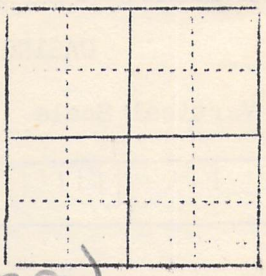
IOWA GEOLOGICAL SURVEY
In Cooperation with U. S. Geological Survey

W 5762

RECORD OF WELL



Location:

Town: Woolstock (N E / S W) :County Wright E.

_____ sec. ____ T ____ N.,R. ____ W. ____ Twp.

Well name and number Woolstock Town Well No. 1 (1952)

Owner Town of Woolstock Address _____

Tenant _____ Address _____

Contractor Layne-Western Co. Address _____

Drillers Marcus Hall

Drilling dates Completed Oct. 8, 1952

Well data:

Elevations: Drilling curb ____ feet; Land surface _____ feet

Determined by _____

Topographic position _____

Total depth: Reported 120½ feet, Measured _____ feet

Drilling method Cable

Hole and casing data _____

Original depth to water 41 ft. (above) below _____ Date _____

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

Sources of water: Principal _____; Others _____

Production data: Date _____

Static depth to water 41 Measuring point _____
Pumping level 49 at 210 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_2O_3+Mn_2O_3+Al_2O_3				
Alkali as sodium				
Calcium				
Magnesium				
Iron (unfiltered)				
Manganese				
Nitrate				
Fluoride				
Chloride				
Sulfate				
Bicarbonate				
Hardness (ppm)				
Hardness (gpg)				

Remarks _____

Laboratory data: Sample storage location EA4-9

Sample range 0-120 No. spls. 24 No. dupls. & Cond. 24 good

Spls. prepared by DeRoma Washed range 85 - 120 by DeRoma

Driller's log and cond. _____

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

Microscopic study Allison strip log Allison

Gen. log _____ Correl. by _____

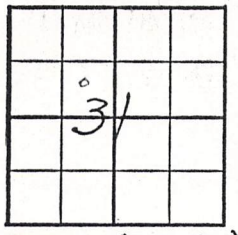
FORM NO. 79—In stock and for sale by Ross-Martin Co., Tulsa. W5762

STATE: IOWA

SW SW NE

SEC. 31

TWP. 90 RGE. 25



(alt. 1975) EL. 1103

T.D. 120'

WOOLSTOCK (WRIGHT)

Woolstock Town Well #1

COMMENCED Oct. 52' COMPLETED Oct 8, 52'

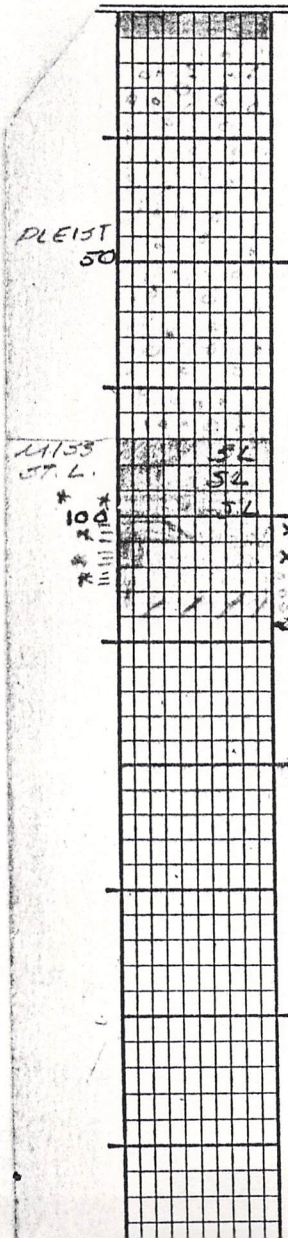
Layne-Western-Marcus Hdl.

CASING RECORD
8" csg set at 89' and cemented in 10" hole; 6" csg set at 120' and lapped up 4' into 8"; slotted in lower 18';

LOGGED Feb 53' BY Allison

REMARKS
S. W. L. 41'
P. L. 49 at 210 gpm.

