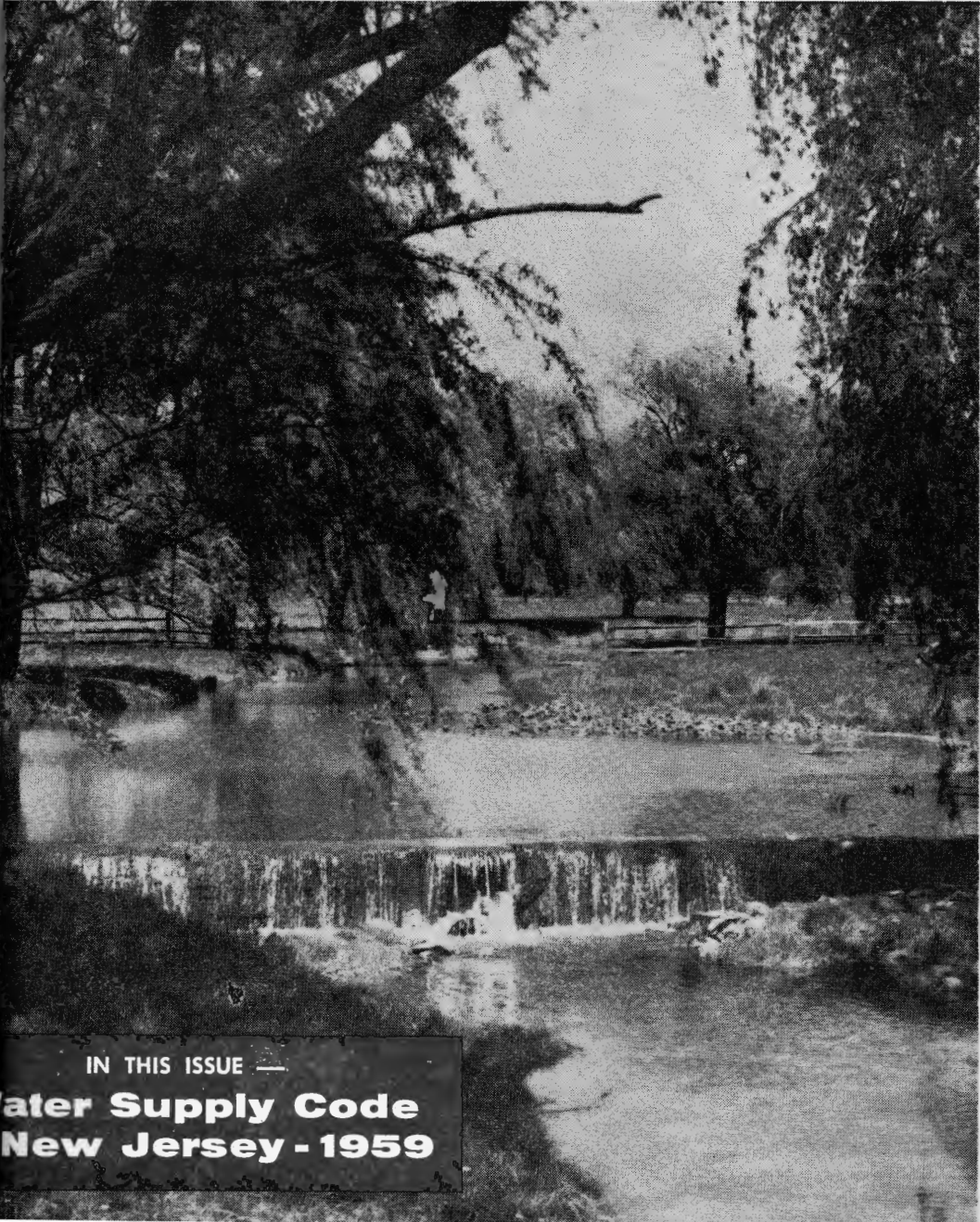


10

# Public Health News

May 1959

NEW JERSEY STATE DEPARTMENT OF HEALTH



IN THIS ISSUE —

**Water Supply Code  
New Jersey - 1959**

# The New Jersey State Department of Health

## PUBLIC HEALTH COUNCIL

HARRY J. ROBINSON, M.D., *Chairman*

MRS. KATHLEEN SLETTELAND, *Vice-Chairman*

MRS. ERMA T. DILKES, *Secretary*

C. BYRON BLAISDELL, M.D.

NELSON S. BUTERA, P.E.

JOHN J. CANE, D.D.S.

HARRY N. LENDALL, C.E.

ANTHONY P. MILLER, JR.

## ORGANIZATION

Daniel Bergsma, M.D., M.P.H.  
*State Commissioner of Health*  
129 East Hanover Street  
Trenton 25, New Jersey

### DIVISIONS

ADMINISTRATION  
E. Powers Mincher

AGING  
Mrs. EONE HARGER, *Director*

CHRONIC ILLNESS CONTROL  
Marian R. Stanford, M.D., *Director*

CONSTRUCTIVE HEALTH  
Curtis F. Culp, M.D., M.S.

ENVIRONMENTAL HEALTH  
Alfred H. Fletcher, M.S., *Director*

LABORATORIES  
Elmer L. Shaffer, Ph.D., *Director*

PREVENTABLE DISEASES  
William J. Dougherty, M.D., M.P.H.,  
*Director*

SPECIAL CONSULTATION SERVICES  
Ralph T. Fisher, M.P.H., *Director*

LOCAL HEALTH SERVICES  
Jesse B. Aronson, M.D., M.P.H.,  
*Director*

Central State Health District  
Geoffrey W. Esty, M.D.,  
*District State Health Officer*  
129 East Hanover Street  
Trenton 25, New Jersey

Metropolitan State Health District  
Miriam Sachs, M.D., M.P.H.,  
*District State Health Officer*  
1100 Raymond Boulevard  
Newark, New Jersey

Northern State Health District  
Harry R. H. Nicholas,  
*District State Health Officer*  
Roxbury Shopping Center  
Succasunna, New Jersey

Southern State Health District  
Hugh D. Palmer, M.D., C.M., M.P.H.,  
*District State Health Officer*  
89 Haddon Avenue  
Haddonfield, New Jersey

DONALD S. BENSON, *Editor*

RALPH T. FISHER, EDWIN C. LANIGAN, JOHN B. VAN ELLIS, *Associate Editors*

## CONTENTS

PAGE

Public Health and Sanitation Codes Adoption by Reference Act .....	123
Water Supply Code of New Jersey (1959) .....	124
An Ordinance Providing for the Adoption of the "Water Supply Code of New Jersey (1959)" .....	125
Water Supply Code of New Jersey (1959) .....	127
Sign to Identify Approved Bathing Areas .....	151
Cover: H. Armstrong Roberts	

Entered as second-class matter, August 25, 1915, at the Post Office, Trenton, N. J.  
under the Act of August 24, 1912.

## PUBLIC HEALTH AND SANITATION CODES ADOPTION BY REFERENCE ACT

Chapter 188 P.L. 1950 (R.S. 26:3-69.1 to 69.6)

### 26:3-69.1 Definitions.

As used in this act, unless the context otherwise requires:

(1) "Local board of health" shall mean a county or municipal board of health, or the board of health of any regional local or special health district, having power to regulate, by ordinance, public health or sanitation.

(2) "Code" means printed code regulations or set of regulations, standards or set of standards concerning, affecting or relating to the subject matter of any such ordinance of substantially uniform character, approved by the State Department of Health.

(3) "Related document" means any printed document or part thereof adopted by reference in a code directly, or by successive adoptions by reference through other printed documents.

(4) "Printed" includes lithographing and any other method of duplicating.

### 26:3-69.2 Adopting certain codes and related documents by reference.

Any local board of health may enact, amend or supplement ordinances establishing, amending or supplementing a code or any parts thereof by reference to such code in any such ordinance and without inclusion of the text thereof in such ordinance if the code to be adopted and any related documents are printed in book form and a copy of such printed and related documents so marked as to indicate plainly what portion thereof, if less than the whole, is intended to be adopted, is annexed to such ordinance and if such code and related documents or such portion thereof as is intended to be adopted is so described in said

ordinance as to identify them and there is indicated in said description the common or trade name, if any, of such code and related documents and it is stated in the ordinance that three copies of said code and said related documents, similarly marked, have been placed on file in the office of the secretary, clerk or other similar office of said local board of health, upon the introduction of said ordinance and will remain on file there until final action is taken on said ordinance, for the use and examination of the public.

### 26:3-69.3 Publication of adopted codes or related documents unnecessary.

It shall not be necessary to publish any such code or related documents, so to be adopted, as part of any such ordinance notwithstanding that printed copies thereof are annexed thereto, either before or after the final passage of such ordinance, if said printed copies are filed as aforesaid.

### 26:3-69.4 Copies of adopted code and related ordinances to remain on file.

In event that any such ordinance is adopted, the said copies of said code and related documents shall remain on file in said office, so long as said ordinance is in effect, and three copies shall be placed on file and shall remain on file in the office of any board, body or officer having in charge the enforcement of said ordinance, for the use and examination of the public so long as said ordinance is in effect and printed copies of said ordinance and said code and related documents shall be made available to citizens on request and for which a nominal fee may be charged.

**26:3-69.5 Copy of adopted code and related documents construed as part of ordinance.**

For the purpose of proof of any such ordinance or receipt thereof in evidence in all courts and places, such copy of such code and related documents, so marked and annexed to such ordinance,

shall be construed to be part of said ordinance, as fully as though it had been set forth at length therein.

