

Layne-Western Company, Inc. ^{w#42504} Well Information

Omaha, Nebraska

1. Contract City of Sioux City, Iowa Date 7-24-90
 2. City and State Sioux City, Iowa Driller Statz/Hrabik
 3. Well No. 11 at test hole No. 90-1 Well location (attach map)
Behind Water Treatment Plant

4. Work completed..... No of man hours as charged to job on time sheet.....

5. MATERIAL:	LENGTH	DIA.	GAUGE OR WALL THICKNESS	MATERIAL	TYPE	NO. OF OPENINGS
6. Screen	<u>130'</u>	<u>18"</u>	<u>7 gauge</u>	<u>304 SST</u>	<u>Johnson</u>	<u>.028</u>
7. Inner Casing	<u>187'</u>	<u>18"</u>	<u>.375</u>	<u>Steel</u>	<u>ASTM A 53-Grade B</u>	
8. Outer Casing	<u>175'</u>	<u>36"</u>	<u>.375</u>	<u>Steel</u>	<u>Structural</u>	

9. 40 tons of gravel used in the well. Size Northern Gravel Ø

10. Test of well. Did you use test or permanent pump? Test 12RKHC 4
Size of Bowl Stages

11. Size of orifice 8 inch by 6 inch. Orifice tube reading 65.0 inches.

12. Pumping test — measurements from ground level:

TIME	G.P.M.	STATIC	DRAWDOWN	PUMPING LEVEL
See Attached Sheets				
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13. Recovery in 5 minutes 63.75', in 30 minutes 54.58'

14. Did you seal bottom of well? yes. Thickness 3/16 inches, material 304 SST

15. Well underreamed? no From.....feet to.....feet,feet to.....feet.

16. If all screen was not placed at bottom, state how it was spaced.
 From 185 feet to 315 feet; from.....feet to.....feet; from.....feet to.....feet.

17. Depth of well from ground level to top of plug 315' Size of drilled hole 42" x 35"

18. Was cement placed around or between any of the casings? yes

19. If so, state where, how much and method used. 42" x 36" - 0 to 180; 21 yards; 36" x 18" - 0 to 150; 32 yards; Tremie Method

CONTRACT City of Sioux City, Iowa

Well No. 11

w#42504

Log of well from ground level:

Feet	to	Feet	Formation
0	to	2	Fill
2	to	10	Fine sand
10	to	25	Gray clay-fill
25	to	35	Fine sand-clay streaks
35	to	60	Fine sand, gravel, pebbles
60	to	130	Sandstone
130	to	155	Gray shale
155	to	180	Sandstone, shale streaks
180	to	218	Fine-medium sandstone
218	to	228	Gray shale with sandstone
228	to	259	Fine-medium sandstone
259	to	262	Gray shale
262	to	295	Fine-medium sandstone
295	to	315	Fine sandstone
	to		
	to		

