

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

Well 37/8W-34J1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Silurian system: Middle Silurian series: Rock, broken-----	2	154	Dolomite or dolomitic limestone.

Well 37/8W-34K1

Type of record: Driller's log.		Altitude: 590 feet.	
Concrete-----	2	2	
Quaternary system: Recent and Pleistocene series:			
Sand, fine to medium, brown----	2	4	
Sand, fine to medium, gray, with some silt-----	43	47	
Clay, silty, gray, with fine sand and small gravel-----	51	98	
Silt, inorganic, gray-----	6	104	
Clay, stiff, silty, gray, with trace of sand-----	23	127	Dolomite or dolomitic limestone at 127 feet.

Well 37/8W-34K2

Type of record: Driller's log.		Altitude: 590 feet.	
Quaternary system: Recent and Pleistocene series:			
Fill; slag-----	3	3	
Sand, fine, brown-----	19	22	
Sand, fine, gray, with trace of silt-----	29	51	
Clay, silty, gray, with trace of silt, sand, and gravel----	81	132	Dolomite or dolomitic limestone at 132 feet.

Well 37/9W-7Q1

Type of record: Driller's log.		Altitude: 585 feet.	
Quaternary system: Recent and Pleistocene series:			
Sand, black, and peat-----	3	3	
Sand, fine, silty, gray, with trace of fine gravel-----	9	12	
Sand, very fine, silty, gray, with trace of shells-----	12	24	
Clay, medium, blue-----	43	67	
Clay, hard, sandy, blue-----	10	77	

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

Well 37/9W-7R1			
Type of record: Driller's log.		Altitude: 585 feet.	
Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	9	9	
Sand, fine, silty, dirty, yellow	4	13	
Sand, fine, silty, yellow-----	7	20	
Sand, very fine, silty, gray----	7	27	
Clay, medium, blue-----	41	68	
Clay, hard, silty, blue-----	21	89	
Well 37/9W-8Q1			
Type of record: Driller's log.		Altitude: 590 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Fill and soil-----	15	15	
Sand, fine-----	10	25	
Clay-----	69	94	
Devonian system:			
Upper Devonian series:			
Shale-----	2	96	
Silurian system:			
Middle Silurian series:			
Limestone, white-----	107	203	Dolomite or dolomitic limestone.
Limestone, brown-----	11	214	Do. .
Limestone, white-----	341	555	Do. .
Ordovician system:			
Upper Ordovician series:			
Shale and limestone, blue-----	169	724	
Middle Ordovician series:			
Limestone-----	302	1,026	
Sandstone, white-----	199	1,225	
Sandstone and shale-----	13	1,238	
Well 37/9W-9R1			
Type of record: Sample study of bedrock by M. P. Myer, Illinois Geological Survey.		Altitude: 585 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	32	32	
Sand and mud-----	48	80	
Mud and gravel-----	68	148	
Silurian system:			
Middle Silurian series:			
Dolomite, very fine-grained, porous, light-brown-----	5	153	

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

Well 37/9W-9R1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Silurian system:			
Middle Silurian series:			
Dolomite, coarse, silty, light-gray, and mottled gray very fine dolomite; trace of clay, green sandy clay-----	2	155	
Dolomite, fine, porous, light-gray and mottled gray; trace of sandy clay; green at base--	80	235	
Dolomite, very fine, light-buff to light-gray-----	20	255	
Dolomite, fine, porous, white---	80	335	

Well 37/9W-14D1

Type of record: Driller's log.

Altitude: 595 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand-----	45	45	
Clay-----	111	156	
Silurian system:			
Middle Silurian series:			
Limestone-----	469	625	Dolomite or dolomitic limestone.
Ordovician system:			
Upper Ordovician series:			
Shale-----	145	770	
Middle Ordovician series:			
Limestone-----	335	1,105	
Sandstone-----	220	1,305	
Lower Ordovician? series:			
Limestone-----	110	1,415	
Sandstone, shale, and limestone-	71	1,486	
Shale, sandy, and limestone----	102	1,588	
Limestone, sandy-----	77	1,665	
Sandstone-----	20	1,685	

Well 37/9W-16K1

Type of record: Sample study; unconsolidated material by L. E. Workman, bedrock by F. T. Thwaites; formerly of Illinois Geological Survey.

Altitude: 592 feet.

Quaternary system:			
Recent and Pleistocene series:			
Record missing-----	40	40	

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

Well 37/9W-16K1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, slightly dolomitic, well sorted, buff, containing besides quartz grains much chert and igneous rock fragments; a few chert and dolomitic pebbles-----	5	45	
Clay, dolomitic, powdered, gray, containing scattered sand grains and Sporangites-----	15	60	
Gravel, clayey, fine, with pebbles averaging 1/8" diameter, composed of about 40% brown Sporangites shale, 35% greenish-gray dolomitic silty shale and siltstone, 20% buff weathered dolomite, and 5% igneous rock and very fine sandstone-----	30	90	
Till, dolomitic, gray, containing a few small pebbles of shale and some sand-----	10	100	
Till, dolomitic, gray, pebbly with shale and dolomite-----	10	110	
Silurian system:			
Middle Silurian series:			
Dolomite, light-gray to white---	380	490	
Dolomite, very light-pinkish-gray, with green spots-----	30	520	
Dolomite, white, some light-pink; with white chert-----	40	560	
Dolomite, gray-----	10	570	
Ordovician system:			
Upper Ordovician series:			
Dolomite, shaly, blue-----	10	580	
Dolomite, light-gray-----	20	600	
Dolomite, light-gray and blue---	10	610	
Shale, dolomitic, blue-----	10	620	
Dolomite, mottled gray and blue-	10	630	
Shale, dolomitic, blue-----	110	740	
Middle Ordovician series:			
Dolomite, gray-----	230	970	
Dolomite, gray, with blue spots-	30	1,000	
Dolomite, gray-----	50	1,050	
Dolomite, very sandy, gray-----	15	1,065	
Sandstone, fine to medium, white	55	1,120	
Sandstone, medium to coarse, white-----	10	1,130	

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

Well 37/9W-16K1--Continued

Material	Thick-ness (feet)	Depth (feet)	Remarks
Ordovician system: Middle Ordovician series: Sandstone, medium to fine, white Conglomerate, pebbles of white chert in white, medium to fine, sandstone; green shale--	30 40	1,160 1,200	
Ordovician and Cambrian system; undifferentiated: Dolomite, gray-----	70	1,270	
Dolomite, light-gray and some light-pink-----	10	1,280	
Dolomite, light-gray-----	100	1,380	
Dolomite, very sandy, light-gray	10	1,390	
Dolomite, light-gray-----	80	1,470	
Sandstone, fine, very dolomitic, glaucopitic, hard, gray-----	130	1,600	
Sandstone, coarse, dolomitic, light-gray-----	20	1,620	
Sandstone, medium, white-----	63	1,683	

Well 37/9W-17D1

Type of record: Driller's log.

Altitude: 585 feet.

Quaternary system: Recent and Pleistocene series: Fill-----	4	4	
Sand, coarse, and gravel-----	17	21	
Sand, fine-----	3	24	

Well 37/9W-19M1

Type of record: Driller's log.

Altitude: 582 feet.

Quaternary system: Recent and Pleistocene series: Muck and water-----	7	7	
Sand, fine, gray-----	15	22	
Clay, soft, gray-----	15	37	
Peat-----	1	38	
Clay, soft, gray-----	16	54	
Clay, gray-----	1	55	Rocks 1-3 inches.

Well 37/9W-19N2

Type of record: Driller's log.

Altitude: 583 feet.

Quaternary system: Recent and Pleistocene series: Top soil-----	1	1	
Sand, coarse, brown-----	4	5	
Sand, fine, brownish-gray-----	5	10	

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

Well 37/9W-19N2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, medium-dense, gray--	13	23	
Clay, soft, gray-----	26	49	
Clay, tough to very hard, with small gravel and shale-----	12	61	

Well 37/9W-21E1

Type of record: Driller's log. Altitude: 585 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand-----	36	36	
Clay, blue-----	46	82	
Hardpan-----	3	85	
Quicksand-----	3	88	
Hardpan-----	7	95	
Silurian system:			
Middle Silurian series:			
Limestone-----	2	97	Dolomite or dolomitic limestone.

Well 37/9W-21E3

Type of record: Driller's log. Altitude: 585 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand-----	3	3	
Sand, medium to fine, with coarse gravel-----	10	13	
Sand, fine, with clay-----	4	17	
Sand, fine, gray-----	4	21	
Quicksand-----	5	26	
Clay, blue, with some pebbles---	4	30	
Clay, blue, with some pebbles and sand-----	3	33	
Clay, stiff, blue-----	7	40	
Clay, sandy, blue-----	19	59	

Well 37/9W-23R1

Type of record: Driller's log. Altitude: 595 feet.

Quaternary system:			
Recent and Pleistocene series:			
Fill; slag and cinders-----	10	10	
Sand, fine, brown and gray-----	35	45	
Clay, silty, gray, with shaly gravel-----	28	73	
Clay, soft-----	10	83	

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

Well 37/9W-23R1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system: Recent and Pleistocene series: Clay, stiff, silty-----	22	105	

Well 37/9W-24N1

Type of record: Driller's log. Altitude: 595 feet.

Quaternary system: Recent and Pleistocene series: Fill; slag and cinders-----	32	32	
Sand, fine-----	17	49	
Clay, silty, gray-----	45	94	
Clay, stiff, silty-----	18	112	
Clay, very stiff, silty, with scattered gravel-----	35	147	
			Bedrock? at 147 feet.

Well 37/9W-24P1

Type of record: Driller's log. Altitude: 590 feet.

Water-----	20	20	
Quaternary system: Recent and Pleistocene series: Sand, fine, silty, gray-----	18	38	
Clay, silty, gray-----	52	90	
Clay, hard, silty-----	34	124	
Silurian system: Middle Silurian series: Limestone, gray-----	12	136	

Well 37/9W-25C1

Type of record: Driller's log. Altitude: 590 feet.

Quaternary system: Recent and Pleistocene series: Sand, cemented-----	21	21	Slag.
Sand, fine-----	17	38	Clay at 38 feet.

Well 37/9W-26A1

Type of record: Driller's log. Altitude: 595 feet.

Quaternary system: Recent and Pleistocene series: Fill; slag and cinders-----	4	4	
Sand, fine to coarse, brown-----	8	12	
Sand, fine, brown and gray-----	28	40	
Clay, silty, gray, with sand and shaly gravel-----	52	92	
Clay, very stiff, silty, with scattered gravel-----	51	143	

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

Well 37/9W-28B1

Type of record: Driller's log.

Altitude: 590 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	20	20	
Quicksand, gray-----	20	40	
Clay-----	114	154	
Silurian system:			
Middle Silurian series:			
Lime, gray-----	486	640	Dolomite or dolomitic limestone.
Ordovician system:			
Upper Ordovician series:			
Shale, gray-----	130	770	
Middle Ordovician series:			
Lime, gray-----	330	1,100	
Sandstone-----	245	1,345	
Ordovician and Cambrian system; undifferentiated:			
Rock, red, with layers of sandstone-----	185	1,530	
Lime-----	20	1,550	
Sandstone-----	10	1,560	
Lime, with quartz-----	10	1,570	
Lime, with breaks-----	50	1,620	
Sandstone-----	200	1,820	
Shale, gray-----	10	1,830	

Well 37/9W-28C1

Type of record: Driller's log.

Altitude: 590 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand-----	3	3	
Gravel-----	4	7	
Sand, fine-----	10	17	
Sand, extra fine-----	15	32	

Well 37/9W-29R1

Type of record: Sample study; bedrock by F. T.

Altitude: 585 feet.

Thwaites, formerly of Illinois Geological Survey.

Quaternary system:			
Recent and Pleistocene series:			
Drift-----	175	175	

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

Well 37/9W-29R1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Silurian system:			
Middle Silurian series:			
Dolomite, gray-----	420	595	Flint at 520 feet; possibly includes some dolomitic limestone of De- vonian age.

Ordovician system:			
Upper Ordovician series:			
Shale, clayey, limey, gray-----	170	765	
Middle Ordovician series:			
Limestone, magnesian, gray to brownish, with pyrite and calcite-----	335	1,100	
Sandstone, fine to medium, limey, gray-----	85	1,185	
Ordovician and Cambrian system; undifferentiated:			
Limestone, magnesian, gray-----	315	1,500	
Sandstone, medium, limey, gray, with green specks-----	50	1,550	

Well 37/9W-30D1

Type of record: Driller's log.

Altitude: 584 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Sand, coarse, loose, brown-----	4	5	
Sand, fine, brownish-gray-----	5	10	
Sand, fine, gray-----	13	23	
Clay, soft, gray-----	26	49	
Clay, tough to very hard, gray, with small gravel and shale---	12	61	

Well 37/9W-30F3

Type of record: Driller's log.

Altitude: 584 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Sand, fine, tan-----	2	3	
Sand, fine to medium, gray, with trace of shale-----	18	21	
Clay, stiff, gray, and silt; with trace of sand, shale fragments, and orange clay----	12	33	
Clay, medium, gray-----	10	43	

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

Well 37/9W-30F3--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, very stiff, gray, and silt; with trace of fine to coarse sand, fine gravel, and shale fragments-----	10	53	
Silt, very hard, gray, and clay; with fine to coarse sand and trace of gray shale-----	10	63	
Silt, clayey-----	2	65	

Well 37/9W-30F5

Type of record: Driller's log.	Altitude: 585 feet.		
Quaternary system:			
Recent and Pleistocene series:			
Top soil and sand-----	1	1	
Sand, fine to medium, brown-----	5	6	
Sand, fine, gray, stratified, with trace of shale and wood--	17	23	
Clay, stiff, gray, and silt; with trace of shale fragments-	11	34	

Well 37/9W-30K3

Type of record: Driller's log.	Altitude: 586 feet.		
Quaternary system:			
Recent and Pleistocene series:			
Top soil and cinder fill-----	2	2	
Sand, medium to fine, tan-----	6	8	
Sand, medium to fine, gray, stratified, with dark lenses and many shells-----	16	24	
Clay, stiff, gray, with trace of sand, shale, limestone, orange clay, and fine gravel--	34	58	
Clay, very stiff, gray, and silt; with some sand and fine gravel, shale, and limestone--	6	64	
Silt, gray, and clay; with some coarse to fine sand, and trace of gravel, shale, and limestone-----	6	70	

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

Well 37/9W-30L4

Type of record: Driller's log.