**26:3-69.6 Short Title.**

This act may be cited as the Public Health and Sanitation Codes Adopted by Reference Act.

## WATER SUPPLY CODE OF NEW JERSEY (1959)

New Jersey State Department of Health  
Trenton 25, New Jersey

*The Code entitled "Water Supply Code of New Jersey (1959)" set forth herein was approved March 19, 1959 by the State Department of Health for adoption by reference by any local board of health. It may be adopted without alteration, or if so desired, any numbered section or paragraph may be deleted therefrom, but no substitute section or paragraph may be added as part of the Code being adopted by reference under Chapter 188, P.L. 1950 (N.J.S.A. 26:3-69.1 to 69.6).*

*It is recommended that this Code be adopted in full.*

### FOREWORD

*The Water Supply Code of New Jersey (1959) is recommended as a model code for use in municipalities or sections of municipalities not provided with water supply for use in municipalities or sections of municipalities not provided with public water supply systems. The provisions for the construction of individual and semipublic water supply sources are the same in substance as the standards promulgated by the State Commissioner of Health in accordance with the provisions of Chapter 199, P.L. 1954. However, this code is broader in scope in that it provides additional administrative coverage including alteration of an existing water supply, use and supervision. Adoption of the code by local boards of health will provide uniform regulations based on the knowledge and experience of experts in the field of water supply and related sciences.*

*The statutes of New Jersey have facilitated the enactment by reference of model codes prepared for that purpose by the State Department of Health and have thereby eliminated a large portion of the expense incurred in enacting codes by making it unnecessary to publish the full text of the code. This code may, therefore, be enacted by any local board of health by reference in the manner provided in Chapter 188, Laws of 1950 and without publication of the full text of the code. In enacting this code, the procedure set forth in Sections 26:3-66 to 69 inclusive, Revised Statutes of New Jersey should be followed, except that the provisions in Section 26:3-66 requiring the code to be published in full need not be followed if the code is enacted by reference as authorized by Chapter 188, P.L. of 1950 (N.J.S.A. 26:3-69.1 to 69.6).*

The aforementioned statute requires the passage of a short enacting ordinance. In such an ordinance, the title of the code must be set forth together with a statement that a copy of said code is attached.

It is necessary to state in the ordinance that three copies of the code similarly marked have been placed on file in the office of the secretary, clerk or other similar officer of the local board of health and will remain on file there for use and examination by the public.

The enacting ordinance shall also contain a section relating to penalties for violation of any section of the code. This section must be in accordance with Sections 26:3-70 to 82 inclusive of the Revised Statutes of New Jersey which relate specifically to actions by local boards of health to recover penalties for violation of health ordinances or codes. The enacting ordinance should also set forth all fees to be charged and the amount of such fees. The fees may vary in different municipalities adopting this code.

Further advancement may be made in the future, indicating the need for subsequent modification of this code. Responsible agencies should and undoubtedly will study developments in this field and consider recommending appropriate amendments to this code. Amendments should not be made until careful study and tests have established the value of any new recommendations. Any such amendment must be promulgated in accordance with the procedure as set forth in Section 26:3-66 to 69 inclusive, Revised Statutes of New Jersey.

## AN ORDINANCE PROVIDING FOR THE ADOPTION OF THE "WATER SUPPLY CODE OF NEW JERSEY (1959)"

This suggested Ordinance indicating the manner in which the "Water Supply Code of New Jersey (1959)" may be adopted should be reviewed by the attorney for the local board of health or municipal attorney for possible changes that he or the board may desire to make.

AN ORDINANCE establishing a code regulating the location, construction, alteration, use and supervision of individual and semipublic water supplies, requiring certain permits, providing for the inspection of such supplies, the fixing of fees and prescribing penalties for violations.

BE IT ORDAINED BY THE BOARD OF HEALTH OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_ STATE OF NEW JERSEY

Section 1. A code regulating the location, construction, alteration, use and supervision of individual and semipublic water supplies, requiring certain permits, providing for the inspection of such supplies, the fixing of fees and prescribing penalties for violations is hereby adopted pursuant to Chapter 188, P.L. 1950 (N.J.S.A. 26:3-69.1 to 69.6). A copy of said code is annexed hereto and made a part hereof without inclusion of the text thereof herein.

Section 2. The said code established and adopted by this Ordinance is described and commonly known as the Water Supply Code of New Jersey (1959).

Section 3. Three copies of the said Water Supply Code of New Jersey (1959) have been placed on file in the office of the secretary, clerk or other similar officer of this Board of Health upon the introduction of this Ordinance and will remain on file in said office for the use and examination by the public.

Section 4 (a). No person shall locate, construct or alter any water supply until a (license) (permit) for the location, construction or alteration of said water supply shall have been issued by the board of health.

(b). The board of health may issue a (license) (permit) if an application for the same is accompanied by a certificate made by an engineer licensed to practice professional engineering in New Jersey stating that the design of the water supply as proposed is in compliance with the code.

Section 5 (a). New water supplies shall not be placed in operation, nor shall new dwellings or buildings or additions thereto be sold or occupied, which must rely on such a supply for water, until the board of health shall have issued a certificate indicating that the said water supply has been located and constructed in compliance with the terms of the (license) (permit) issued and the requirements of the aforesaid code. Issuance of such certificate shall not be required for alteration to an existing water supply.

(b). The board of health may issue such a certificate if an engineer licensed to practice professional engineering in New Jersey submits a statement in writing signed by him to the board of health that the said water supply has been located and constructed in accordance with the terms of the (license) (permit) and the requirements of the aforesaid code.

Section 6. In case any (license) (permit) or certification required by this ordinance is denied by the board of health, a hearing shall be held thereon before the board within fifteen (15) days after request therefor is made by the applicant and upon such hearing the board of health shall affirm, alter or rescind its previous determination and take action accordingly within fifteen (15) days after the date of such hearing.

Section 7. The board of health may order all further work in and about any water supply, which is being erected or installed in violation of the code, to be stopped forthwith, except such work as shall be necessary to remedy such violation, and thereafter, the work continued without any violation of any of the provisions of the code, and after issuance of any such order and the service of a copy thereof upon any person connected with or working in and about the erection or installation of any such water supply, or any part thereof, no further work shall be done thereon except as aforesaid.

Section 8. The following fees and charges are herewith established:

(a) For the filing of an application and plans for a (license) (permit) to locate and construct a water supply \_\_\_\_\_ dollars.

(b) For the filing of an application and plans for a (license) (permit) to alter an existing water supply \_\_\_\_\_ dollars.

(c) For the issuance of a (license) (permit) to locate and construct or alter a water supply \_\_\_\_\_ dollars.

(d) For each reinspection of a water supply, or part thereof, caused by the failure of the (licensee) (permittee) to locate and construct or alter the same in accordance with the terms of the (license) (permit) issued or the terms of the aforesaid code, an inspection fee of \_\_\_\_\_ dollars shall be charged.

Section 9 (a). Any person or persons, firm or corporation violating any of the provisions of or any order promulgated under this Ordinance or the Water Supply Code of New Jersey (1959) made a part hereof shall, upon conviction thereof, pay a penalty of not less than two dollars nor more than one hundred dollars for each violation.

(b) Each day a particular violation continues shall constitute a separate offense.

Section 10. All ordinances, codes or parts of same inconsistent with any of the provisions of this Ordinance and the Code established hereunder are hereby repealed to the extent of such inconsistency.

Section 11. In the event that any section, sentence or clause of this Ordinance or Code shall be declared unconstitutional by a court of competent jurisdiction such declaration shall not in any manner prejudice the enforcement of the remaining provisions.

Section 12. This Ordinance and the Code herein established shall take effect 30 days after the first publication of the Ordinance in accordance with the provisions of R.S. 26:3-69.

## WATER SUPPLY CODE OF NEW JERSEY (1959)

### APPROVED BY

### THE NEW JERSEY STATE DEPARTMENT OF HEALTH

#### Section 1 DEFINITIONS

1.1 The words, terms or phrases listed below for the purpose of this code and ordinance shall be defined and interpreted as follows:

**Administrative Authority.** An Administrative Authority is the board of health.

**Alter.** Alter shall mean and include the replacing or repairing of any portion of an existing water supply system.

**Approved.** Approved shall mean accepted or acceptable under applicable specifications stated or cited in this code, or accepted as suitable for the proposed use under procedures and powers of administration delegated in this code.

**Artesian Formations.** Artesian formations are water-bearing sand or gravel formations in which ground water is confined under hydrostatic pressure by tight clay or other sufficiently impermeable formations so as to restrict free hydraulic connection with other water-bearing formations and in which the supply is normally obtained from distant outcrop areas.

**Authorized Agent.** An authorized agent is a licensed health officer, sanitary inspector, plumbing inspector or any other properly qualified and licensed person who is delegated to function within specified limits as agent of the Administrative Authority.

**Catchment Area.** Catchment area is that area of the ground surface from which precipitation will recharge the source of water supply.

**Certificate of Compliance.** A written statement by the board of health certifying that the proposed water supply facilities have been located and constructed in compliance with this code and the terms of the permit or license issued for such installation.

**Cesspool.** A cesspool is a covered pit with open-jointed lining into which raw sewage is discharged, the liquid portion of which is disposed of by seepage or leaching into the surrounding porous soil, the solids or sludge being retained in the pit.

**Cistern.** A cistern is a covered tank in which rain water from a roof, or roofs, is stored for household or other purposes.

**Construct.** Construct shall mean and include building or installing a new water supply system or enlarging an existing water supply system.

