

BIBLIOGRAPHY OF
PUBLICATIONS RELATING TO GROUND WATER
IN CONNECTICUT

by

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Hartford, Connecticut
~~July 1, 1960~~

Revised July 1, 1960

(PROVISIONAL, SUBJECT TO REVISION)

50-67

INTRODUCTION

The United States Geological Survey is currently investigating the ground-water resources of Connecticut in cooperation with the State Water Commission. As part of this cooperative project, in order to summarize the knowledge already gained about ground water in the State, a bibliography of reports dealing with ground water in Connecticut has been prepared. A compilation entitled "Bibliography and index of publications relating to ground water prepared by the Geological Survey and cooperating agencies", by G. A. Waring and O. E. Meinzer, was issued as U. S. Geological Survey Water-Supply Paper 992 in 1947. The following compilation lists all the papers in Water-Supply Paper 992 that refer to Connecticut plus other short reports not included in the latter.

The first studies of ground water in Connecticut were begun in 1903 by Professor H. E. Gregory of Yale University under the auspices of the U. S. Geological Survey. The early studies were of the reconnaissance type, covering large sections of the State, and were concerned mainly with the relation of the bedrock geology to the water supply. The results were published in several Water-Supply Papers of the Geological Survey. In 1911 a cooperative agreement for the study of the ground-water resources of Connecticut in which each party shared equally in the expenses was made between the Federal Survey and the Connecticut State Geological and Natural History Survey. As a result more detailed studies in smaller areas were undertaken. Active field work covering more than half the State was continued through 1923 under this arrangement and the results published in eight U. S. Geological Survey Water-Supply Papers.

After an eleven year period of inactivity and with the inauguration of the Federal Emergency Relief Commission, detailed studies of ground water in Connecticut were begun again in October 1934 as a project of the Emergency Relief Commission (later the Works Progress Administration). The project was sponsored by the Connecticut State Water Commission, the State Planning Board, and the U. S. Geological Survey. The technical direction of the work was undertaken by the Geological Survey. The project consisted of an inventory and mapping of wells and springs in the State by towns and the recording of weekly observations of water levels in selected wells. The data collected through October 1939 were published in six mimeographed bulletins and one typewritten bulletin by the Works Program Administration.

In 1939, when it became necessary to curtail the work being carried on by the Works Progress Administration, cooperation was arranged between the Federal Geological Survey and the State Water Commission to continue investigations relative to the over-development of ground-water supplies in the New Haven area. From time to time additional funds have been made available to meet growing demands by the State for data on its ground-water supplies and the present cooperative program between the U. S. Geological Survey and the State Water Commission is a continuation of the original arrangement. It is estimated that about 14 per cent of the State has been covered by recent ground-water surveys and in addition some data are available for another 20 per cent of the State.

PLAN OF THE BIBLIOGRAPHY

Part I, the bibliography, has a total of 57 publications or reports relating to ground water in Connecticut that have been issued through June 1, 1950. A brief abstract is given for each paper. The references are grouped under the agency responsible for publication and are listed chronologically within groups. Each reference has been assigned a number according to the order in which it is listed. An attempt has been made to include references to all material issued by agencies directly concerned with the study of ground water in Connecticut. It was therefore necessary to omit such related material as newspaper articles and project reports of professional engineers. Unintentional omissions possibly have been made, however, and the writer wishes that any such omissions be called to his attention, in order that they may be added at a later date. Information of this nature should be addressed to the U. S. Geological Survey, Ground Water Branch, Post Office Building, Middletown, Connecticut.

To aid in locating a report covering a particular area, an index map is included at the rear of the bibliography. For each town in the State in which ground-water conditions have been investigated the published report covering that town is indicated by a number. The number corresponds to the number assigned that particular report in the bibliography. Most of the reports relating to ground water in Connecticut are now out of print. However, copies are on file at the office of the State Water Commission, Room 317 State Office Building, Hartford; at the offices of the U. S. Geological Survey, Room 1, Post Office Building, Middletown, and 203 Post Office Building, Hartford; and at most of the larger libraries in the State.

