

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

RECORD OF WELL


Location:

Town: FONTONELLE ( N E )  
( S W ): County ADAIR

SW SE sec. 18 T 75 N., R 32 W. Twp.

Well name and number Town of Fontanelle

Owner A Address \_\_\_\_\_

Tenant \_\_\_\_\_ Address \_\_\_\_\_

Contractor Victor Kirby Address Harlan

Drillers \_\_\_\_\_

Drilling dates Aug. 1. 1950

Well data:

Elevations: Drilling curb \_\_\_\_\_ feet: Land surface \_\_\_\_\_ feet

Determined by \_\_\_\_\_

Topographic position \_\_\_\_\_

Total depth: Reported 326 feet, Measured \_\_\_\_\_ feet

Drilling method Rotary

Hole and casing data 8" casing with 21' of 6" pipe  
screened on 4' of 22-slot Johnson screen. Top  
of 6" pipe underlapped into 8" with lead packer.  
Lead wave packer tamped in well bottom.

Original depth to water 140 ft. <sup>above</sup> CS ~~below~~ Date \_\_\_\_\_

Original elevation of water level \_\_\_\_\_ ft.; Source of data \_\_\_\_\_

Sources of water: Principal \_\_\_\_\_; Others \_\_\_\_\_

Production data: 48 hr test Date \_\_\_\_\_  
 Static depth to water 140' Measuring point LS  
 Pumping level 148' at 20 g.p.m.

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 or productions: \_\_\_\_\_ g.p.m. for \_\_\_\_\_ hrs. a day  
 Use of water \_\_\_\_\_

WATER ANALYSES (in parts per million)

Date samples	_____	_____	_____
Samples by	_____	_____	_____
Total solids	_____	_____	_____
Insoluble matter	_____	_____	_____
Alkalinity (Meo)	_____	_____	_____
Alkalinity (Phn)	_____	_____	_____
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 CSS-4  
 Sample range 0-300' No. spls. 31 No. dupls. & cond. 31 Good  
 Spls. prepared by Morton Washed range \_\_\_\_\_ by 7/25/51  
 Driller's log and cond. \_\_\_\_\_  
 Insoluble residues: Prepared by \_\_\_\_\_ Studied by \_\_\_\_\_ Strip log \_\_\_\_\_  
 Microscopic study \_\_\_\_\_ strip log 8/13/51  
 Gen. log \_\_\_\_\_ Correl. by NORTHUP

95-3300-1800 W# 4970 Fo Vanille Town 1950 70 326 Adala Co. 50 1334'

411 20 0943480

W-4970

Model Sept 5000  
PRBY 5-14-81

✓ D Rayner 6/1/81

IGS and MDS

48 117 1007

6 00000 0 0 0 0

4 1 1 1  
no fill available

Water analysis

8-22-50 common chemical

sampled 100 hrs 300 hrs  
penser pump

5-3 51 common ch car

8-5-59 52 gp

8-5-59 common ch al. (Also treated analysis  
on same day.)



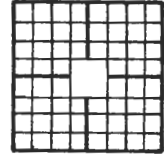
W-4970

Recorded by PRBH  
Date 5-14-8:  
English X Metric     

U.S. DEPT. OF THE INTERIOR  
GEOLOGICAL SURVEY  
WATER RESOURCES DIVISION

75-32W-180C

SITE SCHEDULE



Site Identification No.

Checked by Drayner 6/1/81

5 4111720094343501 19

Punched by     

OWNER IDENTIFICATION

R=158\* T=A\* Date of Ownership 159# 08/01/1950\*

161# FONTAINELLE\* 162= 70WN\* 163=     \*

NAME: Last First Mid. Init.

GENERAL SITE DATA

R=0\* T=A\* 2=W\* 3=U\* 4=USGS\* 6=19\* 7=19\* 8=00\*  
Site Type Data Rel. Source Agency District State County I.D.

