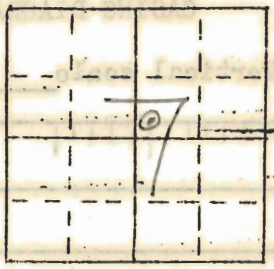
IOWA GEOLOGICAL SURVEY W-0343

In Cooperation with U. S. Geological Survey

RECORD OF WELL



Location:

Town: IRETON (N E / S W): County SIOUX E.

SW - SW - NE sec. 7 T 94 N., R. 46 W. Reading Twp.

Well name and number IRETON TOWN WELL 2 (1935)

Owner _____ Address _____

Tenant _____ Address _____

Contractor Gus Pech Address LeMars

Drillers _____

Drilling dates Aug. 15 - Oct. 10, 1935

Well data:

Elevations: Drilling curb 1430 feet; Land surface _____ feet

1433

Determined by _____

Topographic position Hilltop

Total depth: Reported 538 feet, Measured _____ feet

Drilling method cable

Hole and casing data 8" - 6" hole

256' of 8" pipe from 0 to 256'

256' of 6" pipe from 254' ± to 510' ±

screen 29' ± of 5" casing perforated 509 to 538'

Original depth to water 265 ft. ~~above~~ below curb Date _____

Original elevation of water level 1165 ft.; Source of data _____

Sources of water: Principal Cretaceous 500-38; Others _____

Production data: Date

Static depth to water 265 Measuring point

Pumping level at 70 g.p.m.

Specific capacity g.p.m. per ft. drawdown; Temperature 55½ °F.

Pump data: Type pump Turbine Column Dia. Length

Cylinder or bowls: Dia. Length Suction pipe

Power Electric Airline

Estimated rate of production: g.p.m. for hrs. a day

Use of water city supply

WATER ANALYSES (in parts per million)

Date samples	Oct. 25, 1945			
Sampled by	W. E. Hale			
Total solids	1260			
Insoluble matter	136.5			
Alkalinity (Meo)	308.0			
Alkalinity (Phn)	0.0			
pH	7.7			
$Fe_2O_3 + Mn_2O_3 + Al_2O_3$	15.0			
Alkali as sodium	77.1			
Calcium	179.4			
Magnesium	66.2			
Iron (unfiltered)	3.6			
Manganese	0.09			
Nitrate	8.9			
Fluoride	0.6			
Chloride	6.0			
Sulfate	523.0			
Bicarbonate	375.8			
Hardness (ppm)	727			
Hardness (gpg)	42.51			

Remarks

Laboratory data: Sample storage location

Sample range 510 - 38 No. spls. 1 No. dupls. & cond.

Spls. prepared by Washed range by

Driller's log and cond. Yes very good

Insoluble residues: Prepared by Studied by Strip log

Microscopic study strip log 6/2/53

Gen. log Correl. by Northup

094-46W-07ecc KDD

UNITED STATES DEPARTMENT OF THE INTERIOR
Geological Survey
Water Resources Division

Ireton town (1935)
W-0343

Water Quality
(ppm)

Card Q

State: Iowa [16] (1 2) County: Sioux [84] (3 4) Town: Ireton

Well No. [42 58 35 N] Latitude (5–11) [096 19 09] Longitude (12–18) Seq. No. [1] (19) Date [10 25 45] (M D Y) (20–25)

Sampling Depth [538] (26–29) Type [1] (30) $Kx10^6$ (31–35) pH [7.7] (36–38) Temp. °F [56] (39–41)

SiO_2 (42–44) Ca [179.] (45–49) Mg [66.] (50–53) Na [77.] (54–58) K [.C] (59–61)

HCO_3 [376] (62–65) CO_3 [0] (66 67) SO_4 [523.] (68–72) Cl [60.] (73–78) Source No. [3] [Q] (79 80)

Card R

Duplicate Columns 1-25 from Card Q

F [.6] (26–28) NO_3 [89.] (29–32) PO_4 (33–35) B (36–38) Al (39–41) Fe [36.] (42–45)

Mn [.09] (46–49) Cu (50–52) Pb (53 54) Zn (55–57)

Solids Determined [1260] (58–63) Calc. (64–69) Ca,Mg [727] (70–73) Hardness Non-Carb. [419] (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 $CaCO_3$ [308] (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: P. J. Horick

Punched by: Punched FCH Date:

Published:

WATER WELL HISTORY. IRETON, IOWA.

