1023

MASTER CARD - A

9-26-69
RP 11-22-70

STATE	COUNTY	LATITUDE DEG	LATITUDE MIN	LATITUDE SEC	N or S	LONGITUDE DEG	LONGITUDE MIN	LONGITUDE SEC.	SEQ. NO.
1 2	3 4	5 6	7 8	9 10	11	12 13 14	15 16	17 18	19
19	17	42	59	23	N	093	11	20	1

WELL SCHEDULE

US GEOLOGICAL SURVEY

IOWA DISTRICT WRD

WELL NO 094-20W-03ACB CO CERRO GORDO

OWNER TOWN WELL #3 ADDRESS ROCKWELL

DRILLER THORPE DATE DRLD 10-1939

MAP

SOURCE OF DATA FILE

DESCRIPTION M.P LSD FEET (ABOVE) (BELOW) LSD

CONTINUED FROM ABOVE	ACCURACY	LOCAL WELL NUMBER T	R	E/W	SEC.	QUARTERS	LOCAL USE W-NUMBER	OPTIONAL	OWNER OR NAME	OWNERSHIP	WATER USE	WELL USE	WELL DATA	FREQ W/L	FIELD CHAR	HYD LAB	QW-DATA	QW-FREQ	PUMPAGE	APERTURE	LOG DATA	CARD DESIG
	20	21 22 23	24 25	26	27 28	29 30 31 32 33 34	35 36 37 38 39	40 41 42 43 44 45 46 47 48 49 50 51	52 53 54 55 56 57 58 59 60 61 62 63 64 65 66	67	68	69	70	71	72	73	74	75	76	77	78 79	80
	2	094	20W		03	ACBB	01023	1/1/39	TOWN WELL #3 ROCKWELL	M	P	W	1	0			C	1			G	A

WELL-DESCRIPTION CARD - B

DUPLICATE CARD A CC 1-19	DEPTH OF WELL	ACCURACY	DEPTH CASED OR FIRST PERF.	DIAM. INCHES	WELL FINISH METH. DRILLED	YEAR DRILLED	PUMP SETTING	METH. LIFT	DEEP/SHALLOW	POWER	ALTITUDE OF LSD (FEET)	ACCURACY	WATER LEVEL (FEET)	ACCURACY	DATE MONTH	DATE YEAR	YIELD OF WELL (GPM)	METH. DET.	DRAW-DOWN (FEET)	ACCURACY	PUMPING PERIOD (HOURS)	QUALITY OF WATER IRON	SULF	CHLOR	HARD	SP. COND.	TEMP	DATE SAMPLED	CARD DESIG.
	20 21 22 23	24	25 26 27 28	29 30	31	32 33 34 35	36 37 38 39	40	41		42 43 44 45 46	47	48 49 50 51	52	53 54 55		56 57 58 59 60	61	62 63 64	65	66 67 68	69	70	71	72	73	74 75 76	77 78 79	80
		4	63	3	1	79					1 1467		38	D	0	39	100		533										B

HYDROGEOLOGIC CARD - C

DUPLICATE CARD A CC 1-19	PHYS-IOG-RAPHY PROV.	SEC.	DRAINAGE BASIN	SUBBASIN	TOPO SETTING	MAJOR AQUIFER SYSTEM	SERIES USGS	SERIES ISG	UNIT	LITH-OLOGY	ORIG.	THICK-NESS	LENGTH WELL OPEN TO	DEPTH TO TOP OF	MINOR AQUIFER SYSTEM	SERIES USGS	SERIES ISG	UNIT	LITH-OLOGY	ORIG.	THICK-NESS	LENGTH WELL OPEN TO	DEPTH TO TOP OF	DEPTH TO CONSOL-DATED ROCK	SOURCE	DEPTH TO BASEMENT	SOURCE	SURF MAT. LITH-OLOGY	SURF MAT. INFIL	COEF TRAN SIG FIG	COEF TRAN XIO	COEF STOR SIG FIG	COEF STOR XIO-	CARD DESIG.
	20 21	22	23 24 25	26	27	28	29	30	31	32 33	34	35 36 37	38 39 40	41 42 43	44	45	46	47	48 49	50	51 52 53	54 55 56	57 58 59	60 61 62 63	64	65 66 67 68	69	70 71	72	73 74	75	76 77	78	79 80
	12	E	25	E		5	X		D	6			173	960	D	2	M	C	D	6	244	161	146		D	7	D		D	1					C

