

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/2-36K2

Type of record: Driller's log. Altitude: 732 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	8	8	
Clay, blue-----	30	38	
Sand, fine-----	6	44	
Sand, red-----	16	60	
Sand-----	19	79	
Clay-----	16	95	
Clay and pack sand-----	15	110	
Sand, very fine-----	13	123	
Gravel and sand-----	34	157	

Well 38/2-36K3

Type of record: Driller's log. Altitude: 725 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	6	6	
Sand-----	4	10	
Gravel-----	30	40	
Sand, gray-----	8	48	
Clay, hard-----	32	80	
Clay, soft-----	5	85	
Clay, sandy-----	29	114	
Sand, dirty-----	19	133	
Gravel-----	51	184	Sand at 184 feet.

Well 38/3-14J1

Type of record: Driller's log. Altitude: 794 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	4	4	
Sand, yellow-----	11	15	
Sand and gravel; yellow-----	15	30	
Sand, yellow-----	20	50	
Sand, coarse, yellow-----	10	60	
Sand, gray-----	23	83	

Well 38/3-17K1

Type of record: Driller's log. Altitude: 816 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	18	18	
Clay-----	18	36	
Sand-----	56	92	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/3-20J1

Type of record: Driller's log.

Altitude: 811 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	4	4	
Gravel-----	46	50	
Clay-----	6	56	
Gravel and coarse sand-----	39	95	

Well 38/3-21Q4

Type of record: Driller's log.

Altitude: 783 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Gravel, sandy, dirty-----	30	30	
Gravel and sand-----	4	34	
Sand, coarse, with small gravel--	34	68	
Gravel with coarse sand; clean---	14	82	
Gravel and sand; with traces of clay-----	1	83	

Well 38/3-21R1

Type of record: Driller's log.

Altitude: 787 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	30	30	
Sand, fine-----	15	45	
Sand-----	13	58	

Well 38/3-24F5

Type of record: Driller's log.

Altitude: 787 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil and silt-----	2	2	
Sand, fine, red and brown, with trace of gravel and silt-----	8	10	
Silt, brown, with trace of clay--	1	11	
Sand, medium, light-brown, with trace of coarse sand and gravel-----	18	29	
Sand, medium to coarse, light- brown, with trace of gravel----	3	32	
Sand, medium, light-brown, with trace of gravel-----	10	42	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/3-26D3

Type of record: Driller's log.

Altitude: 786 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil; silt-----	2	2	
Silt, sand, and gravel; red and brown-----	2	4	
Sand, fine, light-brown-----	20	24	
Sand, medium, light-brown, with trace of gravel-----	4	28	
Sand, medium to coarse, light- brown, with trace of silt and gravel-----	3	31	
Sand, fine to medium, light- brown-----	10	41	

Well 38/3-27G1

Type of record: Driller's log.

Altitude: 764 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil; silt-----	2	2	
Silt, sand, and gravel-----	3	5	
Sand, medium, light-brown-----	20	25	
Sand, medium, light-brown, with trace of gravel-----	13	38	
Sand, coarse, light-brown, with trace of gravel-----	7	45	
Sand, medium, light-brown, with trace of silt-----	9	54	
Sand, medium, light-brown, with trace of gravel-----	2	56	

Well 38/3-27G4

Type of record: Driller's log.

Altitude: 762 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil; silt-----	2	2	
Silt, clayey, gravelly, red and brown-----	2	4	
Sand, medium, clayey, silty, dark-reddish-brown-----	4	8	
Sand, medium, light-brown, with trace of silt-----	17	25	
Sand, coarse, and gravel; light- brown-----	3	28	
Sand, medium, light-brown-----	5	33	
Sand, coarse, and gravel; light-brown-----	7	40	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/3-27M1

Type of record: Driller's log.

Altitude: 752 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil; silt-----	2	2	
Sand, fine, silt, light-brown----	5	7	
Sand, fine, silty, gray, with trace of fine gravel-----	5	12	
Sand, coarse, gray, with gravel--	6	18	
Gravel, loose, silty, sandy, gray-----	2	20	

Well 38/3-28B1

Type of record: Driller's log.

Altitude: 777 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Till and sand-----	55	55	
Sand, fine, and gravel-----	31	86	
Clay-----	13	99	
Sand and gravel-----	20	119	

Well 38/3-28K2

Type of record: Driller's log.

Altitude: 763 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil; silt-----	2	2	
Clay, silt, sand, and gravel----	4	6	
Sand, medium, silty, gravelly, brown-----	2	8	
Sand, fine, light-brown, with trace of gravel-----	12	20	
Sand, medium, light-brown-----	10	30	
Sand, fine, light-brown-----	4	34	
Sand, coarse, gravelly, light- brown-----	9	43	

Well 38/3-28L2

Type of record: Driller's log.

Altitude: 764 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil; silt-----	2	2	
Sand, brown, silt, and gravel----	2	4	
Sand, medium, light-brown, with trace of gravel-----	11	15	
Sand, fine, light-brown-----	4	19	
Sand, medium, light-brown, with trace of gravel-----	19	38	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/3-28L2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, coarse, light-brown, with trace of gravel-----	5	43	
Sand, coarse, gravelly, light- brown-----	7	50	

Well 38/3-28M1

Type of record: Driller's log.

Altitude: 764 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil; loose sand and silt----	2	2	
Sand, fine, reddish-brown-----	4	6	
Sand, coarse, gray and brown, with trace of gravel-----	3	9	
Sand, medium, gray and brown, with trace of gravel-----	9	18	
Gravel, medium, sandy-----	3	21	
Sand, medium, light-brown-----	10	31	
Sand, coarse, light-brown, with trace of gravel-----	5	36	
Sand, coarse, brown, with trace of gravel and silt-----	16	52	

Well 38/3-28M4

Type of record: Driller's log.

Altitude: 762 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil; silt-----	2	2	
Sand, fine, reddish-brown, with trace of gravel-----	3	5	
Sand, medium, light-brown, with trace of gravel-----	10	15	
Sand, medium, gravelly, light- brown, with trace of silt-----	5	20	
Sand, medium, light-brown-----	3	23	
Sand, medium, light-brown, with trace of gravel and silt-----	4	27	
Sand, medium, light-brown, with trace of fine gravel-----	8	35	
Sand, coarse, brown, with trace of gravel-----	5	40	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/3-28N1

Type of record: Driller's log. Altitude: 752 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	14	14	
Sand and gravel-----	28	42	
Sand, coarse, and gravel-----	10	52	

Well 38/3-29D1

Type of record: Driller's log. Altitude: 797 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	24	24	
Clay, yellow-----	6	30	
Sand and gravel; yellow-----	65	95	

Well 38/3-29J4

Type of record: Driller's log. Altitude: 745 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil, medium, silty-----	2	2	
Gravel, silty-----	1	3	
Sand, medium, dark-brown, with trace of fine gravel-----	5	8	
Sand, fine, light-brown-----	12	20	

Well 38/3-29M1

Type of record: Driller's log. Altitude: 764 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil; silt-----	3	3	
Gravel, silty, sandy-----	1	4	
Sand, medium, silty, brown-----	5	9	
Sand, medium, silty, reddish- brown-----	4	13	
Sand, medium, silty, reddish- brown, with trace of gravel----	1	14	
Sand, medium, silty, dark-brown--	5	19	
Sand, medium, silty, dark-brown, with trace of gravel-----	5	24	
Sand, medium to coarse, light- brown, with trace of gravel----	7	31	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/3-30E2

Type of record: Driller's log.

Altitude: 721 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Silt-----	1	1	
Gravel, clayey, sandy-----	3	4	
Sand, medium to coarse, silty, light-brown-----	11	15	
Sand, medium to coarse, silty, yellow-----	2	17	
Sand, coarse, gray, with trace of gravel-----	1	18	
Gravel, sandy, with small boulders-----	1	19	
Gravel, coarse, with small boulders and sand-----	13	32	
Sand, medium, gray-----	3	35	
Sand, medium to coarse, gray, with trace of gravel-----	5	40	
Sand, coarse, gray, with trace of gravel-----	5	45	
Sand, medium to coarse, gray-----	13	58	
Sand, medium to coarse, gray, with trace of gravel-----	2	60	

Well 38/3-30F1

Type of record: Driller's log.

Altitude: 719 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Silt, black-----	2	2	
Sand, fine, silty, yellow and brown-----	6	8	
Sand, fine, light-brown-----	12	20	

Well 38/3-30J2

Type of record: Driller's log.

Altitude: 765 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil; silt-----	2	2	
Sand, fine, reddish-brown, with trace of gravel-----	3	5	
Sand, fine, brown, with trace of gravel-----	4	9	
Sand, light-brown-----	10	19	
Sand, light-brown, with trace of gravel-----	20	39	
Sand, fine, light-brown-----	6	45	
Sand, coarse, gravelly, light- brown-----	1	46	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/3-30M1

Type of record: Driller's log.

Altitude: 726 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	16	16	
Sand, fine, yellow-----	14	30	
Clay, yellow-----	6	36	
Sand, yellow-----	7	43	

Well 38/3-30R1

Type of record: Driller's log.

Altitude: 755 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	54	54	
Clay-----	96	150	
Gravel-----	13	163	

Well 38/3-31B2

Type of record: Driller's log.

Altitude: 740 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	31	31	
Clay, blue-----	14	45	
Sand-----	5	50	

Well 38/3-31D1

Type of record: Driller's log.

Altitude: 730 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	3	3	
Sand and gravel-----	22	25	
Sand and gravel; with strips of hardpan-----	20	45	
Sand and gravel; with traces of clay-----	10	55	
Sand-----	7	62	
Clay-----	33	95	
Clay with strips of sand-----	20	115	
Sand with strips of clay-----	9	124	
Sand-----	16	140	
Sand with gravel-----	47	187	Boulders with clay at 187 feet.

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/3-31D2

Type of record: Driller's log.

Altitude: 730 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, gravelly-----	4	4	
Sand and gravel-----	24	28	
Clay, hard-----	2	30	
Sand and gravel-----	31	61	
Clay, soft, gray-----	29	90	
Sand and gravel; with some small strips of clay-----	48	138	
Clay, gravelly, with some boulders-----	5	143	
Sand, medium to coarse, with some small gravel-----	44	187	Gray clay at 187 feet.

Well 38/3-31E1

Type of record: Driller's log.

Altitude: 732 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, sandy, with occasional boulders-----	15	15	
Boulders and fine gravel-----	4	19	
Clay, sandy-----	17	36	
Boulders-----	1	37	
Sand, fine, and gravel; with some clay-----	9	46	
Sand, fine, with little clay-----	12	58	
Gravel and boulders-----	1	59	
Sand, fine-----	75	134	
Sand, coarse-----	10	144	
Sand and gravel-----	29	173	
Sand, gravel, and clay balls, with few boulders-----	16	189	
Clay, gritty, gray, with some boulders-----	3	192	
Boulders-----	2	194	
Clay, gritty, blue, with some boulders-----	56	250	Blue shale at 250 feet.

Well 38/3-31E2

Type of record: Driller's log.

Altitude: 732 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Soil-----	2	2	
Sand and gravel-----	14	16	
Clay-----	112	128	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/3-31E2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	2	130	
Sand and gravel-----	50	180	Clay at 180 feet.

Well 38/3-31F1

Type of record: Driller's log.		Altitude: 733 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel; yellow-----	40	40	
Hardpan; blue clay and gravel----	10	50	
Sand, white-----	11	61	

Well 38/3-31F4

Type of record: Driller's log.		Altitude: 734 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	17	17	
Clay-----	29	46	
Sand-----	11	57	

Well 38/3-31G1

Type of record: Driller's log.		Altitude: 741 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Gravel-----	18	18	
Sand-----	17	35	
Clay-----	13	48	

Well 38/3-31H1

Type of record: Driller's log.		Altitude: 742 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	20	20	
Sand-----	20	40	
Clay-----	5	45	
Sand-----	7	52	

Well 38/3-31M1

Type of record: Driller's log.		Altitude: 737 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	5	5	
Gravel-----	16	21	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/3-31M1--Continued

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Hardpan-----	20	41	
Sand, fine-----	7	48	
Sand-----	17	65	
Clay and clayey sand-----	42	107	
Sand-----	2	109	
Sand, dirty-----	20	129	
Sand-----	14	143	
Sand, coarse-----	10	153	
Gravel-----	14	167	
Sand and gravel-----	5	172	
Gravel-----	28	200	Blue shale at 200 feet.

Well 38/3-31R1

Type of record: Driller's log.

Altitude: 749 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	36	36	
Clay, blue-----	4	40	
Sand-----	2	42	
Clay, yellow-----	2	44	
Sand-----	7	51	

Well 38/3-32L3

Type of record: Driller's log.

Altitude: 750 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, yellow-----	10	10	
Clay, yellow-----	5	15	
Gravel and sand-----	25	40	

Well 38/3-36M1

Type of record: Driller's log.

Altitude: 756 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand-----	20	20	
Sand mixed with clay-----	8	28	
Sand and gravel-----	18	46	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/4-18C1

Type of record: Driller's log.

Altitude: 807 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Sand, muddy-----	7	8	
Sand, medium, clean-----	42	50	
Sand, fine-----	8	58	
Sand, medium-----	20	78	
Sand, coarse, with some clay-----	2	80	

Well 38/4-19F1

Type of record: Driller's log.

Altitude: 789 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine to medium, yellowish- brown-----	4	4	
Sand, fine to medium, silty, brown-----	4	8	
Sand, fine, yellowish-brown, with trace of silt-----	8	16	
Sand, fine to medium, light- brown-----	6	22	
Sand, fine to coarse, light- brown-----	19	41	
Sand, fine to coarse, gravelly, gray, with trace of silt-----	1	42	

Well 38/4-20B1

Type of record: Driller's log.

Altitude: 777 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	144	144	
Gravel-----	2	146	
Mississippian and Devonian systems:			
Lower Mississippian and Upper Devonian series:			
Shale-----	6	152	
Shale, green-----	28	180	
Shale, sandy, green-----	220	400	
Shale, dark-----	100	500	
Shale, hard, dark-----	48	548	
Shale, gray-----	6	554	
Middle Devonian series:			
Lime with shells-----	14	568	
Lime with shells and shale-----	19	587	
Lime, brown-----	11	598	
Lime, dark-gray-----	13	611	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/4-20B1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Mississippian and Devonian systems: Lower Mississippian and Upper Devonian series:			
Lime, light-gray-----	8	619	
Lime, light-brown-----	8	627	
Lime, light-gray-----	15	642	

Well 38/4-20E1

Type of record: Driller's log. Altitude: 774 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil and silt; with trace of clay-----	2	2	
Sand, medium, silty, gray-----	16	18	
Sand, fine, gray-----	4	22	

Well 38/4-20J1

Type of record: Driller's log. Altitude: 774 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, silty, dark-brown, with trace of gravel-----	2	2	
Sand, silty, gravelly, grayish- brown-----	2	4	
Sand, fine to coarse, brown, with trace of silt-----	2	6	
Sand, fine to medium, brown, with trace of silt-----	3	9	
Sand, fine to medium, yellow and brown, with trace of silt and organic matter-----	4	13	
Sand, medium, gravelly, gray and brown-----	6	19	
Sand, fine to medium, gray and brown-----	4	23	
Sand, fine, gray and brown-----	5	28	
Sand, medium to coarse, silty, gravelly, gray-----	14	42	

Well 38/4-21J1

Type of record: Driller's log. Altitude: 777 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil and sand-----	9	9	
Sand, yellow, with some gravel---	26	35	
Sand, gray-----	24	59	
Sand, coarse, gray, and gravel---	14	73	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/4-21J2

Type of record: Driller's log.

Altitude: 776 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, silty, dark-brown-----	1	1	
Sand, medium, gravelly, red and brown-----	6	7	
Sand, medium, yellow and brown, with trace of gravel and silt--	8	15	
Sand, medium, yellow and brown, with trace of silt-----	4	19	
Sand, fine to coarse, yellow and brown-----	13	32	
Sand, medium to coarse, gravelly, brown-----	3	35	
Gravel, fine to medium, sandy----	5	40	
Sand, medium to coarse, gravelly-	2	42	

Well 38/4-21M1

Type of record: Driller's log.

Altitude: 774 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, silty, dark-brown----	2	2	
Sand, fine, yellow and brown, with trace of silt-----	2	4	
Sand, fine to medium, yellow and brown, with trace of silt-----	2	6	
Sand, fine, yellow and brown, with trace of silt-----	2	8	
Sand, medium, yellow and brown---	4	12	
Sand, fine to medium, gravelly, light-brown-----	7	19	
Sand, medium to coarse, light-brown-----	7	26	
Sand, silty, gray, and fine to medium gravel-----	2	28	
Sand, fine to coarse, silty, gravelly-----	4	32	

Well 38/4-31P1

Type of record: Driller's log.

Altitude: 758 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	5	5	
Sand-----	25	30	
Sand and gravel-----	10	40	
Gravel-----	4	44	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/4-33E1

Type of record: Driller's log.

Altitude: 765 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Drift-----	127	127	
Mud, gray-----	48	175	
Mississippian and Devonian systems:			
Lower Mississippian and Upper Devonian series:			
Lime, gray-----	10	185	
Shale, gray-----	38	223	
Lime, dense-----	19	242	
Shale, green-----	33	275	
Shale and shells-----	17	292	
Shale, green-----	38	330	
Shale, green, and shells-----	52	382	
Shale, light-brown-----	29	411	
Shale, gray-----	3	414	
Shale, dark-brown-----	74	488	
Shale, gray-----	4	492	
Devonian system:			
Middle Devonian series:			
Lime, brown-----	12	504	
Lime, gray-----	12	516	
Gypsum, white-----	3	519	
Limestone-----	4	523	

Well 38/4-33E2

Type of record: Driller's log.

Altitude: 764 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand and gravel-----	89	89	
Mud and sand-----	61	150	
Sand and gravel-----	65	215	
Mississippian and Devonian systems:			
Lower Mississippian and Upper Devonian series:			
Shale, gray-----	85	300	
Shale, green-----	15	315	
Lime and shale-----	27	342	
Shale, green and brown-----	58	400	
Shale, light-brown-----	45	445	
Shale(?), dark-brown-----	55	500	
Devonian system:			
Middle Devonian series:			
Lime and shale-----	37	537	
Lime, hard-----	13	550	
Lime, blue-----	10	560	
Lime, white-----	18	578	

Table 3.--Selected logs of wells and test holes in St. Joseph County--Continued

Well 38/4-33E2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Devonian system:			
Middle Devonian series:			
Lime, brown and gray-----	12	590	
Lime, light-brown-----	26	616	
Lime(?), hard, light-brown-----	19	635	
Lime, light-brown-----	65	700	

Table 4.--Field chemical analyses of water from wells in St. Joseph County, Indiana (Results in parts per million. Analyses by U. S. Geological Survey, except where otherwise noted.)

Well: See text for description of well-numbering system.

Material: G, gravel; Sd, sand.

Geologic age: P1, Pleistocene.

Iron (Fe): U. S. Public Health Service drinking-water standards - 0.3 parts per million for iron and manganese together.

Sulfate (SO₄): U. S. Public Health Service drinking-water standards - 250 parts per million.

Chloride (Cl): U. S. Public Health Service drinking-water standards - 250 parts per million.

Remarks: ECI, analysis by Emerson-Constock, Inc.; GFC, analysis by General Filter Co.; ICI, analysis by Industrial Chemicals, Inc.; ISBH, analysis by Indiana State Board of Health; LN, analysis by Layne-Northern Co., Inc.; NALCO, analysis by National Aluminate Corp.; PCC, analysis by Pepsi-Cola Bottling Co.;

TDS, total dissolved solids; So, analysis of softened water; U, analyst unknown; WHB, analysis by W. H. Betz Co.

