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STATE OF IOWA
IOWA GEOLOGICAL SURVEY
GEOLOGY ANNEX
IOWA CITY

Results of Pumping Test Made on Dubuque City Well No. 8

Dubuque, Iowa

September 16-17, 1946

Name: Dubuque City Well No. 8

Location: CSL SE-1/4 SE-1/4 Sec. 7, T. 39 N., R. 3 E. Dubuque Co.

Elevation: Drilling Curb 610.00 Feet Above Sea Level

Owner: City of Dubuque

Contractor: Varner Well Drilling Co.

Drillers: Ralph Ployer - Mr. Faber

Drilling Dates: Started February 19, 1946. Finished September 1946

Total Depth: 1781.7 Feet

Casing and Hole Data:

145'8" of 30 Inch Casing From 0' to 145'8"
78'5" of 26 Inch Liner From 325'7" to 404'
509' of 16 Inch Pipe From 0' to 509' Cemented in
From Bottom to Top With 382 Sacks of Cement
1,272 Feet of Open 15 Inch Hole From 509 to 1781 Feet
Hole Shot With 400 to 425 Pounds of Dynamite at 775;
920; 1,015; 1,080; 1,330; and 1,725 Foot Levels.

Chief Aquifer: Cambrian Sandstones

Test Pump: Turbine, Setting 170 Feet. Powered by 150 H.P. Motor

Water Level Measurements: Reference Point For Water Level Measurements During Test Was Hole ~~of~~ Pump 610.00 Feet Above Sea Level.

Discharge Measurements: The Temperature of the Water Was Measured at the End of 15 Feet of 10 Inch Discharge Pipe.

Note: City Well No. 7 Started Pumping 9:30 A.M. September 17 and Continued Throughout Test. City Well No. 6 Pumped From 4:00 P.M. to 6:00 P.M. September 16. Well No. 7 Was Pumped at the Rate of About 2,000 G.P.M. Well No. 6 Was pumped at the Rate of About 1,400 G.P.M.

City of Dubuque Well No. 8 - September 16-17, 1946

TIME	DEPTH TO WATER	PROD. GPM	TEMP. ° F	REMARKS
Sept. 16				
9:18 A.	27.60			(Reference point is base of pump about 1.5' above T.C.)
9:20				Pumping started
9:28		38" 2220	66 1/2° F.	Water dirty red. (Thermometer No. 5)
9:35	128.0			(Well No. 7 on at 9:30 A.M.)
9:37		2175	66° F.	Water very dirty red
9:39	128.42			
9:45	128.07			
9:47		36 1/2 2175	65 1/2° F.	Water very dirty red
9:48	128.31			
9:57	128.94			
10:00		2175	65 1/2°	Water very dirty red, sandy
10:05	129.90			
10:10	130.72	2160		Water clearing somewhat
10:15	131.40			
10:25	132.55	2153	65 1/2°	
10:30	132.98	2145		
10:44	134.47	2140		
10:51	135.10	2130	65°	
11:03	136.18	2123	65°	
11:14	136.70	2115	65°	Water has red tint, some fine sand
12:10 P.		2100	65°	Water has red tint.
12:12	139.82			
12:23	140.17	2093	65°	
12:36	140.61	2078	65°	
12:45	141.00	2078	65°	Water less pinkish.
12:55	141.28		65°	
1:00 P.	141.40	2078		
1:25	142.12	2072	64°	Water slightly cloudy, trace of fine sand
1:37	142.46	2070	64°	
1:53	142.80	2063	64°	
2:00	143.08	2055	64°	Slightly cloudy.
2:30	143.7			Readings taken with air line
3:00	144.2			
3:19	145.4			Air line 25 3/4 = 144.25 + 1.2 = 145.4
3:30	146.2	2040	64°	Air line 25 = 145 + 1.2 = 146.2
3:45	146.2	2040		Air line 25 = 145 + 1.2 = 146.2
4:00	146.2	2040	64°	Air line 25 = 145 + 1.2 = 146.2 Med. Clear
4:17	146.2			
4:27	146.3	2040		Readings with electric line
4:43	146.65	2032		
5:00	146.6	2032	63°	Medium Clear
5:15	147.33	2023		

