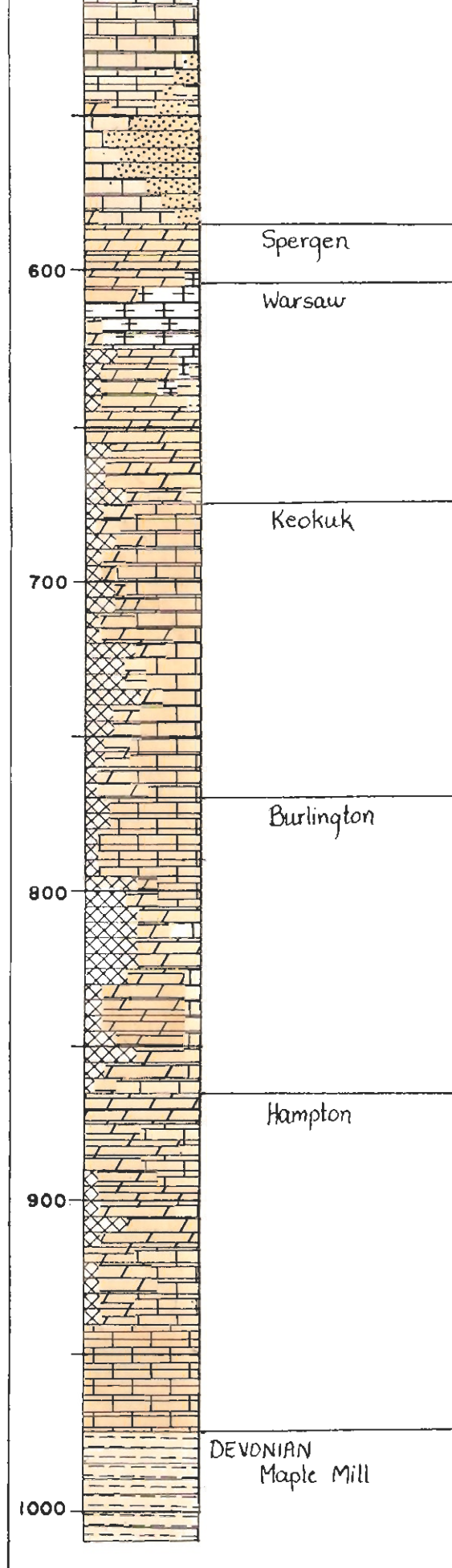
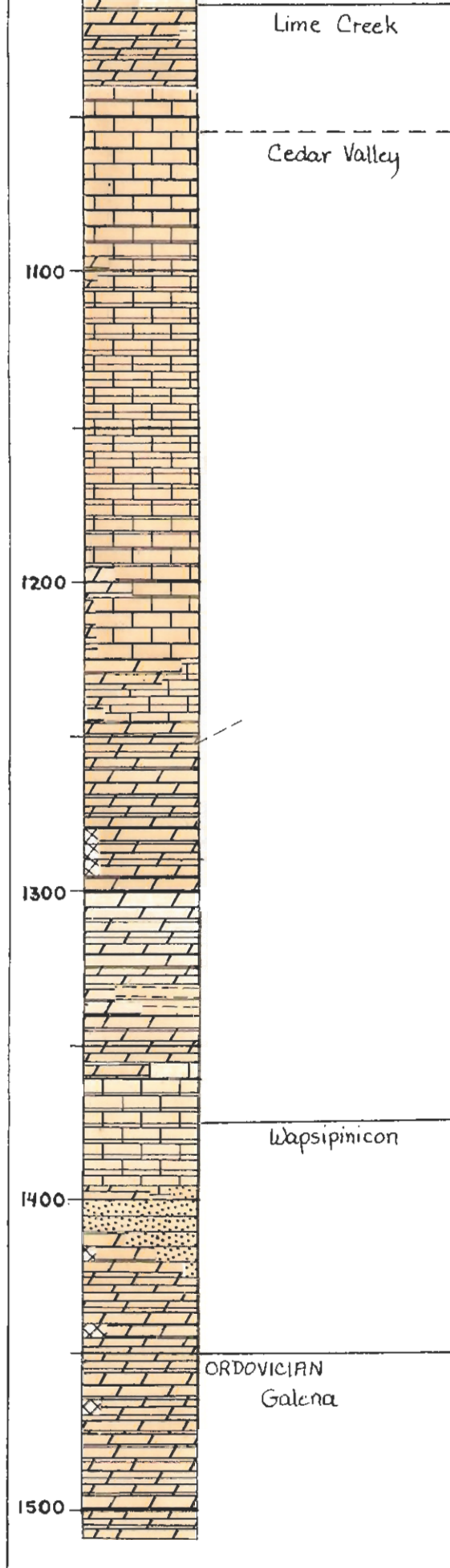
