Vinton

May 14, 1952

Mr. G. L. Ziemer
City Engineer
Vinton, Iowa

Dear Mr. Ziemer:

We are sending you data collected during the recent pumping test at Vinton and certain computations based thereon.

From the drawdown and recovery data we computed values for coefficients of transmissibility and storage which were 11,000 gallons per day per foot and 1 x 10^{-5}, respectively. Using these values, we computed the following drawdowns for various durations and rates of pumping:

Discharge rate = 485 gpm
Time of discharge = 6 months

Distance from pumped well (ft.)	Drawdown (ft.)
1	115
25	90
150	70
300	68
2,000	50

Discharge rate = 1,000 gpm
Time of discharge = 6 months

Distance from pumped well (ft.)	Drawdown (ft.)
1	220
25	170
300	140
2,000	100

Discharge rate = 1,000 gpm
Time of discharge = 2,000 days

Distance from pumped well (ft.)	Drawdown (ft.)
1	265
25	190
300	160
2,000	123

The serious nature of interference between wells at Vinton is apparent. To avoid appreciable interference, the distance between wells must be large. In view of the fact that the present pump bowls are only about 100 feet below the surface, it appears that lower settings would increase the well capacities considerably. The amounts of drawdown would be considerable with continuous pumping at increased rates of withdrawal and allowance for this should be made in deciding upon the level to which to lower the pump bowls. The foregoing drawdown computations should aid in making this decision. I am enclosing a nomograph for computing drawdowns for various rates and durations of pumping if you care to make additional ones.

Feel free to call on us for any additional assistance which we can give you in solving your water-supply problem.

Very truly yours,

C. Richard Murray

Enclosures

CRM:emh

Drawdown and Recovery Measurements
West Well
Pumping rate - 485 g.p.m.

Time	Water Level	Remarks
4-29-52		
10:45 am	51.74	
10:51	51.73	
11:15	51.64	
11:19	58.26	
11:25		Pumping started
11:28	64.82	
11:31	67.20	
11:35	70.37	
11:38	73.00	
11:43	72.53	
11:45½	73.07	
11:48½	73.72	
11:53	74.42	
11:58	75.20	
12:04½ pm	76.10	
12:07	76.36	
12:12½	76.97	
12:18	77.51	
12:25½	78.12	
12:32	78.61	
12:39	79.03	
12:49	79.79	
1:41	82.05	
1:49	82.32	
1:51	82.32	
1:54	82.45	
2:09	82.85	
2:12	82.90	
2:43	83.75	
3:08	84.27	
3:31	84.66	
4:09½	85.25	
4:43	85.50	
5:15	85.87	
5:17	85.89	
7:52½	87.29	
7:55	87.28	
9:04½	87.81	
9:06½	87.82	
4-30-52		
2:04½ am	91.33	
2:11	89.82	
2:13	89.40	
2:15½	89.32	
2:18 am	91.72	
2:26	89.35	
2:30		Pumping ceased
2:32	77.56	
2:33	76.18	
2:35	72.85	
2:37½	72.62	
2:39	71.93	
2:41	71.09	
2:43	70.35	
2:45	69.75	
2:47	69.17	
2:49	68.69	
2:51	68.35	
2:53	67.84	
2:55	67.45	
2:57	67.12	
3:00	66.62	
3:02	66.33	
3:05	65.92	
3:08	65.55	
3:12	65.08	
3:16	64.68	
3:18	64.48	
3:23	64.01	
3:28	63.61	
3:34	63.16	
3:41	62.68	
3:49	62.20	
3:58	61.70	
4:08	61.23	
4:18	60.79	
4:30	60.31	
4:44		East pump on
4:45	61.04	
4:45½		East pump off
4:46	61.00	
4:48	60.88	
4:50	60.63	
5:05	59.35	
5:26	58.63	
5:28	58.58	
5:46	58.15	

Drawdown and Recovery Measurements
East Well
Pumping rate - 485 g.p.m.
in West Well

Time	Water Level	Remarks
4-29-52		
11:02 am	50.92	
11:03½	50.92	
11:05		Pumping started
11:26	50.48	
11:28	53.48	
11:29½	52.60	
11:34	65.09	
11:35½	65.11	
11:37	61.65	
11:38	63.80	
11:40	65.80	
11:41½	66.11	
11:43	68.13	
11:47	68.98	
11:50½	69.69	
11:55½	70.54	
11:59¾	71.17	
12:05½ pm	71.66	
12:10½	72.42	
12:15	72.90	
12:20½	73.33	
12:25	73.57	
12:30½	74.13	
12:35½	74.48	
12:40½	74.82	
12:45½	75.18	
12:50½	75.46	
1:41	77.68	
1:51	78.00	
2:00	78.29	
2:15	78.68	
2:30	79.06	
2:45	79.52	
3:00	79.83	
3:15	80.13	
3:30	80.40	
3:45	80.64	
4:05	80.95	
4:25	81.13	
4:48	81.41	
5:10	81.66	
5:31	81.90	
7:52	83.14	
7:58	83.20	
8:00	83.21	
9:00	83.66	
9:02	83.66	
4-30-52		
2:00 am	85.19	
2:13	85.23	
2:25	85.28	
2:30		Pumping ceased
2:31	79.50	
2:33	70.60	
2:35	62.56	
2:37	63.70	
2:40	71.00	
2:43½	69.72	
2:47½	68.56	
2:49	68.20	
2:51	67.73	
2:53	67.33	
2:55	66.94	
2:58	66.44	
3:01	65.97	
3:04	65.56	
3:08	65.04	
3:12	64.72	
3:16	64.16	
3:20	63.78	
3:24	63.42	
3:30	62.94	
3:37	62.43	
3:40	62.22	
3:47	61.79	
3:50	61.61	
3:55	61.34	
4:02	60.98	
4:05	60.71	
4:13	60.46	
4:26	59.92	
4:43	59.30	
4:44		East pump on
4:45½		East pump off
4:48½	60.51	
5:02	58.96	
5:15	58.42	
5:33	57.89	
5:45	57.59	