**Disposal Area.** The disposal area is considered as the entire area used for underground dispersion of the liquid portion of sewage. It may consist of a seepage pit or a disposal field or a combination thereof.

**Disposal Bed.** A disposal bed consists of a shallow area from which the entire earth contents have been removed and the excavation partially filled with a satisfactory filtering material in which distribution lines have been laid and the entire area covered with top soil and a suitable vegetative growth.

**Disposal Field.** A disposal field is used for dispersion of the liquid portion of sewage into the ground as near the surface as possible. A disposal field may consist of disposal trenches, a disposal bed or a combination thereof.

**Disposal Trench.** Disposal trenches are shallow ditches with vertical sides and flat bottoms partially filled with a satisfactory filtering material in which a single distribution line has been laid, covered with top soil and a suitable vegetative growth.

**Diversion Grant.** A diversion grant is a grant which has been approved by the Division of Water Policy and Supply of the Department of Conservation and Economic Development pursuant to Chapter 375, Laws of 1947 for the private use or diversion of ground water in excess of 100,000 gallons daily from a well or other percolating sources in areas which have been delineated under the provisions of the law.

**Domestic Sewage.** Domestic sewage is any liquid waste containing animal or vegetable matter in suspension solution or the water-carried wastes resulting from the discharge of water-closets, laundry tubs, washing machines, sinks, dish-washers or any other source of water-carried wastes of human origin or containing putrescible material.

**Ground Water.** Ground water is subsurface water which has filled the voids in the earth and cracks or fractures in the rock in what is called the zone of saturation.

**Artesian Ground Water.** Artesian ground water is ground water confined under hydrostatic pressure by a more or less impermeable overlying formation which restricts free hydraulic connection with other water bearing formations.

**Free Ground Water.** Free ground water is unconfined ground water where the upper surface or water table is free to rise and fall with changes in volume of stored water.

**Individual Sewage Disposal System.** An individual sewage disposal system is a subsurface sewage disposal system designed and constructed to treat sewage in a manner that will retain most of the settleable solids in a water-tight tank and to discharge the liquid portion to an adequate disposal area.

**Individual Water Supply.** A water supply used for potable or domestic purposes in a single family residence.

**Industrial Waste.** Industrial waste is a liquid waste resulting from the process employed in industrial establishments.

**Licensed Well Driller.** A licensed well driller is one who has obtained either a Journeyman or Master well driller license under the provisions of Chapter 377, P.L. 1947.

**Locate.** Locate shall mean designating the site or place of the sources or other appurtenances of a water supply system.

**Outcrop Area.** Outcrop area is that portion of the ground surface where an artesian ground water formation is exposed to infiltration from precipitation.

**Person.** Person includes corporations, companies, associations, societies, firms, partnerships and joint stock companies as well as individuals.

**Pollution.** Pollution shall mean the existence of sewage, industrial processing products, or other harmful or objectionable material in water. Sources of pollution may be privies, septic tanks, cesspools, seepage pits, disposal fields such as disposal beds or disposal trenches, sink drains, storm drains, faulty sanitary sewers, barnyards, direct sewage discharges or industrial wastes.

**Potable Water.** Any water used for drinking or culinary purposes meeting the "Potable Water Standards" adopted by the New Jersey State Department of Health.

**Public Potable Water Supply.** A municipality or privately owned water supply, approved by the New Jersey State Department of Health, under the provisions of Article 1, Chapter 10 of Title 58 and Article 1, Chapter 11 of Title 58 of the revised Statutes, which is distributed to consumers through a public water supply system.

**Public Water Supply System.** A municipally or privately owned system comprising structures which operating alone or with other structures result in the derivation, conveyance (or transmission) or distribution of water for potable or domestic purposes to consumers in twenty or more dwellings or properties; this definition does not include a public water treatment plant.

**Privy.** A privy is an earth or water-tight pit or receptacle for receiving non-water-carried human body wastes over which is placed a privy house containing a seat or seats.

**Realty Improvement.** Any proposed new residence or other building the useful occupancy of which will require the installation or erection of a water supply system or sewerage facilities, other than one which is to be served by an approved water supply and an approved sewerage system.

**Semipublic Water Supply System.** A semipublic water supply system is a water supply system from which potable water is supplied to consumers of more than one but less than twenty dwellings and from which water is used or made available for potable purposes to employees, tenants, members, guests, or the public at large in commercial offices, industrial, multiple dwellings or semipublic buildings, such as: apartments, rooming and boarding houses, hotels, motels, tourist cabins, trailer camps, restaurants, camps of all types, day and boarding schools, club houses, hospitals and other institutions, or is used in connection with the manufacture or handling of ice, dairy products, food or drinks.

**Sanitary Sewer.** A sanitary sewer is a pipe which carries sewage and to which storm, surface and ground waters are not intentionally admitted.

**Seepage Pit.** A seepage pit is a covered pit with open jointed lining through which septic tank effluent or laundry waste may seep or leach into the surrounding soil.

**Septic Tank.** A septic tank is a water-tight receptacle which receives the discharge from a building sewer or part thereof, and is designed and constructed so as to permit settling of settleable solids from the liquid, digestion of the organic matter by detention and discharge of the liquid portion into a disposal area.

**Spring.** A spring is a natural surface feature where ground water issues from the rock or soil onto the land or into a body of water.

**Subsurface Water.** See Ground Water.

**Surface Water.** Surface water includes water found on the ground surface or contained in a stream, pond or lake or any other natural water course.

**Water Table.** Water table is the upper surface of the free ground water in an unconfined zone of saturation. In an artesian formation, the water table corresponds to the top of the pressure surface.

**Well.** A well is an artificial excavation that derives water from the interstices of the rocks or soil which it penetrates.

**Abandoned Well.** Abandoned well is one no longer used.

**Artesian Well.** An artesian well is one which derives its water from a confined water-bearing formation in which the ground water is under hydrostatic pressure. An artesian well may or may not overflow at the surface.

**Bored Well.** Bored well is one that is excavated by means of a hand or power soil auger.

**Condemned Well.** Condemned well is one in which the water has been declared unsuitable for human use by the Administrative Authority.

**Drilled Well.** Drilled well is one that is excavated wholly or in part by means of a drill (either percussion or rotary) which operates by cutting or abrasion or by use of a water jet.

**Driven Well.** Driven well is one that is constructed by driving a casing, at the end of which is a drive point and screen without the use of any drilling, boring or jetting device.

**Dug Well.** Dug well is one that is excavated by means of picks, shovels, or other hand tools, or by means of power equipment such as "orange peel" or "clam shell" buckets and is lined as digging progresses or after completion.

**Rock Well.** Rock well is one which derives water only from cracks and fissures in the rock.

**Sunk Well.** Sunk well is one in which the casing is lowered primarily by removing the soil by a water jet.

**Water Table Well.** A water table well is one which derives its water from an unconfined zone of saturation which has no protective impermeable cover over the water bearing formation. Water table wells are subject to periodic variations in water table levels.

**Well Permit.** A well permit is a permit issued by the Division of Water Policy and Supply of the Department of Conservation and Economic Development for the construction of a well in accordance with the provisions of Chapter 377, Laws of 1947.

**Zone of Saturation.** Zone of saturation is that portion of the earth and underlying rock in which all voids, interstices, fissures and cracks are completely filled with ground water.

## Section 2 GENERAL REQUIREMENTS

**2.1 Design.** The following shall be considered in designing a water supply system for a realty improvement:

- a) A balanced system of supply, pumping, distribution and storage facilities to meet the demand.
- b) A dependable source of potable water supply.
- c) Potential and known sources of contamination.
- d) Geological formations.
- e) Availability of water from a public potable water supply within an economic distance from the realty improvement.
- f) Advisability of establishing a public potable water supply.

**2.2 Water Consumption.** Water supply systems shall be designed to provide a quantity of potable water as determined from the following table:

<i>Type of Realty Improvement</i>	<i>Gallons per person per day</i>
All-year private residences	60
Part-year private residences	40
Multiple family permanent residences such as apartments, rooming houses, boarding schools, hotels, club houses	50

Multiple family transient residences such as motels, some hotels, camps	30
Semipublic, nonresidential buildings such as restaurants, boarding houses, day schools, nonresident club houses	10
Semipublic nonresident recreation facilities such as day camps, picnic grounds	5

The demand for special types of realty improvements such as hospitals, and institutions shall be based on estimates of special use.

2.3 Source of Supply. The source of supply shall be determined on the following basis:

- a) Yield.
- b) Nature and quality of the local water resources.
- c) Number and type of realty improvements.
- d) Geologic or subsoil formations.
- e) Depth to acceptable ground water.

2.4 Sources of Water. The source of water supply may be from shallow or deep wells. The use of springs, rainfall cisterns, and surface water may be permitted by the Administrative Authority upon compliance with this code.

2.5 Grading. Final grading shall provide adequate drainage of surface waters to protect the water supply from flooding.

2.6 Freezing. All parts of the water supply system shall be designed, located and constructed to protect against freezing.

2.7 Cross Connection. No cross connection shall be established between a water supply system serving a realty improvement and an approved potable water supply unless approved in accordance with the provisions of Chapter 308, P.L. 1942. (N.J.S.A. 58:11-9.1 et seq.)

2.8 Frost-proof Facilities. No water supply connection shall be made to a frost-proof toilet or hydrant unless authorized by the Administrative Authority.

2.9 Priming. A pump which requires priming shall not be employed for any water supply system serving a realty improvement.

2.10 Disinfection. Upon completion of the installation of a water supply system or following repairs to its pumping equipment, it shall be flushed and disinfected in accordance with the instructions of the Administrative Authority.

