

2158

Name Story City well No. 2
 Loc. NE NW SE 12-85N-24W, Story Co.

T.D. 261.3'

$$\frac{14}{129} = 11. \times 10^{-2}$$

Drilled Hoeg & Ames Oct. 1945

Log W-2158 Harris

Casing 133.6' of 12" pipe from +1.6' to 132'

$$\begin{array}{r} 109 \\ 129 \overline{) 14.00} \\ \underline{129} \\ 1100 \\ \underline{1161} \end{array}$$

Prod. data

SWL flowing +20'

PWL 26.5'

Yield 647 gpm

$$\begin{array}{r} 14. \\ 46 \overline{) 647.} \\ \underline{46} \\ 187 \\ \underline{184} \\ 30 \end{array}$$

+40' Orig Recover

Total 20' in 3 HRS. at piece

500 GPM

971

+20

991

Water analyses: No. 522(517) 11/13/57; No. 24796 (4056) 6/4/57; No. K-172 10/30/45
 No. 1990(3591) 4/25/62

Note: Story City has a 150-foot well No. 1 used for standby purposes. No log on this well, but it probably is finished in Miss rocks. Produces 150 gpm.

Elev.		971'	
Formation	Depth	Top	Base
Keok.	105	866	842
Burl.	129	842	741
Gil. City	230	741	

Story City Old Folks Home	287 500 cu ft/yr
Coin Laundry	117 500 " "
Story City Power Gen.	109 500 " "
Hospital	300 000 " "
School	75,000 " "

889,500 cu ft/yr.

assume all but Power Co & Hospital are domestic =
 409 500 cu ft/yr. = 3,071,250 g/yr. = 8531 gpd

261
 132
 129

602 000
 7.5
 301 000 00
 421 400 00
 451 500 00 gals/yr

409 500
 7.5
 2047 500
 2866 500
 3,071,250.0

12510 gpd
 360 / 451 500 00
 360
 915
 720
 1950
 1800
 500
 360

216500
 128100
 8531 gpd
 360 / 3,071,250
 2880
 1912
 1800
 1125
 1080
 450

4 11 / 49

Story

Mr. Verne Wiggins
Town Clerk
Story City, Iowa

Dear Mr. Wiggins:

Thank you for your letter of April 8 concerning the problem of chlorination of water at Story City.

Problems of this nature are under the direction of the State Department of Health. I am quite sure that they will be able to have one of their public health engineers visit Story City, collect the samples that appear to be needed, and give you a complete report on the needs for chlorination of your water supply.

I am forwarding a copy of your letter to Mr. P. J. Houser, Director, Division of Public Health Engineering, at Des Moines. You will no doubt hear from him directly in the near future.

Very truly yours,

Keith E. Anderson

KEA:AEH

CC: Mr. P. J. Houser

CITY COUNCIL

B. W. Evenson
Otis Frette
Elmer Jensen
E. E. Langland
O. R. Larson

Park Commissioners

Torkel Hill
Alvin Thompson
A. V. Wiggins

H. O. Williams, Mayor Stanton James, Clerk Wm. Petersen, Treasurer

THE TOWN OF STORY CITY, IOWA

(Council Meets First Tuesday in Month)

April 8, 1949

In the Center of the
Great Corn Belt—located
on Highways 69 and 115
—on C. & N.-W. and M. &
St. L. Railways — Grain,
Stock and Poultry Rais-
ing—Butter Tub, Cement
Block, Corn canning Fac-
tories—Municipal Water,
Light and Power Plants.

Mr. K.E. Anderson
Iowa Geological Survey

Iowa City, Iowa.

Dear Sir:

One of our local Councilmen, Mr. Si Jacobson, gave me your name in connection with a problem of chlorination of city water. There had been samples of water which were found to be unsatisfactory and the question of a chlorinating apparatus is under consideration.

My information has been that some member of the staff would stop here upon request and take samples for analysis and report on the need of a chlorinator.

May we request a visit from some member of the Iowa Geological Survey staff for the above purpose?

If this is not the proper procedure for such request may I have some instruction on the correct method of approach?

Sincerely

Verne Wiggins
Verne Wiggins
Town clerk.

Story Co

August 25, 1949

Mr. Silas Jacobson
City Councilman
Story City, Iowa

Dear Mr. Jacobson:

In reply to the questions in your letter of August 17 regarding leakage from the municipal well at Story City, the seepage into the pit around the well seemed to fluctuate in phase with the pressure of the water in the well. No accurate relationship of this fluctuation was established. However, with a head of approximately 45 feet above land surface in the well, the seepage into the pit was determined to be about 7.5 gallons a minute and with a head in the well of about 12 feet above land surface, the seepage rate seemed to be about 3.5 gallons a minute. If a liner is installed in the well in the manner outlined in our letter of August 9, the seepage into the pit may be expected to cease.

If no repair work is done, the rate of leakage is likely to increase very slowly rather than decrease. This increase in leakage will probably be caused by corrosion of the casing at the bottom thus enlarging the entrance to the passage through which the leakage water is now moving and by enlargement of the passage up through the clays.

Very truly yours,

William E. Hale

WEH:LFS

Si's Sales & Service

SI. JACOBSON, Manager

609 Garfield Avenue

STORY CITY, IOWA

August 17, 1949

H. Garland Hershey
Director and State Geologist
Iowa City, Iowa

Dear Sir,

In regards to your letter of August 9,
refering to our well, in Story City,

After meeting with the Councel I wouldlike
to have some information.

If the well should be fixed if that would
eleminate all the leakage or just part of it.

Also we were considering tileing the leak
to the river to see if the leak would decrease
in the futrue.

"Would there be any danger of the leak in-
creasing or decreasing?"

Thanking you for the information you have
already given us and would like to hear from you
in the near future.

sj/lw

Very truly yours

Si Jacobson

Story
July 6, 1949

Mr. R. W. Brooks
Layne-Western Company
P. O. Box 662
Ames, Iowa

Dear Mr. Brooks:

Thank you for your letter of July 2, 1949 in regard to the work to be done on the new town well at Story City.

We had inferred from the production test data on the new well that the non-pumping water level might stand about 20 feet above land surface and that a riser pipe could be installed to stop the flow and permit us to operate a current meter in the well. With this setup there would be no flow in the cased part of the well and any leakage below the casing could be determined easily. However, we made no pressure measurements when the well was capped and certainly a head of 46 feet is much too high to consider using the above method precisely. Using the fittings you plan to install together with a riser pipe 10 or 15 feet high and allowing the well to discharge at as low a rate as possible through the valve on the nipple, we can proceed to pick up any difference in the rate of flow due to leakage at some point in the well. This method should give satisfactory results if the rate of leakage is over 5 percent of the discharge rate at the surface.

