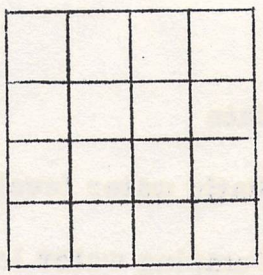
W11168

IOWA GEOLOGICAL SURVEY
In Cooperation with U. S. Geological Survey
RECORD OF WELL

Location:

Town: KLEMME (NE) (SW) County HANCOCK (E)

NE SW NE sec. 31 T. 95 N., R. 23 (W) _____ Twp.



Well name and number _____

Owner TOWN OF KLEMME #2 Address KLEMME, IOWA

Tenant (1959) Address _____

Contractor LAYNE-WESTERN CO. Address AMES, IOWA

Drillers JOHN MASTERS

Drilling dates JUNE 4-16, 1959

Well data:
Altitudes: Drilling curb _____ feet; Land surface _____ feet 1227

Determined by _____

Topographic position _____

Total depth: Reported 185 feet; Measured _____ feet _____

Drilling method CABLE

Hole and casing data 75' OF 12" CASING

Original depth to water 20 ft. above below _____ Date _____

Source of data _____

W11168

Sources of water: Principal 90'-150'

Others

PRODUCTION DATA

Date

Static water level 20

Pumping water level 44

Yield (g.p.m.) 90

Measuring point

Duration of pumping

Specific capacity

LABORATORY DATA

5A3-4

Well No. W11168 Sample range 0 - 185 No. of samples 37

No. of dupls. and cond. 37-good Washed range 70-185

Samples prepared by R. Sunleaf Date Aug 6, 1959

Logged by Northup Date 8/17/59

Correlations by Date 8/17/59

Donerkle
Klemme

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August 17, 1960

Mr. Frank H. Flores
Layne-Western Company
South Duff Avenue
Ames, Iowa

Dear Mr. Flores:

We are replying to your letter of August 11 concerning the problem of the excess iron in the water obtained at the new Klemme town well which your company drilled a bit more than a year ago.

According to our sample log the Klemme well was completed in the lower Lime Creek formation at a depth of 185 feet. The present depth is thought to be in the neighborhood of 150 feet. It might be closer to 100 feet if overlying uncased shales have caved into and filled the hole. A copy of the log of this well showing anticipated additional strata down to the top of the Maquoketa formation is given on a separate sheet included with this letter.

The casing record of the Klemme well includes 75 feet of 12-inch pipe set in dolomite at 74 feet. Note that the shale in the interval from 90 to 125 feet was left open. This might explain the excess iron since shales commonly have a high iron content. Mineral analysis of the water from the Klemme well obtained in December, 1959 showed 2.4 parts per million iron. As you know, more than 0.3 parts per million iron is likely to be troublesome causing "red water" and staining pipes, plumbing fixtures, and laundry.

Municipal wells at Britt, Garner, Meservey, and Thorton indicate that a lower iron content probably can be obtained by drilling into the Shell Rock and Cedar Valley formations between estimated depths of 195 and 550 feet. The casing should extend from the surface into the top 5-10 feet of the Shell Rock dolomite. Plenty of water normally can be expected from these deeper formations. Garner obtained 270 g.p.m. at about 60 feet of drawdown to a pumping water level of 77 feet. This well penetrated 180 feet into the Cedar Valley formation to a total depth of 325 feet.

Actually there is no sure way of predicting the iron content of the different water strata since iron is so ubiquitous in the rocks and local concentrations may be encountered that will result in troublesome quantities of iron dissolved in the ground water. Mineral analyses of the water developed at the wells mentioned here are appended to this letter.

We hope this information will aid in solving the water supply situation at Klemme. If you have any questions remaining or if we can be of further help in this matter, please feel free to call or write us.

Very truly yours,

HGH

H. G. Hershey

PJH:jj
Enclosure

IOWA GEOLOGICAL SURVEY
TABULATION OF WATER ANALYSIS
(Dissolved constituents in parts per million)

Town - Well No Owner	Date of coll.	Lepth (ft.)	Geol. source	°F	Liss. solids	Fe	Mn	Ca	Mg	K	Na	CO_3	HCO_3	SO_4	Cl	F	NO_3	Hardness cal. as $CaCO_3$ tot	carb	non-carb	pH	Cond
Klemme town well No. 2 (1959)	12/9/59	182	Lime Creek		464	2.4	.05	92	40	7.1	21	0	493	40	0.5	0.9	.44	394	394	0	7.2	750
Britt town well (1937)	3/25/57	262	Cedar Valley Maquoketa		363	1.1	.14	80	30	3.8	9.8	0	395	24	4.0	0.3	2.2	323	323	0	7.5	581
Garner town well No.2 (1957)	7/8/57	325	Shell Rock Cedar Valley		491	1.4	.05	90	35	4.4	7.4	0	432	16	3.0	0.5	.44	369	354	15	7.3	640
Meservey town well (1957)	11/4/58	573	"		405	.72	.05	76	42	8.4	18	0	439	17	6	1.5	.44	364	360	4	7.3	710
Thorton town well (1955)	12/29/59	539	"	51	435	.32	.05	76	44	12	21	0	490	10	9.0	1.8	.44	371	371	0	7.3	750

NOTES: < = less than

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AFFILIATED WITH
LAYNE & BOWLER, INC.
MEMPHIS, TENNESSEE

Layne-Western Company

WATER WELL DRILLING
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AMES, IOWA

TELEPHONE CEDAR 2-3563

August 11, 1960

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

Dear Sir:

Approximately a year ago we completed a well for the town of Klemme, Iowa. I am sure that you have samples and a record of the construction on this well. The well was completed to the approximate depth of 150'.

The iron content of the water from this well has gradually increased to a point where it is now almost unsatisfactory for use.

In your opinion, would there be any possibility of casing off this well to its present depth and deepening the well to a lower strata to pick up a better quality water? Any assistance you could give us on this would be greatly appreciated.

Very truly yours,

LAYNE WESTERN COMPANY

Frank H. Flores

Frank H. Flores

FHF/sb