It should be pointed out again that cooperative investigations of the ground-water resources of Connecticut are currently in progress and that considerable information of recent date has been gathered for areas about the State, a substantial proportion of which has not as yet been published. Much of the data are placed on open file in the office of the Geological Survey, Post Office Building, Middletown, Connecticut and are available either upon request or through examination at Middletown.

Part II, an appendix to the bibliography, is a list of general references dealing with the subject of ground water and a list of publications dealing with the general geology of the State. Also included is a list of the several libraries in the State where publications of the State and Federal Government may be found.

PART I - BIBLIOGRAPHY

PUBLICATIONS ISSUED BY THE FEDERAL GOVERNMENT

United States Geological Survey

(*Denotes those publications prepared in cooperation with the Connecticut Geological and Natural History Survey.)

1. Contributions to the hydrology of Eastern United States 1903, by M. L. Fuller, geologist in charge; Water-Supply Paper 102, 1904.

Section on Connecticut, by H. E. Gregory, pp 127-168. Contains records of about 470 wells and 84 springs and analyses of 19 well waters and 19 spring waters.

2. Contributions to the hydrology of eastern United States, 1904 by M. L. Fuller, geologist in charge: Water-Supply Paper 110, 1905.

Drilled wells of the Triassic area of the Connecticut Valley, by W. H. C. Pynchon, pp 65-94. Describes the topography and geology of the Triassic formations of the Connecticut Valley in Connecticut and Massachusetts. Contains notes on 159 wells in Connecticut by towns.

Triassic rocks of the Connecticut Valley as a source of water supply, by M. L. Fuller, pp 95-112. Describes the structure of the Triassic rocks; treats of the source and quality of water in the rocks and the method of recovering this water; includes analyses of water from 11 wells and 5 springs.

3. Underground Water of Eastern United States, by M. L. Fuller, Geologist in charge: Water-Supply Paper 114, 1905.

Section on Connecticut, by H. E. Gregory, pp 76-81. A short paper on the general geological formations of Connecticut and the distribution of ground water in the State.

4. Preliminary list of deep borings in the United States, by N. H. Darton: Water-Supply Paper 149, 1905.

Section on Connecticut, pp 23-24. Gives location by towns, depth, diameter, yield, water level, and other available information concerning 26 wells ranging in depth from 400 to 6,004 feet.

5. Underground water resources of Connecticut, by H. E. Gregory, with a study of the occurrence of water in crystalline rocks, by E. E. Ellis: Water-Supply Paper 232, 1909. 200 pp., 5 pls.

Describes the physiography and geology, and the circulation, quantity, temperature, quality, and contamination of the ground water of the State. Discusses the water in the crystalline rocks, and Triassic sandstones and traps, and the glacial drift. Discusses also the methods of constructing wells and the character and use of the springs. Gives records of wells and springs and analyses of ground waters. Includes detailed descriptions of the towns of Warren, North Haven, and Branford Point.

- *6. Ground water in the Hartford, Stamford, Salisbury, Willimantic, and Saybrook areas, Connecticut, by H. E. Gregory and A. J. Ellis: Water-Supply Paper 374, 1916. 150 pp., 13 pls.

Covers the towns of Bloomfield, Canaan, East Hartford, East Windsor, Essex, Franklin, Greenwich, Hartford, Manchester, Newington, North Canaan, Old Lyme, Salisbury, Saybrook, Stamford, South Windsor, Westbrook, West Hartford, Wethersfield, Windham, and Windsor. Discusses the origin, circulation, quantity, and quality of the waters in stratified and unstratified drift, crystalline rocks, traps, Paleozoic limestones, and Triassic sandstones. Discusses ground water for municipal use and the construction of drilled, driven, and dug wells, and infiltration galleries. Describes the municipal pumping plants at Brookline, Mass., Brooklyn, N. Y., and Plainfield, N. J. Describes the ground-water conditions in detail, by towns. Contains numerous tables of well data and water analyses, and includes maps showing water-bearing formations, depths to water, locations of wells, and woodlands.