There are undoubtedly other ways to get the results, the main features of the setup being that provision is made for lowering a current meter into the well and that the discharge rate be controlled. We will be glad to make such flow tests as we can and will appreciate receiving as much advance notice as possible if the town plans to go ahead with such tests.

Very truly yours,

Keith E. Anderson

KEA:WEH:ANH

cc: Cy Jacobson, Story C.Ty, Iowa

LAYNE-WESTERN COMPANY

JUL 5 1949

WATER SUPPLY CONTRACTORS

WELL WATER SUPPLIES AND
PUMP EQUIPMENT FOR
MUNICIPALITIES
INDUSTRIES
RAILROADS
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SOUTH DUFF

FACTORIES
MEMPHIS, TENN.
HOUSTON, TEXAS
LOS ANGELES, CALIF.
BRANCHES - REPRESENTATIVES
THROUGHOUT THE COUNTRY

AMES, IOWA

July 2, 1949


Iowa Geological Survey
Geology Annex Bldg.
Iowa City, Iowa

Re: Story City, Iowa

Gentlemen:

We believe you have been up to the above city and know what their situation is with regard to leakage around their well casing. They contacted us and said that you would like to have a pipe extended up from the top of this well casing high enough to reach the static water level so that flow tests could be made in the well to determine what this leakage was. In checking our records, when this well was capped we find that there was a 19 $\frac{1}{2}$ pressure at the well casing which would mean that this pipe would have to extend to about 46 feet. We imagine that this is too high to be practical for you but inasmuch as part of the work would have to be done anyway to set the liner we are now tapping their line from the well up to the pump house, installing a tee making provision so that a pump could be connected at this point to pump this well down. We are then going to weld a 12" pipe onto the well casing and extend it up to ground level. We will make provision for a coupling in the top of this casing so that a pipe could be threaded on and extended up into the air. We are also putting a valve on the side of this nipple so that part of the pressure can be relieved by discharging water out below the top of this pipe. If you think you can make any flow tests with this well being pumped or being allowed to flow, would you please let us or the city know what conditions you would have to have or what procedure you would like to follow in view of this high pressure. I am sure that they would be glad to hear from you to have any suggestions that you may have.

Yours very truly,
LAYNE-WESTERN COMPANY


R. W. Brooks

RWB:le

cc: Mr. Cy Jacobson, Story City, Iowa

August 9, 1949

Mr. Silas Jacobson
City Councilman
Story City, Iowa

Dear Mr. Jacobson:

Re: Leakage Survey Made in Story City Town Well,
July 21-22, 1949.

We regret the delay in transmitting the results of the leakage survey made in your 261-foot town well but it was only recently that we have been able to assemble equipment needed to rate the current meter used in making the survey.

On July 22, a series of flow measurements were made in the well at depths ranging between 130 and 160 feet. At this time, the well was capped so that no discharge from the well was taking place at the surface. The nonpumping head in the well was between 45 and 50 feet above land surface. No movement of water could be detected in the cased part of the well. Below the bottom of the casing at an approximate depth of 132 feet below land surface and to a depth of 160 feet, a rather uniform rate of movement of the water in the well was observed. From the results obtained in rating the current meter, the rate of flow in the well in the interval from 160 feet to just below the casing during the time of the test seemed to be about 20 gallons a minute.

Water was observed to be entering the pit surrounding the well during the time the leakage survey was being made. The rate of inflow of water into the pit while the well was idle on July 22 was determined to be about 7.5 gallons a minute.

From these data, it is inferred that while the well is idle, water moves up the hole from below a depth of 160 feet at the rate of approximately 20 gallons a minute and leaves the well at or slightly below the bottom of the 12-inch casing at a depth of about 132 feet. Little water seems to enter or leave the well in the interval from slightly below the casing to a depth of 160 feet. Part of the water leaving the well probably reaches the surface and may compose all of the water entering the pit at the well. The rate of leakage of water from the well below the casing is decreased as the pumping rate of the well is increased.

If you wish to eliminate the leakage which occurs below the bottom of the casing, a liner placed in the well to a depth of about 150 feet and extending up into the 12-inch casing should shut off the leak when the liner has been cemented in. No appreciable change in the yield of the well should result under these conditions.

