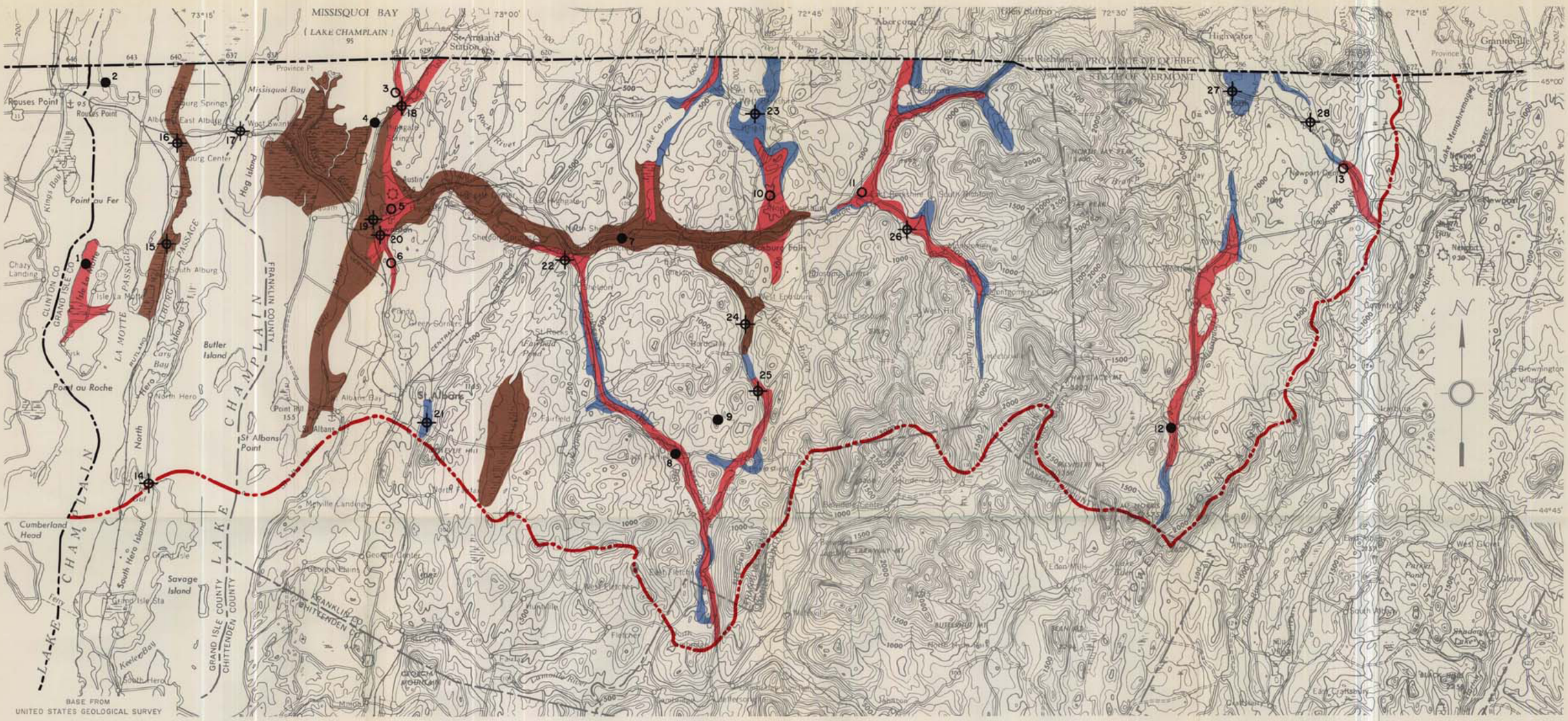

BASE FROM
UNITED STATES GEOLOGICAL SURVEY

Ground-Water Favorability Areas

Areas underlain by thick deposits of coarse-grained stratified glacial drift have excellent ground-water potential. Suitable for exploration to locate wells that should yield sufficient quantities of water to meet municipal and industrial requirements. Deposits are thinner and wells would be less productive along the margins of these areas.

Areas underlain by thin deposits of coarse-grained stratified glacial drift and stream gravel have low to moderate ground-water potential. Suitable for exploration to locate shallow wells and infiltration galleries that should yield sufficient quantities of water for domestic, commercial, and light industrial use.

Areas underlain by fine-grained stratified glacial drift and swamp deposits have low ground-water potential. These deposits generally will yield sufficient water for domestic wells only. In places, thin lenses of gravel with higher yields may underlie these deposits, but these lenses may not have adequate storage or recharge to produce high yields on a sustained basis.

Areas underlain by deposits of unstratified glacial drift (called till or "hardpan") and bedrock ("ledge") have low ground-water potential. In general, wells in either till or bedrock will yield only enough water for domestic or light commercial use. Till and bedrock underlie the stratified glacial drift of the map units listed above.

○ Water wells in stratified glacial drift

● Water wells in glacial till and bedrock

⊕ Test borings

Basin boundary

INDEX MAP OF VERMONT

SCALE OF MILES
10 0 10 20 30 40 50

GROUND WATER FAVORABILITY MAP
OF THE
MISSISQUOI RIVER BASIN, VERMONT

SCALE OF MILES
1 0 1 2 3 4 5 6 7 8

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1967

Introduction

The area of this report includes that part of northwestern Vermont drained by the Missisquoi River and several small tributaries to Lake Champlain. It also includes North Hero Island, Isle La Motte, and the Town of Alburg. This study is part of a cooperative program between the United States Geological Survey and the State of Vermont Department of Water Resources to provide a statewide reconnaissance of ground-water availability. Information presented in this report is based on a limited amount of data; it is intended as a guide for local exploration, and not as a statement that conditions are uniform everywhere within a ground-water favorability area. Further studies are recommended for detailed appraisals of ground-water quantities available within this area.