Altitude: 587 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil and cinder waste-----	1	1	
Sand, fine to medium, brown-----	7	8	
Sand, fine to medium, gray, with trace of shale fragments, seam of foliated organic matter, and silty sand-----	18	26	
Clay, medium-stiff, gray, with trace of rock fragments, small pockets of gray and brown silt, and trace of black clay-----	10	36	

Well 37/9W-30L5

Type of record: Driller's log.

Altitude: 585 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Sand, fine, tan-----	24	25	
Sand, fine, gray, with trace of silt-----	18	43	
Clay, gray, with trace of silt and gravel-----	10	53	
Clay, stiff, gray, with trace of gravel and sand-----	7	60	
Clay, very stiff, gray, with trace of shale and gravel fragments-----	5	65	
Clay, hard, gray, with trace of gravel, sand, and silt-----	9	74	

Well 37/9W-30L9

Type of record: Driller's log.

Altitude: 585 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil and fill with sand and cinders-----	3	3	
Sand, fine, brown-----	3	6	
Sand, fine, gray, with thin black layers and trace of shells and silt-----	19	25	
Clay, gray, with trace of orange clay, sand, fine gravel, and shale-----	12	37	

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

Well 37/9W-30L10

Type of record: Driller's log. Altitude: 587 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Sand, fine, tan-----	7	8	
Sand, fine, gray, with trace of silt-----	18	26	
Clay, sandy, gray, with trace of gravel-----	5	31	
Clay, stiff, gray, with some silt and trace of gravel-----	12	43	
Clay, very stiff, gray, with trace of shale fragments-----	21	64	
Clay, hard, gray, with trace of gravel fragments, silt, and some sand-----	33	97	
Silurian system:			
Middle Silurian series:			
Limestone-----	16	113	Dolomite or dolomitic limestone.

Well 37/9W-30Q1

Type of record: Driller's log. Altitude: 584 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, fine to medium, brown-----	3	3	
Sand, fine to medium, gray-----	22	25	
Clay, medium to very stiff, gray, with trace of rock fragments-----	10	35	

Well 37/9W-30R6

Type of record: Driller's log. Altitude: 585 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Sand, fine to medium, brown-----	5	6	
Sand, fine, gray, with trace of gravel and shells-----	19	25	
Clay, medium stiff, gray, with trace of rock fragments-----	13	38	
Clay, medium, gray, with trace of rock fragments-----	10	48	
Clay, stiff, silty, gray, with trace of rock fragments-----	10	58	
Clay, hard, silty, gray, with fine to coarse rock fragments-	14	72	

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

Well 37/9W-31A1

Type of record: Driller's log.

Altitude: 585 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Organic matter, sandy-----	2	2	
Sand, fine to medium, brown-----	4	6	
Sand, fine to medium, dense, gray-----	17	23	
Clay, stiff, silty, gray, with trace of rock fragments-----	34	57	
Clay, very stiff, silty, gray, with rock fragments-----	7	64	
Clay, hard, silty, gray, with trace of rock fragments-----	16	80	

Well 37/9W-31A6

Type of record: Driller's log.

Altitude: 586 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil and cinder fill-----	1	1	
Sand, fine, tan-----	5	6	
Sand, fine to medium, gray stratified, with layers of black sand having many shell fragments-----	17	23	
Clay, stiff, silty, gray, with trace of sand, fine gravel, and shale fragments-----	25	48	
Clay, very stiff, silty, gray, with some sand, gravel, shale, and limestone fragments-----	10	58	
Clay, hard, silty, gray, with some sand, fine gravel, shale, and limestone fragments-----	13	71	

Well 37/9W-31H1

Type of record: Driller's log.

Altitude: 585 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil, sandy, black, and cinder waste-----	2	2	
Sand, fine to medium, brown-----	6	8	
Sand, fine to medium, gray, with thin layers of dark organic matter-----	15	23	
Clay, medium to very stiff, gray, with trace of rock frag- ments and silt pockets-----	36	59	

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

Well 37/9W-31H1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Silt, very hard, sandy, gray----	3	62	
Clay, hard, gray, with fine to coarse gravel-----	7	69	

Well 37/9W-32E1

Type of record: Driller's log. Altitude: 587 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil, sandy, black-----	2	2	
Sand, fine to medium, brown, with some shell fragments and thin layers of black organic matter-----	7	9	
Sand, fine to medium, gray, with thin layers of black organic matter and trace of fine shell fragments-----	16	25	
Clay, medium-stiff, gray, with trace of rock fragments-----	30	55	
Granite boulder-----	1	56	
Clay, hard, stiff, gray, with trace of rock fragments-----	3	59	
Silt, hard, clayey, gray, with trace of rock fragments-----	3	62	
Clay, hard, silty, gray, with trace of rock fragments-----	3	65	

Well 37/9W-32E4

Type of record: Driller's log. Altitude: 583 feet.

Water-----	1	1	
Quaternary system:			
Recent and Pleistocene series:			
Silt, organic, black, with mill and refinery waste-----	6	7	
Silt, organic, sandy, brown, black, and gray, with trace of shells-----	11	18	
Sand, gray-----	1	19	
Clay, stiff, gray, with layers of silt and clay and trace of rock fragments-----	36	55	
Clay, hard, very stiff, gray, with trace of rock and seams of fine gravel-----	23	78	
Gravel, fine, and coarse sand---	1	79	

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

Well 37/9W-32E4--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, hard, gray, with trace of rock-----	14	93	
Clay, very stiff, gray, with layers of gravel, sand, and silt-----	9	102	
Clay, hard, gray, with fine to coarse rock fragments and some silt-----	22	124	
Silurian system:			
Middle Silurian series:			
Limestone-----	11	135	Dolomite or dolomitic limestone.

Well 37/9W-32H1

Type of record: Driller's log.

Altitude: 595 feet.

Quaternary system:			
Recent and Pleistocene series:			
Drift-----	130	130	
Silurian system:			
Middle Silurian series:			
Dolomite, chert, and sand grains	5	135	
Dolomite, soft, argillaceous, gray-----	45	180	
Dolomite, dense, light-buff, with chert fragments-----	40	220	
Dolomite, argillaceous, light-gray-----	25	245	
Dolomite, gray and light-brown--	45	290	
Dolomite, soft, brittle, buff, with rounded quartz grains and some mottled dolomite, light-gray in lower 15 feet---	145	435	
Dolomite, buff to light-gray, with spots of pyrite and medium-gray dolomite-----	50	485	
Dolomite, buff to light-brown---	35	520	
Dolomite, light-buff, with white chert fragments and some glauconite-----	50	570	
Dolomite, light-to medium- brownish-gray, with white chert fragments-----	24	594	
Dolomite, dark-gray, and dark- gray shale-----	11	605	
Dolomite, buff to light-brown, argillaceous at base-----	35	640	

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

Well 37/9W-32H1--Continued			
Material	Thick- ness (feet)	Depth (feet)	Remarks
Ordovician system:			
Upper Ordovician series:			
Shale, gray to dark-gray, and gray, soft, fossiliferous, dolomitic shale, slightly calcareous-----	124	764	
Middle Ordovician series:			
Dolomite, dense to finely crystalline, light-brown-----	241	1,005	
Dolomite, argillaceous, brownish-gray-----	20	1,025	
Dolomite, light-brown-----	65	1,090	
Sandstone, white, with rounded to sub-rounded grains and some pyrite-----	100	1,190	
Dolomite, dense to finely crystalline, buff, with some green sandy shale-----	125	1,315	White chert and pink dolomite from 1,265 to 1,270 feet.
Cambrian system:			
Upper Cambrian series:			
Dolomite, buff, with abundant rounded quartz grains-----	15	1,330	
Dolomite, crystalline in lower part, buff to medium-gray, with trace of chert and secondary quartz-----	130	1,460	
Dolomite, grayish-brown to brown	25	1,485	
Dolomite, sandy, glauconitic, grayish-brown-----	10	1,495	
Sandstone, glauconitic, gray, with subangular grains and light-gray sandy, glauconitic dolomite-----	105	1,600	
Dolomite, sandy in part, slightly glauconitic, light- grayish-brown-----	20	1,620	
Sandstone, slightly glauconitic, buff to white, with some dolomite-----	200	1,820	
Sandstone, light-buff, and gray argillaceous dolomite----	5	1,825	

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

Well 37/9W-32L2

Type of record: Driller's log. Altitude: 587 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Silt-----	1	1	
Sand, fine, tan-----	7	8	
Sand, fine, gray-----	16	24	
Clay, stiff, gray, with trace of sand, shale pieces, and gravel-----	13	37	

Well 37/9W-32M1

Type of record: Driller's log. Altitude: 582 feet.

Water-----	1	1	
Quaternary system:			
Recent and Pleistocene series:			
Silt, organic, with refinery and mill waste-----	11	12	
Sand, fine to medium, gray, with trace of organic silt and sand layers with shell fragments-----	7	19	
Clay, soft to medium gray, with trace of rock fragments-----	9	28	
Silt, stiff, clayey-----	3	31	
Silt, gray-----	2	33	
Clay, stiff, silty, gray, with trace of rock fragments-----	5	38	
Clay, stiff, gray, with trace of rock fragments-----	14	52	
Clay, very stiff, gray, with trace of rock fragments-----	8	60	
Clay, hard, gray, with trace of rock fragments-----	10	70	

Well 37/9W-32M5

Type of record: Driller's log. Altitude: 583 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	1	1	
Sand, fine, tan-----	3	4	
Sand, fine, gray, foliated, with trace of silt and shell fragments-----	15	19	
Clay, stiff to very stiff, gray, with trace of silt and rock fragments-----	39	58	

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

Well 37/9W-32M5--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system: Recent and Pleistocene series: Clay, hard, gray, with trace of silt, sand, gravel, and rock fragments-----	12	70	

Well 37/9W-32P2

Type of record: Driller's log.

Altitude: 586 feet.

Quaternary system: Recent and Pleistocene series: Top soil, silty-----	1	1	
Sand, fine, tan-----	7	8	
Sand, fine, gray, with trace of fine gravel and shale-----	4	12	
Sand, fine, gray, with some silt	11	23	
Clay, stiff to very stiff, gray, with trace of shale pieces and gravel-----	39	62	
Clay, hard, gray, with trace of sand and gravel-----	13	75	Mostly shale pieces.

Well 37/9W-32Q2

Type of record: Driller's log.

Altitude: 588 feet.

Quaternary system: Recent and Pleistocene series: Silt, dark-----	1	1	
Sand, fine, loose, tan-----	7	8	
Sand, fine, dense, gray, with trace of coarse sand, fine gravel, and some silt-----	16	24	
Clay, very stiff, gray, with trace of sand, gravel, and small shale pieces-----	14	38	
Clay, stiff, silty, gray, with some coarse sand, trace of fine gravel, and shale and limestone fragments-----	21	59	
Clay, silty, gray, with some sand, medium to fine gravel, shale fragments, and occa- sional fine sand pocket-----	12	71	

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

Well 37/9W-33J1

Type of record: Sample study; unconsolidated material Altitude: 587 feet.
by L. E. Workman, bedrock by F. T. Thwaites; formerly of Illinois Geological Survey.

Material	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	40	40	No sample taken.
Clay, dolomitic, brownish-gray, weak, very finely powdered----	32	72	
Gravel, clean, medium, angular to subround pebbles of dark brown and greenish-gray Sporangites shale and dolomite with some granite, basalt, and jasper pebbles-----	29	101	
Clay, dolomitic, silty, sandy, brownish- and greenish-gray, with scattered small pebbles of shale and dolomite-----	49	150	
Silurian system:			
Middle Silurian series:			
Dolomite, gray-----	188	338	
Dolomite, white-----	63	401	
Dolomite, gray-----	26	427	
Dolomite, white-----	23	450	
Dolomite, gray-----	30	480	
Dolomite, dark gray-----	8	488	
Dolomite, gray-----	99	579	
Dolomite, dark gray-----	16	595	
Dolomite, gray, with thin layers of shale-----	9	604	
Dolomite, gray-----	31	635	
Dolomite with shale seams-----	5	640	
Ordovician system:			
Upper Ordovician series:			
Shale, dolomitic, blue-gray----	135	775	
Middle Ordovician series:			
Dolomite, brownish-gray-----	195	970	
Dolomite, light-gray-----	40	1,010	
Dolomite, gray-----	56	1,066	
Dolomite, light-brown-----	8	1,074	
Dolomite, light-gray-----	42	1,116	
Sandstone, coarse, white-----	64	1,180	
Conglomerate, with chert pebbles	11	1,191	
Conglomerate, with dolomite layers-----	24	1,215	
Lower Ordovician series:			
Dolomite, white-----	26	1,241	
Dolomite, gray-----	14	1,256	
Dolomite, light-gray-----	5	1,261	

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

Well 37/9W-33J1--Continued			
Material	Thick- ness (feet)	Depth (feet)	Remarks
Ordovician system:			
Lower Ordovician series:			
Dolomite, red-----	7	1,268	
Dolomite, gray, with shale-----	7	1,275	
Cambrian system:			
Upper Cambrian series:			
Sandstone, dolomitic, medium white, with gray dolomite-----	16	1,291	
Dolomite, sandy, light-gray-----	22	1,313	
Dolomite, shaly, gray-----	4	1,317	
Dolomite, gray-----	15	1,332	
Dolomite, light-gray-----	18	1,350	
Dolomite, white-----	15	1,365	
Dolomite, light-gray-----	10	1,375	
Dolomite, light-brown-----	17	1,392	
Dolomite, gray-----	39	1,431	
Dolomite, light-gray-----	32	1,463	
Dolomite, brown-----	14	1,477	
Dolomite, gray-----	28	1,505	
Sandstone, medium, glauconitic, dolomitic, white-----	19	1,524	
Sandstone, medium, dolomitic, gray-----	7	1,531	
Sandstone, dolomitic, glauconi- tic, green-----	6	1,537	
Sandstone, very dolomitic, glauconitic, green-----	23	1,560	
Sandstone, very dolomitic, shaly, green-----	12	1,572	
Sandstone, very dolomitic, green-gray-----	28	1,600	
Sandstone, medium, very dolomi- tic, glauconitic, gray-----	36	1,636	
Sandstone, medium, white-----	12	1,648	
Sandstone, medium, dolomitic, white-----	6	1,654	
Sandstone, medium, white-----	183	1,837	
Dolomite, very sandy, glauconi- tic, gray-----	3	1,840	

Well 37/9W-33N2

Type of record: Driller's log.

Altitude: 589 feet.