Mr. Silas Jacobson

-2-

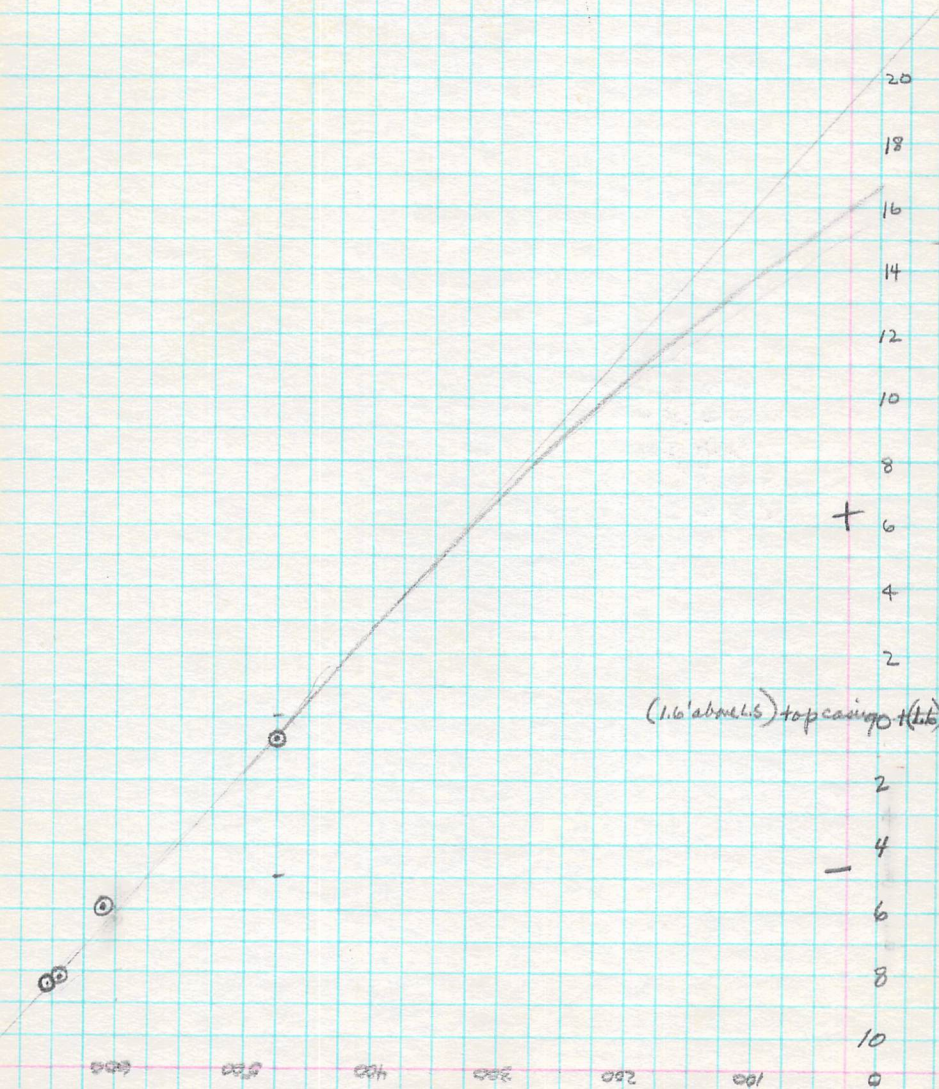
August 9, 1949

Please let us know if you have any questions in regard to this discussion or if we can be of further assistance to you in this matter. We will appreciate learning about any work that may be undertaken.

Very truly yours,

H. G. Hershey

HGH:WEM:AEH

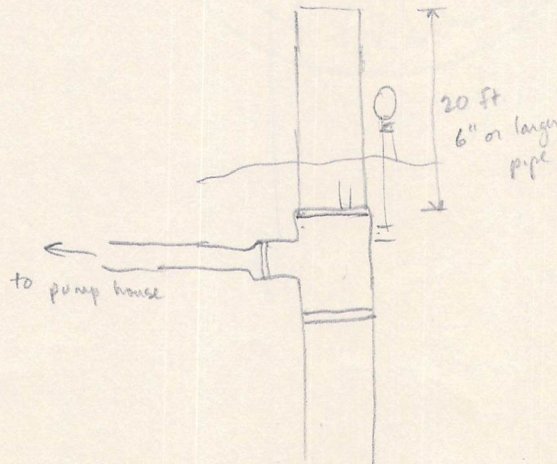


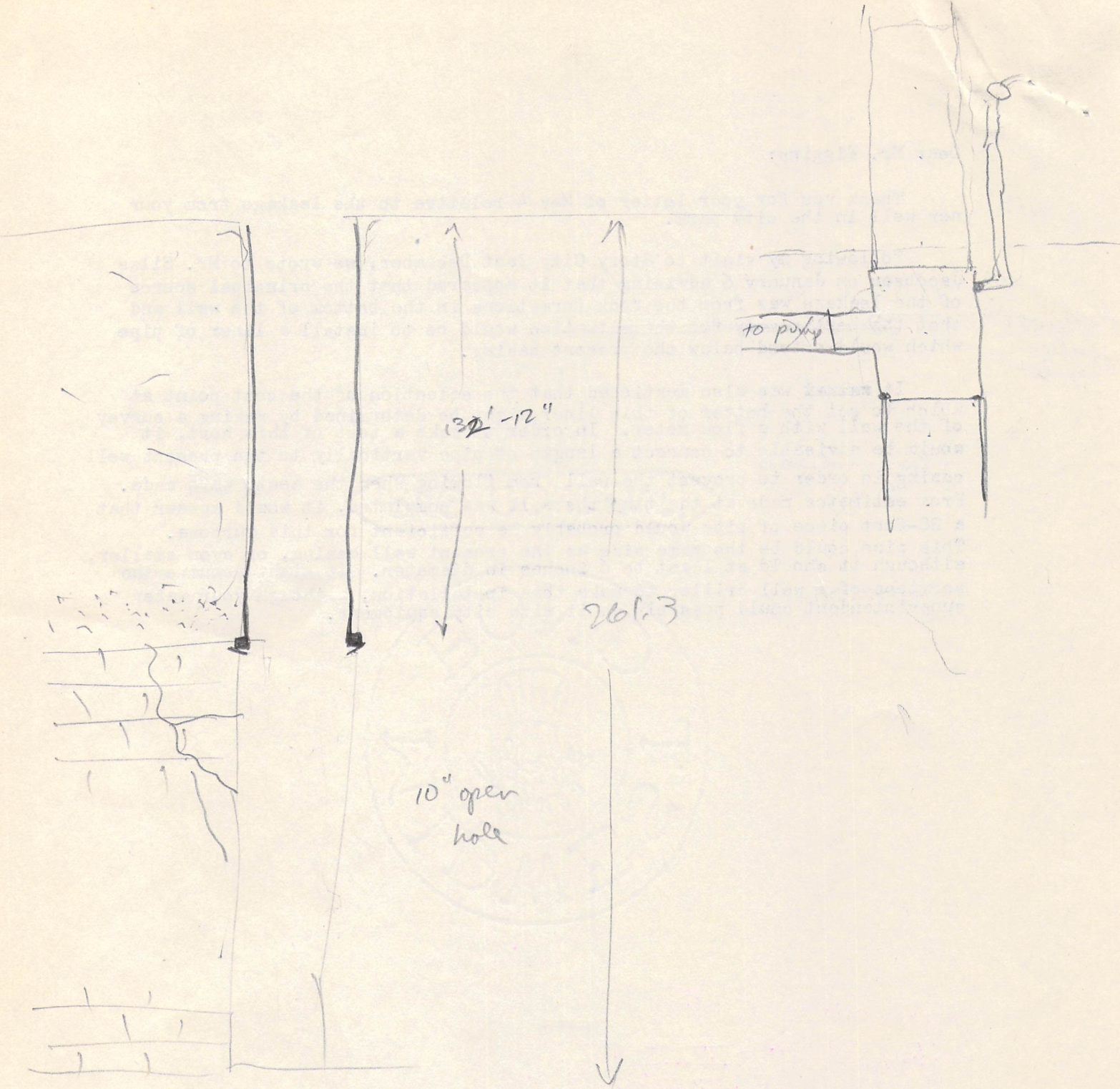
Dear Mr. Wiggins:

Thank you for your letter of May 4 relative to the leakage from your new well in the city park.

