

IOWA DISTRICT WRD

WELL NO. 039-26W-04ACC

UNITED STATES DEPARTMENT OF THE INTERIOR

Geological Survey
Water Resources DivisionLocal Well No. 099-28W-04ACCCAquifer Code(s) 03UMWater Quality
(ppm)Owner's Name LEDYARD, IOWAW Number 1582

Card Q

State: Iowa 19 County: Kossuth 55 Town: LEDYARD, Iowa

Well No. 432515N 0940935 Seq. No. 1 Date 083159

Sampling Depth 212 Type 1 Kx10⁶ 1150 pH 7.6 Temp. °F

SiO₂ 171 Ca 136 Mg 511 Na 561 K 59

HCO₃ 424 CO₃ 0 SO₄ 3381 Cl 21 Source No. 3Q

Card R

Duplicate Columns 1-25 from Card Q

F 4 NO₃ 4 PO₄ B Al Fe 5

Mn 05 Cu Pb Zn

Solids Hardness

Determined 858 Calc. Ca, Mg 550 Non-Carb. 202

Color No. R

Card S

Duplicate Columns 1-25 from Card Q

Br I Alk. as CaCO₃ 348 Free CO₂ SAR

RSC ABS

Alpha (pc/l) Beta (pc/l) Ra (pc/l) U (ug/l)

No. S
80Recorded by: D. AARONSONPunched by: T Date: Published:

IOWA GEOLOGICAL SURVEY
Water Well Data Sheet

Survey Number W-1582

Town Ledyard County Kossuth T. 99 N., R. 28 W.

Name Town Well No. 2 Location SW cor NE 1/4 Sec. 4

Contractor Ed T. Halverson Driller Ed T. Halverson Use municipal
Drilling

Construction drilled Drilling Dates finished June 1942 Depth 212
Curb Total

Topog. upland Elev. 1153 Ref. HL 1.1 ft. above ground Depth 212

Final above

Static below Pumping Draw Time
Level 16.83 curb Level down gpm pumped Date

Depth to Calc. g/ft. Prin.

bot. pump ft. with ft. suction pipe. drawdown Prod.

Producing

Horizons

Water levels and pumping tests on various horizons during drilling:

Depth Range	Stat. Level	Pump Level	Draw down	gpm.	Temp.	Producing horizons	Producing formations	Formations cased out

Additional information

Laboratory Data
Sample range 152-165, 170-185, 190-200, 205-210 Number 11 Duplicates 11 Cond. Good
Yes

Log No., Cond. Boxed Harris Range 152-210 Date 7/31/42

Remarks Gulf cut no. 221 by Harris

Microscopic Strip Gen. Blue Samples
Study Range Log Log Print Washed
Insol. Res. Strip Gen. Insol. Res. Well
Study Range Log Log Prepared Corel.



1
2 Kossuth County

Ledyard town well No (3?)

Contr. Guy Beamer

Date drilled - 1943

T.D. 212'

155' of 8" casing

SWL - 17' below land surface.

Very similar to town well no. 2 drilled by
MR. Halverson.

There is shale above the good rock.

May 4, 1945
W. E. Hale



2

Ledyard City well #2 Koszuth Co

Drilled by Halverson of Ledyard

July 4, 1944

Water Sample U.S. #1^{OK}

T.D. 212'

Production 400 RPM.

Depth to water 16' - top of casing

Temp water at time of sampling 56°
Air. 74°

Sample obtained from bucket in base
of storage tank.

Driller stated that when water was
reached drill dropped 2' in limestone
orevice.

Log no

Notes of Ledyard Town Well #2

No samples were sent in for the upper 152 feet which is till and probably some Cretaceous. (See Anderson's notes taken from Halverson, the driller.) There are three gaps in the 60 feet of samples sent in and cuttings from the lower two feet were washed away.

The section studied is all dolomite with about 5% chert. The chert is white, irregular, opaque, and somewhat tripolitic. The chert is fossiliferous. The dolomite bears more resemblance to the Silurian of the northeast than anything else with which I am familiar. According to the records no Silurian should be present here, however. In comparing this section with nearby well logs it correlates best with the Maquoketa (Ft. Atkinson). This is shown best in Burt City #2 and Lake Mills city where the type of dolomite and the chert are similar.

The Ledyard section is so short that correlations cannot be made with surity.

S. E. H. Jr.

3/26/43



Ledyard (Kossuth)

KEA

9-30-42

Pump for new ^{city} well arrived and to be
installed about Saturday, Oct. 3, 1942.

Pump is Fairbanks-Morse.

Arrangements handled by a Mr. Eastman,
pump co. representative, of Sioux City,

Roy Higley, city clerk,
Ledyard

Called on Ed T. Halverson, driller, but
he was not at home.

Glenn Yahnke, mayor
Roy Higley, city clerk

City Well No. 1

Loc: SW/c-NE-4-99-28 (in basement of City Hall)
Elev: 1150'±
T.D.: 140' approx., filling in some with sand
Pump: Old cylinder pump, into pressure tank.

