St John Quadrangle, Maine

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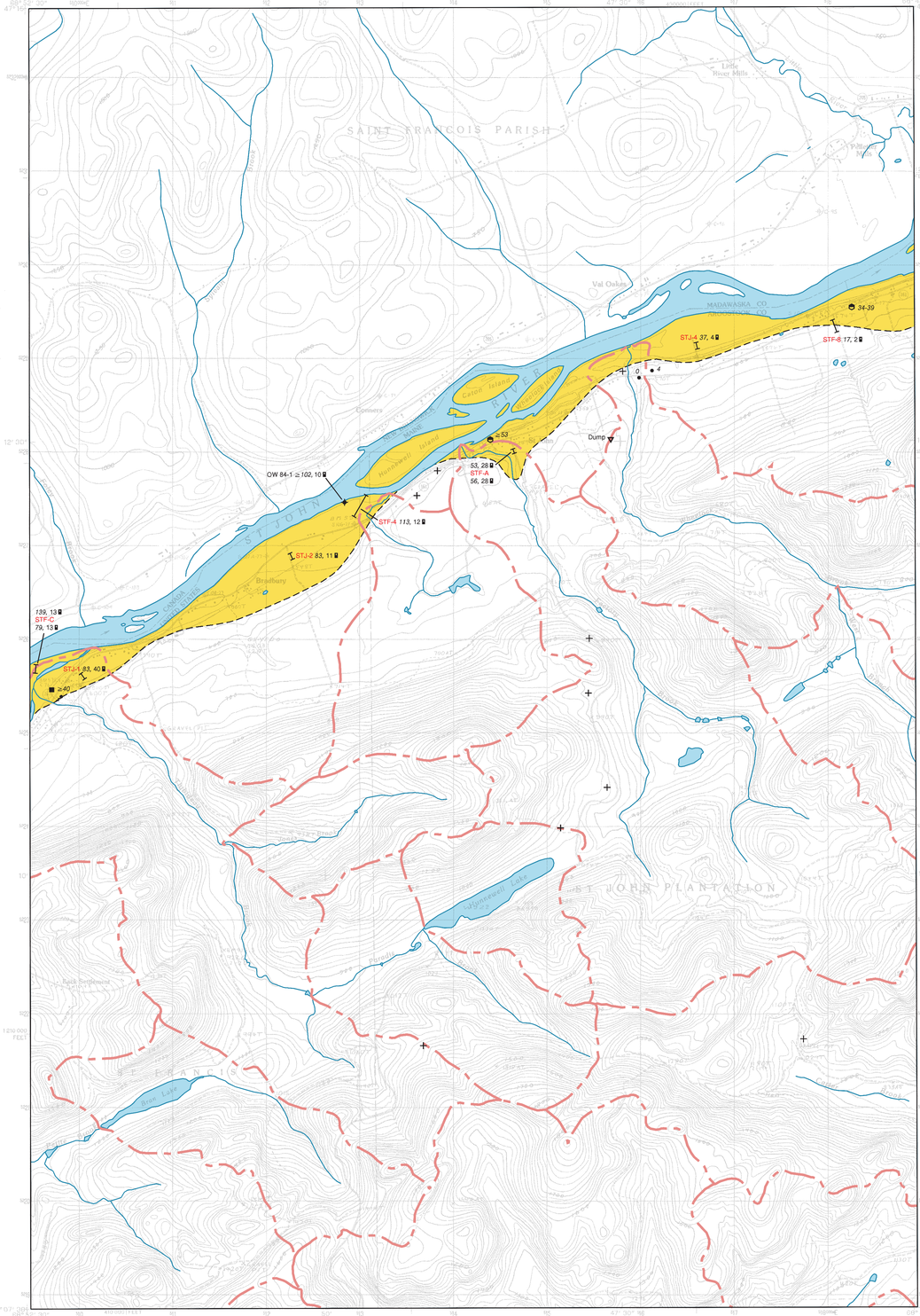
Significant Sand and Gravel Aquifers



Aquifer boundaries modified from: Weddle, T. K., Steiger, J. I., and Neil, C. D., 1989, Significant Sand and Gravel Aquifers Map 84: Maine Geological Survey, Open-File Map 89-1f, scale 1:50,000.

Well inventory data collected by Maine Geological Survey field assistants during the 1986 field season.

Drainage basin boundaries compiled by U.S. Geological Survey, Water Resources Division, Augusta, Maine, with funding from the Maine Low-Level Radioactive Waste Authority.

Quadrangle Location

SCALE 1 : 24,000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETER

CONTOUR INTERVAL 20 FEET

TRUE NORTH

Topographic base from U.S. Geological Survey St John quadrangle, scale 1:24,000 using standard U.S. Geological Survey topographic map symbols.