Following my visit to Story City last December, we wrote to Mr. Silas Jacobsen on January 6 advising that it appeared that the principal source of the leakage was from the rock formations in the bottom of the well and that ~~the best remedy for the situation~~ would be to install a liner of pipe which would extend below the present casing.

a suggested corrective measure
It ~~was~~ ^{at the time of my visit} also mentioned that the selection of the best point at which to set the bottom of this liner might be determined by making a survey of the well with a flow meter. In order to make a test of this sort, it would be advisable to connect a length of pipe vertically to the present well casing ^(see enclosed sketch) in order to prevent the well from flowing when the test ^{was} made. From estimates made at the time the well was completed, it would appear that a 20-foot piece of pipe would probably be sufficient for this purpose. This pipe could be the same size as the present well casing, or even smaller, although it should at least be 6 inches in diameter. ~~It might require the services of a well driller to make this installation,~~ ^{could} although your water superintendent could possibly do it with city equipment.





32' - 12"

261.3

10" open
hole

to pump

CITY COUNCIL

B. W. Evenson
Otis Frette
Elmer Jensen
E. E. Langland
O. R. Larson

Park Commissioners

Torkel Hill
Alvin Thompson
A. V. Wiggins

H. O. Williams, Mayor Stanton James, Clerk Wm. Petersen, Treasurer

THE TOWN OF STORY CITY, IOWA

(Council Meets First Tuesday in Month)

May 4th, 1949

In the Center of the
Great Corn Belt—located
on Highways 69 and 115
—on C. & N.-W. and M. &
St. L. Railways — Grain,
Stock and Poultry Rais-
ing—Butter Tub, Cement
Block, Corn canning Fac-
tories—Municipal Water,
Light and Power Plants.

Mr. Keith E. Anderson

Iowa City, Iowa.

Dear Mr. Anderson:

The waterworks committee of the town council is desirous of doing something about the flow in the south park which is a source of our water supply and which is still leaking around the casing.

I'm not certain if you are the engineer who visited this project and I'm not certain what the committee expects but wasn't there some sort of test suggested to determine where the seepage originated?

At any rate the committee would like to have some such test made so at the convenience of your department could some one arrange to visit us and advise our council what to do?

I'm sorry to have put you to the bother of sending my other inquiry to the State Health Department but my information and instructions in the matter were quite meagre and I am truly grateful to you for your favor.

Sincerely

Verne Wiggins
Verne Wiggins
Town clerk.

*See earlier letter Jacobsen 1/6/49
Suggest 20' riser on well
+ current meter survey*

Story

LAYNE-WESTERN COMPANY

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FACTORIES
MEMPHIS, TENN.
HOUSTON, TEXAS
LOS ANGELES, CALIF.
BRANCHES - REPRESENTATIVES
THROUGHOUT THE COUNTRY

AMES, IOWA

January 8, 1949

Mr. K. E. Anderson
Iowa Geological Survey
Geology Annex Bldg.
Iowa City, Iowa

Dear Mr. Anderson:

Thanks very much for copy of your letter of January 6
to Story City with regard to leakage they are getting around
the casing in their well.

Yours very truly,

LAYNE-WESTERN COMPANY

R. W. Brooks
R. W. Brooks

RWB:le

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington _____
District _____

Rating of U.S.G.S current Meter W.E.-8

Rev	Sec	RPM	Rev	Sec	RPM	Remarks
5	84	3.57				5 1/4 gal - 34 1/2 sec - 9.19 pm.
"	79	3.8	5	58	5.5	
"	81	3.7	"	60	5.0	
"	71	4.2	"	52	5.8	5.24
"	97	3.1	"	60	5.0	
"	77	3.9	"	61	4.9	
"	69	4.35				5 1/4 gal - 25 sec 12.69 pm 1x43
"	69	4.35	5	42		
"	79	3.8	"	33		
"	69	4.35	"	35		
"	85	3.5	"	35	8.5	
"	94	3.2	"	32		
"	91	3.3	"	35		
"	116	2.6	"			
"	98	3.1	"			
Discharge rate						
5 1/4 gal - 48 sec = 6.59 pm.						
"	103	2.9				
"	87					
"	81					
"	119	2.5				
"	120	2.5				2.5
"	107	2.8				
"	127	2.4				
5 1/4 gal - 50 sec = 6.39 pm.						
Meter rated in tube - 8 ft long, 6" diameter -						

W.E. Hale

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington
District
0-6333

TIME	GPM	RPM. Meter	Depth		TIME	GPM	RPM Meter	Depth		July 21, 1949
1:38	430	81			3:50p		56	155		
1:41		80	24.3		3:52		62	150		
1:48		76	"		3:53		61.5	150		
1:50	420	78	"		3:54			145		
1:51		78	"		4:40p		68.0	145		
2:04		77.8			4:42		68.0	145		
2:05	420	78			4:44		61.5	140		
2:06		78			4:45		62.5	140		
2:10					4:47		63.3	140		
2:13		48	1150 - 62.4		4:49		49.2	135		
2:15	225	47.5	1150 - 63.0		4:51		49.8	135		
2:30			1150 - 62.5		4:56		43	130		
2:33		73.5	1150 - 36.1		5:00	225	38	120		
2:35					5:05		38	120	50-796	
2:39			50-36		5:08		44.5	130		
2:40	345		"		5:18		65	170		
2:41		66	1150 - 45.5		5:20		56	160		
2:43		65	46		5:23		56.5	160		
2:50	225	40	1150 - 75.0		5:27		55.5	160		
3:01			100		5:28		69.0	150		
3:07	225	39	78.5		5:30		68	150		
3:12		41	120	73.5	5:32		67.5	140		
3:14		41.5		72	5:37		43.0	130		
3:18		65	140	50-46	5:43		61.0	170		
3:23		68	150		5:45		59	160		
3:30	225	62	170	50-48.5	5:46		59	160		
3:37		63		56-47.7	5:48		56.5	155		
3:39		59 1/2	165							
3:42		59 1/2	165							
3:44		56 1/2	160							
3:45		56	160							
3:48		56	155							