Well # 1 which was located at 6th. & Main (swswne 7 - 94 - 46) was drilled to a depth of 174 feet ~~by~~ in 1912. The contractor was Mr. Henry Herrin of Lemars. In 1938 his son Mr. Louis Herrin of Hawarden reworked the well which included the installation of a 3 inch galvanized screen inside the corroded 18 foot by 6 inch screen. The well was abandoned in 1941.

Water mains and tower were placed in service during 1918 - 1919.

Well # 2 which was located approximately 20 feet north of well # 1 was con - structed by the Peck Foundry of Lemars in the fall of 1935 and abandoned in 1949. The following data was abstracted from the filesof the Iowa Geological Survey.

I. G. S. well no. W - 0345. Elevation - curb 1430 feet above S. L.

Final depth 538 feet. Static water level (depth to water

Pumping level ? @ below curb). 265 feet.

70 G. P. M.

Casing record: 256 feet of 8" from 0' - 256'; 256' of 6" from 254'- 510'

and 29' ± 5" pipe perforated from 509'- 538'

Top of Dakota sandstone - 510'.

Well # 3 in located in the extreme southeast corner of the town (senese 7 -94 -46). The Rasmussin Well and Pump Co. of Sioux City compled the construction of this well in Feb. 1946. The following information is from the files of the Survey.

I. G. S. well no. W- 2310. Elevation - curb 1435 feet above S. L.

Final depth 543 feet.

Static water level 263.5 feet. Pumping level 290 feet @ 80 G. P. M.

Casing record: 267'-8" from ± 1' to 266'-8";

242'-4" of 6" from 260'-8" to 503' with 6" X 8" lead seal.

Top of Dakota sand - 495'.

P. J. Juffer. City Clerk

Loomp

December 26, 1946

Mr. E. J. Marzec
Public Health Engineer
District Health Service
Spencer, Iowa

Dear Mr. Marzec:

The sand which you submitted from the 537-foot well at Ireton has been received. Upon microscopic examination it appears to be from the Dakota sandstone. In the 543-foot well, drilled by Howard Rasmussen in February of this year, the Dakota sandstone extends from 430 to 543 feet below the surface. Apparently the sand being pumped from the 537-foot well is coming from this interval.

If we can be of further assistance do not hesitate to call upon us.

Very truly yours,

H. G. Hershey

HGH:MCP:AEH

Iowa
State Department of Health
DISTRICT HEALTH SERVICE
NO. 3

WALTER L. BIERRING, M. D.
COMMISSIONER
DES MOINES, IOWA

IN REPLYING
ADDRESS

E. J. Marzec
Public Health Engineer

Spencer, Iowa
December 23, 1946

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

Dear Dr. Hershey:

Your letter of December 21st received.

The sand submitted for identification is being pumped from the 537 ft., well at Ireton. This well is practically unusable due to the sand being pumped into the distribution system. The town is anxious to ascertain from what formation the sand is being obtained. This information would permit the council to have the condition corrected.

The drilling samples submitted by Mr. H. Rasmussen from the 543 ft., well at Ireton should be of help in determing the sand producing formation. The two wells are within 1500 ft., of each other, and have approximately the same curb elevation. I believe the log of both wells should be very nearly the same.

I would appreciate the upper and lower limits, expressed in feet below the curb elevation of the 543 ft., well, of the strata sloughing sand in the 537 ft., well in addition to the name of the formation. I do not have a log of the 537 ft., well or information on casing to aid you, but would like to have any opinions you would like to express concerning the above.

Very truly yours,

E. J. Marzec
Public Health Engineer
District Health Service #3

ejm/ns

November 4, 1935

Mr. W. O. Collins
Gus Pech Foundry and
Manufacturing Company
LeMars, Iowa

Dear Mr. Collins:

Thank you for your letter of November first. For some reason the log book which you addressed to Des Moines has not reached this office. I sincerely hope this book has not been lost, as we are very anxious to have a complete record on the Ireton well. It appears that the log books which you received were not corrected as they should have been, as all of the log books were supposed to be restamped, cutting out the Des Moines and inserting Iowa City, as the Survey no longer has an office in Des Moines.

This sample which you state is 18 feet deep and that it is at the bottom of the well hardly coincides with the statement in the press that the Ireton well was completed at a depth of 538 feet.

