WRD Exp. (GW)
April 1966

Well No. 081-10W-36 CCCC

WELL SCHEDULE

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

MASTER CARD

Record by D. AARONSON Source of data FILE Date 2/10/67 Map 1:63,360 COUNTY HWY.

State IOWA [16] County (or town) IOWA [48]

Latitude: 41 46 28 N Longitude: 091 58 07 Sequential number: 2

Lat-long accuracy: 2 T. 81 N, R 10 W Sec 36, SW ¼, SWSW ¼, SW ¼ 5

Local well number: 081/10W36CCCC Other number: W-6371 B & M

Local use: 063711 SCITY Owner or name: SOUTH AMANA TOWN WELL (1953)

Owner or name: SOUTH AMANA IA Address: SOUTH AMANA, IA.

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

Use of water: (A) Air cond, (B) Bottling, (C) Comm, (D) Dewater, (E) Power, (F) Fire, (H) Dom, (I) Irr, (M) Med, (N) Ind, (P) P S, (R) Rec, (S) Stock, (T) Instit, (U) Unused, (V) Repressure, (W) Recharge, (X) Desal-P S, (Y) Desal-other, (Z) Other P

Use of well: (A) Anode, (D) Drain, (G) Seismic, (H) Heat Res, (O) Obs, (P) Oil-gas, (R) Recharge, (T) Test, (U) Unused, (W) Withdraw, (X) Waste, (Z) Destroyed W

DATA AVAILABLE: Well data 4 Freq. W/L meas.: None N Field aquifer char.

Hyd. lab. data:

Qual. water data; type: COMPLETE C

Freq. sampling: IRREGULAR (8/13/54) I Pumpage inventory: yes / no, period:

Aperture cards: yes

Log data: GEOLOGIST-DRILLER'S GD

WELL-DESCRIPTION CARD

SAME AS ON MASTER CARD Depth well: 638 ft 638 Meas rept: DRILLER'S LOG 3

Depth cased: (first perf.) 470 ft 470 Casing type: STEEL; Diam. 8 in 8

Finish: (C) porous concrete, (F) gravel w. (perf.), (G) gravel w. (screen), (H) horiz. gallery, open end, (P) perf., (S) screen, (T) sd. pt., (W) shored, (X) open hole, (Z) other X

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

Date Drilled: Dec. 1953 53 Pump intake setting: ft

Driller: C. L. SENNINGS (name), NEW LONDON, IA. (address)

Lift (type): (A) air, (B) bucket, (C) cent, (J) jet, (L) multiple, (cent.), (M) multiple, (turb.), (N) none, (P) piston, (R) rot, (S) submerg, (T) turb, (Z) other Deep / Shallow D

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

Descrip. MP LSD ft above/below LSD. Alt. MP 780

Alt. LSD: 780 780 Accuracy: (source) ALTIMETER 7

Water Level ft above/below MP; Ft above/below LSD Accuracy:

Date meas: Yield: 125 gpm 125 Method determined

Drawdown: ft Accuracy: Pumping period hrs

QUALITY OF WATER DATA: Iron 1.2 ppm 5 Sulfate 1340 ppm 9 Chloride 11 ppm 1 Hard. 1401 ppm 9

Sp. Conduct 2570 K x 10^6 6 Temp. 56 °F 56 Date sampled FEB. 23, 1960 260

Taste, color, etc.

Punched ERC

Verified PMJ

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Latitude-longitude 41 46 28 (N) S 091 58 07.2
d m s d m s

HYDROGEOLOGIC CARD

SAME AS ON MASTER CARD (1–19) | Physiographic Province: CENTRAL LOWLAND [12] (20–21) Section: DISSECTED

TILL PLAIN [E] (22) | Drainage Basin: IOWA [25D] (23–25) Subbasin: [ ] (26)

Topo of well site: (D) depression, (C) stream channel, (E) dunes, (F) flat, (H) hilltop, (K) sink, (L) swamp, (Q) offshore, (P) pediment, (S) hillside, (T) terrace, (U) undulating, (V) valley flat — UPLAND [F] (27)

MAJOR AQUIFER: SILURIAN system, [ ] series [S] (28–29) [ ] aquifer, formation, group [X] (30–31)