CASING AND SCREEN (SIZE, TYPE, INTERVALS):

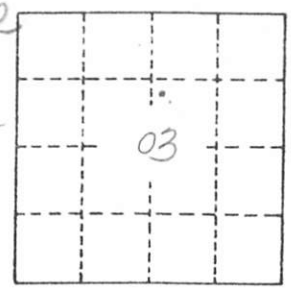
178'9" OF 10" PIPE, 0-178'9"
GROUTED FULL LENGTH

CODED BY Hekum SD DATE 12-15-72

PUNCHED BY Hekum DATE 12-21-72

VERIFIED BY DATE

SKETCH ON REVERSE: YES NO



WELL NO 094-20W-03ACB

R-1-B

THORPE BROTHERS WELL COMPANY

2340 Sixth Avenue

DES MOINES, IOWA

Drilled for Town of Rockwell *at* Rockwell, Iowa

Drilling started _____ *19* ____ *Completed* 10/6/39 *19* ____

Well No. _____ *Kind of Well* Drilled *Depth* 462'6" *Size hole started* 16 *in.*

Finish 10" *G. P. M.* 100 *Static head* 38' *Drawdown* 53'

Water was first encountered at 15' *in* Limestone *Approximate Amount* 50GPM

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
10"	178'9"	178'9"	Surface			
	This 10" pipe grouted the full length					

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
7	Clay	7
35	Limestone	42
13	Shale	55
5	Hard rock	60
7	Shale	67
10	Hard rock	77
64	Shale	141
321'6"	Limestone	462'6"

FEB 10 1942

August 28, 1939

Mr. Ralph W. Gearhart
349 - 21st Street S.E.
Cedar Rapids, Iowa

Dear Mr. Gearhart:

Following is a forecast of the geology and underground water resources at Rockwell, Iowa.

Consolidated rocks are very near the surface at Rockwell. The cover of unconsolidated material is believed to average approximately 10 feet and is underlain by limestones and shales of the Lime Creek formation which continue to a depth of about 60 feet. The limestones and shales are underlain by approximately 50 feet of soft brown to gray dolomite and limestone with a thin shale parting approximately in the center of the unit. This unit is followed in depth by the light gray Juniper Hill shale which is 50 to 60 feet thick. The Juniper Hill shale is underlain by the Shell Rock limestone formation 50 to 60 feet thick, which is in turn underlain by Cedar Valley and Wapsipinicon dolomites which continue to a depth of approximately 490 feet where the Maquoketa formation should be reached.

The best possibility of obtaining a suitable water supply is from the Cedar Valley - Wapsipinicon formations. Numerous localities in eastern Iowa utilize this aquifer. It will probably be necessary to drill some distance into the Cedar Valley before an adequate supply can be expected, but it is believed that sufficient water for the needs of Rockwell can be obtained at approximately 400 feet in depth and I am confident that an adequate supply is assured above the Maquoketa.

The forecast above is based on a starting elevation of 1138 feet. Correction will have to be made if the well site is on higher or lower ground.

If it is decided to attempt a well into the Cedar Valley, I would suggest that the casing be carried at least to the base of the Juniper Hill shale at approximately 160 to 170 feet, but the exact position of the casing

can best be determined after the Juniper Hill shale is drilled.

If you have any questions regarding the above statement or if the Geological Survey can be of further service, please do not hesitate to let me hear from you.