9=4111720\* 10=0943430\* 11=T\*  
Latitude Longitude Accuracy County Adair

12=075N321180C 04970\*  
Local Well Number W-Number

13=SWSE S 18 T 075 N R 32 W 5\*  
Loc. 1/4 1/4 1/4 1/4 Sec. Township Range Merid

14=     \* 15=     \*  
Location Map Scale

16=334\* 17=A\* 18=0.5\* 19=     \* 21=08/01/1950\*  
Altitude Method Accuracy Topo Setting Date of First Const/Completion

23=W\* 24=A\* 25=     \* 27=305\* 28=326\*  
Site Use Water Use 2nd W. Use Hole Depth Well Depth

29=0\* 30=140\* 31=09/01/1950\* 33=D\* 34=R\*  
Source Water Level Date Measured Source Meth. Meas.

37=     \* 36=S\* 35=     \* 301=     \* 302=     \*  
Site Status Source GeoHydro Pump Used Second site use Tertiary site use

WELL CONSTRUCTION DATA

R=58\* T=A\* 59#     \* 60=08/01/1950\* 64=D\*  
Entry No. Date Const. Completed Source

63=V. Kirby\* V. Kirby  
Driller

65=H\* 66=S\* 67=     \* 68=     \* 69=     \* 70=48\* 71=     \*  
Meth. Const. Finish Seal Bottom of Seal Meth. Dvlp. Hours Dvlp. Spl. Treatment

DIMENSIONS OF HOLE Entry No.

R=72\* T=     \* 59#     \*

New Card Each Segment, Same R & T & 59

Top of Hole Segment	Bottom of Segment	Diameter of Segment
73# <u>    </u> *	74= <u>    </u> *	75= <u>    </u> *
73# <u>    </u> *	74= <u>    </u> *	75= <u>    </u> *
73# <u>    </u> *	74= <u>    </u> *	75= <u>    </u> *
73# <u>    </u> *	74= <u>    </u> *	75= <u>    </u> *

CASING SCHEDULE Entry No.

R=76\* T=A\* 59#     \*

New Card Each Section, Same R & T & 59

Top of Section	Bottom	Diameter	Material	Thickness
77# <u>    </u> *	78# <u>    </u> *	79# <u>8</u> *	80# <u>S</u> *	81= <u>    </u> *
77# <u>301</u> *	78# <u>322</u> *	79# <u>4</u> *	80# <u>S</u> *	81= <u>    </u> *
77# <u>    </u> *	78# <u>    </u> *	79# <u>    </u> *	80# <u>    </u> *	81= <u>    </u> *
77# <u>    </u> *	78# <u>    </u> *	79# <u>    </u> *	80# <u>    </u> *	81= <u>    </u> *
77# <u>    </u> *	78# <u>    </u> *	79# <u>    </u> *	80# <u>    </u> *	81= <u>    </u> *

OPENINGS SCHEDULE

R=82 \* T=A \* 59# | | \*

New Card Each Section, Same R & T & 59

Top	83#   3   2       * *	83#               * *	83#               * *
Bottom	84#   3   2   6       * *	84#               * *	84#               * *
Type	85#   5   * *	85#   * *         * *	85#   * *         * *
Material	86#   5   * *	86#   * *         * *	86#   * *         * *
Diameter	87#               * *	87#               * *	87#               * *
Width	88#         0   2   2   * *	88#               * *	88#               * *
Length	89#               * *	89#               * *	89#               * *

PRODUCTION DATA

R=134,146 \* T=A \* 147# | | | \* | 148=08/01/1950 \* | 150= | | | 2 | 0 | | \* \*  
 Flowing, Pumped Entry No. Date Discharge  
 151=D \* 152=R \* 153= | 1 | 4 | 8 | | \* | 154= | 1 | 4 | 0 | | \* | 155=D \* 156=R \*  
 Source Method Production Level Static Level Source Method  
 157= | | | | | \* | 272= | | | | | \* | 309= | | | | | \*  
 Pumping Period Spcfc Capacity Drawdown

