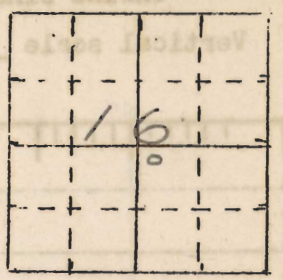
IOWA GEOLOGICAL SURVEY
In Cooperation with U. S. Geological Survey

W-1166

RECORD OF WELL



Location:

Town: Arcadia (N E / S W); County Carroll E.

NW NW SE sec. 16 T. 84 N., R. 36 W. Arcadia Twp.

Well name and number Arcadia Town Well No. 1

Owner Town of Arcadia Address _____

Tenant _____ Address _____

_____

Contractor Thorpe Well Company Address Des Moines, Iowa

Drillers _____

Drilling dates Dec. 21, 1939 to May 10, 1940

Well data:

Elevations: Drilling curb 1392 feet; Land surface _____ feet

_____

_____

Determined by _____

Topographic position _____

Total depth: Reported 1203 feet; Measured _____ feet

_____

Drilling method Cable

Hole and casing data 407' of 6" casing from 0' to 407'; 101'5" of 5 3/16" casing from 390' to 491'5", 203'1" of 4½ casing from 456' to 659'1", 548'11" of 3" casing from 634'4" to 1203'3".

(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 324 ft. ~~above~~ below curb Date May 1940

Original elevation of water level _____ ft.; Source of data _____

_____

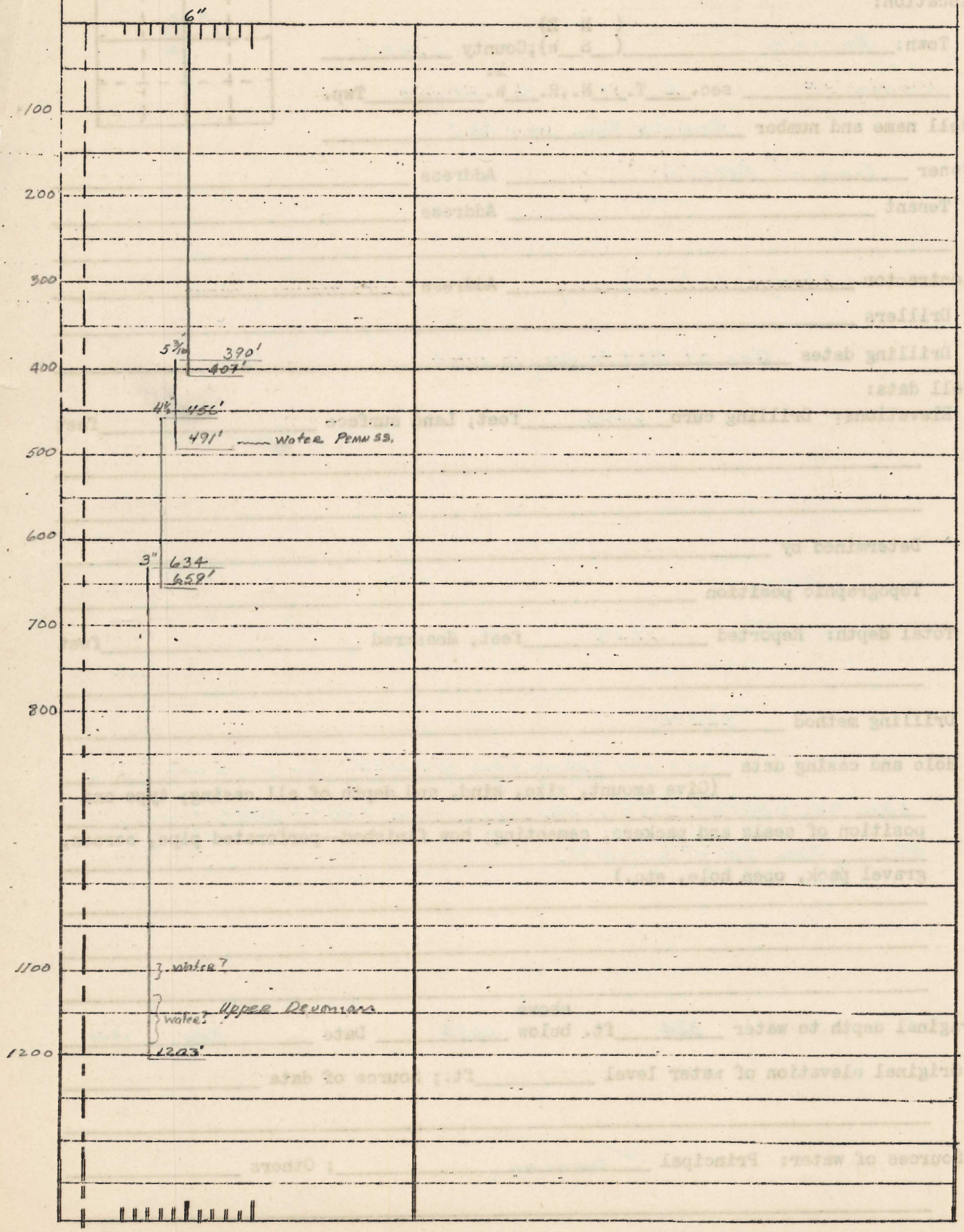
Sources of water: Principal ✓ Devonian; Others _____

