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: 3

Lat-long accuracy: 2 | T. 81 N, R 10 W, Sec 36, SWSW¼, SW¼, SW¼ 5 B & M

Local well number: 081 10W 36 CCCC | Other number: W-2092

Local use: 02092 45CØLØNY | Owner or name: SOUTH AMANA COUNTY WELL

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) Ind, (N) P S, (P) 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, (Ø) Obs, (P) Oil-gas, (R) Recharge, (T) Test, (U) Unused, (W) Withdraw, (X) Waste, (Z) Destroyed — W

DATA AVAILABLE: Well data 3 | Freq. W/L meas.: INVENTORY Ø | Field aquifer char.

Hyd. lab. data:

Qual. water data; type: COMPLETE — C

Freq. sampling: INVENTORY Ø | Pumpage inventory: yes / no, period:

Aperture cards: yes

Log data: GEOLOGIST-DRILLER'S — GD

WELL-DESCRIPTION CARD

SAME AS ON MASTER CARD | Depth well: 90 ft | 090 | Meas. rept accuracy: DRILLER'S LOG — 3

Depth cased; (first perf.): ft | Casing type: ; Diam. 8 in — 8

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

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: AUG. 1945 | 945 | Pump intake setting: ft

Driller: THORPE WELL CO. (name), DES MOINES, 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, gas, wind; nat, LP; H.P. ; Trans. or meter no.

Descrip. MP: LSD ft above/below LSD. Alt. MP 797

Alt. LSD: 797 | 797 | Accuracy: (source) ALTIMETER — 7

Water Level: 50 ft above/below MP; Ft above/below LSD | 050 | Accuracy: DRILLER'S LOG — D

Date meas: AUG. 1945 | 8 45 | Yield: 30 gpm | 030 | Method determined

Drawdown: 12 ft | 12 | Accuracy: | 3 | Pumping period hrs

QUALITY OF WATER DATA: Iron 2.2 ppm | 5 | Sulfate 88.3 ppm | 3 | Chloride 2.0 ppm | 0 | Hard. 437 ppm | 7

Sp. Conduct K x 10^6 | Temp. °F | Date sampled JAN. 21, 1948 | 148

Taste, color, etc.

Punched ERC

Verified PMT

Well No. 081-10W-36 CCCC

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Latitude-longitude 41 46 28 (N) S 091 58 07.3
d m s d m s

HYDROGEOLOGIC CARD

SAME AS ON MASTER CARD (1–19) Physiographic Province: CENTRAL LOWLAND [1|2] (20–21) Section: DISSECTED

TILL PLAIN [E] (22) Drainage Basin: IOWA [2|5|D] (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 [ ] (27)

MAJOR AQUIFER: QUATERNARY system, PLEIST series [Q|G] (28–29) aquifer, formation, group [G|X] (30–31)

Lithology: SAND & GRAVEL [R] (32–33) Origin: GLACIAL [O] (34) Aquifer Thickness: ft

[ ] (35–37) Length of well open to: ft [ ] (38–40) Depth to top of: 80 ft [8|0] (41–43)

MINOR AQUIFER: system, series [ ] (44–45) aquifer, formation, group [ ] (46–47)

Lithology: [ ] (48–49) Origin: [ ] (50) Aquifer Thickness: ft

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

Intervals Screened:

Depth to consolidated rock: ft [ ] (60–63) Source of data: [ ] (64)

Depth to basement: ft [ ] (65–68) Source of data: [ ] (69)

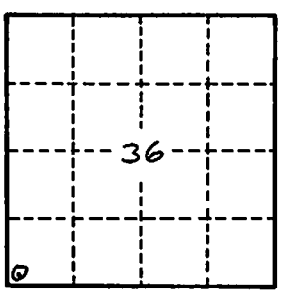
Surficial material: BLUE CLAY [P] (70–71) Infiltration characteristics: POOR [4] (72)

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:

8" CASING & GRAVEL PACK IN 16" HOLE.



Well No. 081-10W-36 CCCC

GPO 857-700

IOWA GEOLOGICAL SURVEY
Iowa City, Iowa

Well Log Record

Owner of well S. Amana Colony County Iowa

Tenant _____ Town _____

Location SW¼ sec. 36, T. 81 N., R. 10 ~~E.~~ W. Washington Twp.

Curb elevation 797 ft. Present depth _____ ft. final depth 90 ft.

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

Contractor (Vic Ogden) Sharpe Well Co. Date drilled July Aug. '45

Description*	FEET Thick	From	To	Description*	FEET Thick	From	To
Blue Clay		0	57				
Fine Sand		57	72				
Blue Clay		72	80				
Sd & Gravel		80	90				

*Abbreviate descriptions; use one line for each formation.

Remarks on water zones and casings

Samples of fine sand 57-72' & Sd & Gravel 80-90'

In Test Hole S.W.L. 50' 30 g.p.m. 12' dd.

