

675-04W-19

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

W-9977

RECORD OF WELL

	9	

Location:

Town: Columbus Junction (N E)
(S W) : County LouisaNE-SE-SW sec. 19 T 75 N., R. 4 W. Twp.Well name and number City No 2

Owner _____ Address _____

Tenant _____ Address _____

Contractor D.E. Edwards Address _____Drillers Parker, BerkenbasDrilling dates Aug. 13 to Sept. 3, 1947

Well data:

Elevations: Drilling curb 577.0 feet; Land surface 576.8 feetHand Level Elevation from Well No. 1Determined by D.A. Morris

Topographic position _____

Total depth: Reported 74'8" feet, Measured _____ feetDrilling method Cable ToolHole and casing data 64'8" of 10" casing from 0-64'8"12' of 10"-120 slot screen set at 74'8"Original depth to water 6.35 ft. ^{above} below land-surface datum Date Sept. 3, 1947

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

Sources of water: Principal Sand & Gravel (64.8-74.8); Others _____

Production data:

Date September 3, 1947Static depth to water 635Measuring point below land surfacePumping level 59.23at 300 g.p.m.49.42392questionable

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	<u>Sept. 3, 1947</u>	_____	_____	_____
Sampled by	<u>Barton + Mann</u>	_____	_____	_____
Total solids	<u>428</u>	_____	_____	_____
Insoluble matter	<u>21.5</u>	_____	_____	_____
Alkalinity (Meo)	<u>370</u>	_____	_____	_____
Alkalinity (Phn)	<u>None</u>	_____	_____	_____
pH	<u>7.7</u>	_____	_____	_____
Fe ₂ O ₃ + Mn ₂ O ₃ + Al ₂ O ₃	<u>8</u>	_____	_____	_____
Alkali as sodium	<u>36.1</u>	_____	_____	_____
Calcium	<u>93.1</u>	_____	_____	_____
Magnesium	<u>26.0</u>	_____	_____	_____
Iron (unfiltered)	<u>3.00</u>	_____	_____	_____
Manganese	<u>.10</u>	_____	_____	_____
Nitrate	<u>3.9</u>	_____	_____	_____
Fluoride	<u>4</u>	_____	_____	_____
Chloride	<u>2</u>	_____	_____	_____
Sulfate	<u>17.5</u>	_____	_____	_____
Bicarbonate	<u>451</u>	_____	_____	_____
Hardness (ppm)	<u>345</u>	_____	_____	_____
Hardness (gpg)	<u>20.2</u>	_____	_____	_____

Remarks _____

Laboratory data:

Sample storage location _____

Sample range 0'-80' 11" No. spls. 9 No. dupls. & cond. 9 fairSpls. prepared by JED Washed range NONE by JED

Driller's log and cond. _____

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

Microscopic study 0-80' 11" strip log Oct 29, 1947Gen. log _____ Correl. by M. Parker

RESULTS OF PRODUCTION TEST

COLUMBUS JUNCTION NO. 2 WELL

September 3, 1947

NAME: City of Columbus Junction No. 2 well.

LOCATION: NE SE SW Sec. 19 T. 75 N., R. 4 W.

ELEV. DRILLING CURB: 577.0 feet above sea level. Elevation of land surface 576.8 feet above sea level.

CONTRACTOR: D. E. Edwards.

DRILLERS: Parker, Berkenbas.

DATE STARTED: August 13, 1947.

DATE FINISHED: September 3, 1947.

TOTAL DEPTH: 74'8" (Ended in fine sand and gravel).

CASING: 64'8" of 10" casing from 0-64'8". 12' of 10"-100 slot screen set at 74'8".

PRODUCING HORIZON: Sand and gravel (64.8'-74.8').

TEST PUMP: American Well Co. turbine powered by G. E. 25 hp. motor of 1755 R.P.M. Pump column consisted of 51' of 5-3/16" O.D. pipe to top of bowls, 7' of 6 1/2" O.D. bowls and 4' of 6" (O.D.) suction pipe. (62', entire length of pump column).

DISCHARGE PIPE: 8' of 5-3/16" pipe.

DRAWDOWN MEASUREMENTS: Made from reference point 1.1' above land surface or at an elevation of 577.9 feet above sea level.

PRODUCTION: Discharge measured with galvanized tank computed at 6.3 gallons per inch.

TEMPERATURE MEASUREMENTS: Made at end of discharge pipe.

CONSTRUCTION OF WELL: 12' screen (100 slot) with 10 feet exposed set at 74'8". Four pilots holes of T.D. 62' placed in 42" circle from main well. Gravel packed with 8 tons of 1/4-1/2 inch gravel after plain surging 6 hrs. and pump surging 4 hrs.

