

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

W-0087

RECORD OF WELL

Location:

Town: Dubuque (N E)
(S W) County Dubuque

NE-SE-SE sec. 7 T 89 N., R. 3 W. J. 1/2 N. Twp.

Well name and number City Well #6

Owner City of Dubuque Address _____

Tenant _____ Address _____

Contractor C. W. Varner Address Dubuque

Drillers _____

Drilling dates Oct 2, 1935 to Aug. 27, 1935

Well data:

Elevations: Drilling curb 614' feet; Land surface _____ feet

Determined by _____

Topographic position Mississippi Valley Terrace

Total depth: Reported 1504 feet, Measured _____ feet

Drilling method cable

Hole and casing data 102' of 24" I.D. casing 0-102'; 257' of 16" casing
+3 to 254'7"; 23" open hole 254'7"-456'; 15" open hole 462'-1504'

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

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

Sources of water: Principal Cambrian-Dresden ss.; Others _____

Production data:

Date Aug. 16, 1938Static depth to water +8Measuring point curb.Pumping level 90at 1780 g.p.m.Specific capacity _____ g.p.m. per ft. drawdown; Temperature 62 °F.Pump data: Type pump Turbine Column Dia. _____ Length _____

Cylinder or bowls: Dia. _____ Length _____ Suction pipe _____

Power Electric (+ Diesel) 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	<u>Aug. 16, 1938</u>	<u>5/2/46</u>		
Sampled by	<u>H.C. Tester</u>	<u>M.V. Stephenson</u>		
Total solids	<u>301</u>	<u>294</u>		
Insoluble matter	<u>7.2</u>	<u>3.</u>		
Alkalinity (Meo)	<u>260.0</u>	<u>276.</u>		
Alkalinity (Phn)	<u>0.0</u>	<u>none</u>		
pH	<u>7.1</u>	<u>7.9</u>		
Fe ₂ O ₃ + Mn ₂ O ₃ + Al ₂ O ₃	<u>2.4</u>	<u>1.5</u>		
Alkali as sodium	<u>5.5</u>	<u>4.5</u>		
Calcium	<u>71.8</u>	<u>61.8</u>		
Magnesium	<u>29.7</u>	<u>34.1</u>		
Iron (unfiltered)	<u>0.2</u>	<u>0.08</u>		
Manganese	<u>0.00</u>	<u>0.0</u>		
Nitrate	<u>0.00</u>	<u>0.0</u>		
Fluoride	<u>0.0</u>	<u>0.6</u>		
Chloride	<u>13.0</u>	<u>4.</u>		
Sulfate	<u>26.2</u>	<u>19.1</u>		
Bicarbonate	<u>317.2</u>	<u>336.7</u>		
Hardness (ppm)	<u>303.0</u>	<u>294.</u>		
Hardness (gpg)	<u>17.7</u>	<u>17.2</u>		

Remarks _____

Laboratory data:

Sample storage location _____

Sample range 12-614 No. spls. 286 No. dupls. & cond. 188 Genl.

Spls. prepared by _____ Washed range _____ by _____

Driller's log and cond. _____

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

Microscopic study Shuf strip log ShufGen. log _____ Correl. by Shuf

DEEP WELL STUDY

Dubuque
Scale from reservoir

MECHANICAL ANALYSIS

A. Acid treatment (HCl 15%)

1. Sample weight 12.97 gm. 100.0%: 2. Wt. of F. P. _____
3. Wt. after solution, with filter paper _____ gm.
4. Less wt. F. P. (2) _____ gm.
5. Wt. Insol. Residue (3 minus 4) 2.49 gm. 19.2 %
6. Wt. lost by solution (1 minus 5) 10.48 gm. 80.8 %
7. To balance (5 plus 6) 12.97 gm. 100.0 %

B. Subsidiary:

1. Original Wt. _____ gm. 100.0%
2. Cylinder (+1/32) _____ gm. _____ %
3. Jar (1/32—1/64) _____ gm. _____ %
4. Drain _____ gm. _____ %

Well No. W— _____

Depth _____ to _____

No. samples used 1

Analyst Taillor

Date Aug. 26, 1935

C. Screen Analysis

SIZE	GRAMS	%
2 plus		
2-1 mm		
1-1/2 mm		
1/2-1/4 mm		
1/4-1/8 mm		
1/8-1/16		
Pan		
Total		100.0

MINERALOGICAL ANALYSIS

(Use opposite side of page for details of minerals)

Acet. Tetrabr. }
Bromoform } _____ Sp. gr. Size-Grade(s) _____ mm.

Analyst _____

Date _____

Wt. of sample _____ gm. 100.0% Shape Analysis:

Heavy Minerals _____ gm. _____ % A. _____ %: a. _____ %: C. _____ %

Light Minerals _____ gm. _____ % r. _____ %: R. _____ %.