Lithology: MEDIUM DOLOMITE [3D] (32–33) Origin: MARINE [6] (34) Aquifer Thickness: 156 ft

[156] (35–37) Length of well open to: 156 ft [156] (38–40) Depth to top of: 474 ft [474] (41–43)

MINOR AQUIFER: DEVONIAN system, MIDDLE series [DZ] (44–45) WAPSIPINICON FM aquifer, formation, group [MW] (46–47)

Lithology: FINE DOL. & LS. [2D] (48–49) Origin: MARINE [6] (50) Aquifer Thickness: 69 ft

[69] (51–53) Length of well open to: 4 ft [4] (54–56) Depth to top of: 405 ft [405] (57–59)

Intervals Screened: NONE

Depth to consolidated rock: 205 ft [205] (60–61) Source of data: WELL CUTTINGS [C] (64)

Depth to basement: [ ] ft [ ] (62–68) Source of data: [ ] (69)

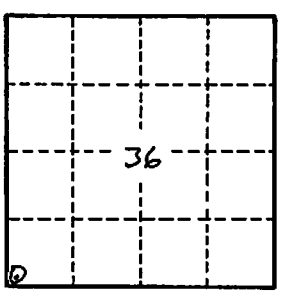
Surficial material: SILTY TILL [7T] (70–71) Infiltration characteristics: POOR [4] (72)

Coefficient Trans: [ ] gpd/ft [ ] (73–75) Coefficient Storage: [ ] [ ] (76–78)

Coefficient Perm: [ ] gpd/ft^2; Spec cap: [ ] gpm/ft; Number of geologic cards: [ ] (79)

CASING:

217' 10" OF 12" CASING SET @ 217'10".
123' 1" OF 10" LINER FROM 199'11" TO 323FT.
470' 4" OF 8" CASING FROM 0 – 470'4".



Well No. 081-10W-36 CCCC

GPO 857-700

September 30, 1954

Memo:

Regarding: Quality of water problem at South Amana

The new well at South Amana drilled by C. L. Jennings in 1953 produces water that is so highly mineralized that it is unfit for most household uses. This well penetrates the same section as those at East Amana, Amana, and Homestead but is cased differently, The South Amana well has all but the lower three or four feet of the Devonian cased out while in the other three wells the Devonian section is open to the well.

The old deep well at South Amana which is now abandoned was 465 feet deep and penetrated the Devonian section and 5 feet of the Silurian. This well was cased into the top of the Devonian limestones. The water analyses from the old well and the new well are remarkable alike, the new well being slightly better.

The following suggestions will be given to the responsible officials at the Amanas regarding the new well at South Amana.

1. The Devonian water at South Amana is obviously very bad for reasons we do not know. Possibly the Devonian gypsum which is known to be present 10 or 15 miles to the west may have outliers in the vicinity of South Amana which cause the bad water.
2. The quality of the water from the Silurian rocks in this well is not known. This could be determined by setting a line of pipe with a packer 30 or 40 feet into the Silurian rocks and pumping for several days with periodic checks made on the water quality. If the water from the Silurian rocks is of better quality a permenent liner could be cemented in the well.
3. If the upper water is all of poor quality then a deep well, possibly to the Jordon would probably be required to produce a satisfactory water supply.

CWL

IOWA GEOLOGICAL SURVEY
Iowa City, Iowa

Well Log Record

Well name and number South Umana (1953) Town South Umana County Iowa

Owner of well → Address

Tenant Address

Location sec. , T. N., R. E. W. Twp.

Curb elevation ft. Present depth ft. final depth 638 ft.

Static level: (Depth to water above / below curb) ft. Pumping level ft. at g.m.

