

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

W-2241

RECORD OF WELL

Location:

Town: Lowden (NE)  
(SW): County Cedar  
NE 1/4 NE 1/4 NW 1/4 sec. 2 T 81 N., R. 1 W. Springfield Twp.

	0	
	2	

Well name and number Chicago & N.W. TRX.

Owner Chicago and Northwestern R.R. Address \_\_\_\_\_

Tenant \_\_\_\_\_ Address \_\_\_\_\_

Contractor Layne-Western Address Ames

Drillers Snead and Holmer

Drilling dates Feb 1946

Well data:

Elevations: Drilling curb \_\_\_\_\_ feet, Land surface 718 feet

Determined by S.E. Hamer

Topographic position broad lowland

Total depth: Reported 308 feet, Measured \_\_\_\_\_ feet

Drilling method cable tool

Hole and casing data \_\_\_\_\_

Original depth to water \_\_\_\_\_ above  
ft. below \_\_\_\_\_ Date \_\_\_\_\_

Original elevation of water level \_\_\_\_\_ ft.; Source of data \_\_\_\_\_

Sources of water: Principal \_\_\_\_\_; Others \_\_\_\_\_



Production data:

Date \_\_\_\_\_

Static depth to water \_\_\_\_\_

Measuring point \_\_\_\_\_

Pumping level \_\_\_\_\_

at \_\_\_\_\_

g.p.m. \_\_\_\_\_

Specific capacity \_\_\_\_\_

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 \_\_\_\_\_

## WATER ANALYSES (in parts per million)

Date samples	_____	_____	_____	_____
Sampled by	_____	_____	_____	_____
Total solids	_____	_____	_____	_____
Insoluble matter	_____	_____	_____	_____
Alkalinity (Meo)	_____	_____	_____	_____
Alkalinity (Phn)	_____	_____	_____	_____
pH	_____	_____	_____	_____
Fe <sub>2</sub> O <sub>3</sub> + Mn <sub>2</sub> O <sub>3</sub> + Al <sub>2</sub> O <sub>3</sub>	_____	_____	_____	_____
Alkali as sodium	_____	_____	_____	_____
Calcium	_____	_____	_____	_____
Magnesium	_____	_____	_____	_____
Iron (unfiltered)	_____	_____	_____	_____
Manganese	_____	_____	_____	_____
Nitrate	_____	_____	_____	_____
Fluoride	_____	_____	_____	_____
Chloride	_____	_____	_____	_____
Sulfate	_____	_____	_____	_____
Bicarbonate	_____	_____	_____	_____
Hardness (ppm)	_____	_____	_____	_____
Hardness (gpg)	_____	_____	_____	_____
Remarks	_____	_____	_____	_____

Laboratory data:

Sample storage location \_\_\_\_\_

Sample range

75-308

No. spls.

5

No. dupls. &amp; cond.

S.F.P

Spls. prepared by

P.J.H.

Washed range

75-308

by

P.J.H.

Driller's log and cond. \_\_\_\_\_

Insoluble residues: Prepared by \_\_\_\_\_

Studied by \_\_\_\_\_

Strip log \_\_\_\_\_

Microscopic study

July 29, 1949

strip log \_\_\_\_\_

Gen. log \_\_\_\_\_

Correl. by

R. Scriven



#5 Well Drilled For

W# 2241

C. & N. W. R. W. Y. CO.

at

Lowden, Iowa

by

Layne Western Co.Ames, IowaFeb. 1946

WN. 4-2

Drillers Log

	<u>Clay</u>
25	
36	<u>Sandy Blue Clay</u>
	<u>Blue Clay</u>
79	
	<u>Limestone</u>
125	
	<u>Limestone</u> (Porous with some clay and shale streaks)
210	
	<u>Brown</u> <u>Limestone</u>
255	
	<u>Gray</u> <u>Limestone</u>
305	
308	<u>Shale</u>

12 ft  
STATIONNeat Cement16" O.D. Steel  
CasingSamples  
START AT 75'  
12" I.D. 45 lb.  
T & C Steel  
Casing

Gap 235-255

Well tested @ 190 g.p.m.  
with pumping level of  
155' after acidizing  
with 1000 gal. of  
acid.

79'

90'

308'

WELL LOGS ON C. & N. W. R.R., AT LOWDEN, IOWA

WELL NO. 2

0 - 15	Yellow Clay
15 - 65	Blue Clay
65 - 66	Clay & Rock
66 - 94	Blue & Yellow Clay
94 -100	Gravel & Hard Rock
100-118	Hard Rock

WELL NO. 4

0 - 4	Soil
4 - 20	Yellow Clay
20 - 40	Blue Clay
40 - 56	Blue Clay, Mixed with Sand
56 - 58	Gravel & Boulders
58 - 81	Blue Clay
81 -170	Lime Rock, with Water Crevice 6' From Bottom

WELL NO. 3

0 -110	Blue Clay
110-128	Soft White Limestone
128-172	Limestone

Well No. 2, was completed in March, 1910, static water level was 38'. Water level was lowered to 70', pumping 110 GPM. 12" pipe extends to within 18' of the bottom. 20' of 10" pipe was drilled with 1/2" holes and installed for screen.

Well No. 4, was completed August, 1912, and was tested at 100 GPM. No static water level or drawdown figures are available. Apparently 12" pipe was installed to the top of the limestone at 81', however this information is not absolutely certain.

Well No. 3, was completed September, 1911, and was tested at 83 GPM. No static water level or drawdown was given. Apparently the original depth, of this well was 128' and the above test figures apply to this depth. In 1912, it was drilled to a depth of 172' and another test was conducted of 18 hours duration, during which time the well was pumped at a capacity of 106 GPM. No static water level or drawdown figures are given. The well was originally constructed with 12" pipe placed to 128', the bottom 12" perforated for screen. It appears that no additional casing was installed when the well was drilled deeper.



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Forecast of  
Generalized Geologic Section at Lowden

	<u>Thick.</u>	<u>From</u>	<u>To</u>
Pleistocene system - drift with sand and gravel reported at the base	100±	0	100±
Silurian system - dolomite	200±	100	300
Ordovician system			
Maquoketa formation - shale	230	300	530
Galena formation - dolomite	250	530	780
Decorah-Platteville formations - shale and limestone	80	780	860
St. Peter formation--sandstone	50	860	910
Prairie du Chien formation - sandy and cherty dolomite	320	910	1230
Cambrian system			
Jordan sandstone	55	1230	1285
St. Lawrence dolomite	10	1285	1295



Chicago and Northwestern RR  
Plowden (Cedar)

Loc NENENW2-81-1

Elev 718

Water level 32'4" below 10" casing  
Feb 21 2:15 pm

The well was pumped for  
2 days at a level between 140 and  
150 feet at a rate of 190 g.p.m.  
at the end the rate was raised  
to 250 g.p.m. & it didn't suck air  
although the nearer of the two  
shallow <sup>RR</sup> wells did when the  
rate was increased.

land surface about 1 ft above  
RR tracks at sta.

Wayne Western

Snead & Holmen