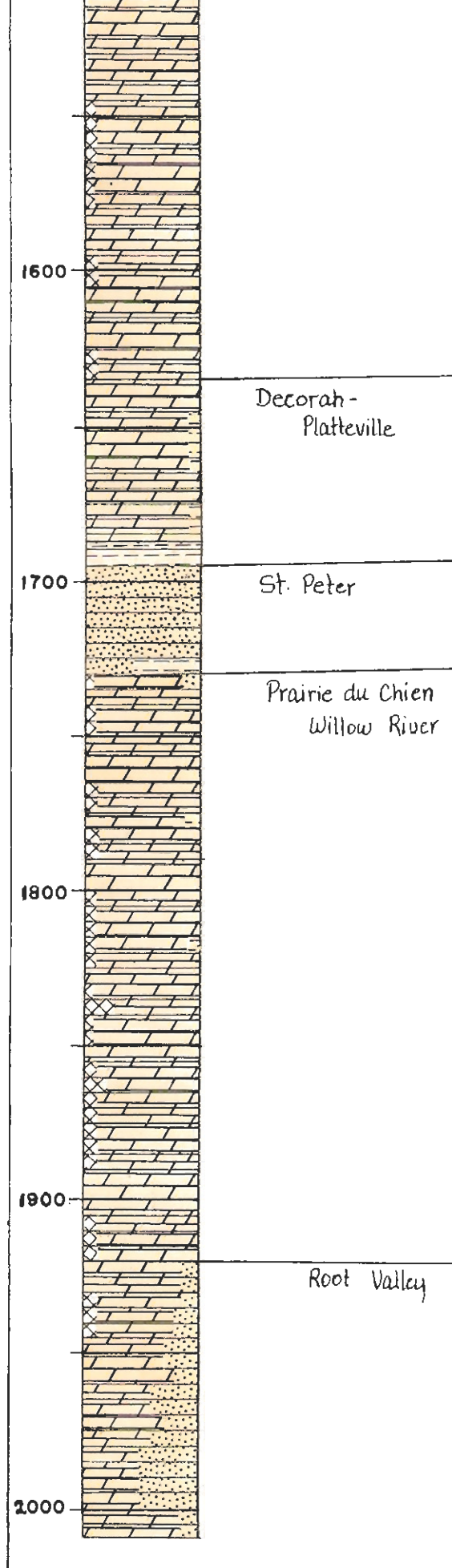
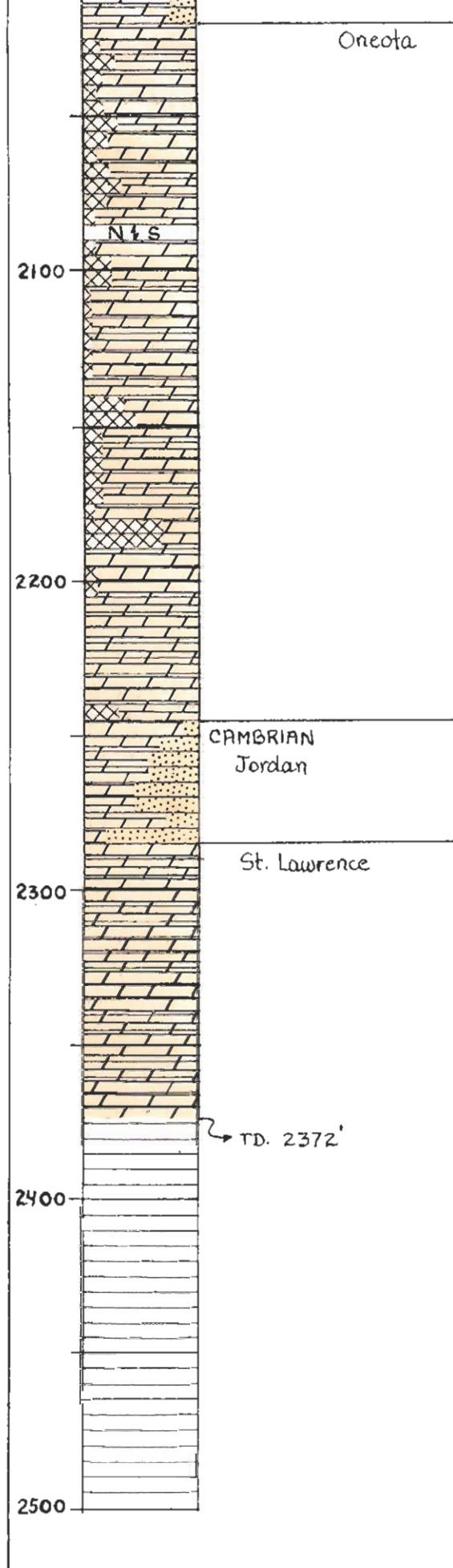