Contractor C. L. Jennings Date drilled Nov-Dec, 1953

Description*	FEET			Description*	FEET		
	Thick	From	To		Thick	From	To

*Abbreviate descriptions: use one line for each formation

Remarks on water zones and casings 20" hole to 60'; 14" hole 60' to 80'; 12" hole 80' to 323'; 10" hole 323' to 470'; 8" hole 470' to 638' 217'-10" of 12" csg. 0' to 217'-10": 123'-1" of 10" liner from 199'-11" to 323': 470'-4" of 8" csg from 470'-4" to 0'

Temperature: Air °F., Water °F. at A.M. P.M. 19

Record obtained from Recorded by

→ Hole cemented 218' between 12" & 8" csg. → 76 sacks cement
106' " 10" liner & 8" csg → 15 " "
147' " 10" hole & 8" csg → 20 " "

217'10" FEET OF 12"
CASING

20 FEET OF 20"
CASING

60 FEET OF
20" HOLE
204 FEET OF
14" HOLE
80 TO 323 12" HOLE
REDUCED TO 10"
AT 323
REDUCE TO 8"
AT 475

DIA. & REDUCTIONS OF HOLE

DESCRIPTION OF BEDS KIND OF ROCK, COLOR, HARD OR SOFT, WATER, ETC.	
0 - 60 FT.	20" HOLE
60 - 80 "	15" "
80 - 325 "	12" "
325 - 470 "	10" "
470 - "	8" "

8" PIPE

FOR FIGURING, CASING TALLY, ETC.

16 - 7'
18 -
21 - 6'
20 -
17 - 193-1
21 - 3'
20 - 3
20 - 9
21 - (4) - 176-10'
20 - 3
18 - 10'
16 - 3'
14 - 7' - 248-9'

FOR FIGURING, CASING TALLY, ETC.

WELED.

10". LINER. 123'-1"

SET. AT. 323'

TOP. OF. 10", 200'

081-10W-36 CCCC

W-6371

IOWA GEOLOGICAL SURVEY
In Cooperation with U. S. Geological Survey
RECORD OF WELL

Location:

Town: South Amana (N E) (S W) :County Iowa

or SE/c 35 sec. ___ T. 81 N., R. 10 E. W. ___ Twp.
SW/c 36

Well name and number South Amana Town Well (1953)

Owner ___ Address ___

Tenant ___ Address ___

Contractor C. L. Jennings Address ___

Drillers ___

Drilling dates Nov.-Dec. 1953

Well data:

Altitudes: Drilling curb ___ feet; Land surface 780 feet

Determined by ___

Topographic position ___

Total depth: Reported 638 feet, Measured ___ feet

Drilling method ___

Hole and casing data Hole sizes: 20" to 60', 14" to 80', 12" to 323', 10" to 470', 8" to 638'. Casing data: 217'10" of 12" set at 217'10", 123'1" of 10" liner from 199'11" to 323', 470'4" of 8" from 0 to 470'4". Cementing: 218' between 12" and 8" csg, 106' between 10" liner and 8" csg., 147' between 10" hole & 8" csg.

Original depth to water ___ ft. above/below ___ Date ___

Source of data ___

Sources of water: Principal ___

Others ___

Production Data

Date				
Static water level				
Measuring point				
Pumping water level				
Yield (g. p. m.)				
Duration of pumping				
Specific capacity				

Pump Data

Type pump _____ Column diameter and length _____

Cylinder or bowls diameter and length _____

Suction pipe _____ Airline _____

Power _____ Production _____ g. p. m. for _____ hours per day

Use of water _____

Dissolved constituents and properties (in parts per million except as indicated)

Date sampled				
Sampled by				
Silica (SiO_2)				
Iron (Fe)				
Manganese (Mn)				
Calcium (Ca)				
Magnesium (Mg)				
Potassium (K)				
Sodium (Na)				
Carbonate (CO_3)				
Bicarbonate (HCO_3)				
Sulfate (SO_4)				
Chloride (Cl)				
Fluoride (F)				
Nitrate (NO_3)				
Dissolved solids				
Hardness (as $CaCO_3$)				
Total				
Grains per gallon				
Noncarbonate				
Alkalinity (as $CaCO_3$)				
pH				
Specific conductance (micromhos at 25°C)				
Temperature (°F)				
Analysis No.				

Laboratory Data

LOCATION - ED3-8,9

Well No. W-6371 Sample range 0-638 No. of samples 119

No. of dupls. and cond. 192 Good Washed range 210-638

Samples prepared by de Roma Date 2/11/54

Logged by C Brown Date 4-12-54

Correlations by C Brown E R C Northrop Date