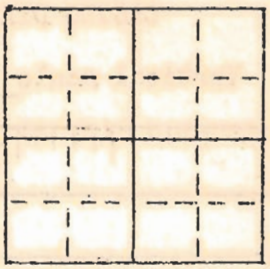
W-2958

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

RECORD OF WELL



Location:

Town: Carroll (N E / S W): County Carroll

SE SE NW sec. 25 T 84 N., R. 34 W. Twp.

Well name and number Carroll City No. 7

Owner City Address

Tenant Address

Contractor Thorpe Well Co. Address

Drillers Elom, Masters, Thorpe

Drilling dates 1947

Well data:
Elevations: Drilling curb feet; Land surface feet

Determined by

Topographic position

Total depth: Reported 185 feet, Measured feet

Drilling method gravel pack

Hole and casing data 146' of 20" casing set at 144'; 35' of 20" Everdur screen with 8" pipe on top; screen set at 183'

Original depth to water 55 ft. above / below Date

Original elevation of water level ft.; Source of data

Sources of water: Principal ; Others

Production data: Date

Static depth to water 55 Measuring point

Pumping level 123 at 700 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 samples				
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 0-185 No. spls. 35 No. dupls. & cond. 35 (F)

Spls. prepared by Puff Washed range. 135-185 by Puff

Driller's log and cond.

Insoluble residues: Prepared by Studied by Strip log

Microscopic study 0-185 strip log Nov. 22, 1947

Gen. log Correl. by R. Wehmer

Results of Pumping Test at City Well Field
Carroll, Iowa
May 7, 1952

Well No. 7

Time	Depth to Water (ft.)	Remarks
7:43 am	56.48	No. 6 pump turned on at 5:30 pm May 6
8:03	56.57	No. 3 turned off
8:05		No. 7 pump started
8:05:45	80.00	
8:06:20	90.00	
8:07:30	100.00	
8:08	101.90	
8:10	105.50	
8:11	106.42	
8:12	106.91	
8:13	107.10	
8:14	107.25	
8:15	107.40	
8:18	107.80	
8:20	107.60	
8:21	107.85	
8:23	108.00	
8:25	107.96	
8:26	108.23	
8:27	108.40	
8:29	108.32	
8:30	108.15	
8:31	108.43	
8:32	108.32	
8:33	108.55	
8:34	108.56	
8:35	108.60	
8:37	108.56	
8:39	108.80	
8:41	108.94	
8:43	108.65	
8:43	108.65	
8:45	108.73	
8:49	108.78	
8:51	108.83	
8:53	108.86	
8:55	108.90	
8:57	108.93	
8:59	109.00	No. 3 pump turned on at approximately 9:00 am. Turned off at approximately 10:00 am.
9:01	109.12	
9:03 am	109.23	
9:05	109.35	
9:10	109.75	
9:15	109.93	
9:20	110.15	
9:25	110.35	
9:30	110.47	
9:35	110.92	
9:40	111.08	
9:45	111.15	
9:50	111.18	
9:55	111.34	
10:00	111.44	
10:05	111.54	
10:20	111.75	
10:35	111.87	
10:50	111.57	
10:52	111.50	
10:55	111.48	
11:00	111.52	
11:05	111.64	
11:15	111.61	
11:30	111.55	
11:45	111.64	
12:31 pm	112.02	
1:02	111.85	
1:04		No. 7 pump off Recovery measurements
1:04:35	90.00	
1:05:45	80.00	
1:06:30	76.30	
1:07	74.00	
1:08	71.8	
1:08:30	69.8	
1:09	68.50	
1:09:30	67.85	
1:10	67.25	
1:11	66.3	
1:12	65.58	
1:13	65.00	
1:14	64.57	
1:16	63.95	
1:18	63.54	
1:20	63.25	

Well No. 7 (cont.)