_____

CASING DIAGRAM

Vertical scale _____

LOG



Production data: Date _____

Static depth to water 324; Measuring point _____

Pumping level 351'2" at 25 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	May 1, 1940			
Sampled by	Elias & Masters			
Total solids	2249.			
Insoluble matter	13.0			
Alkalinity (Meo)	202.0			
Alkalinity (Phn)	0.0			
pH	7.3			
$Fe_2O_3+Mn_2O_3+Al_2O_3$	5.0			
Alkali as sodium	276.6			
Calcium	272.3			
Magnesium	78.4			
Iron (unfiltered)	0.7			
Manganese	Trace			
Nitrate	0.44			
Fluoride	1.5			
Chloride	34.0			
Sulphate	1331.3			
Bicarbonate	246.0			
Hardness (ppm)	1004.			
Hardness (gpg)	58.7			

Remarks Hard, high in sodium + sulphate

Laboratory data: Sample storage location _____

Sample range 10-1203 No. spls. 188 No. dupls & cond. 16 & Poor.

Spls. prepared by Summerfd Washed range _____ by _____

Driller's log and cond. Yes v. good

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

Microscopic study 260-1203' Conselman strip log Schuldt & Elias copied by Harris 9/5/41

Gen. log _____ Correl. by Conselman

R-1-B

THORPE BROTHERS WELL COMPANY

2340 Sixth Avenue

DES MOINES, IOWA

Drilled for Town of Arcadia *at* Arcadia, Ia.

Drilling started Dec/21st 39 *19* ____ *Completed* May 10th 40 *19* ____

Well No. ____ *Kind of Well* Drilled *Depth* 1203 *Size hole started* 8 *in.*

Finish 4½" *G. P. M.* 25 *Static head* 324' *Drawdown* 27'2"

Water was first encountered at 485 *in* Sandstone *Approximate Amount* 4GPM

Remarks ____

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
6"	407'	407'	Surface			
5 3/16IJ	101'5"	491'5"	390'			
4½"IJ	203'1"	659'1"	456'			
3"	568'11"	1203'3"	634'4"	Std blk.		

Driller ____ *From Surface to* ____ *feet*

Driller ____ *From* ____ *feet to* ____ *feet*

Driller ____ *From* ____ *feet to* ____ *feet*

AMOUNT IN FEET	KIND OF SOIL OR FORMATION	TOTAL DEPTH FEET
2	Soil	2
10	Yellow clay	12
2	Sand	14
6	Yellow clay	20
30	Blue clay	50
30	Yellow clay	80
35	Blue clay	115
2	Hard sand	117
23	Blue clay	140
3	Finesand	143
57	Blue clay	200
25	Yellow clay	225
35	Blue shale	260
5	Yellow clay	265
10	Blue shale	275
5	Red Shale	280
10	Blue shale	290
5	Red shale	295
20	Gray shale	315
25	Red shale	340
5	Blue shale	345
4	Fine sand	349
21	Blue shale	370
5	Black shale	375
65	Brown shale	440
5	Black shale	445
20	Brown shale	465
5	Red shale	470
15	Blue shale	485
15	Sandstone	500
5	Blue shale	505
5	Black shale	510

R-1-B

THORPE BROTHERS WELL COMPANY

2340 Sixth Avenue

DES MOINES, IOWA

Drilled for Arcadia, Ia *at* _____

Drilling started _____ *19* ____ *Completed* _____ *19* ____

Well No. _____ *Kind of Well* _____ *Depth* _____ *Size hole started* _____ *in.*