2.11 Protection. All necessary measures shall be taken to prevent the contamination of the water-bearing stratum during the well construction.

### Section 3 LOCATION

3.1 General. A water supply system located and installed under this code shall be such that with reasonable maintenance, it will function in a satisfactory manner and will not be subject to contamination from surface or subsurface sources.

Springs situated on the side of or at the foot of a hill should not be used if cesspools, privies, sewers or other potential sources of contamination are located above the spring and in line with the flow of the waterbearing strata toward the spring. In no instance shall a spring be used if located closer than 200 feet from an upstream source of contamination.

Surface supplies subject to direct contamination from sewage and industrial waste shall not be used for potable purposes.

3.2 Distances. The approximate minimum distances for the location of the various component parts of a water supply system shall comply with those in the following table:

MINIMUM DISTANCE - FEET

Component	Building Sewer	Septic Tank	Distribution Box	Disposal Field	Seepage Pit	Cesspool
Well (a)	50	50	50	100 (b)	100 (b)	150
Suction Line	50	50	50	50	50	150
Water Supply Line	10	10	10	10	10	25

- (a) Where course soil or limestone formations are encountered, the distance from a subsurface sewage disposal system may be increased by the Administrative Authority to such point as may be necessary to protect public health.
- (b) Distances from disposal fields and seepage pits may be reduced to a minimum of 50 feet when the well is provided with an outside water-tight casing to a depth of 50 feet or more, or said casing extends and is sealed into an impervious stratum separating the water-bearing stratum from the stratum of soil used for sewage disposal.

3.3 Flooding. No part of any water supply system, except the intake and connection component of a surface supply, shall be located in an area subject to frequent surface water flooding or inundation.

3.4 Well Room. A well shall not be installed within the cellar or basement of any realty improvement. An offset basement pump and well room is not considered a part of the cellar or basement provided the floor of said offset room is at least 8 inches above the floor of the adjoining basement, and the offset room is constructed with a water-tight top so as to permit the removal of any part of the well construction or pumping equipment for maintenance and repair.

3.5 Pump Pits. Pump pits will be permitted if water-tight and provided with either a four-inch gravity drain to the ground surface or a sump pump. In no case shall a pump pit be located in or over a dug well.

Section 4  
WELL CONSTRUCTION

4.1 General. The design, selection, location and construction shall conform to the provisions of Sections 2 and 3 and as prescribed herein for specific types of wells.

4.2 Drilled Well.

4.2.1 Casing

- a) Material. Well casings shall be new standard wrought iron or steel well casing pipe. Well casings in excess of 6 inches in diameter, shall have a minimum wall thickness of 1/4 inch.
- b) Used or Reclaimed Pipe. Damaged, used or reclaimed pipe shall not be used in the construction or equipment of any well for an individual water supply. Pipe withdrawn from a well of new construction is not considered as used or reclaimed.
- c) Couplings. Each section of the casing shall be joined with standard drive-pipe couplings with ample full threaded joints or by proper welding so that all joints shall be closed and water-tight as installed in the well.
- d) Diameter. The minimum inside diameter of the well casing shall be four inches. The minimum diameter of the drill hole for the casing for rock wells shall be four inches greater than the diameter of the casing.

#### 4.2.2 Casing Depth

- a) **Water Table Wells.** In unconsolidated materials such as sand, gravel, silt, clay, or combinations thereof, the bottom of the casing shall extend at least 10 feet below the lowest seasonal stage with due allowance for drawdown of the static ground water table where yields of 10 gallons per minute can be obtained with pumping drawdown of 5 feet or less. For larger pumping capacities, the bottom of the casing shall extend a minimum of 10 feet below the pumping level for the desired yield with due allowances for seasonal fluctuations and for increased draft on the water-bearing formation. The casing shall be sealed securely in any tight or impermeable material encountered above the water-bearing formation.
- b) **Rock Wells.** The bottom of the casing and drill hole of rock wells shall extend a minimum distance of 10 feet into solid rock. The casing shall be securely driven into the solid rock and shall be firmly seated and sealed into said rock.
- c) **Limestone Rock Wells.** The casing for limestone rock wells shall extend to the approved source of supply and shall be protected as required and sealed into rock so as to exclude all unsuitable water from crevices located above the approved source of water.
- d) **Artesian Wells.** The casing for artesian wells shall extend through and be securely sealed into the impermeable stratum above the water-bearing formation.

#### 4.2.3 Screen

- a) All drilled wells shall be equipped with suitable noncorrosive screen, installed below the bottom of the water-tight casing or shaft lining and securely fastened when sand, gravel or other unconsolidated material is encountered in the water-bearing formation. The length and size of openings shall be satisfactory to develop the desired yield and to confine the sand or other loose material. The installation shall expose all of the slotted or porous area to the water-bearing formation.

#### 4.2.4 Sealing

- a) **Shallow Wells Other Than Rock Wells.** The annular opening for a minimum depth of 10 feet below the surface platform slab or pump-room floor shall be filled with concrete or puddled clay to provide a watertight collar around the casing at least 6 inches thick.
- b) **Rock Wells.** The annular opening between the casing and the drill hole shall be filled with a neat portland cement grout or a 1:1 ratio cement-sand grout of approved consistency extending from the bottom of the casing in the drill hole to the surface platform slab or pump-room floor. The grout mixture shall be placed in one continuous operation and shall be applied from the bottom upward so as to reduce voids to a minimum. The casing shall be centered in the drill hole, using guides if necessary, and shall be firmly seated on solid rock in the bottom of the drill hole with a neat cement grout.
- c) **Open Casings.** The seal between the pump base and concrete platform or pump-room floor shall be water-tight and all openings between the casing and the drop pipe shall be closed with an approved type of water-tight sanitary seal.
- d) **Closed Casings.** All closed casings shall be sealed and covered with an approved standard type of well seal and all openings through the casing for the pump discharge or drop-line shall be made with an approved standard type of seal. Vents, if required, shall be properly screened with the opening terminating in a downward direction.

#### 4.3 Driven Well

#### 4.3.1 Casing

- a) **Material.** Well casings shall be new standard wrought-iron or steel drive pipe.
- b) **Used or Reclaimed Pipe.** Damaged, used or reclaimed pipe shall not be used in the construction or equipment of any well for an individual water supply. Pipe withdrawn from a well of new construction is not considered as used or reclaimed.
- c) **Couplings.** Each section of the casing shall be joined with standard drive-pipe couplings with ample full threaded joints so that all joints shall be closed and water-tight as installed in the well.
- d) **Diameter.** The minimum inside diameter of the pipe casing shall be 14 inches.

#### 4.3.2 Casing Depth

- a) **Water Table Wells.** The top of the well point or the perforated section of the casing shall extend at least 10 feet below the lowest minimum seasonal stage of the static ground water table for driven wells of 2½ inches or less in diameter. For driven wells of greater diameter, the minimum depth shall conform to the provisions of Section 4.2.2.a for drilled wells.
- b) **Artesian Wells.** The water-tight casings for all artesian wells shall conform to the provisions of Section 4.2.2.a for drilled wells.

**4.3.3 Well Points.** The casing of all driven wells shall be equipped with a standard drive point and a well point or perforated section of sufficient length to develop the desired yield in the water-bearing formation.

**4.3.4. Methods of Construction.** No well or well point shall be driven with the assistance of a water jet without the written approval of the Administrative Authority.

- a) **Water Jet.** Water jets and the water supply may only be used upon approval by the Administrative Authority. The flow from the water jet shall be confined by an exterior wrought iron or steel casing conforming to the provisions of Section 4.5 for the construction of sunk wells. The exterior casing shall be centered on the drive pipe or well casing, and shall terminate above the ground water table and shall provide a diameter not more than 4 to 6 inches greater than the diameter of the drive pipe or well casing. The annular opening between the exterior casing and the drive pipe or well casing shall be filled with a neat portland cement or a 1:1 ratio cement-sand grout of proper consistency, carefully introduced as specified in Section 4.2.4b so as to reduce voids to a minimum. If desired, the exterior casing can be pulled as the grout mixture is introduced.
- b) **Bored Holes.** The annular opening between the bored hole and the drive pipe or well casing shall be filled with a neat portland cement or a 1:1 ratio cement-sand grout of proper consistency, carefully introduced as specified in Section 4.2.4.b so as to reduce voids to a minimum. The bored hole shall be centered on the drive pipe or well casing, shall terminate above the ground water table and shall provide a diameter not more than 4 to 6 inches greater than the diameter of the drive pipe or well casing.
- c) **Dug Holes.** The annular opening between the drive pipe or well casing and the undisturbed material around the edge of the hole shall be filled with concrete or puddled clay to provide a water-tight collar not less than 6 inches thick where the surface material has been disturbed during the construction.

- d) Bored Sunk or Dug Wells. All wells or well points driven in the bottom of a bored, dug or approved type of sunk well shall be sealed by a 24-inch thick, impermeable bed of concrete where the diameter of the well is more than 6 inches greater than the diameter drive pipe or well casing. For well diameters 6 inches or less, the drive pipe or well casing shall be sealed as specified in Section 4.2.4.a.

#### 4.3.5 Sealing

- a) Open Casings. The seal between the pump base and concrete platform or pump room floor shall be water-tight and all openings between the casing and the drop line shall be closed with an approved type of water-tight sanitary seal.
- b) Closed Casings. All closed casings shall be sealed and covered with an approved standard type of well seal and all openings through the casing for the pump discharge or drop-pipe shall be made with an approved standard type seal. Vents, if required, shall be properly screened with the the opening terminating in a downward direction.