- *7. Ground water in the Waterbury area, Connecticut, by A. J. Ellis: Water-Supply Paper 397, 1916. 73 pp., 4 pls.

Discusses the water in glacial drift and crystalline rocks, ground water for private and municipal uses, and methods of developing ground-water supplies. Describes the municipal pumping plants at Brookline, Mass., Brooklyn, N. Y., and Plainfield, N. J. Describes in detail the water-bearing formations and water supplies in the towns of Ansonia, Beacon Falls, Middletown, Naugatuck, Oxford, Seymour, Thomaston, Waterbury, and Watertown. Contains tables of well data and water analyses and includes a map showing areas underlain by stratified drift, rock outcrops, woodlands, and locations of wells and springs.

- *8. Ground water in the Meriden area, Connecticut, by G. A. Waring: Water-Supply Paper 449, 1920. 83 pp., 7 pls.

Covers parts of Hartford, New Haven, and Middlesex Counties, Connecticut. Describes occurrence and availability of ground-water supplies, methods of well construction, and quality of ground water. Contains descriptions of towns with reference to geology, surface water, ground water, records of wells and springs, and water analyses. Includes maps showing areal geology, extent of glacial deposits, and forested areas.

- *9. Ground water in the Southington - Granby area, Connecticut, by H. S. Palmer: Water-Supply Paper 466, 1921. 219 pp., 7 pls.

Covers parts of Litchfield, New Haven, and Hartford Counties, Conn. Discusses physiography, geology, water-bearing formations, artesian conditions, springs, means of recovery of ground water, ground water as a source of public supply, and quality of water. Describes towns individually with reference to local aquifers, quality of water, public water supply, and well and spring records. Includes tables of analyses and a geologic map.

- *10. Ground water in the Norwalk, Suffield, and Glastonbury areas, Connecticut, by H. S. Palmer: Water-Supply Paper 470, 1920. 171 pp., 12 pls.

Covers parts of Fairfield and Hartford Counties, Conn. Discusses the physiography, geology, water-bearing formations, artesian conditions, springs, means of recovery of ground water, ground water for public supplies, and quality of water. Describes the towns individually with reference to local aquifers, quality of water, public water supply, and well and spring records. Includes tables of analyses and geologic map of the area.

- *11. A study of coastal ground water, with special reference to Connecticut, by J. S. Brown: Water-Supply Paper 537, 1925. 101 pp., 7 pls.

Discusses the subject of coastal ground water, with special reference to the New Haven, Conn. area. Describes the geology, physiography, and ground-water conditions in the New Haven coastal area, with a discussion of the Ghyben-Herzberg theory of fresh and salt water relationships, contamination by salt water, effects of pumping and tides on contamination, and the nature of the fresh and salt water contact. Includes a geologic map, water analyses, descriptions of wells, springs, and pumping plants in the New Haven area, and a bibliography of coastal ground water.

- *12. Ground water in the New Haven area, Connecticut, by J. S. Brown: Water-Supply Paper 540, 1928. 206 pp., 15 pls.

Covers New Haven County and part of Middlesex County, Conn. Discusses the geology and physiography of the area and the ground-water resources with respect to occurrence, quality, and methods of recovery. Describes the public water supplies and gives records of wells and springs in the several towns, with water analyses. Includes a geologic map.

- *13. A study of ground water in the Pomperaug Basin, Connecticut, with special reference to intake and discharge, by O. E. Meinzer and N. D. Stearns: Water-Supply Paper 597-B, pp 73-146, 1929. 9 pls.

Describes the geography and geology of the Pomperaug Basin and the ground-water resources of the towns of Bethlehem, Southbury, and Woodbury, Conn. Discusses the methods of making a ground-water inventory with regard to precipitation, evaporation, and surface-water and ground-water runoff; gives a monthly inventory 1913-16. Includes a discussion of relation of water table fluctuations to ground-water storage. Contains geologic map.