City Well No. 2

Loc: SW/c-NE-4-99-28 (5' east of E. wall of City Hall and 20' N. of sidewalk)
Elev: 1153'
T.D.: 212'
Hole size: 8"
Casing: 8" from surface to 152', with drive shoe on bottom, driven 4" into solid rock
Static level: 16.83' below top of casing which is 1.4' above ground surface, at 11:20 a.m., July 10, 1942
Production: No pumping test made as yet.
Driller: Ed T. Halverson, Ledyard, Iowa

Rock was encountered at 151-152', with all limestone below that. White and red ocher found for 40-50' above the limestone. Cuttings washed away in the last few feet of drilling (210-212') and S.W.L. rose.

What was it before rise

K.E.A.
7/10/42

East of the town of Ledyard, bedrock is found at from 70 to 80' below surface. There is no ocher above the limerock and no water bearing sand.

West of the town of Ledyard, bedrock is found at from 125-150+ ' below surface. Water bearing sand occurs above white and red ocher, but sand is too fine so is shut out. Lower, a fairly coarse, clean sand is found which contains water and which will stand without screening. More ocher is found below this sand, and above the bedrock.

Once the limestone is entered, there is nothing but limerock for 150' or perhaps slightly more. (*Interesting in regard to mapped Maguokata.*)

(Above information from Mr. Ed. T. Halverson, driller, Ledyard, Iowa)

N.B. This indicates that probably Dakota ss. extends as far east as Ledyard but not much beyond. Will try to get samples of the sand from Halverson, and information as to location and depth to this sand in some of the wells he has drilled.

K.E.A.
7/10/42

IOWA PRESS
CLIPPING BUREAU
Des Moines, Iowa

Globe Gazette
Mason City, Iowa

JUN 25 1942

Work Is Begun on New City Well at Ledyard

LEDYARD—Work has been started on a new city well near the city hall.

June 27, 1942

Kossuth

3

The Mayor
Ledyard, Iowa

Dear Sir:

We have just been informed that the city of Ledyard is drilling a new well near the city hall. We will appreciate it greatly if you will request the driller to save samples of the rock cuttings for us. Under separate cover we are sending you a supply of sample containers to facilitate this work.

We should like to have a sample from each five foot interval of drilling and of each formation if less than five feet thick. I believe that the information derived from the samples will be valuable to the city of Ledyard and we will be glad to make a geologic report on them to you.

Very truly yours,

H. G. Hershey

HGH:N

W-1582

4

Town: LEDYARD (S W): County KOSSUTH
SW/4 NE sec. 4 T 99 N., R. 28 W. RAMSEY Twp.

[illegible]

Sources of water: Principal *Ordovician* ; Others

Production data:

Date

 Static depth to water 16.83 Measuring point top of casing 1.4' above l.s.
 Pumping level _____ at 700 g.p.m.

 Specific capacity _____ g.p.m. per ft. drawdown; Temperature 56 °F.

 Pump data: Type pump centrif. 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 municipal

WATER ANALYSES (in parts per million)

Date samples	<u>July 4, 1944</u>	_____	_____	_____
Sampled by	<u>N.A. Miner</u>	_____	_____	_____
Total solids	<u>887</u>	_____	_____	_____
Insoluble matter	<u>9.0</u>	_____	_____	_____
Alkalinity (Meo)	<u>332.0</u>	_____	_____	_____
Alkalinity (Phn)	<u>0.0</u>	_____	_____	_____
pH	<u>7.1</u>	_____	_____	_____
Fe ₂ O ₃ + Mn ₂ O ₃ + Al ₂ O ₃	<u>5.0</u>	_____	_____	_____
Alkali as sodium	<u>64.9</u>	_____	_____	_____
Calcium	<u>140.8</u>	_____	_____	_____
Magnesium	<u>50.0</u>	_____	_____	_____
Iron (unfiltered)	<u>3.0</u>	_____	_____	_____
Manganese	<u>0.00</u>	_____	_____	_____
Nitrate	<u>1.1</u>	_____	_____	_____
Fluoride	<u>0.3</u>	_____	_____	_____
Chloride	<u>7.0</u>	_____	_____	_____
Sulfate	<u>339.5</u>	_____	_____	_____
Bicarbonate	<u>405.0</u>	_____	_____	_____
Hardness (ppm)	<u>563</u>	_____	_____	_____
Hardness (gpg)	<u>32.9</u>	_____	_____	_____
Remarks	_____	_____	_____	_____

Laboratory data:

Sample storage location _____

 Sample range 152-210 No. spls. 11 No. dupls. & cond. 11 good

 Spls. prepared by Harris Washed range _____ by _____

 Driller's log and cond. No

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

 Microscopic study _____ strip log 3-26-43 SEH

Gen. log _____ Correl. by _____