4.3.6 Drop Line. A separate inside pipe 3 inches or more in diameter known as a drop line shall be installed in all drive pipe casings.

### 4.4 Bored Well

#### 4.4.1 Limitations

- a) Bored wells less than 20 feet in depth shall not be used for a semipublic water supply or for a private water supply to more than one realty improvement, or for any individual water supply in a locality where seepage pits or cesspools are used as a means of sewage disposal.
- b) Bored wells shall not be constructed in an artesian formation unless special precautions satisfactory to the Administrative Authority are provided to seal the casing into the impermeable stratum above the water-bearing formation.
- c) Water Jets or similar devices or procedures shall not be used in the construction of a bored well.

#### 4.4.2 Casing

- a) Material. Casings shall be constructed preferably of new standard steel black pipe, standard wrought iron or steel well casing pipe or corrugated iron or other sheet metal pipe. Reinforced concrete or cement-asbestos pipe may be used when approved by the administrative authority. Bell and spigot pipe, tile pipe, or stove pipe of any kind shall not be used. All metal pipe casing in excess of 6 inches in diameter shall have a minimum wall thickness of  $\frac{1}{4}$  inch.
- b) Used or Reclaimed Pipe. Damaged, used or reclaimed pipe shall not be used in the construction or equipment of any well for an individual water supply. Pipe withdrawn from a well of new construction is not considered as used or reclaimed.
- c) Joints. Each section of a metal pipe casing shall be welded or fastened with an appropriate, approved type of coupling to provide a closed, water-tight joint when installed in the well. Riveted joints are not permitted. Concrete and cement-asbestos pipe shall be laid with the inside spigot upwards to reduce leakage.
- d) Diameter. The minimum inside diameter of the casing shall be 3 inches where a screen or other type of perforated or porous casing is installed. Where the well is terminated at the bottom of the water-tight casing, the minimum inside diameter shall be such as to expose sufficient water-bearing surface to develop the required yield without disturbance of the water-bearing material.

#### 4.4.3 Casing Depth

- a) **Water Table Wells.** The minimum depth to the bottom of the watertight casing shall conform to the provisions of Section 4.2.2a for drilled wells except as otherwise authorized by the Administrative Authority, the depth of the bottom of the water-tight casing may be reduced to a minimum of 5 feet below the lowest minimum seasonal stage of the static ground water table, provided, however, that the bottom of the water-tight casing shall not be less than 20 feet below the surface of the ground.
- b) **Artesian Wells.** The minimum depth of the water-tight casing shall conform to the provisions of Section 4.2.2.d for drilled wells.

4.4.4 **Screen.** Unless otherwise authorized by the Administrative Authority, all bored wells shall be equipped with a screen or other type of suitable perforated or porous casing conforming to the provisions of Section 4.2.3. The minimum length of screen or substitute shall be 4 feet.

Where the water-tight casing is terminated at the bottom of the hole, the exposed water-bearing surface shall be protected by a layer of clean gravel at least 6 inches, or more, as may be specified by the Administrative Authority if necessary to protect public health.

#### 4.4.5 Construction of Bored Hole

- a) **Depth.** The bored hole shall extend from the surface of the ground into the water-bearing formation below the ground water table but not less than 20 feet in depth below the surface of the ground. Unless otherwise authorized by the Administrative Authority, the bored well shall provide sufficient depth below the water-tight casing for a screen or other type of perforated or porous casing acceptable to the Administrative Authority.
- b) **Diameter.** The minimum diameter of the bored hole shall be 4 to 6 inches greater than the maximum outside diameter of the casing for the entire depth of the water-tight casing except for water-tight metal casing where the depth may be reduced to a minimum of 10 feet below the surface of the ground with the consent of the Administrative Authority. For the balance of the hole, the diameter of the bored hole shall provide a close fit for the casing and screen where the latter is used.

#### 4.4.6 Sealing

- a) **Annular Opening.** The annular opening between the water-tight casing and the bored hole shall be filled for the entire depth with a 1:1 ratio cement-sand grout of proper consistency, carefully introduced as specified in Section 4.2.4.b so as to reduce voids to a minimum. For water-tight metal casings, soft puddled clay may be used with the consent of the Administrative Authority.
- b) **Open Casings.** The seal between the pump base and concrete platform or pump-room floor shall be water-tight and all openings between the casing and the drop pipe shall be closed with an approved type of water-tight sanitary seal.
- c) **Closed Casings.** All closed casings shall be sealed and covered with an approved standard type of well seal and all openings through the casing for the pump discharge or drop-line shall be made with an approved standard type of seal. Vents, if required, shall be properly screened with the opening terminating in a downward direction.

### 4.5 Sunk Wells

#### 4.5.1 Limitations

- a) The installation and use of sunk wells for individual water supply is limited to a private water supply in a locality where seepage pits or cesspools are not used as a means of sewage disposal. Special written

approval to make such an installation shall be obtained from the Administrative Authority.

- b) Sunk wells shall not be constructed or installed in any artesian formation.

#### 4.5.2 Casing

- a) Material. The water-tight casing shall be constructed of new, standard steel black pipe, standard wrought iron or steel well casing pipe or corrugated iron or other sheet metal pipe. Well casings in excess of 6 inches in diameter shall have a minimum thickness of  $\frac{1}{4}$  inch.
- b) Used or Reclaimed Pipe. Damaged, used or reclaimed pipe shall not be used in the construction or equipment of any well for an individual water supply. Pipe withdrawn from a well of new construction is not considered used or reclaimed.
- c) Joints. Each section of the casing shell shall be welded or fastened with an appropriate approved type of coupling to provide a closed, water-tight joint when installed in the well. Riveted joints are not permitted.
- d) Diameter. The minimum inside diameter of the casing shall conform to the provisions of Section 4.4.2.d for bored wells.

4.5.3 Casing Depth. The minimum depth to the bottom of the water-tight casing shall conform to the provisions of Section 4.4.3.a for bored wells.

4.5.4. Screen. Screens, if provided, shall conform to the provisions of Section 4.4.4 for bored wells.

#### 4.5.5 Method of Construction

- a) Jetting. All sunk wells shall be constructed so as to confine as far as practicable the erosive effect to the water jet within the casing and to maintain the bottom of the casing at all times at or below the jetting nozzle. Where substantial erosion is experienced outside of the casing, the use of a larger diameter casing may be specified by the Administrative Authority to reduce the annular opening between the casing and the undisturbed material. Special precautions shall also be taken to carry the liquid material away from the site of the well.
- b) Water Used During Construction. All water used during the construction of a well shall be of approved quality satisfactory to the Administrative Authority. Liberal chlorination of such water may be required.
- c) Depth. Unless otherwise authorized by the Administrative Authority, the sunk well shall provide sufficient depth below the water-tight casing for a screen or other type of perforated or porous casing acceptable to the Administrative Authority.

#### 4.5.6 Sealing

- a) Annular Opening. The annular opening between the water-tight casing and the bored hole shall be filled for the entire depth with a 1:1 ratio cement-sand grout of proper consistency, carefully introduced as specified in Section 4.2.4.b so as to reduce voids to a minimum. For water-tight metal casings, soft puddled clay may be used with the consent of the Administrative Authority.
- b) Open Casings. The seal between the pump base and concrete platform or pump-room floor shall be water-tight and all openings between the casing and the drop pipe shall be closed with an approved type of water-tight sanitary seal.
- c) Closed Casings. All closed casings shall be sealed and covered with an approved standard type of well seal and all openings through the casing

for the pump discharge or drop-line shall be made with an approved standard type of seal. Vents, if required, shall be properly screened with the opening terminating in a downward direction.

#### 4.6 Dug Well

##### 4.6.1 Limitations

- a) The installation and use of dug wells shall conform to the provisions of Section 4.5.1.a for sunk wells.
- b) Dug wells shall not be constructed or installed in any artesian formation.

##### 4.6.2 Casing

- a) **Material.** The water-tight casing or lining of a dug well shall be constructed of new, standard wrought iron or steel black pipe or other prefabricated lining of equal quality having a wall thickness of at least  $\frac{1}{4}$  inch; reinforced concrete pipe or equal when encased in a 4-inch reinforced concrete exterior water-tight lining; or stone, brick, concrete, cinder or terra cotta block when encased in a 6-inch reinforced concrete exterior water-tight lining. Other materials of construction acceptable to the Administrative Authority may be used so as to provide a water-tight construction of sufficient strength and durability to maintain the opening and withstand the loads imposed. The method of installation shall be satisfactory to the Administrative Authority.

4.6.3 **Casing Depth.** The minimum depth to the bottom of the water-tight casing shall conform to the provisions of Section 4.4.3.a for bored wells.

4.6.4 **Excavation.** The excavation shall provide a smooth, vertical shaft, of adequate size for the installation of the type of casing or lining selected. The face of the hole shall be shored and braced as required to maintain the natural stability of the soil. Where a pipe or other type of prefabricated casing is used as an open caisson, the excavation shall provide an annular space of not less than 2 inches or more than 6 inches around the outside of the casing for the depth of the water-tight casing.

4.6.5 **Porous Casing. (screen).** At the point where the dug well extends below the bottom of the water-tight casing into the water-bearing formation, the hole shall be lined from the bottom of the hole to the bottom of the water-tight casing with a loose jointed perforated metal or other type of permeable or porous casing satisfactory to the Administrative Authority.

