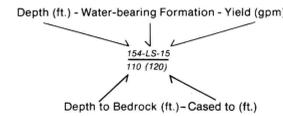


Ground-Water Resources of OTTAWA COUNTY

by James J. Schmidt



- Well Site
- ▲ Well Site - H₂S Noted
- Municipal-Industrial Well
- △ Test Well
- ▲ Chemical Analyses

- Ancestral Buried Bedrock Channel
- Formations**
- LS - Limestone
- SG - Sand & Gravel
- S - Sand
- G - Gravel

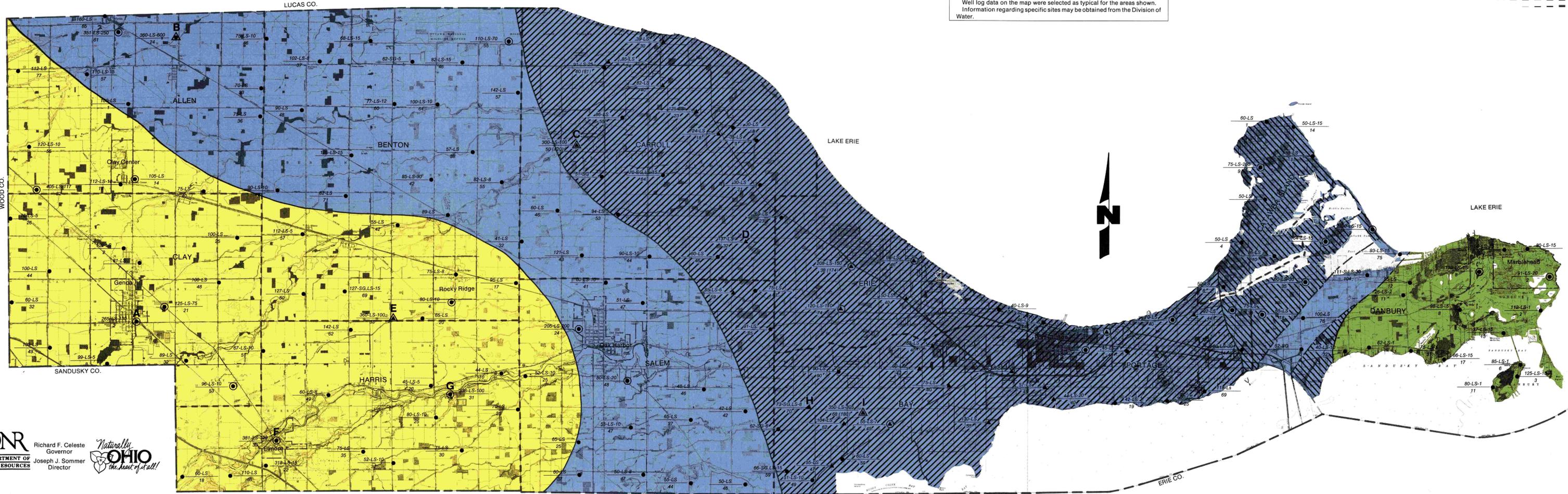
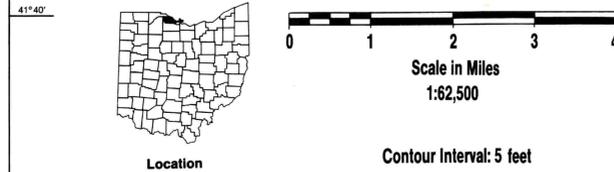
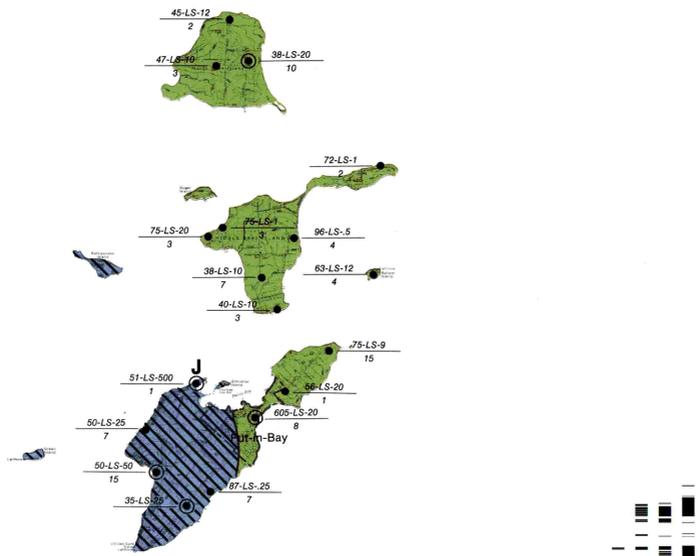
Chemical Analysis Table