UNITED STATES  
 DEPARTMENT OF THE INTERIOR  
 GEOLOGICAL SURVEY

 File No. { Washington \_\_\_\_\_  
 District \_\_\_\_\_

... City Well ... 102372

| DATE:  |     | CASE SIZE | GPM. | AIR-<br>LINE |     | SWL = 348' |         | REMARKS                   | PUMP &<br>AIR LINE | 543              |
|--------|-----|-----------|------|--------------|-----|------------|---------|---------------------------|--------------------|------------------|
| 7/3/68 |     | 6 X 8"    |      |              |     | PL         |         |                           |                    |                  |
| 9:12   | AM. |           |      |              |     | 348'       |         | Pump out - 1st cloudy     |                    |                  |
| 9:20   |     |           | 874  | 94           | 98  | 446        |         | 8.9 - 50' cloud 70        |                    |                  |
| 9:30   |     | 32        | 874  | 94           | 98  | 446        |         | WATER CLEARING Temp = 79° |                    |                  |
| 9:45   |     | 32        | 874  | 94           | 98  | 446        |         | WATER                     |                    | cloudy temp. 78° |
| 10:00  |     | 32        | 874  | 94           | 98  | 446        |         |                           |                    | 473              |
| 10:15  |     | 31.5      | 867  | 94           | 98  | 446        |         | WATER                     |                    | 2.75°            |
| 10:45  |     | 31.0      | 860  | 94           | 98  | 446        |         |                           |                    | 31.1453          |
| 11:15  |     | 31.0      | 860  | 94           | 97  | 446        |         |                           |                    |                  |
| 11:45  |     | 30.5      | 854  | 94           | 98  | 446        |         |                           |                    |                  |
| 12:15  | PM  | 30.5      | 854  | 94           | 98  | 446        | INCREAS | PUMP & BATH               |                    |                  |
| 12:20  |     | 45        | 1037 | 90           | 102 |            |         | TEMP 75°                  |                    |                  |
| 12:45  |     | 44.5      | 1032 | 88           | 104 | 452        |         |                           |                    |                  |
| 1:15   |     | 44        | 1025 | 88           | 104 | 452        |         |                           |                    | 9.8 with 51      |
| 2:15   |     | 44        | 1025 | 87           | 105 | 453        |         |                           |                    | TEMP 78°         |
| 2:45   |     | 43.5      | 1019 | 87           | 105 | 453        |         |                           |                    |                  |
| 3:15   |     | 43.5      | 1019 | 87           | 105 | 453        |         |                           |                    |                  |
| 3:45   |     | 43.5      | 1019 | 87           | 105 | 453        |         |                           |                    |                  |
| 4:15   |     | 43.5      | 1019 | 87           | 105 | 453        |         |                           |                    |                  |
| 4:45   |     | 43.5      | 1019 |              |     | 453        |         | WATER CLEAR               |                    |                  |
| 5:15   |     | 43.5      | 1019 | 87           | 105 | 453        |         |                           |                    |                  |
| 5:45   |     | 43.5      | 1019 | 87           | 105 | 453        |         |                           |                    |                  |
| 6:15   |     | 43.5      | 1019 | 87           | 105 | 453        |         |                           |                    |                  |
| 6:45   |     | 43.5      | 1019 | 87           | 105 | 453        |         |                           |                    |                  |
| 7:15   |     | 43.5      | 1019 | 87           | 105 | 453        |         |                           |                    |                  |
| 7:45   |     | 43.5      | 1019 | 87           | 105 | 453        |         |                           |                    |                  |
| 8:15   |     | 43.5      | 1019 | 87           | 105 | 453        |         |                           |                    |                  |
| 8:45   |     | 43.5      | 1019 | 87           | 105 | 453        |         |                           |                    |                  |
| 9:15   |     | 43.5      | 1019 | 87           | 105 | 453        |         |                           |                    |                  |
| 9:45   |     | 43.5      | 1019 | 87           | 105 | 453        |         | INCREASE PUMP & BATH      |                    |                  |
| 10:15  |     | 76        | 1348 | 40           | 152 | 500        |         |                           |                    |                  |
| 11:15  |     | 76        | 1348 | 40           | 152 | 500        |         |                           |                    |                  |
| 12:15  |     | 71        | 1473 | 22           | 180 | 518        |         | REASER                    |                    | DATA             |

