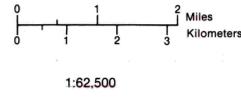


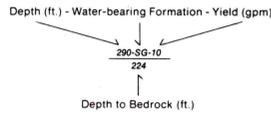
# Ground-Water Resources of HAMILTON COUNTY by Alfred C. Walker



### Well Site Symbols

- Well Site
- Municipal-Industrial Well
- △ Test Well\*
- Observation Well\*\*
- A Chemical Analyses

- S - Sand
- CL - Clay
- SH - Shale
- LS - Limestone
- SG - Sand & Gravel



### Chemical Analysis Table

Well Site	A	B	C	D	H-5	H-6	H-9	H-11
Depth of well (ft.)	76	125	197	118	122	167	168	148
Aquifer	SG	SG	SG	SG	SG	SG	SG	SG
pH	7.5	7.8	7.6	7.6	7.1	7.6	7.1	7.4
Total hardness (CaCO <sub>3</sub> )	376.0	146.0	—	350.0	440	280	410	310
Sulfate (SO <sub>4</sub> )	50.0	52.0	101.0	79.9	61	6.1	97	290
Iron (Fe)	—	—	4.2	0.08	2.6	4.5	2.6	1.9
Manganese (Mn)	—	0.08	0.37	0.38	0.11	0.09	0.18	1.1
Fluoride (F)	0.11	0.23	0.21	0.30	0.10	0.30	0.30	0.10
Chloride (Cl)	40.0	21.0	32.0	36.0	31	9.8	65	200
Calcium (Ca)	105.6	45.0	129.0	110.0	120	78	100	78

Chemical constituents as milligrams per liter (mg/l).

### Well Yields

AREAS IN WHICH YIELDS OF MORE THAN 500 GALLONS PER MINUTE CAN BE DEVELOPED.

Best ground-water areas in Hamilton County. Permeable sand and gravel deposits in ancient stream channels, suitable for large industrial well field development. Yields of as much as 1,000 gallons per minute have been reported.

AREAS IN WHICH YIELDS OF 100 TO 500 GALLONS PER MINUTE CAN BE DEVELOPED.

Sand and gravel deposits, generally well sorted, may yield several hundred gallons per minute. Highest yields are reported where recharge is available from nearby streams. Exploratory drilling is necessary to locate coarser materials.

AREAS IN WHICH YIELDS OF 25 TO 100 GALLONS PER MINUTE CAN BE DEVELOPED.