Finish _____ *G. P. M.* _____ *Static head* _____ *Drawdown* _____

Water was first encountered at _____ *in* _____ *Approximate Amount* _____

Remarks _____

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

Driller _____ *From Surface to* _____ *feet*

Driller _____ *From* _____ *feet to* _____ *feet*

Driller _____ *From* _____ *feet to* _____ *feet*

AMOUNT IN FEET	KIND OF SOIL OR FORMATION	TOTAL DEPTH FEET
25	Gray shale	535
5	Red shale	540
25	Gray shale	565
95	Dark gray shale	660
5	Dak brown limestone	665
35	Brown limestone	700
5	Green shale	705
7	Green shale & limestone	712
3	Brown limestone	715
20	Green shale	735
5	Brown limestone	740
15	White limestone	755
5	Brown limestone	760
15	Light gray shale	775
33	Dark gray limestone	808
4	Light gray limestone	812
3	Bluish green shale	815
25	Light brown limestone	840
60	Limestone- light buff	900
5	Dark gray shale	905
35	Light brown limestone	940
5	Gray shale	945
10	Grayish brown limestone	955
70	Brown limestone	1025
50	Gray limestone	1075
10	Light brown limestone	1085
5	Light green shale	1090
20	Grayish brown limestone(porous)	1110
5	White shale	1115
15	Light blue shale	1130
70	Light brown limestone(porous)	1200
3	" " " Hard	1203

WH 1166

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

LAB. NO. 5655
MINERAL NO. 7350
25 Jul 19 69 bj

TOWN Arcadia COUNTY Carroll
OWNER OF SUPPLY Municipal
COLLECTOR'S NAME Ray Wiebers
DATE COLLECTED 14 Jun 69 DATE RECEIVED 16 Jun 69
REPORT TO: NAME EES
ADDRESS SDH

FIELD DATA

SOURCE: WELL NAME, NUMBER, POINT OF COLLECTION, DEPTH, CONSTRUCTION DATE, ETC., Well #4 Pump House 1203' 1940
North well (750') no longer being used

WELL PUMPED 1/2 HRS. AT 28 GPM. DATE OF PREVIOUS SAMPLE 1963
WAS SAMPLE FREE OF TURBIDITY WHEN COLLECTED Clear
TEMPERATURE °C ALKALINITY (ppm $CaCO_3$) P T pH
IS A POLYPHOSPHATE BEING USED? None

Iron (ppmFe) 3.0

LABORATORY ANALYSIS
(PARTS PER MILLION)

SPECIFIC CONDUCTANCE K AT 25°C 310 x 10^{-5}. TURBIDITY
DISSOLVED SOLIDS 2670 SOLUBLE IRON (Fe) 3.7
TOTAL SOLIDS 2670 SILICA (SiO_2) 12 TOTAL IRON (Fe) 3.7
ALKALINITY (ppm $CaCO_3$) P None T 215 pH 7.3 DATE 16 Jun 69

POSITIVE IONS		NEGATIVE IONS	
K^+	37	NO_3^-	0.4
Na^+	370	F^-	2.0
Ca^{++}	244	Cl^-	3
Mg^{++}	107	SO_4^{--}	1600
Mn^{++}	0.07	HCO_3^-	262
Al^{+++}		CO_3^{--}	None

HARDNESS AS $CaCO_3$ 1050 ppm 61.3 gpg
Cloudy and slightly yellow on receipt in laboratory.

ANALYST Ryan, Wright

R. L. MORRIS
JHG PRINCIPAL CHEMIST

W1166

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

LAB. NO. 3080
MINERAL NO. 4129
25 June 1963

TOWN Arcadia COUNTY Carroll
OWNER OF SUPPLY Municipal
COLLECTOR'S NAME X P Boyles - Ray Wiebers
DATE COLLECTED 22 May 1963 DATE RECEIVED 24 May 1963
REPORT TO: NAME Division of Public Health Engineering
ADDRESS State Department of Health

FIELD DATA

SOURCE: WELL NAME, NUMBER, POINT OF COLLECTION, DEPTH, CONSTRUCTION DATE, ETC., #4 Deep well, 1203 ft deep. Constructed in May 1940

WELL PUMPED 1/4 HRS. AT 30 GPM. DATE OF PREVIOUS SAMPLE 19 May 1958
WAS SAMPLE FREE OF TURBIDITY WHEN COLLECTED Yes
TEMPERATURE °C ALKALINITY (ppm $CaCO_3$) P 0 T 190 pH 7.3+
IS A POLYPHOSPHATE BEING USED? No
Sample ahead of treatment.