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

File No. { Washington \_\_\_\_\_  
District \_\_\_\_\_

2

| Time             | 6" 18" | 0.1 mm | 1"  | Air -<br>Wind | DO  | PL | Remarks     |
|------------------|--------|--------|-----|---------------|-----|----|-------------|
| 11:30 PM.        | 35.5   | 920    | 106 | 96            | 434 |    | Water clear |
| 12:00 AM 12/1/60 | 35.5   | 920    | 106 | 86            | 434 |    |             |
| 12:30            | 35.5   | 920    | 106 | 86            | 414 |    |             |
| 1:00             | 35.5   | 920    | 106 | 86            | 434 |    |             |
| 1:30             | 35.5   | 920    | 106 | 86            | 434 |    |             |
| 2:00             | 35.5   | 920    | 106 | 86            | 454 |    |             |
| 2:30             | 35.5   | 920    | 106 | 86            | 434 |    |             |
| 3:00             | 35.5   | 920    | 106 | 86            | 434 |    |             |
| 3:30             | 35.5   | 920    | 106 | 86            | 431 |    |             |
| 4:00             | 35.5   | 920    | 109 | 83            | 431 |    |             |
| 4:30             | 35.5   | 920    | 109 | 83            | 431 |    |             |
| 5:00             | 35.5   | 920    | 109 | 83            | 431 |    |             |
| 5:30             | 35.5   | 920    | 109 | 83            | 431 |    |             |
| 6:00             | 35.5   | 920    | 109 | 83            | 431 |    |             |
| 6:30             | 35.5   | 920    | 109 | 83            | 431 |    |             |
| 7:00             | 35.5   | 920    | 109 | 83            | 431 |    |             |
| 7:30             | 35.5   | 920    | 108 | 84            | 452 |    |             |
| 8:00             | 35.5   | 920    | 108 | 84            | 432 |    |             |
| 8:30             | 35.5   | 920    | 108 | 84            | 432 |    |             |
| 9:00             | 35.5   | 920    | 108 | 84            | 432 |    |             |
| 9:30             | 35.5   | 920    | 108 | 84            | 432 |    | Water clear |
|                  |        |        |     | 1 MW          | 126 |    |             |
|                  |        |        |     | 3 MW          | 150 |    |             |
|                  |        |        |     |               | 150 |    |             |
|                  |        |        |     |               | 150 |    |             |