Quaternary system:			
Recent and Pleistocene series:			
Fill; cinders-----	1	1	
Sand, fine, brown-----	6	7	

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

Well 37/9W-33N2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, gray, stratified, with trace of dark thin layers of coarse sand and shale-----	18	25	
Clay, silty, gray, with trace of coarse sand, fine gravel, shale, and rock fragments-----	10	35	

Well 37/9W-33P4

Type of record: Driller's log. Altitude: 588 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, fine to medium, brown, with trace of rock fragments--	13	13	
Sand, fine to medium, gray, with trace of fine gravel and lenses of coarse to medium sand and fine gravel-----	16	29	
Clay, medium, gray, with trace of rock fragments and lenses of silt-----	34	63	
Clay, stiff to very stiff, gray, varved, with fine to medium gravel and trace of rock fragments-----	17	80	
Clay, hard, silty, gray, with fine to coarse rock fragments-	12	92	

Well 37/9W-33Q1

Type of record: Driller's log. Altitude: 590 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, fine to medium, brown, with trace of gravel-----	19	19	
Sand, fine to medium, gray-----	11	30	
Clay, medium, gray, with trace of gravel-----	9	39	
Clay, stiff, gray, with trace of rock fragments and layer of black clay with shale fragments-----	3	42	
Clay, medium gray and brown, with silt and trace of gravel-	31	73	
Clay, stiff, gray, varved, with trace of gravel in lower part-	3	76	

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

Well 37/9W-33Q1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Silt, stiff to hard, clayey, gray, with trace of fine to medium gravel -----	10	86	
Silt, clayey, or silty clay; gray with gravel-----	15	101	

Well 37/9W-34N1

Type of record: Driller's log. Altitude: 582 feet.

Water-----	2	2	
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine to medium, brownish- gray to gray, with some red- dish-brown and black silty sand, trace of shale frag- ments, and thin pockets of organic matter-----	22	24	
Clay, soft to medium, gray, and gray silt in alternating layers; trace of rock fragments-----	23	47	
Clay, very soft to soft, stiff, gray, with trace of rock fragments-----	29	76	
Clay, very hard, silty, gray, with some very hard gray sand and rock fragments-----	15	91	

Well 37/9W-34R1

Type of record: Driller's log. Altitude: 589 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, fine to medium, tan, with trace of organic matter-----	8	8	
Sand, fine to medium, brown, with trace of silt and rock fragments-----	15	23	
Sand, fine, gray, with trace of gravel and rock fragments----	10	33	
Clay, medium, gray, with trace of silt and rock fragments----	21	54	
Clay, stiff to very stiff, gray, with trace of rock fragments and silt -----	32	86	

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

Well 37/9W-34R1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, hard, silty, gray, with trace of gravel and rock fragments-----	16	102	

Well 37/9W-35N1

Type of record: Driller's log. Altitude: 590 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, tan-----	8	8	
Sand, fine to medium, gray-----	26	34	
Clay, stiff to very stiff, gray, with trace of sand, gravel, and shale fragments-----	13	47	

Well 37/9W-35P2

Type of record: Driller's log. Altitude: 592 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil and cinder fill-----	1	1	
Sand, fine, tan-----	6	7	
Sand, medium to fine, brown, stratified, with dark seams and many shell fragments-----	7	14	
Sand, medium to fine, gray, stratified, with trace of shells and shale fragments-----	21	35	
Clay, gray, and silt; with some coarse to fine sand and trace of fine gravelly shale fragments-----	10	45	

Well 37/9W-36E1

Type of record: Driller's log from memory. Altitude: 590 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand-----	40	40	
Clay, blue-----	60	100	
Gravel-----	5	105	

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

Well 27/10W-1B1

Type of record: Driller's log.

Altitude: 585 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill-----	3	3	
Sand, medium to coarse, brown, and medium to large gravel----	6	9	
Sand, fine to medium, brown, with trace of silt-----	4	13	
Sand, fine to medium, silty, gray, with trace of small gravel-----	13	26	
Clay, medium, silty, blue, with trace of fine sand-----	10	36	
Clay, stiff, silty, blue, with trace of fine sand and gravel-	5	41	
Clay, medium stiff, blue-----	12	53	
Silt, hard, sandy, clayey, blue, with gravel noted-----	3	56	
Silt, very hard, sandy, clayey, blue, with gravel noted-----	4	60	

Well 37/10W-1C2

Type of record: Driller's log.

Altitude: 588 feet.

Quaternary system:			
Recent and Pleistocene series:			
Fill; coarse sand, gravel, and slag-----	6	6	
Sand-----	20	26	
Clay-----	2	28	

Well 37/10W-1F2

Type of record: Driller's log.

Altitude: 586 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, gray, and gravel-----	1	1	
Sand, brown, with trace of gravel	3	4	
Sand, fine, loose, with trace of coarse sand-----	5	9	
Sand, fine, medium-dense, gray--	16	25	
Clay, dense, blue-----	12	37	Moist.
Clay, dense, blue, with trace of gravel-----	14	51	Do.
Clay, silty-----	4	55	
Clay, blue, with gravel and silt	16	71	
Sand, fine, gray, with black shale and rock, 1 to 6 inches-	18	89	

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

Well 37/10W-1F2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, blue, with trace of silt and much shale-----	5	94	
Clay, blue, with black small gravel and little shale-----	2	96	
Clay, blue, with black gravel and trace of shale-----	3	99	
Clay, sandy, blue, with rocks 1 to 4 inches-----	1	100	Bedrock at 100 feet.

Well 37/10W-1G1

Type of record: Driller's log.

Altitude: 585 feet.

Quaternary system:			
Recent and Pleistocene series:			
Soil-----	5	5	
Sand and gravel-----	5	10	
Sand, fine-----	17	27	
Clay, blue-----	23	50	
Sand, coarse-----	3	53	
Sand, fine-----	8	61	
Clay, blue-----	14	75	

Well 37/10W-1L2

Type of record: Driller's log.

Altitude: 591 feet.

Quaternary system:			
Recent and Pleistocene series:			
Cinders and sand-----	1	1	
Fill; slag-----	8	9	
Muck-----	1	10	
Sand, gray, with trace of coarse sand and silt-----	22	32	
Clay, soft, blue-----	2	34	

Well 37/10W-1P1

Type of record: Driller's log.

Altitude: 589 feet.

Quaternary system:			
Recent and Pleistocene series:			
Rubbish and cinders-----	8	8	
Sand, light-gray-----	19	27	
Clay, stiff, blue-----	4	31	

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

Well 37/10W-12C2

Type of record: Driller's log.

Altitude: 584 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill; brown coarse sand, gravel, and cinders-----	3	3	
Sand, fine, loose, gray, with trace of brown fine sand-----	16	19	
Sand, fine, medium-dense, gray--	6	25	
Clay, soft, gray-----	21	46	
Clay, stiff, gray, and small gravel-----	10	56	
Clay, very hard, gray, with small black shaly gravel and 3/4-inch stones-----	22	78	
Record missing-----	20	98	
Silurian system:			
Middle Silurian series:			
Limestone-----	8	106	Dolomite or dolomitic limestone.

Well 37/10W-12F1

Type of record: Driller's log.

Altitude: 583 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand-----	1	1	
Cinders and muck-----	2	3	
Muck-----	3	6	
Sand, fine, gray-----	15	21	
Sand, silty-----	1	22	
Clay, blue-----	4	26	

Well 37/10W-12G1

Type of record: Driller's log.

Altitude: 582 feet.

Water-----	3	3	
Quaternary system:			
Recent and Pleistocene series:			
Sand, dirty, gray-----	6	9	
Clay, soft, gray-----	13	22	
Clay, soft, gray, with trace of gravel-----	4	26	

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

Well 37/10W-12J1

Type of record: Driller's log. Altitude: 582 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Water-----	3	3	
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, gray-----	22	25	
Clay, soft, gray-----	1	26	

Well 37/10W-12K1

Type of record: Driller's log. Altitude: 582 feet.

Water-----	2	2	
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, gray-----	20	22	
Clay, soft, gray, with trace of gravel-----	4	26	

Well 37/10W-12L3

Type of record: Driller's log. Altitude: 583 feet.

Water-----	5	5	
Quaternary system:			
Recent and Pleistocene series:			
Sand, mucky-----	5	10	
Sand, fine, loose, gray-----	1	11	
Sand, fine, light-gray-----	10	21	
Clay, gray-----	25	46	Moist.
Clay, gray, with trace of gravel	14	60	Do.
Clay with gravel-----	5	65	

Well 37/10W-12L4

Type of record: Driller's log. Altitude: 586 feet.

Quaternary system:			
Recent and Pleistocene series:			
Cinders and sand-----	1	1	
Slag, blue-green-----	5	6	
Silt, organic-----	1	7	
Sand, silty, gray-----	17	24	
Clay, stiff, blue-----	4	28	

Well 37/10W-12N1

Type of record: Driller's log. Altitude: 582 feet.

Water-----	4	4	
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine, black-----	5	9	
Sand, fine, gray-----	15	24	

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

Well 37/10W-12N1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system: Recent and Pleistocene series: Clay, soft, gray-----	2	26	Moist.

Well 37/10W-12P2

Type of record: Driller's log.		Altitude: 583 feet.	
Water-----	3	3	
Quaternary system: Recent and Pleistocene series: Sand, fine, gray-----	16	19	
Clay, soft, gray-----	3	22	
Clay, gray-----	5	27	Very moist.

Well 37/10W-13C1

Type of record: Driller's log.		Altitude: 582 feet.	
Water-----	4	4	
Quaternary system: Recent and Pleistocene series: Sand, fine, gray-----	16	20	
Clay, soft, gray-----	6	26	

Well 37/10W-13G5

Type of record: Driller's log.		Altitude: 586 feet.	
Quaternary system: Recent and Pleistocene series: Sand, coarse, brown, silt, and blue slag-----	7	7	
Sand, silty, gray-----	4	11	
Sand, fine, gray with small gravel-----	9	20	
Sand, fine, gray, with trace of gravel-----	4	24	
Clay, gray, with trace of black gravel-----	25	49	
Clay, stiff, gray, with trace of shale and gravel-----	2	51	
Clay, soft, with trace of shale and black gravel-----	10	61	
Clay with trace of shale, black gravel, and stones-----	15	76	

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

Well 37/10W-19K3

Type of record: Driller's log.

Altitude: 584 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Cinders and slag-----	6	6	
Clay, hard, blue, and silty sand	2	8	
Sand, fine, silty, gray, with trace of gravel-----	12	20	
Sand, fine, silty, gray, with trace of fine gravel-----	4	24	
Clay, soft, gray, with trace of gravel-----	5	29	
Clay, tough, gray, with trace of black small gravel-----	20	49	
Clay, soft, gray, with trace of black small gravel-----	5	54	
Clay, stiff, gray, with trace of black small gravel-----	10	64	

Well 37/10W-19Q3

Type of record: Driller's log.

Altitude: 585 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand, silty, cinders, and slag--	5	5	
Sand, fine, silty, gray-----	19	24	
Clay, soft, gray, with rocks and trace of gray sand-----	32	56	
Clay, stiff, gray, and fine sand	5	61	
Clay, tough, gray, with shaley gravel-----	8	69	

Well 37/10W-24B1

Type of record: Driller's log.

Altitude: 585 feet.

Quaternary system:			
Recent and Pleistocene series:			
Cinders, gravel, and brown coarse sand-----	4	4	
Sand, coarse, mucky, black-----	4	8	
Sand, light-gray-----	16	24	
Clay, light-gray-----	5	29	
Clay, light-gray, with fine sand and small gravel-----	23	52	
Clay, tough, gray-----	2	54	
Clay, hard, gray, with trace of black gravel and shale-----	8	62	

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

Well 37/10W-24H1

Type of record: Driller's log.

Altitude: 584 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill; sand, gravel, blue slag, and cinders-----	4	4	
Sand, fine, silty, gray, with trace of black gravel-----	4	8	
Sand, fine, loose, gray-----	11	19	
Clay, medium-dense, gray, trace of small gravel-----	7	26	
Clay, soft, gray-----	2	28	

Well 37/10W-24J1

Type of record: Driller's log.

Altitude: 580 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Cinders, slag, coarse sand, and gravel-----	7	7	
Muck and decayed weeds-----	4	11	
Sand, fine, gray-----	13	24	
Clay, soft, gray-----	25	49	
Clay, hard, gray, with small gravel-----	11	60	

Well 37/10W-36J1

Type of record: Driller's log.

Altitude: 590 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand-----	30	30	
Clay-----	100	130	
Silurian system:			
Middle Silurian series:			
Lime, brown-----	170	300	Dolomite or dolomitic limestone.

Well 38/10W-36L1

Type of record: Driller's log.

Altitude: 585 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill; sand and gravel, with some silt-----	9	9	
Sand, fine, loose, gray, with trace of fine gravel-----	5	14	
Sand, fine, medium-dense, gray--	10	24	
Clay, soft, gray-----	2	26	

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

Well 38/10W-36M3

Type of record: Driller's log.

Altitude: 584 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Fill; cinders, sand, and gravel, with rubbish-----	4	4	
Sand, fine, silty, loose, gray, with some rubbish and black gravel-----	19	23	
Clay, soft, gray-----	9	32	
Clay, soft, gray, with black small gravel and shale-----	11	43	
Clay, tough, gray, with black small gravel and shale-----	6	49	
Clay, very hard, gray, with shale and black fine gravel---	10	59	
Shale-----	1	60	
Clay, very hard, gray, with shale and black fine gravel---	20	80	

Well 38/10W-36N1

Type of record: Driller's log.

Altitude: 585 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	2	2	
Sand-----	22	24	
Clay, sandy-----	2	26	

Well 38/10W-36P2

Type of record: Driller's log.

Altitude: 585 feet.

Quaternary system:			
Recent and Pleistocene series:			
Fill; hard slag-----	1	1	
Fill; yellow coarse sand and gravel-----	8	9	
Sand, fine, loose, brown and gray, with gravel-----	5	14	
Sand, fine, loose, gray, with gravel-----	10	24	
Clay, soft, gray-----	15	39	
Clay, tough, gray, with fine gravel-----	10	49	
Clay, very hard, gray, with shale and black fine gravel---	41	90	

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

Well number: See text for description of well-numbering system.
 Material: D, drift; Do, dolomite; G, gravel; Ls, limestone; Sd, sand; Sh, shale; Ss, sandstone.
 Geologic age: C, Cambrian; D, Devonian; O, Ordovician; Pl, Pleistocene; S, Silurian.
 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: DCC, analysis by Dearborn Chemical Co.; gpm, gallons per minute; ISBH, analysis by Indiana State Board of Health; min., minute; TDS, total dissolved solids; U, analyst unknown.

