pipe \_\_\_\_\_

Power \_\_\_\_\_ Airline \_\_\_\_\_

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

Use of water \_\_\_\_\_

WATER ANALYSES (in parts per million)

Date samples	_____	_____	_____	_____
Sampled by	_____	_____	_____	_____
Total solids	_____	_____	_____	_____
Insoluble matter	_____	_____	_____	_____
Alkalinity (Meo)	_____	_____	_____	_____
Alkalinity (Phm)	_____	_____	_____	_____
pH	_____	_____	_____	_____
Fe <sub>2</sub> O <sub>3</sub> + Mn <sub>2</sub> O <sub>3</sub> +Al <sub>2</sub> O <sub>3</sub>	_____	_____	_____	_____
Alkali as sodium	_____	_____	_____	_____
Calcium	_____	_____	_____	_____
Magnesium	_____	_____	_____	_____
Iron (unfiltered)	_____	_____	_____	_____
Manganese	_____	_____	_____	_____
Nitrate	_____	_____	_____	_____
Fluoride	_____	_____	_____	_____
Chloride	_____	_____	_____	_____
Sulfate	_____	_____	_____	_____
Bicarbonate	_____	_____	_____	_____
Hardness (ppm)	_____	_____	_____	_____
Hardness (gpg)	_____	_____	_____	_____
Remarks	_____			

Laboratory data:

Sample storage location \_\_\_\_\_

Sample range 0-197 No. sps. 49 No. dupls. & cond. \_\_\_\_\_

Spis. prepared by TED Washed range NONE by \_\_\_\_\_

Driller's log and cond. \_\_\_\_\_

Insoluble residues: Prepared by \_\_\_\_\_ Studied by \_\_\_\_\_ Strip log \_\_\_\_\_

Microscopic study 0-197 strip log at 27, 1947

Gen. log \_\_\_\_\_ Correl. by in D. K.

UNITED STATES DEPARTMENT OF THE INTERIOR

Geological Survey  
Water Resources Division

Local Well No. 086-3/W-12 ACC  
Aquifer Code(s) KIDI  
Owner's Name FARNHAMVILLE CITY (1947) #3  
W Number 02975

Water Quality  
(ppm)

Card Q

State: Iowa 1 1 2 9 County: CALHOUN 3 1 4 3 Town: FARNHAMVILLE, IOWA

Well No. Latitude Longitude Seq. No. Date  
5 4 2 1 6 2 6 N 11 0 9 4 2 4 2 2 12 0 9 4 2 4 2 2 18 1 1 19 0 6 0 3 5 4 20 0 6 0 3 5 4 25

Sampling Depth Type Kx10<sup>6</sup> pH Temp. °F  
26 1 1 9 5 29 1 30 1 31 1 1 3 0 0 35 36 7 5 38 39       41

SiO<sub>2</sub> Ca Mg Na K  
42       44       45 2 0 1   49 50 6 0   53 54     6 8   58 59     7 0   61

HCO<sub>3</sub> CO<sub>3</sub> SO<sub>4</sub> Cl Source No.  
62   5 5 4 65 66   0 67 68 4 3 4   72 73       6 0 78 79 3 80 Q

Card R

Duplicate Columns 1-25 from Card Q

F NO<sub>3</sub> PO<sub>4</sub> B Al Fe  
26     4 28 29     8 9 32 33       35 36       38 39       41 42 2 6   45

Mn Cu Pb Zn Solids  
46     3 49 50       52 53       54 55       57 Hardness

Determined Calc. Ca, Mg Non-Carb.  
58     1 1 1 0 63 64             69 70 7 4 9 73 74 2 9 5 77

Color No.  
78     79 80 R

Card S

Duplicate Columns 1-25 from Card Q

Br I Alk. as CaCO<sub>3</sub> Free CO<sub>2</sub> SAR  
26       28 29       31 32 4 5 4 35 36       38 39       41

RSC ABS Alpha (pc/l) Beta (pc/l) Ra (pc/l) U (ug/l)  
42       44 45       47 48       50 55       57 58       60 61       63 64       66

No. S  
80

Recorded by: D. AARONSON

Punched by: T Date:  

Published:



UNITED STATES DEPARTMENT OF THE INTERIOR

Geological Survey  
Water Resources Division

Local Well No. 086-31W-12 ACC

Aquifer Code(s) KIDI

Water Quality  
(ppm)