10' of 6" screen set at about 102'



Soil
Till, gry. lchd. pebbles unlchd.

Ls. lt. tan SL. Dol. brn. F. x'line

XLS wht. x'line

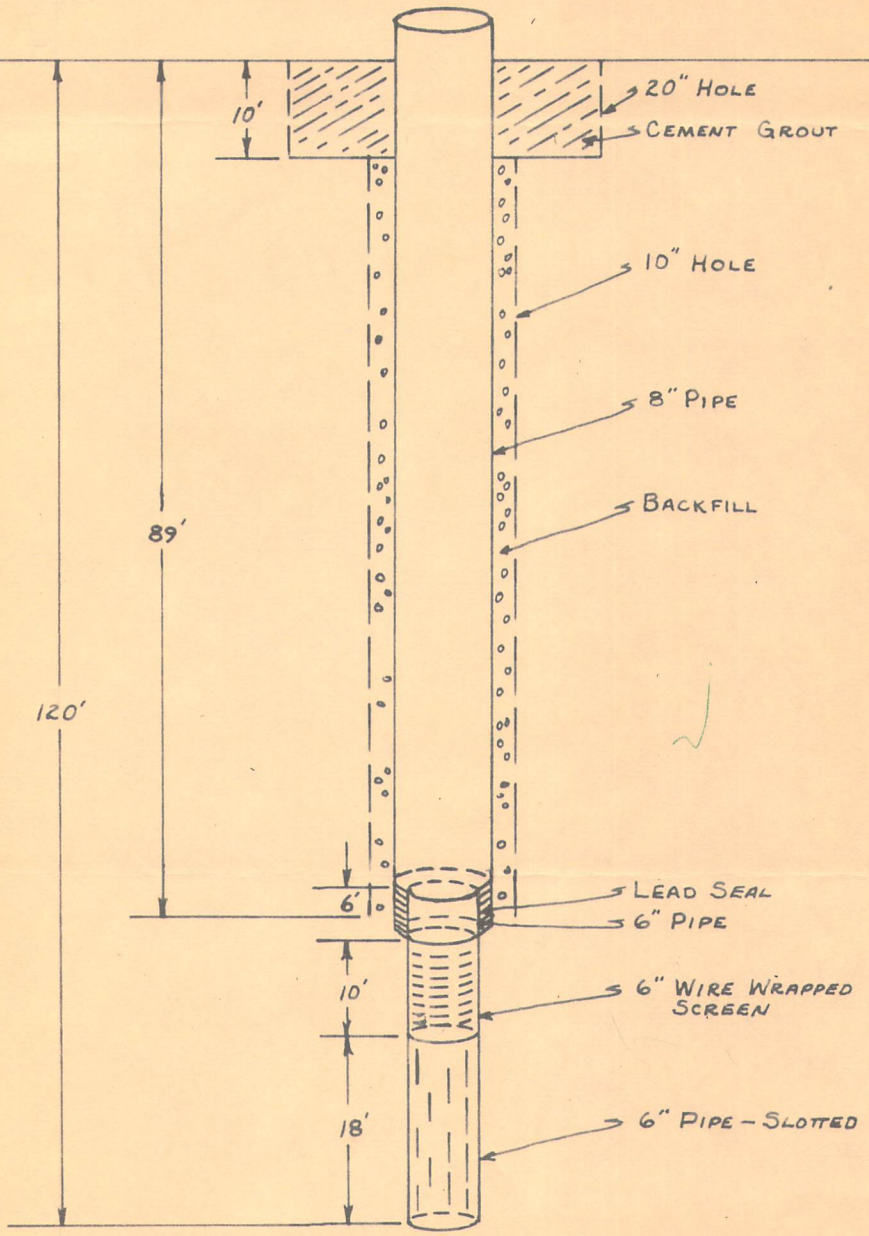
Ls. green, oölitic.