Well Number	Material	Geologic Age	Date of Collection	Temperature (°F)	Iron (Fe)	Carbonate (CO ₃)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Hardness as CaCO ₃ (calcium, magnesium)	Remarks
35/1W-1R1	Sd,G	P1	1-12-60	--	0.1	10	176	60	4	196	
13G1	Sd,G	P1	1-14-60	--	.5	14	185	35	8	188	
13H1	Sd,G	P1	8-20-58	58	1.3	0	224	---	8	184	
13H1	Sd,G	P1	1-14-60	--	1.5	0	178	15	28	176	
13K1	Sd,G	P1	1-14-60	56	.5	24	298	5	8	244	
35H1	Sd,G	P1	8-20-58	58	.8	0	317	---	6	212	
35/1-1A2	Sd,G	P1	1-11-60	--	.3	19	346	5	4	280	
1J1	Sd	P1	6-18-58	56	<.1	0	307	---	20	288	
1J1	Sd	P1	1-11-60	--	.1	19	268	45	8	296	
9J1	Sd	P1	12-19-57	52	1.0	10	244	---	20	224	
9J1	Sd	P1	1-12-60	50	1.5	5	293	10	4	220	
17J1	Sd,G	P1	1-14-60	--	2.0	38	248	30	12	276	
35/2-1F1	Sd,G	P1	6-18-58	57	1.5	19	268	---	20	344	
1F1	Sd,G	P1	1-14-60	--	1.5	19	278	110	16	336	
2F1	Sd,G	P1	7-12-56	--	---	0	332	---	12	288	
2K1	G,Sd	P1	1-14-60	--	1.5	24	302	60	16	324	
3N1	Sd,G	P1	8-56	--	---	12	268	---	10	352	

Table 4. --Field chemical analyses of water from wells in St. Joseph County, Indiana--Continued

Well Number	Material	Geologic Age	Date of Collection	Temperature (°F)	Iron (Fe)	Carbonate (CO ₃)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Hardness as CaCO ₃ (calcium, magnesium)	Remarks
35/2-4D1	Sd	P1	1-11-60	--	2.5	5	376	25	4	292	
4R1	Sd	P1	1-14-60	--	.1	24	356	45	12	340	
6A1	Sd	P1	1-13-60	--	5.0	5	336	15	<4	280	
6A2	Sd	P1	12-19-57	50	1.0	34	342	---	16	372	
8B1	Sd	P1	6-17-58	--	1.0	0	454	---	16	388	
8B1	Sd	P1	1-11-60	--	.5	19	429	40	4	384	
10J1	Sd,G	P1	6-17-58	55	.8	0	337	---	20	324	
10J1	Sd,G	P1	1-14-60	53	.5	19	312	75	8	320	
14H1	Sd	P1	1-14-60	--	1.0	19	234	35	12	240	
16H1	Sd,G	P1	12-17-57	--	.5	14	205	---	16	252	
16H1	Sd,G	P1	1-14-60	--	.1	19	381	60	16	380	
18E1	G	P1	1-14-60	--	.1	19	278	120	40	472	
18Q1	Sd,G	P1	12-17-57	51	.1	19	283	---	46	384	
21C1	Sd	P1	6-17-58	--	1.2	0	434	---	24	444	
35/3-11D1	Sd,G	P1	6-20-58	58	6.0	0	444	---	16	320	
11D1	Sd,G	P1	2- 2-60	--	3.0	24	283	10	4	240	
13R1	Sd,G	P1	7-29-58	60	3.5	0	410	---	8	264	
13R1	Sd,G	P1	1-21-60	--	3.0	0	410	5	12	260	
16K1	Sd,G	P1	6-18-58	55	5.0	0	356	---	16	256	
16K1	Sd,G	P1	1-21-60	--	3.0	0	351	0	<4	248	
18K1	Sd	P1	1-21-60	--	.5	0	337	15	16	280	
35/4-17L1	Sd	P1	12-20-57	55	3.0	0	390	---	10	260	
36/1W-25P1	Sd,G	P1	6-19-58	56	5.0	0	298	---	20	348	
35B1	Sd	P1	1-12-60	--	.1	10	244	80	12	300	
36/1-1H1	G,Sd	P1	10-58	56	.1	0	273	---	24	300	
1H1	G,Sd	P1	1-11-60	--	.1	5	307	35	20	348	
1K1	Sd,G	P1	1-11-60	53	.5	10	312	35	16	292	
8R1	Sd	P1	1-12-60	--	.1	0	264	30	12	252	
10C2	Sd	P1	1-12-60	--	.1	14	264	30	8	256	
12C1	Sd,G	P1	10-58	59	.1	0	249	---	16	220	
13K1	Sd	P1	11-19-58	54	.1	10	288	---	6	264	
17B2	Sd	P1	1956	--	---	0	288	---	<4	268	

36/1-19B1	Sd,G	P1	11-19-57	60	2.0	24	254	---	14	300
19R1	Sd	P1	1-12-60	--	.1	14	346	45	16	328
21D1	Sd	P1	1-12-60	--	.5	14	298	10	4	240
28E1	Sd,G	P1	12-19-57	54	.5	34	317	---	16	312
28E1	Sd,G	P1	1-12-60	---	.3	19	376	5	4	288
32G1	Sd,G	P1	12-19-57	50	.3	0	220	---	18	224
32G2	G	P1	1-12-60	--	.1	14	244	50	16	292
32K1	Sd,G	P1	7-13-56	---	---	0	171	---	28	292
33D1	Sd,G	P1	1956	53	---	2	227	---	4	222
33D1	Sd,G	P1	1956	53	---	2	281	---	4	280
34A1	Sd	P1	1-12-60	---	.1	5	356	20	4	272
34J1	Sd	P1	6-19-58	54	.5	0	410	---	16	320
36N1	Sd	P1	7-56	---	---	12	383	---	6	272
36/2-1B1	Sd	P1	11-11-58	---	.1	0	210	---	12	208
1C3	G,Sd	P1	1-13-60	---	.1	10	239	25	8	236
1H1	Sd,G	P1	1-21-60	---	.1	10	229	25	8	212
2A1	Sd,G	P1	1-13-60	---	.1	10	298	45	32	360
2R3	Sd,G	P1	10-58	56	1.0	0	303	---	12	228
3R3	Sd	P1	1-13-60	---	.5	14	322	25	4	292
3R4	Sd	P1	4-16-58	55	.5	0	356	---	16	336
3R5	Sd	P1	11-13-58	58	.1	5	278	---	12	216
4M3	Sd,G	P1	1-13-60	---	.1	19	376	10	4	328
4M4	Sd	P1	10-58	---	.1	10	400	---	12	300
5N1	Sd	P1	1-13-60	---	.1	19	293	60	8	292
5N2	Sd	P1	10-58	56	.2	10	283	---	28	288
5Q2	Sd	P1	10-58	59	.8	14	366	---	16	292
6G1	Sd,G	P1	1-13-60	---	.1	19	268	40	8	288
8J1	Sd	P1	10-58	58	.1	10	386	---	8	300
10D1	Sd	P1	10-58	58	.1	0	303	---	16	236
10K1	Sd,G	P1	10-58	56	.1	0	259	---	20	272
10K1	Sd,G	P1	1-13-60	53	.1	0	346	40	8	336
13F1	Sd,G	P1	11-21-58	---	.1	34	351	---	10	---
13F1	Sd,G	P1	1-21-60	---	.1	19	361	30	4	280
14P1	Sd	P1	11-13-58	---	3.0	0	85	---	---	320
18C1	Sd,G	P1	11-19-58	56	1.0	0	400	---	12	332
18C1	Sd,G	P1	1-13-60	---	.3	5	359	40	8	340
20A1	Sd,G	P1	12-17-57	54	.1	43	283	---	52	468
20B1	Sd	P1	8-15-58	56	<.1	0	312	---	24	312
20B1	Sd	P1	1-13-60	---	.1	19	312	50	8	316

Table 4.--Field chemical analyses of water from wells in St. Joseph County, Indiana--Continued

Well Number	Material	Geologic Age	Date of Collection	Temperature (°F)	Iron (Fe)	Carbonate (CO ₃)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Hardness as CaCO ₃ (calcium, magnesium)	Remarks
36/2-20R1	Sd	P1	6-17-58	54	5.0	0	405	---	20	364	
21C1	Sd	P1	7-20-58	58	<.1	0	351	---	12	280	
21C1	Sd	P1	1-13-60	54	.3	19	293	25	4	264	
22F1	Sd,G	P1	1-13-60	--	.1	24	273	40	4	280	
24B1	Sd,G	P1	1-21-60	--	.1	14	317	50	8	4	So.
25P1	Sd	P1	12-17-57	52	2.0	14	303	---	16	296	
25P1	Sd	P1	1-21-60	52	1.0	5	332	75	8	336	
26D3	Sd	P1	8-56	--	---	5	310	---	6	208	
30C1	Sd	P1	12-20-57	60	.5	24	259	---	12	284	
30C1	Sd	P1	1-13-60	--	.3	14	273	20	8	248	
32B1	G,Sd	P1	12-17-57	--	.1	24	195	---	100	420	
32R2	Sd,G	P1	1-13-60	--	5.0	19	439	25	4	364	
33Q2	Sd	P1	1-13-60	--	7.5	10	381	10	4	322	
33R1	Sd	P1	1-13-60	--	.1	10	342	80	16	356	
34R1	Sd,G	P1	3-27-57	53	---	---	---	---	12	308	
35L1	Sd	P1	7-29-58	60	1.0	0	303	---	12	296	
35L1	Sd	P1	1-13-60	--	.5	14	288	65	8	300	
35M1	Sd,G	P1	6-17-58	58	.1	0	249	---	20	244	
36/3-1P1	G	P1	1-21-60	55	3.0	19	342	5	8	240	
2F1	Sd,G	P1	12-16-58	50	1.5	0	322	---	16	252	
2M1	Sd	P1	12-16-58	60	.2	24	268	---	10	240	
2R1	Sd	P1	1-13-59	--	.5	29	381	---	10	328	
3F1	Sd,G	P1	12-16-58	57	<.1	14	278	---	14	288	
3F1	Sd,G	P1	1-21-60	--	.1	14	366	40	4	336	
5F1	Sd	P1	12-16-58	50	.2	19	259	---	10	268	
5N1	Sd,G	P1	12-16-58	52	.4	34	361	---	12	368	
5N1	Sd,G	P1	1-21-60	--	.3	24	360	45	4	348	
7A1	Sd	P1	12-17-58	53	.1	0	386	---	10	316	
7C1	Sd	P1	11-11-58	55	.8	0	283	---	106	204	
7C1	Sd	P1	1-21-60	--	.5	5	351	10	108	260	
7E1	Sd	P1	11-11-58	53	<.1	19	312	---	24	340	
8B1	Sd,G	P1	12-16-58	52	.1	43	288	---	12	312	

36/3-8B1	Sd,G	P1	1-21-60	--	.3	19	356	30	4	320	
11A1	Sd,G	P1	12-16-58	56	1.5	34	327	---	12	276	
15C1	Sd	P1	1-14-59	56	1.5	10	332	15	10	256	
15N3	Sd,G	P1	6-20-58	55	1.5	0	361	---	16	260	
16R1	Sd	P1	1-21-60	--	3.0	24	293	25	4	272	
17C1	Sd	P1	7-29-58	58	.7	0	415	---	12	336	
17P1	Sd	P1	12-17-57	51	---	29	283	---	28	372	
17Q1	Sd,G	P1	6-20-58	55	5.0	0	405	---	20	332	
17Q1	Sd,G	P1	1-21-60	---	3.0	5	395	35	4	336	
18C1	Sd	P1	11-12-58	50	2.0	0	381	---	12	348	
18E1	Sd	P1	11-11-58	--	2.0	0	332	---	20	272	
18M1	Sd	P1	11-12-58	--	5.0	5	205	---	152	384	
21D1	Sd	P1	2- 1-60	--	.1	14	254	45	4	---	So.
21E1	Sd	P1	7-29-58	55	2.5	0	395	---	16	308	
21R1	G	P1	2- 2-60	--	1.0	0	102	10	164	260	
22E1	G	P1	7-29-58	56	1.0	0	371	---	16	272	
23C1	Sd,G	P1	2- 1-60	48	.3	29	317	5	8	232	
30A1	Sd	P1	7-29-58	59	<.3	0	376	---	8	324	
30D1	Sd,G	P1	6-17-58	56	1.5	0	429	---	28	348	
30H1	Sd,G	P1	1956	---	---	7	256	---	6	180	
30H1	Sd,G	P1	2- 2-60	58	2.0	24	342	55	4	332	
32C1	G,Sd	P1	2- 2-60	59	.5	29	307	20	4	---	So.
35B2	G	P1	2- 2-60	---	4.0	38	356	10	4	272	
36/4-5M1	Sd	P1	12-17-58	---	.1	24	283	---	18	156	
5M1	Sd	P1	1-21-60	---	.5	5	346	10	12	140	
17Q1	Sd	P1	12-18-57	51	.5	10	317	---	26	108	
17Q1	Sd,G	P1	1-21-60	51	<.1	10	312	10	16	92	
29A2	Sd,G	P1	1-21-60	---	1.0	0	264	35	144	332	
30D1	Sd	P1	12-18-57	55	3.0	34	346	---	68	304	
30D1	Sd	P1	1-21-60	--	2.5	10	425	5	16	272	
32R1	Sd,G	P1	1-21-60	---	2.5	0	298	135	52	360	
33R1	Sd	P1	1-21-60	---	1.5	5	439	0	<4	320	
37/1W-2B1	Sd	P1	7-20-58	59	<.1	0	361	---	16	364	
11D1	Sd	P1	8-13-58	59	.1	0	322	---	12	296	
11D1	Sd	P1	1-11-60	---	.1	10	273	35	8	284	
14H1	Sd	P1	2- 3-60	50	2.0	10	220	55	4	220	
24J1	Sd,G	P1	8-13-58	60	2.0	0	346	---	16	400	
37/1-1L1	Sd,G	P1	11-21-58	---	.1	5	346	---	8	268	
1M2	Sd,G	P1	10-10-57	52	.5	10	327	---	12	336	

Table 4.--Field chemical analyses of water from wells in St. Joseph County, Indiana--Continued

Well Number	Material	Geologic Age	Date of Collection	Temperature (°F)	Iron (Fe)	Carbonate (CO ₃)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Hardness as CaCO ₃ (calcium, magnesium)	Remarks
37/1-2G1	G,Sd	P1	8-14-56	--	2.3	0	258	200	---	306	ICI; TDS - 450.
	G,Sd	P1	1-13-60	--	2.0	19	331	50	16	328	
	Sd,G	P1	1-12-60	--	.3	14	195	55	16	216	
	G,Sd	P1	1-13-60	--	.3	24	229	45	12	248	
	Sd	P1	8-14-58	55	<.1	0	185	---	12	176	
	Sd,G	P1	8-13-58	56	.1	0	190	---	8	164	
	Sd,G	P1	1-13-60	--	.3	14	151	35	16	156	
	Sd,G	P1	8-14-58	59	<.1	0	132	---	8	116	
	Sd,G	P1	8-13-58	54	2.0	0	249	---	16	228	
	Sd	P1	1-12-60	---	.5	14	200	25	16	172	
	Sd,G	P1	8-13-58	55	.6	0	259	---	20	244	
	Sd,G	P1	8-13-58	58	.3	0	239	---	20	224	
	Sd,G	P1	4-15-58	53	.4	0	303	---	12	296	
	Sd,G	P1	4-15-58	56	.5	0	264	---	12	276	
37/2-1P2	Sd,G	P1	4-30-58	--	1.5	0	259	---	12	248	U.
	Sd,G	P1	4-15-58	53	<.1	0	332	---	12	332	
	Sd,G	P1	4-15-58	55	2.0	0	386	---	20	444	
	G,Sd	P1	5-17-34	---	---	0	372	---	10	---	
	Sd,G	P1	1-14-60	--	3.0	19	298	185	20	460	
	Sd,G	P1	1-13-60	---	.1	24	298	70	16	336	
	Sd	P1	11-18-58	57	1.0	19	244	---	12	256	
	Sd,G	P1	11-21-58	58	1.0	0	317	---	20	280	
	Sd,G	P1	1-15-59	---	.1	0	312	60	12	---	
	Sd,G	P1	1-13-60	---	.1	19	181	40	16	208	
	Sd,G	P1	1-13-60	---	.1	29	210	50	12	236	
	Sd,G	P1	1-13-60	---	.1	19	229	---	20	268	
	Sd,G	P1	10- 8-57	60	.4	19	259	---	6	208	
	Sd,G	P1	11-18-58	55	.1	0	234	---	8	220	
Sd,G	P1	10- 8-57	60	.5	0	322	---	10	260		
37/3-1P3	Sd	P1	11-18-58	58	.4	0	215	65	16	244	So.
	Sd	P1	1-14-60	--	.5	19	229	---	18	244	
	Sd	P1	11-18-58	56	.1	0	229	---	18	244	
	Sd	P1	11-18-58	56	.1	0	229	---	18	244	

37/2-10D1	Sd	P1	1-14-60	--	7.5	0	439	305	48	648	WHB.
10H1	Sd,G	P1	1-14-60	--	.1	10	293	60	16	296	
11H1	G,Sd	P1	1-58	--	4.7	0	417	430	36	816	
11K3	Sd,G	P1	4-29-58	--	.1	0	371	---	12	364	
11R2	Sd,G	P1	4-20-58	58	<.1	0	390	---	28	464	
12C2	G	P1	4-11-58	--	.5	10	215	---	12	224	
12C5	G,Sd	P1	1-20-60	--	<.1	0	425	135	52	472	GFC.
12E2	Sd,G	P1	8-13-54	--	.1	0	366	---	---	382	
12F1	Sd,G	P1	4-11-58	--	.1	0	322	---	36	368	
12H1	Sd,G	P1	5-8-59	--	.7	0	291	70	34	314	ICI; TDS - 430.
12H3	Sd,G	P1	4-11-58	57	1.0	10	151	---	16	164	
13H1	Sd,G	P1	4-9-58	54	.1	0	312	---	24	324	
13H1	Sd,G	P1	12-6-56	56	<.1	0	295	40	12	300	PCC; TDS - 275.
13H3	G,Sd	P1	4-9-58	53	.1	0	268	---	16	272	
13H4	Sd,G	P1	4-10-58	--	.1	0	298	---	16	288	
14A2	Sd,G	P1	4-20-58	58	<.1	0	322	---	32	344	
14B2	Sd,G	P1	4-10-58	59	.1	10	205	---	20	236	
14H1	Sd	P1	4-20-58	57	.1	0	376	---	36	396	
15C5	Sd,G	P1	12-10-53	--	.1	---	---	---	---	578	LN.
15F1	Sd,G	P1	4-11-58	49	.1	0	322	---	12	408	
15F1	Sd,G	P1	1-14-60	--	.1	29	312	100	16	368	
15H1	Sd	P1	4-15-58	--	.1	10	298	---	12	300	
16B3	Sd,G	P1	4-11-58	--	0.3	0	300	---	25	393	ICI; TDS - 550.
16B3	Sd,G	P1	4-11-58	52	.1	0	307	---	16	424	
16B5	Sd	P1	4-10-58	54	.1	14	283	---	20	520	
16B5	Sd	P1	1-19-60	55	.3	0	303	260	20	488	
17B1	Sd	P1	11-18-58	59	.1	0	317	---	36	372	
20P2	Sd,G	P1	1-19-60	--	1.0	24	312	115	24	384	
21P1	Sd,G	P1	11-19-58	57	.2	0	342	---	10	296	
21R3	Sd	P1	1-5-60	--	.1	0	429	40	12	364	
22G1	G	P1	4-16-58	55	.1	0	268	---	8	268	
22P2	Sd	P1	11-19-58	56	.1	14	322	---	6	280	
23D2	Sd,G	P1	7-5-55	49	<.1	0	317	---	18	304	LN.
24C1	Sd,G	P1	1-14-59	--	.1	0	234	40	10	204	
24K1	G,Sd	P1	11-19-58	55	.1	0	307	---	14	272	
24K1	G,Sd	P1	1-20-60	--	.1	0	288	30	12	256	
25E6	Sd	P1	11-10-58	--	.1	19	366	---	22	408	
25H2	G,Sd	P1	8-19-54	--	.3	---	---	---	---	340	LN.
25K1	Sd,G	P1	1-20-60	--	<.1	10	298	30	4	280	

Table 4. --Field chemical analyses of water from wells in St. Joseph County, Indiana--Continued

Well Number	Material	Geologic Age	Date of Collection	Temperature (°F)	Iron (Fe)	Carbonate (CO ₃)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Hardness as CaCO ₃ (calcium, magnesium)	Remarks
37/2-25P3	Sd,G	P1	11-10-58	--	0.1	14	249	---	34	284	
26B1	Sd,G	P1	11-19-58	57	.1	0	288	---	12	268	
26E2	Sd	P1	11-13-58	--	3.0	5	303	---	20	284	
26F1	Sd,G	P1	11-11-58	56	.1	0	278	---	18	272	
26L1	Sd,G	P1	10- 8-57	--	.1	5	200	---	12	196	
26L1	Sd,G	P1	1- 5-60	--	.1	24	312	35	16	324	
27L1	Sd,G	P1	11-11-58	--	<.1	5	322	---	12	264	
27M2	Sd,G	P1	10-58	56	1.5	0	376	---	16	276	
28E1	Sd,G	P1	10-58	57	1.5	0	376	---	12	288	
28E1	Sd,G	P1	1-18-60	--	.3	24	346	25	4	316	
29C1	Sd,G	P1	10-58	59	3.5	14	332	---	24	340	
29F2	Sd	P1	1-18-60	--	.5	29	332	64	12	344	
29F3	Sd	P1	1-15-59	--	.1	10	268	---	18	320	
29J1	Sd,G	P1	8-12-58	60	.5	0	405	---	16	328	
29J2	Sd,G	P1	10-58	55	.8	5	298	---	12	248	
31A1	Sd	P1	2- 3-60	--	.3	14	254	25	12	236	
32G1	Sd,G	P1	10-58	59	.3	19	283	---	20	288	
32L1	Sd	P1	1-11-60	--	.1	14	298	35	4	284	
32N1	Sd	P1	10-58	54	.1	0	405	---	16	340	
33C1	Sd,G	P1	10-58	57	.1	10	229	---	12	204	
33G1	Sd	P1	11-11-58	--	.1	19	332	---	26	328	
33M1	Sd	P1	10-58	58	.5	0	425	---	16	328	
35B1	Sd,G	P1	1-11-60	55	.1	14	268	40	8	260	
35G1	Sd,G	P1	10-58	58	.1	0	293	---	16	260	
35G2	Sd,G	P1	1-13-59	--	.1	29	264	---	16	288	
35J4	Sd,G	P1	1-11-60	--	.1	24	283	35	8	284	
36C1	Sd,G	P1	11-13-58	--	<.1	24	254	---	20	284	
36D4	Sd,G	P1	11-11-58	58	.1	0	244	---	14	244	
36E1	Sd,G	P1	11-13-58	--	.3	0	288	---	36	340	
36F3	Sd	P1	11-11-58	53	.1	0	244	---	12	212	
36L2	Sd,G	P1	11-11-58	54	.1	0	268	---	34	252	
36L11	Sd,G	P1	1-14-59	--	.1	29	215	25	8	240	