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
32/7W- 6N1	Ls	S	1- 5-59	48	1.3	0	532	65	72	456	
32/8W-33C1	Ls?	S?	-----	58	.1	34	220	-----	18	180	
33E2	Ls	S	3-24-56	---	---	24	295	-----	26	180	
33F4	Ls?	S	5-57	54	---	10	241	-----	26	164	
32/9W- 2Q1	Sd	Pl	8-57	---	1.0	0	163	-----	8	204	
2Q1	Sd	Pl	10-21-59	---	1.5	0	215	90	16	272	
4L2	Ls	S	10- 4-59	56	.1	19	293	51	14	160	
4N1	Sd	Pl	7-24-56	---	---	0	400	-----	6	424	
5J1	Sd	Pl	10-21-59	---	.1	0	322	115	64	420	
5N1	Sd	Pl	8-57	60	1.0	0	386	-----	10	432	
36E1	Ls?	S	4-11-57	54	---	22	285	-----	46	204	
36E1	Ls?	S	10-21-59	---	.5	0	405	13	28	188	
32/10W- 1N1	Ls	S	4-11-57	51	---	17	337	-----	---	276	

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

32/10W-12R1	PI	Sd	---	0.1	0	532	255	20	660
13C1	S	Ls?	---	2.0	0	415	170	16	504
33/7W-7N1	PI	Sd	---	1.0	0	312	88	20	316
9D1	PI	Sd	52	1.5	0	434	43	20	376
17P1	PI	Sd	---	2.0	0	434	50	12	356
28C1	PI	Sd	---	2.0	0	508	190	12	530
33/8W-7B1	PI	Sd	54	1.5	7	425	---	---	412
7K1	PI	Sd	---	5.0	0	576	220	12	640
9G1	PI	Sd	---	1.5	0	493	40	6	404
12B1	PI	Sd	---	1.5	0	498	110	20	504
18P1	PI	Sd	---	3.0	0	493	145	16	504
21R1	PI	Sd	---	1.0	0	102	130	164	432
23P1	PI	Sd	---	1.0	0	254	75	12	256
29D1	PI	Sd	---	.4	0	346	90	8	344
33/9W-1J1	PI	Sd	---	3.0	0	508	90	10	464
4E1	S	Ls?	---	.1	0	307	11	28	76
7G1	S	Ls	---	.1	0	293	5	4	92
8M1	S	Ls	51	---	19	224	---	2	112
8M1	S	Ls	---	.1	0	298	28	16	100
11L1	PI	Sd	---	.5	0	249	96	8	260
12H2	PI	Sd	---	---	7	376	---	6	524
18K2	PI	Sd	---	---	0	566	270	12	684
22B1	PI	Sd	60	1.0	0	500	---	8	404
25D1	PI	Sd	56	3.0	5	244	---	4	424
25F1	PI	Sd,G	---	1.5	0	420	140	20	464
28D1	PI	Sd	---	2.5	0	488	40	16	408
29G1	S	Ls	---	.1	0	283	100	12	144
30E1	S	Ls	52	---	17	259	---	22	164
30E1	S	Ls	54	.1	0	317	90	20	152

Table 4.--Field chemical analyses of water from wells in Lake 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
33/9W-31N1	Ls?	S	10-21-59	---	0.3	0	420	65	10	348	
	Sd	Pl	1-7-59	---	.3	0	298	75	8	296	
33/10W-1B1	Ls?	S	10-21-59	---	.1	0	312	69	32	140	
	Ls?	S	10-21-59	53	.1	0	420	205	16	140	
	Ls?	S	10-21-59	---	.3	0	351	325	16	396	
	Sd	Pl	10-21-59	---	7.5	0	312	250	136	656	
	Ls	S	4-10-57	51	---	17	203	---	4	296	
	Ls	S	10-21-59	---	.5	0	312	240	16	340	
34/7W-6N1	Sd	Pl	10-16-59	---	3.0	19	346	95	14	372	
	Ls	S	10-16-59	---	.1	38	425	13	20	20	
	Sd	Pl	10-16-59	---	3.0	29	410	100	12	432	
	Sd,G	Pl	1-5-59	---	.7	0	634	75	8	528	
	Sd,G	Pl	1-5-59	54	3.0	0	581	100	12	500	
	Sd	Pl	10-16-59	---	2.5	53	478	47	10	452	
	Sd	Pl	10-16-59	---	3.0	29	371	180	8	528	
	Sd,G	Pl	10-16-59	---	3.0	29	488	94	12	476	
	Sd	Pl	10-16-59	---	1.0	24	395	12	10	332	
	Sd	Pl	10-16-59	---	.7	0	498	25	12	368	
34/8W-5A1	Sd	Pl	1-8-59	---	3.5	19	639	---	20	900	
	Sd	Pl	10-3-57	55	1.0	0	605	---	4	536	
	Sd	Pl	10-3-57	56	.1	24	420	101	16	412	
	Sd,G	Pl	10-15-59	---	5.0	0	727	425	20	960	
	Sd	Pl	8-1-40	---	1.2	0	588	---	12	440	DCC.
	Sd	Pl	10-15-59	---	1.0	53	405	27	12	404	
	Sd	Pl	10-3-57	55	3.0	10	547	---	4	560	
	Sd	Pl	10-3-57	55	3.0	10	547	---	4	560	
	Sd	Pl	10-3-57	55	3.0	10	547	---	4	560	
	Sd	Pl	10-3-57	55	3.0	10	547	---	4	560	

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

34/8W-18P2	Sd	Pl	10-15-59	---	2.5	0	634	95	12	552
18R5	Sd	Pl	10-15-59	---	2.5	38	571	98	12	552
19G2	Sd	Pl	10-3-57	58	4.5	0	586	---	8	736
19G3	Sd	Pl	10-3-57	56	4.5	0	630	---	8	720
20L1	Sd	Pl	10-16-59	53	1.0	24	264	18	8	240
20M4	Sd	Pl	7-31-57	68	4.0	17	527	---	22	800
22N1	Sd	Pl	10-15-59	---	2.0	0	678	375	16	888
26C1	Sd	Pl	10-15-59	---	5.0	29	561	82	8	488
28N1	Sd	Pl	10-15-59	---	5.0	0	586	120	12	560
29D1	Sd	Pl	5-57	50	---	0	395	---	24	488
30B1	Sd	Pl	10-3-57	55	3.0	14	200	---	12	376
30B1	Sd	Pl	10-15-59	---	3.0	38	537	205	12	656
34/9W-4E1	Ls?	S	6-20-57	58	.2	31	417	---	18	248
5R2	Ls?	S	11-8-59	---	.3	0	576	225	8	572
8B1	Sd	Pl	7-25-56	---	---	0	512	---	4	348
9A2	Ls?	S	1-8-59	---	.5	0	581	190	8	556
9M1	Ls?	S	10-15-59	---	.3	0	581	205	12	584
11A3	Ls	S	1-5-59	48	.5	14	551	220	8	388
11M2	Sd	Pl	10-15-59	---	1.5	24	556	220	16	672
12K1	Sh	D	10-15-59	---	1.5	0	693	310	12	672
12P4	Ls	S	1-9-59	53	.3	0	532	---	16	68
13B1	Ls	S	10-15-59	---	.5	48	410	11	36	100
13G4	Sd	Pl	10-15-59	---	3.0	0	693	430	16	888
13L1	Ls?	S	7-57	56	.2	29	412	---	20	76
14E2	Ls?	S	1-8-59	---	2.5	0	664	200	8	628
16E1	Sd	Pl	10-15-59	---	3.0	0	639	68	12	744
19A1	Ls	S	7-57	52	.2	0	461	---	12	344
19A1	Ls	S	10-14-54	---	.1	0	473	110	8	316
20R5	Ls?	S	1-8-59	56	.1	19	459	65	8	344
21C1	Sd	Pl	7-30-57	60	---	0	603	---	8	2,000
21C1	Sd	Pl	7-57	60	6.0	26	520	---	4	1,760
21D2	Ls	S	8-20-57	55	.1	22	259	---	6	188
21F2	Sd	Pl	5-57	56	4.0	0	554	---	2	982

Table 4.--Field chemical analyses of water from wells in Lake 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
34/9W-21F3	Sd	Pl	8-20-57	64	4.0	0	598	---	16	1,120	
21H2	Sd	Pl	8-57	60	2.5	0	466	---	6	408	
23A1	Ls	S	5-57	57	.1	17	322	---	14	40	
23E3	Ls	S	10-3-57	53	.8	0	522	---	4	484	
23E3	Ls	S	10-14-59	---	.5	0	556	100	12	484	
23G12	Sd	Pl	10-3-57	59	2.0	0	698	---	8	784	
24R2	Sd	Pl	7-24-56	---	---	0	493	---	---	408	
25B3	Sd	Pl	10-14-59	---	2.5	0	639	190	20	588	
26F3	Ls	S	1-5-59	45	.3	0	410	45	8	168	
29A1	Ls	S	7-25-56	---	---	0	390	---	6	192	
30D2	Ls?	S	10-14-59	---	.3	24	425	95	12	296	
31R1	Ls	S	10-25-56	52	---	0	498	---	12	256	
32E2	D	Pl	10-26-56	52	1.5	0	595	---	8	908	
34B1	Ls	S	1-5-59	56	.5	0	517	45	8	304	
35H1	Sd	Pl	10-3-57	58	2.5	34	268	---	16	364	
35R1	Sd	Pl	1-9-59	---	3.0	19	542	195	12	612	
34/10W-1C1	Ls?	S	10-14-59	---	2.0	0	493	84	16	340	
1C2	Ls?	S	---	52	---	---	427	---	2	252	
12J1	Ls?	S	10-14-59	---	.1	24	322	10	12	176	
13H1	Ls?	S	10-14-59	---	.1	29	342	50	12	200	
25D1	Ls	S	10-14-59	---	.8	0	332	80	12	172	
36L1	Sd	Pl	1-9-59	45	1.0	0	566	25	4	424	
36M1	Ls?	S	---	---	---	0	334	---	2	244	
35/7W-7R1	Sd	Pl	10-13-59	---	.5	24	561	27	12	472	
17D1	Sd,G	Pl	10-13-59	---	---	0	581	17	10	416	
18A2	Sd	Pl	10-13-59	---	1.0	29	537	47	28	480	

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

35/7W-21F1	Sd,G	P1	12-58	---	1.0	0	649	---	---	540
21F1	Sd,G	P1	10-13-59	---	.5	0	664	48	12	488
21L1	Ls?	D?	11-17-59	48	1.0	34	434	10	12	112
35/8W-51L1	Sd,G	P1	10-13-59	---	1.5	0	551	67	6	392
51L2	G,Sd	P1	10-27-59	50	.5	43	410	65	12	328
9D1	Sd	P1	10-13-59	53	1.0	0	571	12	8	376
13N1	Sd	P1	10-14-59	---	1.0	0	547	78	18	468
16H1	Sd	P1	10-14-59	---	.5	48	571	14	12	440
16J1	Sd	P1	10-13-59	---	1.0	0	547	112	24	496
18K1	Sd	P1	1- 8-59	48	5.0	0	512	480	12	864
18L1	Sd	P1	10- 3-57	55	1.0	24	268	---	12	348
20L1	Sh	D	1- 6-59	56	1.0	0	503	5	8	260
20L6	Sd	P1	1- 6-59	54	1.0	0	483	10	12	328
22H1	Sd	P1	10-14-59	---	1.0	0	630	68	12	496
29P1	Sd	P1	6-20-44	56	.3	0	393	---	24	305
30N1	Sd	P1	11-14-59	---	3.0	38	605	160	8	616
32P1	Sh?	D?	10-14-59	---	.1	14	473	9	8	216
35/9W-2C1	Sd	P1	6- 3-54	---	2.4	---	---	18	6	360
2F1	Ls	S	10-14-59	55	1.0	0	498	64	12	300
4Q1	Ls	S	4-26-57	55	1.5	29	303	---	12	248
4Q1	Ls	S	10-14-59	---	5.0	0	561	115	8	392
9D1	Ls	S	4-26-57	54	.2	17	468	---	14	264
14A1	Sd	P1	10-14-59	---	3.0	0	605	180	8	538
14P1	Ls	S	5-16-57	56	.4	12	415	---	28	144
15D1	Ls	S	1-17-50	---	.6	0	468	---	6	495
17R1	Ls	S	5-16-57	56	.1	17	500	---	12	152
18N10	Ls?	S	1- 8-59	53	.3	5	483	145	8	344
19D1	Ls?	S	1- 8-59	54	1.2	0	532	185	16	464
20F1	Sd	P1	10-14-59	---	2.0	10	556	125	6	488
24P2	Sd	P1	1- 8-59	---	.1	24	689	185	12	8
27D5	Ls?	S	1- 8-59	---	.3	0	537	205	12	312
29C4	Ls?	S	10-14-59	---	1.0	0	571	165	8	488

Table 4.---Field chemical analyses of water from wells in Lake 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
35/9W-29D2	Ls?	S	1- 8-59	53	0.3	0	488	175	12	420	
30A2	Ls	S	1- 8-59	48	.3	0	586	50	8	428	
30B2	Ls?	S	1- 8-59	52	.3	0	493	125	12	376	
34R1	Sd	Pl	10-14-59	---	5.0	0	522	65	6	444	
35/10W- 1R2	Sd	Pl	10-14-59	---	7.5	0	420	315	12	612	
19C1	Ls	S	2- 5-49	---	---	---	208	135	10	504	U; TDS-646.
13C2	Ls	S	3-22-56	---	1.0	0	488	304	10	515	U.
25E1	Ls?	S	1- 9-59	---	.1	0	351	---	8	180	
25L3	Ls?	S	-----	52	---	0	329	---	4	180	
25M1	Ls?	S	-----	58	.2	19	283	---	12	112	
36P3	Sd	Pl	10-14-59	---	1.0	0	610	18	12	456	
36/7W-16P1	Sd	Pl	10-13-59	---	1.0	24	190	10	952	488	
18G1	Ls	S	6-54	---	---	---	200	---	9	230	ISBH.
20R1	Sd	Pl	10-13-59	---	3.0	0	400	110	16	384	
36/8W- 3N1	Ls	S	9-30-41	---	---	0	201	6	447	---	U; TDS-1060.
9E1	Sd	Pl	5-15-57	---	---	0	234	---	22	328	
29G1	Sd	Pl	10-13-59	---	1.5	0	298	160	8	316	
32K1	Sd,G	Pl	10-12-59	---	1.0	0	397	17	8	224	
32K2	Sd,G	Pl	10-12-59	---	.3	14	307	14	10	220	
33E1	Sd,G	Pl	10-12-59	57	1.0	0	376	13	8	236	
35L1	Sd	Pl	12-57	---	1.0	0	307	---	8	172	
36/9W-11D1	Ls,Sh	S	10-12-59	---	.3	0	288	17	48	64	
14P1	Ls?	S	1- 8-59	54	.3	0	283	15	8	56	