TIME	DEPTH TO WATER	PROD. GPM	TEMP. O F	REMARKS
5:29	147.80	2023	63.5°	
5:46	148.22	2014		
5:59	148.46	2014	63°	
6:14	148.72	2014		
6:30	148.00	2005		
7:00	148.00	1998		Time Out Readings with air line
7:32	149.09	2005	63°	
7:45	149.18	2005		
7:59	149.24	2005	63.5°	
8:13	149.20			
8:29	149.40	2005		Water clear, trace of fine sand
8:45	149.37	2005		
8:59	149.48	1998		
9:15	149.48	1998		
9:30	150.6	1998		
10:00	150.1	1998		
10:30	150.6	1998		
11:00	150.6	1998		
11:30	151.1	1998		
12:00 M	151.1	1998		
Sept. 17				
12:30 A.	151.1	1998		
1:00 A	151.1	1998		
1:30	152.1	1998		
2:00	152.1	1990		
2:30	152.1	1990		
3:00	152.1	1990		
3:30	152.1	1990		
4:00	152.1	1990		
4:30	151.6	1982		
5:00	151.6	1982		
5:30	151.6	1982		
6:00	151.6	1982		
6:30	151.6	1982		
7:00	151.6	1982		
7:31 A	151.6	1980	62°	Water clear, trace of fine sand
8:06	151.75	1975		
8:20	151.80	1975		
8:30	151.80	1975		
8:58	151.80	1975		
9:20	151.95	1975		
9:25		1975	62° F.	Water sample collected (G-118) Water clear, trace of fine sand.
9:30				Pumping stopped
9:31	89.09			Recovery measurements
9:32	84.26			
9:33	80.50			
9:34	77.90			
9:35	75.89			

TIME	DEPTH TO WATER	PROD. GPM	TEMP. O F	REMARKS
9:36	74.06			
9:37	72.50			
9:38	71.35			
9:39	70.28			
9:40	69.11			
9:41 A.	68.38			
9:42	67.70			
9:43	66.94			
9:44	66.40			
9:45	65.80			
9:49	64.35			
9:55	61.80			
10:00	59.95			(Well No. 7 rose from 6' 1" to 7' above bowls)
10:05	58.29			
10:10	56.97			
10:15	55.67			
10:20	54.43			
10:25	53.58			
10:30	52.73			
10:36	51.74			
10:45	50.50			
10:53	49.63			
11:00	48.83			
11:10	47.88			
11:20	47.06			
11:30	46.35			

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**RESULTS OF PUMPING TEST
MADE ON CITY OF DUBUQUE WELL NO. 8 ON
AUGUST 23-24, 1946**

Name: Water Department Well No. 8.

Location: QLS SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 7, T. 89 N., R. 3 E. Dubuque County.

Elevations: Drilling curb 610.06 feet above sea level.

Owner: City of Dubuque.

Contractor: Varner Well Drilling Company.

Drillers: Ralph Ployer, George Faber.

Drilling Dates: February 19, 1946. Not yet finished.

Present Depth: 1781 feet 8 inches.

Casing and hole data:

145' 8" of 30 inch casing from 0' to 148' 8"
78' 5" of 26 inch liner from 325' 7" to 404'
509' of 16 inch pipe from 0' to 509'. Cemented in from bottom to
top with 882 sacks of cement
1272' 8" of open 15 inch hole from 509' to 1781' 8".

Chief aquifer: Cambrian sandstone.

Test Pump: Turbine. Setting 170 feet. Powered by 150 h.p. motor.

Water Level Measurements: Reference point for water level measurements during test was centerline of discharge column at No. 8 Well 610.75 feet above sea level. No. 7 - 626 feet and No. 5 - 605 feet.

Discharge Measurements: Discharge rate obtained by use of 8 1/2 inch orifice in 10 inch standard pipe.

Temperature Measurements: The temperature of the water was measured at the end of 15 feet of 10 inch discharge pipe.