LABORATORY ANALYSIS
(PARTS PER MILLION)

SPECIFIC CONDUCTANCE K AT 25°C 319 x 10^{-5}. TURBIDITY
DISSOLVED SOLIDS 2680 SOLUBLE IRON (Fe) 3.3
TOTAL SOLIDS 2680 SILICA (SiO_2) 10.4 TOTAL IRON (Fe) 3.3
ALKALINITY (ppm $CaCO_3$) P None T 208 pH 7.25 DATE 24 May 1963

POSITIVE IONS		NEGATIVE IONS	
K^+	38.0	NO_3^-	< 0.1
Na^+	344	F^-	2.2
Ca^{++}	232	Cl^-	29
Mg^{++}	112	SO_4^{--}	1520
Mn^{++}	0.07	HCO_3^-	254
Al^{+++}		CO_3^{--}	None

HARDNESS AS $CaCO_3$ 1040 ppm 60.7 gpg
Turbid with yellow color on receipt in lab.

ANALYST Pierson, Ryan

R. L. MORRIS
PRINCIPAL CHEMIST

bw

Coded

W1166

STATE HYGIENIC LABORATORY, IOWA CITY, IOWA
WATER LABORATORY DIVISION
MINERAL ANALYSIS

C

LAB. NO. 29391
MINERAL NO. 5597
6-19-58 19

TOWN Arcadia COUNTY Carroll
OWNER OF SUPPLY Town
COLLECTOR'S NAME Ray Wiebers
DATE COLLECTED 5-19-58 DATE RECEIVED 5-20-58
REPORT TO: NAME Division of Public Health Engr.
ADDRESS Des Moines, Iowa

FIELD DATA

SOURCE: WELL NAME, NUMBER, POINT OF COLLECTION, DEPTH, CONSTRUCTION DATE, ETC., Deep well at pump 1203

WELL PUMPED 17,000 gal. in 24 HRS. AT 27 GPM. DATE OF PREVIOUS SAMPLE
WAS SAMPLE FREE OF TURBIDITY WHEN COLLECTED
TEMPERATURE °C ALKALINITY (ppm $CaCO_3$) P T pH
IS A POLYPHOSPHATE BEING USED? none

LABORATORY ANALYSIS
(PARTS PER MILLION)

SPECIFIC CONDUCTANCE K AT 25°C 297 x 10^{-5}. TURBIDITY
DISSOLVED SOLIDS 2060 SOLUBLE IRON (Fe) 0.56
TOTAL SOLIDS SILICA (SiO_2) 12.0 TOTAL IRON (Fe) 2.1
ALKALINITY (ppm $CaCO_3$) P none T 206 pH 7.7 DATE 5-20-58

POSITIVE IONS		NEGATIVE IONS	
K^+	10.6	NO_3 – asN	<0.1
Na^+	370	F^-	2.8
Ca^{++}	230	Cl^-	30
Mg^{++}	103	SO_4^{--}	1560
Mn^{++}	<0.05	HCO_3^-	251
Al^{+++}		CO_3^{--}	none

HARDNESS AS $CaCO_3$: 1020 ppm 59.6 gpg
Slight yellow turbidity when received.
Lab. filtered 5-20-58.

ANALYST Dougherty arv

R. L. MORRIS
PRINCIPAL CHEMIST

W 1164 codes 12302

THE STATE UNIVERSITY OF IOWA
STATE HYGIENIC LABORATORIES
IOWA CITY

N100329

Mineral Water Analysis

Jan. 29, 1937

(Parts per Million)

Owner - George Grimsman Bottle #C-15

Town Arcadia (2 mi. S.E.) County Carroll Source Drilled well, depth 350' Water level 200' Pleistocene