OTHER DATA AVAILABLE

R=180 \* T=A \* 312# | | | \* | 181=GEOLOGICAL \* | 182=C \* | 261=M \*  
 New Card Same R & T 312# | | 2 \* | 181=DRILLERS \* | 182=C \* | 261=Y \*  
 Type Data Location FORMAT

AVAILABLE LOG DATA

R=198 \* T=A \* New Card For Each Log Type, Same R & T  
 Type 199# | G | \* \* | Begin Depth 200# | | | 0 | | | \* \* | End Depth 201# | 3 | 0 | 0 | | | \* \* | Source 202# | S | \* \*  
 199# | D | \* \* | 200# | 3 | 0 | 0 | | | \* \* | 201# | 3 | 2 | 6 | | | \* \* | 202# | S | \* \*  
 199# | | \* \* | 200# | | | | | | \* \* | 201# | | | | | | \* \* | 202# | | \* \*  
 199# | | \* \* | 200# | | | | | | \* \* | 201# | | | | | | \* \* | 202# | | \* \*

GEOHYDROLOGIC UNIT DESCRIPTIONS

R=90 \* T=A \* 256# | | | \* | 91= | | | 2 | 9 | 0 | | \* \* | 92= | | | | | | | \* \* | 304=P \* \*  
 Depth to Top Depth to Bottom Contributing unit  
 93= | 1 | 1 | 2 | 1 | 1 | 8 | | \* \* | 96= | 3 | 0 | 6 | | \* \* | 97= | | | | | | | \* \*  
 Unit Identifier Lithology Lithology Modifier

AQUIFER DATA

R=94 \* T= | | \* \* | 256# | | | \* \* | 95# | | | / | / | | | \* \*  
 Entry No. Date  
 126= | | | | | | \* \* | 132= | | | | | \* \*  
 Water Level % Water Contributed

GEOHYDROLOGIC UNIT DESCRIPTIONS

R=90 \* T= | | \* \* | 256# | | | \* \* | 91= | | | | | | | \* \* | 92= | | | | | | | \* \* | 304= | | \* \*  
 Depth to Top Depth to Bottom Contributing unit  
 93= | | | | | | | \* \* | 96= | | | | | | | \* \* | 97= | | | | | | | \* \*  
 Unit Identifier Lithology Lithology Modifier

AQUIFER DATA

R=94 \* T= | | \* \* | 256# | | | \* \* | 95# | | | / | / | | | \* \*  
 Entry No. Date  
 126= | | | | | | \* \* | 132= | | | | | \* \*  
 Water Level % Water Contributed

PERTINENT REMARKS

R=183 \* T=A \* 311# | | | \* \* | 185= | 0 | : | T | 0 | P | 0 | F | N | B | R | K | 1 | 5 | U  
 N.C.R.T.N. \* \*

OTHER SITE I. D.

R=189 \* T= \* 190# \* 191= \*

I. D. Assigner

New Card Each I.D.  
Same R & T

190# \* 191= \*

I. D. Assigner

SITE VISIT DATA

R=186 \* T= \* 187# / / \* 188= \*

Date Person

FIELD WATER QUALITY MEASUREMENTS

R=192 \* T= \* 193# / / \* 195# \*

Date Lith. Unit

New Card Same  
R thru 195  
for Each  
Parameter

196# 0 0 0 1 0 \* 197= \*

Temperature Degrees C

196# 0 0 0 9 5 \* 197= \*

Conductance μ Mhos

196# \* 197= \*

Other Parameter Value

196# \* 197= \*

Other Parameter Value

LIFT DATA

R=42 \* T= \* 43# \* 44= \* 45= \* 38= / / \*

Lift Type Intake Setting Power Type Date

46= \* 254# \*

Horsepower Entry No.