37/2-36N2	G,Sd	P1	11-13-58	--	<.1	5	215	---	20	228	
37/3-2E1	Sd	P1	1-20-60	54	1.0	5	181	45	4	176	
2L1	Sd	P1	12-18-58	50	.3	0	132	---	12	132	
3G1	Sd	P1	1-20-60	---	.3	0	176	60	8	188	
3L1	Sd	P1	12-15-58	---	.1	0	259	---	80	32	So.
3N2	Sd,G	P1	7-30-56	---	1.0	0	317	---	8	266	LN.
3N3	Sd	P1	12-18-58	---	1.0	0	239	---	16	128	
4E1	Sd	P1	12-15-58	55	.3	19	200	---	14	220	
4R1	Sd,G	P1	3- 8-53	---	.3	0	295	---	8	260	LN.
5P2	Sd,G	P1	4-16-58	---	.1	0	388	---	20	412	
6N1	Sd	P1	1-20-60	---	.1	5	249	50	12	240	
8G1	Sd	P1	4-15-58	---	1.5	0	307	---	8	272	
8G1	Sd	P1	1-18-60	---	.1	0	307	30	8	256	
10G1	Sd	P1	1-18-60	---	.1	5	234	50	16	232	
11F1	Sd,G	P1	12-18-58	---	.3	14	181	---	10	180	
11F1	Sd,G	P1	1-18-60	---	.1	5	181	40	8	172	
11N3	G,Sd	P1	5-16-51	---	.3	0	549	---	29	325	ISBH.
13K1	Sd,G	P1	1-21-60	---	3.0	0	337	225	12	464	LN; taken at 24 feet.
14K1	Sd,G	P1	-----	---	2.0	0	348	---	0	453	LN; taken at 125 feet.
14K1	Sd,G	P1	-----	---	.4	0	332	---	2	465	
14K3	Sd,G	P1	4-17-58	---	1.0	0	278	---	16	392	
14M1	Sd,G	P1	5- 2-58	---	.1	5	288	---	12	336	
15C1	Sd,G	P1	12-18-58	---	.1	0	224	---	10	168	
15H1	G,Sd	P1	4-17-58	---	1.0	0	337	---	12	508	
15M1	Sd,G	P1	4-16-58	---	.3	0	224	---	16	344	
15M2	Sd,G	P1	1-20-60	---	1.0	0	425	200	12	528	
15R1	Sd,G	P1	2- 2-54	---	.1	--	---	---	---	306	LN.
15R2	Sd,G	P1	4- 1-54	---	.1	--	---	---	---	323	LN.
16C4	Sd	P1	4-17-58	---	.8	0	378	---	76	520	
16F3	Sd,G	P1	4-17-58	---	.8	0	371	---	24	328	
16N2	G,Sd	P1	4-17-58	52	1.1	0	400	---	12	336	
16R1	G	P1	4-17-58	55	.1	0	361	---	20	484	
18A1	Sd,G	P1	4-15-58	---	2.0	0	249	---	16	220	
19R1	Sd,G	P1	11-20-58	55	.1	19	346	---	6	340	
21G3	Sd	P1	12-18-58	---	.1	14	376	---	12	288	
21R2	Sd,G	P1	12-18-58	---	.5	0	327	---	6	232	
22R3	Sd,G	P1	1-20-60	---	<.1	0	312	45	8	236	

Table 4.--Field chemical analyses of water from wells in St. Joseph County, Indiana--Continued

Well Number	Material	Geologic Age	Date of Collection	Temperature (°F)	Iron (Fe)	Carbonate (CO ₃)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Hardness as CaCO ₃ (calcium, magnesium)	Remarks
37/3-23H1	Sd,G	P1	1-15-59	--	0.1	19	259	25	12	232	
25E2	Sd,G	P1	1-21-60	--	<.1	0	337	35	12	272	
25M1	Sd	P1	12-17-58	--	.4	0	420	---	10	312	
26A1	Sd,G	P1	12-17-58	54	.1	34	259	---	14	284	
26G3	Sd	P1	12-18-58	55	.1	43	307	---	24	304	
26L1	Sd	P1	12-16-58	57	<.1	29	317	---	20	308	
26P1	Sd,G	P1	12-16-58	54	<.1	24	298	---	12	292	
27R1	Sd,G	P1	1-13-59	58	.1	0	312	60	18	280	
27R1	Sd	P1	1-21-60	56	.1	14	264	50	8	280	
28D1	Sd,G	P1	12-18-58	--	.1	0	307	---	10	248	
28M1	Sd,G	P1	1-21-60	51	.1	5	371	30	4	316	
28N1	Sd	P1	12-17-58	--	.1	38	268	---	16	316	
29K3	Sd	P1	12-17-58	54	.1	0	356	---	28	304	
30A5	Sd	P1	1-20-60	--	<.1	5	322	30	4	288	
31C1	Sd,G	P1	12-19-58	--	.1	19	264	---	10	300	
31D1	Sd,G	P1	11-20-58	56	.1	0	273	---	8	272	
31D2	G,Sd	P1	1-21-60	--	.1	14	244	35	8	268	
31R1	Sd,G	P1	11-12-58	--	.5	0	137	---	132	316	
33A4	Sd,G	P1	12-17-58	55	.1	34	298	---	10	300	
33B3	Sd	P1	12-17-58	55	.3	29	390	---	12	336	
33E1	Sd,G	P1	4-18-58	55	3.5	0	425	---	8	368	
33E1	Sd,G	P1	1-20-60	--	7.5	19	381	20	4	336	
34Q1	Sd,G	P1	1-13-59	--	.1	24	361	25	12	340	
34Q1	Sd,G	P1	1-20-60	--	.1	24	361	30	4	336	
35D1	G,Sd	P1	12-17-58	51	.1	34	303	---	16	292	
35D2	G,Sd	P1	12-18-58	54	.1	38	305	---	42	416	
35M2	G	P1	1-20-60	52	.1	19	342	25	4	320	
36Q1	G	P1	12-17-58	55	.1	34	346	---	20	308	
36Q1	G	P1	1-20-60	54	.5	19	390	5	4	312	
37/4-4J1	Sd	P1	12-18-58	--	.2	0	205	---	14	184	
6B1	Sd,G	P1	1-19-60	--	.5	5	229	35	4	204	

37/4-6J2	Sd,G	P1	5- 2-58	--	0.1	0	273	---	12	216	
7A4	Sd,G	P1	12-18-58	57	<.1	14	195	---	12	208	
7B2	Sd,G	P1	4-16-58	--	.1	0	293	---	16	220	
7B2	Sd,G	P1	1-18-60	--	.1	5	278	15	4	212	
7E2	Sd,G	P1	2-56	--	2.0	0	281	---	8	222	
7E2	Sd,G	P1	12-31-56	--	.1	0	305	15	15	256	ECl.
7E2	Sd,G	P1	1- 4-57	--	.1	0	317	---	10	248	LN.
7E2	Sd,G	P1	12-18-58	54	.1	14	293	---	6	220	LN.
7H1	G	P1	12-18-58	54	.7	0	220	---	14	236	
8E1	Sd	P1	1-18-60	--	.1	14	239	25	4	208	
8E2	Sd	P1	12-19-58	--	.1	14	229	---	8	212	
9A1	Sd	P1	1-14-60	--	.1	14	190	45	20	212	
9D1	Sd,G	P1	5-16-58	--	.1	0	210	---	8	188	
9G2	Sd,G	P1	12-18-58	54	<.1	5	215	---	16	228	
16G2	Sd,G	P1	1-14-60	--	<.1	29	346	55	16	412	
17A1	Sd,G	P1	1-14-60	--	1.0	24	249	125	8	264	
17H1	Sd	P1	12-17-58	51	1.5	14	229	---	10	240	
17H1	Sd	P1	1-14-60	51	1.5	14	239	60	12	260	
18D1	G,Sd	P1	3-19-55	--	.8	0	342	---	---	272	LN.
19M1	Sd,G	P1	1-14-60	--	.5	24	332	55	16	328	
21P1	Sd,G	P1	1-13-59	--	.5	48	303	---	12	260	
30K1	Sd,G	P1	12-16-58	--	3.0	29	259	---	12	216	
30K1	Sd,G	P1	1-14-60	53	2.5	19	351	15	12	276	
31M1	Sd	P1	1-13-59	--	1.0	0	410	---	8	286	
31M1	Sd	P1	1-21-60	53	3.0	--	---	5	12	---	
33R1	Sd,G	P1	1-13-59	56	.3	19	342	105	18	388	
33R1	Sd,G	P1	2- 4-60	59	.1	0	264	85	12	272	
38/1W-10J1	Sd	P1	1-11-60	54	1.0	29	361	15	4	328	
15E1	Sd	P1	1-11-60	--	1.0	14	361	20	4	308	
15J1	Sd,G	P1	11-59	54	.3	43	307	80	14	372	
15K1	Sd,G	P1	7-30-58	59	.2	0	473	---	12	388	
15K1	Sd,G	P1	1-11-60	--	1.5	10	366	45	4	332	
22R2	Sd	P1	1-11-60	--	.3	5	278	50	12	268	
24E2	Sd,G	P1	1-12-60	53	.5	10	298	55	20	284	
34M1	Sd,G	P1	1-11-60	--	.1	19	278	30	12	292	
36D1	Sd,G	P1	1-12-60	47	.3	14	268	60	24	284	
38/1-13P1	Sd	P1	1-13-60	--	.1	10	400	65	20	464	
13Q1	Sd,G	P1	8-13-58	56	.1	0	342	---	8	312	
23H1	Sd,G	P1	2- 4-60	--	.3	5	229	30	8	232	

Table 4.--Field chemical analyses of water from wells in St. Joseph County, Indiana--Continued

Well Number	Material	Geologic Age	Date of Collection	Temperature (°F)	Iron (Fe)	Carbonate (CO ₃)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Hardness as CaCO ₃ (calcium, magnesium)	Remarks
38/1-25L2	Sd,G	P1	1-13-60	--	0.5	0	273	65	20	260	
26J1	Sd,G	P1	8-13-58	60	<.1	0	273	---	16	244	
26J2	Sd	P1	1-13-60	--	.1	19	234	40	12	248	
26K3	Sd,G	P1	1-12-60	--	.3	34	220	55	28	284	
31C1	Sd,G	P1	1-12-60	--	.1	19	244	45	28	284	
35K2	Sd	P1	8-13-58	60	<.1	0	317	---	24	284	
36M1	Sd,G	P1	1-12-60	--	1.0	19	366	65	20	384	
37/2-7L1	Sd,G	P1	8-22-58	57	.1	0	386	---	< 4	404	
8P2	Sd,G	P1	1-20-60	--	.1	19	254	45	4	280	
9K1	Sd,G	P1	8-14-58	58	.2	0	288	---	8	280	
11N1	Sd,G	P1	8-14-58	60	<.1	0	288	---	16	260	
11N1	Sd,G	P1	1-19-60	--	.1	19	244	40	4	220	
13F1	Sd,G	P1	1-19-60	61	.3	19	229	35	4	252	
13P3	Sd,G	P1	1-19-60	--	1.5	0	24	55	136	244	
14F1	G,Sd	P1	1-19-60	--	1.0	19	288	60	8	312	
14N2	Sd,G	P1	1-14-59	--	.3	19	317	35	12	304	
15H2	Sd	P1	1-15-59	--	.1	29	234	40	10	252	
15M1	Sd,G	P1	1-20-60	--	.1	14	244	50	8	268	
16B2	Sd,G	P1	1-20-60	--	.1	19	244	40	8	272	
19P1	Sd,G	P1	4-15-58	--	.1	0	327	---	8	328	
19P1	Sd,G	P1	1-19-60	54	.3	5	283	70	4	292	
19Q1	Sd,G	P1	8-14-58	56	.2	0	405	---	28	484	
22K1	Sd	P1	1-19-60	--	.1	19	288	80	8	328	
22K2	Sd	P1	1-19-60	54	.1	19	351	65	8	352	
23D1	Sd,G	P1	8-14-58	58	<.1	0	303	---	12	260	
23F5	Sd,G	P1	4-16-58	54	1.0	0	273	---	12	273	
23F5	Sd,G	P1	1-19-60	54	.1	19	249	40	4	240	
24L5	Sd,G	P1	1-20-58	55	.1	0	293	---	16	248	
24N1	Sd,G	P1	11-20-58	58	.2	0	264	---	8	240	
24P2	Sd,G	P1	12-19-58	--	.1	14	249	---	12	252	
24Q2	Sd,G	P1	1-19-60	--	<.1	0	234	50	20	228	

Table 4. --Field chemical analyses of water from wells in St. Joseph County, Indiana--Continued

Well Number	Material	Geologic Age	Date of Collection	Temperature (°F)	Iron (Fe)	Carbonate (CO ₃)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Hardness as CaCO ₃ (calcium, magnesium)	Remarks
38/3-32N1	Sd	P1	1-19-60	--	0.1	0	190	55	12	180	
32N2	Sd,G	P1	8-20-58	--	.2	0	205	---	16	216	
36M1	Sd,G	P1	1-20-60	56	1.0	0	185	85	4	228	
38/4-18B1	Sd,G	P1	7-30-58	58	<.1	0	312	---	28	364	
18C1	Sd	P1	5-10-60	53	.5	10	259	15	8	248	
21A1	Sd	P1	7-30-58	55	<.1	0	93	---	8	80	
21A1	Sd	P1	1-19-60	--	.3	---	---	25	---	96	
21J1	Sd,G	P1	4-1-55	--	.7	0	54	2	14	118	ICI.
29N1	G,Sd	P1	8-20-58	57	1.5	0	234	---	6	220	

Table 5.--Water levels in observation wells in St. Joseph County, Indiana
(In table below land-surface datum, except as noted. Water level: e, esti-
mated; h, tape measurement)

St. Joseph 1. (37/3-11P13). City of Mishawaka. Mishawaka Water and Light Dept., Virgil and Linden Sts. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 11, T. 37 N., R. 3 E. Previously shown as the SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 11, T. 37 N., R. 3 E. Driven unused water-table well in sand, diameter 1 $\frac{1}{2}$ inches, depth 40 feet. Land-surface datum is 702.37 feet above msl. Highest water level is 4.46 below lsd, May 25, 1943; lowest is 17.70 below lsd, Oct. 15, 1956. Records available: 1935-57. Affected by nearby pumping.

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1935							
Oct. 16	9.85	Apr. 1	9.33	Dec. 1	9.64	Apr. 1	8.42
Nov. 1	10.82	16	8.33	17	10.75	15	7.96
16	8.54	May 3	8.16			May 1	8.43
Dec. 3	8.96	17	9.00	1939		16	9.67
17	8.76	June 2	9.69			June 1	8.41
		17	8.17	Jan. 2	9.50	17	8.08
1936		July 16	7.40	16	10.66	July 1	8.61
		Aug. 3	8.92	Feb. 1	9.54	16	8.69
Jan. 2	8.58	16	9.02	14	8.68	Aug. 1	12.17
16	8.66	Sept. 1	9.34	Mar. 1	8.25	16	11.26
Feb. 1	9.68	16	10.82	16	6.84	Sept. 1	9.31
17	10.21	Oct. 1	11.17	Apr. 1	8.09	15	9.85
Mar. 1	8.92	Nov. 16	9.09	5	7.92	Oct. 1	10.34
17	8.71	Dec. 1	10.00	May 2	7.83	16	10.57
Apr. 1	9.12	15	10.25	15	8.68	Nov. 1	9.92
16	8.78			June 1	9.82	15	10.09
May 2	7.86	1938		16	9.95	Dec. 2	9.75
16	9.25			July 1	8.34	16	9.55
June 1	10.75	Jan. 1	8.75	15	9.25		
19	10.29	17	8.92	Aug. 1	9.98	1941	
July 2	10.33	Feb. 1	9.18	16	8.85	Jan. 1	9.57
17	12.83	14	8.29	22	8.08	16	9.66
Aug. 3	11.25	Mar. 1	8.42	Sept. 1	9.92	15	10.74
17	11.50	16	8.31	16	11.18	Feb. 1	9.34
Sept. 15	10.67	Apr. 1	8.07	Oct. 2	9.85	15	10.92
Oct. 1	10.12	15	7.65	16	10.42	Mar. 1	10.92
16	9.91	May 2	8.67	Nov. 1	10.40	17	8.75
Nov. 2	9.58	16	8.25	16	10.00	Apr. 1	8.91
Dec. 2	10.08	June 2	7.34	Dec. 1	10.24	15	9.84
16	9.66	July 1	8.62	16	9.42	May 1	9.17
		16	7.84			16	11.25
1937		Aug. 1	9.21	1940		June 2	11.65
		16	10.08			16	11.85
Jan. 4	8.75	Sept. 1	9.83	Jan. 1	9.74	July 1	12.92
16	8.91	15	10.25	16	9.00	15	13.06
Feb. 1	8.33	Oct. 1	9.83	Feb. 1	9.22	Aug. 1	13.34
18	8.25	15	10.00	15	9.50	16	13.09
Mar. 1	8.75	Nov. 1	9.96	Mar. 1	9.59	Sept. 2	12.15
16	9.59	15	11.08	16	9.93	15	11.51

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 1.

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1941		June 1	4.67	Apr. 1	9.42	Jan. 16	9.25
		15	7.34	15	10.00	31	10.16
Oct. 1	11.33	July 1	9.50	May 1	8.34	Feb. 14	9.67
16	10.52	15	9.68	16	9.00	Mar. 1	9.58
Nov. 1	9.02	Aug. 1	10.17	June 1	9.25	15	10.25
16	8.52	16	9.75	15	10.08	Apr. 1	7.83
Dec. 1	8.15	Sept. 1	9.75	July 2	8.75	15	4.70
16	9.26	15	9.16	16	10.67	May 1	5.33
		Oct. 1	9.58	31	10.66	16	7.17
1942		15	9.42	Aug. 16	10.25	June 1	5.75
		Nov. 1	8.75	Sept. 1	11.08	16	6.92
Jan. 3	7.95	15	9.42	15	10.58	July 1	8.34
16	9.18	Dec. 1	8.67	Oct. 1	9.08	16	12.00
Feb. 1	7.74	16	9.33	15	8.42	Aug. 1	11.83
15	7.65			Nov. 1	10.25	16	12.33
Mar. 1	8.50	1944		15	10.42	Sept. 1	9.66
16	6.81			Dec. 1	10.75	15	10.50
Apr. 1	7.17	Jan. 1	9.26	15	10.59	30	11.08
15	7.34	17	8.57			Oct. 16	10.90
May 1	9.15	Feb. 1	8.92	1946		Nov. 1	10.75
16	9.42	Mar. 1	8.07			15	9.66
June 1	10.01	16	6.06	Jan. 1	10.08	Dec. 1	10.08
15	8.92	Apr. 1	6.58	16	8.17	16	9.17
July 1	10.16	15	6.08	Feb. 1	10.24		
Aug. 1	9.92	May 1	6.00	15	8.75		
15	9.25	16	6.84	Mar. 1	8.92	1948	
Sept. 1	9.17	June 1	7.42	15	7.63	Jan. 1	9.83
15	9.42	15	11.83	Apr. 1	8.84	17	10.34
Oct. 1	9.69	July 1	9.84	15	8.92	Feb. 15	11.08
16	9.08	15	11.24	May 1	10.75	Mar. 1	8.59
Nov. 2	8.93	Aug. 1	12.58	16	10.50	15	9.75
16	8.50	16	12.75	June 1	10.84	Apr. 1	6.92
Dec. 1	8.32	Sept. 1	11.24	15	11.42	18	9.67
16	9.25	16	12.31	July 1	10.33	May 1	10.34
		Oct. 2	10.75	15	13.58	15	6.75
1943		16	11.08	Aug. 1	14.59	31	9.67
		Nov. 1	11.51	15	13.00	June 15	10.58
Jan. 1	6.25	15	9.75	Sept. 2	12.67	July 1	11.08
16	8.00	Dec. 1	9.66	16	13.50	16	11.57
Feb. 1	7.60	16	9.83	Oct. 1	13.33	Aug. 2	9.75
16	7.15			16	11.17	8	10.50
18	11.18	1945		Nov. 1	10.67	Sept. 4	11.32
Mar. 1	6.92			15	11.16	15	12.84
16	7.42	Jan. 1	11.18	Dec. 1	9.91	Oct. 1	11.42
Apr. 1	7.08	16	11.51	16	9.68	15	11.58
15	7.50	Feb. 1	11.74			Nov. 1	11.34
May 1	8.33	15	9.66	1947		15	11.32
15	5.58	Mar. 1	9.25			Dec. 1	10.67
25	4.46	16	9.82	Jan. 1	9.16	15	9.35

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 1.

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1948							
Dec. 31	9.75	Sept. 2	11.00	May 16	10.43	Feb. 1	11.00
		19	10.68	June 1	7.50	15	11.75
1949		Oct. 1	11.08	17	10.34	Mar. 1	9.50
		15	11.50	July 1	9.92	15	10.42
Jan. 15	10.17	Nov. 1	12.42	16	10.50	Apr. 1	8.84
Feb. 1	9.00	16	10.16	Aug. 3	10.50	15	8.17
15	10.00	Dec. 1	10.00	19	11.42	May 1	9.50
Mar. 1	10.50	16	11.00	Sept. 2	10.83	15	10.75
16	8.92			16	12.33	31	11.25
Apr. 1	9.00	1951		Oct. 2	14.60	June 15	12.00
16	9.84			15	12.60	July 1	13.85
May 1	8.17	Jan. 2	9.67	Nov. 2	11.50	Aug. 1	12.68
16	11.66	Feb. 1	10.17	15	11.42	15	12.33
June 1	14.33	17	9.75	Dec. 1	11.08	25	13.00
16	12.25	Mar. 1	9.83	15	13.08	Sept. 1	12.50
July 1	11.66	16	9.25			15	12.90
16	10.00	Apr. 2	8.92	1953		Oct. 1	13.70
Aug. 1	11.50	16	10.00			15	9.42
16	11.90	May 1	9.43	Jan. 2	13.84	Nov. 1	9.00
Sept. 1	11.58	15	8.25	16	14.83	15	10.65
15	11.17	June 1	9.25	31	15.08	Dec. 1	11.50
Oct. 1	12.00	16	12.17	Feb. 16	14.33	15	11.08
16	11.50	July 1	8.58	Mar. 1	15.33		
Nov. 1	11.92	16	9.25	16	13.32	1955	
15	10.75	Aug. 1	11.16	Apr. 1	13.32		
Dec. 2	11.08	15	10.58	15	13.08	Jan. 1	10.66
16	11.00	Sept. 2	9.83	May 2	13.50	15	11.16
		17	10.50	18	12.00	Feb. 1	12.32
1950		Oct. 1	11.58	June 1	14.50	16	12.50
		16	12.68	July 1	14.60	Mar. 1	10.83
Jan. 1	8.00	Nov. 2	9.66	16	14.25	16	10.16
15	9.00	16	10.75	Aug. 1	14.74	Apr. 1	9.58
Feb. 1	9.92	Dec. 2	10.32	15	13.50	16	11.07
15	9.07	16	8.50	Sept. 1	15.34	May 2	10.57
Mar. 1	10.66			15	14.00	16	13.00
15	9.32	1952		Oct. 2	13.58	June 1	12.08
Apr. 1	5.75			15	13.75	15	12.66
5	4.75	Jan. 5	7.84	Nov. 2	12.50	July 1	14.75
15	7.57	16	6.92	16	11.25	16	14.17
May 15	8.58	Feb. 3	6.86	Dec. 1	11.50	Aug. 1	13.84
June 2	10.83	17	8.17	15	10.50	15	13.58
15	7.50	Mar. 2	8.50			Sept. 1	13.58
July 2	8.42	16	7.92	1954		15	15.08
16	9.00	Apr. 2	8.84			Oct. 2	12.75
Aug. 1	9.08	15	8.00	Jan. 1	10.67	15	13.58
16	11.50	May 2	8.75	15	11.17	Nov. 1	14.00

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 1.