Collected by H. G. Harshey on Dec. 15, 1936

Total Solids 5205 Suspended Solids Dissolved Solids

Turbidity Coefficient of Fineness Color pH 7.0

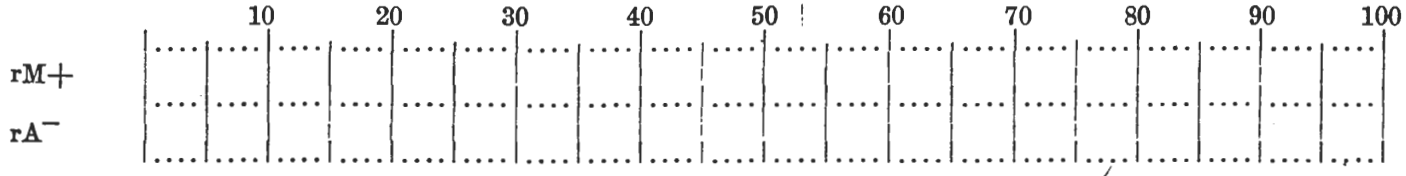
Alkalinity (to MeO) 256.0 Alkalinity (to Phn.) 0.0 Free Carbon Dioxide

Insoluble Matter 28.0 Silica (SiO_2) $Fe_2O_3+Al_2O_3+Mn_2O_3$ 20.0

POSITIVE IONS.	r		rM+	NEGATIVE IONS.	r		rA⁻
N as NH_4+	-	x 0.0714 =		N as NO_2^-	0.000	x 0.0714 =	
Alkalies as Na+	184.4	x 0.0435 =	8.456	N as NO_3^-	0.80	x 0.0714 =	
K+		x 0.0256 =		F^-	2.0	x 0.0526 =	0.105
Na+		x 0.0435 =		Cl^-	28.0	x 0.0282 =	0.790
Ca++	520.2	x 0.0499 =	25.950	SO_4^{--}	2017.5	x 0.0208 =	41.966
Mg++	142.8	x 0.0822 =	11.735	HCO_3^-	287.9	x 0.0164 =	4.722
(Fe++)	0.0	x 0.0358 =		CO_3^{--}		x 0.0333 =	
(Mn++)	0.80	x 0.0364 =		OH^-		x 0.0588 =	
(Al+++)		x 0.1112 =		PO_4^{---}	0.00	x 0.0316 =	
(Pb++)		x 0.0097 =		(BO_3^{---})	6.0	x 0.0510 =	
(Zn++)		x 0.0306 =		(Free CO_2)		x 0.0454 =	
TOTALS:		Sum rM+ =	46.399			Sum rA⁻ =	47.583

$$E = \frac{\text{Sum rM+} - \text{Sum rA}^-}{\text{Sum rM+} + \text{Sum rA}^-} \times 100 = -1.25\ \text{o/o}$$

Calculated Hardness as $CaCO_3$ = (Ca x 2.497) + (Mg x 4.115) + (Fe x 1.792) + (Mn x 1.822) = 1900 p.p.m.



One space = 2.4 milligram equivalent

Jack Grimsman Jr.
Chief, Water Laboratory Division.

UNITED STATES DEPARTMENT OF THE INTERIOR
Geological Survey
Water Resources Division

Water Quality
(ppm)

Local Well No. 084-36W-16 DBB
Aquifer Code(s) D3UL
Owner's Name ARCADIA CITY #1 (1940)
W Number 01166

Card Q

State: IOWA (19) County: CARROLL (14) Town: ARCADIA, IOWA

Well No. Latitude 42 05 06 N (5–11) Longitude 095 02 35 (12–18) Seq. No. 1 (19) Date M D Y 05 01 40 (20–25)

Sampling Depth 1203 (26–29) Type 1 (30) Kx10^6 (31–35) pH 7.3 (36–38) Temp. °F (39–41)

SiO_2 (42–44) Ca 272 (45–49) Mg 78 (50–53) Na +K 276 (54–58) K .C (59–61)

HCO_3 246 (62–65) CO_3 (66–67) SO_4 1330 (68–72) Cl 34 (73–78) Source No. 3 (79) Q (80)

Card R

Duplicate Columns 1-25 from Card Q

F .15 (26–28) NO_3 .1 (29–32) PO_4 (33–35) B (36–38) Al (39–41) Fe .7 (42–45)

Mn (46–49) Cu (50–52) Pb (53–54) Zn (55–57)

Solids Determined 2350 (58–63) Calc. (64–69) Hardness Ca,Mg 1000 (70–73) Non-Carb. 802 (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 $CaCO_3$ 202 (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)

No. S (80)

Recorded by: D. AARONSON

Punched by: T Date:

Published:

UNITED STATES DEPARTMENT OF THE INTERIOR
Geological Survey
Water Resources Division