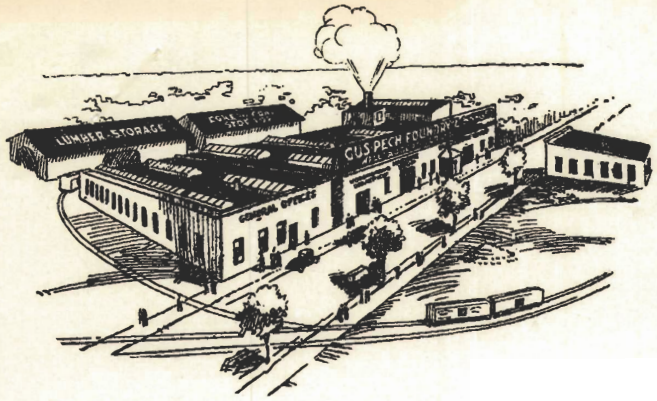
What happened to the samples of the other 500 plus feet of this well?

Yours very truly,

A. C. Tester

ACT:A

log book rec'd 11/7/35



ESTABLISHED 1879 TELEPHONE 61

Gus Pech Foundry and Manufacturing Co.

W. O. COLLINS, President and Manager

WELL DRILLING and BORING MACHINERY

MONITOR WELL AUGERS AND MONARCH ROCK DRILLS
REVOLVING AND JETTING MACHINERY

LE MARS, IOWA.

Nov. 1st, 1935.

Iowa Geological Survey,

Iowa City, Iowa.

Dear Sir;-

The depth of the sample sent you is 18 feet deep.

Now this is the bottom 18 feet as the log would show you. This should be clear to you.

I have already sent in a log to the Iowa Geological at Des Moines, Iowa, same as where I sent the sample.

Yours very truly

Gus Pech Foundry & Mfg Co.

W D Collins

The Booklets we keep the log in - says send them to Des Moines, Iowa .

October 31, 1935

Mr. W. O. Collins
Gus Pech Foundry & Manufacturing Co.
LeMars, Iowa

Dear Mr. Collins:

Thank you for your letter of October 25 which has reference to the sample which you submitted from the Ireton town well.

Your statement that the sample came from "approximately 18 foot of depth" is not clear. Do you mean that there was 18 feet of thickness of this formation? At what depth was the top of this 18 feet of rock material encountered? Or do you mean that the rock was encountered at 18 feet below the surface? I take it that the former is what you mean.

We would like to have a complete log of this well, as it is of considerable interest and value for this territory.

You mention the well that you are completing at Canton, South Dakota. We will be glad to receive a log of the Canton well, and in addition any samples that you may have preserved. Even though this well is not in Iowa, it is sufficiently close to be of value in our work. You indicate that you are having trouble with this well. Do not hesitate to call on us if there is any interpretation that you desire of the formations.

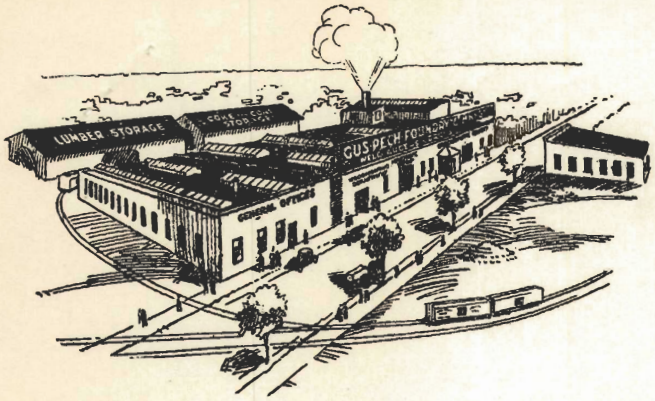
I appreciate your suggestion that you will be glad to give us samples from time to time on farm wells. I am very anxious to obtain as many samples as possible, and in particular complete sets in sequence from the same wells.

The sample bags must have been misdirected, as our records show that a shipment was sent to LeMars. In order that you will have bags to preserve this material, we are sending you another group by parcel post.

Yours very truly,

ACT:A

A. C. Tester



ESTABLISHED 1879 TELEPHONE 61

Gus Pech-Foundry and Manufacturing Co.