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1955		Mar. 1	11.33	Sept. 4	15.10	Feb. 15	11.65
		16	13.30	15	15.00	Mar. 1	10.34
Nov. 16	13.58	Apr. 1	13.00	30	15.60	16	8.20
Dec. 1	14.42	16	13.70	Oct. 15	17.70	Apr. 1	7.90
15	14.70	May 1	11.06	Nov. 2	15.65	15	6.66
31	13.41	16	11.50	15	13.60	May 1	7.40
		June 1	14.34	Dec. 1	13.00	15	8.10
1956		16	16.50	16	16.40	June 1	8.25
		July 1	16.50			15	8.80
Jan. 16	12.66	16	16.40	1957		July 1	9.12
Feb. 1	12.70	Aug. 1	17.05	Jan. 15	12.75	15	9.90
15	10.60	15	16.80	Feb. 1	12.71	Aug. 1	10.88
						15	13.34
						Sept. 1	14.30

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 2. (36/2-11G2). G. R. Castle. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 11, T. 36 N., R. 2 E. Drilled unused water-table well in sand, diameter 2 inches, reported depth 90 feet. Highest water level is 52.0 below lsd, Dec. 17, 1935, May 15, 1936; lowest 57.0 below lsd, Nov. 23, 1935, June 22, 1937. Records available: 1935-37.

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1935		Dec. 17	52.00	Feb. 1	53.50	May 15	52.00
				19	54.00	June 16	53.00
Oct. 7	53.20	1936		Mar. 3	53.50		
Nov. 4	54.00			16	54.00	1937	
23	57.00	Jan. 7	53.60	Apr. 7	53.00		
Dec. 4	53.00	18	53.00	May 6	53.00	June 22	57.00

St. Joseph 3. (36/3-33Q1). John Hensler. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 33, T. 36 N., R. 3 E. Dug unused well in glacial drift, diameter unknown, depth 13 feet. Highest water level is 0.75 below lsd, Mar. 13, Apr. 15, 1939; lowest 9.94 lsd, Sept. 29, 1941. Records available: 1938-42.

1938		Mar. 13	0.75	1941		Sept. 4	8.70
		Apr. 1	1.86			19	9.10
Oct. 29	6.48	15	0.75	Jan. 15	9.12	29	9.94
Nov. 12	7.43	29	1.95	31	8.51	Oct. 15	9.05
14	7.48	May 13	3.12	Feb. 15	8.08	Nov. 3	8.35
26	7.56	June 1	4.48	Mar. 1	7.61	17	4.70
Dec. 4	6.72	13	5.18	15	7.07	Dec. 1	2.95
17	7.47	29	5.65	29	6.38	16	3.05
		July 14	6.27	Apr. 15	3.52		
1939		Aug. 21	7.30	30	2.53	1942	
				May 15	3.39		
Jan. 5	6.95	1940		31	4.10	Jan. 21	3.95
14	7.18			June 15	4.30	Feb. 12	1.95
28	6.97	Dec. 14	9.69	July 1	5.47	24	2.60
Feb. 10	6.80	31	9.46	17	6.13	Apr. 30	2.95
18	6.58			Aug. 1	6.80	Aug. 9	3.58
28	3.16			15	7.45		

St. Joseph 4. (37/2-10G1). Formerly Sj 16-1. Singer Manufacturing Co. Olive St. and Western Ave., South Bend. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 10, T. 37 N., R. 2 E. Drilled unused water-table (?) well in sand and gravel, diameter 6 inches, depth 118 feet. Land-surface datum is 716 feet above msl. Highest water level is 23.20 below lsd, Mar. 1, 1946; lowest 34.0 below lsd, May 16, 1949. Records Available: 1944-53. Affected by nearby pumping.

1944		July 12	30.14	Aug. 10	30.10	Sept. 7	29.59
		19	30.21	16	31.27	13	29.49
June 28	29.86	26	30.42	24	30.17	20	29.85
July 5	29.41	Aug. 1	30.87	30	29.60	27	29.10

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 4--Continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1944		Aug. 8	30.84	Sept. 27	32.25	Dec. 29	29.90
		16	30.42	Oct. 16	31.49		
Oct. 4	29.30	23	30.42	23	30.94	1948	
11	29.45	30	30.57	Nov. 1	31.90	Jan. 5	29.10
19	29.55	Sept. 6	30.80	25	30.25	12	30.16
25	29.32	14	29.74	29	29.70	19	28.97
Nov. 8	28.59	20	29.09	Dec. 5	30.30	26	28.87
12	29.12	27	29.07			Feb. 2	28.94
16	29.38	Oct. 4	29.03	1947		9	29.19
22	29.96	10	28.94	Feb. 14	29.88	16	29.21
29	29.34	18	29.22	28	29.90	23	29.01
Dec. 6	29.70	25	28.74	Mar. 7	29.90	Mar. 1	29.42
15	29.04	Nov. 1	28.90	14	30.03	8	28.40
22	29.71	9	28.58	28	30.75	15	29.53
28	28.79	16	29.19	Apr. 4	29.70	22	29.27
		30	29.17	22	29.54	29	28.02
1945		Dec. 9	29.55	May 3	29.80	Apr. 5	28.30
		13	29.37	9	30.10	12	27.60
Jan. 3	29.58	21	29.19	17	29.25	19	28.40
11	29.53			21	26.45	26	28.90
17	29.38	1946		June 9	26.68	May 3	29.00
24	28.85	Jan. 7	28.75	16	27.40	10	28.40
Feb. 1	29.10	18	27.82	23	27.20	17	28.03
8	28.63	30	27.15	30	27.70	24	29.01
14	28.84	Feb. 7	27.18	July 3	28.40	31	28.98
22	29.01	15	27.46	12	28.70	June 7	28.00
Mar. 1	28.84	Mar. 1	23.20	19	28.30	14	28.67
8	29.01	8	28.37	Aug. 4	28.96	21	28.40
15	30.74	13	27.57	11	28.58	28	28.53
22	29.76	20	28.69	18	28.47	July 5	28.40
29	31.83	27	29.18	26	29.17	12	28.60
Apr. 6	30.50	Apr. 3	28.26	Sept. 9	28.70	19	29.42
12	30.01	11	28.55	15	28.68	26	30.10
19	30.80	18	28.27	22	29.10	Aug. 2	29.20
26	30.51	25	27.93	29	27.82	9	28.58
May 3	30.36	May 3	29.26	Oct. 5	28.50	16	29.61
10	30.17	9	29.30	12	28.15	23	28.86
17	30.28	16	29.55	20	28.50	30	29.03
24	30.16	23	28.90	27	28.48	Sept. 6	30.10
June 1	29.73	31	26.80	Nov. 3	29.10	13	30.40
7	29.55	June 7	28.75	10	28.50	20	29.94
14	30.23	21	27.40	17	28.65	27	29.90
21	29.98	28	28.73	24	28.62	Oct. 4	29.35
28	30.17	July 19	32.20	Dec. 1	28.98	11	28.94
July 5	29.18	Aug. 15	31.20	5	29.07	18	29.32
12	30.61	23	31.10	15	28.78	25	29.20
19	31.41	Sept. 5	31.24	22	29.02	Nov. 1	28.90
Aug. 2	30.67						

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 4--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1948		Feb. 7	29.64	1951		Nov. 26	28.75
		13	29.60			Dec. 3	27.50
Nov. 8	29.36	20	29.20	Jan. 1	28.40	10	28.00
15	29.40	27	28.90	8	28.10	16	28.40
22	29.00	Mar. 6	27.50	17	27.70	27	27.55
29	29.20	13	28.40	22	28.10		
Dec. 6	29.10	20	28.40	29	28.40	1952	
13	29.58	27	29.00	Feb. 5	27.60	Jan. 2	26.85
20	29.30	Apr. 3	28.30	12	27.60	8	28.05
26	29.50	10	27.20	19	27.40	15	28.00
		17	27.50	26	27.00	22	26.80
1949		24	28.10	Mar. 5	28.40	29	27.10
		May 1	27.00	12	28.40	Feb. 5	27.95
Jan. 3	29.47	8	28.60	19	28.20	12	27.55
10	30.80	15	27.00	26	28.40	19	26.90
17	30.85	22	27.60	Apr. 2	27.80	26	26.65
Mar. 14	29.00	29	26.00	9	28.60	Mar. 4	27.00
Apr. 4	29.80	June 5	27.40	16	26.70	18	26.80
11	31.05	12	27.10	23	28.30	25	27.50
18	30.10	19	26.90	30	29.00	Apr. 3	27.75
25	30.40	26	27.00	May 7	28.10	16	27.20
May 2	30.24	July 3	26.53	14	29.10	May 1	27.40
9	30.60	10	28.96	21	29.00	6	27.40
16	34.00	17	26.80	28	27.80	13	27.30
23	30.70	24	27.80	June 4	27.70	20	28.10
30	29.10	31	27.80	11	28.80	27	28.00
June 6	31.80	Aug. 7	28.20	18	29.30	June 3	28.40
13	31.70	14	27.00	25	29.30	16	28.70
20	31.20	21	27.80	July 2	29.00	23	28.40
Sept. 5	31.76	28	27.10	9	29.00	July 1	29.20
12	30.70	Sept. 4	26.70	16	29.60	8	29.80
19	31.10	11	27.20	23	29.75	15	28.60
24	31.80	18	27.20	30	27.50	22	29.60
Oct. 3	31.00	25	28.20	Aug. 7	26.30	29	27.40
10	31.45	Oct. 2	27.70	13	27.98	Aug. 12	27.90
17	30.41	9	27.70	27	27.20	18	29.40
24	31.10	16	27.60	Sept. 4	27.80	26	29.05
31	30.30	23	27.50	10	28.20	Sept. 3	29.70
Nov. 7	30.50	30	28.30	17	27.90	9	29.30
14	31.90	Nov. 6	28.80	25	29.20	16	29.30
Dec. 5	31.32	13	28.10	Oct. 1	28.60	29	29.70
12	32.50	20	28.50	8	29.40	Oct. 7	28.10
		27	28.00	15	30.20	14	29.60
1950		Dec. 4	28.30	22	28.95	28	29.45
		11	27.70	29	30.00	Nov. 3	28.70
Jan. 9	28.70	18	27.50	Nov. 5	30.25	11	29.45
16	29.50	25	28.50	12	28.30	18	29.30
30	28.60			19	28.00		

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 4--continued

Date	Water level	Date	Water level	Date	Water level	Date	Water level
1952		1953		Feb. 10	30.00	Mar. 31	30.20
Nov. 26	29.10	Jan. 13	29.30	17	29.30	Apr. 14	30.30
Dec. 16	29.10	20	29.80	Mar. 2	29.90	May 5	29.50
30	29.30	27	30.80	10	30.10	12	30.70
				24	30.50		

St. Joseph 5. (37/2-10G2). Formerly S_j 16-2, S_j 16F. Singer Manufacturing Co. Olive St. and Western Ave., South Bend. SW $\frac{1}{2}$ NE $\frac{1}{2}$ sec. 10, T. 37 N., R. 2 E. Dug unused water-table (?) well in sand, diameter 40 feet, reported depth 40 feet. Land-surface datum is 716 feet above msl. Highest water level is 15.89 below lsd, July 17, 1950; lowest 21.72 below lsd, Feb. 22, 1945. Records available: 1944-53. Affected by nearby pumping.

1944		Jan. 24	21.64	Oct. 10	21.19	1947	
June 28	19.28	Feb. 1	21.64	18	21.04	Feb. 14	19.89
July 5	19.31	8	21.71	25	21.14	Apr. 4	19.89
12	19.48	14	21.70	Nov. 1	21.14	22	19.89
19	19.57	22	21.72	9	21.09	May 3	20.89
26	19.87	Mar. 1	21.67	16	21.09	17	20.39
Aug. 1	19.91	8	21.64	30	21.15	21	19.89
10	19.79	15	21.62	Dec. 9	21.19	June 16	19.89
16	20.29	22	21.65	13	21.19	23	19.89
24	20.45	29	21.71	21	21.19	Aug. 4	19.89
30	20.54	Apr. 6	21.67			11	19.89
Sept. 7	20.70	12	21.60	1946		18	19.89
13	20.83	19	21.54	Jan. 7	21.09	26	19.89
20	20.95	26	21.46	Mar. 20	20.39	Sept. 15	19.89
27	21.09	May 3	21.41	27	20.40	Nov. 3	19.89
Oct. 11	21.20	10	21.52	Apr. 3	20.40	10	19.89
19	21.26	June 1	20.74	11	19.90	Dec. 1	19.89
25	21.30	7	20.58	18	19.90	22	19.89
Nov. 1	21.14	14	20.59	May 3	19.90	29	19.89
8	21.35	21	20.54	9	19.90		
16	21.42	28	20.64	16	19.90	1948	
22	21.38	July 5	20.66	July 7	19.90	Jan. 5	19.89
29	21.63	12	20.68	July 19	19.90	12	19.89
Dec. 6	21.46	19	20.64	Aug. 23	19.40	19	19.89
15	21.48	Aug. 2	21.39	Sept. 5	19.40	26	19.89
22	21.57	8	21.01	27	19.40	Feb. 2	19.89
28	21.46	16	21.01	Oct. 16	19.40	16	19.89
		23	21.13	23	19.90	23	19.89
		30	21.14	Nov. 25	19.90	Mar. 1	19.89
1945		Sept. 6	21.14	29	19.90	8	19.89
Jan. 3	21.63	14	21.09			15	19.89
11	21.58	20	21.07			22	20.39
17	21.61	27	21.04				
		Oct. 4	21.11				

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph . 5--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1948		May 2	19.89	July 3	16.19	May 21	17.69
		9	19.89	10	16.09	28	17.59
Mar. 29	17.89	16	19.89	17	15.89	June 4	17.69
Apr. 19	18.89	23	19.89	24	16.09	11	17.59
26	18.89	30	19.81	31	16.39	18	17.72
May 10	20.09	June 6	19.89	Aug. 7	16.14	25	17.89
17	19.39	13	19.89	14	16.39	July 2	17.89
24	19.39	20	19.64	21	16.64	9	18.14
31	19.39	Sept. 5	20.14	28	16.89	16	18.14
June 7	18.89	12	20.14	Sept. 4	16.89	23	18.14
14	19.14	19	20.39	11	16.89	30	18.39
21	18.89	24	20.39	18	17.19	Aug. 7	18.39
28	18.89	Oct. 3	20.39	25	17.39	13	18.49
July 5	18.89	10	20.14	Oct. 2	17.79	Sept. 4	18.64
12	19.09	17	20.14	9	18.39	10	18.64
19	18.89	24	20.14	16	17.59	17	18.64
26	18.89	31	20.14	23	17.89	25	18.89
Aug. 2	18.89	Nov. 7	20.14	30	17.89	Oct. 1	18.89
9	18.89	14	20.14	Nov. 6	18.19	8	18.89
16	18.89	Dec. 5	20.64	13	18.39	15	18.89
23	18.89	12	20.64	20	18.39	22	18.89
30	18.89			27	18.39	29	18.89
Sept. 6	18.89	1950		Dec. 4	18.39	Nov. 5	18.89
13	18.89			11	19.39	12	18.64
20	18.89	Jan. 9	20.49	18	18.39	19	19.06
27	18.89	16	20.49	25	18.39	26	18.89
Oct. 4	18.89	30	20.09			Dec. 3	18.89
18	20.89	Feb. 7	19.89	1951		10	18.64
25	21.19	13	19.89	Jan. 1	18.39	16	18.64
Nov. 1	20.89	20	19.89	8	18.39	27	18.64
8	20.64	27	19.89	17	18.19		
15	20.89	Mar. 6	19.89	22	18.19	1952	
22	20.39	13	19.89	29	18.09	Jan. 2	18.39
Dec. 6	20.56	20	19.39	Feb. 5	18.09	8	18.39
13	19.89	27	19.14	12	17.89	15	18.72
20	21.39	Apr. 3	18.89	19	17.89	22	17.89
26	20.56	10	18.39	26	17.89	29	17.81
		17	17.89	Mar. 12	17.89	Feb. 5	17.72
1949		24	17.64	19	18.19	12	17.39
		May 1	17.39	26	18.09	19	17.22
Jan. 3	21.39	8	17.49	Apr. 2	18.09	26	17.14
10	21.06	15	16.89	9	20.49	Mar. 4	17.14
17	21.39	22	16.89	16	18.09	18	17.14
Mar. 14	20.89	29	16.89	23	18.09	25	17.22
Apr. 4	20.14	June 5	16.69	30	18.19	Apr. 3	17.22
11	20.14	12	16.64	May 7	17.89	16	17.14
18	20.22	19	16.39	14	17.89	May 1	17.14
25	20.14	26	16.39				

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 5--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1952		July 29	17.39	Nov. 11	18.14	Feb. 17	19.39
		Aug. 12	17.89	18	18.89	Mar. 2	19.39
May 13	16.97	18	18.14	26	17.76	10	19.39
20	16.89	26	18.14	Dec. 16	19.06	24	18.89
27	16.89	Sept. 3	18.39	30	19.39	31	19.14
June 3	17.14	9	18.14			Apr. 14	18.89
16	17.39	16	18.22	1953		May 5	18.89
23	17.39	29	18.22			12	18.89
July 1	17.39	Oct. 7	18.14	Jan. 13	19.39	June 12	18.64
8	17.39	14	18.14	20	19.39	17	18.89
15	17.48	28	18.14	27	19.47	23	18.89
22	17.39	Nov. 3	18.14	Feb. 10	19.39		

St. Joseph 6. (37/2-12D4). Formerly Sj 22. Palace Theater. Colfax Ave. and Michigan St., South Bend. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 12, T. 37 N., R. 2 E.. Drilled unused artesian well in sand and gravel, diameter 12 inches, depth 97 feet. Land-surface datum is 708 feet above msl. Recording gage installed Sept. 20, 1944. Highest water level is 26.20 below lsd, Mar. 31, 1949; lowest 46.95 below lsd, Aug. 27, 28, 1948. Records available: 1944-53. Affected by nearby pumping.

(Daily 2 a.m. water level from recorder graph)

1944		Nov. 18	36.20	May 1	31.55	Nov. 1	32.25
		27	32.15	4	31.05	11	33.05
June 8	h37.29	Dec. 1	33.95	15	31.50	15	32.80
12	h34.06	10	36.70	27	35.40	23	31.15
15	h37.87	15	36.10	June 1	34.00	Dec. 1	32.10
29	h40.44	27	31.30	4	31.45	3	30.50
July 1	h39.22			15	38.50	15	32.25
8	h41.97	1945		30	41.30	21	33.75
15	h39.67			July 1	41.00		
22	h36.55	Jan. 1	32.45	15	39.40	1946	
Aug. 1	h39.90	3	32.40	16	37.10	Jan. 1	29.95
5	h43.46	6	35.70	21	43.00	26	33.70
15	h42.87	15	33.05	Aug. 1	40.10	Feb. 9	34.25
29	h34.63	Feb. 1	34.30	3	41.90	15	31.90
Sept. 1	h35.18	15	35.00	15	40.25	18	30.95
7	h36.47	18	35.75	27	36.50	Sept. 2	40.30
15	h35.16	26	32.95	8	41.00	Mar. 1	33.55
20	h36.90	Mar. 1	34.35	15	34.70	15	32.65
Oct. 1	34.15	10	32.50	17	32.95	27	30.95
7	35.35	15	35.70	Oct. 1	31.70	Apr. 1	31.20
13	34.05	18	36.95	8	31.05	15	30.40
23	31.70	Apr. 1	32.85	15	31.65	26	33.85
Nov. 1	33.95	15	32.20	19	33.40	May 1	34.10
15	35.00	23	30.45			13	31.25

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 6--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1946		Apr. 21	29.40	Apr. 15	32.05	Mar. 31	26.85
		May 1	32.25	19	31.05	Apr. 1	30.60
May 15	34.55	15	33.10	28	35.60	15	36.45
31	35.60	24	35.40	May 1	34.10	29	37.45
June 1	35.20	26	29.95	15	34.25	May 1	36.95
2	33.23	June 1	29.85	17	32.25	2	34.35
15	37.90	2	28.85	29	39.25	7	41.85
27	41.35	15	34.70	June 1	36.55	15	42.30
July 2	38.30	25	37.25	5	44.00	June 1	37.70
3	37.95	July 1	38.25	14	35.70	12	44.00
15	41.75	15	38.95	15	36.30	15	42.10
21	45.35	22	35.35	July 1	37.80	20	36.95
Aug. 1	43.65	27	41.10	15	44.55	July 1	44.50
4	45.20	Aug. 1	41.70	17	45.40	11	39.50
12	37.45	4	39.95	Aug. 1	43.10	15	42.65
15	39.65	14	44.40	9	37.30	21	46.20
Sept. 1	38.55	15	43.65	15	41.75	Aug. 1	40.05
8	41.90	Sept. 1	38.10	28	46.90	15	40.70
15	35.00	15	36.50	Sept. 1	44.75	27	45.85
16	33.55	21	40.25	4	45.35	Sept. 15	40.35
Oct. 1	35.30	28	34.95	15	40.80	18	41.00
11	37.55	Oct. 1	36.20	27	34.25	26	36.25
15	34.50	13	35.10	Oct. 1	37.50	Oct. 1	37.10
21	32.95	15	35.65	2	38.25	5	31.85
Nov. 1	35.35	18	37.70	15	36.25	9	39.05
4	32.60	Nov. 1	35.30	18	33.60	15	38.65
15	33.65	15	34.15	Nov. 1	34.00	Nov. 1	35.95
Dec. 1	33.15	30	31.90	13	35.90	5	38.00
6	35.35	Dec. 2	32.05	15	32.75	15	33.55
15	34.25	4	33.90	29	31.50	28	28.85
30	31.20	15	31.05	Dec. 1	33.60	Dec. 1	33.45
		27	30.30	15	36.30	15	34.35
				23	36.50	16	36.25
				27	32.10	27	29.00
1947		1948		1949		1950	
Jan. 1	32.85	Jan. 1	33.05	Jan. 1	34.40	Jan. 1	31.90
15	32.85	5	30.75	3	30.60	4	28.95
25	35.50	15	32.80	15	35.85	12	32.10
30	30.10	17	33.45	Feb. 1	31.85	15	30.60
Feb. 3	32.15	Feb. 1	33.20	5	35.05	Feb. 1	e31.60
7	34.90	2	31.55	15	32.95	3	33.55
15	33.85	7	34.10	21	31.80	15	30.25
17	31.75	15	33.30	Mar. 1	32.25	21	29.40
Mar. 1	34.40	Mar. 1	31.50	7	31.75	Mar. 1	28.75
13	34.80	15	32.05	12	35.85	15	30.20
24	30.70	19	33.50	15	34.00	20	28.10
Apr. 1	32.70	22	31.05				
4	34.75	Apr. 1	31.95				
15	31.20						