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

Well No.	Depth	Interval	Depth	Temp	Sp. Gr.	Hardness	Alk.	Ca	Mg	Total Solids	Chloride	Sulfate	Iron	Copper	Manganese	Zinc	Lead	Mercury	Ammonia	Nitrate	Phosphate	Fluoride	Other	ISBH.
36/9W-35L1		Pl	12-20-50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	264
36/10W-24B1		S	10-12-59	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	80
37/9W-25C1	32H1	Do, Ss	5-15-57	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	168
			4- 4-49	1.2	53	53	20	317	111	125	---	---	---	---	---	---	---	---	---	---	---	---	---	---
32H1		Do, Ss	4- 4-49	1.6	53	53	46	298	7	72	---	---	---	---	---	---	---	---	---	---	---	---	---	27
32H1		Do, Ss	4- 4-49	1.2	55	55	41	162	7	70	---	---	---	---	---	---	---	---	---	---	---	---	---	14
32H1		Do, Ss	4- 4-49	1.2	58	58	55	266	7	67	---	---	---	---	---	---	---	---	---	---	---	---	---	14
32H1		Do, Ss	4- 4-49	1.2	61	61	20	305	176	142	---	---	---	---	---	---	---	---	---	---	---	---	---	109
32H1		Do, Ss	4- 4-49	2.4	63	63	10	301	634	347	---	---	---	---	---	---	---	---	---	---	---	---	---	493
32H1		Do, Ss	4- 4-49	2.8	63	63	0	292	1,130	563	---	---	---	---	---	---	---	---	---	---	---	---	---	657
32H1		Do, Ss	4- 4-49	4.0	64	64	0	296	1,075	568	---	---	---	---	---	---	---	---	---	---	---	---	---	656

Table 5.--Water levels in observation wells in Lake County, Indiana
(In feet below land-surface datum. Water level: e, estimated; h, tape measurement)

Lake 1. (36/7W-16Q2). Town of East Gary. Corner of Vandenburg and 28th Sts. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 16, T. 36 N., R. 7 W. Drilled public-supply water-table well in sand, diameter 38 inches, reported depth 64 feet. Land-surface datum is 635 feet above msl. Highest water level is 29 below lsd, Jan. 12, Sept. 2, 1954, June 3-July 1, 1956; lowest 32 below lsd, Jan. 6, Feb. 6-12, July 26, 1954. Records available: 1954-56. Affected by nearby pumping.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
1954		Feb. 4	31	Mar. 15	30	Sept. 19	30
		5	31	23	30	21	30
Jan. 1	30	6	32	26	30	23	30
3	30	7	32	28	30	25	30
4	31	8	32	30	30		
5	31	9	32	Apr. 8	30	1955	
6	32	10	32	10	30		
8	30	11	32	May 8	30	Jan. 25	48
10	30	12	32	30	30		
12	29	18	30	June 22	30	1956	
15	30	22	30	July 26	32		
17	30	28	30	Sept. 2	29	June 3	29
21	30	Mar. 7	30	5	30	12	29
23	30	9	30	9	30	22	29
29	30	11	30	15	30	July 1	29
Feb. 3	30	13	30	17	30		

Lake 2. (35/8W-29P2). Parramore Hospital. Crown Point. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 29, T. 35 N., R. 8 W. Drilled public-supply artesian well in sand, diameter 26 inches, reported depth 89 feet. Land-surface datum is 720 feet above msl. Highest water level is 58 below lsd, Mar. 14-June 13, 1955, Mar. 13-May 8, 1958; lowest 76 below lsd, Oct. 17, 1956. Records available: 1954-58. Affected by nearby pumping.

1954		Dec. 13	62	Mar. 21	58	Sept. 5	61
		20	64	28	58	12	62
Aug. 17	64	27	62	Apr. 3	58	19	62
23	62			10	58	26	62
30	63	1955		18	58	Oct. 3	62
Sept. 7	60			25	58	10	63
13	60	Jan. 3	62	May 2	58	17	63
20	62	10	62	9	58	24	62
27	62	17	61	16	60	31	60
Oct. 4	64	24	62	23	59	Nov. 7	60
11	64	31	64	30	58	14	60
Nov. 1	60	Feb. 7	62	June 6	58	21	60
8	62	14	62	13	58	28	60
15	62	21	62	Aug. 7	62	Dec. 5	62
22	60	28	64	14	62	12	62
29	61	Mar. 7	64	21	61	19	60
Dec. 6	62	14	58	29	61	26	62

Table 5.--Water levels in observation wells in Lake County, Indiana--Continued

Lake 2--Continued

Date	Water level	Date	Water level	Date	Water level	Date	Water level
1956		July 18	60	Apr. 29	60	Feb. 12	62
		23	70	May 18	60	Mar. 13	58
Jan. 2	60	Aug. 10	60.5	June 15	62	Apr. 10	58
9	60	Sept. 12	62	July 15	60	May 8	58
16	60	Oct. 10	60	Aug. 11	60	June 5	62
23	62	17	76	23	60	July 3	60
30	62	Nov. 8	60.5	Sept. 11	62	31	60
Feb. 6	60	12	62	17	62	Aug. 15	60
13	62			Oct. 13	60	Sept. 12	62
20	62	1957		Nov. 14	62	Oct. 10	62
27	62	Jan. 5	62	Dec. 14	62	Nov. 7	62
Mar. 5	60	Feb. 10	62.5			Dec. 5	60
12	60	Mar. 15	62	1958			
19	61	Apr. 26	64	Jan. 12	60		
26	61						

Lake 3. (32/8W-23M2). Town of Shelby. NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 28, T. 32 N., R. 8 W. Driven unused water-table well in sand, diameter 4 inches, reported depth 18 feet. Land-surface datum is 638 feet above msl. Highest water level is 0.05 below lsd, Mar. 28, 1955; lowest 5.70 below lsd, Sept. 27, Oct. 4, 1954. Records available: 1954-56.

1954		Jan. 31	3.40	Aug. 25	5.14	Dec. 1	4.26
		Feb. 7	2.50	Sept. 1	4.73	8	4.35
Aug. 30	4.90	14	3.85	8	5.16	15	4.50
Sept. 6	5.30	21	3.35	15	5.26	22	4.70
13	5.40	28	2.20	22	5.36	29	4.73
20	5.60	Mar. 7	1.40	29	5.32		
27	5.70	14	0.90	Oct. 6	4.14	1956	
Oct. 4	5.70	21	0.60	13	4.26		
11	4.40	28	0.05	20	4.29	Jan. 5	4.80
18	3.97	Apr. 4	1.48	27	4.39	12	4.90
		11	1.80	Nov. 3	3.90	19	4.98
1955		18	2.58	10	3.98	26	5.05
		May 25	3.42	17	4.07	Feb. 2	5.10
Jan. 24	3.40	Aug. 18	4.96	24	4.16		

Table 5.--Water levels in observation wells in Lake County, Indiana--Continued

Lake 4. (35/9W-2J1). Chesapeake and Ohio Railroad Co. Griffith. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 2, T. 35 N., R. 9 W. Drilled unused artesian well in sand, diameter 3 $\frac{1}{4}$ inches, reported depth 82 feet. Land-surface datum is 638 feet above msl. Highest water level is 13.00 below lsd, May 20, 1957; lowest 19.05 below lsd, Oct. 17, 19, 1956. Recording gage installed July 19, 1956. Records available: 1956-1958. Affected by nearby pumping and by trains.

(Daily highest water level from recorder graph, 1956)

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	-----	18.14	e17.20	16.90	18.05	17.55
2	-----	18.17	-----	17.05	18.40	17.05
3	-----	18.15	-----	17.15	18.20	17.00
4	-----	17.70	-----	17.50	17.65	17.35
5	-----	17.37	-----	17.75	17.55	17.50
6	-----	17.27	-----	17.65	17.80	17.55
7	-----	17.54	-----	17.15	18.05	17.65
8	-----	17.96	-----	17.00	-----	17.45
9	-----	-----	-----	17.40	18.30	17.00
10	-----	17.81	-----	17.85	18.00	16.95
11	-----	17.82	-----	18.20	17.50	17.10
12	-----	17.22	-----	18.15	17.45	17.40
13	-----	17.18	-----	18.10	e17.55	17.60
14	-----	17.32	17.48	17.60	18.30	17.75
15	-----	e17.40	-----	17.45	18.70	17.50
16	-----	17.81	-----	17.80	18.60	17.00
17	-----	17.92	-----	18.70	-----	16.85
18	-----	17.71	-----	18.60	-----	17.20
19	-----	16.98	-----	18.75	-----	17.45
20	e17.36	16.85	-----	18.60	-----	17.60
21	17.37	16.98	17.31	18.35	-----	17.65
22	-----	17.07	-----	18.35	17.65	17.45
23	-----	17.23	-----	18.25	17.55	16.95
24	-----	17.35	-----	18.30	17.00	16.75
25	-----	17.35	-----	18.55	16.90	16.55
26	-----	16.66	-----	18.50	16.95	16.50
27	18.01	16.62	-----	18.25	17.25	16.70
28	18.07	17.33	17.80	17.90	17.45	16.90
29	17.63	17.52	17.55	17.85	17.75	17.00
30	17.43	17.59	17.00	17.85	17.70	16.55
31	17.79	17.54	-----	17.95	-----	16.45

Table 5.--Water levels in observation wells in Lake County, Indiana--Continued

Lake 4--Continued

(Daily highest water level from recorder graph, 1957)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	e16.40	16.75	16.20	-----	-----	13.60	-----	-----	15.25	16.15	-----	-----
2	e16.40	16.60	16.05	-----	13.65	13.75	-----	h14.70	14.80	16.45	-----	-----
3	16.80	16.25	15.75	-----	13.75	13.65	h14.61	-----	14.70	16.65	-----	-----
4	16.95	16.15	15.70	15.35	13.70	13.95	-----	-----	15.10	16.75	-----	-----
5	16.95	16.50	-----	15.25	13.40	-----	-----	-----	15.50	16.75	-----	-----
6	16.65	16.85	16.05	e15.05	13.35	h14.51	-----	-----	-----	16.60	-----	-----
7	16.60	17.00	15.95	-----	13.75	-----	-----	-----	15.65	16.60	-----	-----
8	16.95	16.90	15.95	-----	-----	-----	-----	e14.65	15.55	16.75	-----	-----
9	16.90	16.55	15.90	-----	14.30	-----	e14.75	14.95	15.50	16.85	-----	-----
10	17.15	16.20	e15.65	-----	-----	-----	15.00	-----	15.70	-----	-----	-----
11	17.25	16.10	-----	14.85	-----	-----	15.25	-----	15.90	17.00	-----	-----
12	16.95	16.20	-----	14.85	-----	-----	14.90	-----	15.95	16.90	-----	-----
13	-----	e16.25	-----	-----	-----	14.20	14.75	-----	16.00	16.80	-----	-----
14	e16.85	16.30	15.75	-----	-----	14.05	-----	-----	15.90	16.75	-----	-----
15	16.95	16.30	15.80	-----	-----	13.80	-----	14.85	15.70	16.90	-----	-----
16	17.05	16.10	15.75	-----	13.75	13.50	-----	14.85	15.60	16.80	-----	-----
17	-----	15.95	15.35	h14.85	13.70	13.45	-----	14.65	15.84	16.75	-----	-----
18	h17.29	15.85	15.25	-----	13.50	-----	13.80	14.50	16.05	16.80	-----	-----
19	-----	16.15	-----	-----	13.10	e13.95	13.85	14.40	16.20	16.50	-----	-----
20	-----	16.25	-----	-----	13.00	14.15	13.85	14.60	16.25	-----	-----	-----
21	-----	16.30	15.80	-----	13.10	14.30	13.60	14.90	16.15	-----	-----	-----
22	-----	16.35	15.75	-----	13.15	-----	13.50	15.05	15.95	-----	-----	-----
23	h17.17	16.20	e15.35	-----	13.35	-----	13.70	15.10	15.80	-----	-----	-----
24	-----	15.75	-----	h14.85	13.50	-----	13.85	14.85	16.00	-----	-----	-----
25	-----	15.65	-----	-----	13.40	-----	13.95	14.55	-----	-----	-----	-----
26	-----	15.85	-----	-----	13.35	-----	14.05	14.45	-----	-----	-----	-----
27	-----	16.05	-----	-----	13.40	14.40	14.25	14.85	16.35	-----	-----	-----
28	-----	16.15	15.65	-----	13.80	-----	14.25	15.15	16.30	-----	-----	-----
29	-----	-----	15.70	-----	14.00	-----	e14.00	15.20	16.10	-----	-----	-----
30	h16.92	-----	15.35	-----	13.90	-----	-----	15.35	16.00	-----	-----	-----
31	16.70	-----	e15.10	-----	13.60	-----	-----	15.40	-----	-----	-----	-----

(Daily highest water level from recorder graph, 1958)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	-----	13.95	14.25	13.80	14.30	14.70	13.80	15.45	14.75	-----	-----	-----
2	-----	13.90	13.95	13.85	14.50	14.60	14.20	15.15	14.70	-----	-----	-----
3	-----	13.90	13.90	13.90	14.40	14.75	14.20	15.05	15.00	16.20	-----	-----
4	-----	-----	-----	13.85	14.30	14.95	13.90	15.00	15.45	16.15	-----	-----
5	-----	-----	-----	13.70	14.15	15.00	13.65	15.25	-----	16.10	-----	16.40
6	-----	-----	-----	13.70	14.20	15.05	13.55	15.35	15.60	16.10	16.55	16.10
7	-----	14.00	14.30	13.65	14.40	15.00	13.50	15.35	15.60	16.20	-----	16.00
8	-----	-----	14.05	-----	14.45	14.25	13.80	15.30	15.65	16.30	-----	16.00