Water Quality
(ppm)

Local Well No. 084-36W-16DBB
Aquifer Code(s) D3UL
Owner's Name ARCADIA CITY #1 (1940)
W Number 01166

Card Q

State: IOWA [19] (1 2) County: CARROLL [14] (3 4) Town: ARCADIA, IOWA

Well No. Latitude [4205061N] (5–11) Longitude [095023515] (12–18) Seq. No. [1] (19) Date M D Y [020349] (20–25)

Sampling Depth [1203] (26–29) Type [1] (30) Kx10^6 (31–35) pH [77] (36–38) Temp. °F (39–41)

SiO_2 (42–44) Ca [170] (45–49) Mg [71] (50–53) Na +K [383] (54–58) K [C] (59–61)

HCO_3 [227] (62–65) CO_3 [0] (66 67) SO_4 [1260] (68–72) Cl [39] (73–78) Source No. [3] (79) [Q] (80)

Card R

Duplicate Columns 1-25 from Card Q

F [8] (26–28) NO_3 [0] (29–32) PO_4 (33–35) B (36–38) Al (39–41) Fe [33] (42–45)

Mn [0] (46–49) Cu (50–52) Pb (53 54) Zn (55–57)

Solids Determined [2110] (58–63) Calc. (64–69) Hardness Ca,Mg [722] (70–73) Non-Carb. [536] (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 $CaCO_3$ [186] (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)

No. [S] (80)

Recorded by: D. AARONSON

Punched by: T Date:

Published:

UNITED STATES DEPARTMENT OF THE INTERIOR
Geological Survey
Water Resources Division

Water Quality
(ppm)

Local Well No. 084-36W-16 DBB
Aquifer Code(s) D3UL
Owner's Name ARCADIA CITY #1 (1940)
W Number 01166

Card Q

State: IOWA [19] (1-2) County: CARROLL [14] (3-4) Town: ARCADIA, IOWA

Well No. Latitude [4205060N] (5-11) Longitude [095023 5] (12-18) Seq. No. [1] (19) Date M D Y [061469] (20-25)

Sampling Depth [1203] (26-29) Type [1] (30) Kx10^6 [3100] (31-35) pH [7.3] (36-38) Temp. °F [ ] (39-41)

SiO_2 [12.] (42-44) Ca [244.] (45-49) Mg [107.] (50-53) Na [370.] (54-58) K [37.] (59-61)

HCO_3 [262] (62-65) CO_3 [0] (66-67) SO_4 [1600.] (68-72) Cl [3.] (73-78) Source No. [3] (79) [Q] (80)

Card R

Duplicate Columns 1-25 from Card Q

F [2.0] (26-28) NO_3 [.4] (29-32) PO_4 [.] (33-35) B [.] (36-38) Al [.] (39-41) Fe [3.7] (42-45)

Mn [.07] (46-49) Cu [.] (50-52) Pb [.] (53-54) Zn [.] (55-57)

Solids Determined [2670] (58-63) Calc. [ ] (64-69) Hardness Ca,Mg [1050] (70-73) Non-Carb. [835] (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 $CaCO_3$ [215] (32-35) Free CO_2 [ ] (36-38) SAR [.] (39-41)

RSC [ ] (42-44) ABS [.] (45-47) [.] (48-50) [ ] (51-54)

Alpha (pc/l) [ ] (55-57) Beta (pc/l) [ ] (58-60) Ra (pc/l) [.] (61-63) U (ug/l) [.] (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

Water Quality
(ppm)

Local Well No. 084-36W-16DBB
Aquifer Code(s) D3UL
Owner's Name ARCADIA CITY #1 (1940)
W Number 01166

Card Q

State: IOWA [19] (1 2) County: CARROLL [14] (3 4) Town: ARCADIA, IOWA

Well No. Latitude [4205061 N] (5–11) Longitude [095023 5] (12–18) Seq. No. [1] (19) Date M D Y [05 19 58] (20–25)

Sampling Depth [1203] (26–29) Type [1] (30) Kx10^6 [2970] (31–35) pH [7.7] (36–38) Temp. °F [ ] (39–41)

SiO_2 [10.] (42–44) Ca [230.] (45–49) Mg [108.] (50–53) Na [370.] (54–58) K [41.] (59–61)

HCO_3 [251] (62–65) CO_3 [0] (66 67) SO_4 [1560.] (68–72) Cl [30.] (73–78) Source No. [3] (79) [Q] (80)