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 6--continued

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1950		Aug. 21	34.80	Jan. 20	36.45	July 14	36.65
		27	39.95	Feb. 1	35.95	15	37.80
Mar. 31	33.70	Sept. 1	38.05	3	36.10	28	41.90
Apr. 1	34.70	15	35.60	15	35.10	Aug. 1	39.25
2	34.80	25	28.65	26	31.75	15	39.15
15	33.80	Oct. 14	h36.90	Mar. 1	33.20	20	35.90
17	30.75	21	38.10	5	32.75	31	40.95
May 1	31.90	23	33.35	15	34.90	Sept. 1	41.25
15	35.25	Nov. 1	38.35	17	35.70	10	35.65
26	37.85	13	32.40	Apr. 1	34.75	15	39.40
June 3	36.75	15	34.60	14	35.50	Oct. 1	34.10
9	38.15	Dec. 1	35.30	15	35.30	2	31.85
15	36.10	7	31.00	23	31.65	6	38.80
20	31.35	15	36.20	May 1	34.65	Nov. 1	34.30
July 1	e35.80			14	34.30	5	31.20
5	32.15	1951		15	34.50	15	35.60
13	38.65	Jan. 1	33.55	20	39.05	16	35.65
15	36.30	2	31.80	June 1	36.50	Dec. 1	35.30
Aug. 1	36.40	15	35.20	19	41.65	10	31.60
15	38.05			July 1	39.10	15	34.75
						22	36.35

(Daily highest water level from recorder graph, 1952)

Day	Jan.	Feb.	Mar.	Apr.	May	June
1	-----	32.05	31.55	30.25	37.10	32.70
2	-----	31.95	30.50	31.25	38.05	31.60
3	31.70	30.65	29.35	31.55	37.65	33.70
4	32.75	29.40	30.40	32.00	37.05	34.40
5	33.55	30.25	31.15	32.25	37.05	35.55
6	32.45	30.80	31.80	31.45	38.40	36.44
7	31.20	31.30	31.55	30.00	38.50	38.00
8	31.90	31.60	31.85	30.45	37.35	39.20
9	31.40	31.50	30.65	30.85	35.55	38.50
10	32.30	31.50	29.25	31.80	34.70	38.50
11	33.30	29.75	30.45	32.30	33.70	38.85
12	33.80	30.55	30.90	31.85	31.55	39.00
13	32.45	31.45	31.30	30.45	32.00	38.15
14	30.25	31.65	31.15	29.30	32.00	38.50
15	31.10	31.80	31.20	30.55	32.20	37.85
16	32.05	32.10	29.95	32.20	31.80	36.65
17	32.95	29.85	29.35	32.55	31.60	38.35
18	33.30	28.80	29.55	32.95	30.25	38.50
19	33.40	29.15	29.95	33.35	29.20	39.40
20	32.35	29.40	30.40	33.10	30.45	39.30
21	30.65	28.95	30.95	31.95	30.90	37.60

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 6--continued

(Daily highest water level from recorder graph, 1952)

Day	Jan.	Feb.	Mar.	Apr.	May	June
22	31.25	29.20	31.35	33.20	31.85	35.65
23	31.95	29.60	30.90	34.65	30.95	35.35
24	-----	29.80	29.50	34.65	32.50	35.15
25	32.85	28.65	29.90	34.35	32.60	36.80
26	33.20	30.10	30.70	34.45	31.75	-----
27	32.25	30.85	31.75	34.65	32.20	-----
28	30.10	-----	31.95	34.40	33.80	-----
29	30.85	32.35	31.70	35.30	34.50	-----
30	31.40	-----	31.50	36.00	34.65	-----
31	32.10	-----	29.75	-----	33.15	-----

(Daily highest water level from recorder graph, 1953)

1	-----	34.45	34.05	32.35	35.45	41.85
2	-----	33.50	-----	32.70	36.40	41.05
3	33.00	-----	33.30	32.70	36.50	41.30
4	33.45	-----	34.15	-----	35.85	42.10
5	32.35	-----	34.50	-----	35.70	43.15
6	33.35	-----	34.70	-----	36.05	43.10
7	34.10	-----	34.40	-----	36.55	42.10
8	34.55	-----	34.45	-----	36.85	41.70
9	35.05	33.90	33.30	-----	36.55	41.80
10	-----	34.70	33.80	-----	36.95	-----
11	-----	35.20	34.35	-----	36.90	-----
12	-----	35.55	34.55	-----	37.45	-----
13	-----	35.55	34.40	33.80	38.35	-----
14	-----	35.05	34.75	34.35	38.05	-----
15	-----	33.30	34.50	34.95	37.65	-----
16	-----	-----	33.35	35.20	37.65	-----
17	-----	33.05	33.65	35.40	36.90	-----
18	-----	33.95	-----	35.30	35.20	-----
19	-----	34.45	34.05	35.00	36.05	-----
20	-----	34.80	34.75	34.00	37.55	-----
21	-----	34.95	35.10	34.35	38.85	-----
22	-----	34.30	34.95	35.05	39.60	-----
23	-----	33.85	33.40	35.95	38.10	-----
24	35.60	33.65	33.80	36.15	37.55	-----
25	35.25	34.20	34.15	35.40	35.85	-----
26	33.55	34.55	33.75	35.55	37.75	-----
27	33.30	34.80	32.95	-----	38.80	-----
28	33.95	34.80	32.60	-----	39.35	-----
29	34.55	-----	31.70	34.60	39.80	-----
30	34.85	-----	31.35	35.15	40.15	-----
31	34.65	-----	31.85	-----	41.35	-----

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 7. (37/2-11K4). Formerly Sj 25-3. Oliver Farm Equipment Co. Chapin and Fords Sts., South Bend. NW $\frac{1}{2}$ SE $\frac{1}{4}$ sec. 11, T. 37 N., R. 2 E. Driven unused water-table well in sand and gravel diameter 2 inches, depth 44 feet. Land-surface datum is 718 feet above msl. Highest water level is 28.37 below lsd, July 5, 1945; lowest 32.10 below lsd, Mar. 22, 1945. Records available: 1944-45.

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1944		1945		Mar. 15	31.77	July 19	30.00
Sept. 30	29.28	Jan. 18	31.63	22	32.10	26	30.18
Oct. 3	29.68	25	31.69	29	31.81	Aug. 2	29.68
6	31.38	Feb. 1	31.70	Apr. 5	31.54	9	29.54
16	30.19	8	31.82	June 7	29.14	17	29.40
23	31.18	15	31.76	14	28.74	23	30.35
Nov. 1	31.30	22	31.72	21	29.70	30	30.33
8	31.28	Mar. 1	31.75	28	28.58	Sept. 6	30.40
		8	31.75	July 5	28.37		
				12	29.15		

St. Joseph 8. (37/2-3N2). Formerly Sj 23. Bendix Aviation Corp. Bendix Dr. and Westmoor St., South Bend. SW $\frac{1}{2}$ SW $\frac{1}{2}$ sec. 3, T. 37 N., R. 2 E. Drilled unused water-table well in gravel and sand, diameter 12 inches, depth 198 feet. Land-surface datum is 712 feet above msl. Recording gage installed June 13, 1944. Highest water level is 20.7 below lsd, Nov. 17, 1952; lowest 50.5 below lsd, May 7, 8, 1945. Records available 1944-53. Affected by nearby pumping.

(Daily lowest water level from recorder graph, 1944)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	----	----	----	----	----	----	48.7	48.1	47.3	46.8	42.4	39.6
2	----	----	----	----	----	----	48.2	47.9	47.5	46.6	42.1	39.6
3	----	----	----	----	----	----	38.8	47.5	47.2	46.8	42.0	39.4
4	----	----	----	----	----	----	36.8	47.4	46.5	47.1	41.8	39.3
5	----	----	----	----	----	----	37.4	47.2	46.7	47.2	41.6	39.5
6	----	----	----	----	----	----	37.5	46.4	46.8	47.3	41.9	----
7	----	----	----	----	----	----	37.2	46.3	46.9	47.4	41.6	----
8	----	----	----	----	----	----	37.1	----	46.8	46.5	41.3	----
9	----	----	----	----	----	----	37.0	----	47.0	47.0	41.1	----
10	----	----	----	----	----	----	42.1	47.6	46.7	----	41.1	----
11	----	----	----	----	----	----	42.8	47.7	----	----	41.0	----
12	----	----	----	----	----	----	----	47.7	----	47.4	40.8	----
13	----	----	----	----	----	----	----	47.3	----	47.3	40.9	39.3
14	----	----	----	----	----	44.5	----	47.5	46.2	47.2	40.8	39.2
15	----	----	----	----	----	45.0	----	47.5	46.8	46.8	40.7	39.3
16	----	----	----	----	----	45.6	----	47.6	47.3	46.8	40.2	39.3
17	----	----	----	----	----	45.5	----	47.5	47.2	46.9	41.0	39.2
18	----	----	----	----	----	45.0	46.1	47.5	47.5	47.0	40.6	39.0
19	----	----	----	----	----	45.1	46.6	47.3	47.8	47.1	40.4	39.1
20	----	----	----	----	----	45.4	46.7	46.9	47.2	47.1	40.1	39.2
21	----	----	----	----	----	45.7	46.6	47.1	47.5	47.0	----	39.1

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 8--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
22	----	----	----	----	----	45.9	46.7	47.2	47.4	46.8	40.1	38.9
23	----	----	----	----	----	45.9	46.6	47.1	47.0	46.6	40.0	38.8
24	----	----	----	----	----	45.9	46.3	47.0	46.7	46.9	39.9	38.7
25	----	----	----	----	----	45.2	47.1	47.1	46.5	47.1	39.8	38.1
26	----	----	----	----	----	46.1	47.2	47.1	47.4	47.1	39.7	38.1
27	----	----	----	----	----	46.8	47.5	46.6	47.6	47.1	----	38.1
28	----	----	----	----	----	47.0	47.7	47.0	47.6	46.9	----	38.3
29	----	----	----	----	----	47.8	47.8	47.4	47.5	43.7	39.7	38.2
30	----	----	----	----	----	48.4	47.5	47.5	47.5	42.6	39.6	38.1
31	----	----	----	----	----	----	47.9	47.9	----	42.5	----	37.9

(Daily lowest water level from recorder graph, 1945)

1	38.1	40.8	38.2	48.3	49.8	45.3	46.6	46.3	36.8	34.4	35.5	32.9
2	----	40.8	38.4	47.9	49.2	46.8	36.7	46.5	36.5	34.8	35.5	32.5
3	----	40.8	38.7	48.3	49.4	46.4	33.7	----	36.5	34.8	35.3	37.8
4	----	40.0	40.3	48.5	49.9	46.1	32.0	46.5	28.5	34.9	35.1	38.3
5	----	39.3	41.6	48.7	50.2	44.9	30.9	46.3	27.4	35.0	35.3	38.9
6	38.1	33.8	41.9	49.0	50.4	43.5	30.1	45.5	26.7	----	35.5	39.0
7	38.1	32.5	43.7	49.1	50.5	43.2	29.4	46.1	----	----	35.5	39.1
8	38.1	31.1	44.1	49.0	50.5	44.5	----	46.4	----	----	35.5	34.4
9	38.2	29.9	44.3	48.6	----	45.2	----	46.5	----	----	35.6	33.6
10	----	28.9	43.8	49.0	49.6	45.1	40.8	46.8	----	----	35.6	38.5
11	----	28.3	43.1	49.3	50.0	45.5	41.9	46.8	----	----	35.2	39.0
12	----	27.6	43.4	49.5	50.0	45.8	42.4	----	----	----	35.2	38.4
13	----	27.0	43.7	49.7	49.2	45.8	----	46.9	33.8	----	35.4	36.1
14	38.5	26.6	43.9	49.1	48.9	46.2	----	47.0	34.7	----	38.3	34.0
15	38.4	----	44.1	48.1	49.5	----	----	46.8	----	----	37.9	33.6
16	38.3	----	44.1	48.7	49.7	----	43.4	----	----	----	37.7	33.3
17	38.4	----	44.5	49.3	49.7	----	44.0	----	----	----	38.3	33.4
18	38.4	----	44.2	49.6	49.9	44.4	44.6	----	35.9	----	33.3	33.5
19	39.1	----	44.0	49.8	49.9	45.1	44.8	----	36.1	35.2	38.3	33.5
20	39.5	----	44.5	50.0	48.9	45.5	45.7	----	36.3	35.2	38.9	33.5
21	39.6	----	45.5	50.0	48.8	45.7	45.9	42.1	36.5	35.1	38.6	33.6
22	39.6	34.8	46.4	48.8	49.4	45.9	45.9	40.1	36.3	35.0	38.5	33.5
23	39.9	35.8	47.0	49.0	49.8	46.0	44.7	38.9	36.1	35.3	37.1	33.2
24	40.1	36.4	47.3	49.6	49.9	44.1	45.7	38.1	36.0	35.3	32.8	32.8
25	40.2	e36.8	47.2	50.0	49.4	44.6	45.8	37.3	36.4	35.4	32.2	----
26	40.3	e37.2	47.2	50.2	48.9	----	46.3	36.7	----	35.4	31.9	----
27	40.4	e37.7	47.9	50.4	48.5	46.0	46.5	----	34.8	35.3	32.0	----
28	40.4	37.9	48.5	----	47.8	46.4	43.1	35.7	34.8	35.0	32.8	----
29	40.6	----	48.6	----	47.8	46.7	44.8	36.2	34.6	35.3	32.8	33.0
30	40.7	----	48.6	----	47.7	46.8	45.5	36.5	34.3	35.3	32.8	32.8
31	40.8	----	48.4	----	47.7	----	46.0	36.9	----	35.5	----	32.8

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 8--continued

(Daily lowest water level from recorder graph, 1946)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	32.6	35.7	35.5	34.9	34.8	----	----	----	----	----	44.3	----
2	32.5	35.7	35.5	35.4	34.9	----	----	----	----	----	44.1	----
3	32.7	35.3	35.3	35.3	34.8	----	----	----	----	----	40.4	37.8
4	32.7	35.3	35.5	35.3	34.3	----	----	----	----	----	43.3	37.6
5	34.6	35.3	35.4	35.3	----	----	----	----	----	----	43.7	37.6
6	34.7	35.3	35.5	35.2	----	----	----	----	----	----	44.3	37.2
7	35.0	35.4	35.6	35.1	----	----	----	----	----	----	44.7	36.9
8	35.2	35.4	35.6	35.2	----	----	----	----	----	----	----	36.3
9	35.4	35.4	33.3	35.3	----	----	----	----	----	----	41.5	40.5
10	35.5	35.0	33.3	35.4	----	----	----	----	----	----	41.0	41.3
11	35.4	35.2	34.9	35.3	33.6	----	----	----	----	----	42.9	----
12	35.4	35.4	35.1	35.2	33.3	----	----	----	----	----	43.7	----
13	35.4	35.4	35.1	34.9	33.8	----	----	----	----	----	44.3	----
14	35.5	35.5	35.2	----	----	----	----	----	----	----	44.6	----
15	35.8	35.6	35.2	34.9	----	----	----	----	----	31.8	44.8	----
16	35.7	35.5	35.1	35.0	----	----	----	----	----	32.2	44.5	42.4
17	35.9	35.4	34.9	35.0	----	----	----	----	----	32.4	----	43.2
18	35.9	35.3	35.0	34.9	----	----	----	----	----	32.5	43.2	43.7
19	35.9	35.4	35.2	34.6	----	----	----	----	----	32.2	44.1	44.0
20	35.6	35.5	35.3	34.5	----	----	----	----	----	31.5	44.6	44.3
21	35.5	35.5	35.3	34.3	----	----	----	----	----	----	45.0	44.0
22	35.8	35.6	35.3	34.7	----	----	----	----	----	----	43.2	40.6
23	35.7	35.4	35.1	34.9	----	----	----	----	31.5	----	41.2	42.7
24	35.5	35.0	35.0	34.9	----	----	33.5	----	32.3	38.0	40.2	42.7
24	35.6	35.1	35.2	35.0	----	----	33.9	----	32.8	37.8	39.5	----
26	35.4	35.3	35.3	34.7	----	----	34.1	----	33.2	37.6	39.3	42.2
27	35.2	35.5	35.4	34.3	----	----	33.5	----	33.1	32.8	39.3	42.8
28	35.3	35.6	35.4	34.1	----	----	32.5	----	----	40.6	39.1	42.8
29	35.4	----	35.4	34.5	----	----	----	----	----	42.2	----	39.4
30	35.6	----	35.3	34.7	----	----	----	----	----	43.2	----	41.9
31	35.7	----	35.1	----	----	----	----	----	----	44.0	----	42.5

(Daily lowest water level from recorder graph, 1947)

1	41.1	----	----	38.4	33.0	----	----	----	41.5	46.8	46.5	43.9
2	42.2	----	----	38.4	35.5	34.8	29.3	43.7	43.3	46.3	44.5	45.2
3	43.2	----	----	38.5	36.2	36.4	34.8	39.8	44.3	46.2	45.2	45.7
4	43.2	----	----	38.4	36.5	37.5	27.1	42.5	45.0	46.1	45.8	46.1
5	40.9	----	----	37.9	36.7	38.2	26.1	43.6	45.3	45.4	46.2	46.4
6	42.1	----	----	37.4	32.5	38.5	25.3	44.3	45.3	45.3	46.5	46.4
7	42.9	----	----	37.9	31.9	38.6	31.4	43.8	42.7	45.8	46.7	44.2
8	43.6	----	----	38.0	31.5	34.8	33.3	44.4	43.8	45.9	46.6	44.4
9	43.9	----	----	37.9	31.5	37.0	34.2	44.4	44.9	46.0	46.0	45.5
10	44.0	----	----	37.9	31.2	38.3	36.7	41.8	45.4	45.9	45.8	45.9
11	43.7	----	----	37.8	----	39.0	37.8	42.7	45.8	45.8	46.3	----
12	40.5	----	----	37.6	----	39.1	38.5	43.5	46.1	45.0	46.6	----

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 8--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
13	42.4	-----	-----	36.9	-----	39.3	38.7	44.9	46.1	45.2	46.8	-----
14	43.5	-----	-----	37.1	28.1	39.5	37.0	45.3	45.8	45.6	46.9	-----
15	43.9	-----	-----	37.5	27.9	36.2	36.6	45.5	45.8	46.0	46.9	46.0
16	39.6	-----	-----	37.8	28.7	39.2	36.2	45.5	46.1	46.2	46.9	46.5
17	38.5	-----	-----	37.7	29.3	39.8	39.3	42.6	46.3	46.3	45.4	46.8
18	39.5	-----	-----	37.6	24.6	40.7	-----	43.5	46.5	46.3	46.2	47.0
19	37.3	-----	-----	35.2	28.1	41.1	-----	44.5	46.7	46.9	46.5	47.3
20	42.0	-----	38.6	33.9	29.1	41.3	37.0	45.3	46.7	45.6	46.7	47.3
21	42.7	-----	38.6	33.8	29.8	41.5	-----	45.7	46.4	45.9	46.8	47.1
22	43.2	-----	38.2	33.8	34.6	37.9	40.5	45.9	46.0	46.1	46.7	46.0
23	43.2	-----	37.3	33.7	35.7	40.4	41.3	45.8	46.3	46.3	46.6	46.8
24	41.5	-----	38.1	33.7	36.1	41.3	42.0	45.4	46.6	46.3	45.6	46.9
25	40.8	-----	-----	33.5	33.4	42.1	42.4	44.3	46.7	46.2	46.1	44.9
26	39.5	-----	-----	33.4	36.2	42.5	42.5	45.1	46.8	42.9	46.1	45.0
27	-----	-----	-----	32.7	36.9	43.0	42.4	45.5	46.7	44.6	46.1	45.7
28	-----	-----	-----	-----	37.5	43.0	41.8	45.9	46.5	45.4	43.9	45.7
29	-----	-----	-----	-----	38.0	42.8	42.5	46.0	46.2	46.0	43.2	45.4
30	-----	-----	-----	33.1	37.6	39.0	43.8	46.0	46.6	46.3	41.3	46.2
31	-----	-----	-----	-----	35.2	-----	-----	43.1	-----	46.5	-----	46.7

(Daily lowest water level from recorder graph, 1948)