14. Water levels and artesian pressure in observation wells in the United States in 1935, prepared under the direction of O. E. Meinzer and L. K. Wenzel: Water-Supply Paper 777, 1936.

Section on Conn. by W. H. Brothwell, pp 35-39. Reviews history of ground-water investigations in the State. Discusses observation well programs carried out by Works Progress Administration.

15. Water levels and artesian pressure in observation wells in the United States in 1937, prepared under the direction of O. E. Meinzer and L. K. Wenzel: Water-Supply Paper 840, 1938 (1939).

Section on Conn. by W. H. Brothwell and R. M. Logie, pp 50-51. Discusses Works Progress Administration program for 1937.

16. Water levels and artesian pressure in observation wells in the United States in 1938, prepared under the direction of O. E. Meinzer and L. K. Wenzel: Water-Supply Paper 845, 1939.

Section on Conn. pp 48-49. Discusses Works Progress Administration program for 1938 and lists reports published by that program.

17. Water levels and artesian pressure in observation wells in the United States in 1939, by O. E. Meinzer, L. K. Wenzel, and others: Water-Supply Paper 886, 1940.

Section on Conn., New Haven County, by J. G. Ferris, pp 56-63. Discusses details of ground-water investigation in New Haven area and contains records of water levels in 24 wells.

18. Water levels and artesian pressure in observation wells in the United States in 1940, part 1, Northeastern States, by O. E. Meinzer, L. K. Wenzel, and others: Water-Supply Paper 906, 1942.

Section on Conn., New Haven County, by J. G. Ferris, pp 5-15. Contains records of water levels in 32 wells.

19. Water levels and artesian pressure in observation wells in the United States in 1941, part 1, Northeastern States, by O. E. Meinzer, L. K. Wenzel, and others: Water-Supply Paper 936, 1943.

Section on Conn. by J. G. Ferris, pp 6-19. Briefly describes ground-water conditions in New Haven and gives amount and distribution of withdrawal of water. Contains records of water levels in 27 wells.

20. Water levels and artesian pressure in observation wells in the United States in 1942, part 1, Northeastern States, by O. E. Meinzer, L. K. Wenzel, and others: Water-Supply Paper 944, 1944.

Section on Conn., New Haven County, by J. G. Ferris, pp 8-18. Briefly discusses ground-water conditions in New Haven during 1942. Contains records of water levels in 23 wells.

21. Water levels and artesian pressure in observation wells in the United States in 1943, part 1, Northeastern States, by O. E. Meinzer, L. K. Wenzel, and others: Water-Supply Paper 986, 1946.

Sections on Conn. by Jean Lowry, pp 6-17. Briefly discusses ground-water conditions in New Haven during 1943. Contains records of water levels in 21 wells.

22. Water levels and artesian pressure in observation wells in the United States in 1944, part 1, Northeastern States, by A. N. Sayre and others: Water-Supply Paper 1016, 1947.

Section on Conn. by Jean Lowry, pp 5-22. Outlines ground-water studies made in Connecticut during 1944. Briefly discusses geology and ground-water conditions in Waterbury. Contains records of water levels in 51 wells in Connecticut by counties.

23. Water levels and artesian pressure in observation wells in the United States in 1945, part 1, Northeastern States, by A. N. Sayre and others: Water-Supply Paper 1023, 1948.

Section on Conn., by Jean Lowry, pp 5-19. Outlines cooperative program for 1945. Contains records of water levels in 42 wells in Connecticut by counties.

24. Water levels and artesian pressure in observation wells in the United States in 1946, part 1, Northeastern States by A. N. Sayre and others: Water-Supply Paper 1071, 1949.

Section on Conn., by R. V. Cushman, pp 5-17. Outlines program for 1946. Contains records of water level in 43 wells in Connecticut by counties.