Owner's Name FARNHAMVILLE CITY (1947) #3

W Number 02975

Card Q

State: Iowa 1 9 County: CALHOUN 1 3 Town: FARNHAMVILLE, IOWA

Well No. 4 2 1 6 2 6 N 0 9 4 2 4 2 2 Seq. No. 1 Date 0 3 2 3 6 0

Sampling Depth 1 9 5 Type 1 Kx10<sup>6</sup> 1 5 1 0 pH 7.1 Temp. °F 5 0

SiO<sub>2</sub> 1 9 Ca 1 9 3 Mg 6 7 Na 7 1 K 7 0

HCO<sub>3</sub> 5 6 9 CO<sub>3</sub> 0 SO<sub>4</sub> 4 3 2 Cl 5 0 Source No. 3 Q

Card R

Duplicate Columns 1-25 from Card Q

F 4 NO<sub>3</sub> 4 PO<sub>4</sub>  B  Al  Fe 2 9

Mn 3 8 Cu  Pb  Zn

Solids 1 1 6 0 Calc.  Ca, Mg 7 5 8 Hardness Non-Carb. 2 9 2

Determined 1 1 6 0 Calc.  Ca, Mg 7 5 8 Hardness Non-Carb. 2 9 2

Color   No. R

Card S

Duplicate Columns 1-25 from Card Q

Br  I  Alk. as CaCO<sub>3</sub> 4 6 6 Free CO<sub>2</sub>  SAR

RSC  ABS

Alpha (pc/l)  Beta (pc/l)  Ra (pc/l)  U (ug/l)

No. S  
80

Recorded by: D. ARONSON

Punched by: T Date: \_\_\_\_\_

Published: \_\_\_\_\_



UNITED STATES DEPARTMENT OF THE INTERIOR

Geological Survey  
Water Resources Division

Local Well No. 086-31W-12 ACC

Aquifer Code(s) K 1 D 1

Water Quality  
(ppm)

Owner's Name FARNHAMVILLE CITY (1947) #3

W Number 02975

Card Q

State: Iowa 1 1 9 County: CALHOUN 1 1 3 Town: FARNHAMVILLE, IOWA

Well No. 4 2 1 6 2 6 N 0 9 4 2 4 2 2 Seq. No. 1 Date 0 6 2 0 5 1

Sampling Depth 1 9 5 Type 1 Kx10<sup>6</sup> 1 4 9 0 pH 7.3 Temp. °F   

SiO<sub>2</sub>    Ca 1 9 6 Mg 6 0 Na    K   

HCO<sub>3</sub> 5 5 4 CO<sub>3</sub> 0 SO<sub>4</sub> 4 1 9 Cl    Source No. 3 Q

Card R

Duplicate Columns 1-25 from Card Q

F    NO<sub>3</sub> 4 4 PO<sub>4</sub>    B    Al    Fe 3 0

Mn 3 8 Cu    Pb    Zn   

Determined 1 1 9 0 Solids    Calc.    Ca, Mg 7 3 6 Hardness Non-Carb. 2 8 2

Color    No. R

Card S

Duplicate Columns 1-25 from Card Q

Br    I    Alk. as CaCO<sub>3</sub> 4 5 4 Free CO<sub>2</sub>    SAR   

RSC    ABS         

Alpha (pc/l)    Beta (pc/l)    Ra (pc/l)    U (ug/l)   

No. S  
80 100

Recorded by: D. AARONSON

Punched by: T Date: \_\_\_\_\_

Published: \_\_\_\_\_



File Calhoun  
Farnhamville New Town Well

Iowa

State Department of Health

DISTRICT HEALTH SERVICE

NO. 5

Fort Dodge, Iowa

WALTER L. BIERRING, M. D.  
COMMISSIONER  
DES MOINES, IOWA

MAR 2 1948

IN REPLYING  
ADDRESS

X. P. Boyles

Public Health Engineer

March 1, 1948

H. G. Hershey,  
Director & State Geologist  
Iowa Geological Survey  
Iowa City, Iowa

Dear Dr. Hershey:

Re: Gravel packed well development at Farnhamville

I do not recall if the Farnhamville well had been discussed with Mr. Hale on his last visit to Fort Dodge. This well was constructed in September of 1947 by the Thorpe Well Company to the depth of 194 ft. It is located just north of the elevated storage tower. A 10 in. casing was used with the lower end equipped with a 24 ft. long screen. Gravel packing entirely surrounds this screen area. The well was pumped at 120 g.p.m. for slightly over seven days. No information is available on drawdown or recovery.

Since the pumphouse has not been completed for this well and pumping equipment is not provided, it was impossible to secure a mineral analysis. This mineral sample will, however, be secured when pumping equipment is set.

Your forecasts on well possibilities at Paton and Bradgate received and greatly appreciated.

Very truly yours,



X. P. Boyles  
Public Health Engineer

XPB:DES

cc: Mr. A. H. Wieters