I hope that you will make arrangement to have samples saved on this job. If you will let me know who is awarded the contract a few days before drilling is to start, I will see that sample sacks and log books are furnished.

Very truly yours,

H. G. Hershey

HGH:LM
CC: E. G. Fiala

August 18, 1939

Mr. E. G. Fiala
Assistant Engineer
State Department of Health
Des Moines, Iowa

Dear Mr. Fiala:

I have received a request from Mr. Ralph Gearhart for a report on the geology and underground water conditions at Rockwell, Cerro Gordo County. Recent well cutting studies in our laboratory here at Iowa City have given us considerably more information than we had when the question of water supply at Rockwell was before us a year or more ago, and I believe that a satisfactory report can be written.

Although my notes are incomplete on Rockwell, it runs in my memory that you found contamination in the present wells at Rockwell. I would appreciate it greatly if you could send me a copy of your report to Rockwell with particular emphasis on the depths of the present wells and the sanitary conditions as you found them. I do not necessarily want a detailed report. My reason for requesting this information is that I find that there are several water-bearing horizons at various depths which may be developed in the vicinity of town and if possible I do not want tc recommend entering an horizon which is already contaminated.

I will withhold my report to Mr. Gearhart until I hear from you.

Very truly yours,

HGH:LM

H. G. Hershey

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State of Iowa
Department of Health
Des Moines

WALTER L. BIERRING, M. D.
COMMISSIONER

DIVISION OF
PUBLIC HEALTH ENGINEERING
AND INDUSTRIAL HYGIENE

August 22, 1939.

Dr. H. G. Hershey,
Asst. State Geologist,
Iowa Geological Survey,
Iowa City, Iowa.

Dear Dr. Hershey:

This will acknowledge receipt of your letter of August 18th with reference to the water supply at Rockwell.

A number of surveys have been made at Rockwell and each time the same sanitary defects were noted. The location of the wells, as you undoubtedly know, is not the best, being located in approximately the center of the town and in rather low area. Water has been known to stand in the area about the wells.

These wells originally were about the same depth. The north well at the time of the last survey was reported to be 120 feet deep, but the original depth was 244 feet. Apparently the well has failed or caved below the 120 foot level. The south well is reported to be 288 feet deep. The north well was installed in 1899 and the south well in 1919. Neither of the wells have been reconditioned. The exact depth of the casing is unknown, but the wells are cased into the rock.

The past bacteriological record of the Rockwell supply is not considered satisfactory. A number of suspicious and unsafe samples have been collected in the last four or five years. It may be that the casing of the old well has corroded to such an extent as to be of little value in casing out the upper waters. There also may be some doubt as to the casing of the south well. When the early surveys were made on these wells, both were found to be open at the top. However, these were sealed quite sometime ago, but the wells failed to clear up entirely.

My recent survey in Rockwell (July 14, 1939) places the new proposed well approximately four blocks north of the old supply. This location is above the major portion of the town. It is my opinion that with a satisfactorily constructed well we may be able to develop a source of supply at a depth of approximately 350 to 400 feet. I believe you already have some information relative to this particular horizon.

I am enclosing herewith a copy of a report of the survey conducted in Rockwell, which I trust may be of some value to you.

We have just received the specifications on this well from Mr. Gearhart. The proposed well is a 10 inch drilled approximately 300 feet and into dolomite. The well is to be cased into the first limestone underlying the glacial drift. Apparently the drill hole will not be cased from this point downward and the well is to be finished 10 inches in diameter. I thought possibly you might want this information to determine whether or not the undesirable waters will be cased from the well. We are withholding approval on these specifications until we receive your report.

I hope I have given you the information you have been seeking but in the event I have not, please feel free to write me. I have been planning on seeing you for the last four or five weeks, but have been quite busy. I hope I can get over in the eastern part of the state and at that time will stop in your office.

With kindest personal regards, I am

Very truly yours,

E. G. Fiala

E. G. Fiala,
Assistant Engineer.

EGF/MM
Enc.

