

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington -----
District -----

Grinnell Pump Test 8-29-55

Time	Engine RPM	Pump RPM	P/W	Gpm	Temp OF	Remarks
10:00P						Slanted Pump
11:00	800	1450	378-6	680		
12:00P	800	1500	411-0	752		80°
12:30	800	"	411-0	750	75	
1:00	"	"	411-0	734		
						Spaced motor
1:30	900	1550	422-6	795		
1:45	"	"	"	"	76	
2:00	"	"	422-5	800		
2:30	"	"	422-0	800	76	
3:00	"	"	422-0	800	76	Water Gauge
3:30	"	"	"	790		
4:00	"	"	"	786		
5:00	925	1590		840		Line stuck
5:30	"	"		"		in hole - hole
6:00	"	"		"		P/W near
7:00	"	1600	439-6	930		Lowered bowls
7:30	"	"	445-0	"		2 turns
8:00	"	"	444-0	925		
9:00	"	"	438-0	"		
9:30	"	"	444-6	880		
10:00	"	"	"	880		Pulley broke on motor - Shut down
						Pump off to lower bowls Return 6 & 7:00
- Electric line stuck in hole -						

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington _____
District _____

City Well No. 7

Grinnell Pump Test 8:30-55

Time	Engine RPM	Pump RPM	P/w	Gpm	Temp OF	Remarks.
						Pulleys changed so as to revolve pump at higher speed
12:20 Pm			301.12			SWL
1:08			301.28			Using City electric line
1:45			301.22			MP - basing pump rim .70' above top csg. City use top csg. Top csg. 2 1/2' above 15.
2:10						Pump off.
2:18			341	500±		
2:20						Stopped pump
2:30						Pump on
2:36			350	580		
2:44			352.7	"		
2:55	700	1350	352.75	584		
3:00	700	1350	350	569		Written mess.
3:09						Repaired pump
3:12			370	760		
3:30	750	1350	375	760		
4:00	750	1450	379.6	735		
4:30	800	1550	414.6	875		
5:00	825	1600	424	900		
5:30	"	"	425.10	890		
6:00	"	"	426.8	"		
6:30	850	1650	455	970		
7:00	"	"	456	975		
7:30	875	1700	473.2	1017		
8:00	"	"	475	1015		Water Sample

Results of Pumping Test
Grinnell City Well No. 7
October 12-13, 1955

Name: Grinnell City Well No. 7

Location: SW NW sec. 16, T. 80 N., R. 16 W. Poweshiek County

Elevation: 1011 feet above sea level

Contractor: Thorpe Well Company, Des Moines

Depth: 2920'

Casing record: 19" casing cemented in hole from surface to about 2200'.

Test Pump: Turbine. 490' of 12" column and 6-stage bowls with 10' of suction pipe. Powered by 2 large diesel engines.

Discharge measurements: 6" Sparling meter set in discharge line. Discharge line was 10" with upturned 45° elbow at discharge end. Majority of measurements made by M. B. Starr, City Manager.

Temperature measurements: Made at end of discharge line.

Depth to water measurements: Majority made by Bernard Metherly, Water Superintendent.

Aquifer tested: Jordan and Mt. Simon sandstone.

Remarks: City well No. 5 was pumped at 300 g. p. m. continuously during pumping test.

Results: Drawdown was greater at comparable discharge rates than the drawdown of water from Jordan sandstone along. (See pump test results of August 27-30, 1955).

Future plans: Liner will be set opposite the Jordan sandstone and pumping test conducted on water from the Mt. Simon sandstone.

Data collected: during pumping test by W. L. Steinhilber.

obs. - W.Z.S.