Table 5.--Water levels in observation wells in Lake County, Indiana--Continued

Lake 4--Continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
9	-----	-----	13.80	-----	14.50	14.10	14.10	15.25	15.90	16.35	-----	-----
10	-----	-----	13.80	-----	14.45	14.05	14.25	15.20	16.05	16.30	-----	16.40
11	-----	-----	13.90	14.00	14.40	14.00	14.35	15.20	16.15	16.25	-----	16.30
12	-----	-----	13.90	14.00	14.35	14.00	14.35	15.25	16.15	16.10	-----	16.40
13	-----	-----	13.90	13.85	14.60	13.90	14.20	15.25	16.15	16.10	-----	16.50
14	-----	h14.85	13.95	13.80	14.80	13.60	14.10	-----	16.10	16.25	16.40	16.35
15	-----	e14.65	13.70	14.00	14.95	13.40	14.25	15.15	16.10	16.25	16.10	-----
16	-----	-----	13.50	14.25	15.05	13.30	-----	14.65	16.25	16.25	16.10	16.65
17	-----	-----	13.40	14.40	15.05	13.45	-----	14.25	16.05	16.40	16.15	16.60
18	-----	-----	13.65	14.45	15.00	13.55	14.75	14.15	-----	-----	-----	16.70
19	-----	-----	13.80	14.35	14.90	13.65	14.80	14.40	-----	-----	-----	16.65
20	-----	-----	13.90	14.15	15.00	13.80	14.70	14.55	-----	-----	-----	16.65
21	-----	15.05	13.85	14.05	15.25	13.70	14.60	14.65	15.65	-----	-----	16.55
22	-----	14.95	13.75	14.15	15.40	13.45	14.80	14.65	15.65	-----	h16.25	16.45
23	-----	14.80	13.55	14.30	15.50	13.40	15.00	14.55	15.85	-----	-----	16.55
24	-----	14.70	13.50	-----	15.40	13.60	15.15	14.50	15.85	16.45	-----	16.55
25	-----	-----	13.75	14.35	15.25	13.65	15.15	14.55	15.90	16.35	-----	16.15
26	-----	-----	13.85	14.25	15.15	13.70	15.30	14.80	16.00	16.25	-----	16.05
27	-----	-----	13.90	14.10	15.25	13.75	15.25	15.05	-----	16.25	-----	16.15
28	14.00	14.45	13.95	14.00	15.45	13.80	15.20	15.20	-----	-----	h15.85	16.25
29	14.05	-----	13.90	14.15	15.65	13.80	15.45	15.40	-----	-----	-----	16.30
30	14.05	-----	13.75	14.25	15.45	13.70	15.65	15.40	-----	-----	-----	16.55
31	14.05	-----	13.70	-----	15.15	-----	15.65	15.10	-----	16.55	-----	16.60

Lake 5. (36/9W-28B1). Town of Highland. NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 28, T. 36 N., R. 9 W. Drilled unused artesian well in sand, diameter 72 inches, reported depth 39 feet. Land-surface is 615 feet above msl. Highest water level is 4.95 below lsd, Jan. 4, 1958; lowest 10.30 below lsd, Aug. 11, 1956. Records available: 1956-58.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
1956		Oct. 6	9.80	1957		Mar. 30	6.30
		12	9.70			Apr. 6	6.10
June 28	8.02	20	10.00	Jan. 5	8.30	13	6.00
July 19	8.20	26	9.70	12	8.40	20	5.80
28	8.50	Nov. 3	9.90	19	8.30	27	5.10
Aug. 4	8.80	9	9.10	25	8.20	May 4	5.30
11	10.30	17	9.00	Feb. 2	8.00	11	5.80
18	9.90	26	8.70	9	7.90	18	5.50
25	8.80	Dec. 1	8.60	16	7.80	25	5.30
Sept. 1	9.00	8	8.50	23	7.60	June 1	5.50
7	8.80	15	8.30	Mar. 2	7.20	8	6.30
15	8.90	22	8.40	9	8.00	15	6.20
22	8.90			16	7.70	22	7.10
28	10.00			23	6.40	27	7.00

Table 5.--Water levels in observation wells in Lake County, Indiana--Continued

Lake 5--Continued

Date	Water level	Date	Water level	Date	Water level	Date	Water level
1957		Nov. 2	6.27	Feb. 22	5.93	July 5	5.76
		9	5.85	Mar. 1	5.67	12	6.52
July 6	7.20	16	6.11	8	5.28	19	6.78
13	8.00	23	5.14	15	5.22	26	8.22
20	6.70	30	5.15	22	5.15	Aug. 2	7.64
27	6.80	Dec. 7	5.15	29	5.18	9	7.85
Aug. 3	7.20	14	5.28	Apr. 5	5.40	16	7.66
10	7.50	21	5.17	12	5.44	23	7.58
17	7.00	28	4.98	19	5.94	30	7.48
24	7.70			26	5.76	Sept. 6	7.48
31	7.20	1958		May 3	6.38	13	7.97
Sept. 7	7.30	Jan. 4	4.95	10	6.57	20	7.80
14	7.40	11	5.14	17	7.84	27	7.77
21	7.40	18	5.35	24	7.48	Oct. 4	7.84
28	7.40	25	5.37	31	9.18	11	7.92
Oct. 5	7.90	Feb. 1	5.47	June 7	7.64	18	8.18
12	8.08	8	5.52	14	6.28		
19	7.85	15	5.66	21	5.73		
26	7.06			28	5.56		

Lake 6. (34/9W-5E1). Michigan-Wisconsin Pipeline Co. St. John. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 5, T. 34 N., R. 9 W. Drilled unused artesian well in sand, diameter 6 inches, reported depth 125 feet. Land-surface datum is 710 feet above msl. Recording gage installed Aug. 20, 1956. Highest water level is 24.90e below lsd, Aug. 17, 1958; lowest 34.03 below lsd, Sept. 24, 1956. Records available: 1956-58. Affected by nearby pumping.

(Daily highest water level from recorder graph, 1956)

Aug. 17	33.52	Aug. 23	33.57	Sept. 4	33.68	Sept. 12	33.80
18	33.54	28	33.61	5	33.69	13	33.81
19	33.54	29	33.62	6	33.70	14	33.82
20	33.55	30	33.65	7	33.71	15	33.84
21	33.56	Sept. 2	33.66	8	33.72	25	33.76
22	33.57	3	33.67	11	33.78	26	33.76

(Daily highest water level from recorder graph, 1957)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	-----	-----	-----	-----	-----	-----	-----	32.30	32.80	33.49	33.11	32.50
2	-----	-----	-----	-----	-----	-----	-----	32.31	32.97	33.58	33.08	32.49
3	-----	-----	-----	-----	-----	-----	-----	32.27	33.02	33.74	33.06	32.54
4	-----	-----	-----	-----	-----	-----	-----	32.27	33.00	-----	33.08	32.52
5	-----	-----	-----	-----	-----	-----	-----	32.37	33.00	-----	33.07	32.53
6	-----	-----	-----	-----	-----	-----	-----	-----	33.13	-----	33.10	32.45

Table 5.--Water levels in observation wells in Lake County, Indiana--Continued

Lake 6--Continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
7	-----	-----	-----	-----	30.72	-----	-----	-----	33.15	-----	33.10	32.40
8	-----	-----	-----	-----	30.86	-----	-----	-----	33.15	-----	33.08	32.42
9	-----	-----	-----	-----	30.99	31.15	-----	32.32	33.20	-----	33.07	32.40
10	-----	-----	-----	-----	31.07	31.16	-----	32.40	33.24	33.63	33.15	32.37
11	-----	-----	-----	-----	31.14	31.18	-----	32.51	33.22	33.56	33.15	32.37
12	-----	-----	33.48	-----	31.20	31.18	-----	32.58	33.14	33.50	33.17	32.85
13	-----	-----	33.52	-----	-----	30.92	-----	32.58	33.10	33.49	33.16	32.70
14	-----	-----	33.53	-----	-----	30.84	-----	32.54	-----	33.52	32.96	32.57
15	-----	-----	33.49	-----	-----	30.94	-----	32.57	-----	33.52	32.93	32.50
16	-----	-----	33.49	-----	-----	31.09	-----	32.55	-----	33.61	32.92	-----
17	-----	-----	33.49	-----	-----	-----	30.20	32.55	-----	33.67	32.91	-----
18	-----	-----	33.50	-----	30.39	-----	30.70	32.55	-----	33.58	32.80	-----
19	-----	-----	-----	-----	30.47	-----	31.05	32.61	33.32	33.46	32.78	32.22
20	-----	-----	-----	-----	30.47	-----	31.29	32.61	33.29	33.44	32.77	32.18
21	-----	-----	-----	-----	30.51	-----	31.46	32.65	33.26	33.48	32.76	32.18
22	-----	-----	32.72	-----	30.57 ^h	31.30	31.61	32.71	33.30	33.55	32.77	32.16
23	-----	-----	32.72	-----	30.61	-----	31.69	-----	33.32	33.59	32.74	32.14
24	-----	-----	32.69	-----	30.62	-----	31.85	-----	33.36	33.55	32.71	32.22
25	-----	-----	32.66	-----	30.65	-----	31.94	-----	33.47	33.44	32.66	32.09
26	-----	-----	32.63 ^e	-----	30.68	-----	32.02	-----	33.44 ^e	33.28	32.61	32.06
27	-----	-----	32.63 ^e	-----	30.71	-----	32.05	-----	33.41	-----	32.58	32.03
28	-----	-----	-----	-----	-----	-----	32.15	-----	33.38	-----	-----	32.00
29	-----	-----	-----	-----	-----	-----	32.23	-----	33.36	-----	-----	32.04
30	-----	-----	-----	-----	-----	-----	32.25	32.72	33.37	-----	32.53	31.96
31	-----	-----	-----	-----	-----	-----	32.22	32.73	-----	33.14	-----	31.93

(Daily highest water level from recorder graph, 1958)

1	31.94	31.48	31.47	31.92	31.65	32.21	31.55	31.42	30.48	31.10	31.52	32.16
2	31.93	31.47	31.56	31.86	31.62	32.21	31.64	31.42	30.51	31.15	31.54	32.18
3	-----	31.47	31.61	31.85	31.66	32.12	31.77	31.42	30.53	31.16	31.55	32.19
4	-----	31.53	31.66	31.82	31.61	32.07	31.86	31.51	30.56	31.17	31.57	32.20
5	-----	31.52	31.67	31.78	31.57	32.04	31.83	31.57	30.58	31.19	31.59	32.22
6	31.84	31.56	31.75	31.71	31.56	32.03	31.76	-----	30.61	31.21	31.75	32.24
7	31.78	31.59	31.76	31.66	31.58	32.09	31.72 ^h	25.73	30.63	31.23	31.76	32.26
8	31.73	31.80	31.84	31.64	31.57	31.93	31.63	26.35	30.65	31.24	31.78	32.29
9	31.68	31.78	31.84	31.69	31.60	31.90	31.60	26.92	30.68	31.10	31.80	32.31
10	31.64	31.84	31.93	31.66	31.58	-----	31.54	27.21	30.70	31.11	31.82 ^e	32.33
11	31.62	31.82	31.93	31.65	31.73	-----	31.52	27.52	30.72	31.12	31.84 ^e	32.36
12	31.64	31.86	31.95	31.69	31.89	31.57	-----	27.76	30.74	31.14	31.85	32.37
13	31.64	31.82	31.93	31.66	31.86	-----	-----	27.94	30.75	31.17	31.88	32.38
14	31.74	31.83	31.93	31.63	31.81	-----	-----	28.07	30.79 ^e	31.19	31.89	32.39
15	31.69	31.71	31.92	31.61	31.79	-----	31.37	-----	30.83 ^e	31.21	31.91	32.41
16	31.70	31.71	31.92	-----	31.86	31.30	31.34	-----	30.85 ^e	31.23	31.91	32.41
17	31.64	31.85	31.90	-----	31.83	31.41	31.34 ^e	24.90	30.87	31.25	31.93	32.40
18	31.61	31.98	31.89	31.89	31.80	31.46	31.37	26.86	30.88	31.27	31.94	-----

Table 5.--Water levels in observation wells in Lake County, Indiana--Continued

Lake 6--Continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
19	31.60	32.01	31.90	31.80	31.78	31.45	31.36	28.12	30.89	31.30e	31.96	32.21
20	31.67	32.02	31.87	31.80	31.98	31.43	-----	28.87	30.91	31.31	31.97	32.21
21	-----	32.01	31.88	31.73	31.92	31.44	-----	29.38	30.92	31.33	31.99	32.22
22	-----	31.83	31.87	31.73	31.90	31.49	-----	29.69	30.94	31.35	32.00	32.24
23	31.47	-----	31.90	31.73	31.89	31.44	-----	29.91	30.96	31.38	32.02	32.26
24	31.49	-----	31.90	31.66	31.88	31.42	-----	30.10	30.98	31.40e	32.04	32.28
25	31.45	-----	31.91	31.64	31.90	31.37e	31.39	30.19	31.00	31.41e	32.06	32.30
26	31.42	-----	31.93	31.66	31.94	31.38	31.43	30.27	31.02	31.43e	32.07	32.32
27	31.43	-----	31.93	31.65	31.98	31.41	31.44	30.32	31.03	31.44	32.09	32.33
28	31.43	31.28	31.91	31.66	32.00	31.42	31.44	30.37	31.05	31.46	32.12	32.35
29	31.46	-----	32.06	31.63	32.14	31.43	31.41	30.41	31.06	31.48	32.13	32.37
30	31.45	-----	32.02	31.61	32.23	31.48	31.41	30.43	31.08	31.49	32.14	32.39
31	31.45	-----	31.95	-----	32.28	-----	31.43	30.45	-----	31.51	-----	32.41

Lake 7. (34/9W-25B1). Lloyd Wakefield. Cedar Lake. NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 25, T. 34 N., R. 9 W. Drilled unused artesian well in limestone(?), diameter 3 inches, reported depth 230 feet. Land-surface datum is 750 feet above msl. Highest water level is 51.17 below lsd, Mar. 15, 1958; lowest 60.90 below lsd, Aug. 20, 1957. Records available: 1957-58.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
1957		July 2	60.54	Mar. 29	58.07	Aug. 25	60.73
		9	60.75	Apr. 14	60.35	30	60.79
Mar. 12	60.14	16	60.66	21	60.19	Sept. 6	60.88
19	60.16	23	60.77	28	60.15	13	60.61
26	60.23	30	60.68	May 5	60.35	25	60.76
Apr. 2	60.45	Aug. 6	60.84	12	60.67	Oct. 6	60.52
9	60.56	13	60.83	19	60.55	13	60.81
16	60.50	20	60.90	27	60.59	20	60.62
23	60.35	27	60.83	June 3	60.68	27	60.61
30	60.37	Sept. 3	60.66	10	60.28	Nov. 3	60.43
May 7	60.46	10	60.65	18	60.22	10	60.39
14	60.07	17	60.76	27	60.44	17	60.63
21	59.80	24	60.64	July 3	60.55	24	60.53
28	60.33			12	60.43	Dec. 1	60.56
June 4	60.46	1958		21	60.63		
11	60.11			29	60.67		
18	60.38	Mar. 15	51.17	Aug. 8	60.83		
25	60.55	22	54.33	19	60.64		

Lake 8. (37/9W-8Q1). Standard Oil Co. Whiting. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T. 37 N., R. 9 W. Drilled unused artesian well in limestone and sandstone, diameter 14 to 8 inches, reported depth 1,238 feet. Land-surface datum is 590 feet above msl. Highest water level is 3.70 below lsd, Dec. 26, 1958; lowest 60.10 below lsd, May 9, 1957. Records available: 1957-58.

