



DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH SERVICE
Manila, Philippines
1995

**IMPLEMENTING RULES AND
REGULATIONS OF CHAPTER II**

WATER SUPPLY

**OF THE CODE ON
SANITATION OF THE PHILIPPINES
(P.D. 856)**

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**Implementing Rules and Regulations of
Chapter II – “Water Supply” of the Code
on Sanitation of the Philippines
(P.D. 856)**

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30 October 1995

IMPLEMENTING RULES AND REGULATIONS OF CHAPTER II – “WATER SUPPLY” OF THE CODE ON SANITATION OF THE PHILIPPINES (P.D. 856)

To carry out the provisions of Chapter II – “Water Supply” of the Code on Sanitation of the Philippines, these rules and regulations are hereby formulated for implementation and strict compliance of all concerned.

SECTION 1 : SCOPE

These implementing rules and regulations shall apply to all public and private water supply system project planned by any government agency or instrumentality including government-owned or controlled corporations, private organizations, firms, individuals or other entities.

SECTION 2 : DEFINITION OF TERMS

As used in these rules and regulations, the terms below shall be defined as follows:

1. **Artesian Well** – a well where water is confined under hydrostatic pressure between two relatively impervious layers such as rock formations.
2. **Bored well** – a well constructed by manually driven augers into the ground.
3. **Cistern** – a water-tight tank used to store water.
4. **Coliform Organisms** – any rod-shaped, non-spore-forming, gram negative bacteria capable of growth in the presence of bile salts, or other surface-active agents with similar growth-inhibiting properties which are cytochrome-oxidase negative and able to ferment lactose at either 35°C or 37°C with the production of acid, gas and aldehyde within 24-48 hours.
5. **Complete Treatment** – a series or combination of water treatment processes which shall include coagulation, adsorption, sedimentation, slow and rapid sand filtration, aeration and chlorination.
6. **Contamination** – a general term referring to the introduction of materials not normally found in water that make the water less desirable or unfit for its intended use.
7. **Deep Well** – a well with depth greater than 20 meters constructed in areas characterized by aquifers or water-bearing formations generally located at a depth of more than 20 meters below ground surface.
8. **Department** – the Department of Health.
9. **Disinfection** – water treatment processes designed to destroy disease-causing organisms. The efficacy of disinfection is often assessed by measuring the coliform group of indicator organism.

10. **Doubtful Source** – a water supply facility or source that is subject to recontamination (e.g. open dug well, unimproved spring, surface water).
11. **Drilled Well** – a well constructed by percussion or rotary drills.
12. **Drinking Water** – water intended for direct human consumption or for use in food preparation.
13. **Driven Well** – a well constructed by driving an iron pipe with a well point at lower end into the ground water bearing stratum.
14. **Dug Well** – a well normally circular or rectangular in shape, with diameter ranging from 1 to 1.5 meters. After the well is dug, it is necessary to put a lining made of permanent materials like masonry, brickworks of reinforced concrete which serve as protection against surface or outside contamination. An open dug well shall mean a well dug manually or mechanically to draw water by use of bucket or any container attached to a rope.
15. **Groundwater** – that portion of the rainwater which has percolated into the earth to form underground deposits called aquifers.
16. **Level I (point source)** – a protected well or a developed spring with an outlet but without distribution system, generally adaptable for rural areas where the houses are thinly scattered. A Level I facility normally serves around 15 households.
17. **Level II (communal faucet system or standposts)** – a system composed of a source, a reservoir, a piped distribution network and communal faucets, generally suitable for rural and urban fringe areas where houses are clustered densely to justify a simple piped system. Usually, one faucet serves 4 to 6 households.
18. **Level III (waterworks system or individual house connections)** – a system with a source, a reservoir, a piped distribution network and household taps, generally suited for densely populated urban areas.
19. **Local Health Authority** – a government official or employee responsible for the application of a prescribed health measure in a local political subdivision. It is the provincial governor, city or municipal mayor, as the case maybe.
20. **Local Health Officer** – the provincial, city or municipal health officer.
21. **MPN (Most Probable Number)** – a statistical method of determining microbial populations. A multiple dilution tube technique is utilized with a standard medium and observations are made for specific individual tube effects. Resultant coding is translated by mathematical probability tables into population numbers.
22. **Pipe Lines** – pipes used to transport water.