Note: City well No. 7 was pumped during the entire pumping test. Well No. 6 was pumped from 4:00 P.M. to 6:00 P.M. (on Friday August 23rd, a two hour run) and from 10:00 A.M. to 5:05 P.M. on Saturday August 24th. No. 7 was pumped at a rate of about 1800 g.p.m. and No. 6 at a rate of about 1300 g.p.m. No. 5 Well was not pumped during test, it was used to measure water table.

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Pumping Test Made on Water Department Well No. 8
On August 23-24, 1946

Time	Depth to Water #8 (feet)	Discharge		Depth to Water		Remarks
		Orifice (inches)	(GPM)	#5 (feet)	#7	
August 23						
9:30 AM	32.75			32 1/2		Non-pumping water level
2:30 PM	30.00					No. 7 on at 1:40 P.M.
2:40	30.00	37	2190			Pumping started
2:50	131.00	35 1/2	2145			Water dirty red, muddy, sandy
3:00	133.00	35 1/2	2145	41	162	Test started
3:10	136.00	35 1/2	2145			
3:20	137.00	35 1/4	2138			Water very dirty red, little sand
3:30	138.00	35	2130			
3:40	140.00	34 1/4	2108			Water pink
3:50	142.00	34	2100			Temperature 58 deg. F.
4:00	143.00	34	2100	51 1/2	166	No. 6 Well on at 4:00 P.M.
4:20	143.00	33 1/2	2085			
4:30	143.00	33 1/4	2078			Water light pink
5:00	147.00	32 1/2	2055	57	168	
5:30	148.00	32	2040			Water very light pink
6:00	149.00	31 3/4	2032	60 1/2	169	No. 6 Well off at 6:00 P.M.
6:30	149.00	31 3/4	2032			
7:00	150.00	31 1/2	2023	61 1/2	171	
7:30	151.00	31 1/2	2023			Water quite clear - sandy
8:00	152.00	31 1/4	2014	62 1/2	171	
8:30	153.00	30 3/4	1998			Water clear but sandy
9:00	153.00	30 3/4	1998	63	172	
9:30	154.00	30 3/4	1998			
10:00	154.00	30 3/4	1998	63 1/2	172	
10:30	154.00	30 3/4	1998			
11:00	154.00	30 3/4	1998	64	172 1/2	
11:30	154.00	30 3/4	1998			
12:00	154.00	30 3/4	1998	64 1/2	172 1/2	
12:30 AM	154.00	30 1/2	1990			
1:00	154.00	30 1/4	1983	65	172 1/2	
1:30	154.00	30 1/4	1983			
2:00	154.00	30 1/4	1983	65 1/2	172 1/2	
2:30	154.00	30 1/4	1983			
3:00	154.00	30	1975	66	172 1/2	
3:30	154.00	30	1975			
4:00	154.00	30	1975	66	172 1/2	
4:30	154.00	29 3/4	1967			
5:00	154.00	29 3/4	1967	66	172 1/2	
5:30	154.00	29 3/4	1967			
6:00	154.00	29 3/4	1967	66 1/2	172 1/2	
6:30	154.00	29 1/2	1958			
7:00	155.00	29 1/2	1958	67	173	
7:30	155.00	29 1/2	1958			
8:00	155.00	29 1/2	1958	67	173	
8:30	156.00	29 1/2	1958			
9:00	158.00	29 1/2	1958	67 1/2	173	
9:30	158.00	29 1/2	1958			Temperature of water 63 deg. F.
10:00	158.00	29 1/2	1958	68	173	No. 6 Well on at 10:00 A.M.
10:30	158.00	29 1/2	1958			

Pumping Test Made on Water Department Well No. 8 On August 23-24, 1946, Cont.