Card R

Duplicate Columns 1-25 from Card Q

F [2.8] (26–28) NO_3 [.4] (29–32) PO_4 [ ] (33–35) B [ ] (36–38) Al [ ] (39–41) Fe [2.1] (42–45)

Mn [.05] (46–49) Cu [ ] (50–52) Pb [ ] (53 54) Zn [ ] (55–57)

Solids Determined [2660] (58–63) Calc. [ ] (64–69) Hardness Ca,Mg [1020] (70–73) Non-Carb. [813] (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 $CaCO_3$ [206] (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)

No. [S] (80)

Recorded by: D. AARONSON

Punched by: I Date:

Published:

084-36W-16 DBB

D3UL

ARCADIA CITY #1 (1940)

01166

W-1166

UNITED STATES DEPARTMENT OF THE INTERIOR
Geological Survey
Water Resources Division

Water Quality
(ppm)

Card Q

State: IOWA [16] (1 2) County: CARROLL [14] (3 4) Town: ARCADIA

Well No. [4205061N] (5–11) Latitude
Longitude [095023 5] (12–18)
Seq. No. [1] (19)
Date [05 22 63] (M D Y) (20–25)

Sampling Depth [1203] (26–29) Type [1] (30) Kx10^6 [3190] (31–35) pH [7.3] (36–38) Temp. °F [ ] (39–41)

SiO_2 [10.] (42–44) Ca [232.] (45–49) Mg [112.] (50–53) Na [344.] (54–58) K [38.] (59–61)

HCO_3 [254] (62–65) CO_3 [0] (66 67) SO_4 [520.] (68–72) Cl [29.] (73–78) Source No. [3] (79) [Q] (80)

Card R

Duplicate Columns 1-25 from Card Q

F [2.2] (26–28) NO_3 [<.1] (29–32) (LESS THAN) PO_4 [.] (33–35) B [.] (36–38) Al [.] (39–41) Fe [3.3] (42–45)

Mn [<.07] (46–49) Cu [.] (50–52) Pb [ ] (53 54) Zn [ ] (55–57)

Solids: Determined [2680] (58–63) Calc. [ ] (64–69)
Hardness: Ca,Mg [1040] (70–73) Non-Carb. [832] (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 $CaCO_3$ [208] (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)

No. [S] (80)

Verified PMJ

Recorded by: D. AARONSON

Punched by: Punched FCH Date: _____

Published: _____

Punched PCH

WRD Exp. (GW) Verified PMJ
Aug. 1964

U. S. DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY

Water Resources Division Well Schedule Form

MASTER CARD

Record by D. AARONSON Source of data FILE Date 7/12/65 Map COUNTY HWY 1:63,360

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

Latitude: 42 05 06 N Longitude: 094 02 35 Sequential number: 1

Lat-long accuracy: 2 T. 84 N S, R. 36 E W Sec. 16, NW ¼, NW ¼, SE ¼ 5

Local well number: 084 36W 16d bb Other number: B & M W-1166

Local use: 01 16 6 40 CITY 1 Owner or name: ARCADIA CITY #1

Owner or name: ARCADIA IOWA Address: ARCADIA, 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) Dom, (I) Irr, (N) Ind, (P) P S, (S) Stock, (T) Instit, (U) 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 [U]

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

Hyd. lab. data: [ ]

Qual. water data; type: COMPLETE [C]

Freq. sampling: INTERMITTENT [I] Pumpage inventory: yes / no, period: [ ]

Aperture cards: yes [ ]

Log data: GEOLOGIST LOG - DRILLER'S LOG [GD]

WELL-DESCRIPTION CARD

SAME AS ON MASTER CARD Depth well: 1203 ft [1203] Meas. reptd accuracy [6]

Depth cased; (first perf.) 1203 ft [1203] Casing type: STEEL; Diam. 6 in [6]

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

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: MAY 1940 [9 4 0] Pump intake setting: ft [ ]

Driller: THORPE WELL CO. (name), DES MOINES, IOWA (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): nat gas, LPG gas, diesel, elec, gasoline, hand, wind; H.P. [ ] Trans. or meter no. [ ]

Descrip. MP LSD ft above below lsd, Alt. MP 1392

Alt. LSD: 1392 [1392] Accuracy: (source) ALTIMETER [7]

Water Level 324 ft above below MP; Ft above below lsd [324] Accuracy: REPORTED [6]

Date meas: MAY 1940 [5 4 0] Yield: 25 gpm [25] Method determined [ ]

Drawdown: 27'2" ft [27] Accuracy: REPT [6] Pumping period hrs [ ]

QUALITY OF WATER DATA: Iron 3.3 ppm [6] Sulfate 1520 ppm [9] Chloride 29 ppm [2] Hard. 1040 ppm [9]

Sp. Conduct 3190 K x 10^6 [6] Temp. °F [ ] Date sampled MAY 1963 [5 6 3]

Taste, color, etc. TURBID WITH YELLOW COLOR ON RECEIPT IN LAB.