W. O. COLLINS, President and Manager

WELL DRILLING and BORING MACHINERY

MONITOR WELL AUGERS AND MONARCH ROCK DRILLS
REVOLVING AND JETTING MACHINERY

LE MARS, IOWA.

Oct. 25, 1935.

Iowa Geological Survey,

Iowa City, Iowa.

Dear Sirs;-

Relative to the sample submitted of the Ireton well, wish to say that this strata from which the sample came was approximately 18 foot of depth.

Just below this 18 foot, we discovered a formation consisting of sand stone and fine coal mixed in it. There was about 3 feet of this and we graveled that back with coarse gravel.

We are justing finishing a well at Canton, S Dak, which is just accross the Iowa line, which we have encountered a lot of trouble with.

This well is about the same depth and we fine different formations altogether. I shall send you some, when he completes the well.

Relative to receiving sample bags, You must not have sent them for we find we never received any.

We shall be glad to give samples from time to time on farm wells, for we do a lot of this and it might be advisable for you to have them. We keep samples here in the office of most every well we encounter.

Yours very truly

WHW*WOC

Gus Pech Foundry & Mfg Co.

W. O. Collins

October 25, 1935

Mayor
Ireton, Iowa

Dear Sir:

On July 20 I wrote to you stating that we were very desirous of obtaining a complete set of well cuttings from the new well that your town had contracted. I understand that this well has now been completed, and I will appreciate receiving these cuttings at the earliest possible moment. Please ship them to the Iowa Geological Survey by express collect.

Yours very truly,

A. C. Tester

ACT:A

October 23, 1935

Gus Pech Foundry and
Manufacturing Company
LeMars, Iowa

Gentlemen:

This will acknowledge receipt of the driller's log covering the Ireton city well which you completed recently. Also, a sample of sand which was sent to Des Moines was forwarded to this office. We are glad to have all of this material. What depth range does the sample which you submitted represent? Were other samples preserved from this well? We have been very anxious to obtain a complete set of samples from this locality and have hoped to obtain such material. If the other samples are available, please forward them to us at the earliest opportunity. Some time ago we sent your company a large supply of sample bags and so far have not received any material from you. We are very anxious to get cuttings from your drillings.

Thanking you for this material and trusting to have a more complete set of samples, I remain,

Yours very truly,

A. C. Tester

ACT:A

cave
Sioux Co

July 20, 1935

The Hon. Mayor
Ireton, Iowa

My dear Sir:

A recent newspaper article has been brought to my attention which explains the need of your town for an additional water supply. This article states that the bids have been received for the new well and that work would start in the near future.

The Iowa Geological Survey is desirous of assisting in all ways possible in the development of a useful water supply for communities in the state. Please advise the name of the contractor and the type of well being constructed.

We would like to have you preserve a full set of cuttings from this well and records on the water tests as they are made during the drilling procedure. These records are very valuable and not only will be of use to your town in developing a well to its best possibilities but in later years you may wish to refer to these records in case of repair work or the development of new wells.

I will await with interest your reply.

Yours sincerely,

A. C. Tester

ACT-LCA

LEDG—IRETON, IA.

SEP 2 6 1935

New Well Test Shows Good Watar Flow, but Sand Ruins Pump Parts

Fine Sand in Water Cuts Leathers On Pump

Ireton town officials and business men shed dignity last Monday afternoon and crouched on dirt piles around the end of a four-inch pipe, watching anxiously a stream of murky water flowing from the pipe.

The occasion was a test of the water in the new town well, now at a depth of approximately 500 feet.

Yes and No

The result of the test was partly favorable and partly unfavorable. The pump dropped into the well was unable to appreciably lower the water level, although when first started it pulled an estimated 60 gallons a minute from the well.

A large quantity of very fine, hard sand was present in the water, however. This sand was so destructive to the leather parts of the pump that it reduced the pump's output to a scant 35 gallons a minute within an hour after pumping was begun at about 5:15 p.m. Monday.

Leathers Cut Away

As pumping went on the flow of water continued to diminish, and finally the pump was stopped and the piston drawn up. It was found that the leathers on the piston had been almost completely cut away by the fine sand.

Hartwig, head of the drill crew, said he was uncertain what is the cause of the heavy deposit of sand.

Some Not Screened

Some of the drilled intake pipe in the water vein is not screened, Hartwig said, and it is possible the sand is coming in through these few feet at the top of the intake sections.