Time	Depth to Water #8 (feet)	Discharge		Depth to Water		Remarks
		Orifice (inches)	(GPM)	#5 (feet)	#7	
11:00 AM	159.00	29 1/4	1948	69	173	
11:30	159.00	29 1/4	1948			
12:00 Noon	160.00	29	1940	70 1/2	175	
12:30 PM	160.50	29	1940			
1:00	161.00	28 3/4	1932	72	177	Temperature of water 62 deg. F.
1:30	161.00	28 3/4	1932			
2:00	161.50	28 1/2	1923	73	177 1/2	
2:30	162.00	28 1/2	1923			
3:00	164.00	28 1/2	1923	73 1/2	177 1/2	
3:30	164.50	28 1/2	1923			
4:00	164.50	28 1/4	1914	74 1/2	178	Temperature of Water 62 deg. F.
4:30	165.00	28 1/4	1914			
5:00	165.00	28 1/4	1914	75	178	No. 4 Well static 68' below air pipe Shut down Wells 6, 7 & 8
5:05						
5:06	95.00				120	
5:07	96.00				107	
5:08	91.00				104	
5:09	90.00				101	
5:10	88.00				99	
5:11	85.00					
5:12	84.00				95	
5:15	80.00			72		
5:20	77.00				93	
5:25	73.00					
5:30	70.00			69	90	
5:35	66.50					
5:40	64.50				82	
5:45	63.00			65		
5:50	61.00					
6:00	58.00					
6:10	55.00					
6:20	53.00				75	
6:30	52.00			56		No. 4 Well Static 54' below air pipe
6:40	51.00					
6:50	50.00					
7:00	49.00				70	
7:10						No. 4 Well static 59.55 below air pipe
7:16				49 1/2		

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STATE OF IOWA
IOWA GEOLOGICAL SURVEY
GEOLOGY ANNEX
IOWA CITY

Results of Pumping Test
Made on Dubuque City Well 8
Dubuque, Iowa
July 19-20, 1946

Name: Dubuque City Well 8

Location: $CSL \ 32\frac{1}{2} \ 32\frac{1}{2}$ Sec. 7, T. 39 N., R. 3 E. Dubuque County.

Elevation: Drilling curb, 610.0 feet above sea level.

Owner: City of Dubuque.

Contractor: Varner Well Drilling Company.

Drillers: Ralph Floyer, Mr. Faber.

Drilling dates: Started February 19, 1946 Not yet finished.

Present depth: 1640 feet.

Casing and hole data:

145'8" of 30-inch casing from 0' to 145'8"
78'5" of 26-inch liner from 325'7" to 404'
509' of 16-inch pipe from 0' to 509'. Cemented in from bottom to top with
882 sacks of cement.
1131 feet of open 15-inch hole from 509 to 1640 feet.

Chief aquifer: Cambrian sandstones.

Test Pump: Turbine, setting 170 feet. Powered by 150 h.p. motor.

Water level measurements: Reference point for water level measurements during test
was base of pump 610.00 feet above sea level.

Discharge measurements: Discharge rate obtained by use of $8\frac{1}{2}$ -inch orifice in
10-inch standard pipe.

Temperature measurements: The temperature of the water was measured at the end of
15 feet of 10-inch discharge pipe.

Note: City wells 6 and 7 were pumped during the entire pumping test except from
9:35 AM to 2:00 PM CST on July 19th. Well 7 was pumped at the rate of about
2,000 gallons per minute. Well 6 was pumped at the rate of about 1400 GPM.

Pumping Test No. 1 Made on Dubuque City Well 8. July 19-20, 1946

Time CST	Depth to Water (feet)	Discharge Orifice (inches)	(GPM)	Temp. O F.	Remarks
July 19					
6.55 AM	40.50				Non-pumping water level.
7.00	40.52				
7.10	40.55				
7.17	40.57				
7.33	40.63				
7.58	40.67				
8.16	40.78				
8.35					Pumping started.
8.40					
9.52	153.52				
8.55	153.50	7 1/2	990	60 3/4	Water very dirty red, little sand.
8.56	154.24				
8.59	154.55	7 1/2	970	60 3/4	Water very dirty red.
9.04	155.02				
9.10	155.58	7 1/2	970	60 3/4	Water very dirty red.
9.15	155.99				
9.20	156.17				
9.26	156.31				
9.30					
9.35	55.35				Pumping stopped.
9.37	54.35				Recovery Measurements.
9.38	53.42				
9.39	52.80				
9.40	52.13				
9.41	51.57				
9.43	50.64				
9.44	50.31				
9.45	50.00				
9.50	48.72				
9.55	47.75				
10.00	47.10				
10.05	46.58				
10.10	46.12				
10.15	45.80				
10.22	45.43				
10.28	45.13				
10.50	39.10				
11.51					Pumping started
11.55	125				
12.05 PM	155.82	8 3/4	1070		Water dirty red
12.11	157.90			60 3/4	
12.15	158.49				
12.20	159.11	8 5/8	1060	61	Water clearing somewhat.
12.25	159.53				
12.30	159.86				
12.35	160.08				
12.41	160.35				
12.45	160.61				
12.50	160.65	8 1/2	1050	61	Water clearing somewhat.
12.55	160.77				
1.00	160.81				
1.05	160.96				
1.10	161.08				
1.15	161.04	8 1/2	1035	61	Water has red tint.