1	46.6	45.4	47.1	47.2	46.4	37.0	-----	44.2	47.1	47.0	e44.5	45.7
2	45.3	44.0	47.4	47.3	46.4	36.9	-----	44.4	47.2	47.0	e39.6	46.1
3	45.4	45.1	47.6	47.3	46.3	36.9	-----	44.7	47.2	46.1	38.7	46.4
4	45.3	46.3	47.8	46.5	46.4	36.9	-----	44.8	47.2	45.8	38.1	46.4
5	45.7	46.8	47.8	46.2	46.4	36.8	28.5	44.9	47.1	46.2	42.0	46.4
6	46.5	47.1	47.8	46.6	46.5	36.6	30.7	45.0	46.4	46.5	42.7	46.3
7	46.9	47.1	46.7	46.8	46.5	36.4	31.6	45.0	46.6	46.9	-----	46.0
8	47.2	44.7	46.0	47.0	45.3	36.3	32.1	45.0	46.7	47.0	-----	46.5
9	47.4	45.3	46.7	47.0	45.5	36.3	32.5	45.0	46.7	47.0	44.6	46.7
10	47.4	46.2	47.0	47.0	45.6	36.2	32.7	45.3	46.7	46.9	45.2	46.8
11	45.0	46.9	47.2	46.9	42.7	36.1	32.9	45.4	46.7	46.3	45.5	46.8
12	45.3	47.1	47.4	46.2	41.3	36.1	-----	45.6	46.5	-----	45.7	-----
13	-----	47.5	47.4	46.5	40.6	35.9	38.2	45.6	46.3	-----	45.7	43.2
14	46.9	47.5	46.5	46.7	40.1	35.8	39.3	45.7	46.5	-----	45.6	44.4
15	47.2	45.1	46.7	46.7	39.7	35.8	40.3	45.6	46.7	-----	45.6	45.3
16	47.4	45.2	47.2	46.7	39.4	35.3	41.0	45.4	46.9	-----	46.0	45.9
17	47.4	46.0	47.5	46.6	39.1	35.2	41.2	45.8	47.0	-----	46.2	46.1
18	45.5	46.6	47.6	46.5	38.9	35.5	41.1	46.0	47.0	-----	46.3	46.2
19	45.3	47.1	47.7	45.8	38.7	35.5	41.7	46.3	47.0	-----	46.4	45.7
20	46.3	47.3	47.7	46.0	38.6	35.5	42.3	46.4	46.7	-----	45.5	46.0
21	47.0	47.3	46.9	45.9	38.4	35.4	42.6	46.4	46.9	-----	46.3	46.4
22	47.3	45.2	46.3	45.9	38.3	35.4	42.8	46.4	47.0	-----	46.2	46.6
23	47.5	45.5	46.9	46.0	38.1	35.5	42.8	46.3	47.0	-----	46.3	46.7
24	47.5	46.3	47.3	46.0	37.9	35.3	42.7	46.5	47.0	46.7	46.4	46.7
25	47.4	46.8	47.4	45.5	37.8	35.3	42.7	46.7	47.0	46.5	46.4	45.4
26	46.7	47.1	47.5	45.5	37.7	35.2	42.9	46.8	46.9	45.8	46.3	44.6

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 8--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
27	47.1	47.4	47.5	45.8	37.7	----	43.2	46.9	46.3	43.6	46.3	45.5
28	47.3	47.4	47.3	46.2	37.6	----	43.5	47.0	46.6	43.6	46.0	46.0
29	----	47.0	46.4	46.3	37.5	----	44.0	47.0	46.8	44.7	46.0	46.4
30	47.8	----	46.7	46.4	37.3	----	44.2	46.8	46.9	45.2	44.9	46.5
31	47.8	----	47.1	----	37.1	----	44.3	47.0	----	45.2	----	46.6

(Daily lowest water level from recorder graph, 1949)

1	46.3	46.5	46.2	44.3	----	----	----	43.3	44.9	42.8	41.0	42.6
2	45.0	46.5	----	44.3	----	----	28.8	43.5	44.7	41.1	36.1	42.8
3	44.5	46.4	----	36.0	----	----	29.2	43.6	44.6	40.1	35.4	42.8
4	46.0	46.4	43.3	40.3	----	----	29.7	43.8	44.5	42.6	35.0	39.9
5	46.3	46.4	43.9	41.5	----	----	----	44.0	44.1	43.1	34.7	40.9
6	46.6	46.2	44.0	----	----	----	----	44.0	44.5	40.9	34.5	41.4
7	46.8	46.1	44.3	----	----	----	----	44.0	44.7	39.9	34.1	41.7
8	46.8	46.1	44.5	----	----	----	----	44.1	44.8	39.5	33.8	41.9
9	46.7	46.1	44.5	----	----	----	----	44.3	44.9	39.3	33.7	42.0
10	46.5	46.1	44.7	----	----	----	----	44.5	44.9	41.7	39.2	41.9
11	46.8	46.1	44.7	----	----	----	38.2	44.5	44.9	42.8	39.7	41.9
12	46.8	46.0	42.3	----	----	----	----	44.6	44.7	43.4	37.6	42.2
13	46.9	45.9	----	----	----	----	39.2	44.5	44.9	43.7	36.5	42.3
14	46.9	44.0	41.9	34.0	----	----	39.7	44.1	45.0	44.0	40.0	42.4
15	46.9	44.9	43.1	38.4	----	----	40.1	----	45.0	44.0	41.1	42.5
16	46.8	45.3	43.6	39.2	----	----	40.3	----	45.0	41.3	41.6	42.6
17	46.6	45.4	44.0	----	----	----	40.0	----	43.9	42.5	42.0	42.6
18	46.7	45.5	44.1	----	----	----	40.6	----	42.7	43.5	42.2	42.6
19	46.8	45.5	44.2	----	----	----	41.1	----	43.3	43.9	42.2	42.6
20	46.8	45.4	41.5	----	----	----	41.5	----	44.1	44.1	39.2	42.6
21	46.8	----	42.6	36.1	----	----	41.7	----	44.4	44.3	41.2	42.7
22	46.8	----	43.4	30.3	----	----	42.0	44.3	44.7	44.4	41.9	42.7
23	46.6	----	43.9	28.8	----	----	42.1	44.7	44.7	41.6	42.5	42.7
24	46.5	45.2	44.2	27.9	----	----	42.0	44.9	44.8	40.4	42.5	42.7
25	46.6	45.8	44.4	27.1	----	----	42.3	45.1	44.7	37.6	41.6	40.5
26	46.6	45.9	44.4	26.6	----	----	42.6	----	44.7	37.0	41.8	39.2
27	46.6	45.9	41.4	26.1	----	----	42.8	----	44.7	36.6	39.1	41.0
28	46.7	46.0	42.5	----	----	----	43.1	----	44.8	36.2	41.1	41.5
29	46.7	----	43.3	----	----	----	43.2	----	44.9	35.9	41.9	41.7
30	46.5	----	43.7	----	----	----	43.2	44.8	44.9	35.6	42.3	41.8
31	46.4	----	44.1	----	----	----	43.1	44.9	----	40.4	----	41.9

(Daily lowest water level from recorder graph, 1950)

1	39.4	42.4	41.0	40.1	37.5	36.9	35.6	37.0	34.8	34.3	35.2	34.9
2	38.3	42.5	41.2	39.8	37.4	36.9	29.0	37.2	34.7	34.4	35.2	34.9
3	40.3	42.5	41.2	39.6	37.4	36.9	27.3	37.3	34.5	34.5	35.2	34.9
4	40.9	42.4	41.2	39.5	37.4	36.8	26.2	37.4	34.3	34.5	35.1	34.9
5	41.2	42.3	40.3	39.5	37.4	36.6	25.4	37.3	34.2	34.4	35.1	35.0

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 8--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
6	41.4	42.1	40.6	39.4	37.4	36.6	24.8	37.3	34.2	34.5	34.1	35.0
7	41.5	42.2	40.8	39.2	37.3	36.6	29.3	37.4	34.1	34.5	35.1	35.0
8	41.5	42.2	41.0	39.1	37.2	36.7	30.3	37.5	34.0	34.5	35.1	35.1
9	41.6	42.1	41.0	39.0	37.3	36.7	30.7	37.6	34.0	34.6	35.2	35.0
10	41.7	42.1	41.0	38.8	37.3	36.6	33.2	37.7	33.8	34.6	35.1	35.0
11	41.8	42.1	41.0	38.7	37.2	36.5	34.0	37.6	33.8	34.7	35.0	35.0
12	41.8	42.0	41.0	38.8	37.2	36.4	34.5	37.6	33.8	34.8	34.9	35.0
13	41.8	42.0	40.5	38.8	37.1	36.3	35.0	37.5	33.8	34.8	34.8	35.1
14	41.9	42.0	40.6	38.8	37.1	36.3	35.0	37.6	33.7	34.8	34.8	35.1
15	41.7	42.0	40.7	38.7	37.1	36.3	35.3	37.7	e33.7	34.8	34.8	35.1
16	40.9	42.0	40.6	38.5	37.2	36.3	35.5	37.7	33.6	34.8	34.9	35.1
17	41.0	42.0	40.6	38.4	37.2	36.3	35.6	37.8	33.6	34.8	34.9	35.0
18	41.2	42.0	40.6	38.4	37.1	36.2	35.9	37.7	33.5	34.9	34.8	35.0
19	41.8	41.9	40.5	38.3	37.1	e36.0	36.0	37.7	33.8	34.9	34.8	35.0
20	42.0	41.8	40.5	38.3	37.1	36.0	35.7	37.7	33.9	35.0	34.8	35.1
21	42.1	41.7	40.5	38.2	37.1	36.0	36.0	36.6	33.9	35.0	34.7	35.1
22	42.2	41.7	40.5	38.1	37.0	36.0	36.2	36.7	34.0	34.9	34.7	35.0
23	42.3	41.7	40.5	38.0	37.0	36.0	36.2	36.8	34.1	34.6	34.7	35.0
24	42.4	41.7	40.5	37.9	37.0	36.0	e36.4	36.8	34.1	34.8	33.6	34.9
25	42.5	41.6	40.5	37.9	36.8	35.9	----	36.8	34.1	34.9	33.9	34.8
26	42.5	39.1	40.3	37.9	37.0	35.7	36.8	36.5	34.1	35.0	34.3	34.9
27	42.3	40.3	40.3	37.8	37.0	35.7	e36.9	36.6	34.2	35.0	34.6	34.9
28	42.3	40.8	40.3	37.7	37.0	35.7	----	36.6	34.3	35.0	34.7	34.8
29	42.3	----	40.3	37.7	36.8	35.7	----	35.5	34.3	35.0	34.8	34.9
30	42.3	----	40.2	37.6	36.8	35.6	----	35.1	34.3	35.0	34.9	34.9
31	42.4	----	40.2	----	36.8	----	----	34.9	----	35.1	----	34.9

(Daily lowest water level from recorder graph, 1951)

1	34.4	34.6	41.0	37.3	43.5	46.7	34.0	47.0	34.2	38.6	46.0	45.3
2	34.1	34.6	41.3	33.9	43.8	46.8	33.0	47.2	41.7	39.5	46.0	45.2
3	34.5	34.6	41.9	37.4	44.1	46.9	34.1	47.4	43.7	40.1	46.0	45.0
4	34.7	29.4	42.0	37.4	44.4	46.7	30.5	47.4	44.7	40.3	46.0	45.0
5	34.7	32.6	42.3	37.2	44.5	46.9	34.3	47.4	45.4	40.8	46.1	44.9
6	34.8	33.2	42.8	37.2	44.6	47.0	34.8	47.4	45.9	41.3	46.1	44.9
7	34.8	33.6	43.2	37.0	44.9	47.1	34.9	47.6	46.3	41.5	46.2	44.9
8	34.7	33.8	43.4	31.9	45.3	47.1	35.0	47.7	46.5	41.8	46.3	44.8
9	34.8	33.9	43.4	30.6	45.5	47.2	40.0	48.0	46.5	42.1	46.3	44.7
10	34.8	33.9	43.4	29.9	45.4	47.0	41.4	48.1	46.7	42.5	46.2	44.5
11	34.9	34.0	43.5	29.2	45.6	47.4	42.3	48.1	46.8	42.6	46.1	44.5
12	34.9	34.1	43.7	28.5	45.7	47.5	43.0	48.1	39.6	42.8	45.9	44.5
13	34.9	34.2	44.2	28.0	45.7	47.6	43.1	48.0	35.8	42.9	46.0	44.5
14	34.8	34.2	44.2	27.5	45.6	47.7	44.0	48.1	33.7	42.9	46.1	44.4
15	34.8	34.2	44.2	26.9	46.0	47.7	44.0	48.1	32.5	43.3	46.2	44.4
16	34.8	34.2	44.4	26.4	46.1	47.9	44.4	48.0	31.5	43.6	46.2	44.1
17	34.8	34.1	44.5	26.2	46.1	47.8	44.8	47.6	30.7	43.8	46.2	43.5
18	34.8	34.2	44.6	25.9	42.5	48.0	45.2	48.7	30.3	43.9	46.0	----
19	34.8	34.1	44.8	31.0	45.0	48.0	45.5	48.7	29.7	42.6	45.9	----

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 8--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
20	34.7	34.1	44.9	32.8	45.3	48.1	45.8	47.7	29.2	44.0	45.9	----
21	34.7	34.3	45.0	33.6	45.8	48.2	45.7	47.9	28.7	44.5	45.9	----
22	34.6	34.3	45.0	34.1	45.8	48.2	44.8	47.9	28.2	44.7	45.9	----
23	34.5	34.3	45.2	38.5	44.7	48.3	45.3	44.2	27.8	44.9	45.7	----
24	34.6	34.3	45.2	39.6	45.6	48.2	43.6	42.2	27.3	45.1	45.6	36.2
25	34.5	34.1	45.1	40.5	46.2	48.6	45.1	41.0	27.0	45.3	45.5	36.0
26	34.6	38.1	45.3	41.1	46.1	48.8	45.9	40.2	26.7	45.5	45.4	34.8
27	34.6	39.3	45.5	41.8	46.0	48.8	46.2	39.6	26.6	45.5	45.4	35.0
28	34.6	39.5	45.5	42.2	46.1	40.7	46.4	39.3	35.1	45.5	45.4	34.9
29	34.6	----	45.6	42.3	46.3	37.1	46.4	39.1	37.6	45.6	45.4	34.9
30	34.6	----	45.7	43.0	46.3	35.0	46.5	38.8	38.3	45.7	45.4	34.7
31	34.5	----	45.7	----	46.4	----	46.7	40.5	----	45.9	----	----

(Daily lowest water level from recorder graph, 1952)

1	34.7	33.1	40.0	39.5	37.8	35.9	----	32.2	31.6	28.1	22.0	----
2	34.6	33.1	39.9	39.7	37.8	35.9	----	32.4	31.7	28.0	21.8	----
3	34.8	32.9	39.8	39.8	37.8	36.0	----	32.4	31.7	27.8	21.8	----
4	34.7	----	40.1	39.9	30.2	36.1	----	32.5	31.7	27.8	21.8	----
5	34.8	----	40.2	39.8	35.7	36.2	----	32.6	31.6	27.6	21.7	----
6	34.8	----	40.2	----	36.5	36.2	----	32.6	31.6	27.5	21.6	----
7	34.7	----	40.2	39.8	36.7	36.2	29.8	32.7	31.6	27.2	21.6	----
8	34.7	----	40.2	39.8	36.8	36.0	29.7	32.8	30.4	27.2	21.5	----
9	34.7	----	40.1	39.8	37.1	36.1	31.3	32.8	30.5	27.0	21.3	----
10	34.7	----	40.1	39.8	37.1	36.2	31.4	32.7	30.5	26.5	21.2	----
11	34.7	41.0	40.2	39.8	36.8	36.2	31.9	32.8	30.5	26.1	21.2	----
12	34.6	41.0	40.2	39.8	36.6	36.0	32.2	32.9	30.5	26.0	21.2	----
13	34.5	39.4	40.2	39.5	36.7	36.1	32.4	32.5	30.5	26.1	21.2	----
14	34.4	39.5	40.2	39.3	36.8	34.3	32.5	32.8	30.4	26.1	21.1	----
15	34.5	----	40.2	38.3	36.9	33.6	31.7	32.5	30.3	26.8	21.1	----
16	34.4	39.5	40.0	38.2	36.9	33.1	31.9	32.3	30.3	27.0	21.0	----
17	34.3	39.3	40.0	38.0	36.9	34.9	31.5	32.2	30.2	27.0	20.8	----
18	34.2	39.0	40.0	37.9	36.7	35.2	31.6	32.2	29.5	27.0	----	----
19	34.2	39.3	40.1	37.8	36.7	35.4	31.9	32.2	29.3	26.9	----	----
20	34.1	39.4	39.7	37.6	36.7	35.5	32.0	32.2	29.2	27.0	----	----
21	----	39.5	39.9	37.5	36.8	35.5	32.1	32.2	28.9	27.0	----	----
22	34.0	39.6	39.9	37.4	36.8	35.4	21.9	32.2	28.8	26.9	----	----
23	34.0	39.6	39.2	37.5	36.8	35.5	32.1	32.1	28.7	26.9	----	----
24	34.0	39.5	39.4	37.6	36.7	35.4	32.2	32.0	28.6	24.6	----	----
25	33.8	39.8	39.6	37.7	36.5	35.5	32.3	31.9	28.5	23.8	----	----
26	33.8	39.9	39.7	37.7	36.5	35.5	32.4	31.9	28.4	23.4	----	----
27	33.7	39.9	39.4	37.7	----	35.4	32.4	31.9	28.4	22.9	----	----
28	32.9	40.0	39.2	37.6	36.3	35.1	32.5	31.9	28.2	22.7	----	----
29	33.2	40.0	39.0	37.7	36.3	33.2	32.4	31.9	----	22.5	----	----
30	33.2	----	38.5	37.7	36.3	----	32.1	31.9	28.1	22.3	----	----
31	33.2	----	39.0	----	36.0	----	32.0	31.8	----	22.1	----	----

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 9. (37/2-15L1). Formerly Sj 85. New Jersey, Indiana and Illinois Railroad Co. Olive St. and Indiana Ave., South Bend. NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 15, T. 37 N., R. 2 E. Drilled unused artesian well in sand and gravel, diameter 8 inches, depth 80 feet. Land-surface datum is 715 feet above msl. Recording gage installed Jan. 1, 1945, removed July 24, 1946, reinstalled July 28, 1948. Highest water level is 10.62 below lsd, June 12, 1947; lowest 17.55 below lsd, Sept. 5, 1953. Records available: 1945-58. Affected by barometric pressure and by trains.

(Daily highest water level from recorder graph, 1945)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	-----	14.45	14.36	14.09	13.71	12.74	13.19	14.00	14.13	14.23	-----	14.29
2	-----	14.46	14.35	14.07	13.73	12.73	13.21	14.00	14.13	14.22	14.23	14.29
3	-----	14.46	14.36	14.07	13.73	12.75	13.22	13.99	14.12	14.21	14.24	14.28
4	-----	14.47	14.36	14.05	13.71	12.75	13.23	13.99	14.12	14.20	14.24	14.26
5	-----	14.48	14.34	14.04	13.70	12.75	13.24	13.99	14.12	14.19	14.23	14.25
6	-----	14.48	14.34	14.01	13.69	12.76	13.26	13.98	14.14	14.18	14.23	14.24
7	-----	14.49	14.34	13.98	13.67	12.78	13.28	13.98	14.15	14.17	14.23	14.25
8	-----	14.50	14.33	13.95	13.65	12.81	13.31	13.98	14.18	14.16	14.25	14.27
9	-----	14.52	14.30	13.92	13.63	12.83	13.34	13.98	14.20	14.15	-----	-----
10	-----	14.53	14.28	13.89	13.57	12.86	13.37	31.98	14.22	14.15	-----	-----
11	-----	14.54	14.23	13.87	13.54	12.88	13.40	13.98	14.23	14.13	-----	-----
12	-----	15.55	14.19	13.84	13.52	12.89	13.43	13.98	14.24	14.12	-----	-----
13	-----	e14.54	14.15	13.84	13.49	12.90	13.46	13.97	14.25	14.13	-----	-----
14	-----	e14.52	14.13	13.82	13.46	12.91	13.50	13.96	14.25	14.13	-----	-----
15	-----	-----	e14.10	13.81	13.44	12.93	13.52	13.96	14.25	14.13	-----	14.30
16	-----	-----	14.10	13.78	13.41	12.94	13.53	-----	14.25	14.13	14.25	14.31
17	-----	14.57	14.08	13.77	13.39	12.96	13.54	13.94	14.26	14.13	14.25	14.31
18	-----	14.56	14.07	13.76	13.34	12.97	13.55	13.94	14.26	14.13	14.25	14.32
19	-----	14.54	14.06	13.75	13.32	12.97	13.57	13.94	14.26	14.13	14.24	14.32
20	14.32	14.54	14.06	13.74	13.23	12.97	13.60	13.95	14.26	14.13	14.24	14.33
21	14.34	14.53	14.07	13.73	13.10	12.99	13.63	13.95	14.27	14.13	14.23	14.34
22	14.35	14.51	14.07	13.73	19.03	13.01	13.67	13.98	14.28	14.14	14.24	14.34
23	14.36	14.48	14.07	13.72	12.97	13.02	13.71	14.00	14.29	14.14	-----	14.35
24	14.37	14.45	14.07	13.72	12.92	13.04	13.74	14.02	14.29	14.14	-----	14.35
25	14.38	14.43	14.08	13.72	12.88	13.06	13.77	14.04	14.28	14.14	14.24	14.33
26	-----	14.41	14.08	13.72	12.85	13.09	13.81	14.06	14.26	-----	14.26	14.33
27	14.39	14.39	14.08	13.72	12.81	13.10	13.85	14.07	14.25	14.18	14.27	14.33
28	14.40	14.37	14.08	13.71	12.79	13.13	13.89	14.08	14.24	14.19	14.27	14.34
29	14.41	-----	14.08	13.71	12.77	13.14	13.93	14.09	14.24	14.21	14.28	14.35
30	14.42	-----	14.09	13.70	12.75	13.17	13.95	14.12	14.24	14.22	14.29	14.35
31	14.43	-----	14.09	-----	12.75	-----	13.97	14.12	-----	-----	-----	14.33

(Daily highest water level from recorder graph, 1946)

1	14.32	13.69	13.62	12.90	13.01	13.31	13.41	-----	-----	-----	-----	-----
2	14.32	13.69	13.62	12.90	13.04	13.32	13.38h	14.10	-----	-----	-----	-----
3	14.32	13.70	13.60	12.88	13.07	13.32	13.37	-----	-----	-----	-----	-----
4	14.33	13.69	13.59	12.87	13.08	13.32	13.38	-----	-----	-----	-----	-----
5	14.29	13.69	13.58	12.86	13.10	13.32	13.39	-----	-----	h14.77	-----	h14.96
6	14.24	13.68	13.56	12.85	13.11	13.33	13.41	-----	h14.52	-----	-----	-----
7	14.18	13.69	13.52	12.84	13.12	13.34	13.44	-----	-----	-----	-----	-----