Table 5.--Water levels in observation wells in Lake County, Indiana--Continued

Lake 8--Continued

Date	Water level	Date	Water level	Date	Water level	Date	Water level	
1957		Aug. 23	55.40	Feb. 13	42.50	July 25	38.60	
			56.40		20	31	36.60	
Mar. 14	49.42	Sept. 5	55.75		27	Aug. 8	29.00	
			58.60	Mar. 6	51.20		14	27.50
			58.20		13		21	29.90
Apr. 4	54.20		58.20		20		28	31.00
		Oct. 3	4.11		27	Sept. 4	32.20	
			8.50	Apr. 2	51.90		11	33.30
			13.70		8		17	34.50
May 2	59.14	Nov. 13	14.80		18		26	36.70
			15.25		24	Oct. 6	39.00	
			15.75	May 2	47.10		9	39.70
		Dec. 3	16.40		9		16	41.10
			19.60		15		23	42.30
June 7	38.10		23.65		22		31	42.90
			32.30		28	Nov. 6	43.80	
				June 2	53.00		13	44.70
		1958			6		20	45.60
July 3	46.70				12		28	25.10
		Jan. 10	32.40		19	Dec. 8	19.70	
			34.20		26		11	20.50
			35.90	July 2	51.50		14	30.60
Aug. 2	51.72		37.70		11		26	3.70
		Feb. 6	39.60		17			

Lake 9. (37/8W-31H1). American Bridge Division, U. S. Steel Corp. Gary. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 31, T. 37 N., R. 8 W. Dug industrial water-table well in sand, diameter 50 feet, reported depth 30 feet. Land-surface datum is 595 feet above msl. Recording gage installed Mar. 13, 1957, removed Apr. 24, 1958. Highest water level is 7.1 below lsd, July 22, 1957; lowest 14.0 below lsd, Aug. 22, 1958, Records available: 1957-58.

(Daily highest water level from recorder graph)

1957		Mar. 25	7.60	Apr. 7	7.60	July 18	8.30	
			7.60		8	19	8.10	
Mar. 14	7.40		7.50		9	20	8.30	
			7.50		10	21	7.20	
			7.50		11	22	7.10	
			7.50	July 10	10.70	23	8.40	
			7.50		11	24	9.00	
		Apr. 1	7.60		12	25	9.20	
			7.50		13	26	11.60	
			7.60		14	Aug. 2	11.40	
			7.50		15		3	11.20
			7.40		16		4	8.90
			7.50		17		5	8.40

Table 5.--Water levels in observation wells in Lake County, Indiana--Continued

Lake 9--Continued

Date	Water level	Date	Water level	Date	Water level	Date	Water level
1957		May 16	h10.70	July 25	h12.40	Oct. 31	h12.00
				Aug. 1	h11.60	Nov. 7	h9.94
Aug. 6	9.00					14	h12.00
		June 20	h11.30	8	h10.80	21	h11.94
7	9.70			15	h12.10	28	h10.98
8	10.50	June 6	h12.20	22	h14.00	Dec. 5	h8.91
				29	h11.60	12	h12.94
1958		20	h12.60	Oct. 3	h7.98	19	h10.00
		27	h13.30	10	h9.94	26	h11.94
May 2	h8.10	July 3	h13.50	17	h12.00		
				24	h12.94		
9	h8.30	11	h12.60				
		18	h10.20				

Lake 10. (37/9W-15M1). Inland Steel Co. East Chicago. NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 15, T. 37 N., R. 9 W. Drilled unused artesian(?) well in limestone, diameter 8 inches, reported depth 550 feet. Land-surface datum is about 595 feet above msl. Highest water level is 24.43 below lsd, Dec. 4, 1958; lowest 30.25 below lsd, Nov. 21, 1957. Records available: 1957-58.

1957		Aug. 29	28.47	Jan. 23	29.28	July 10	25.85
		Sept. 5	28.20	30	28.91	17	25.90
Mar. 28	28.33			Feb. 6	28.75	24	25.02
Apr. 4	28.32			13	28.42	31	25.57
				20	28.35	Aug. 7	25.49
				27	27.23	14	25.45
		Oct. 3	29.60	Mar. 6	28.20	21	25.41
				13	28.29	28	25.38
May 25	29.31			20	28.52	Sept. 11	25.47
May 2	29.35			27	28.19	18	25.29
				Apr. 3	27.76	25	25.10
		Nov. 7	29.88	10	27.46	Oct. 2	25.42
				17	27.30	9	24.92
				24	27.00	16	25.10
				May 1	26.87	23	25.00
				8	26.20	30	25.30
				15	26.58	Nov. 6	24.98
July 4	27.80			22	26.24	13	25.00
				29	26.30	20	25.08
				June 6	26.25	27	25.18
				12	26.09	Dec. 4	24.43
				19	25.86	11	24.77
				26	25.86	18	24.44
		1958		July 3	25.88	24	24.49
Aug. 1	28.38	Jan. 2	30.00				
		9	29.69				
		16	29.54				

Table 5.--Water levels in observation wells in Lake County, Indiana--Continued

Lake 11. (32/8W-28F1). Town of Shelby. SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 28, T. 32 N., R. 8 W. Driven unused water-table well in sand, diameter $\frac{1}{4}$ inches, reported depth 18 feet. Land-surface datum is 642 feet above msl. Highest water level is 4.10 below lsd, May 24, 1957; lowest 9.50 below lsd, Jan. 11, 1957. Records available: 1956-58.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
1956		Nov. 30	9.25	Aug. 9	5.75	Apr. 18	6.75
		Dec. 7	9.30	16	6.20	25	6.85
Mar. 16	6.80	14	9.30	23	6.40	May 3	6.95
23	6.90	21	9.45	30	6.55	9	7.00
30	7.10	28	9.40	Sept. 6	7.05	16	7.10
Apr. 6	7.15			13	7.30	23	7.25
13	7.25	1957		20	7.60	30	7.45
20	7.40			27	7.85	June 8	7.50
27	7.40	Jan. 4	9.45	Oct. 4	8.05	13	6.30
May 4	5.50	11	9.50	11	8.20	20	5.65
11	5.30	18	9.45	18	3.25	27	5.95
18	5.30	25	9.30	25	7.60	July 4	6.20
25	4.90	Feb. 1	9.20	Nov. 1	7.15	11	6.30
June 1	5.05	8	9.20	8	7.25	18	5.55
8	5.55	15	9.00	15	7.05	25	5.70
15	5.80	27	8.90	22	6.95	Aug. 1	6.00
22	6.00	Mar. 1	8.85	29	6.80	8	6.20
30	6.20	8	8.80	Dec. 6	6.60	15	6.40
July 6	6.60	15	8.80	13	6.55	22	6.55
13	6.80	22	8.70	20	6.35	29	6.80
20	6.95	29	8.60	27	5.80	Sept. 5	7.10
27	7.15	Apr. 5	8.40			12	7.40
Aug. 3	7.40	12	7.20	1958		19	7.55
10	7.60	19	6.95			26	7.70
17	7.80	26	5.65	Jan. 3	5.60	Oct. 3	7.95
24	8.05	May 3	4.30	10	5.80	10	8.05
31	8.15	10	4.55	17	6.10	17	8.20
Sept. 7	8.35	17	4.15	24	6.65	24	8.25
14	8.40	24	4.10	31	6.25	31	8.35
21	8.45	31	4.55	Feb. 7	6.40	Nov. 7	8.45
28	8.60	June 7	4.85	14	6.55	14	8.55
Oct. 5	8.76	14	5.00	21	6.90	21	8.49
12	8.80	21	4.40	28	6.85	28	8.45
19	8.90	28	4.30	Mar. 7	6.70	Dec. 5	8.35
25	9.00	July 5	4.55	14	6.55	12	8.30
Nov. 2	9.00	12	5.05	21	6.40	19	8.45
9	9.10	19	4.30	28	6.50	26	8.55
16	9.15	26	5.10	Apr. 4	6.25		
23	9.20	Aug. 2	5.50	11	6.35		

PUBLICATIONS OF COOPERATIVE GROUND-WATER PROGRAM

Report

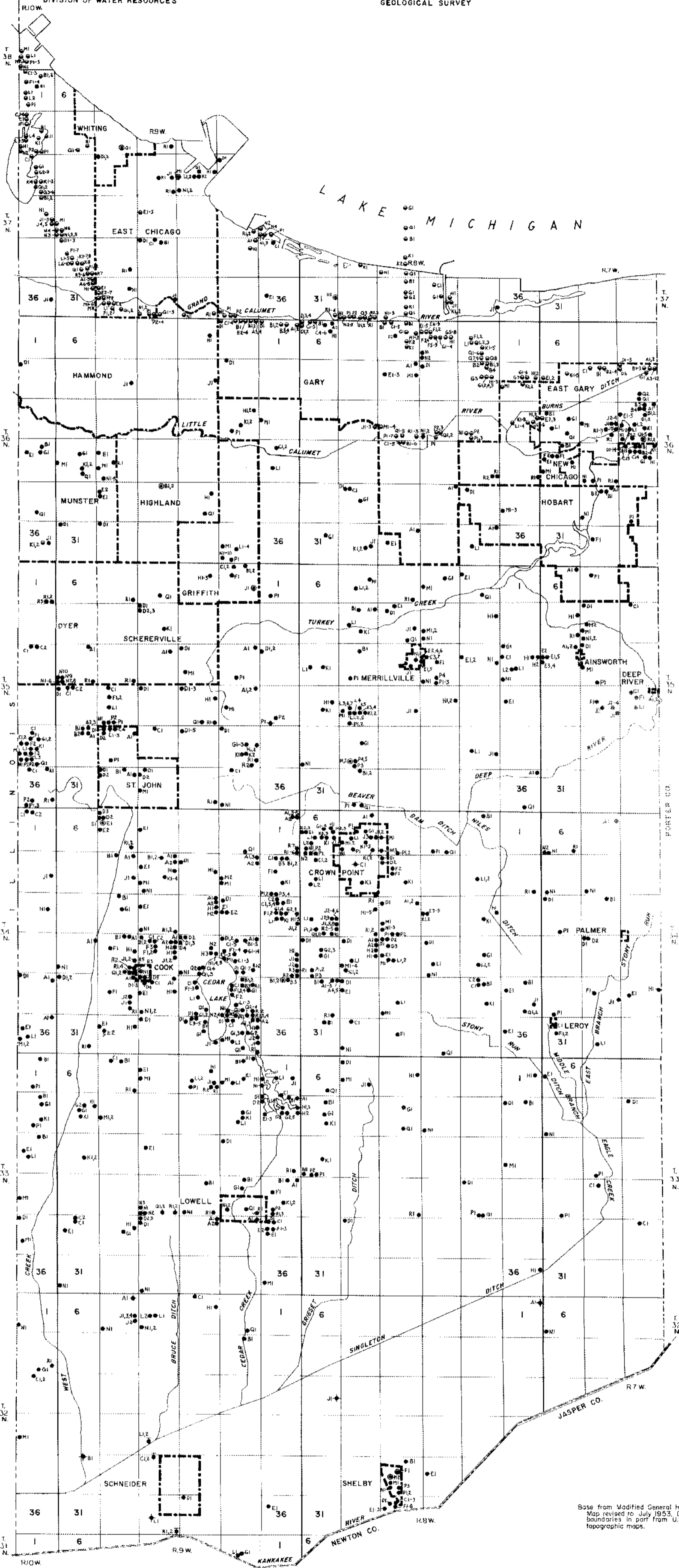
Ground-water resources of the Indianapolis area, Marion County, Ind.
C. L. McGuinness. Indiana Dept. Conserv., Div. Geology, 1943.

Bulletins

- No. 1 Memorandum concerning a pumping test at Gas City, Ind. J. G. Ferris.
Indiana Dept. Conserv., Div. Water Resources. 1945.
- 2 A preliminary report of the ground-water levels of the State based on
records of twenty-six observation wells for which long time re-
cords are available. Anonymous. Indiana Dept. Conserv., Div.
Water Resources. 1946 (Out of print).
- 3 Ground-water resources of St. Joseph County, Ind. Part 1, South Bend
area. F. H. Klaer, Jr., and R. W. Stallman. Indiana Dept.
Conserv., Div. Water Resources. 1948.
- 4 Ground-water resources of Boone County, Ind. E. A. Brown. Indiana
Dept. Conserv., Div. Water Resources. 1949.
- 5 Ground-water resources of Noble County, Ind. R. W. Stallman and F. H.
Klaer, Jr., Indiana Dept. Conserv., Div. Water Resources. 1950.
- 7 Water-level records of Indiana. Anonymous. Indiana Dept. Conserv.,
Div. Water Resources. 1956.
- 8 Ground-water resources of Tippecanoe County, Ind.: Appendix, Basic
Data. J. S. Rosenshein and O. J. Cosner. Indiana Dept. Conserv.,
Div. Water Resources. 1956.
- 8 Ground-water resources of Tippecanoe County, Ind. J. S. Rosenshein.
Indiana Dept. Conserv., Div. Water Resources. 1958 (1959).

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EXPLANATION

- A1 Water well or water-well test hole
- F1 Observation well
- E2 Spring
- P1 Structure boring for bridge or foundation
- L1 Oil or gas test well
- T1 Test pit

Base from Modified General Highway and Transportation Map revised to July 1953. Drainage and town boundaries in part from U.S. Geological Survey topographic maps.