It also is possible, he said, that it is merely sand suspended in the water from the drilling operations, and that the water would clear up after a few hours of pumping.

To Attempt Bailing

It has been decided to remove the pump and attempt to remove some of the sand from the well with a slush bucket.

Additional screening also may be tried.

Sioux Co-

ADVR—ALTA, IA.

MAY 3 0 1935

Ireton: Ireton will have to dig a new well this summer for her water supply. The town well that has withstood the drouth has slowed to such an extent that a new supply will have to be obtained.

IND—HAWARDEN, IA.

OCT 1 0 1935

Well Drillers Complete Their Job

The well drillers have pulled up stakes and left Ireton. The new well is 588 feet deep with 247 feet of 8-inch pipe and the balance 6-inch pipe. The water is 275 feet deep in the pipes and after rigid tests by pumps could not be lowered. The pump will be put in to a depth of 100 feet in the water, leaving 175 feet of water below the pump. The water has been tried out by many and all agree that it is much better in quality than in the old well and not nearly so hard and alkaline. The city is now busy putting in a cement building to house the pump. The basement which will be used for the pump and supplies will be eight feet deep and 10 feet by 30 feet and the main floor will be 20 feet by 30 feet and 10 feet high and will be used for the maintainer and other machinery. This building will be a good addition to the city property. The present cement pump building is being torn down and the cement blocks go into the new building.

POST—LE MARS, IA.

SEP 2 1935

IRETON HAVING WATER TROUBLE

Down Over 300 Feet and Still No Water

(By Special Correspondent)

The new Ireton city well has been something of a thorn in the flesh of the city fathers, numerous called meetings being the order of the day in discussing the situation. Drillers report that they have gone to the depth of 327 feet and have struck a layer of shale that seems to promise trouble. However, hopes are expressed that a vein of water in water-bearing sandstone will be found beneath the shale. Two hundred and fifty six feet of casing has been driven in the well to date. To add to the troubles the present supply of city water has been unuseable for household purposes because of an undesirable odor.

IND—HAWARDEN, IA.

AUG 1 5 1935

Ireton

New City Well Being Drilled

The well drillers arrived last week and on Friday began their operation on the new city well which is being sunk about 20 feet north of the present well. The first day they went down several feet when something went wrong with the machinery and they had to shut down for repairs. Monday they again began work and by evening had gone down nearly 100 feet. The old well is less than 200 feet deep so it is expected that they will reach water at or near that depth. It is hoped that the supply when reached will be sufficient for all needs. The water from the present well is very alkaline and hard for toilet or washing purposes but with the new well so near the old one it is a question whether a different vein will be struck, which would give hope for a better grade of water. A few more days will undoubtedly tell the tale.

Punched FCH

WRD Exp. (GW)
Aug. 1964

U. S. DEPARTMENT OF THE INTERIOR — GEOLOGICAL SURVEY

Water Resources Division Well Schedule Form

MASTER CARD

Record by P. J. Horick Source of data Files Date 6/1/65 Map H. & T.

State Iowa [1 6] County (or town) Sioux [8 4]

Latitude: [4 2 5 8 3 5 N] Longitude: [0 9 6 1 9 0 9] Sequential number: [1]

Lat-long accuracy: [Z] T 94 (N) S, R 46 (W) Sec 7, SW ¼, SW ¼, NE ¼, 5 PM

Local well number: [0 9 4 4 6 W 0 7 a c c] Other number: W-0343

Local use: [0 0 3 4 3 | C I T Y | 2] Owner or name: TOWN OF IRETON

Owner or name: [I R E T O N] Address: Ireton, Iowa

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 [U]

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 [Z]

DATA AVAILABLE: Well data [2] Freq. W/L meas.: INVENTORY [Ø] Field aquifer char. [ ]

Hyd. lab. data: [ ]

Qual. water data; type: COMPLETE [C]

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: 538 ft [5 3 8] Meas. Rept [ ] accuracy [ ]

Depth cased: (first perf.) 510 ft [5 1 0] Casing type: STEEL; Diam. 8 in [ ]

Finish: (C) porous concrete, (F) gravel w. (perf.), (G) gravel w. (screen), (H) horiz. gallery, (O) 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 [ ]

Date Drilled: OCT. 1935 [9 3 5] Pump intake setting: ft [ ]