The use of industry, firm, or local government names on this map is for location purposes only and does not impute responsibility for any present or potential effects on the natural resources.

SIGNIFICANT SAND AND GRAVEL AQUIFERS
(yields greater than 10 gallons per minute)

Approximate boundary of surficial deposits with significant saturated thickness where potential ground-water yield is moderate to excellent.

Surficial deposits with good to excellent potential ground-water yield; yields generally greater than 50 gallons per minute to a properly constructed well. Deposits consist primarily of glacial sand and gravel, but can include areas of sandy till and alluvium; yield zones are based on subsurface data where available, and may vary from mapped extent in areas where data are unavailable.

Surficial deposits with moderate to good potential ground-water yield; yields generally greater than 10 gallons per minute to a properly constructed well. Deposits consist primarily of glacial sand and gravel, but can include areas of sandy till and alluvium; yields may exceed 50 gallons per minute in deposits hydraulically connected with surface-water bodies, or in extensive deposits where subsurface data are available.

SURFICIAL DEPOSITS WITH LESS FAVORABLE AQUIFER CHARACTERISTICS
(yields less than 10 gallons per minute)

Areas with moderate to low or no potential ground-water yield (includes areas underlain by till, marine deposits, eolian deposits, alluvium, swamps, thin glacial sand and gravel deposits, or bedrock); yields in surficial deposits generally less than 10 gallons per minute to a properly constructed well.

SEISMIC-LINE INFORMATION

Profiles for selected 12-channel seismic lines are shown in Figure 12 of Open-File Report 89-1a (Locke and others, 1989). Length of 12-channel seismic lines as shown on the map is to scale. All single-channel lines ranged from 60 to 300 feet long and are shown to scale.

53 Depth to bedrock, in feet below land surface.

≥**53** Depth to bedrock exceeds depth shown (based on calculations).

12 Depth to water level, in feet below land surface.

MAP-7 **131, 23** Twelve-channel seismic line, with depth to bedrock and depth to water shown at the midpoint of the line, in feet below land surface.

MAP-E **69, 12** / **72, 12** Single-channel seismic line, with depth to bedrock and depth to water shown at each end of the line, in feet below land surface. Unless otherwise indicated, data shown above the line-identifier box refers to the northern end of the seismic line.

The 3-letter identifier for a line is an abbreviation for the topographic quadrangle. If the 3-letter identifier for the line is followed by a number (ex: MAP - 7, MAP - 4), the line is a 12-channel line. If the identifier is followed by a letter (ex: MAP - E, MAP- F), the line is a single-channel line. Single-channel seismic interpretations by C. D. Neil. Twelve-channel seismic interpretations by J. I. Steiger and C. D. Neil.

GEOLOGIC AND WELL INFORMATION

50 Depth to bedrock, in feet below land surface

≥**13** Penetration depth of boring; ≥ symbol refers to minimum depth to bedrock based on boring depth or refusal

6 Depth to water level in feet below land surface (observed in well, spring, test boring, pit, or seismic line)

Gravel pit (overburden thickness noted in feet, e.g. 5-12')

Quarry

4 GPM Yield (flow) of well or spring in gallons per minute (GPM)

Spring, with general direction of flow

Drilled overburden well

Dug well

Observation well (project well if labeled; nonproject well if unlabeled)

Test boring (project boring if labeled; nonproject boring if unlabeled)

Driven point

Test pit

Drilled bedrock well

Potential point source of ground-water contamination

Bedrock outcrop

Surface-water drainage-basin boundary; surface-water divides generally correspond to ground-water divides. Horizontal direction of ground-water flow generally is away from divides and toward surface-water bodies.

OTHER SOURCES OF INFORMATION

1. Locke, D. B., Steiger, J. I., Weddle, T. K., and Neil, C. D., 1989, Hydrogeology and water quality of significant sand and gravel aquifers in parts of Aroostook County, Maine: Maine Geological Survey, Open-File Report 89-1a, 88 p.
2. Weddle, T. K., 2002, Surficial materials of the St John quadrangle, Maine: Maine Geological Survey, Open-File Map 02-93.
3. Genes, A. N., 1981, Reconnaissance surficial geology of the St. Francis 15' quadrangle, Maine: Maine Geological Survey, Open-File Map 81-15.
4. Caswell, W. B., 1987, Ground water handbook for the state of Maine, Second Edition: Maine Geological Survey, Bulletin 39, 135 p.
5. Thompson, W. B., 1979, Surficial geology handbook for coastal Maine: Maine Geological Survey, 68 p. (out of print)
6. Thompson, W. B., and Borns, H. W., Jr., 1985, Surficial geologic map of Maine: Maine Geological Survey, scale 1:500,000.