- a) **Length.** The porous casing shall be of sufficient length to expose all the porous area to the water-bearing formation.
- b) **Material.** All material shall be new, clean and undamaged and shall provide sufficient strength and durability to maintain the opening and withstand the loads imposed, including that of the water-tight casing. Stone, brick or concrete, cinder, terra cotta block may be used for loose jointed casings. Metal casings shall have a minimum wall thickness of  $\frac{1}{4}$  inch.

4.6.6 **Casing Construction.** All concrete shall be composed of 1 part portland cement, 1- $\frac{1}{2}$  parts sand and 3 parts gravel by volume of proper consistency to provide a dense, water-tight wall. Unless otherwise authorized by the Administrative Authority, the entire concrete wall shall be poured in one continuous operation and, in no case, with a construction joint less than 10 feet below the natural surface of the ground. Concrete shall be applied from the bottom upwards so as to reduce voids to a minimum. The completed wall shall be free of honey-combing.

- a) **Poured-in-place Concrete Wall.** Unless otherwise authorized by the Administrative Authority, all poured concrete wall casings should be poured against undisturbed earth and no outside form used. Where outside forms are permitted, all pieces of the outside form shall be carefully removed and the

annular space between the exterior of the poured casing and the undisturbed earth shall be sealed with concrete or a 1:1 ratio cement-sand grout for the first 10 feet above the bottom of the water-tight casing and for the balance of the depth with puddled clay, concrete or other acceptable material, in a manner satisfactory to the Administrative Authority.

- b) Metal Pipe or Other Prefabricated Lining. Each section of the casing shall be welded or fastened with an appropriate approved type of coupling to provide a closed, water-tight joint when installed in the well. No riveted joints shall be permitted. The casing shall be centered in the dug hole which shall provide an annular space between the exterior face of the casing and the undisturbed earth of not less than 2 inches. Where required, the annular space shall be reamed to remove and compact the loose material in the bottom of the hole and shall be filled for the entire remaining depth (not less than 10 feet) with a 1:1 ratio cement-sand grout of proper consistency, carefully introduced as specified in Section 4.2.4.b so as to reduce voids to a minimum.
- c) Concrete Pipe or Stone, Brick or Block Lining. The exterior concrete casings shall be poured against the undisturbed earth face of the excavated hole. No outside form shall be used.
- d) Poured Casings. Loose jointed linings shall be constructed firmly against the undisturbed face of the hole and shall be of sufficient thickness to align the inside face with that of the water-tight lining. For perforated metal casings, the hole shall provide a close fit.

Where the bottom of the water-tight casing is terminated at the bottom of the hole, the exposed water-bearing surface shall be protected by a layer of clean gravel, 12 inches or more in thickness, as specified by the Administrative Authority.

#### 4.6.7 Sealing

- a) Open Casing. For the ordinary type of dug well with the water-tight casing extending to the surface of the ground, the top of the open casing shall extend not less than 6 inches above the finished surface grading of the ground. The open casing shall be covered and sealed with a reinforced concrete slab platform 4 to 6 inches thick and shall extend at least 6 feet greater in diameter than the well excavation with a slope of at least 1 inch from the well casing to the edge of the concrete.

The joint between the slab and top of well casing shall be sealed and made water-tight. A 1-foot length of 5-inch wrought iron or steel pipe or well casing, with the upper end threaded for a cap, shall be placed in a vertical position in the center of the slab when it is cast for the drop pipe. The top of casing shall extend not less than 6 inches above finished grade of the concrete cover slab. The seal between the pump base and the cover slab shall be water-tight and all openings between the 6-inch casing pipe and the drop pipe shall be closed with approved type of water-tight sanitary seal. Similar provisions, satisfactory to the Administrative Authority, shall be made for drop pipe connections through the side wall of the water-tight casing.

- b) Closed Casings. When the water-tight casing is terminated and capped below the surface of the ground, as in the case of buried dug wells, the casing shall be covered and sealed by a reinforced concrete slab, 4 to 6 inches thick, conforming to the provisions of Section 4.6.7.a for open type casings. The joint between the slab and the well casing shall be sealed and made water-tight by a metal strip or plastic compound. A length of 5-inch pipe or well casing placed in the slab is laid to at least 6 inches above the finished grade of the pump room floor or concrete platform. The seal between the pump base and concrete platform slab or pump-room floor and between the drop pipe and the 5-inch casing shall conform to the provisions of Section 4.6.7.a.

## Section 5

### SPRINGS, CISTERNS AND SURFACE SUPPLIES

#### 5.1 Springs

5.1.1 Construction. Springs shall be enclosed by walls and covers constructed of impervious concrete or other relatively water-tight material and installed so as not to restrict the flow of water into the basin.

- a) The walls of the spring encasement shall be extended above the elevation of the surrounding ground to prevent the entrance of surface water. Diversion ditches on the uphill side shall be installed if necessary. An overflow drain shall be placed near the top of the casement.
- b) The discharge or pump intake pipe shall be installed so that the lowering of the water level within the casement will not permit the entrance of surface water.
- c) The cover shall be movable or in case of a large encasement, a water-tight covered manhole shall be provided so that the interior can be serviced.

#### 5.2 Cisterns

5.2.1 Limitation. Cisterns may be permitted where ground water is unavailable.

5.2.2 Construction. Cisterns shall be enclosed by walls and covers constructed of metal or impervious brick, stone or concrete, and may be constructed above or below ground level, depending upon local conditions governing such a decision. Manholes shall be provided for all cisterns to permit cleaning.

5.2.3 Supply Line. The supply line to the cistern shall contain a switch so that the first washings of the roof can be wasted.

5.2.4 Overflows. The overflow pipe shall be screened with 16-mesh copper cloth. The inside end of the overflow pipe shall extend to the bottom of the cistern.

5.2.5 Filters. Filters employing coarse gravel shall be provided between the supply line and the cistern to prevent the entrance of insects and other matter, not removed from the roof and gutters by the first washing, from entering the cistern.

5.2.6 Discharge Line. The discharge or pump suction line shall be installed so that the opening through which it passes can be provided with a water-tight seal.

5.2.7 Disinfection. Disinfection of cistern water may be required by the Administrative Authority if in their opinion the catchment area can not be washed and wasted properly.

#### 5.3 Surface Water Supply

5.3.1 Limitations. A surface water supply for a realty improvement is not recommended and may only be permitted when the supply is not subject to direct pollution from sewage, industrial waste or other sources of contamination and when adequate continuous operating treatment facilities are to be employed.

5.3.2 Treatment. Treatment of surface water shall consist of filtration and chlorination.

5.3.3 Treatment Plant Design. The treatment plant shall be designed to provide the quantity of water as determined in the table in Section 2.2 of these standards and generally consist of the following principal units:

1. Raw water intake line.
2. Raw water pump if required.
3. Filter.
4. Filtered water storage basin.
5. Chlorinator.

6. Filtered water pump.

7. Pressure or gravity tank.

5.3.4 Chlorine Residual Testing Kit. A chlorine residual testing kit shall be provided employing the chemical "orthotolidine" and permanent color standards having the range of 0.05 to 1.0 parts per million.

5.3.5 Chlorine Residual Required. The proper amount of chlorine shall be added to the filtered water to produce a safe water. This amount should be determined through bacteriological samples containing varying amounts of chlorine as determined by the chlorine residual test. Generally the filtered water leaving the filtered water storage basin should contain a chlorine residual of from 0.3 p.p.m. to 0.5 p.p.m.

## Section 6 PUMPS AND EQUIPMENT

6.1 Type and Capacity. Type and capacity of the pump and equipment (motor, drop pipes, foot valve, cylinder, storage tank, etc.) used shall be selected to meet the condition of the well and the requirements of the property served.

- a) The equipment used with the pump shall be in accordance with the pump manufacturers recommendations as to type, size and kind.
- b) Suction or shallow-well pumps shall not be used where the maximum suction head exceeds 22 feet.

6.2 Location. Location of the pump and all equipment shall be such as will permit convenient access and removal for maintenance and repair.

- a) Where a shallow well is placed in the basement or where a deep-well pump for a drilled or driven well is in an offset-basement pump room, the pumping equipment and the top of the drilled or driven-well casing shall be located not less than 18 inches above the basement floor.
- b) When possible the pump shall be located and designed as to make the use of a pump pit unnecessary; however, if used the pit shall be provided with either a 4-inch gravity drain to the ground surface or a sump pump.

6.3 Installation. Installation of the pump and equipment shall be satisfactory to the Administrative Authority and shall conform with the following:

- a) The pump and equipment shall be designed and installed to assure a pollution-proof and, where necessary, a frost-proof installation.
- b) The pump base shall be constructed so as to permit installation of a water-tight mounting.

6.4 Seal

6.4.1 Below Grade. When the top of well casing is below grade the seal shall be so constructed and installed as to maintain its water-tight feature.

6.4.2 Air Vent. An air vent shall not be permitted in a below grade installation, and only in an above grade installation where required by the Administrative Authority.

6.4.3 Suction Lines. Suction lines installed through the well casing or where otherwise required, shall be constructed with a wrought iron pipe sleeve set water-tight into the casing. The suction line shall be caulked into the sleeve providing a water-tight joint which will permit easy removal. The suction line shall slope upward toward the pump.

## Section 7 DISTRIBUTION

7.1 Storage. Water shall be stored only in impervious tanks protected against surface drainage. All tanks shall be provided with water-tight covers and any

overflow or ventilation openings shall be covered with a metallic screen of not less than 16-mesh to prevent the entrance of insects and vermin. No storage tank shall have a drainage connection directly to a sewer.