25. Lists and analyses of the mineral springs of the United States (a preliminary study) by A. C. Peale: Bull. 32, 1886.

On p. 25 lists 16 mineral springs in Connecticut, all classed as weakly mineralized and comparatively unimportant.

26. Record of deep-well drilling for 1904, by M. L. Fuller, E. F. Lines, and A. C. Veatch: Bull. 264, 1905.

Section on Connecticut, p 44. Lists by owner and location 9 deep wells drilled in the State in 1904.

27. Record of deep-well drilling for 1905, by M. L. Fuller and Samuel Sanford: Bull. 298, 1906.

Section on Connecticut, p 44-45. Lists by owner and location 12 deep wells drilled in the State in 1905.

28. Ground-water resources and public water-supply system at Middletown, Conn., by J. G. Ferris. January 1943. 12 pp. (Typewritten).

Discusses geology, ground-water occurrence, and industrial usage of ground water in Middletown. Describes the public-supply system and gives tables of reservoir data and daily withdrawals. Suggests areas for future development of ground-water supplies.

29. Ground-water conditions in the Waterbury area, Connecticut, by J. G. Ferris. July 1943. 9 pp. (Typewritten).

Discusses geology, ground-water conditions, and the use of ground water by industrial plants in the area. Discusses the contamination of well water by acid industrial wastes and suggests method for further study.

30. Ground-water conditions in Waterbury, Connecticut, by Jean Lowry and J. J. Miles, Jr. August 1947. 12 pp. (Prepared for publication in Amer. Geophys. Union Transactions. Typewritten).

Reviews geology and ground-water conditions in the area and contains a further discussion of contamination by acid industrial wastes. Includes a geologic map showing well locations, and a comparative hydrograph of water levels.

31. Ground-water conditions at the site of the proposed Fairfield County Jail Farm, Fairfield, Connecticut, by J. J. Miles, Jr. December 1946. 6 pp. (Typewritten)

Discusses geology and ground-water conditions in the vicinity of proposed site. Includes a map showing location of site and topography.

32. Ground-water conditions in an 8-acre parcel of land in New Milford, Connecticut, by J. J. Miles, Jr. January 1947. 6 pp. (Typewritten)

Discusses geology and ground-water conditions in New Milford, Conn.

33. Ground-water conditions at the site of a proposed Fairfield County Jail Farm, Trumbull, Connecticut, by R. V. Cushman. December 1947. 6 pp. (Typewritten)

Discusses geology and ground-water conditions in vicinity of proposed site. Includes a map showing location of site and topography.

Works Progress Administration for Connecticut

(The following bulletins were prepared in cooperation with the Connecticut State Water Commission)

34. Record of wells, springs, and ground-water levels in the towns of Bridgeport, Easton, Fairfield, Stratford, and Trumbull, Conn., by R. M. Leggette and others: Connecticut Ground-Water Survey Bull. GW-1, Hartford, Conn., November 1938. 242 pp. (Mimeographed.)

Gives the owners, elevations above sea level, types, depths, diameters, depths to bedrock, water levels, chloride determinations, and maps showing the locations of 1,873 wells in 5 towns in southwestern Connecticut.

35. Record of wells, springs, and ground-water levels in the towns of Branford, Chester, Clinton, Essex, Guilford, Haddam, Killingworth, Madison, North Branford, Old Saybrook, Saybrook, and Westbrook, Conn., by R. M. Leggette and others: Connecticut Ground-Water Survey Bull. GW-2, Hartford, Conn., 1938. 340 pp. (Mimeographed.)

Gives tabulated data on 2,624 wells in the 12 towns. Includes maps showing the location of wells and springs.

36. Record of wells, springs, and ground-water levels in the towns of Bethany, East Haven, Hamden, Milford, North Haven, Orange, West Haven, and Woodbridge, Conn., by R. M. Leggette and others: Connecticut Ground-Water Survey Bull. GW-3, Hartford, Conn., 1938. 247 pp. (Mimeographed.)

Gives tabulated data on 1,847 wells in the 8 towns named. Includes maps showing the location of wells and springs.