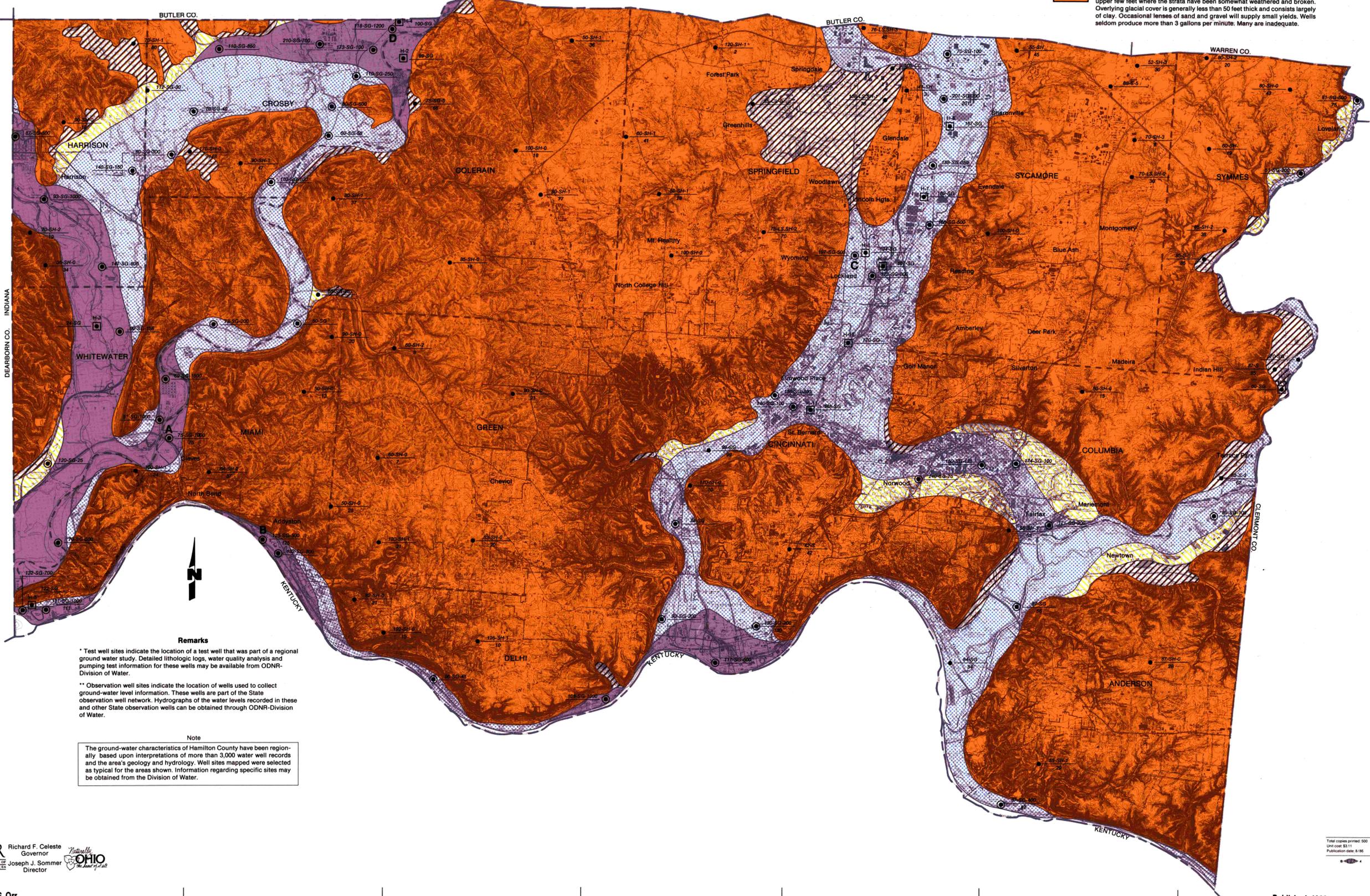
Valley fill contains thick local deposits of sand and gravel. Screened wells encountering permeable deposits yield less than 100 gallons per minute. Shale bedrock will supply very limited yields.

AREAS IN WHICH YIELDS OF 3 TO 10 GALLONS PER MINUTE MAY BE DEVELOPED.

Thick deposits of clay with thin lenses of sand and gravel will yield less than 10 gallons per minute. Wells not encountering sand and gravel produce less than 3 gallons per minute from the underlying limey shale at depths of less than 100 feet.

AREAS IN WHICH YIELDS SELDOM EXCEED 3 GALLONS PER MINUTE.

Poor source of ground water. Bedrock consists of interbedded plastic shales and thin limestone layers. If water is present in the rock, it usually occurs in the upper few feet where the strata have been somewhat weathered and broken. Overlying glacial cover is generally less than 50 feet thick and consists largely of clay. Occasional lenses of sand and gravel will supply small yields. Wells seldom produce more than 3 gallons per minute. Many are inadequate.



### Remarks

\* Test well sites indicate the location of a test well that was part of a regional ground water study. Detailed lithologic logs, water quality analysis and pumping test information for these wells may be available from ODNR-Division of Water.

\*\* Observation well sites indicate the location of wells used to collect ground-water level information. These wells are part of the State observation well network. Hydrographs of the water levels recorded in these and other State observation wells can be obtained through ODNR-Division of Water.

### Note

The ground-water characteristics of Hamilton County have been regionally based upon interpretations of more than 3,000 water well records and the area's geology and hydrology. Well sites mapped were selected as typical for the areas shown. Information regarding specific sites may be obtained from the Division of Water.