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Washington

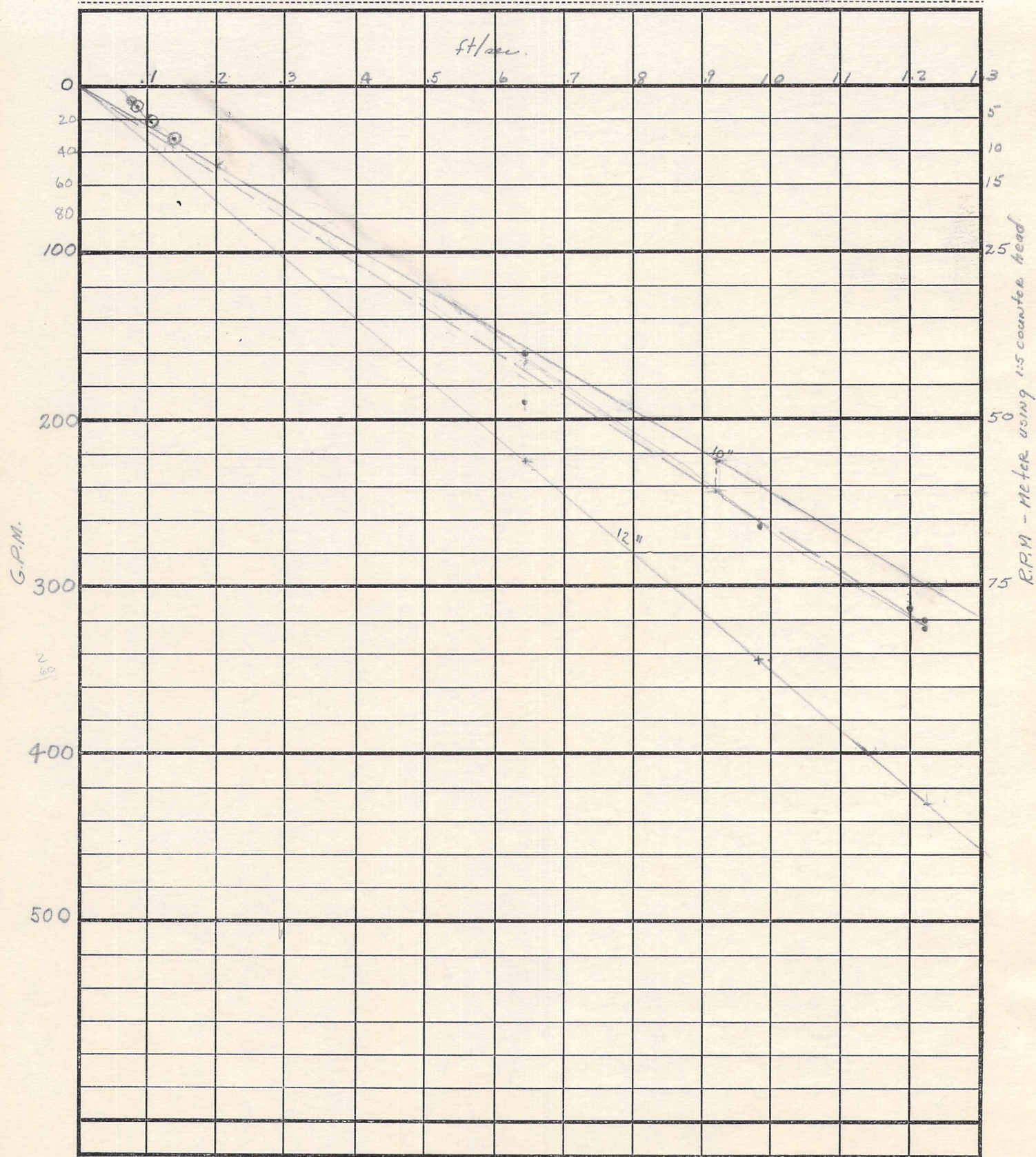
File No.

Title

Marks - shut down . 6:21:30

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

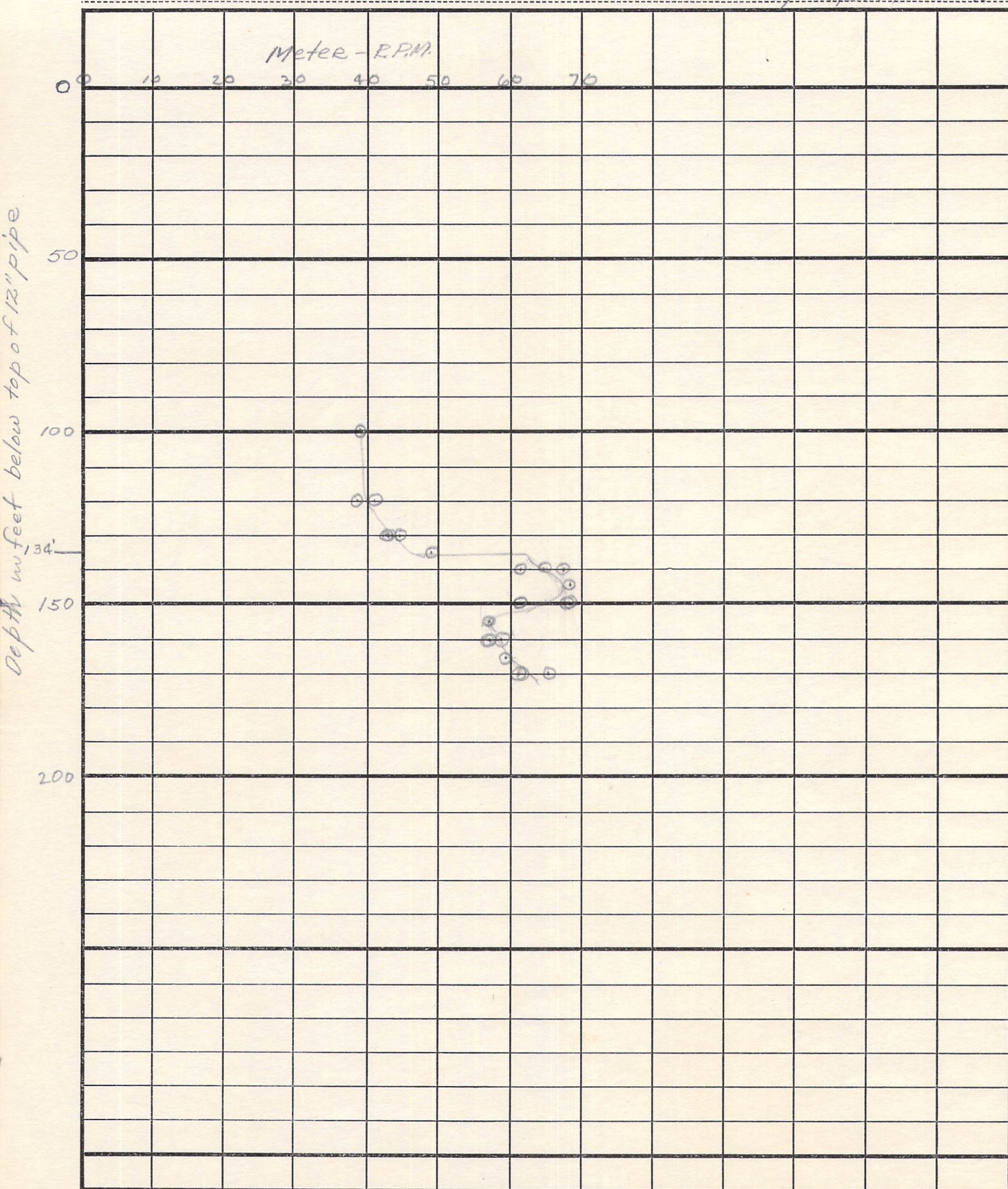
File No. { Washington -----
District -----
GPO G-9333



- Meter Readings at various velocities

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEYFile No. { Washington
District
GPO 6-9333

July 21, 1949



Flow meter test made on Story City well. Discharge rate 225 g.p.m.