Time CST	Depth to Water (feet)	Discharge		Temp. ° F.	Remarks
		Orifice (inches)	(GPM)		
July 19					
1.18 PM	161.14				
1.20	161.06				
1.22	161.12				
1.25	161.14				
1.30	161.15				
1.35	161.18				
1.40	161.30				
1.45	161.25				
1.50	161.31	8½	1035	61	Water has red tint, trace of fine sand.
1.55	161.32				
1.57	161.25				
1.58	161.15				
1.59	161.26				
2.00	161.24				
2.01	161.30				
2.02	161.28				
2.04	161.16				
2.05	161.14				
2.07	161.21				
2.10	161.28				
2.15	161.39				
2.20	161.51				
2.25	161.85				
2.30	162.00				
2.33	162.26				
2.35	162.31				
2.41	162.70				
2.45	162.81	8½	1035	61	Water has red tint, trace of fine sand.
2.50	163.05				
2.55	163.32				
3.00	163.58				
3.05	163.75				
3.10	163.92				
3.15	164.10				
3.20	164.27				
3.25	164.55				
3.30	164.73				
3.35	164.92				
3.40	165.05				
3.45	165.09				
3.50	165.25				
3.55	165.57				
4.00		7	950		Decrease discharge rate.
4.02	157.85				
4.05	158.48				
4.07	159.98				
4.10	160.21	7½	965	61	Water has pink tint, some fine sand.
4.30	160.62				
4.51	161.10				
5.00	161.20				
6.37	162.72	7½	965	61	Water has slight pinkish tint, fine sand.
6.53	163.00				
7.07	163.17				
7.50	163.59	7 1/8	960	61	Water almost clear

Time CST	Depth to Water (feet)	Orifice (inches)	(GPM)	Temp. O F.	Remarks
July 19					
8.58	164.16				
9.10	164.22				
9.20	164.26				
9.40	164.41				
9.50	164.52				
10.00	164.55				
10.10	164.63				
10.55	165.02	7	950	61	Water slightly cloudy
11.10	164.92				
11.20	165.04				
11.30	165.12	7	950		
11.45	165.13				
12.00	165.24				
July 20 12.15 AM	165.30				Water clear, trace offine sand
12.25	165.35	7	950	61	Water sample collected.
12.29					Pumping stopped.
12.29.35	100				Recovery measurements.
12.30	81.15				
12.31	75.50				
12.32	71.20				
12.33	68.30				
12.34	66.35				
12.35	64.87				
12.36	63.62				
12.37	62.70				
12.38	61.85				
12.39	61.16				
12.40	60.51				
12.41	60.00				
12.42	59.50				
12.43	59.02				
12.44	58.57				
12.45	58.22				
12.46	57.86				
12.47	57.55				
12.48	57.24				
12.49	56.93				
12.50	56.60				
12.52	56.10				
12.53	55.84				
12.54	55.60				
12.57	55.08				
1.00	54.57				
1.02	54.24				
1.04	53.94				
1.06	53.68				
1.08	53.40				
1.10	53.16				
1.13	52.85				
1.15	52.63				
1.17	52.34				
1.19	52.22				
1.21	52.04				

Time CST	Depth to Water (feet)
July 20	
1.23 AM	51.86
1.25	51.68
1.28	51.45
1.31	51.25
1.35	50.95
1.38	50.75
1.41	50.56
1.45	50.34
1.50	50.08
1.55	49.83
2.00	49.60
2.05	49.38
	49.38
8.18	44.81