MAP OF LAKE COUNTY, INDIANA SHOWING LOCATION OF WELLS AND TEST HOLES

DIAGRAM OF TOWNSHIP

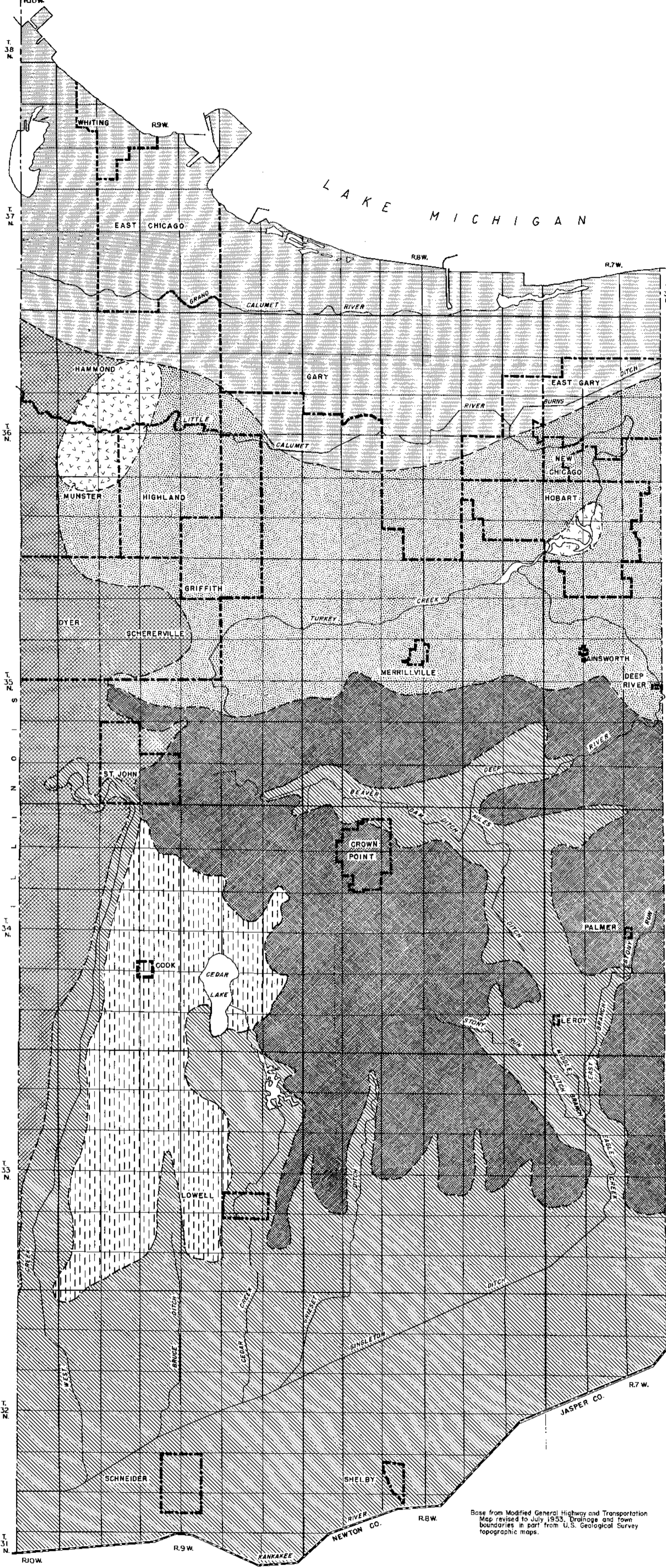
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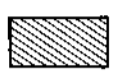
BY J. S. ROSENSEIN AND R. J. VIG
1960

D	C	B	A
E	F	G	H
M	L	K	J
N	P	Q	R

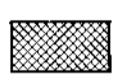
SECTION LETTER SYMBOLS IN WELL-NUMBERING SYSTEM.



EXPLANATION



Production from bedrock and glaciofluvial sand. Well depths in bedrock generally less than 150 feet. Well depths in sand less than 50 feet. Yields from bedrock and sand generally adequate for domestic use. Larger yields possible from sand.



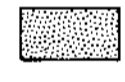
Production chiefly from bedrock. Well depths generally less than 325 feet. Shallower production possible from glaciofluvial sand and some gravel. Yields generally adequate to more than adequate for domestic use. Larger yields possible locally from bedrock and sand.



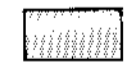
Production from bedrock and glaciofluvial sand. Well depths in bedrock generally more than 125 and less than 250 feet. Few wells deeper. Well depths in glaciofluvial sand generally more than 50 and less than 120 feet. Yields generally adequate to more than adequate for domestic use. Larger yields possible from bedrock and sand.



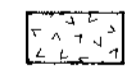
Production chiefly from glaciofluvial sand and some gravel. Well depths generally more than 50 and less than 110 feet. Yields adequate to more than adequate for domestic use. Larger yields possible.



Production chiefly from glaciofluvial sand and gravel. Well depths generally more than 30 and less than 80 feet. Yields adequate to more than adequate for domestic use. Larger yields possible.



Some production from bedrock and shallow sand and some gravel. Yields from wells in bedrock generally inadequate for industrial use. Shallow sand potential source of larger yields from properly constructed wells; water in sand susceptible to contamination and pollution by sewage and industrial wastes.

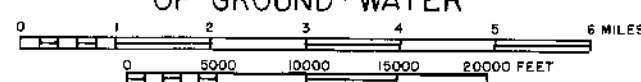


Potential production from bedrock overlain by clay. Yields adequate for domestic use. Little production possible from glaciofluvial sand.

Boundary approximate.

- ? - ? - ? -
Boundary uncertain.

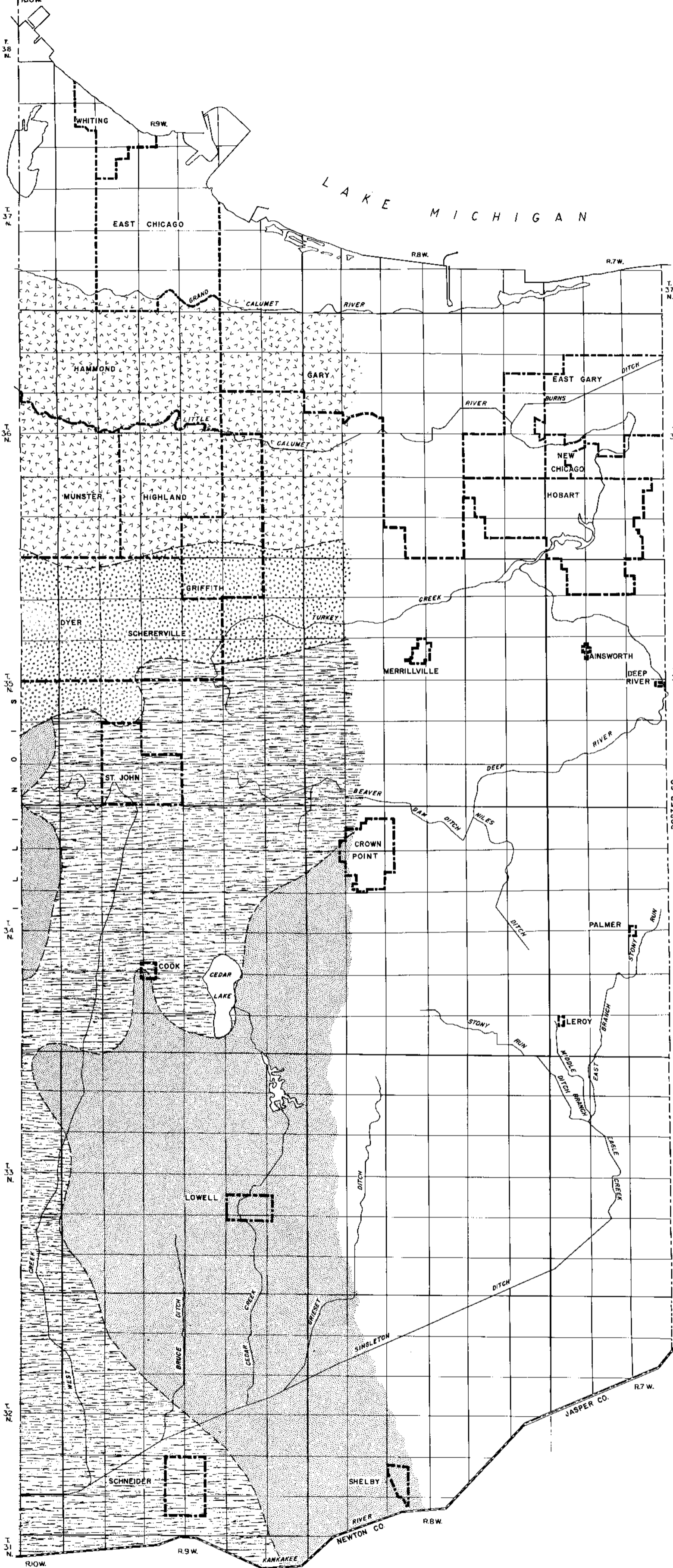
MAP OF LAKE COUNTY, INDIANA SHOWING AVAILABILITY OF GROUND-WATER



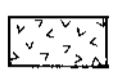




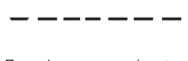
BY J. S. ROSENSHEIN
1960

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19	20	21	22	23	24
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31	32	33	34	35	36

DIAGRAM OF TOWNSHIP

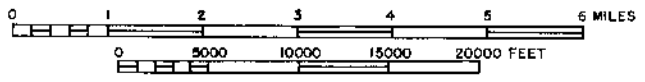


EXPLANATION

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Base from Modified General Highway and Transportation Map revised to July 1953. Drainage and town boundaries in part from U.S. Geological Survey topographic maps.

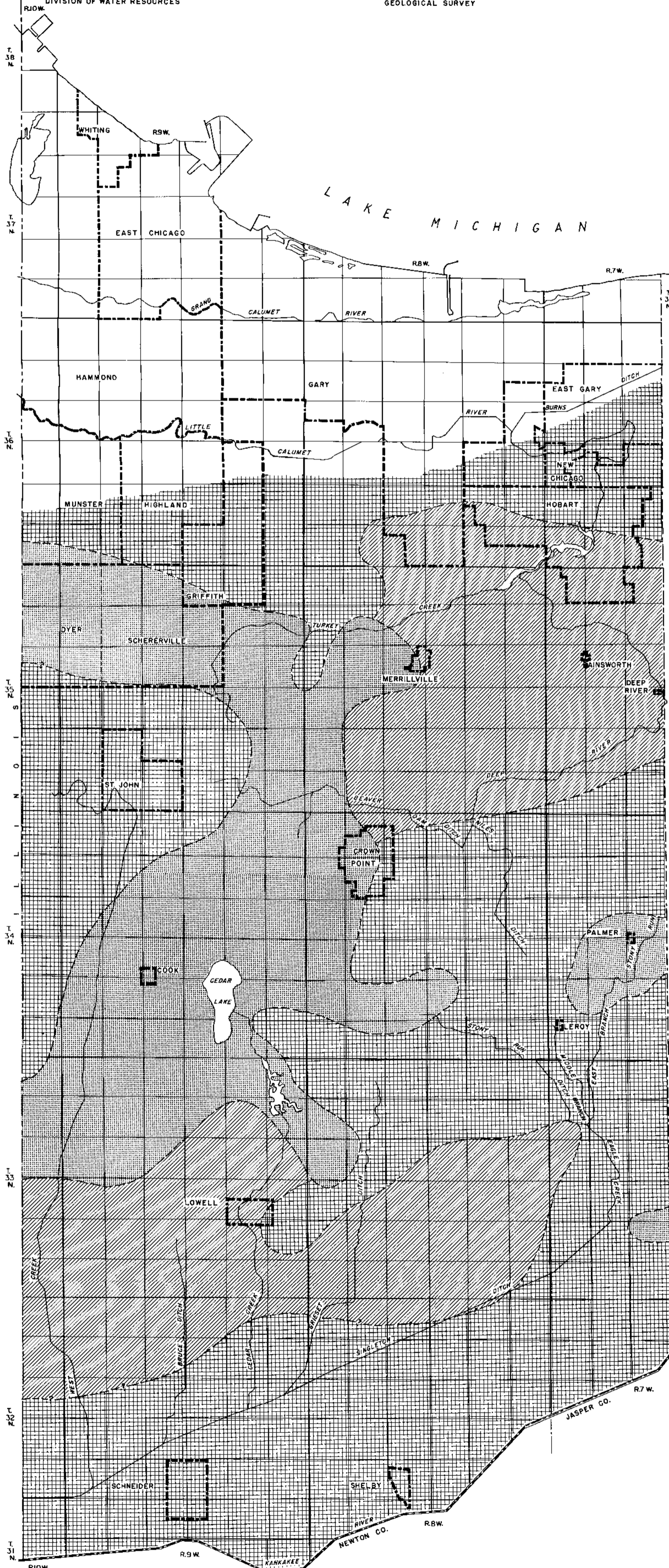
MAP OF LAKE COUNTY, INDIANA, SHOWING GENERALIZED QUALITY OF WATER IN ROCKS OF MIDDLE SILURIAN AGE



BY J. S. ROSENHEIM
1960

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7	8	9	10	11	12
13	14	15	16	17	18
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25	26	27	28	29	30
31	32	33	34	35	36

DIAGRAM OF TOWNSHIP



EXPLANATION



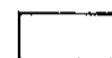
Hardness 200 to 500 ppm; iron content 1 to 8 ppm; sulfate content 10 to 200 ppm.



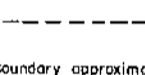
Hardness 200 to 500 ppm; iron content less than 1 ppm; sulfate content 10 to 100 ppm.



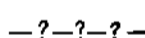
Hardness 500 to 1,100 ppm; iron content 1.5 to 7.5 ppm; sulfate content 100 to 450 ppm.



Data not sufficient to show quality of water.



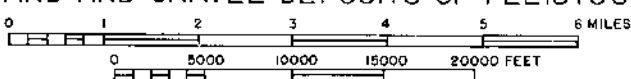
Boundary approximate.



Boundary uncertain.

6	5	4	3	2	1
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36

MAP OF LAKE COUNTY, INDIANA, SHOWING GENERALIZED QUALITY OF WATER IN SAND AND GRAVEL DEPOSITS OF PLEISTOCENE AGE.



BY J. S. ROSENHEIM
1960

Base from Modified General Highway and Transportation Map revised to July 1953. Drainage and town boundaries in part from U.S. Geological Survey topographic maps.