MAJOR PUMP DATA (only one per type of lift)

R=47 \* T= \* 43# \* 48= \* 49= \*

Lift Type Manufacturer Serial No.

50= \* 51= \* 53= \*

Power Co. Power Co. Account No. Pump Rating

52= \* 54= \*

Power Meter No. Person or Co. Maintaining Pump

254# \* 255= \* 268= \*

Entry No. Additional Lift Rated Capacity

STANDBY POWER DATA

R=55 \* T= \* 43# \* 56= \* 57= \* 254# \*

Lift Type Power Type Horsepower Entry No.

WATER QUALITY DATA COLLECTION

R=114 \* T=A \* 115# 1950 \* 116= \* 117# IAID \* 118= I \* 120= B \*

Begin Year End Year Source Agency Frequency Type of Analyses

257# \* 307= IAID \*

Network Participation Analyzing Agency

WATER QUALITY DATA COLLECTION

R=114 \* T= \* 115# \* 116= \* 117# \* 118= \* 120= \*

Begin Year End Year Source Agency Frequency Type of Analyses

257# \* 307= \*

Network Participation Analyzing Agency

WATER LEVEL DATA COLLECTION

R=121 \* T= \* 122# \* 123= \* 124# \* 125= \*

Begin Year End Year Source Agency Frequency

258# \*

Network Site



UNITED STATES DEPARTMENT OF THE INTERIOR  
 Geological Survey  
 Water Resources Division

075-32W-18DC

KDD

W-4970

Water Quality  
 (ppm)

Card Q

State: IOWA 1 6 County: ADAIR 1 1 Town: FONTANELLE

Well No. Latitude Longitude Seq. No. Date  
411720N 0943430 1 080559

Sampling Depth Type Kx10<sup>6</sup> pH Temp. °F  
326 1 3380 74 56

SiO<sub>2</sub> Ca Mg Na K Source No.  
19.. 415.. 102.. 300.. 78

HCO<sub>3</sub> CO<sub>3</sub> SO<sub>4</sub> Cl Source No.  
383 0 1740.. 21.. 3 9

Card R

Duplicate Columns 1-25 from Card Q

F <sup>0.35</sup> 04 NO<sub>3</sub> 09 PO<sub>4</sub> .. B .. Al .. Fe 61

Mn 30 Cu .. Pb .. Zn ..

Determined Solids Ca, Mg Hardness Non-Carb.  
3160 ...... 1460 1140

Color No. R

Card S

Duplicate Columns 1-25 from Card Q

Br I Alk. as CaCO<sub>3</sub> Free CO<sub>2</sub> SAR  
.. .. 314 .... ....

RSC ABS .. ....

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

Verified PMJ

No. 5  
 80

Recorded by: D. AARONSON

Punched by: Punched FCH Date: \_\_\_\_\_

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

12.01 *collected by Ryan 3/26/80 W-4970*

STATE HYGIENIC LABORATORY, DES MOINES BRANCH  
WATER LABORATORY DIVISION  
MINERAL ANALYSIS

LAB. NO. 294  
MINERAL NO. 1416  
9/8 19 59

TOWN Pontanelle COUNTY Adair  
OWNER OF SUPPLY Town IOWA GEOLOGICAL SURVEY  
COLLECTOR'S NAME Paul Reichardt  
DATE COLLECTED 8/5/59 DATE RECEIVED 8/6/59 SEP 10 1959  
REPORT TO: NAME Engineering Division  
ADDRESS State Department of Health

FIELD DATA

SOURCE: WELL NAME, NUMBER, POINT OF COLLECTION, DEPTH, CONSTRUCTION DATE, ETC.,  
West Well at pump station. Filter Effluent 327' Deep. Constructed  
1950. Finished water.  
WELL PUMPED \_\_\_\_\_ HRS. AT \_\_\_\_\_ GPM. DATE OF PREVIOUS SAMPLE \_\_\_\_\_  
WAS SAMPLE FREE OF TURBIDITY WHEN COLLECTED Yes  
TEMPERATURE 14 56°F ALKALINITY (ppm CaCO<sub>3</sub>) P \_\_\_\_\_ T \_\_\_\_\_ pH \_\_\_\_\_  
IS A POLYPHOSPHATE BEING USED? Not in this sample  
10 ppm injected after point which this sample was taken