T.D. 120'

Details of Well Construction
for
Town of Woolstock, Iowa
Well No. 1

Layne-Western Company, Ames, Iowa — October 1952

Construction



Log

5'	Top Soil
	Sandy Clay
90'	
	Sand & Gravel
103'	
105'	Limestone, Shale
	Hard Limestone
118'	
120'	Fine Brown Sand

Pumping Test Results

Pumping Rate	106 GPM	Pumping Level	43'
Static Water Level	41'	Drawdown	2'

10/8/58 SWL 41' PWL 49' @ 210 gpm

Wright Co.

Woolstock, Iowa

Woolstock Municipal Water System

Special Provisions

These special provisions shall be a part of the standard specifications to which they are attached. The standard specifications shall govern unless modified by these special provisions.

1. The contractor shall spud the first ten (10) feet of hole twenty (20) inches in diameter and set an 8" well casing inside this hole and 10 feet in the sandstone strata. A ten (10) foot screen to be set, then the 8" casing to be withdrawn to the top of the screen lead packed.

2. The top ten (10) feet, after the well has been completed shall be filled with concrete, Class A. This 6" concrete shall extend to 6" above the floor of pump house.

3. The eight (8) inch casing shall extend at least twelve (12) inches above final ground surface, or at elevation fixed by Engineer and at least six (6) inches above the pump house floor.

4. During the entire period of drilling, samples must be preserved as directed by the Engineer.

5. The Contractor shall keep a log and record of all water encountered and forward a copy to the Iowa Geological Survey at Iowa City.

6. The Contractor shall exert every effort and strive in every way to drill a perfectly vertical hole. The 8-inch casing must be set straight.

7. The Contractor shall, after the screen has been placed thoroughly surge the well and pump out all sand in the well.

8. The Contractor shall send samples of the water to Iowa City for analysis.

9. The Contractor shall pump the well at the rate of 100 GPM for ten (10) hours and then determine the draw down accurately and the quantity of water available. Also, the Contractor shall, twenty-four (24) hours after the conclusion of the pumping period, remeasure and determine the static head.

10. The Contractor shall chlorinate the well in a manner satisfactory to the State Department of Health, prior to the final acceptance of the well by the Town Council of Woolstock, Iowa, approximately 50 PPM residual.

PUMP

General

The Contractor shall furnish and set one turbine pump with a capacity of 100 GPM against a total head of 250 feet ± at a speed not in excess of 1750 RPM and with a 4" discharge.

The pump is to operate in an 8" I.D. cased well. The top of the turbine proper shall be set 45 ± feet below the top of the casing which is at an elevation of _____ and the lower end of the turbine proper shall be fitted with a 8 to 10 foot suction pipe. These elevations cannot be accurately determined until the well is constructed. The discharge column shall be in interchangeable 10 foot lengths, and shall be not less than 4-inch I.D. full weight pipe. The shafting shall be not less than one (1) inch in diameter.

The discharge head shall be an "above the floor" discharge type with base seal to meet the approval of the Iowa State Department of Health.

The pump shall also be furnished with a draw down gauge, complete with accessories for water level determination.

MOTOR

The motor shall be a vertical hollow shaft unit of ample size so that it will not be overloaded at any point of operation. Current characteristics shall be 220 volt, 3 phase, 60 cycle.

CONTROLS

The unit shall be furnished with a magnetic starter equipped with overload and low voltage protection and three position pilot switch for manual operation.

Bidders shall submit detailed specifications concerning the equipment being offered and shall furnish guaranteed performance curves and efficiencies, as well as power input guarantee.

The pump shall be so designed that it will give a long life of sustained high efficiency with a minimum of maintenance and servicing.

The equipment shall be the latest provided product of a manufacturer regularly engaged and experienced in making pumps of this kind, and which is regularly sold to the commercial trade.

Column bearings shall have water lubrication. Pump Contractor shall make tests to prove that both the pump and motor will meet the above specifications.

Electrical

The Contractor shall furnish all labor and materials including lighting fixtures, conduit, wire, circuit breakers, motor starting switches and miscellaneous items needed for a complete electrical installation and make necessary tests to assure that the electrical equipment operates properly.

Construction Standards, Workmanship and Material

All materials shall be new and shall conform to the latest applicable specifications of the National Electrical Manufacturer's Association and the National Board of Fire Underwriters. All workmanship shall conform to the National Electric Code.