Driller: Gus Pech Foundry, LeMars, Iowa (name / 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 [ ]

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

Descrip. MP LSD ft above below lsd, Alt. MP 1430

Alt. LSD: 1430 [1 4 3 0] Accuracy: (source) ALTIMETER [7]

Water Level 265 ft above below MP; Ft above below lsd [2 6 5] Accuracy: DRILLER'S LOG [5]

Date meas: OCT. 1935 [0 3 5] Yield: 70 gpm [7 0] Method determined [ ]

Drawdown: ft [ ] Accuracy: [ ] Pumping period hrs [ ]

QUALITY OF WATER DATA: Iron 3.6 ppm [6] Sulfate 523 ppm [8] Chloride 6.0 ppm [0] Hard. 727 ppm [8]

Sp. Conduct K x 10^6 [ ] Temp. 56 °F [5 6] Date sampled OCT. 1945 [0 4 5]

Taste, color, etc.

W-0343 Ireton, Iowa

Sample of Sand from 515-534'± feet

Sand 98% A to a maj. gr. ½-¼, prin. sub. ¼-⅛; mica, muscovite, tr; Sh. 1% gry. soft friable: Some sand grains resemble Sioux quartzite.

DGKoto SS

094-46W-07acc

Well Number 42, 58, 35 N 096, 18, 46.1
d m s S d m s

HYDROGEOLOGIC CARD

SAME AS ON MASTER CARD | Physiographic Province: CENTRAL LOWLAND 12 | Section: DISSECTED TILL PLAINS e | Drainage Basin: BIG SIOUX 36A | Subbasin:

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

MAJOR AQUIFER: Cretaceous system, LOWER series, K1 Dakota Sandstone aquifer, formation, group D1

Lithology: FINE SANDSTONE Z1 | Origin: MARINE C | Aquifer Thickness: ft

Length of well open to: 28 ft | Depth to top of: 510 ft 5C

MINOR AQUIFER: system, series, aquifer, formation, group

Lithology: | Origin: | Aquifer Thickness: ft

Length of well open to: ft | Depth to top of: ft

Intervals Screened:

Depth to consolidated rock: 215 ft 215 | Source of data: WELL CUTTINGS C

Depth to basement: ft | Source of data:

Surficial material: SANDY TILL ST | Infiltration characteristics: POOR 4

Coefficient Trans: gpd/ft | Coefficient Storage:

Coefficient Perm: gpd/ft²; Spec cap: gpm/ft; Number of geologic cards:

Casing: 256' of 8" from 0-256';
256' of 6" from 254-510';
29± of 5" perforated from
509-538'

Note: Well abandoned 1949 pumps too much sand.

WELL RECORD.

Well is located ____ miles in a City direction from Dreton (Post office.) in Iowa (State.), in the ____ ¼ ____ ¼ sec. ____ T. ____ R.

Owner, Town of Dreton
Address, Dreton Ia
Contractor, Geo Reed Fdy & Sup Co
Address, Le Mars Iowa
Well began Aug 15, 1925; completed Oct 15, 1925
Rig used—cable, rotary, jet, or Cable
Maker, Geo Reed Fdy & Sup Co
Diameter of well at mouth, 8" (Inches.); at bottom, 6" (Inches.)
Depth of well, 538 (Feet.); Length and size of casing,
256' 8" Pipe 256' 6" Pipe
Water at 275 ft (Depths in feet.) ft.
Main supply at bottom = 500'-538' ft.
Water head 265 ft ft.
Is well pumped? Yes; Yield, 70 gal. (Gallons per minute.)
Screen ± 29' of 5" casing perforated

Recorded by Walter Harbinke
Address, Le Mars Iowa

Sample No.	DEPTH From	DEPTH To	THICKNESS	DESCRIPTION OF BEDS — KIND OF ROCK, COLOR, HARD OR SOFT WATER, ETC.
	0	10	10'	Top soil
	10	15	5'	Sea Mud
	15	35	20'	Yellow clay
	35'	50'	15'	Sandy yellow clay + Dug
	50'	165'	115	Stoney Blue clay +
	152'	we	hit	Foul air (Marsh gas?)
	165	168'	3'	Dirty Gravel
	168'	172'	4	Grey Clay
	172	196'	24'	Dirty real fine Sand
	196'	200	4'	Dirty coarse Sand
	200	206	6'	Sandy Grey clay
	206	215	9'	Sandy yellow clay
	215	250	35'	Blue Shale (clean)