IOWA
STATE DEPARTMENT OF HEALTH
DIVISION OF PUBLIC HEALTH ENGINEERING
DES MOINES

4

Town Rockwell, Iowa Date January 10, 1938

Report on Water Supply Development (New Well)

By E. G. Fiala Approved Director
Division of Public Health Engineering

Pursuant to a letter from Mayor W. B. Bruce of Rockwell, the writer visited the Town of Rockwell for the purpose of investigating a possible well site, and in the evening of January 10th met with the local Mayor and Council and discussed the development of a new water supply.

The present supply of Rockwell is taken from two deep drilled wells. For sometime in the recent past, these wells have shown intermittent contamination, and also a limited quantity of water. The writer was informed that a pumping period of three hours at the rate of 50 gallons per minute is about all the wells will stand. On various occasions in the past, attempts have been made to correct the undesirable features about the present supply, and to provide such construction as to exclude any visible source of contamination. However, at this writing, all of the contamination has not been cleared up. Therefore, in view of the limited quantity of water available and the questionable quality of the present supply, it was deemed advisable to take such steps as are necessary for the development of a new supply.

During the evening meeting, the development of the water supply was thoroughly discussed, and the minimum requirements of the State Department of Health were outlined. It is believed that the method of improvements of this nature are well understood by various members of the council and the writer was assured full cooperation in this matter.

During the day, the writer had an opportunity to investigate a number of possible well sites. As a matter of record and for those interested, these well sites will be discussed separately in the order of their respective qualifications.

WELL LOCATION NO. 1:

This well site is located on the property owned by Downing estate, situated in the northwest section of the town. The location is on rather high ground and above the major sources of pollution, and is located in a residential district. This plot of ground comprises approximately 6 lots. The area is suitable for deep well development

and also provides an opportunity for the construction of an elevated tank should it be deemed necessary to construct in the future. The location is easily accessible and should prove to be an economical development due to the fact that a short length of main would be necessary to connect with the existing main. Aside from the fact that an earth pit privy exists in the restricted area, this location can be approved subject, of course, to the construction of the well.

WELL LOCATION NO. 2:

This well site is located on the Charles Bruce property, also in the north end of Rockwell, and possibly on the highest point within the corporate limits. The area immediately surrounding this property is strictly residential. Most of the surrounding area is serviced by a sanitary sewer. The sewer extends east and west on the street north of the property and north and south on the street east of the property. This location is considered desirable for development in that a comparatively short line would be necessary to connect with the existing main, although the existence of the sanitary sewer in the street north of the property would necessarily have to be provided with water tight joints for a distance of at least 100 feet on either side of the well. The proposed location for the well would be in the northwest corner of the block, thereby eliminating the necessity of reconstructing a sewer to the east. Approval is granted this location, also subject to the construction of the well proper.

WELL LOCATION NO. 3:

This well site is located also in the north end of town on the Mrs. Sturges property. This location is similar to the location No. 2, and the requirements governing the No. 2 location also applies to this particular location. It is believed that with suitable construction, approval can be granted this location.

The three above well sites were investigated with the view that in the event any difficulty was encountered in securing any one of the above properties, no delay would be encountered in going ahead with the development of the well on other property.

During the council session, the writer pointed out that the construction of pits was considered very undesirable, and also discussed the manner in which the proposed well was to be constructed. That is, suitable seals and lengths of casing are to be provided so as to effectively seal out any undesirable water or shallow supply. In view of the fact that the area immediately about Rockwell is underlain largely with limestone near the surface, it is very advisable that the opinion of the State Geologist be obtained before the actual well is sunk. At the request of the Mayor, the writer has contacted Mr. Hershey of the Iowa Geological survey, and has been assured that a visit will be made to Rockwell in the near future. However, in the meantime

Rockwell, Iowa 1-10-38
Water Supply Development

the writer suggests that the local council take immediate steps to secure an option on any of the above properties, and to draft up such details on the well development as are necessary in order that further delay will be eliminated.