23. **Polluted Water** – water whose physical, chemical, bacteriological, biological and radioactive properties have been altered due to the presence of domestic sewage, industrial waste or other substances in water that are possibly objectionable or harmful to human lives.
24. **Potable Water/Safe Drinking Water** – water that is free of microorganisms or disease-producing bacteria (pathogens). In addition, the water should not possess undesirable taste, odor, color, levels of radioactivity, turbidity or chemicals and it should pass the standards of the Philippine National Standards for Drinking Water.
25. **Public or Private Water Supply System** – a government or private owned system for the provision of potable water for human consumption. The water system could either be of Level I (point source), Level II (communal) or Level III (waterworks) type. The system includes a) any collection, treatment, storage and distribution facilities under the control of the operator of such system and used primarily in connection thereto; and b) any collection, pre-treatment, or storage facilities not under the control of the operator of the system which are used primarily in connection with such system.
26. **Reservoir** – a pond, lake or basin, either natural or artificial, designed for storage, regulation and control of water.
27. **Sanitary Engineer** – a person duly registered with the Board of Examiners for Sanitary Engineers (R.A. 1364) and who heads the sanitation division or section or unit of the provincial/city/municipal health office or employed with the Department of Health or its regional field health units.
28. **Sanitary Seal** – a mixture of cement and water placed in the annular space of the well casing and drillhole to seal space and about 3 meters deep to prevent the intrusion of water.
29. **Sanitary Survey** – an activity to inspect and investigate the existing environmental conditions around the water source which may affect the quality of the water.
30. **Sanitation Inspector** – a government official or personnel employed by the national, provincial, city or municipal government, who enforces sanitary rules, laws and regulations and implements environmental sanitation activities under the supervision of the provincial/city/municipal health officer/sanitary engineer.
31. **Secretary** – the Secretary of Health.
32. **Shallow Well** – a well measured from the natural ground surface with a depth of not more than 20 meters.
33. **Springs** – ground water seepage visible at the earth's surface due to hydrostatic gradient or head.
34. **Surface Water** – a mixture of surface run-off and groundwater. Surface sources include rivers, lakes, streams, ponds and impounding reservoirs.

35. **Test Well** – an excavation made to determine the quality and quantity of water.
36. **Water Hauler** – any person, firm or company who transports, stores, delivers and operates equipment used to transport or deliver water for human consumption.

37. **Water Supplier** – any entity, government or private company, responsible for source development, water abstraction, treatment and distribution of water.
38. **Well** – a man made hole used for recovering ground water from the water bearing strata by digging, boring, drilling or by any other method.
39. **Well Driller** – an individual, partnership, corporation, cooperative and the like who undertake well drilling work or activities for the purpose of extracting ground water.

SECTION 3 : PRESCRIBED STANDARDS AND PROCEDURES

3.1 Standard Parameters and Values for Drinking Water

Before water is used, distributed or sold for drinking, it should pass the criteria on standard parameters and values for bacteriological, physical, chemical, biological and radiological quality set by the Philippine National Standards for Drinking Water.

3.2 Water Treatment

Treatment is necessary so as to render water supply potable. The degree and manner of treatment will depend on the quality of the raw water, however, the bacteriological quality shall be used as the main criterion. No water supplier shall be allowed to operate water system for public use unless necessary treatment has been provided.

For the purpose of classifying and evaluating raw-water quality with respect to its treatment requirements, the following criteria shall be used:

1. **Group I. Water Requiring Disinfection Only:** Water from underground or surface sources subject to a low degree of contamination, and having a MPN of coliform organisms not exceeding 50 per 100 ml.
2. **Group II. Water Requiring Complete Treatment:** Water from underground or surface sources having a MPN of coliform organisms 50 per 100 ml. to not more than 5,000 per 100 ml.

3.3 Water Disinfection

- a. Disinfection of water supply facilities shall be required for the following:
 1. Newly constructed water supply facilities.
 2. Water supply facility that has been repaired/improved.
 3. All existing water facilities that exceeded the bacteriological value set by the Philippine National Standards for Drinking Water.
 4. All water facilities that require continuous disinfection.
 5. Drinking water collected from a doubtful source.

b. Disinfectant

Chlorine shall be used as main water disinfectant. Other disinfectant shall be used provided that it has residual effect to ensure disinfecting capacity in the distribution system.

c. Responsible Agencies/Persons for Disinfection

Water disinfection shall be the responsibility of the following as shown on the table:

d. Requirements for Chlorination of Level II and III Water Supplies.