MEMORANDUM

Subject: Story City current meter survey
Date: July 19, 1949

Hale telephoned me at home the evening of July 18 regarding developments at Story City and the proposed current meter survey to check on their leakage problem.

The town is anxious to move as soon as possible on this and presumably Mr. Jacobsen will telephone me in the very near future to arrange a date for the work.

They plan to have an 8-inch riser pipe above the present well casing to a height of about 21 feet. There will be a 6-inch valve near the base of this pipe to release water if the S.W.L. is above the top of the riser pipe (Munson of Layne-Western seems sure that their high S.W.L. measurement is o.k.)

We should have them arrange to have a reducer from the 6-inch valve to a fire hose connection in order that we may conveniently measure the discharge from the well during our survey.

The job can probably be done in one day and Hale can meet me later this week at Story City if that is o.k. with the town--perhaps Thursday, July 21.

Take with me:

- Current meter and housing
- Wire (2 conductor best), preferably calibrated
- Phones
- Battery
- Meter, lamp, or other phone substitute
- Idler pulley to clamp on 8-inch casing
- Drum for winding cable would be desirable

Should be able to have town get things essentially ready in advance. Perhaps get there around 10-11 a.m. and check things before lunch, running survey right after lunch.

K.E.Anderson

*Town clerk called (1:30 pm) & riser pipe is now in place.
He will advise water supt. re fire hose connection to valve.
Will test Thurs., July 21 -- arrive before noon, test then
or after noon.*

K.E.A.

January 6, 1949

Mr. Silas Jacobson
City Councilman
Story City, Iowa

Dear Mr. Jacobson:

We have now had a chance to review our files and the data I collected at the time of my visit to Story City to inspect the leakage at your new city well.

From the history of the leakage, it appears that most or all of the water coming to the surface outside of the well casing is coming from the rock formations and is probably leaving the well under the bottom of the casing.

In this event, the best method of remedying the situation is probably to install a liner in the well. This liner would be a length of pipe of smaller diameter than the well casing; the bottom of the liner could be set with an expanding wall packer and the top should extend to the land surface.

We would suggest that the packer be placed a short distance below the bottom of the present well casing. If the packer is seated properly and there is no leakage past it, there should no longer be any flow between the liner and the well casing and the flow outside of the casing should also stop. If the packer will not seat properly without some leakage, it would be desirable to lower the packer a short distance and make another attempt.

If the packer is once seated properly, and some flow is still evident at the surface outside of the well casing, this remaining leakage could be tiled or drained to the river. This leakage would be from the sand and gravel beds which lie on top of the bedrock surface and which have already been cased out in your well.

From the brief inspection of the well last month, it does not appear that there would be any serious objection to waiting until spring to commence any of the repair work outlined above.

I trust that this information will be of help to you. If we can assist in any other way, do not hesitate to write.

Very truly yours,

Keith E. Anderson

KEA:AEH

cc: Mr. R. W. Brooks, Ames
Mr. S. R. Ames, Lincoln

November 26, 1948

Mr. Sylvan Ames
Lincoln,
Iowa

Dear Mr. Ames:

We have your letter of November 20 in regard to the leakage problem at Story City. There appear to be a number of possible causes for the leak. For this reason we hesitate to make any suggestions before visiting the well.

I plan to be in Story City Friday, December 3, about 10 A.M. and would be glad to look over the well site and discuss the problem with you at that time. If this is not convenient for you please let us know.

Very truly yours,

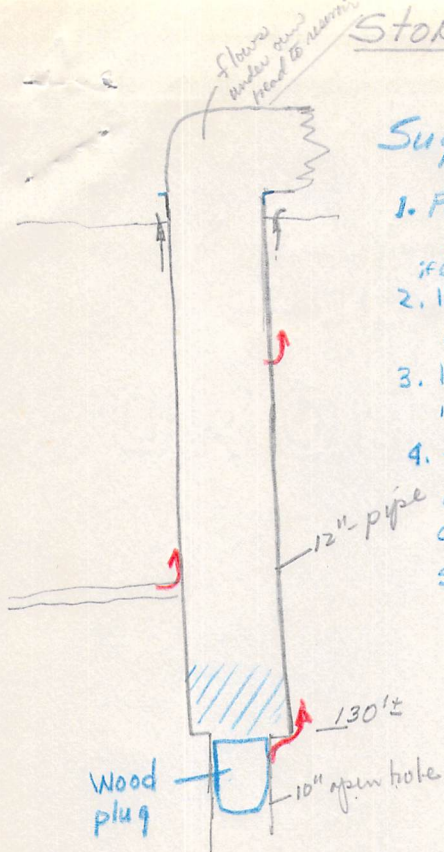
William E. Hale

WEH:BN

Story City

Suggestions

1. Pump well
observe if leak stops
if leak stops
2. Insert plug
if leak stops
3. Load pump column
if leak continues
4. fill bottom part
of hole with cotton
clay, load hole and
see if leak continued



NOV 22 1948

HOEG & AMES

FAIRBANK'S-MORSE
WATER SYSTEMS

WELL CONTRACTORS

WELL REPAIRING AND
WELL SUPPLIES

▲
LINCOLN, IOWA

November 20, 1948

Dr. H. G. Hershey
Iowa Geological Survey
Iowa City, Iowa

Dear Sir,

In 1945 we drilled a well for the Town of Story City and we got a flow at 265 feet deep. I think it flowed at the rate of 450 gal. per min.. After the well was drilled the town capped the well and hooked it on to the main. Evidently there is quite a lot of pressure in this flow and they told me that it is starting to leak in back of the casing. About the only way I would know about fixing this, is to run a pipe inside and cement between the two casings or some other method. I do not think it will make a satisfactory job to try to cement it around the outside.