Time		Depth to water (ft.)	Remarks	Time	Depth to water (ft.)	Remarks
1:22	PM	63.00				
1:24		62.83				
1:26		62.65				
1:28		62.52				
1:30		62.39				
1:32		62.28				
1:34		62.17				
1:36		62.08				
1:38		61.98				
1:40		61.90				
1:42		61.82				
1:44		61.75				
1:46		61.67				
1:48		61.60				
1:50		61.55				
1:52		61.49				
1:54		61.43				
1:56		61.36				
1:58		61.33				
2:00		61.29				
2:02		61.24				
2:04		61.19				
2:08		61.11				
2:33		60.69				
2:47		60.51				
3:38		60.09				
4:40		59.78				
4:49		59.74	No. 7 well had to be put back in service			

Results of Pumping Test at City Well Field
Carroll, Iowa
May 7, 1952

Test Well No. 1

Time	Depth to Water (ft.)	Remarks
7:35 am	40.74	
8:02	40.81	
8:05		No. 7 pump started
8:06	40.94	
8:07	41.10	
8:08	41.42	
8:09	41.71	
8:10	42.03	
8:11	42.23	
8:12	42.43	
8:13	42.63	
8:14	42.80	
8:15	42.93	
8:16	43.06	
8:17	43.18	
8:18	43.31	
8:19	43.42	
8:20	43.51	
8:21	43.61	
8:22	43.69	
8:23	43.76	
8:24	43.83	
8:25	43.92	
8:26	43.99	
8:27	44.07	
8:28	44.12	
8:29	44.19	
8:30	44.25	
8:31	44.31	
8:32	44.36	
8:33	44.42	
8:35	44.52	
8:37	44.62	
8:39	44.72	
8:41	44.81	
8:43	44.97	
8:45	45.18	
8:47	45.45	
8:49	45.72	
8:51	45.94	
8:53	46.19	
8:55	46.39	
8:57	46.60	
8:59	46.79	
9:01 am	46.96	
9:03	47.10	
9:05	47.26	
9:09	47.55	
9:13	47.84	
9:17	48.10	
9:21	48.33	
9:25	48.54	
9:29	48.77	
9:33	48.93	
9:37	49.12	
9:41	49.28	
9:45	49.47	
9:49	49.63	
9:53	49.76	
9:57	49.92	
10:01	50.06	
10:05	50.17	
10:16	50.52	
10:25	50.23	
10:35	49.72	
10:45	49.62	
10:55	49.50	
11:05	49.37	
11:20	49.33	
11:35	49.32	
11:45	49.32	
12:37 pm	49.51	
1:04	49.59	
1:05		Pump No. 7 turned off
1:06	49.37	Recovery Measurements
1:07	49.13	
1:08	48.90	
1:09	48.68	
1:10	48.47	
1:11	48.28	
1:12	48.09	
1:13	47.93	
1:14	47.78	
1:15	47.65	
1:16	47.52	
1:17	47.38	
1:18	47.31	
1:19	47.21	

Test Well No. 1 (cont.)

Time	Depth to Water (ft.)	Remarks	Time	Depth to Water (ft.)	Remarks
1:20	47.12				
1:21	47.06				
1:22	46.98				
1:23	46.89				
1:24	46.84				
1:25	46.77				
1:27	46.64				
1:29	46.53				
1:31	46.43				
1:33	46.34				
1:35	46.24				
1:40	46.05				
1:45	45.90				
1:50	45.74				
1:55	45.62				
2:00	45.48				
2:05	45.39				
2:35	44.87				
3:05	44.54				
3:35	44.28				
3:55	43.97				
4:08	43.93	No. 7 well had to be put back in service.			

084-35W-25 BDD

KID1

CARROLL CITY #7 (1947)

02958

UNITED STATES DEPARTMENT OF THE INTERIOR
Geological Survey
Water Resources Division

Water Quality
(ppm)

Card Q

State: IOWA (1-2) County: CARROLL (3-4) Town: CARROLL

Well No. Latitude 4 2 0 3 2 9 N (5-11) Longitude 0 9 4 5 2 1 (12-18) Seq. No. (19) Date M 0 5 D 1 2 Y (20-25)

Sampling Depth (26-29) Type (30) Kx10⁶ (31-35) pH 9.1 (36-38) Temp. °F (39-41)

SiO_2 (42-44) Ca 4 2 (45-49) Mg 2 3 (50-53) Na (54-58) K .C (59-61)

HCO_3 (62-65) CO_3 .12 0 (66-67) SO_4 3 5 (68-72) Cl 1 0 (73-78) Source No. (79-80)