7.2 Installation. The distribution system shall conform to recognized and generally accepted engineering practices.

### 7.3 Identification - Piping

7.3.1 Identification of each piping system shall be in accordance with 7.3.2 and 7.3.3 when potable and nonpotable water are used on the same premises, or where other piping systems are present as in commercial or industrial plants.

7.3.2 Potable water piping systems shall be identified by solid green color bands, painted at conspicuous places throughout the piping system.

7.3.3 Nonpotable water and other piping systems shall be identified by color banding in accordance with the "American Standard Scheme for Identification of Piping Systems" published by the American Society of Mechanical Engineers, 29 West 39th Street, New York 8, N. Y. (ASA-A13-1928 Reaffirmed 1947), excepting that where the solid green banding is recommended, an additional color stripe shall be employed.

7.3.4 Each and every outlet of a nonpotable water supply shall be conspicuously identified by the posting and maintaining of a permanent sign or notice reading "Not for Drinking or Culinary Purposes."

### 7.4 Protection of Potable Water Supply

7.4.1 Water from approved public potable water supplies, nonpotable water supplies or water supplies from a private source acceptable to the Administrative Authority shall be distributed through piping systems entirely independent of each other. Cross connections or physical connections between an approved public potable water supply and an unapproved water supply are prohibited unless approved by the State Department of Health in accordance with the provisions of Chapter 308, P.L. 1942 (N.J.S.A. 58:11-9.1 et seq.).

7.4.2 Individual or semipublic water supplies acceptable to the Administrative Authority shall not be physically (cross) connected to water supplies not having such acceptance.

## Section 8

### REQUIREMENTS FOR CERTIFICATION

#### 8.1 Individual Water Supply and System

8.1.1 Basic Information Required. Applications for certifications of individual water supplies and systems for one to ten realty improvements fronting on an existing "street" as defined in Section 2 of the Municipal Planning Enabling Act (1953), shall be made in writing, and upon a formal application form when provided by the Administrative Authority, and contain the following information:

- a) A description of the proposed water supply system covering the following items:
  1. Type of well or source of water supply (drilled, driven, spring, surface, etc.).
  2. Estimated depth of well.
  3. Method of sealing.
  4. Pumping equipment.
  5. Storage facilities.
  6. Purification facilities if required.
- b) A sketch of the property to be served by the individual water supply showing the following.

1. Size of lot.
2. Location of all buildings.
3. Location of the proposed individual water supply.
4. Location of the sewerage facilities.

8.1.2 Additional Information Required. Applications for certification of individual water supplies and systems for realty improvements not covered in 8.1.1 and 8.2.1 shall submit the following information in addition to that required in 8.1.1:

- a) A plan of the subdivisions showing the following:\*
  1. Lots with their dimensions.
  2. Contours of original grades.
  3. Proposed elevations of the final grading shown at lot corners or any contemplated change of slope.
  4. Location of all test wells drilled to investigate water supply potentialities.
  5. Location of all natural streams, and storm water drainage channels on or abutting the subdivision and of any contemplated relocation of same.
  6. Location when less than ½ mile from the high water line along the coast and all salt water estuaries and elevation of maximum high water where available.
  7. Location of storm and sanitary sewers.
  8. Location of all private and public water supplies within 1,000 feet of the subdivision.

## 8.2 Semipublic Water Supply and System

8.2.1 Information Required. An application for certification of a water supply and system to serve less than 20 realty improvements and for any other realty improvements included under the definition of a Semipublic Water Supply System shall be made in writing and upon a formal application form when provided by the Administrative Authority, and contain the following information:

- a) For a semipublic water supply and system to serve less than 20 realty improvements:
  1. A description of the proposed water supply system covering the following items:
    - a) Type of well or source of water supply (drilled, driven, dug, surface, etc.).
    - b) Estimated depth of well.
    - c) Method of Sealing.
    - d) Pumping equipment.
    - e) Storage equipment.
    - f) Purification facilities if required.
    - g) Number of realty improvements to be served.
    - h) Size of water main proposed.
    - i) Estimated water demand in gallons per day and basis for estimate.
  2. A sketch of the property upon which the water supply is located showing:
    - a) Location of water supply.
    - b) Location of sewerage facilities within 50 feet of the water supply.
    - c) Location of buildings.

\* The plan of the subdivision to be submitted for certification of sewerage facilities may be used for this purpose.

- b) For a semipublic water supply and system to serve all other realty improvements in this classification:
1. A description of the proposed water supply and system covering the following items:
    - a) Type of realty improvement to be served.
    - b) Type of well or source of water supply (drilled, driven, dug, surface, etc.).
    - c) Estimated water demand in gallons per day and basis for estimate.
    - d) Estimated depth of well.
    - e) Method of sealing.
    - f) Pumping equipment.
    - g) Storage facilities.
    - h) Purification facilities if required.
  2. A sketch of property to be served by the water supply and system showing the following:
    - a) Size of lot.
    - b) Location of buildings.
    - c) Location of proposed water supply.
    - d) Location of sewerage facilities.

### 8.3 Fifty or More Realty Improvements

8.3.1 Copies of all applications and accompanying engineering and other information herein required for certification of water supply systems for 50 or more realty improvements shall be filed with or mailed to the District State Health Office serving the county in which the subdivision and realty improvements are located by the applicant on the date the application is made to the board of health.

## Section 9 ADMINISTRATION

9.1 License or Permits. Water supplies shall not be located, constructed or altered until the Administrative Authority or its authorized agent has issued a license or permit for such location, construction or alteration.

9.2 Application. A properly executed application on a form when supplied by the Administrative Authority shall be submitted to that Authority. Such application shall be a prerequisite for certification of the water supply and shall include the data specified in the applicable parts of Section 8 of this Code. The Administrative Authority or its authorized agent shall examine the application to determine whether the proposed location, construction or alteration of the water supply complies with the provisions of this Code. If compliance is found, the Administrative Authority shall issue a permit for location, construction or alteration to the applicant.

9.3 Revised Plans. Revision of plans or proposed water supplies shall be approved only with the written consent of the Administrative Authority, or its authorized agent. The Administrative Authority, or its authorized agent, may require such revision of plans as it deems necessary if conditions found prior to or during construction warrant such change in order to obtain compliance with the provisions of this Code.

9.4 Construction Inspections. The Administrative Authority, or its authorized agent, shall make sufficient inspections during the construction or alteration of a water supply to determine compliance with the terms of the license or permit.

9.5 Water Quality. Upon completion of construction or alteration of a water supply the Administrative Authority, or its authorized agent, shall collect a sufficient number of samples for analyses to determine whether the water meets the

"Potable Water Standards." In no instance shall a "Certificate of Compliance" be issued for a water supply failing to satisfy the "Potable Water Standards."

9.6 Certificate of Compliance. A water supply shall not be placed in service until a certificate has been issued by the Administrative Authority or its authorized agent indicating that the said supply has been located and constructed in compliance with this Code and that the water meets the "Potable Water Standards." The building inspector or similar official of the municipality who is responsible for the issuance of occupancy permits shall be furnished a copy of this certificate.

The issuance of a certificate of compliance shall constitute certification that the water supply has been located and constructed in compliance with this Code. It shall not in any way restrict the powers or responsibilities of the Administrative Authority in the enforcement of any law or ordinance relating to public health.

9.7 Proposed Design or Construction not Conforming to Code. Proposed design or construction features of a water supply differing from the provisions of this Code may be approved upon submission of evidence to the satisfaction of the Administrative Authority that public health or safety would not be affected adversely by such design or construction and such proposed design or construction features did not permit lower standards than those required under the Standards for Construction of Water Supply Systems for Improvements under authority of Chapter 199, P.L. 1954.

9.8 Supervision. The Administrative Authority, or its authorized agent, shall cause such inspections and samplings of a water supply to be made as may be deemed necessary from time to time.

**Members of Water Supply Code Committee Which Wrote  
Code Approved by State Commissioner of Health**

**Anthony T. Leahey, Chairman.**  
Principal Public Health Engineer, Division of Environmental Health,  
New Jersey State Department of Health.

**Howard Abbott, Principal Sanitarian**  
Food and Drug Programs, Division of Environmental Health,  
New Jersey State Department of Health.

**Thomas DeAngelo, Health Officer, Perth Amboy.**

**Charles Foulk, II, formerly Health Officer of Englewood,**  
deceased.

**William F. Kearney, Chief Sanitary Inspector,**  
Paterson Board of Health.

**Lewis W. Klockner, Sr., Superintendent.**  
Water Department, City of Trenton.

**George E. Laubach, Health Officer, Elizabeth.**

**John McNally, Principal Public Health Engineer.**  
Metropolitan State Health District,  
New Jersey State Department of Health.

**Edward D. Sheehan, Superintendent.**  
Water Department, City of Camden.

## APPENDIX

## SUGGESTED FORM

No.

## BOARD OF HEALTH

Application for a (Permit) (License) to Locate and Construct an Individual Water Supply and System

Date

Owner:

Address:

Address at which supply is to be located and constructed

Name and address of contractor:

Type of well or source of water supply

Estimated depth of well

Method of sealing

Pumping equipment

Storage facilities

Purification facilities

Attach a sketch of the property to be served showing the following:

- a. Size of lot
- b. Location of all buildings
- c. Location of the proposed individual water supply
- d. Location of sewerage facilities

Note: Applications for certification of individual water supplies and systems for realty improvements not covered in Sections 8.1.1 and 8.2.1 of this Code shall submit the following additional information:

A plan of the subdivision showing the following: \*

Lots with their dimensions

Contours of original grades

Proposed elevation of the final grading shown at corner lots or any contemplated change of slope.