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 9--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
8	14.13	13.69	13.48	12.83	13.13	13.36	13.46	-----	-----	-----	h14.90	-----
9	14.09	13.68	13.44	12.84	13.14	13.37	13.49	-----	-----	-----	-----	-----
10	14.05	13.68	13.40	12.84	13.14	13.39	13.51h14.29	-----	-----	-----	-----	-----
11	14.01	13.68	13.35	12.84	-----	13.39	13.55	-----	-----	h14.81	-----	-----
12	13.97	13.68	13.32	12.84	13.13	13.41	13.59	-----	-----	-----	-----	h14.94
13	13.92	13.68	13.27	12.84	13.14	-----	13.62	-----	h14.58	-----	-----	-----
14	13.88	13.68	13.24	12.84	13.15	13.44	13.65	-----	-----	-----	h14.87	-----
15	13.85	13.68	13.21	12.84	13.16	13.45	13.69	-----	-----	-----	-----	-----
16	13.81	13.68	13.18	12.86	13.18	13.44	13.71h14.31	-----	-----	-----	-----	-----
17	13.79	13.68	13.16	12.86	13.20	13.42	13.73	-----	-----	-----	-----	-----
18	13.77	13.68	13.13	12.86	13.21	13.44	13.76	-----	-----	-----	-----	-----
19	13.75	13.67	13.13	12.85	-----	13.46	13.79	-----	-----	-----	-----	-----
20	13.74	13.67	13.09	12.87	-----	13.45	13.81	-----	h14.68	-----	-----	-----
21	13.73	13.67	13.08	12.89	13.23	13.45	13.84	-----	-----	h14.86	-----	-----
22	13.71	13.67	13.06	12.88	13.24	13.42	13.87	-----	-----	-----	-----	-----
23	13.70	13.68	13.05	12.89	13.24	13.40	13.88h14.38	-----	-----	-----	-----	-----
24	13.69	13.68	13.03	12.92	13.24	13.38	13.90	-----	-----	-----	-----	-----
25	13.69	13.66	13.01	12.92	13.25	13.38	-----	-----	-----	h14.89	-----	-----
26	13.69	13.66	12.99	-----	13.27	13.41h	13.98	-----	-----	-----	-----	-----
27	13.68	13.65	12.98	12.98	13.27	13.44	-----	-----	-----	-----	-----	h14.70
28	13.68	13.64	12.96	12.97	13.28	13.47	-----	-----	-----	-----	-----	-----
29	13.68	-----	12.95	12.97	-----	13.46	-----	-----	-----	-----	-----	-----
30	13.67	-----	12.94	12.98	13.29	13.43	-----	-----	-----	-----	-----	-----
31	13.67	-----	12.92	-----	13.30	-----	-----	-----	-----	-----	-----	-----

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
1947		Mar. 21	h14.31	June 27	h11.00	Oct. 31	13.00
		Apr. 3	h14.08	July 14	h11.67	Nov. 14	h13.13
Jan. 16	h14.81	17	h12.54	Sept. 5	h12.90	Dec. 1	h13.26
23	h14.76	May 10	h11.89	11	h12.92		
Feb. 3	h14.63	16	h11.97	18	h12.58		
20	h15.03	24	h11.56	Oct. 3	h12.55		
27	h14.35	June 2	h11.13	10	h12.69		
Mar. 6	h14.37	12	h10.62	22	h12.94		

(Daily highest water level from recorder graph, 1948)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	-----	-----	-----	-----	-----	-----	-----	13.36	14.35	14.36	14.70	14.87
2	-----	-----	-----	-----	-----	-----	-----	13.39	14.34	14.37	14.71	14.88
3	-----	-----	-----	-----	-----	-----	-----	13.41	14.33	14.39	14.71	14.88
4	-----	-----	-----	-----	-----	-----	-----	13.46	14.34	14.40	14.73	14.89
5	-----	-----	-----	-----	-----	-----	-----	-----	14.34	14.40	14.74	14.89

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 9 --continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
6	-----	-----	-----	-----	-----	-----	-----	-----	14.33	14.41	14.74	14.90
7	-----	-----	-----	-----	-----	-----	-----	-----	14.32	14.42	14.75	14.91
8	-----	-----	-----	-----	-----	-----	-----	-----	14.31	-----	14.76	14.91
9	-----	-----	-----	-----	-----	-----	-----	-----	14.30	-----	14.76	14.92
10	-----	-----	-----	-----	-----	-----	-----	-----	14.29	14.47	14.77	14.92
11	-----	-----	-----	-----	-----	-----	-----	-----	14.29	14.47	14.78	14.93
12	-----	-----	-----	-----	-----	-----	-----	-----	14.29	14.48	14.78	14.94
13	-----	-----	-----	-----	-----	-----	-----	-----	14.29	14.49	14.79	14.96
14	-----	-----	-----	-----	-----	-----	-----	-----	14.29	14.50	14.79	14.96
15	-----	-----	-----	-----	-----	-----	-----	-----	14.29	14.51	14.84	14.97
16	-----	-----	-----	-----	-----	-----	-----	-----	14.30	14.52	-----	14.97
17	-----	-----	-----	-----	-----	-----	-----	-----	14.30	14.54	-----	14.98
18	-----	-----	-----	-----	-----	-----	-----	-----	14.31	-----	-----	14.99
19	-----	-----	-----	-----	-----	-----	-----	-----	14.31	14.55	-----	15.00
20	-----	-----	-----	-----	-----	-----	-----	-----	14.31	14.56	-----	15.00
21	-----	-----	-----	-----	-----	-----	-----	-----	14.32	14.56	-----	15.00
22	-----	-----	-----	-----	-----	-----	-----	-----	14.32	14.57	14.85	15.00
23	-----	-----	-----	h12.22	-----	-----	-----	-----	e14.34	14.58	14.85e	15.01
24	-----	-----	-----	-----	h12.55	-----	-----	-----	14.36	14.59	14.85e	15.02
25	-----	-----	-----	-----	-----	-----	-----	-----	14.36	14.60	14.86e	15.02
26	-----	-----	-----	-----	-----	-----	-----	-----	14.36	14.60	14.86e	15.02
27	-----	-----	-----	h12.02	-----	-----	-----	14.12	14.35	14.61	14.86	-----
28	-----	-----	-----	-----	-----	-----	-----	14.20	14.35	14.63	14.86	-----
29	-----	-----	-----	-----	-----	-----	13.25	14.27	14.35	14.66	14.86	-----
30	-----	-----	-----	-----	-----	-----	13.28	14.31	14.36	14.68	14.86	-----
31	-----	-----	-----	-----	-----	-----	13.32	14.33	-----	14.69	-----	-----

(Daily highest water level from recorder graph, 1949)

1	-----	14.38	13.82	13.82	13.80	14.13	14.74	15.25	15.67	-----	15.52	16.20
2	-----	14.37	13.80	13.84	-----	14.22	14.83	15.27	15.65	-----	15.53	16.23
3	14.99	14.36	13.79	13.83	13.83	14.32	14.88	15.24	15.63	15.59	15.55	16.26
4	14.99	14.34	13.77	13.80	13.85	14.40	14.92	15.23	15.61	15.56	-----	16.29
5	14.97	14.33	13.76	13.79	13.86	14.43	14.92	15.23	15.58	15.55	-----	16.32
6	14.94	14.32	13.76	13.79	13.89	14.44	14.92	15.23	15.55	15.53	-----	16.35
7	14.92	-----	13.74	13.79	13.92	14.47	14.88	15.24	15.53	15.53	15.55	16.31
8	14.91	-----	-----	13.80	13.95	14.51	14.86	15.23	15.52	15.53	15.56	16.41
9	14.90	-----	-----	13.81	13.97	14.55	14.84	15.27	15.51	15.53	15.57	16.43
10	14.87	-----	13.73	13.81	13.98	14.60	14.82	15.32	15.51	15.53	15.58	16.46
11	14.85	-----	13.72	13.80	14.00	14.65	14.82	15.35	15.50	15.53	15.58	16.49
12	14.84	-----	13.72	13.80	14.02	14.71	14.80	15.38	15.49	15.52	15.59	16.52
13	14.84	14.24	13.73	13.81	14.06	14.76	15.80	15.39	15.49	15.51	15.60	16.54
14	14.84	14.22	13.72	13.82	14.13	14.80	14.84	15.37	-----	15.50	15.60	16.57
15	14.83	14.19	13.72	13.83	14.20	14.81	14.92	15.36	-----	15.50	15.60	16.59
16	14.83	14.14	13.71	13.85	14.25	14.78	14.97	15.35	15.50	15.51	15.61	16.62
17	14.83	14.09	13.71	-----	14.27	14.75	15.00	15.38	15.49	15.50	15.62	16.64
18	14.81	14.04	-----	13.86	14.29	14.71	15.02	15.38	15.49	15.50	15.63	16.66
19	14.77	14.00	13.72	13.87	14.33	14.68	15.05	15.39	15.50	15.50	15.67	16.68

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 9--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
20	14.72	13.97	13.71	13.88	14.34	14.67	15.09	15.39	15.58	15.54	15.72	16.71
21	14.68	13.96	13.71	-----	14.33	14.69	15.13	15.41	15.59	15.54	15.77	16.73
22	14.63	13.93	13.71	-----	14.31	14.70	15.16	15.41	15.56	15.53	15.82	16.72
23	14.59	13.92	13.72	-----	14.30	14.69	15.14	15.43	15.54	15.51	15.87	16.67
24	14.55	13.90	13.73	13.85	14.27	14.73	15.14	15.45	15.53	15.49	15.91	16.61
25	14.52	13.88	13.63	13.78	14.23	14.79	15.13	15.49	15.53	15.49	15.96	16.59
26	14.49	13.87	13.74	13.76	14.19	14.78	15.16	15.54	15.53	-----	16.00	16.55
27	14.47	13.85	13.74	13.76	14.17	14.73	15.20	15.59	15.53	15.50	16.04	16.52
28	14.45	13.84	13.76	13.76	14.15	14.70	15.23	15.64	15.54	15.51	16.08	16.51
29	14.43	-----	13.78	13.77	14.11	14.69	15.26	15.67	15.55	15.52	16.12	16.50
30	14.42	-----	13.80	13.78	14.09	14.69	15.28	15.68	15.60	15.52	16.16	16.50
31	14.40	-----	13.81	-----	14.09	-----	15.27	15.68	-----	15.51	-----	16.49

(Daily highest water level from recorder graph, 1950)

1	16.49	16.04	15.99	14.37	12.03	11.81	11.68	12.54	13.93	14.28	13.76	-----
2	16.48	16.01	16.01	14.21	11.99	11.83	11.64	12.58	13.95	14.29	13.77	13.72
3	16.48	16.00	16.01	14.08	-----	11.55	11.57	12.61	13.96	14.30	13.77	13.70
4	16.48	15.98	16.02	13.96	11.90	11.38	11.53	12.65	13.98	14.31	13.76	13.68
5	16.48	15.95	16.02	13.83	11.87	11.29	11.49	12.69	14.00	14.33	13.75	13.67
6	16.48	15.94	15.98	13.58	11.86	11.25	11.45	12.72	14.02	14.30	13.75	13.64
7	16.48	15.93	15.94	13.53	11.86	11.23	11.42	12.75	14.03	14.25	13.75	13.62
8	16.47	15.92	15.88	13.38	11.83	11.25	11.40	12.79	14.05	14.19	13.73	13.62
9	16.46	15.92	15.80	13.23	11.80	11.31	11.39	12.85	14.07	-----	13.73	13.60
10	16.45	15.92	15.72	13.11	11.80	11.22	-----	12.91	14.09	14.11	13.76	13.58
11	16.45	15.92	15.63	13.02	11.79	11.20	11.42	12.97	14.05	14.06	13.77	13.56
12	16.44	15.91	15.58	12.94	11.77	11.20	11.49	13.03	13.99	14.05	13.76	13.54
13	16.44	15.88	15.52	12.86	11.77	11.20	11.60	13.08	13.98	14.01	13.76	13.53
14	16.43	15.85	15.47	12.78	11.76	11.26	11.74	13.12	13.99	13.99	13.75	13.52
15	16.42	15.84	15.42	12.71	11.76	11.32	11.80	13.14	14.01	13.97	13.74	13.51
16	16.41	15.84	15.38	12.63	11.76	11.37	11.84	13.19	14.05	13.94	13.74	13.50
17	16.39	15.84	15.35	12.57	11.77	11.45	11.90	13.26	14.08	13.92	13.77	13.50
18	16.36	15.85	15.33	12.52	11.79	11.49	11.91	13.33	14.09	13.90	13.78	13.49
19	16.34	15.86	15.31	12.47	11.82	11.50	11.91	13.39	14.10	13.88	13.80	13.49
20	16.32	15.87	15.29	12.43	11.84	11.54	11.94	13.43	14.12	13.87	13.83	13.49
21	16.29	15.89	15.27	12.40	11.88	11.58	11.99	13.46	14.13	13.85	13.83	13.47
22	16.27	15.90	15.25	12.35	11.90	11.62	12.03	13.49	14.14	13.84	13.81	13.47
23	16.25	15.91	15.22	12.31	11.92	11.64	12.06	13.53	14.15	13.84	13.79	13.46
24	16.24	15.93	15.21	12.30	11.91	11.67	12.10	13.59	14.17	13.83	13.80	13.46
25	16.23	15.94	15.20	12.27	11.93	11.72	12.14	13.65	14.20	13.83	13.73	13.48
26	16.21	15.96	15.17	12.24	-----	11.73	12.18	13.72	14.21	13.81	13.73	13.48
27	16.18	15.98	15.11	12.21	11.86	11.75	12.22	13.79	14.23	13.80	13.75	13.47
28	16.16	15.98	15.02	12.16	11.83	11.78	12.28	13.84	14.24	13.79	13.77	13.45
29	16.14	-----	14.89	12.11	11.80	11.79	12.35	13.87	14.26	13.79	13.75	13.45
30	16.10	-----	14.71	12.07	11.79	11.77	12.43	13.89	14.27	13.78	13.75	13.45
31	16.07	-----	14.53	-----	11.80	-----	12.50	13.90	-----	13.77	-----	13.46

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 9--continued

(Daily highest water level from recorder graph, 1951)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	13.45	12.81	12.77	12.97	12.63	-----	13.24	14.45	14.84	15.36	-----	13.77
2	13.42	12.86	12.76	12.99	12.61	-----	13.29	14.48	14.86	15.37	-----	13.73
3	13.39	12.86	12.75	12.98	12.60	-----	13.34	14.51	14.88	15.38	-----	13.68
4	13.35	12.85	12.81	12.98	12.58	12.10	13.37	14.56	14.89	15.40	-----	13.65
5	13.27	12.99	12.92	12.96	12.55	12.09	13.42	14.59	14.90	15.42	15.33	13.61
6	13.20	12.86	12.80	12.92	12.52	12.09	13.46	14.61	14.91	15.43	15.32	13.57
7	13.12	12.89	12.81	12.90	12.48	12.14	13.51	14.61	14.93	15.45	15.32	13.55
8	13.07	12.95	12.83	12.90	12.45	12.19	13.57	14.62	14.95	15.46	15.33	13.52
9	13.01	12.98	12.87	12.87	12.44	12.22	13.60	14.63	14.97	15.47	15.35	13.50
10	12.97	12.94	12.89	12.87	12.40	12.23	13.64	14.65	14.97	15.48	15.33	13.46
11	12.95	12.92	12.88	12.81	12.36	12.23	13.68	14.67	14.99	15.49	15.27	13.43
12	12.93	12.87	12.85	12.78	12.33	12.28	13.72	14.69	15.01	15.51	15.19	13.42
13	12.89	12.87	12.85	12.76	12.27	12.35	13.77	14.71	15.02	15.52	15.11	13.40
14	12.86	12.88	12.88	12.75	12.21	12.41	13.80	14.72	15.04	15.52	15.02	13.37
15	12.85	12.84	12.90	12.74	12.16	12.46	13.83	14.65	15.06	15.53	14.93	13.37
16	12.83	12.82	12.93	12.73	12.14	12.51	13.86	14.65	15.08	15.53	14.82	-----
17	12.82	12.84	12.90	12.72	12.14	12.58	13.89	14.66	15.10	15.54	14.72	-----
18	12.81	12.84	12.86	12.72	12.11	12.65	13.94	14.68	15.11	15.55	14.62	-----
19	12.80	12.83	12.81	12.77	12.09	12.73	13.97	14.70	15.13	15.57	14.53	-----
20	12.79	12.81	12.80	12.83	12.07	12.82	14.01	14.71	15.15	15.58	14.43	-----
21	12.83	12.81	12.79	12.79	12.08	12.91	14.04	14.71	15.17	15.59	14.35	-----
22	12.78	12.83	12.78	12.79	12.09	12.96	14.08	14.73	15.20	15.59	14.27	-----
23	12.77	12.82	12.77	12.77	12.11	13.00	14.11	14.74	15.22	15.56	14.20	-----
24	12.78	12.79	12.81	12.74	12.09	12.99	14.14	14.75	15.24	15.50	14.14	13.23
25	12.79	-----	12.87	12.72	12.09	12.98	14.17	14.77	15.26	15.47	14.07	13.21
26	12.77	12.77	12.90	12.74	12.13	12.98	14.21	14.77	15.28	15.44	14.02	13.22
27	12.77	12.79	12.90	12.70	12.12	13.03	14.27	14.78	15.30	15.41	13.96	13.20
28	12.80	12.76	12.90	12.67	-----	13.08	14.33	14.79	15.31	15.39	13.91	13.17
29	12.82	-----	12.91	12.66	-----	13.13	14.37	14.80	15.33	-----	13.86	13.16
30	12.84	-----	12.92	12.65	-----	13.18	14.40	14.81	15.34	-----	13.82	13.16
31	12.81	-----	12.96	-----	-----	-----	14.42	14.82	-----	-----	-----	13.14

(Daily highest water level from recorder graph, 1952)

1	13.10	11.96	11.93	11.69	11.47	12.92	13.58	14.37	14.84	14.75	14.76	14.95
2	13.03	11.95	11.94	11.72	11.49	12.95	13.65	14.39	14.84	14.83	15.79	15.93
3	12.95	11.90	11.86	11.73	11.54	12.95	13.72	14.43	14.86	14.90	15.82	15.89
4	12.86	11.89	11.85	11.75	11.61	12.98	13.79	14.47	14.87	14.95	15.84	15.83
5	12.80	11.88	11.94	11.74	11.69	13.00	13.83	14.49	14.89	14.99	15.86	15.79
6	12.75	11.87	11.93	11.77	11.79	13.01	13.87	14.50	14.90	15.04	15.88	15.73
7	12.70	11.83	11.90	11.78	11.90	13.05	13.91	14.51	14.92	15.08	15.90	15.69
8	12.65	11.80	11.86	11.75	11.94	13.11	13.94	14.52	14.95	15.12	15.91	15.65
9	12.63	11.79	11.83	11.71	12.00	13.14	13.99	14.54	14.97	15.15	15.92e	15.61
10	12.62	11.76	11.78	11.71	12.05	13.18	14.01	14.56	14.99	15.19	15.93e	15.58
11	12.58	-----	11.78	11.72	12.11	13.22	14.02	14.58	15.02	15.22	15.94e	15.54
12	12.57	-----	11.81	11.67	12.15	13.25	14.04	14.59	15.05	15.25	15.95e	15.51

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 9--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
13	12.55	-----	11.79	11.66	12.21	13.28	14.07	14.60	15.09	15.29	15.96	15.48
14	12.52	-----	11.87	11.65	12.26	13.25	14.11	14.62	15.13	15.32	15.98	-----
15	12.52	-----	11.85	11.63	12.30	13.25	14.13	14.63	15.18	15.35	15.99	15.42
16	12.47	-----	11.85	11.60	12.36	13.21	14.16	14.62	15.20	15.38	16.00	15.40
17	12.44	-----	11.84	-----	12.41	13.22	14.17	14.62	15.22	15.40	16.02	15.38
18	12.42	11.73	11.77	-----	12.46	13.26	14.18	14.62	15.23	15.43	16.03	15.36
19	12.37	11.70	11.77	-----	12.50	13.28	14.18	14.64	15.22	15.46	16.05	15.34
20	12.37	11.70	11.80	-----	12.53	13.31	14.18	14.65	15.15	15.48	16.06	15.32
21	12.30	11.71	11.78	11.51	12.58	13.32	14.19	14.66	15.09	15.50	16.08	15.30
22	12.25	11.76	11.73	11.50	12.62	13.34	14.20	14.68	15.03	15.52	16.09	15.27
23	12.22	11.75	11.74	11.49	12.66	13.36	14.21	14.69	14.97	15.55	16.11	15.26
24	12.17	11.75	11.73	11.49	12.70	13.37	14.22	14.70	14.92	15.57	16.15	15.24
25	12.12	11.76	11.72	11.49	12.73	13.39	14.23	14.72	14.87	15.60	16.16	15.22
26	12.10	11.74	11.72	11.48	12.78	13.40	14.25	14.73	14.82	15.62	16.17	15.20
27	12.06	11.77	11.73	11.48	12.81	13.42	14.26	14.75	14.78	15.66	16.14	15.19
28	12.06	11.80	11.72	-----	12.84	13.47	14.27	14.78	14.74	15.68	16.07	15.18
29	12.03	11.88	11.73	-----	12.87	13.51	14.30	14.81	14.71	15.70	16.01	15.16
30	12.02	-----	11.71	-----	12.88	13.54	14.31	14.83	14.71	15.72	-----	15.15
31	11.99	-----	11.70	-----	12.90	-----	14.34	14.84	-----	15.74	-----	15.13

(Daily highest water level from recorder graph, 1953)