Well Site	A	B	C	D	E	F	G	H	I	J
Depth (feet)	265	360	300	137	360	381	338	73	350	51
Critical Pumping Level	—	125	120	—	160	—	—	—	175	—
Iron	.6	.25	.90	.05	.79	.1	14.	3.4	—	.39
Calcium	122	108	400	544	104	242	162	480	577	300
Magnesium	33	32	146	177	55	73	56	162	130	54
Sulfates	—	114	1290	1831	375	379	368	1640	1600	620
Hardness as CaCO ₃	440	401	1600	2090	486	900	635	1860	1980	970
Dissolved Solids	550	465	2250	3018	782	1347	878	2600	2740	1260
Sulfides as H ₂ S	—	2.2	3.9	3.9	14.0	—	Odor	—	5.6	—

Chemical Constituents as Mg/l

- LEGEND**
- AREAS IN WHICH YIELDS OF 100 TO 500 GALLONS PER MINUTE MAY BE DEVELOPED.
 - Large diameter wells developed at depths of less than 300 feet have proven yields in excess of 500 gallons per minute. Farm and domestic supplies of 10 to 30 gallons per minute are usually encountered at depths of less than 90 feet.
 - Wells developed at depths of less than 125 feet often encounter high concentration of hydrogen sulfide. Settling casing to seal off brackish water reduces yield as well as concentration of hydrogen sulfide. Presence of calcium, and magnesium sulfate water noted. Regional public water supply recommended owing to presence of poor quality water.
 - Excellent ground-water source for private and public supplies developed at an average depth of 60 feet. However, very shallow cavitated carbonate bedrock prevents proper disposal of sanitary wastes through leaching tile fields. Contaminated wells noted. Lesser quantity and poorer quality developed from deeper wells. Regional public water and sewerage systems recommended.
 - Ancestral Drainage channel. Drift thickness in excess of 75 feet.
 - AREAS IN WHICH YIELDS OF 25 TO 100 GALLONS PER MINUTE MAY BE DEVELOPED.
 - Carbonate aquifer beneath relatively thin glacial drift may yield as much as 100, or more, gallons per minute at depths of less than 260 feet. Small diameter wells drilled for farm and domestic use yield less than 10 gallons per minute at average depth of about 75 feet. Although less quantity is available, the quality of the ground water is considerably better than the carbonate formations beneath the central and eastern portions of the county.
 - AREAS IN WHICH YIELDS OF 5 TO 25 GALLONS PER MINUTE MAY BE DEVELOPED.
 - Average yields of less than 15 gallons per minute are developed from wells drilled to depths of less than 100 feet. Owing to nature of limestone bedrock, poor yields of less than 2 gallons per minute are noted, especially in southern portion of area. Very shallow limestone bedrock beneath leaching tile fields deters development of potable water supplies. Owing to the poor quality and quantity of ground-water available, and the high concentration of present and future development, public water and sewerage systems are recommended.

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



ODNR Richard F. Celeste
OHIO DEPARTMENT OF NATURAL RESOURCES Governor
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