MEMO

TO: Dr. H. G. Hershey  
FROM: Richard C. Northup  
RE: Pumping test at Centerville  
DATE: August 6, 1968

July 31 - August 1, I attended the pumping test of the new Jordan well at Centerville. A 24 hour test was run beginning at ~~9:12~~ <sup>9:12</sup> A.M., Wednesday and continuing until 9:30 A.M. Thursday, August 1. It turned out to be an excellent well, <sup>as to capacity</sup> and also of good quality. After a preliminary test to clean the well up, a pumping rate of 860 gpm was established for three hours. Static water level was 348', giving a drawdown of 98 feet. The well was then pumped at 1019 gpm for eight hours with pumping level of 453' (drawdown of 105'), and then pumped briefly (1 hour) at 1348 gpm (152' of drawdown) and for a half hour at 1473 gpm. This high rate resulted in the pump overheating, and the pumping rate was then cut back to 920 gpm (pumping level 431') for the remainder of the test.

A water sample was taken just before completion of the test and has gone to the laboratory at Des Moines. Field checks made by Mr. Bob King, Centerville Water Superintendent, and Mr. Don Watt, Warner Well Co., shows the following:

PH = 7.6  
H<sub>2</sub>S = 0  
Sulphate = 240 ppm  
Chloride = 175 ppm  
Iron = .60 ppm  
Total Hardness = 250 ppm  
Temp. = 78° F.

All samples are in, and my log should be completed in a few days.

Iowegian  
Centerville, Iowa

JUN 21 1968

6

# New Water Source As Deep Well Is Drilled

By LLOYD FINKS

Probably man's most precious commodity, especially when there is none available, is nothing more than water. Nature in most cases provides plenty of the wet stuff, but during prolonged drouths anxiety is bound to be stirred up. For that reason, the Centerville Water Board is now in the process of providing a bigger water source for the city's needs. This new source is a large deep well which will reach far down into the earth and which is expected to furnish an endless supply of water.

Hard at work the past few days has been a large crew of men, armed with a giant well boring machine, drilling the deep well. It is located just west of the shelter house in the Lelah Bradley Park and a few hundred feet from the northeast bank of the upper reservoir. The idea is to hit the so-called Jordan Stream, then pump this water directly into the reservoir whenever the need arises. Many

plans have been considered in the past for securing more water, but the water board decided this was the best plan.

At one time there was talk of tapping water at Cooper Creek or putting a pipeline to the river or even getting water from the Rathbun Lake. However, this type of thing could be very expensive, and as it is, Centerville will have a completely independent system, once the well is completed.

Shown in the accompanying picture is the huge derrick which resembles a rig for sinking oil wells. In fact, it is very similar. At the top of the derrick are attached huge cables which hang down and hold the drill in place. Sections of drilling bar are added as the hole becomes deeper.

Huge diesel engines are used to power the operation. One of the diesels is attached to a large pump which forces water down the drill hole, and this water

is the agent which brings loose soil and other materials to the surface. The stream of flushing water is said to enter the drill hole at several hundred pounds pressure.