TIME	DEPTH TO WATER (FEET)	DISCHARGE RATE G.P.M.	DEPTH TO WATER (FEET)	REMARKS
	WELL NO. 2		WELL NO. 1	
1:21	16.87			
1:22	16.20			
1:23	15.66		18.60	
1:25	14.46			
1:26	14.00		15.25	
1:27	13.58			
1:28	13.16			
1:33	12.42			
1:34	12.08		12.89	
1:36	11.75			
1:36	11.45			Measured by steel tape.
1:38			12.40	
1:42	11.55		11.95	Steel tape
2:36	10.80		11.	Steel tape.
2:38				No. 1 well started pumping to supply water.

REMARKS: No. 1 well was used as an observation well on No. 2. Pump on No. 1 well was shut off during production test. Reference point No. 1 well top of $1\frac{1}{2}$ inch galvanized pipe air vent. .73 feet below concrete platform or 579.03 feet above sea level. No. 1 well is located 38.3 feet north of No. 2.

TIME	DEPTH TO WATER (FEET) WELL NO. 2	DISCHARGE RATE G.P.M.	DEPTH TO WATER (FEET) WELL NO. 1	REMARKS
10:56 am	9.56			
11:03				Shut off No. 1 to throw in circuit No. 2.
11:16	7.92			
11:18	7.86			
11:21	7.72			
11:33	7.45			
11:35			8.09	
11:35				Pumping started.
11:36				Pumping stopped.
11:40				Pumping started.
11:42	29.5			Water riley.
11:44	39.87		16.45	
11:46				Break in circuit for 15 seconds.
11:47	41.54			
11:49	45.96			
11:50	47.08			
11:51	47.33		20.40	Temperature of water No. 2 well 53 $\frac{1}{2}$ °F.
11:54			21.88	
11:57	48.46			
11:58	48.55		22.74	Water clear.
12:02 pm	49.00			
12:03			23.46	
12:05	48.91			Temperature of water No. 2 well 53 $\frac{1}{2}$ °F.
12:10	49.29			
12:14			24.38	
12:19	49.92			
12:20			24.92	Water clear.
12:25	50.27			Air temp. 90°
12:26			26.04	
12:30	50.50			Water became riley, then cleared.
12:33			27.62	
12:38	50.33			
12:40		300	28.15	
12:47			28.90	
12:50	50.33			
12:51	50.46			
12:52	52.00			Increased discharge
12:58	48.60			Measured by steel tape.
12:59	49.20			Pumping air.
1:04	46.62			Measured by steel tape.
1:04	50.25			
1:06	48.25			Measured by steel tape.
1:06	50.42			
1:09			31.9	Water sample collected.
1:10		392		
1:15				Pumping stopped
1:16	24.3		30.2	Recovery measurements started.
1:17	21.3			
1:18	19.12			
1:19	18.12			
1:20			22.29	

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington -----
District -----
GPO 6-9333

Time	Depth to Water (feet) Well 2	Discharge Rate G.P.M.	Depth to Water (feet) Well 1	Remarks
10:56	9.56			
11:03				[No. 1] Shut off No 1 to throw in circuit No. 2
11:16	7.92			
11:18	7.86			
11:21	7.72			
11:33	7.45			
11:35			8.09	
11:35				Pumping started.
11:36				Pumping stopped.
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11:51	47.33		20.40	Temperature of water No 2 Well. $53\frac{1}{2}^{\circ} F$
11:54			21.88	
11:57	48.46			
11:58	48.55		22.74	Water clear.
12:02	49.00			
12:03			23.46	
12:05	48.91			Temperature of water No 2 Well. $53\frac{1}{2}^{\circ} F$
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12:14			24.38	
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12:26			26.04	
12:30	50.50			Water became riley then cleared.
12:33			27.62	

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 GEOLOGICAL SURVEY

 File No. { Washington
 District
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Time	D/w input No 2	Prod No 2	D/w No 1	Remarks.								
12:38	50.33											
12:40		300	28.15									
12:47			28.90									
12:50	50.33											
12:51	50.46											
12:52	52.00			Increased Discharge.								
12:58	48.60			Measured by steel tape.								
12:59	49.20			Pumping Air.								
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1:34	12.08		12.89									
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1:36	11.45			Measured by steel tape								
1:38			12.40									
1:42	11.55		11.95	Steel tape								

2:36 10.80

Steel tape.

2:38.

No. 1 Well started Pumping to supply water

July 16, 1947 Information on Columbus Junction City Well

Water Superintendent - Mr. Billings.

Contractor - D.E. Edwards

T.D. - 92' (Rock Well)

Temp Water - 55°

Pumping Data: 130 gpm or 50,000 gallons daily pumping for
about 12 hrs a day

SWL - 3.15'