Light wall conduit and type MW wire or equivalent shall be used. All conduit shall drain to an open end or box.

Power Supply

The Power Company will run secondary wire to the building to provide 220 volts, 2 phase, 60 cycle and 115-220 volts single phase.

The Contractor shall Furnish and Install:

1. All conduit and fittings
2. Wire with necessary connectors, tape, etc.
3. Lighting fixtures, convenience outlet and switch
4. Circuit breakers
5. Motor starting switch
6. Service entrance
7. Electric heater
8. Grounding
9. Pressure switch

Lighting Fixtures, Convenience Outlet and Switch

A lighting fixture convenience outlet and switch shall be installed.

Circuit Breakers

Circuit breakers shall be quick make, quick break and shall be furnished and installed where required.

Pressure Switch

Type E. Rotor

A pressure switch shall be connected into the motor starting circuit to stop the burner automatically when the tank is full. Switch to have a range between 15 and 60 p.s.i.

Service Entrance

The Contractor shall provide a 4 wire service entrance complete with a three phase meter setting.

Electric Heater

The Contractor shall furnish and install a J-W electric heater complete with fan six feet above the floor. The heater shall be controlled by a thermostat with a range of 35°F to 65°F. and shall have a capacity of 10,000 B.T.U.

Grounding

The service neutral shall be solidly connected to the meter setting and each circuit breaker. The neutral shall also be solidly grounded using No. 6 wire to the 1½" vent from the wall casing.

Construction Standards. Workmanship and Material

All materials shall be new and shall conform to the latest applicable specifications of the National Electrical Manufacturer's Association and the National Board of Fire Underwriters. All workmanship shall conform to the National Electric Code.

Builders Hardware

The door shall be fitted with (Yale) &r (Corbin) locks, all hardware to conform to the provisions of Section 13-00 of the standard specifications.

Painting

Painting shall conform to the provisions of Section 35-00, 36-00 and 37-00 of the standard specifications insofar as they apply.

Carpentry

The building as shown on the plans shall be constructed according to the provisions of Section 22-00 of the standard specifications insofar as they apply.

Sterilization

The pipe line contractor shall furnish sterilising materials needed to conform to the provisions of Article 63-12 of the standard specifications.

Fill Around Wall

The Contractor shall make the fill at the well as shown on the plans, and fill shall be compacted in 4" layers to a maximum density, and left in a smooth and sightly condition.

Roofing Materials

The roof of the building over the well shall be built up, with a guarantee of fifteen (15) years, and shall conform to the provisions of Section 16-00 of the Standard Specifications.

Bleeder — 1/4" bleeder pipe to prevent freezing in Tank. from pump back to well.

5762

Name Woolstock Town Well No. 1 (1952)

Loc. SE NW - 31-90-25 Wright Co.

T.D. 120'

Drilled Layne-Western Co. (10/52)

Log W-5762 Allison

LLS 7/62

TOWN SYS STARTED 1953
85% OF POP ON CITY SYS

Casing 90' of 8" csg set at 89' grouted in 20" hole to 10' and 10" hole to 89'; 34' of 6" csg & screen set at 120', bottom 18' of pipe is slotted, upper 6' lapped into 8" csg, 10' of wire wrapped screen exposed below 8" csg. Lead seal between 8 & 6" csg.

Prod. data

		10/52	26.	53.
SWL	41'	41	8/210.	2/106
PWL	49'	43	16/50	
Yield	210 ~~gpm~~	106 gpm	48	

1089
41
1048
piez

50 GPM pumping rate 7/62 LLS.

Water analyses: No. 2089 (3871) 7/20/53 and No. 1910 (1969) 2/29/60 are from town wells 120½ and 128' deep. Must be from Mississippian

Check entire set up. Seem to have 2 wells? No! Only 1 town well
CLYDE CULMEN W/S
LLStaple 7/62

Elev. 1089'

pop. 269 (1960)

Formation	Depth	Top	Base
St. Louis	85	1004	

228
55
1140
1140
12[illegible]40

269
85 40
1345
2152
228.6