9-280

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington
District

Grinnell City Well # 7

10/12/55

Time	R.P.M.		Pumping level	gpm	Temp.	Remarks
	Engine	Pump				
10:10a	725	1325	304.75	SWL		start pumping
10:30	"	"	371-0	402		
11:00	"	"	369	418	74°F	water muddy
11:30	"	"	367	429		do
12:00	"	"	367	433		water cloudy & sand
12:30	"	"	365-5	435		do
1:00	"	"	365-8	440	75°F	do
1:30	750	1400	386-8	530		do
2:00	"	"	386-11	525	75°F	do
2:30	"	"	385-2	530		do
3:00	800	1500	412-0	632		do water sample
3:30	"	"	411-10	634		do taken for
4:00	"	"	412-7	637		do chem. analysis
4:30	850	1550	444-9	720		do
5:00	"	"	445-2	720		do
5:30	"	"	445-2	710		do
6:30	"	"	445-6	710		do
7:00	900	1600	472-10	762		do
7:30	"	"	474-10	754	75°F	do
8:00	"	"	475-1	755		water clear
8:30	"	"	475-0	756		do
9:00	"	"	475-0	756		do
9:30	"	"	474-9	750		do
10:00	"	"	475-4	756		do
10:30	"	1625	482-6	777		do
11:00	"	"	482-6	780		do
11:30	910	1640	487-0	789		do
12:00	"	"	486-10	775		do
12:30	"	"	486-8	780		do
1:00	"	"	484-2	780		do
1:30	"	"	483-9	780		do
2:00	"	"	483-5	775		do

obs. W.Z.S.

Results of Pumping Test
Grinnell City Well No. 7
November 11 and 12, 1955

Name: Grinnell City Well No. 7

Location: SWNW sec. 16, T. 80 N., R. 16 W. (Poweshiek County)

Elevation: 1011 feet above sea level

Contractor: Thorpe Well Company, Des Moines, Iowa

Depth: 2970'

Casing Record: 19" from 0-700' (cemented); 12" from 675 - 2000' (cemented); 10" from 1975 - 2685, swedged in top and bottom (this column was added last to shut-off the Jordan St. Lawrence aquifer -- will be perforated after test); 10" from 2685 to 2700; 8" from 2660 to 2815'; ^{6"}from 2768' to 2970', bottom 110 ft. perforated.

Test Pump: Turbine, powered by two large diesels. Set at 560'

Discharge measurements and depth to water measurements same as previous tests, made by B. Matherly, Water Superintendent.

Temperature Measurements: made at end of discharge line.

Aquifer Tested. Mt. Simon sandstone

Results: drawdown was extreme - 259' dd. pumping at only 425 g.p.m. after 8 hours. (See results of previous tests on 8/27-30 & 10/12-13/55)

Future plans: Plug to be set at ft. and casing opposite Jordan sandstone to be perforated from ft. to ft.

Data collected by W. L. Steinhilber

Remarks: Matherly made preliminary chloride analysis. Very high, over 2600 p.p.m.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington
District

Grinnell City Well # 7

Pumping Test 11/11-11/12/55

DATE	Hour	RPM		W/L	D/W	Q (gpm)	Temp.	REMARKS
		Engine	Pump					
11/11	12 N.						63°F	START PUMP
	12:30			391.2	90.2			S.W.L. = 301'
	1:00	750	1400	425.5	124.5	250		
	1:30	800	1490	448.7	147.7	290		Muddy & sand
	2:00	800	1490	448.2	147.2	290		Muddy
	2:30	850	1560	463.3	162.3	350	77°F	clearing
	3:00	"	"	462.8	161.8	345		
	3:30	"	"	462.7	161.7	345	77°F	
	4:00	"	"	462.7	161.7	350		
	4:30	"	"	-		405		
	5:00	"	"	-		405		
	5:30	900	1600	548.3	247.3	405		
	6:00	"	"	548.3	247.3	405		
	6:30	"	"	-		405		
	7:00	"	"	544.6	243.6	405		
	7:30	"	"	544.6	243.6	405		water sample
	8:00	910	1650	560(?)	259.	425	77	little cloudy
	8:00							PUMP off
	8:10			303	257			Recovery
11/12	9:30a			295				W/L after 13 has higher than original static W/L.

obs: B. Matherly - Town Water Supt.
Data collected by W. L. Steinhilber
SWL = 301'