Sample No.	DEPTH From	DEPTH To	THICKNESS	DESCRIPTION OF BEDS — KIND OF ROCK, COLOR, HARD OR SOFT WATER, ETC.
	250	275	25'	Blue shale full of Grit Iron soft shale + streaks of Pyrite
	275	360	85'	soft shale + streaks of Sand stone
	360'	390	30'	Soft Coal
	390	392	2'	Grey shale + Parts of Iron Pyrite
	392	400	8'	Brown clay
	400	420	20'	Grey shale + Parts Sand rock + Iron Pyrite
	420	430	10'	Blue shale + Parts of Sand stone
	430	465	35'	Hard Black shale + Parts Coal
	465	470	5'	soft sand stone
	470	473	3'	Grey shale.
	473	478	5'	Sand rock.
	478	481	3ft	Grey shale
	481	487	6	

Sample No.	DEPTH From	DEPTH To	THICKNESS
	487	515	28'
Dak	515	534	19 ft
	534	538	4

DESCRIPTION OF BEDS

KIND OF ROCK, COLOR, HARD OR SOFT WATER, ETC.

Dark Shale - Blue. full of Sand

Sand rock

Soft sand rock & Parts of

& iron pyrite

Coal. which was Graveled rock..

Fairbanks-Morse pump - placed pump bowls & shaft

WELL RECORD.

Well is located ____ miles in a Town direction
from Dreton (Post office.) in Iowa (State.), in the
____ ¼ ____ ¼ sec. ____ T. ____ R.

Owner, Town of Dreton
Address, Dreton Iowa
Contractor, Geo Peck Eddy Mfg Co
Address, Le Mars Iowa
Well begun Aug 15, 1905; completed Oct 15, 1905
Rig used—cable, rotary, jet, or Cable
Maker, Geo Peck Eddy Mfg Co
Diameter of well at mouth, 8 (Inches.); at bottom, 6" (Inches.)
Depth of well, 538 (Feet.); Length and size of casing,
256' of 8" casing - 256' of 6" casing
Water at 300 ft (Depths in feet.) ft.
Main supply at Rock ft.
Water head ____ ft.
Is well pumped? No; Yield, 50 (Gallons per minute.)

Recorded by Walter Hartwick
Address, Le Mars Iowa

Sample No.	DEPTH From	DEPTH To	THICKNESS	DESCRIPTION OF BEDS — KIND OF ROCK, COLOR, HARD OR SOFT WATER, ETC.
	0	10'	10'	Top soil
	10'	15'	5'	Red mud
	15'	35'	20'	Solid Yellow clay
	35'	50'	15'	Sandy clay, Yellow Little Purple
	50'	165'	115'	Blue stony clay
	165	168'	3'	Dirty Gravel
	168	172'	4'	Grey clay
	172	196'	24'	Dirty red Fine Sand
	196	200	4'	Dirty Course Sand
	200	206	6'	Sandy Grey clay
	206	215'	9'	Sandy Yellow clay
	215	250	35'	Blue Pebble
	250	275	25	Blue shale full of grit

Sample No.	DEPTH From	DEPTH To	THICKNESS	DESCRIPTION OF BEDS — KIND OF ROCK, COLOR, HARD OR SOFT WATER, ETC.
	275	360'	85'	Soft shale & streak of Pyrite
	360	390'	30'	Soft shale - streaks of sand stone
	390	392'	2'	part of soft coal
	392'	400'	8'	Grey shale & pyrite of Iron
	400'	420'	20'	Brown clay
	420'	430'	10'	Grey shale - parts of sand stone
	430'	465'	35	Blue shale - with parts of sand stone
	465	470	5'	Hard Black shale - parts of coal
	470	473	3'	soft sand stone
	473	478	5'	Grey shale
	478	481	3'	Sand Rock
	481	487	6'	Grey shale
	487	515	28'	Salt shale - full of sand

Sample No.	DEPTH From	DEPTH To	THICKNESS	DESCRIPTION OF BEDS — KIND OF ROCK, COLOR, HARD OR SOFT WATER, ETC.
	515'	534'	19'	Sand Rock.
	534'	538'	4'	Soft sand rock. full of Pyrite of Iron - Bottom is filled full of Coarse Gravel.