Mayor Bruce has informed the writer that the committee will be appointed to investigate this matter and will report their findings to him.

The writer wishes again to call attention to the regulations of the State Department of Health requiring the submission of plans and specifications for such development before actual construction begins. It is thought that considerable time, and possibly some expense could be saved by carefully reviewing the proposed development as to its location and construction before actual construction is undertaken.

The writer has been assured full co-operation in this matter, and wishes to take this opportunity to thank the local officials for their kind attention at the meeting, and also the suggestions that have been rendered.

Respectfully submitted,

E. G. Fiala,
Asst. Sanitary Engineer

EGF:MO'L

John C. Moore Corporation Rochester, N. Y. Binder and holes in leaves, ... Patented 1906. ...0687

MOORE'S MODERN METHODS

Rockwell, Cerro Gordo
New well No 3

clear cool
Oct 17, 1937

NW¼ SW¼ NE¼ Sec 3 T94N, R20W Genesco Twp

Rockwell M+St. L	2:18	1177	-39	1138	Base of Rail
" No 3	2:28	1185	-41	1146	At top of casing 1.5' above nat. gd level
Rockwell M+St. L	2:37	1180	-42	1138	

Old wells Nos 1+2 9'± below RR, base of Rail
NE¼ NW¼ SE¼ Sec 3 T94N R20W, Genesco Twp

462' T.D.
38'± SWL
56' DD @ 100 gpm
} From Wyman Ellis

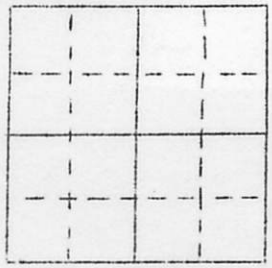
Water came in below pipe in increasing capacity with depth

Dr. John F. Meaney
James Gaffney, Water Supt.

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

W-1023

RECORD OF WELL



Location:

Town: Rockwell (N E S W); County Cerro Gordo

NW¼ SW-NE sec. 3 T. 94 N., R. 20 W. Genesco Twp.

Well name and number City Well #3

Owner _____ Address _____

Tenant _____ Address _____

Contractor Thorpe Well Co. Address Des Moines

Drillers West & Ellis

Drilling dates Sept to completed 10/4/39

Well data:

Elevations: Drilling curb 1146 feet; Land surface _____ feet

Determined by _____

Topographic position Upland plain

Total depth: Reported _____ feet, Measured 462'6" feet

Drilling method Drilled

Hole and casing data 178'9" of 10" from surface to 178'9"
(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 _____ ft. above below _____ Date _____

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

Sources of water: Principal Devonian; Others _____

Production data: Date _____

Static depth to water 38 Measuring point _____

Pumping level 94 at 100 g.p.m.

_____ _____

_____ _____

_____ _____

Specific capacity 1.79 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 Public Supply

WATER ANALYSES (in parts per million)

Date sampled	Oct. 10, 1939			
Sampled by	Dr. J. T. Meany			
Total solids	399			
Insoluble matter	13.0			
Alkalinity (Meo)	378.0			
Alkalinity (Phn)	0.0			
pH	7.1			
$Fe_2O_3 + Mn_2O_3 + Al_2O_3$	5.0			
Alkali as sodium	22.0			
Calcium	79.3			
Magnesium	38.2			
Iron (unfiltered)	0.3			
Manganese	Tr.			
Nitrate	0.00			
Fluoride	2.0			
Chloride	14.0			
Sulfate	9.4			
Bicarbonate	461.2			
Hardness (ppm)	356.			
Hardness (gpg)	20.8			

Remarks _____

Laboratory data: Sample storage location _____

Sample range 0-465 No. spls. 93 No. dupls. & cond. 93 P-G

Spls. prepared by Yoho Washed range _____ by _____

Driller's log and cond. _____

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

Microscopic study ✓ strip log Consolmag Cores

Gen. log _____ Correl. by ✓