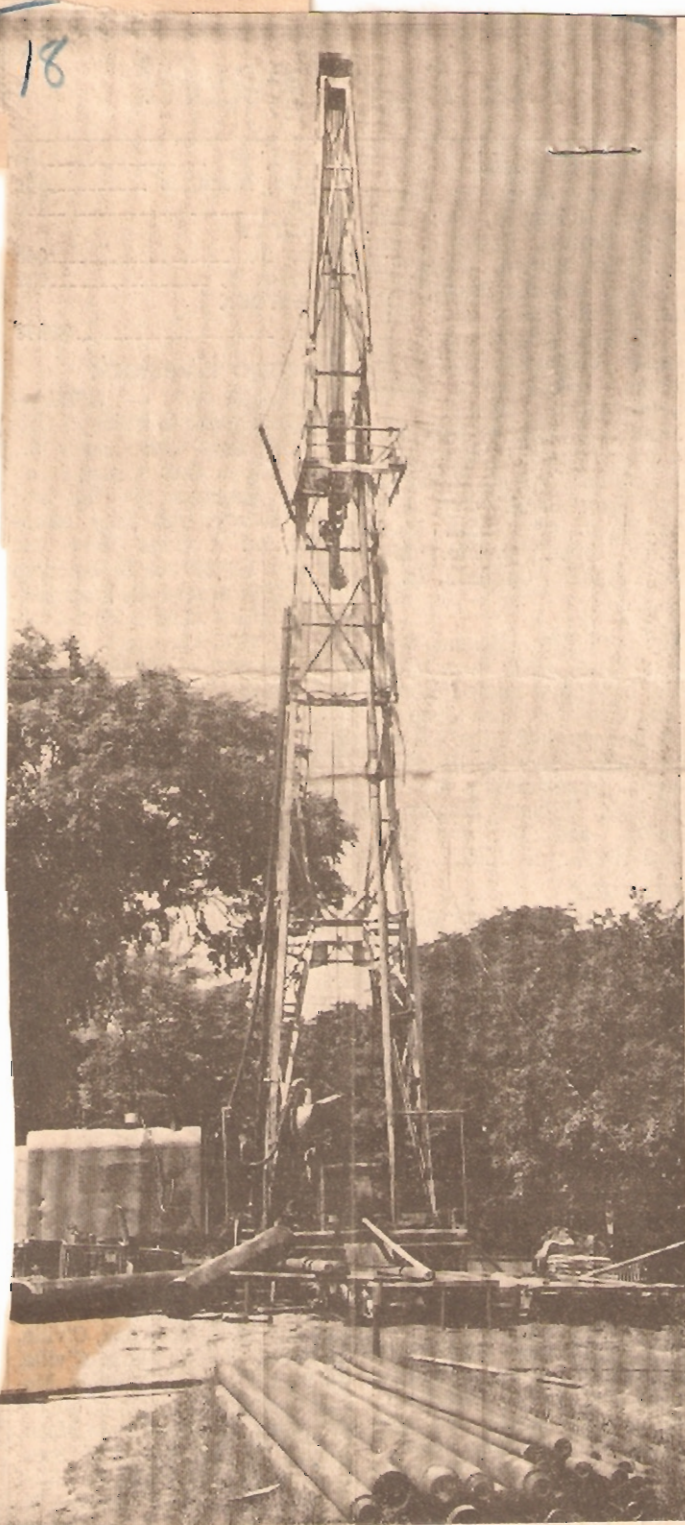
So far, things have gone pretty smoothly except for the fact that an old abandoned coal mine entry way was encountered and this caused a huge loss of flushing water. Steel tubing and cement took care of this problem and work continued as usual. The report is that there is a chance the drill will eventually run into part of the old gypsum mine, but this is partly guess.

The coal mine in question, has not worked for years, of course, and is located immediately west of the pumping station. Some remains of the old dirt dump may still be seen.

Work on the well goes on around the clock and there is no time being spared. It takes from four to five men to operate the outfit and they must check the operation from minute to minute.

A similar well is now being dug at the town of Moravia. The goal there is also to hit the Jordan vein. Moravia's water supply for years, has come from a shallower vein but it is thought the Jordan water will be of higher quality.

With two new deep wells in this immediate area, and 11,000 acres of water behind the Rathbun Dam, it is highly unlikely that local folks will go thirsty in the future.



**DRILLING FOR WATER . . .** Drilling has started on the new deep well for the Centerville Municipal Waterworks. The work is being done by the Varner Well Co., Dubuque, Iowa, and work is being done around the clock. The well will reach over two thousand feet into the earth to reach the Jordan Stream. At last report, Monday, a depth of 141 feet had been reached. The well is being drilled just west of the shelter house at Lelah Bradley park.