084-36W-16 dbb

Well Number 42 05 06 N S 095 02 35
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: NISHNABOTNA [315D] (23-25) Subbasin: [ ] (26)

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

MAJOR AQUIFER: DEVONIAN system, UPPER series [D3] (28-29) LIME CREEK ? aquifer, formation, group [UL] (30-31)

Lithology: DOLOMITE [D] (32-33) Origin: MARINE [6] (34) Aquifer Thickness: [ ] ft

[ ] (35-37) Length of well open to: [ ] ft [ ] (38-40) Depth to top of: 1130 ft [A13] (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: NONE

Depth to consolidated rock: 305 ft [305] (60-63) Source of data: WELL CUTTINGS [C] (64)

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

Surficial material: [ ] (70-71) Infiltration characteristics: POOR [4] (72)

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

Coefficient Perm: [ ] gpd/ft^2; Spec cap: 9 gpm/ft; Number of geologic cards: [ ] (79)

CASING:

407' OF 6" CASING 0-407'

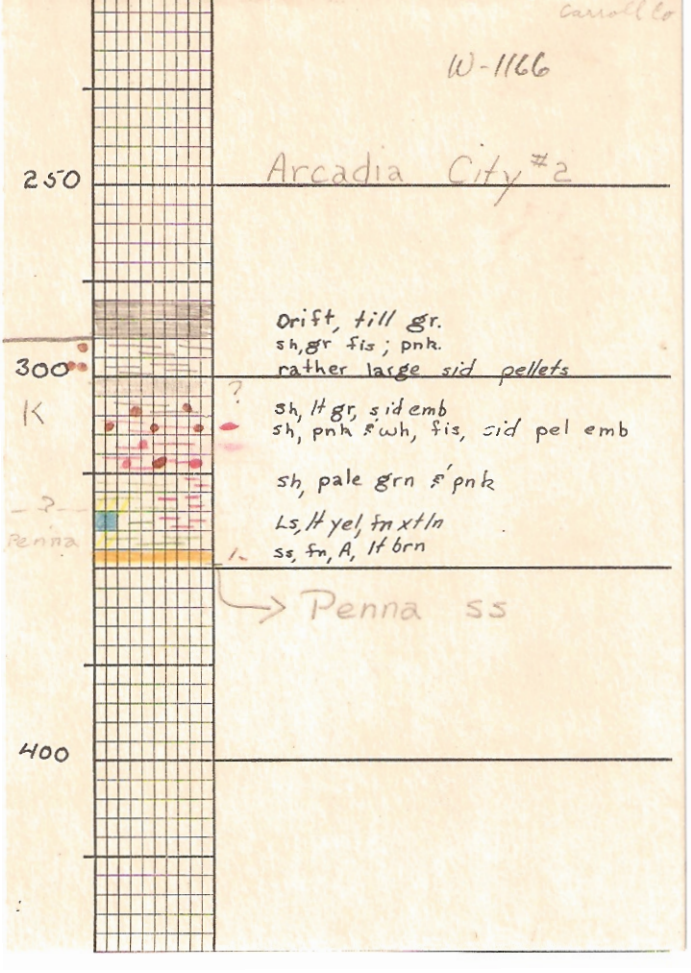
101'5" OF 5 3/16" CASING 390'-491'5"

203'1" OF 4 1/4" CASING 456'-659'1"

568'11" OF 3" CASING 634'4"-1203'3"



GPO 844-225


Carroll Co
W-1166
250
Arcadia City #2
Drift, till gr.
sh, gr fis ; pnk.
rather large sid pellets
300
K
?
sh, lt gr, s id emb
sh, pnk & wh, fis, sid pel emb
sh, pale grn & pnk
?
Penna
Ls, lt yel, fn x tln
ss, fn, A, lt brn
Penna ss
400