1	15.12	14.83	14.67	14.29	14.20	14.48	16.04	17.15	17.38	16.58	16.50	16.36
2	15.10	14.81	14.66	14.28	14.22	14.52	16.11	17.16	17.41	16.60	16.48	16.36
3	15.10	14.80	14.65	14.27	14.25	14.58	16.16	17.15	17.46	16.63	16.48	16.36
4	15.08	14.78	14.65	14.26	14.25	14.68	16.20	17.07	17.50	16.65	16.50	16.35
5	15.07	14.76	14.65	14.25	14.24	14.78	16.23	16.97	17.54	16.61	16.48	16.35
6	15.06	14.76	14.64	14.24	14.25	14.89	16.24	16.95	17.49	16.58	16.47	16.35
7	15.05	14.75	14.64	14.23	14.25	14.97	16.25	16.93	17.42	16.55	16.45	16.34
8	15.05	14.75	-----	14.22	14.26	14.96	16.26	16.87	17.36	-----	16.42	16.34
9	15.04	14.76	14.62	14.20	14.27	14.93	16.28	16.81	17.32	-----	16.42	16.33
10	15.03	14.75	14.62	14.20	14.28	14.89	16.30	16.75	17.28	-----	16.40	16.34
11	15.03	14.74	14.62	14.21	14.29	14.86	16.33	16.72	17.24	-----	16.40	16.35
12	15.01	14.73	14.61	14.21	14.29	14.84	16.37	16.71	17.21	-----	16.39	16.34
13	15.01	14.73	14.60	14.21	14.31	14.84	16.41	16.72	17.18	-----	16.38	16.33
14	15.00	14.72	14.59	14.21	14.31	14.93	16.45	16.76	17.14	-----	16.38	16.32
15	14.99	14.71	14.58	14.19	14.31	15.00	16.50	16.80	17.08	-----	16.37	16.33
16	15.01	14.71	14.57	14.19	14.31	15.05	16.56	16.84	17.02	-----	16.38	16.33
17	15.00	14.71	14.55	14.21	14.30	15.12	16.63	16.86	16.96	-----	16.37	16.33
18	15.00	14.70	14.53	14.21	14.30	15.19	16.69	16.89	16.91	-----	16.37	16.33
19	14.98	14.70	14.52	14.20	14.30	15.27	16.73	15.91	16.87	16.65	16.36	16.35
20	14.97	14.70	14.50	14.20	14.30	15.34	16.76	16.94	16.84	16.67	-----	16.34
21	14.96	14.69	14.47	14.20	14.31	15.43	16.78	16.97	16.80	16.69	-----	16.34
22	14.95	14.70	14.45	14.19	14.33	15.53	16.80	17.00	16.76	16.70	-----	16.34
23	14.94	14.69	14.42	15.19	14.36	15.61	16.82	17.04	16.72	16.71	-----	16.35
24	14.93	14.68	14.40	14.20	14.37	15.70	16.85	17.07	16.68	16.69	-----	16.35
25	14.93	14.67	14.39	14.19	-----	15.79	16.88	17.10	16.65	16.65	-----	16.34
26	14.91	14.66	14.37	14.20	-----	15.87	16.93	17.14	16.63	16.62	-----	16.34

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 9--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
27	14.89	14.66	14.35	14.22	-----	15.92	16.97	17.18	16.61	16.58	-----	16.34
28	14.88	14.67	14.34	14.22	-----	15.95	17.02	17.23e	16.57	16.56	-----	16.33
29	14.87	-----	14.33	14.22	-----	15.96	17.06	17.27e	16.56	16.54	-----	16.33
30	14.85	-----	14.32	14.20	-----	15.99	17.11	17.31e	16.57	16.52	-----	16.33
31	14.83	-----	14.30	-----	-----	-----	17.14	17.35	-----	16.50	-----	16.33

(Daily highest water level from recorder graph, 1954)

1	16.33	16.30	15.71	15.43	14.03	13.98	15.36	16.00	15.00	15.02	13.33	13.34
2	16.33	16.30	15.69	15.41	13.95	13.93	15.46	15.93	14.97	15.04	13.34	13.30
3	16.33	16.30	15.67	15.40	13.90	13.89	15.57	15.81	14.97	15.05	13.32	13.28
4	16.32	16.30	15.65	15.37	13.85	13.89	15.66	15.73	14.97	15.05	13.31	13.28
5	16.32	16.30	15.65	15.33	13.81	13.87	15.69	15.66	14.97	15.05	13.31	13.32
6	16.32	16.30	15.63	15.26	13.76	13.86	15.63	15.61	14.95	15.05	13.31	13.40
7	16.32	16.29	15.62	15.21	13.75	13.84	15.51	15.55	14.97	15.06	13.31	13.40
8	16.32	16.29	15.59	15.15	13.72	13.84	15.43	15.51	15.05	15.04	13.31	13.36
9	16.32	16.28	15.56	15.10	13.71	13.88	15.36	15.46	15.08	15.04	13.31	13.36
10	16.32	16.28	15.54	15.06	13.69	14.00	15.29	15.41	15.09	14.90	13.31	13.42
11	-----	16.29	15.52	15.06	13.69	14.13	15.22	15.37	15.10	14.75	13.29	13.44
12	-----	16.30	15.49	15.01	13.72	14.25	15.17	15.33	15.09	14.66	13.30	13.45
13	-----	16.29	15.48	14.96	13.76	14.35	15.17	15.30	15.06	14.57	13.28	13.45
14	-----	16.29	15.46	14.92	13.74	14.42	15.22	15.28	15.04	14.49	13.28	13.45
15	-----	16.28	15.45	14.89	13.72	14.45	15.32	15.25	15.03	14.40	13.28	13.44
16	-----	16.22	15.42	14.87	13.72	14.49	15.39	15.23	15.02	14.43	13.27	13.52
17	-----	16.16	15.40	14.84	13.72	14.56	15.46	15.19	15.01	14.24	13.28	13.50
18	16.33	16.11	15.37	14.82	13.73	14.63	15.51	15.16	14.99	14.12	13.28	13.53
19	16.33	16.06	15.34	14.79	13.78	14.69	15.55	15.13	-----	13.99	13.28	13.57
20	16.33	16.01	15.34	14.76	13.82	14.74	15.57	15.10	14.97	13.86	13.29	-----
21	16.34	15.97	15.36	14.72	13.81	14.77	15.61	15.10	14.96	13.76	13.32	-----
22	16.35	15.92	15.42	14.70	13.89	14.77	15.67	15.08	14.98	13.68	13.33	13.59
23	16.34	15.87	15.46	14.67	13.96	14.82	15.70	15.06	14.98	13.62	13.29	13.58
24	16.33	15.84	15.52	14.64	14.00	14.86	15.73	15.07	14.96	13.54	13.29	13.63
25	16.33	15.80	15.50	14.57	14.04	14.90	15.76	15.12	14.96	13.49	13.33	13.65
26	16.32	15.78	15.52	14.49	14.11	14.95	15.77	15.10	14.95	13.45	13.33	13.65
27	16.32	15.75	15.51	14.41	14.17	15.05	15.81	15.07	14.92	13.43	13.30	13.62
28	16.32	15.73	15.50	14.31	14.14	-----	15.85	15.06	14.91	13.39	13.30	13.56
29	16.31	-----	15.49	14.20	14.15	15.19	15.90	15.05	14.93	13.37	13.32e	13.51
30	16.31	-----	15.48	14.11	14.11	15.27	15.96	15.03	14.97	13.36	13.37e	13.46
31	16.31	-----	15.46	-----	14.05	-----	16.00	15.01	-----	13.36	-----e	13.41

(Daily highest water level from recorder graph, 1955)

1	e13.36	12.49	12.44	12.72	12.52	13.38	14.12	14.68	15.36	15.28	14.28	13.87
2	e13.30	12.51	12.49	12.68	12.52	13.41	14.18	14.73	15.32	15.25	14.26	13.87
3	e13.22	12.59	12.44	12.69	12.56	13.44	14.21	14.80	15.28	15.21	14.25	13.86
4	e13.15	12.60	12.43	12.63	12.64	13.46	14.19	14.87	15.28	15.18	14.23	13.87
5	e13.07	12.56	12.43	12.60	12.73	13.50	14.19	14.95	15.31	15.12	14.21	-----

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 9--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
6	13.00	12.56	12.40	12.58	12.80	13.56	14.22	15.04	15.36	15.03	14.20	-----
7	12.93	12.58	12.40	12.58	12.84	13.59	14.22	15.05	15.38	14.97	14.18	-----
8	12.87	12.61	12.37	12.57	12.88	13.60	14.24	15.00	15.41	14.91	14.17	-----
9	12.82	12.61	12.35	12.57	12.90	13.58	14.27	14.96	15.43	14.85	14.14	-----
10	12.75	12.62	12.32	12.55	12.90	13.50	14.26	14.94	15.46	14.80	14.12	-----
11	12.69	12.65	12.32	12.53	12.91	13.47	14.24	14.93	15.49	14.75	14.11	-----
12	12.61	12.67	12.34	12.53	12.90	13.47	14.25	14.93	15.46	14.71	14.10	-----
13	12.58	12.72	12.34	12.52	12.89	13.44	14.29	14.94	15.46	14.67	14.08	-----
14	12.52	12.70	12.32	12.51	12.89	13.41	14.33	14.97	15.47	14.64	14.05	-----
15	12.51	12.70	12.31	12.52	12.89	13.41	14.38	14.95	15.50	14.62	14.04	-----
16	12.49	12.71	12.31	12.53	12.92	13.38	14.37	14.96	15.53	14.61	14.02	-----
17	-----	12.75	12.32	12.53	12.95	13.36	14.32	15.02	15.56	14.61	14.01	-----
18	-----	12.75	12.32	12.50	12.01	13.36	14.28	15.08	15.58	14.61	13.99	-----
19	-----	12.74	12.32	12.51	13.05	13.40	14.28	15.14	15.60	14.50	13.98	-----
20	-----	12.69	12.30	12.52	13.12	13.45	14.31	15.21	15.63	14.57	13.96	-----
21	-----	12.65	12.29	12.52	13.19	13.49	14.39	15.28	15.67	14.54	13.94	-----
22	-----	12.60	12.28	12.52	13.27	13.56	14.44	15.27	15.72	14.51	13.92	-----
23	-----	12.58	12.45	12.51	13.32	13.62	14.41	15.23	15.68	14.47	13.92	-----
24	12.41	12.54	12.52	12.48	13.35	13.67	14.42	15.19	15.63	14.45	13.93	-----
25	12.41	12.51	12.59	12.49	13.37	13.73	14.39	15.18	15.58	14.41	13.91	-----
26	12.43	12.48	12.61	12.53	13.38	13.80	14.38	15.17	15.52	14.39	13.90	13.95
27	12.47	12.46	12.68	12.52	13.37	13.85	14.40	15.20	15.46	14.37	13.89	13.96
28	12.46	12.44	12.71	12.51	13.40	13.90	14.46	15.27	15.41	14.33	13.88	13.94
29	12.47	-----	12.71	12.51	13.41	13.96	14.52	15.30	15.36	14.32	13.88	13.94
30	12.49	-----	12.73	12.51	13.39	14.03	14.57	15.31	15.32	14.31	13.90	13.94
31	12.49	-----	12.76	-----	13.37	-----	14.62	15.33	-----	14.29	-----	13.94

(Daily highest water level from recorder graph, 1956)

1	13.94	14.18	13.77	13.54	13.41	12.09	14.06	14.71	15.11	15.47	16.09	16.08
2	13.93	14.18	13.77	13.52	13.36	12.12	14.11	14.73	15.08	15.47	16.11	16.12
3	13.94	14.20	13.76	13.51	13.31	12.12	14.17	14.76	15.03	15.49	16.13	16.16
4	13.94	14.18	13.74	13.52	13.28	12.12	14.24	14.81	15.01	15.51	16.15	16.18
5	13.94	14.19	13.73	13.54	13.23	12.16	14.29	14.85	15.00	15.54	16.14	16.19
6	13.94	14.17	13.70	13.52	13.20	12.18	14.29	14.89	15.02	15.56	16.15	16.20
7	13.99	14.19	13.69	13.51	13.18	12.32	14.31	14.93	15.08	15.58	16.17	16.22
8	14.01	14.19	13.68	13.53	13.14	12.41	14.35	14.96	15.09	-----	16.18	16.24
9	14.00	14.15	13.65	-----	13.09	12.52	14.39	15.01	15.11	15.58	16.19	16.24
10	14.00	14.11	13.59	-----	13.07	12.63	14.39	15.06	15.10	15.59	16.19	16.23
11	14.03	14.09	13.59	-----	13.01	12.74	14.39	15.08	15.11	15.60	16.17	16.24
12	14.05	14.09	13.56	-----	12.79	12.86	14.41	15.08	15.12	15.61	-----	16.26
13	14.06	14.09	13.53	-----	12.57	12.99	14.45	14.92	15.14	15.62	-----	16.28
14	14.05	14.09	13.52	-----	12.43	13.12	14.49	14.88	15.17	15.65	-----	16.29
15	14.03	14.10	13.53	-----	12.30	13.24	14.53	14.87	15.20	15.67	-----	16.31
16	14.03	14.06	13.53	-----	12.21	13.36	14.58	14.87	15.17	15.70	-----	16.31
17	14.07	14.05	13.55	13.67	12.17	13.46	14.63	14.88	15.16	15.72	-----	16.29
18	14.08	14.05	13.56	13.67	12.11	13.55	14.67	14.90	15.15	15.75	-----	16.31
19	14.06	14.04	13.57	13.68	12.10	13.59	14.73	14.93	15.16	15.78	16.17	16.33

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 9--continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
20	14.08	14.03	13.55	13.69	12.06	13.61	14.78	14.90	15.19	15.81	16.16	16.34
21	14.12	14.02	13.53	13.65	12.03	13.64	14.75	14.90	15.21	15.84	16.16	16.35
22	14.17	14.01	13.53	13.66	12.02	13.67	14.73	14.90	15.23	15.82	16.18	16.36
23	14.23	13.99	13.51	13.68	12.04	13.74	14.69	14.91	15.25	15.82	16.17	-----
24	14.26	13.94	13.53	13.69	12.09	13.81	14.67	14.95	15.25	15.87	16.02	16.31
25	14.26	13.91	13.51	13.66	12.07	13.87	14.68	14.98	15.28	15.91	16.10	16.28
26	14.25	13.86	13.51	13.67	12.04	13.92	14.70	14.99	15.32	15.95	16.08	16.25
27	14.22	13.83	13.52	13.63	12.05	13.97	14.72	14.98	15.36	16.00	16.06	16.27
28	14.18	13.82	13.52	13.63	12.07	13.99	14.74	15.00	15.40	16.03	16.05	16.21
29	14.18	13.80	13.52	13.53	12.06	14.01	14.74	15.05	15.43	16.05	16.06	16.17
30	14.18	-----	13.53	13.47	12.06	14.02	-----	15.09	15.46	16.05	16.06	16.11
31	14.23	-----	13.55	-----	12.07	-----	-----	15.11	-----	16.07	-----	16.06

(Daily highest water level from recorder graph, 1957)

1	16.02	15.34	-----	14.79	13.95	13.96	14.81	15.94	15.76	15.63	15.91	15.14
2	15.97	15.32	-----	14.79	13.87	-----	14.81	15.98	15.73	15.66	15.89	15.12
3	15.93	15.30	-----	14.78	13.79	-----	14.86	16.03	15.71	15.69	15.85	15.11
4	15.89	15.29	-----	14.77	13.74	-----	14.91	16.05	15.71	15.77	15.83	15.09
5	15.85	15.29	-----	14.75	13.69	-----	14.95	16.01	15.71	15.82	15.82	15.05
6	15.80	15.31	-----	14.75	13.67	14.13	14.95	15.97	15.71	15.86	15.80	15.05
7	15.77	15.29	-----	14.74	13.65	14.18	14.90	15.94	15.74	15.89	15.79	15.06
8	15.76	15.27	-----	14.73	13.65	14.23	14.88	15.92	15.73	14.93	15.78	15.04
9	15.76	15.25	-----	14.71	13.68	14.26	14.88	15.94	15.70	15.99	15.76	15.01
10	15.76	15.24	-----	14.69	13.73	14.27	14.94	15.99	15.69	16.03	15.73	15.00
11	15.74	15.22	-----	14.68	13.74	14.30	14.98	15.93	15.71	16.06	15.70	15.01
12	15.71	15.20	-----	14.67	13.71	14.34	15.05	15.90	15.72	16.10	15.67	15.01
13	15.69	15.18	-----	14.65	13.69	14.36	15.13	15.88	15.74	16.13	15.63	15.01
14	15.68	15.17	-----	14.64	13.67	13.38	15.20	15.89	15.70	16.14	15.60	15.00
15	15.67	15.15	-----	14.61	13.67	14.41	15.22	15.86	15.69	16.14	15.56	14.96
16	15.67	15.14	-----	14.58	13.71	14.44	15.24	15.84	15.67	16.16	15.55	14.95
17	15.65	15.12	14.88	14.56	13.72	14.46	15.29	15.84	15.66	16.15	15.51	14.94
18	15.65	15.11	14.86	14.54	13.70	14.47	15.34	15.85	15.67	16.15	15.46	14.92
19	15.63	15.10	14.86	14.51	13.69	14.51	15.39	15.83	15.65	16.18	15.43	14.92
20	15.61	15.09	14.86	14.49	13.68	14.54	15.45	15.84	15.66	16.13	15.42	14.91
21	15.59	15.07	14.85	14.49	13.70	14.56	15.59	15.88	15.68	16.11	15.40	14.88
22	15.58	15.06	14.84	14.49	13.70	14.61	15.58	15.92	15.68	16.14	15.38	14.81
23	15.55	15.05	14.84	14.47	13.73	14.68	15.59	15.96	15.67	16.15	15.35	14.72
24	15.53	15.03	14.83	14.44	13.77	14.73	15.59	16.00	15.69	16.15	15.30	14.62
25	15.50	-----	14.82	14.42	13.77	14.76	15.61	15.97	15.70	16.18	15.28	14.51
26	15.48	-----	14.82	14.38	13.77	14.78	15.63	15.93	15.70	16.16	15.26	14.43
27	15.45	-----	14.82	14.33	13.77	14.80	15.67	15.91	15.68	16.07	15.24	14.37
28	15.42	-----	14.81	14.26	13.80	14.83	15.72	15.88	15.66	16.00	15.23	14.33
29	15.40	-----	14.81	14.16	13.81	14.82	15.78	15.82	15.63	15.95	15.21	14.30
30	15.38	-----	14.81	14.04	13.84	14.82	15.84	15.79	15.62	15.93	15.18	14.27
31	15.35	-----	14.80	-----	13.90	-----	15.89	15.78	-----	15.93	-----	14.23

Table 5.--Water levels in observation wells in St. Joseph County--Continued

St. Joseph 9--continued

(Daily highest water level from recorder graph, 1958)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	14.17	13.71	13.53	13.10	13.40	14.57	14.22	14.35	14.06	14.25	14.54	14.45
2	14.13	13.71	13.46	13.14	13.44	14.56	14.32	14.30	14.03	14.22	14.56	14.42
3	14.09	13.72	13.40	13.15	13.43	14.53	14.40	14.27	14.02	14.22	14.55	14.40
4	14.06	13.76	13.34	13.17	13.45	14.53	14.35	14.25	14.01	14.23	14.56	14.40
5	14.01	13.78	13.26	13.10	13.47	14.54	14.31	14.25	14.01	14.24	14.57	14.41
6	13.98	13.81	13.22	13.10	13.48	14.59	14.29	14.27	14.02	14.25	14.59	14.43
7	13.97	13.85	13.17	13.14	13.40	14.61	14.26	14.31	14.09	14.26	14.60	14.43
8	13.94	13.89	13.12	13.15	14.51	14.64	14.25	14.32	14.14	14.28	14.60	-----
9	13.91	13.87	13.08	13.15	13.53	14.63	14.25	14.29	14.18	14.30	14.59	-----
10	13.89	13.85	13.05	13.12	13.56	14.59	14.26	14.25	14.22	14.33	14.60	-----
11	13.88	13.84	13.02	13.12	13.61	14.57	14.27	14.23	14.26	14.35	14.61	14.40
12	13.84	13.82	13.00	13.13	13.71	14.52	14.28	14.23	14.24	14.35	14.62	14.40
13	13.81	13.82	12.96	13.13	13.79	14.49	14.30	14.25	14.23	14.33	14.64	14.41
14	13.79	13.80	12.95	13.13	13.89	14.43	14.27	14.30	14.25	14.35	14.65	14.41
15	13.77	13.79	12.93	13.17	13.98	14.38	14.30	14.20	14.27	14.38	14.67	14.39
16	13.75	13.80	12.92	13.22	14.09	14.36	14.34	14.17	14.29	14.40	14.63	14.41
17	13.74	13.80	12.90	13.25	14.15	14.35	14.37	14.11	14.27	14.42	14.61	14.40
18	13.73	13.80	12.90	13.28	14.22	14.33	14.37	14.08	14.26	14.46	14.62	-----
19	13.71	13.81	12.93	13.34	14.26	14.31	14.38	14.07	14.22	14.44	14.61	-----
20	13.70	13.82	12.93	13.39	14.27	14.31	14.38	14.07	14.19	14.43	14.59	-----
21	13.69	13.79	12.92	13.40	14.29	14.32	14.37	14.08	14.17	14.43	14.57	-----
22	13.69	13.80	12.93	13.40	14.32	14.30	14.39	14.08	14.15	14.45	14.56	-----
23	13.75	13.77	12.94	13.38	14.37	14.28	14.42	14.05	14.15	14.48	14.54	-----
24	13.75	13.74	12.93	13.37	14.32	14.26	14.47	14.02	14.15	14.50	14.54	-----
25	13.75	13.70	12.95	13.45	14.29	14.24	14.53	14.00	14.17	14.51	14.50	-----
26	13.75	13.66	12.96	13.46	14.27	14.22	14.60	13.98	14.21	14.48	14.50	-----
27	13.74	13.62	12.98	13.43	14.29	14.22	14.64	13.98	14.24	14.47	14.50	-----
28	13.74	13.58	13.04	13.41	14.39	14.22	14.63	14.00	14.24	14.48	14.47	14.45
29	13.72	-----	13.08	13.41	14.43	14.20	14.59	14.03	14.21	14.52	14.47	14.45
30	13.72	-----	13.08	13.40	14.46	14.19	14.50	14.06	14.22	14.53	14.45	14.47
31	13.70	-----	13.08	-----	14.51	-----	14.41	14.08	-----	14.54	-----	14.44

St. Joseph 10. (37/2-12P1). Formerly S_j 34. White Swan Laundry. 118 E. Sample St., South Bend. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 12, T. 37 N., R. 2 E. Drilled unused artesian well in sand and gravel, diameter 12 inches, reported depth 81 feet. Land-surface datum is 726 feet above msl. Recording gage installed Feb. 15, 1945. Highest water level is 27.3 below lsd, Apr. 19, 1947; lowest 41.53 below lsd, Apr. 5, 1945. Records available: 1945-47. Affected by nearby pumping.