City of Dubuque Well #8 - September 16-17, 1946

TIME	DEPTH TO WATER	PROD. GPM	TEMP. O F	REMARKS
Sept. 16 9.18 A.M.	27.60			(Reference point is base of pump about 1.5' above T. C.)
9.20				Pumping started
9.28		38" 2220	66½ F.	Water dirty red. (Thermometer #5)
9.35	126.0			(Well #7 on at 9.30AM)
9.37		2175	66	Water very dirty red
9.39	128.42			
9.45	128.07			
9.47		36½ 2175	65½	Water very dirty red
9.48	128.31			
9.57	128.94			
10.00		2175	65½	Water very dirty red, sandy
10.05	129.90			
10.10	130.72	2160		Water clearing somewhat
10.15	131.40			
10.25	132.55	2153	65½	
10.30	132.98	2145		
10.44	134.47	2140		
10.51	135.10	2130	65	
11.03	136.18	2123	65	
11.14	136.70	2115	65	Water has red tint, some fine sand
12.10 PM		2100	65	Water has red tint
12.12	139.82			
12.23	140.17	2093	65	
12.36	140.61	2078	65	
12.45	141.00	2078	65	Water less pinkish
12.55	141.28		65	
1.00 PM	141.40	2078		
1.25	142.12	2072	64	Water slightly cloudy, trace of fine sand.
1.37	142.46	2070	to	
1.53	142.80	2063	64	
2.00	143.08	2055	64	Slightly cloudy
2.30	143.7			Readings taken with airline
3.00	144.2			
3.19	145.4			Airline 25 ¾ = 144.25 + 1.2 = 145.4
3.30	146.2	2040	64	Airline 25 = 145 + 1.2 = 146.2
3.45	146.2	2040		Airline 25 145 1.2 146.2
4.00	146.2	2040	64	Airline 25 145 1.2 146.2 Med. Clear
4.17	146.2			
4.27	146.3	2040		Readings with electric line
4.48	146.65	2032		
5.00	146.6	2032	63	Medium clear
5.15	147.38	2023		

TIME	DEPTH TO WATER	PROD. GPM	TEMP. O F	REMARKS
5.29	117.80	2023	63.5	
5.46	118.22	2014		
5.59	118.16	2014	63	
6.14	118.72	2014		
6.30	118.00	2005		Time out Readings with airline
7.00	118.00	1998		
7.32	119.09	2005	63	
7.45	119.18	2005		
7.59	119.24	2005	63.5	
8.13	119.20			
8.29	119.40	2005		Water clear, trace of fine sand
8.45	119.37	2005		
8.59	119.48	1998		
9.15	119.48	1998		
9.30	150.6	1998		
10.00	150.1	1998		(Well 27 runs from 6' to 7' above level)
10.30	150.6	1998		
11.00	150.6	1998		
11.30	151.1	1998		
12.00AM	151.1	1998		
Sept. 17				
12.30 AM	151.1	1998		
1.00	151.1	1998		
1.30	152.1	1998		
2.00	152.1	1990		
2.30	152.1	1990		
3.00	152.1	1990		
3.30	152.1	1990		
4.00	152.1	1990		
4.30	151.6	1982		
5.00	151.6	1982		
5.30	151.6	1982		
6.00	151.6	1982		
6.30	151.6	1982		
7.00	151.6	1982		
7.31 A	151.6	1980	62	Water clear, trace of fine sand
8.06	151.75	1975		
8.20	151.80	1975		
8.30	151.80	1975		
8.58	151.80	1975		
9.20	151.95	1975		
9.25		1975	62	Water sample collected (G-118). Water clear, trace of fine sand.
9.30				Pumping stopped
9.31	89.09			Recovery measurements
9.32	81.26			
9.33	80.50			
9.34	77.90			
9.35	75.89			

RECORD - WELL CAPACITY TEST

JOB City Well No. 8 LOCATION Dubuque, Iowa DATE 8-25-46
 PUMP SETTING 170 FT. ABOVE 170 FT. STATIC HEAD 30 FT.