LABORATORY ANALYSIS  
(PARTS PER MILLION)

SPECIFIC CONDUCTANCE K AT 25°C 338 x 10<sup>-5</sup> TURBIDITY \_\_\_\_\_  
**DISSOLVED SOLIDS** 3205 SOLUBLE IRON (Fe) 0.11  
TOTAL SOLIDS 3205 SILICA (SiO<sub>2</sub>) 17.0 TOTAL IRON (Fe) 0.11  
ALKALINITY (ppm CaCO<sub>3</sub>) P None T 292 pH 7.2 DATE 8/6/59

POSITIVE IONS

K<sup>+</sup> 7.8  
Na<sup>+</sup> 321  
Ca<sup>++</sup> 144  
Mg<sup>++</sup> 82.1  
Mn<sup>++</sup> 0.30  
Al<sup>+++</sup> \_\_\_\_\_

NEGATIVE IONS

NO<sub>3</sub>- as N 3.7  
F<sup>-</sup> 0.4  
Cl<sup>-</sup> 21  
SO<sub>4</sub>-- 1800  
HCO<sub>3</sub>- 356  
CO<sub>3</sub>-- None

HARDNESS AS CaCO<sub>3</sub> 1448 ppm 84.6 gpg

ANALYST Ehrhardt, Ryan

R. L. MORRIS  
(D.E.) PRINCIPAL CHEMIST



WRD Exp. (GW)  
Aug. 1964

Verified PMJ

U. S. DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

## Water Resources Division Well Schedule Form

MASTER CARD

COUNTY, IOWA

Record by D. AARONSON Source of data FILE Date 7/22/65 Map 1:63,360

State IOWA 16 COUNTY ADAIR 1  
(or town)

Latitude: 41 17 20 N Longitude: 09 43 43 W Sequential number: 1  
5 deg 7 min 9 sec 11 S 12 degrees 13 min sec 18

Lat-long accuracy: 3 E 75 S R 32 W Sec 18 SW SE 5  
20 T. 20 S. R. 32 W. Sec 18 SW SE 5

Local well number: 07532W18dc Other number: W-4970  
21 25 30 34 B & M

Local use: 09970 CITY Owner of name: TOWN OF FONTANELLE  
35 40 45 50 54

Owner or name: FONTANELLE Address: FONTANELLE, IA  
52 56 61 66

Ownership: County, Fed Gov't, City, Corp or Co, Private, State Agency, Water Dist M  
(C) (F) (M) (N) (P) (S) (W) 67

Use of water: Air cond, Comm, Dewatering, Fire, Dom, Irr, Ind, P-S, Stock, Instrt, Unused P  
(A) (C) (D) (F) (H) (I) (N) (P) (S) (T) (U) 68

Use of well: Anode, Drain, Seismic, Obs, Oil-gas, Recharge, Spring, Test, Unused, Withd<sup>aw</sup>, Waste, Destroyed W  
(A) (D) (G) (O) (P) (R) (S) (T) (U) (W) (X) (Z) 69

DATA AVAILABLE: Well data 3 Freq. W/L meas.: INVENTORY 0 Field aquifer char. 0  
70 71 72