Location of all test wells drilled to investigate water supply potentialities.

Location of all natural streams, and storm water drainage channels on or abutting the subdivision or any contemplated relocation of same

Location when less than  $\frac{1}{2}$  mile from the high water line along the coast and all salt water estuaries and elevation of maximum high water when available.

Location of all private and public water supplies within 1000 feet of the subdivision.

Location of storm and sanitary sewers.

\* The plan of the subdivision to be submitted for certification of sewerage facilities may be used for this purpose.

The undersigned agree to construct the aforescribed water supply in accordance with the provisions of an ordinance entitled: "AN ORDINANCE establishing a code regulating the location, construction, alteration, use and supervision of individual and semipublic water supplies, requiring certain permits, providing for the inspection of such supplies, the fixing of fees and prescribing penalties for violations" adopted by the Board of Health of \_\_\_\_\_ on (date).

Owner: \_\_\_\_\_

Contractor: \_\_\_\_\_

### SUGGESTED FORM

No.

BOARD OF HEALTH \_\_\_\_\_

Application for (Permit) (License) to Alter a Water Supply

Date:

Owner:

Address:

Address at which supply is to be altered:

Name and address of contractor:

Describe the water supply in detail

Nature of alteration (describe in detail)

Attach a sketch of the property upon which the water supply to be altered is located:

- a) Location of water supply
- b) Location of all buildings
- c) Location and type of sewerage facilities

The undersigned agree to alter the aforescribed water supply in accordance with the provisions of an ordinance entitled: "AN ORDINANCE establishing a code regulating the location, construction, alteration, use and supervision of individual and semipublic water supplies requiring certain permits, providing for the inspection of such supplies, the fixing of fees and prescribing penalties for violations," adopted by the Board of Health of \_\_\_\_\_ on (date).

Owner: \_\_\_\_\_

Contractor: \_\_\_\_\_

*SUGGESTED FORM*

No.

## BOARD OF HEALTH

Application for a (Permit) (License) to Locate and Construct a Semipublic Water Supply and System

Date:

Owner:

Address:

Address at which supply is to be located and constructed:

Name and address of contractor:

- A) For a semipublic water supply and system to serve less than 20 realty improvements:
- 1) A description of the proposed water supply system covering the following items:
    - a) Type of well or source of water supply (drilled, driven, dug, surface, etc.)
    - b) Estimated depth of well.
    - c) Method of sealing.
    - d) Pumping equipment.
    - e) Storage equipment.
    - f) Purification facilities if required.
    - g) Number of realty improvements to be served.
    - h) Size of water main proposed.
    - i) Estimated water demand in gallons per day and basis for estimate.
  - 2) A sketch of the property upon which the water supply is located showing:
    - a) Location of water supply.
    - b) Location of sewerage facilities within 50 feet of the water supply.
    - c) Location of buildings.
- B) For a semipublic water supply and system to serve all other realty improvements in this classification:
- 1) A description of the proposed water supply and system covering the following items:
    - a) Type of realty improvement to be served.
    - b) Type of well or source of water supply (drilled, driven, dug, surface, etc.).
    - c) Estimated water demand in gallons per day and basis for estimate.
    - d) Estimated depth of well.
    - e) Method of sealing.
    - f) Pumping equipment.
    - g) Storage facilities.
    - h) Purification facilities if required.

- 2) A sketch of property to be served by the water supply and system showing the following:
  - a) Size of lot.
  - b) Location of buildings.
  - c) Location of proposed water supply.
  - d) Location of sewerage facilities.

The undersigned agree to construct the aforescribed semipublic water supply in accordance with the provisions of an ordinance entitled: "AN ORDINANCE establishing a code regulating the location, construction, alteration, use and supervision of individual and semipublic water supplies, requiring certain permits, providing for the inspection of such supplies, the fixing of fees and prescribing penalties for violations" adopted by the Board of Health of \_\_\_\_\_ on (date).

Owner: \_\_\_\_\_

Contractor: \_\_\_\_\_

**SUGGESTED FORM**

No.

BOARD OF HEALTH OF \_\_\_\_\_

(License) (Permit) TO LOCATE AND CONSTRUCT OR ALTER  
A WATER SUPPLY

PERMISSION IS HEREBY GRANTED \_\_\_\_\_  
Name of Owner or Contractor

locate and construct  
to \_\_\_\_\_ a water supply  
 alter

at Block No. \_\_\_\_\_ Lot No. \_\_\_\_\_ Street \_\_\_\_\_ as shown on

Application for Permit to Locate and Construct a Water Supply

Number

Application for Permit to Alter a Water Supply

Dated \_\_\_\_\_, in accordance with the provisions of an ordinance entitled:

"AN ORDINANCE establishing a code regulating the location, construction, alteration, use and supervision of individual and semipublic water supplies, requiring certain permits, providing for the inspection of such supplies, the fixing of fees and prescribing penalties for violations."

Board of Health of \_\_\_\_\_

Date: \_\_\_\_\_

Administrative Officer \_\_\_\_\_

MAY, 1959

## SUGGESTED FORM

No. \_\_\_\_\_

BOARD OF HEALTH OF \_\_\_\_\_

## CERTIFICATE OF COMPLIANCE

Issued to \_\_\_\_\_  
Name of Owner or Contractor

Address

 THIS IS TO CERTIFY, That the Water Supply Installed by  
 \_\_\_\_\_ At Block No. \_\_\_\_\_ Lot No. \_\_\_\_\_ or  
 \_\_\_\_\_ In the (municipality) has been constructed in  
 No. Street

accordance with the provisions of an ordinance entitled: "AN ORDINANCE establishing a code regulating the location, construction, alteration, use and supervision of individual and semipublic water supplies, requiring certain permits, providing for the inspection of such supplies, the fixing of fees and prescribing penalties for violations," adopted by the Board of Health of \_\_\_\_\_ (date) and as described in the Application for Permit to Locate and Construct or Alter A Water Supply. No. \_\_\_\_\_ Dated \_\_\_\_\_ or as the Board of Health of \_\_\_\_\_ has directed.

The issuance of this certificate shall not be construed as a guarantee that the water supply will function satisfactorily nor shall it in any way restrict the powers or responsibilities of the Board of Health in the enforcement of any law or ordinance relating to public health.

Board of Health \_\_\_\_\_

\_\_\_\_\_  
Administrative Officer

Date \_\_\_\_\_

### Children's Bureau Booklet Available on Gifted Child

The Children's Bureau of the U.S. Department of Health, Education, and Welfare announced in January that it has published a booklet entitled "Your Gifted Child."

The announcement said the publication reflects the belief of the Children's Bureau that long-range planning for gifted children should begin early in their formative years. It is written for parents but it is also expected to be useful to tea-

chers and physicians who deal with children.

The publication was reviewed by more than 100 persons, including educators, parents of gifted children, and gifted children themselves. Reviewing groups included the National Association of Gifted Children, the Association for Childhood Education, and the U.S. Office of Education.

Copies of "Your Gifted Child" may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. for 20 cents each.

## LARGE SIGN TO IDENTIFY APPROVED BATHING AREAS

A sign 22 inches high and 16 inches wide, reproduced in miniature on this page, will be made available this year by the New Jersey State Department of Health to proprietors of lake bathing areas who comply with standards of the Department.

Requirements for compliance are that the bathing water shall be of good quality, the general sanitation of the area must be good, and there must be adherence to safety considerations.



**THIS**

**BATHING LAKE  
MEETS STANDARDS  
OF THE  
NEW JERSEY STATE  
DEPARTMENT OF HEALTH**

The proprietor will be responsible for periodic sampling and subsequent bacteriological analysis of the bathing waters. Sanitation and safety will be evaluated by local health personnel and District personnel of the State Department of Health.

Ernest Segesser, Coordinator of the Camp and Bathing Program of the De-

partment, said this is the first year the Department has made the signs available. The signs help the general public to identify those lake bathing places which meet the standards of this Department. In previous years, the Department has awarded certificates of compliance to those proprietors who meet the standards and that will be done again this year.

Segesser also said that in previous years this effort was confined largely to the lake bathing areas in northern New Jersey on a demonstration basis. This year there will be an effort to make the program statewide.

The Department agreed to provide the signs as a result of a request from the Lakeland Waters Association. Members said there has been no readily apparent evidence to help the general public differentiate between areas which meet State Health Department standards and those which do not. The sign constitutes such evidence.

The Department will also give to the press the names and addresses of those lake bathing areas whose proprietors are awarded certificates of compliance.

— 0 —

## Veterinarians Establish Association Bulletin

Initial Issue of the *New Jersey Veterinarian*, a bulletin published by the Veterinarian Medical Association of New Jersey, was distributed in March. Emphasis in the first issue was on relation of the profession to public health activities.

Mathew W. Bonese, D.V.M., of Mullica Hill, is editor. Dr. Bonese is Assistant Chief, Bureau of Veterinary Public Health, State Department of Health.

*in New Jersey*  
**OPEN DUMPS**  
*are*  
**DISAPPEARING**

This is the title of a special report distributed in April dealing with the development of sanitary landfills in New Jersey as substitutes for open dumps.

Copies have been sent to municipal governing bodies, to local boards of health, to local health officers, to members of the Legislature, and others likely to be interested.

Additional copies may be secured, through District Offices of the Department, by boards of health or health officers who can make productive use of them. The supply is limited.

New Jersey State Department of Health  
Trenton 25, New Jersey

*To Postmaster:*

BUREAU MATERNAL AND CHILD HEALTH

RECEIVED

MAY 19 1959

FORWARD TO: \_\_\_\_\_