37. Record of wells, springs, and ground-water levels in the towns of Berlin, Cromwell, Durham, Meriden, Middlefield, Middletown, Portland, and Wallingford, Conn., by R. M. Leggette and others: Connecticut Ground-Water Survey Bull. GW-4, Hartford, Conn., 1938. 170 pp. (Mimeographed.)

Gives tabulated data on 1,158 wells in the 8 towns named. Includes maps showing the location of wells and springs.

38. Record of wells, springs, and ground-water levels in the towns of Colchester, East Haddam, East Hampton, East Lyme, Lyme, New London, Old Lyme, and Waterford, Conn., by R. M. Leggette and others: Connecticut Ground-Water Survey Bull. GW-5, Hartford, Conn., 1938. 314 pp. (Mimeographed.)

Gives tabulated data on 3,042 wells in the 8 towns named. Includes maps showing location of wells and springs.

39. Ground-water levels in north-central Connecticut, Oct. 1, 1934, to Dec. 31, 1937, by R. M. Leggette and others: Connecticut Ground-Water Survey Bull. GW-6, Hartford, Conn., 1938. 212 pp. (Mimeographed.)

Gives measurements of water levels made in 1934-37 in 218 wells in 27 towns in north-central Connecticut.

40. Ground-water levels in Connecticut, Jan. 1, 1938, to Oct. 31, 1939 by R. M. Leggette and others: Connecticut Ground Water Survey Bull. GW-7, Hartford, Conn., 1940. 252 pp. (Typewritten)

Gives measurements of water levels made in 1938-39 in 383 wells in 67 towns in Connecticut.

PUBLICATIONS ISSUED BY THE STATE OF CONNECTICUT

State Water Commission

41. Report on the water resources of Connecticut to the Governor, 1930.
Contains recommendations of the Commission regarding proposed study of the State's water resources and a draft of an act creating a State Water Conservation Commission.
42. Ground-water Survey, U. S. Geol. Survey - State of Connecticut, report of cooperative program covering current biennium, by J. G. Ferris: 9th Bienn. Rept., 1940-42, Pub. Doc. 78, Hartford, Conn., pp. 75-77, 1942.

Contains a description of the ground-water investigation being conducted in the New Haven area, one of the most critical in the State with respect to ground-water supply.
43. Ground-water Survey, U. S. Geol. Survey - State of Connecticut, report of cooperative program covering current biennium, by E. J. Lowry: 10th Bienn. Rept., 1942-44, Pub. Doc. 78, Hartford, Conn., pp. 46-47, 1944.

Summarizes the progress of ground-water studies in Connecticut during biennium.
44. Ground-water Survey, U. S. Geol. Survey - State of Connecticut, report of cooperative program covering current biennium, by E. J. Lowry: 11th Bienn. Rept., 1944-46, Pub. Doc. 78, Hartford, Conn., pp. 33-34, 1946.

Summarizes the progress of ground-water studies in Connecticut during biennium.
45. Ground-water Survey, U. S. Geol. Survey - State of Connecticut, report of cooperative program covering fiscal year 1946-47: Digest of Conn. Administrative Repts. 1946-47 to the Governor, Pub. Doc. 97, Hartford, Conn., p. 248, 1947.
46. Ground-water Survey, U. S. Geol. Survey - State of Connecticut, report of cooperative program covering fiscal year 1947-48: Digest of Conn. Adminis. Repts., 1947-48 to the Governor, Pub. Doc. 97, Hartford, Conn., p. 312, 1948.
47. Ground-water Survey, U. S. Geol. Survey - State of Connecticut, report of cooperative program covering fiscal year 1948-49: Digest of Conn. Adminis. Repts. 1948-49 to the Governor, Pub. Doc. 97, Hartford, Conn., p. 289, 1949.