Hyd. lab. data: 0 73

Qual. water data: type: COMPLETE C 74

Freq. sampling: INTERMITTENT I Pumpage inventory: yes 0 no, period: 0 75 76

Aperture cards: 0 yes 0 77

Log data: GEOLOGIST LOG G 78 79

## WELL-DESCRIPTION CARD

SAME AS ON MASTER CARD Depth well: 326 ft 326 Meas. 6  
19 (rept) accuracy 24

Depth cased: 0 ft 0 Casing 0 ft 0 accuracy 0  
(first perf.) 25 28 Type: 29 30

Finish: porous gravel w. gravel w. horiz. open (C) (F) (G) (H) (O) (P) (S) (T) (W) (X) (Z)  
concrete, (perf.), (screen), gallery, end, 31

Method: (A) (B) (C) (D) (H) (J) (P) (R) (T) (V) (W) (Z)  
air bored, cable, dug, hyd jetted, air reverse trenching, driven, drive 32  
rot, rot., percussion, rotary, wash, other

Date Drilled: AUG. 1950 9:50 Pump intake setting: 0 ft 0  
33 35 36 38

Driller: VICTOR KIRBY HARLAN, IOWA  
name address

Lift (type): air, bucket, cent, jet, multiple, multiple, none, piston, rot., submerg, turb, other D Deep 0 Shallow 40  
(cent.) (turb.) 39

Power (type): diesel, elec, gas, gasoline, hand, gas, wind; H.P. 0 Trans. or meter no. 0  
nat LPG 41

Descrip. MP LSD 0 ft above lsd, Alt. MP 1334  
42 43

Alt. LSD: 1334 1334 Accuracy: ALTIMETER 7  
(source) 47

Water Level: 140 ft above 140 ft above 140 Accuracy: REPORTED 6  
below MP; Ft below lsd 48 51 52

Date meas: AUG. 1950 8:50 Yield: 20 gpm 20 Method 0  
53 55 56 60 determined 61

Drawdown: 8 ft 8 Accuracy: REP 6 Pumping period 0 hrs 0  
57 64 65 66 68

QUALITY OF WATER DATA: Iron 6.12 7 Sulfate 1740 9 Chloride 21 1 Hard. 1456 9  
ppm 67 ppm 70 ppm 71 ppm 72

Sp. Conduct 3380 K x 10 6 Temp. 56 °F 56 Date sampled AUG 1950 8:50  
73 74 76 77 79

Taste, color, etc.

Well Number 41, 17, 20 <sup>N</sup> 004, 34, 30 <sub>S</sub>

## HYDROGEOLOGIC CARD

SAME AS ON MASTER CARD  Physiographic Province: CENTRAL LOWLAND  1:2 Section: DISSECTED

TILL PLAIN  Drainage Basin: NODAWAY  3:1:1:1:1 Subbasin:  76

Topo of well site: (D) local depression, (F) flat surface, (H) hilltop, (S) hillside, (T) terrace, (V) valley flat,  27

MAJOR AQUIFER: CRETACEOUS, LOWER  K:1  DAKOTA SANDST.  D:D

Lithology: SAND & GRAVEL  R  Origin: MARINE  6  Aquifer Thickness:  ft

Length of well open to:  ft  38  40 Depth to top of: 320 ft  3:2:0  43

MINOR AQUIFER:  system  series  44  45 aquifer, formation, group  46  47

Lithology:  Origin:  50  Aquifer Thickness:  ft

Length of well open to:  ft  54  56 Depth to top of:  ft  57  59

Intervals Screened:

Depth to consolidated rock: 320 ft  3:2:0  63 Source of data:  64

Depth to basement:  ft  65  68 Source of data:  69

Surficial material:  70  71 Infiltration characteristics: POOR  72  74

Coefficient Trans:  gpd/ft  73  75 Coefficient Storage:  76  78

Coefficient Perm:  gpd/ft<sup>2</sup>; Spec cap: 215  gpm/ft; Number of geologic cards:  79

## CASING

8" CASING WITH 21' OF 6" PIPE  
SCREWED ON 4' OF 22 SLOT JOHN-  
SON SCREEN. TOP OF 6" PIPE  
OVERLAPPED INTO 8" WITH  
LEAD PACKER