Time	Pressure	P.M.	110	Drawdown	Pumping	Temp.	Remarks
2.10	37 1/2	2090	37	203	133		
3.10	39 1/2		32	198	138		
3.40	31 1/2	2075	27	113	143		
4.10	39 1/2	2060	26	114	144	56	
4.40	32 3/4	2050	24	116	146		
5.10	32 1/2	2045	22	118	148		
5.40	32	2040	20	120	150		
6.10	31 3/4	2030	16	124	154		
6.40	31 3/4		16	124	154		
7.10	31 1/2	2018	15	125	154		
7.40	31 1/2	2010	15	"	"		
8.10	31 1/2		15	"	"		
8.40	30 5/8	1998	15	"	"		
9.10	30 5/8		15	"	"		
9.40	30 5/8		14	126	156		
10.10	30 3/4		14	"	"		
10.40	30 3/4		14	"	"		
11.10	30 3/4		14	"	"		
11.40	30 3/4		"	"	"		
12.10	30 1/2	1990	"	"	"		
12.40	30 1/2		"	"	"		
1.10	30 1/2	1980	"	"	"		
1.40	30 1/2		"	"	"		
2.10	30 1/2		"	"	"		

RECORD - WELL CAPACITY TEST

JOB City Well #8

LOCATION Dubuque, Iowa

DATE 8-24-46

PUMP SETTING

FT. APPLICABLE

FT. STATIC HEAD

FT.

Time	Pressure P.S.I.	P.M.	Altitude 110	Drawdown	Pumping Level	Temperature	Remarks
2.40	30½		11	126	156		
3.10	30½		"	"	"		
3.20	30½		"	"	"		
4.50	30½		"	"	"		
5.20	30½		"	"	"		
5.50	30½		"	"	"		
6.20	29 ¾	1965	"	"	"		
6.50	29 ¾		13	127	157		
7.30	29½	1958	13	127	157		
8.30	29½		12	128	158		
9.00	29 ¾		10	130	160		
9.30	29½		10	130	160	63	
10.00	29½		10	130	160		
11.00	29	1940	9	131	161		
12.00	29		8	132	162		
12.30	29		7½	133	163		
1.00	28 ¾	1930	7	133	163		
1.30	28 ¾		7	133	163		
2.00	28 ¾		7	133	163	62	
2.30	28½	1920	6	134	164		
3.00	28½		6	134	164		
3.30	28½	1915	6	134	164		
4.00	28½		5	135	165	62	
4.30	28½		5	135	165		

Test Run for Efficiency on No. 8 Well - Byron Jackson Pump - February 3, 1947

Time P.M.	Dynamic Head (Feet)				Input (Inches)	Gallons Pumped	Gallons Elec. per Meter		Volt- age	Amp.
	D.D.	Disc Press.	Plus Friction	Total			Minute	K.W.H.		
12:05	84.00	10.90	.00	94.90	0.				2400	37½
12:10	107.00	26.60	14.00	147.60						
12:15	114.00	27.00	14.00	155.00						
12:20	119.00	27.00	14.00	160.00	3.500	38000	2533	33	2400	38
12:25	120.00	27.00	14.00	161.00						
12:35	123.00	26.80	14.00	163.80	6.875	36625	2442	30	2367	38½
12:50	123.50	26.80	14.00	164.30	10.250	36625	2442	30	2367	37½
1:05	125.00	26.50	14.00	165.50	13.625	36625	2442	30	2367	38½
1:20	126.50	26.50	14.00	167.00	17.000	36625	2442	30	2367	37½
1:35	128.00	26.30	14.00	168.30	20.375	36625	2442	30	2333	38½
1:50	131.00	26.30	14.00	171.30	23.750	36625	2442	30	2333	38½
2:05	132.00	26.50	14.00	172.50	27.125	36625	2442	30	2333	37½
2:20	132.50	26.50	14.00	173.00	30.375	35250	2360	30	2333	39½
2:35	133.00	26.30	14.00	173.30	33.625	35250	2360	30	2367	38½
2:50	134.00	27.00	14.00	175.00	36.875	35250	2360	30	2367	38½
3:05	133.00	26.50	14.00	173.50	40.125	35250	2360	30	2400	38
3:20	133.50	26.50	14.00	174.00	43.375	35250	2360	33	2400	38
3:35	134.00	26.50	14.00	174.50	46.625	35250	2360	30	2367	38½
3:50	135.00	26.50	14.00	175.50	49.875	35250	2360	30	2367	38½
Total						541,125		456		
Average 129.53								2405		
Plus Friction Equals 10.5 Column - 2.5 Bend - Gauge Elev. 1.0										