Final well will be 8" casing - gravel pack

in 16" hole

Will probably be ready to test Sun. Aug 19 1945

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

Record obtained from _____ Recorded by _____

Station	Temp	Time	actual Reading	Temp Corr.	Red. to datum	Elev.	actual Elev.
S. Amana Old Well	83°	2:40 p.m.	895	0	895 - 98	797	
S. Amana R.R.	84.5	2:48	850	-3	847 - 100	747	848
S.A.C. Well	84	2:53	898	0	898 - 101	797	
S.A. R.R.	84	2:59	854	-3	851 - 104	747	852
S.A.C. Well		3:04	901	0	901 - 105	796	

4' in 11 min

1' ~ 3

Sheet No. 1 Name of Well S Amana Colony Well Survey No. 2092

Location S Amana (Iowa) Date Drilled Analyst Parker

00

10

20

30

40

50

60 ±7 Very fine sand A-C, ~~wt~~ gray, white buff & blk
dol pbls

70 ±2

80

Coarse sd & gravel, qtz, ig, dol

90

00

081-10W-36CCCC

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

W-2072

RECORD OF WELL

Location:

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

SW¼ sec. 36 T. 81 N., R. 10 E. W. Washington Twp.

Well name and number South Amana Colony #11

Owner _____ Address _____

Tenant _____ Address _____

Contractor Thorpe Well Co. Address Ainsworth, Iowa

Drillers Vic Ogden

Drilling dates July - August 1945

Well data:

Elevations: Drilling curb 797 feet; Land surface _____ feet

Determined by _____

Topographic position _____

Total depth: Reported 90 feet, Measured _____ feet

Drilling method Cable

Hole and casing data 8" casing & gravel pack in 14" hole
(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 50 ft. above ground level Date _____

Original elevation of water level 747 ft.; Source of data V. Ogden

Sources of water: Principal _____; Others _____

CASING DIAGRAM

Vertical scale _____

LOG

Blue clay 0-57

Fine Sand 57-72

Blue Clay 72-80

Lt gravel 80-90

Production data: Date _____

Static depth to water 50 Measuring point _____

Pumping level 62 at 30 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 of production: _____ g.p.m. for _____ hrs. a day

Use of water _____

WATER ANALYSES (in parts per million)

Date sampled				
Sampled by				
Total solids				
Insoluble matter				
Alkalinity (Meo)				
Alkalinity (Phn)				
pH				
Fe_2O_3+ Mn_2O_3+Al_2O_3				
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 57-72' & 80-90 No. spls. 2 No. dupls. & cond. 0