I would like to have your opinion on this and I would also like to know how far down the inside casing should be installed. I think you have the samples there and if you have these checked over, you will be able to tell me where this casing should be set at.

I would appreciate hearing from you in regard to this matter and will appreciate any recommendations you have to make.

Thanking you for your cooperation, I remain.

Yours very truly,

S. R. Ames
S. R. Ames

SRA:HCS

OW

Story

January 17, 1946

Mr. Stanton James
Town Clerk
Story City, Iowa

Dear Sir:

Enclosed is a copy of the results of the pumping test made on the Story City town well No. 2 on October 30, 1945. If you have any questions concerning this report I hope that you will feel free to let me hear from you.

Very truly yours,

H. G. Hershey

HGH:BN

Story

IOWA PRESS
CLIPPING BUREAU

Des Moines, Iowa

Herald
Story City, Iowa

NOV 8 1945

Large Flow Of Water Secured In New City Well

The effort to increase the water supply by sinking a new well near the old wells at the foot of main street proved very successful.

A flow of water which amounted to 475 gallons per minute at the level of the ground was reached at a depth of 263 feet. At four feet below the top, the well gives 620 gallons per minute, which according to the superintendent of our water department, Mr. John Erickson, is enough to give every man, woman and child in town, 600 gallons every day. It is safe to say we have water enough for all purposes now.

The well was drilled by Hoeg & Ames of Lincoln, Neb. It is 12 inches in diameter at the top, reduced to 10 inches in the rock.

Iowa

STATE OF IOWA
IOWA GEOLOGICAL SURVEY
GEOLOGY ANNEX
IOWA CITY

Results of Production Test Made on Story City Town Well No. 2

Time	Depth to Water (feet)	Discharge (G.P.M.)	Remarks
Oct. 30 1945			
4:00 PM			Well flowing. Water temperature 50° F.
4:40			Pump started.
4:45	4.30		
4:50		650±	
4:56	.75		Decrease discharge rate.
5:10	.80	475	
5:25	6.00	620	Increase discharge rate.
5:45	8.15	660	
5:55	8.10	647	
5:57			Pumping stopped.
5:57+			Well flowing.

STATE OF IOWA
IOWA GEOLOGICAL SURVEY
GEOLOGY ANNEX
IOWA CITY

Results of Production Test
made on
Story City Town Well No. 2
at
Story City, Iowa
October 30, 1945

Name: Story City Town Well No. 2.

Location: NE $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 12, T. 85 N., R. 24 W., Lafayette Twp., Story County.

Elevation: Land surface, 971 feet above sea level.

Top of 12-inch pipe, 1.6 feet above land surface.

Contractor: Hoeg and Ames, Lincoln, Iowa.

Driller: LeRoy Ames.

Drilling Dates: Started, October, 1945. Finished, October 25, 1945.

Depth: 261' $\frac{1}{4}$ " below land surface.

Casing Record and Hole Size: 133.6 feet of 12-inch pipe from +1.6 to 132 feet.

Open 10-inch hole from 132' to 261' $\frac{1}{4}$ ".

Chief Aquifer: From 255 to 261 feet.

Test Pump: Centrifugal pump with 30 feet of suction pipe. Driven by electric motor.

Measuring Point: Top of 12-inch pipe, 1.6 feet above land surface.

Discharge Measurements: Discharge rate obtained by measuring time to fill tank of known capacity.

Remarks: The well flows. The static water level was estimated to be 20 feet above land surface.

(4)

Copy to town clerk at
Story City, Mr. Stanton James

Copy to Sylvan Ames

Copy to Louis Whitney

Results of Production Test
made on
Story City Town Well No. 2
at
Story City, Iowa
October 30, 1945

Name: Story City town well No. 2

Location: NE $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 12, T. 85 N., R. 24 W., La Fayette Twp, Story Co.

Elevation: Land surface, 971 feet above sea level.

Top of 12-inch pipe, 1.6 feet above land surface.

Contractor: Hoeg and Ames, Lincoln, Iowa.

Driller: Le Roy Ames

Drilling dates: Started, October, 1945. Finished October 25, 1945

Depth: 261' 4" below land surface.

Casing record and hole size:

133.6 feet of 12-inch pipe from +1.6 to 132 feet.

Open 10-inch hole from 132' to 261' 4"

Chief aquifer: From 255 to 261 feet.

Test pump: Centrifugal pump with 30 feet of suction pipe. Driven by electric motor.

Measuring point: Top of 12-inch pipe, 1.6 feet above land surface.

Discharge measurements: Discharge rate obtained by measuring time to fill tank of known capacity

Remarks: The well flows. The static water level was estimated to be 20 feet above land surface.



Story City

Story County

Present well located along valley wall in NE $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$
Sec. 12, T. 85N, R. 24W.

Elev. 42' below sta of cwnw, 974' above sea level.

New well ~~locat~~ to be located about 300 E. of present
well. Sample sacks + drillers log book left with town clerk.

Town clerk - Stanton James

Councilman - Mr. Ahrens

May. 3, 1945
W.E. Hale

April 5, 1944

Mr. Stanton James
City Clerk
Story City, Iowa

Dear Mr. James:

In response to your letter of March 6 we have assembled the information that we have available in regard to a proposed new water well for Story City.

Mr. Malcolm Larson of Roland who drilled your present well has kindly furnished us with the data that we did not have available. The well is 137 feet deep and is finished in limestone. The 6-inch casing extends from the surface to the top of the rock. The log is reported as follows:

	Thickness	From	To
Sandy clay	40	0	40
Blue clay, resting on hard limestone	50	40	90
Limestone, varying in hardness	47	90	137

The original static water level was 6 feet below ground surface and the well was reported to have pumped 200 gallons of water per minute with a drawdown of 12 feet. This indicates a strong source of supply.

Other wells in town obtain water from a strata above the top of the limestone bedrock. However, this water-bearing zone is probably directly connected with the zone from which the present city supply is derived. The quantity and quality of waters from the two sources should be very similar.

A new well to a depth of approximately 140 feet should give about the same results as are obtained by your present well in regard to the quantity and quality of water available. A satisfactory well could undoubtedly be finished in the sand and gravel zone overlying the bedrock. After considering all angles it appears that the best results can be obtained by continuing the well into bedrock.