Summary: Test Run Byron Jackson Pump - February 3, 1947

<u>Description</u>	<u>Guarantee</u>	<u>Test</u>
Total Number of K. W. Hours	414.00	456
K.W.H. per hour	110.4	121.6
Elec. H. P. used	150.45	163.0
Brake H. Power	135.4	146.7
Gallons per minute pumped	2100	2405
Total Dynamic Head - feet	190.0	170.1
Developed Horse Power	100.8	103.3
Overall Efficiency - Per cent	67.00	63.37
Pump Efficiency - Per cent	74.4	70.42
K.W.H. per thousand gallons	.876	.843

Test run by:

J. J. Hail, Superintendent
 J. W. Straub, Field Engineer
 Henry Schroeder, Pump Representative

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STATE OF IOWA
IOWA GEOLOGICAL SURVEY
 GEOLOGY ANNEX
 IOWA CITY

Water Level Measurements Made on Dubuque City Well #4
 in Connection with Pumping Tests Made on City Well #8
 Dubuque, Iowa
 September 16-17, 1946

Location: SE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 7, T. 89 N., R. 3 E.
 About 700 feet NW of well #8

Reference Point: The water level measurements during this period were referred to the hole in the air line, about 1.5 feet below land surface and at an elevation of 608.05 feet above sea level.

Time CST	Depth to Water (feet)	Time CST	Depth to Water (feet)
Sept. 16		4:52	56.54
9:07 AM	24.74	4:58	56.88
9:12	24.79	5:18	58.02
9:17	24.62 X	5:20	58.14
9:22	24.43	5:27	58.46
9:25	24.86	5:34	58.79
9:33	25.90	5:49	59.45
9:38	27.12	5:55	59.70
9:42	28.08	6:00	59.89
9:46	29.35	6:02	60.00
9:53	30.54	6:04	60.08
9:57	31.50	6:06	60.15
10:00	31.12 - 32.12 ⁷	6:08	60.21
10:04	32.78	6:10	60.23
10:07	33.65	6:12	60.27
10:12	34.12	6:15	60.29
10:17	35.04	6:18	60.32
10:22	35.87	7:30	59.55
10:27	36.72	7:44	59.50
10:32	37.32	9:39	59.48
10:37	38.01	Sept. 17	
10:42	38.63	7:50 AM	61.54
10:47	39.29	8:03	61.60
10:52	39.84	8:10	61.62
10:57	40.39	8:18	61.73
11:03	40.70	8:23	61.77
11:07	41.34	8:29	61.78
11:12	41.83	8:40	61.80
11:17	42.26	8:48	61.82
11:22	42.66	9:02	61.86
12:22 PM	46.68	9:07	61.88
12:40	47.58	9:12	61.90
1:20	49.24	9:18	61.90
2:55	52.13	9:20	61.90
3:00	52.50	9:25	61.92

5
 4/5
 24
 21
 48
 24
 27

3

-2-

Time GST	Depth to Water (feet)
9:30 AM	61.98
Well #8 stopped pumping	X
9:35	61.70
9:40	59.81
9:45	59.71
9:50	58.78
9:55	57.77
10:00	56.97
10:05	56.19
10:10	55.48
10:15	54.84
10:20	54.21
10:25	53.75
10:30	53.24
10:35	52.78
10:40	52.31
10:45	51.88
10:50	51.48
10:55	51.10
11:00	50.77
11:05	50.37
11:10	50.05
11:15	49.79
11:20	49.49
11:25	49.22

Note: Pumping was started at well #8 at 9:20 AM September 16 and continued until 9:35 AM September 17.

City well #7 was pumped throughout test at approximate rate of 2,000 g.p.m. City well #6 was pumped from 4:00 PM to 6:00 PM September 16 at approximate rate of 1,400 g.p.m.