Spls. prepared by Peterson Washed range 57-90 by R. Peterson

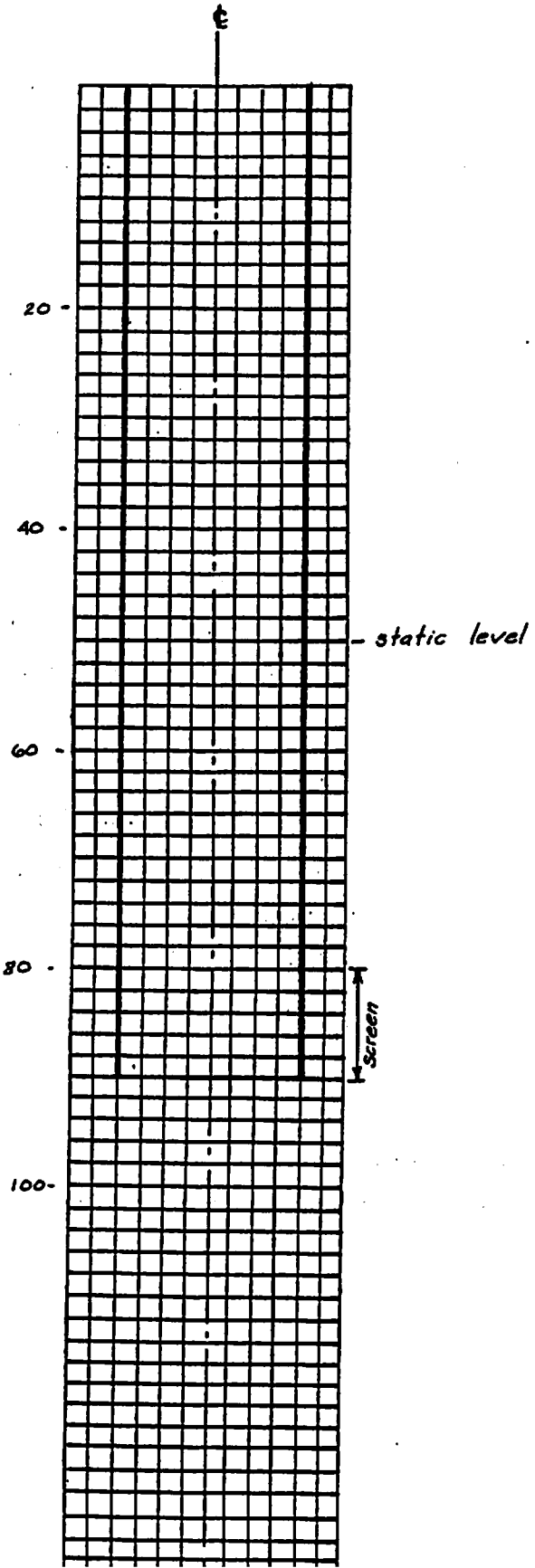
Driller's log and cond. _____

Insoluble residues: Prepared by _____ Studied by _____ Strip log _____

Microscopic study 57-72, 80-90 strip log Aug 13 1945

Gen. log _____ Correl. by MC Rankin

GEOLOGICAL DATA			CASING DATA	WELL DATA	
Formation	Material and distance from surface in ft.	Series	Position, kind and extent of casing, liners, shoes, etc.	Scale: Horizontal 1□ = 1' Vertical 1□ = 2'	Position of seals, screens, static level, etc.
	0				
	Blue Clay				
	57				
	Very fine sand. Gray Dolomite pebbles				
	72				
	Blue Clay				
	80				
	Coarse sand & gravel. Qtz. & Dol.				
	90				



#13

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

GROUND WATER

Town South Amana County Iowa Date March 17 1947

WELL NO. Active ✓ Standby Abandoned Replaced by No.

LOCATION: Street Hwy #6 Sec. 36 T. 81 N.R. 10 ~~East~~ West

Lot Block Township Washington

OWNERSHIP Amana Society Date Installed Completed Aug. 1945

CONTRACTOR Thorpe Well Co. Address Des Moines

DATE RECONDITIONED 19 Contractor Address

CONSTRUCTION EMPLOYED: Gravel Packed - 8" casing in 16" hole

CURB ELEVATION 797 REFERENCE I. G. S.

TYPE OF CONSTRUCTION Gravel Packed Depth 90 ft. Diameter 8 in.

CASING: Material Iron Condition Good

SCREEN: Material Length 10 ft. Diameter 8 in. Slot Opening in.

WELL SEALED Yes How Pump base tight Approved Yes

WELL VENTED No How Approved

TYPE OF PUMP Turbine Make Pomona Capacity 45 GPM Lubricated

DEPTH TO CYLINDER 85 ft. Tail Pipe ft.

PUMP CONTROL: Manual Automatic ✓ Semi-Automatic

STATIC LEVEL 50 ft. Pumping Level ft. Drawdown ft.

OPTIMUM SPECIFIC YIELD * GPM Drawdown ft. Time hrs.

RATE OF DRAWDOWN Rate of Recovery

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

DRAWDOWN GAUGE INSTALLED No

TOPOGRAPHICAL POSITION OF WELL High ground - excellent drainage

WELL SITE INVESTIGATED Yes Approved Yes Why not

WELL CONSTRUCTION REVIEWED Yes Approved Yes Why not

PIT CONSTRUCTION: Purpose None Size and Description

CONDITION: Drainage Facilities

PUMP INSTALLATION: Approved Yes Why Not

CUTTINGS FROM WELL PRESERVED: Yes Where I. G. S.

DEPTH TO BED ROCK Depth to Water-bearing Stratum

SOURCE OF WATER: Principal Formation Sand & Gravel Bed Other

DATE RECONDITIONED ..... 19 ..... Contractor ..... Address .....

CONSTRUCTION EMPLOYED: Gravel Packed - 8" casing in 16" hole

CURB ELEVATION 797 REFERENCE I. G. S.

TYPE OF CONSTRUCTION Gravel Packed Depth 90 ft. Diameter 8 in.

CASING: Material Iron Condition Good

SCREEN: Material ..... Length 10 ft. Diameter 8 in. Slot Opening ..... in.

WELL SEALED Yes How Pump base tight Approved Yes

WELL VENTED No How ..... Approved .....

TYPE OF PUMP Turbine Make Pomona Capacity 45 GPM Lubricated .....

DEPTH TO CYLINDER 85 ft. Tail Pipe ..... ft.

PUMP CONTROL: Manual ..... Automatic ✓ Semi-Automatic .....

STATIC LEVEL 50 ft. Pumping Level ..... ft. Drawdown ..... ft.

OPTIMUM SPECIFIC YIELD * GPM Drawdown ..... ft. Time ..... hrs.

RATE OF DRAWDOWN ..... Rate of Recovery .....

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

DRAWDOWN GAUGE INSTALLED No

TOPOGRAPHICAL POSITION OF WELL High ground - excellent drainage

WELL SITE INVESTIGATED Yes Approved Yes Why not .....

WELL CONSTRUCTION REVIEWED Yes Approved Yes Why not .....

PIT CONSTRUCTION: Purpose None Size and Description .....

CONDITION: ..... Drainage Facilities .....

PUMP INSTALLATION: Approved Yes Why Not .....

CUTTINGS FROM WELL PRESERVED: Yes Where I. G. S.

DEPTH TO BED ROCK ..... Depth to Water-bearing Stratum .....

SOURCE OF WATER: Principal Formation Sand & Gravel Bed Other .....

Total Hardness ..... ppm. Total Iron ..... ppm. Sulfates ..... ppm. Fluorine ..... ppm.

Manganese ..... ppm. pH ..... CO_3 ..... ppm.

REMARKS: * On pumping test @ 30 g.p.m. there was 12' drawdown

Wooden pumphouse 6' x 8', concrete floor drained to ground surface