Minerals Identified; Heavy Concentrate No. of Grains Rel. % Classification Grouping: Primary Minerals: _____ % Absol. %

Total _____ 100%

Light Concentrate

Secondary Minerals: _____ %

Total _____ 100% Total Revised Lithologic Description (from descriptive log and laboratory data). _____ 100%

Drilling started Oct. 1935
Drilling completed Aug. 27, 1935

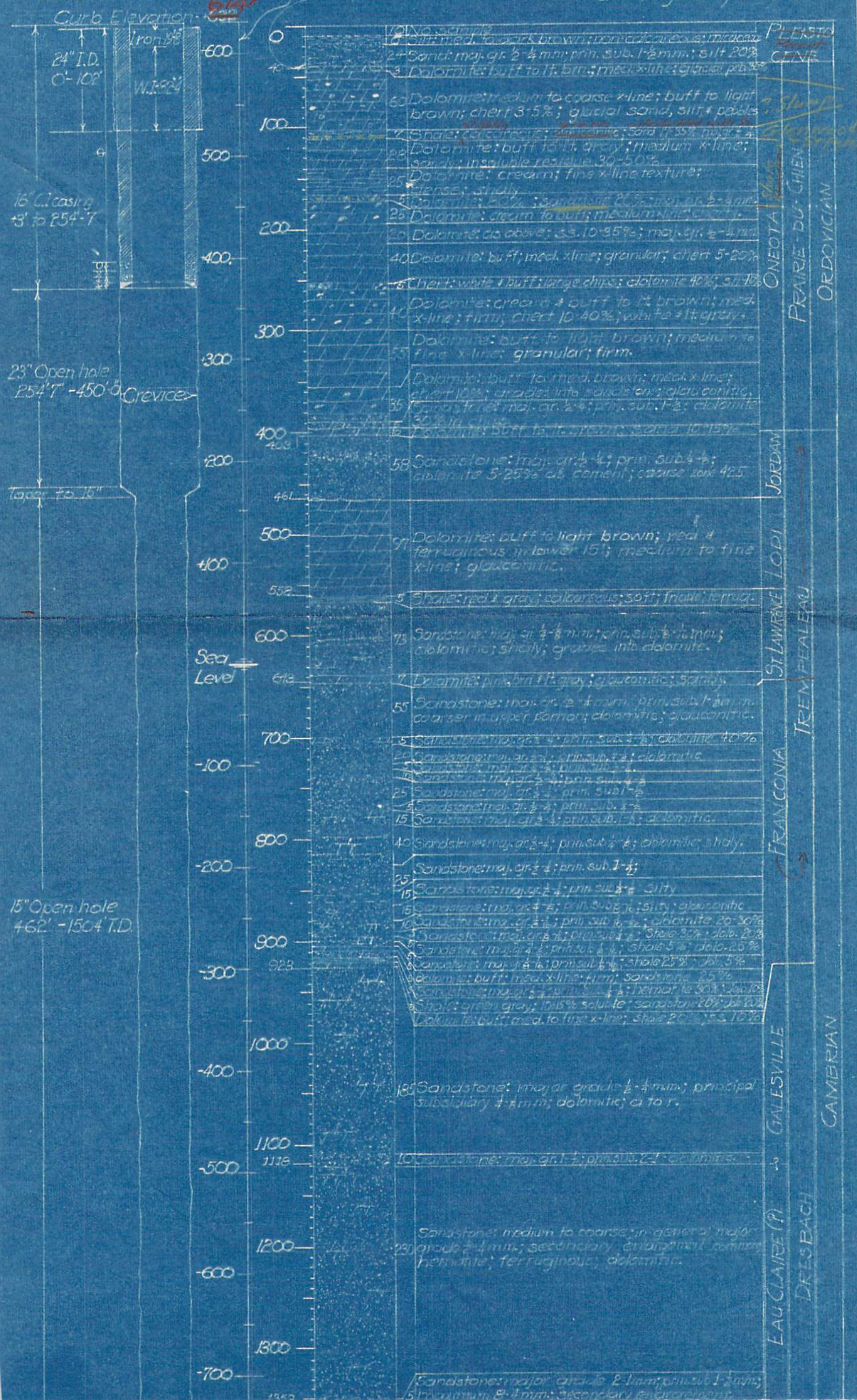
Vertical Scale = 1" = 100'

Elevations referred to sea level

Depth below surface

Location:

Northwest corner of Water
Works property adjacent
to U.S. Highway No. 61.



-800

1400

1500

16 Sandstone: medium to coarse; subangular to subround; secondary enlargement; dolomite.

Mt. Simon

1504' T.D.

Notes on construction:

- * 16" burlap packing around shoe.
- + 4 1/2' rock & sand
- * 3 1/2' neat mixture quick setting cement
- o 8' loose sand
- + 210' neat mixture plain portland cement

FLOW DATA

- @ 732' - approx. 2.6 g.p.m. (first flow)
- @ 1065' - 12.7 g.p.m.
- @ 1460' - 140 g.p.m.
- @ 1504'(T.D.) - 177 g.p.m.

June 13, 1935 well flowed 137 g.p.m. from top 16" pipe, 5' above curb.
August 27, 1935, after completion of permanent casing, well flowed 170 g.p.m. 6' above curb level.

PUMPING, HEAD, & DRAWDOWN

At drilled depth of 450' pump developed 488 g.p.m. - 72' drawdown below static level (10.35').

Jan. 25, 1935 at 250' static level = 10.35'

March 21, 1935 .. 825' = 17.06' (other wells pumped 8 hours)

June 5, 1935 .. 1504'(T.D.) stopped flowing after pumping 1, 2, 3, 4, 5, 1 hour

C.W. Varner Dubuque, Iowa
Contractor

J.W. McEvoy - Supr. Dubuque Water Works
J.W. Straub - City Engineer
J.A. Falkman - Consulting Engineer

Samples interpreted &
log prepared by
IOWA GEOLOGICAL SURVEY
Iowa City
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