State Geological and Natural History Survey

48. Report on the Water Resources of Connecticut by R. H. Suttie: Bull. 44, Pub. Doc. 47, Hartford, Conn., 1928. 165 pp.

Discusses the work done on ground water in Connecticut since 1903 and gives recommendations for future study; contains a list of publications on ground water.

State Department of Health

49. Analyses of Connecticut Public-Water Supplies, (First Edition) 1931-1936: Hartford, Conn., Dec. 1936.

Contains a tabulation of various public and semi-public water supplies in Connecticut, including those obtained from ground water, with information as to ownership, date of inauguration of supply, sources of supply, extent of service, estimated population supplied, source of pressure, and types of treatment. Also listed are averages over a five year period of laboratory determinations on all water samples collected from the various supplies.

50. Analyses of Connecticut Public-Water Supplies, (Second Edition) 1936-1940: Hartford, Conn., October 1941.

Contains up-to-date information similar to that given in first edition.

51. Analyses of Connecticut Public-Water Supplies, (Third Edition) 1941-1945: Hartford, Conn., July 1946.

Contains up-to-date information similar to that given in previous issues.

State Board of Agriculture

52. 39th annual report (1905): Pub. Doc. 18, Hartford, Conn., 1906, pp 283-297. General report by H. E. Gregory on the relation of geology in Connecticut to rural water supply.

Journal Articles

53. Relation of sea water to ground water along coasts, by J. S. Brown: Am. Jour. Sci., 5th ser., vol. 4, No. 22, New Haven, Conn., October 1922. pp. 274-294.

Describes contamination of wells near the Connecticut coast by sea water, and the relation of topography and geology to the wells. Explains the law of equilibrium of salt and fresh water, as developed by Ghyben and later by Herzberg. Discusses the effects of pumping, the season, and the tides, on the saline contamination.

54. Public Water Supplies of Connecticut, by Warren J. Scott and F. O. A. Almqvist: New England Water Works Assoc. Jour., vol. 43, No. 3, Boston, Mass., pp 298-317, 1929.

Contains statistics relative to the various public water supplies of Connecticut, including ground water supplies, covering the year ending December 31, 1927. Tabulation lists ownership, date of inauguration, estimated population supplied, source of supply, source of pressure, types of treatment, and extent of service.

55. Geologic features in New England ground-water supply, by Kirk Bryan: New England Water Works Assoc. Jour., vol. 50, No. 2, Boston, Mass., June 1936. pp. 222-228.

The two general sources of ground-water supply in New England are the bedrock, which is suitable for small individual supplies, and the glacial sand and gravel, which are adaptable to large supplies. Outlines the theory of formation of sand and gravel bodies by glaciation. By means of correlation between iron content of well water and the areas of older drift refutes the belief that the last or late Wisconsin ice covered all New England. Contains maps showing the position and extent of the Wisconsin ice according to two theories.

56. Cooperative ground-water investigation in Connecticut, by J. G. Ferris: New England Water Works Assoc. Jour., vol. 56, No. 2, Boston, Mass., June 1942. pp. 157-165.

Gives data on a study of ground-water conditions in the New Haven area, with graphs showing the relation between ground-water level, pumpage, and precipitation. Most of the ground water is from glacial drift. Increased pumpage for industrial uses has caused some increase in the infiltration of salt water.

57. Report of the committee for survey of ground-water supplies in New England: New England Water Works Assoc. Jour., vol. 63, No. 2, Boston, Mass., pp. 175-200, 1949.

PART II - APPENDIX

Selected References on Ground-Water Hydrology

1. Meinzer, O. E. and others, Hydrology, New York, McGraw-Hill Co., 1942.
2. Tolman, C. F., Ground Water, New York, McGraw-Hill Co., 1937.
3. Bonnisson, E. W., Ground Water - Its development, uses and conservation, Edward E. Johnson, Inc., St. Paul, 1947.
4. Meinzer, O. E., The occurrence of ground water in the United States: U. S. Geol. Survey Water-Supply Paper 489, 1923.
5. Meinzer, O. E., Outline of ground water hydrology: U. S. Geol. Survey Water-Supply Paper 494, 1923.