It is my understanding that the new well will supplement the present supply. For this reason it will be advisable to drill the new well at some distance from the present one. I suggest that the two wells be at least 300 feet apart and that the new well be placed so that it is not close to any other heavily pumped well in town. Possible sites appear to be north of the present well and east of the school house, or in the western part of Story City at a site favored by the State Department of Health. If the new well is located in the western part of town it may have to be carried to a greater

Mr. Stanton James

-2-

April 5, 1944

depth than the present well. This greater depth will probably be equivalent to the difference in surface elevation between the present well and the new well.

If a well is drilled we will appreciate it greatly if you will require the driller to save a complete set of rock cuttings and a log for us. We will be glad to furnish the sample containers and log books for this purpose. If you have any questions regarding this report or if I can be of further service to you, please let me hear from you.

Very truly yours,

H. G. Hershey

HGH:N

Story City Council meets this week
and wants the dope from Laison on the
old well.

* CITY COUNCIL *
* Chas. Alsager *
* Bert Hill *
* M. Idse *
* Russell H. Leonard *
* George B. Nibe *
* Park Commissioners *
* Arthur Ahrens *
* Alfred O. Jacobson *
* John Hill *

C. L. JOHNSON, Mayor STANTON JAMES, Clerk R. A. SWEET, Treasurer

THE TOWN OF STORY CITY, IOWA

(Council Meets First and Third Tuesdays in Month)

* In the Center of the *
* Great Corn Belt—located *
* on Highways 69 and 115 *
* —on C. & N.-W. and M. & *
* St. L. Railways — Grain, *
* Stock and Poultry Rais- *
* ing—Butter Tub, Cement *
* Block, Corn canning Fac- *
* tories—Municipal Water, *
* Light and Power Plants. *

Mar. 6th, 1944.

Mr. H. G. Hershey,
Ass't State Geologist,
Geological Survey, Geological Annex,
Iowa City, Iowa.

Dear Sir:

We are planning on developing a new well here at Story City and are interested in any forecasts that you might be able to make in regards to location of same, quality and quantity of water and other items relating to the project.

We had the same matter up for consideration in 1940 and 1941 and at that time the State Board of Health asked you for some information whcih they now do not seem to be able to find.

It is their suggestion that we write you for this as they have had their Mr. Hanlon up here to look over the situation this last week.

Thanking you for any help you can give us in this matter, we beg to remain

Yours respectfully,

Inc. Town of Story City, Iowa,

By

Stanton James
Clerk.

MAR 8 1944

March 16, 1944

Mr. Malcom E. Larson
Roland, Iowa

Dear Mr. Larson:

The town of Story City has recently requested us to furnish them with a report on the possibilities of securing an additional source of ground water from a new well.

I understand that you drilled the present town well at Story City and wonder if you could furnish us with a log or record of construction of this well.

It is reported that the well is 137 feet deep. Could you tell me whether the well is producing from sand and gravel or from the underlying limestone? Is the well cased to the top of the rock? How much water would the well produce when completed? What was the original water level?

Any answers you may be able to give me in regard to these questions will be greatly appreciated. If at any time we can be of any service to you, please let me hear from you.

Very truly yours,

H. G. Hershey

HGH:N

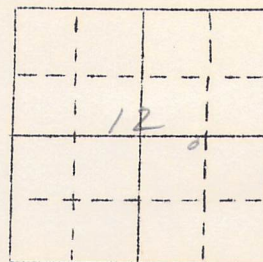
IOWA GEOLOGICAL SURVEY
In Cooperation with U. S. Geological Survey

W-2158

RECORD OF WELL

Location:

Town: Story City (N E)
(S W); County Story
NE-NW-SE sec. 12 T. 85 N., R. 24 W. LaFayette Twp.



Well name and number Story City #2

Owner City of Story City Address _____

Tenant _____ Address _____

Contractor Hoeg & Ames Address Lincoln

Drillers Le Roy Ames

Drilling dates Oct. to Oct. 25, 1945

Well data:

Elevations: Drilling curb 971 feet; Land surface 971.0 feet

Determined by Altimeter

Topographic position Valley of Skunk River

Total depth: Reported 261.3' feet, Measured _____ feet

Drilling method Cable Tool

Hole and casing data 133.6' of 12" pipe + 1.6' to 132' open 10" hole
(Give amount, size, kind, and depth of all casing; type and
to 261.3
position of seals and packers; cementing; how finished--perforated pipe, screen,
gravel pack, open hole, etc.)

Original depth to water 20 ± ^{above} ft. below L.S. Date Oct 25, 1945

Original elevation of water level 991.0 ± ft.; Source of data observation

Sources of water: Principal Mississippian; Others _____

Gilmore City.
255 to 261.3

Production data:

Static depth to water 17-20

Date _____

Pumping level 34-40

Measuring point _____

at 470 g.p.m.0.84756.06208.1647Specific capacity _____ g.p.m. per ft. drawdown; Temperature 50 °F.Pump data; Type pump 0 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	<u>Oct. 1945</u>	_____	_____	_____
Sampled by	<u>W.E.H.</u>	_____	_____	_____
Total solids	<u>400</u>	_____	_____	_____
Insoluble matter	<u>12.5</u>	_____	_____	_____
Alkalinity (Meo)	<u>392.0</u>	_____	_____	_____
Alkalinity (Phn)	<u>0.0</u>	_____	_____	_____
pH	<u>7.3</u>	_____	_____	_____
Fe ₂ O ₃ + Mn ₂ O ₃ + Al ₂ O ₃	<u>2.5</u>	_____	_____	_____
Alkali as sodium	<u>21.7</u>	_____	_____	_____
Calcium	<u>89.7</u>	_____	_____	_____
Magnesium	<u>33.2</u>	_____	_____	_____
Iron (unfiltered)	<u>0.05</u>	_____	_____	_____
Manganese	<u>0.0</u>	_____	_____	_____
Nitrate	<u>0.0</u>	_____	_____	_____
Fluoride	<u>1.9</u>	_____	_____	_____
Chloride	<u>3.0</u>	_____	_____	_____
Sulfate	<u>3.9</u>	_____	_____	_____
Bicarbonate	<u>478.2</u>	_____	_____	_____
Hardness (ppm)	<u>361</u>	_____	_____	_____
Hardness (gpg)	<u>21.1</u>	_____	_____	_____

Remarks _____

Laboratory data:

Sample storage location WM 11-2Sample range 0-255 No. spls. 45 No. dupls. & cond. 446Spls. prepared by DH Washed range 0-255 by PH

Driller's log and cond. _____

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

Microscopic study 0-255 strip log _____Gen. log _____ Correl. by SE202cuttings from 255 to 261.3' washed away