Card R

Duplicate Columns 1-25 from Card Q

F .4 (26-28) NO_3 0. (29-32) PO_4 (33-35) B (36-38) Al (39-41) Fe 0.0 0 (42-45)

Mn .0 3 (46-49) Cu (50-52) Pb (53-54) Zn (55-57)

Determined Solids (58-63) Calc. (64-69) Ca,Mg (70-73) Hardness Non-Carb. (74-77)

Color (78-79) No. R (80)

Card S

Duplicate Columns 1-25 from Card Q

Br (26-28) I (29-31) Alk. as $CaCO_3$ 3 0 (32-35) Free CO_2 (36-38) SAR (39-41)

RSC (42-44) ABS (45-47) (48-50)

Alpha (pc/l) (55-57) Beta (pc/l) (58-60) Ra (pc/l) (61-63) U (ug/l) (64-66)

Verified PMJ

Punched FCH

No. S (80)

Recorded by: D. AARONS

Punched by: _____ Date: _____

Published: _____

Carroll

1

May 19, 1952

Mr. D. S. Boudinot
Brown Engineering Company
326 K P Building
Des Moines, Iowa

Dear Mr. Boudinot:

Enclosed are the tabulations of the pumping test conducted at Carroll, Iowa, May 7, 1952, by Mr. Cooper and Mr. Lane.

The city was unable to cease pumping overnight to allow water levels in the well field to approach static conditions. This was due to insufficient storage of sufficient elevation to maintain pressure in outlying sections of the city which are on high ground.

As a result of not being able to suspend pumping in the well field and the fact that the pumpage from the well field is not metered, the data obtained does not lend itself well to quantitative interpretation. However, if the production of the wells pumping at the time of the test could be determined, reliable figures for the specific capacity of the wells could probably be obtained.

At the time of the pumping test, well 6 had been pumping approximately 15 hours and was pumped to storage continuously during the test. Well 3 had been pumping prior to well 6. Well 7 was pumped to waste during the test. Water level measurements were made in well 7; test well 1 was used as an observation well.

If there are any questions concerning the enclosed data or if we can be of further assistance to you, please feel free to call upon us.

Very truly yours,

C. Richard Murray

Enclosures

CRM:CWL:wmh

Results of Pumping Test at City Well Field
Carroll, Iowa
May 7, 1952

Location: Well No. 7 and test hole No. 1 are located in the SE¼ NW¼ sec. 25, T. 84 N., R. 35 W.

Total Depth: Well No. 7 has a total depth of 185 feet. Test well No. 1 has a total depth of 169 feet.

Casing and Hole Data: Well No. 7 is cased with 20-inch casing to a depth of 144 feet with 35 feet of 20-inch screen set at 183 feet.

Test well No. 1 is cased with 8-inch casing to a depth of 106 feet with 8-inch open hole to a depth of 169 feet

Chief Aquifer: The chief aquifer in the Carroll well field is the Dakota sandstone and adjacent Pleistocene gravels.

Pump: The pump in well No. 7 is an electrically powered turbine of 20 H.P. rating.

Water Level Measurements: Water level measurements in well No. 7 and test well No. 1 were made with calibrated electric tapes. The measuring point at well No. 7 was the top of the breather pipe hole in the pump base. In test well No. 1 the measuring point was at the top of a 3/4-inch pipe placed in well 2.3 feet above land surface.

Remarks: Well No. 6 was pumped continuously from 5:00 p.m. May 6, 1952, throughout the test. No. 7 well was pumped during the test period with No. 1 test well used as an observation well. No method of measuring the discharge of the two pumping wells was available but was estimated as 400 gpm for each well. Measurements made by J. B. Cooper and C. W. Lane.