ADDENDA

PUBLICATIONS ISSUED BY THE U. S. GEOLOGICAL SURVEY

- 58. Memorandum on ground-water conditions in Madison, Connecticut: by R. V. Cushman: Typewritten report in open files of U. S. Geological Survey, 10 p., 1 pl., 1 table, 1954.**

Describes the occurrence of ground water in glacial outwash and till, alluvium, and bedrock. The distribution of the glacial deposits and the alluvium are shown on a map.

PUBLICATIONS ISSUED BY STATE OF CONNECTICUT

- 59. Statement on ground water in Connecticut, by R. V. Cushman: Conn. Devel. Conn. Reference Manual of Intus. Location Factors, v. 5, sec. 7, p. 26-30, 1 pl., 1955.**

A brief discussion of occurrence, availability, and quality of ground water in Connecticut. Gives expectable yields of wells in the several aquifers. Map shows promising areas for moderate to large ground-water development.

- 60. Ground water in Connecticut; chapter in water resources of Connecticut, by R. V. Cushman: Water Resources Conn. Report to the General Assembly. 6 p., 2 tables, 3 figs., 1957.**

Discusses the history of cooperative ground-water investigations in Connecticut. Discusses briefly the occurrence, availability, and quality of ground water in Connecticut. Gives expectable yields of wells in the several aquifers and incorporates a map showing promising areas for moderate to large ground-water development. Gives estimated use of ground water in 1956 and indicates areas of concentrated withdrawal.

AGENDA

JOURNAL ARTICLES

61. Geologic factors affecting the yield of rock wells in southern New England, by R. V. Cushman, W. B. Allen, and H. L. Free, Jr.: New England Water Works Assoc. Jour., v. 67, no. 2, p. 77-95, 4 pls., 1 fig., 1953. Reprinted as Sci. Contr. Conn. State Water Comm., R. I. Devel. Council, and Mass. Dep. Public Works.

Discusses effect of rock type, geologic structure, topography, well depth, and type of overburden on the yield of wells in bed-rock. Averages of data for rock wells in southern New England are summarized in five tables.

A map shows the generalized bedrock geology of southern New England (scale about 1:1,600,000).

62. Ground water in north-central Connecticut, by R. V. Cushman: Econ. Geology, vol. 55, p. 101-114, 1960.

The principal water-bearing units in the 640-sq-mi area are sands and gravels of glaciofluvial and glaciolacustrine deposits. Yields range from 100 to 600 gpm. The bedrock and ground moraine generally will yield small supplies averaging 10 to 15 gpm but sandstone and shale beds yield up to 450 gpm to a few wells. The distribution of the principal water-bearing units and the topography of the buried bedrock surface are shown on maps.

6. Meinzer, O. E., Outline of methods for estimating ground-water supplies: U. S. Geol. Survey Water-Supply Paper 638-C, pp. 99-144, 1932.
7. Meinzer, O. E., Ground Water in the United States, a summary: U. S. Geol. Survey Water-Supply Paper 836-D, 1939.
8. Meinzer, O. E., The history and development of ground-water hydrology: Washington Acad. Sci. Jour., Vol. 24, pp. 6-32, 1934.
9. Wenzel, L. K., Methods of determining permeability of water-bearing materials: U. S. Geol. Survey Water-Supply Paper 887, 1942.
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Libraries Containing Public Documents

1. Connecticut State Library, 231 Capitol Avenue, Hartford, Conn.
2. Hartford Public Library, 624 Main Street, Hartford, Conn.
3. Trinity College Library, Summit Street, Hartford, Conn.
4. Wesleyan University Library, Church Street, Middletown, Conn.
5. New Haven Public Library, 133 Elm Street, New Haven, Conn.
6. Yale University Library, High Street, New Haven, Conn.
7. Bridgeport Public Library, 925 Broad Street, Bridgeport, Conn.
8. University of Connecticut Library, Storrs, Conn.