The areas of greatest ground-water potential are Isle La Motte, Swanton, Highgate Springs, Sheldon to East Fletcher, North Enosburg, East Berkshire to Montgomery Center and Newport Center. Excellent areas for potential ground-water development also occur along the main stem of the Missisquoi River from East Berkshire to the Canadian border, and from Troy to Lowell. Other less promising areas are scattered throughout the basin. Silt and clay deposits predominate in the Missisquoi River valley from North Enosburg to Lake Champlain and may mask possible underlying water-bearing gravel.

WATER WELLS AND TEST BORINGS

WATER WELLS

Number	Owner	Location	Total Depth (in ft) [1]	Depth to Bedrock (in ft) [1]	Aquifer [1]	Yield (in gallons per minute) [1/2]
1.	Brothers of the Sacred Heart	Isle La Motte	224	152	Rock	20
2.	Carl Hunter	Alburg	275	9	Rock	20
3.	Herman Pelkey	Highgate	60	NR	Gravel	40
4.	Russell Haugland	Highgate	180	1	Rock	6
5.	Lloyd Brow	Swanton	102	NR	Sand	20
6.	Sears Farm	Swanton	100	NR	Gravel	20
7.	Wesley Longe	Sheldon	167	65	Rock	25
8.	Neil McGinn	Fairfield	235	99	Rock	30
9.	Village of Bakersfield	Bakersfield	400	1	Rock	8
10.	Village of Enosburg Falls	Berkshire	63	NR	Gravel	600
11.	United Farmers Creamery	Berkshire	25	NR	Gravel	100
12.	Lowell School	Lowell	217	95	Rock	30
13.	Village of Newport Center	Newport Town	31	NR	Gravel	60

NR Not Reached
1/ Reported by owner or driller
2/ May be limited by capacity of pump

TEST BORINGS (Vermont Department of Highways)

14. Grand Isle - North Hero - U.S. Route 2 over The Gut — Elevation 95 ft
    5 to 10 feet of sand & clay over bedrock

15. Alburg - U.S. Route 2 approximately 1.5 miles North of South Alburg — Elevation 100 ft
    Sand . . . . . 0 - 5 ft
    Clay & muck . . . . . 5 - 30
    Not to refusal

16. Alburg - Vt. Route 78 over Mud Creek — Elevation 93 ft
    Muck . . . . . 0 - 12 ft
    Sand . . . . . 12 - 16
    Bedrock 16

17. Alburg - Swanton - Vt. Route 78 across Lake Champlain — Elevation 95 ft
    Water . . . . . 0 - 12 ft
    Silty clay . . . . . 12 - 30
    Coarse sand . . . . . 30 - 35
    Bedrock 35

18. Highgate - Interstate 89 over Rock River — Elevation 97 ft
    -South end of bridge
    Clay . . . . . 0 - 75 ft
    Sand, fine gravel . . . . . 75 - 90
    Refusal 90
    -North end of bridge — Elevation 97 ft
    Clay . . . . . 0 - 60 ft
    Sand & gravel . . . . . 60 - 70
    Refusal 70

19. Swanton - Interstate 89 over Vt. Route 78 — Elevation 155 ft
    Sand & muck . . . . . 0 - 10 ft
    Sand . . . . . 10 - 35
    Sand & clay . . . . . 35 - 45
    Clay . . . . . 45 - 53
    Bedrock 53

20. Swanton - Interstate 89 over Missisquoi River — Elevation 153 ft
    North end
    Fine sand . . . . . 0 - 64 ft
    Fine gravel . . . . . 64 - 70
    Bedrock 70

21. St. Albans - Vt. Route 36 over Interstate 89 — Elevation 585 ft
    Sand, some gravel & silt . . . . . 0 - 45 ft
    Not to refusal

22. Sheldon - Vt. Route 105 over Missisquoi River at Sheldon Junction — Elevation 338 ft
    East end of bridge
    Sandy soil . . . . . 0 - 10 ft
    Sand & fine gravel . . . . . 10 - 18
    Compact blue clay . . . . . 18 - 48
    Very fine silt-like sand . . . . . 48 - 62
    Porous material (probably gravel) 62
    Not to refusal

23. Berkshire - West Berkshire Road over Pike River — Elevation 530 ft
    Maximum 15 feet sand & gravel over till and bedrock

24. Enosburg - Vt. Route 108 over The Branch — Elevation 413 ft
    Sand & fine gravel . . . . . 0 - 5 ft
    Clay & fine sand . . . . . 5 - 16
    Medium sand & clay . . . . . 16 - 25
    Clay, some fine sand . . . . . 25 - 38
    Not to refusal

25. Bakersfield - Vt. Route 108 over The Branch — Elevation 556 ft
    Coarse sand & gravel . . . . . 0 - 22 ft
    Not to refusal

26. Montgomery - Vt. Route 118 over Alder Brook — Elevation 434 ft
    Topsoil . . . . . 0 - 3 ft
    Sand & gravel . . . . . 3 - 39
    Not to refusal

27. Troy - Vt. Route 105 over Missisquoi River at North Troy — Elevation 456 ft
    East end of bridge
    Fill . . . . . 0 - 4 ft
    Sand . . . . . 4 - 17
    Bedrock ? . . . . . 17 - 25

28. Newport - Vt. Route 105 over Mud Creek — Elevation 565 ft
    Maximum depth to bedrock . . . . . 12 ft