WRD Exp. (GW)
Aug. 1964

Punched FCH
Verified PMJ

U. S. DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY

Water Resources Division Well Schedule Form

MASTER CARD

COUNTY NUM

Record by D. AARONSON Source of data FILE Date 7/9/65 Map 1:63,360

State IOWA (16) County (or town) CARROLL (14)

Latitude: 42 deg 03 min 29 sec N (1) Longitude: 094 deg 52 min 11 sec (1) Sequential number: 1

Lat-long accuracy: 2 T. 84 N S, R 35 E W, Sec 25, SE ¼, SE ¼, NW ¼ 5

Local well number: 084 35W 25 b d d Other number: W-2958 B & M

Local use: 02958 47 CITY 7 Owner or name: CARROLL CITY, #7

Owner or name: CARROLL IOWA Address: CARROLL, 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, (C) Comm, (D) Dewatering, (F) Fire, (H) (I) (N) Dom, Irr, Ind, (P) S, Stock, Instit, Unused P

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

DATA AVAILABLE: Well data 1 Freq. W/L meas.: INVENTORY Ø Field aquifer char.

Hyd. lab. data:

Qual. water data; type: PARTIAL P

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

Aperture cards: yes

Log data: GEOLOGIST LOG G

WELL-DESCRIPTION CARD

SAME AS ON MASTER CARD Depth well: 185 ft 185 Meas. rept 6

Depth cased; (first perf.) 148 ft 148 Casing type: STEEL; Diam. 20 accuracy in 20

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

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

Date Drilled: 1947 9 47 Pump intake setting: ft

Driller: THORPE WELL CO. (ELOM, MASTERS) DES MOINES, IA.

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 T Deep / Shallow D

Power (type): diesel, (elec) nat gas, gasoline, hand, LPG gas, wind; H.P. 20 5 Trans. or meter no.

Descrip. MP LSD ft above below lsd, Alt. MP 1261

Alt. LSD: 1261 1261 Accuracy: (source) ALTIMETER 7

Water Level 55 ft above below MP; Ft above below lsd 55 Accuracy: REPORTED 6

Date meas: 1947 4 7 Yield: 700 gpm 700 Method determined

Drawdown: 68 ft 68 Accuracy: REPT 6 Pumping period hrs

QUALITY OF WATER DATA: Iron 0 ppm Sulfate 34.6 ppm 2 Chloride 10 ppm Hard. 312 ppm 7

Sp. Conduct K x 10^6 Temp. °F Date sampled MAY 1947 5 47

Taste, color, etc.

084-35W-25bdd

Well Number 42 03 29 (N/S) 094 52 11
d m s d m s

HYDROGEOLOGIC CARD

SAME AS ON MASTER CARD [1-19]

Physiographic Province: CENTRAL LOWLAND [20-21] 12 Section: DISSECTED

TILL PLAIN [22] E Drainage Basin: RACCOON [23-25] 25A Subbasin: [26]

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

MAJOR AQUIFER: CRETACEOUS system, LOWER series [28-29] K1 DAKOTA SANDSTONE aquifer, formation, group [30-31] D1

Lithology: COARSE SANDST [32-33] 4V Origin: MARINE [34] 6 Aquifer Thickness: [35-37] ft

Length of well open to: 30 ft [38-40] 30 Depth to top of: 150 ft [41-43] 150

MINOR AQUIFER: QUATERNARY system, PLEIST series [44-45] QG aquifer, formation, group [46-47] GX

Lithology: SAND [48-49] S Origin: GLACIAL [50] 0 Aquifer Thickness: 154 ft

Length of well open to: 2 ft [54-56] 2 Depth to top of: [57-59] ft [51-53]

Intervals Screened: 148-183'

Depth to consolidated rock: 150 ft [60-63] 1150 Source of data: WELL CUTTINGS [64] C

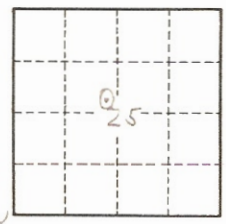
Depth to basement: [65-68] ft Source of data: [69]

Surficial material: SANDY TILL [70-71] ST Infiltration characteristics: POOR [72] 4

Coefficient Trans: [73-75] gpd/ft Coefficient Storage: [76-78]

Coefficient Perm: gpd/ft^2; Spec cap: 10.2 gpm/ft; Number of geologic cards: [79]

CASING:
146' OF 20" CASING SET AT 144'.
35' OF 20" EVERDUR SCREEN WITH 8" PIPE ON TOP, SCREEN SET AT 183'.



GPO 844-225