Type of Water Supply	Agencies/Persons Responsible for Disinfection	Person Responsible
Public Level I (wells, springs)	BWSA, Barangay Official and Local Health Agency	Caretaker with Sanitation Inspector (SI)
Levels II & III	Water Supplier (e.g. MWSS, LWUA or water district)	Waterworks Personnel
Private Wells	Individual/ Owner	Private Owner with SI technical assistance

1. Appropriate chlorination equipment shall be installed to ensure continuous and effective disinfection.
 - a. Chlorination equipment shall have a capacity of at least 50% greater than the highest expected dosage to be applied at anytime to attain satisfactory operation.
 - b. Automatic proportioning of chlorine dosage to the rate of flow of treated water shall be provided at all plants where rate of flow varies more than 50% above or below the average flow. Manual control is permissible when rate of flow is relatively uniform or an attendant is present to effect dosage adjustments.
 - c. Standby units shall be provided to ensure continuous operation.
 - d. Solution of calcium hypochlorite shall be prepared in a separate mixing tank, diluted and allowed to settle so that only clear supernatant liquid is withdrawn from the solution storage tank and to the chlorinator.
 - e. Devices and instruments for the determination of the amount of daily chlorine dosage and chlorine residual shall be provided.
 2. Suitable gas mask or self-contained type breathing apparatus and a small bottle of fresh ammonia solution to test for chlorine leakage shall be provided and shall be accessible outside the chlorination room.
 3. Safety measures for gas chlorination equipment and chlorine storage shall include a separate building or room subject to the approval of the Department of Health.
 4. Adequate floor level ventilation shall be provided for all enclosures where chlorine is being fed or stored.
 5. Free residual chlorine shall be maintained between 0.20 to 0.50 ppm until water reaches the consumer and the farthest point in the distribution system.
- e. Requirements for Complete Chlorination of Level I Water Supply Facility**
1. A dose of 50-100 ppm chlorine solution shall be used in disinfecting Level I water supply facility. (See Annex – Chlorine Requirement to have 50-100 ppm dosage)
 2. The person who will conduct the chlorination shall observe personal hygiene and must be free from communicable disease.
 3. Procedures to follow on disinfection.

a. Improved Dug Well.

- i. Scrub interior walls of the casing or lining and splash with chlorine solution (50-100 ppm) to ensure thorough contact of solution to the surface.
- ii. Wash the exterior surface of the pump cylinders and drop pipe with chlorine solution as the assembly is lowered into the well.
- iii. Return cover of the well and pour chlorine solution through a manhole or pipe sleeve opening before inserting the pump cylinder and drop pipe assembly. After setting the pump, draw out water from the well until strong odor of chlorine is noted.
- iv. After 12 hours, flush out well water by pumping water to waste until the drawn water is free from chlorine odors. Rinse the exterior surface and the pump cylinder with potable water.

b. Drilled, Driven and Bored Wells

- i. Slowly pour chlorine solution into the well just before installing the permanent pumping equipment. Dilution of chlorine is facilitated by alternately raising or lowering the waterhose or pipe line.
- ii. Wash the exterior surface of the pump cylinders and drop pipe with chlorine solution as the assembly is lowered into the well.
- iii. After the pump has been set, operate the pump until water is discharged.
- iv. Allow chlorine solution to remain in the well for 12 hours. For deep well, a special method may be employed as follows:

Place the granulated calcium hypochlorite in a cut short pipe capped at both ends. Small holes are drilled at each cap or sides of the pipe. One cap is fitted with an eye for cable attachment. Disinfecting agent is diffused by vertical movement of the cut short pipe.
- v. After 12 hours, draw out well water. The pump is to be operational when pumped water is free from chlorine odor.

c. Spring

- i. Disinfection of spring intake box is similar to the procedure used for improved dug wells.
 - ii. If the flow cannot be controlled, continuous supply of disinfectant shall be provided.
- d. Cistern**
- i. The cistern shall be thoroughly cleaned by using a stiff brush or broom to clean interior wells.
 - ii. Drain and cover the cistern.
 - iii. Fill the cistern with adequate potable water and add 50-100 ppm chlorine solution.
 - iv. Pump water from the cistern and note the presence of strong chlorine odor in the entire water distribution system.
 - v. Retain the disinfectant in the cistern for 24 hours then examine for residual chlorine and drain.
 - vi. Flush the system with potable water to remove all traces of chlorine.

f. Requirements for Household Container Disinfection

- 1. Procedures to Follow
 - 1.1 Prepare a stock solution by dissolving 1 level teaspoon of powder Chlorine compounds (65 to 75% available chlorine) to one liter of water. This stock solution is effective only for one week.
 - 1.2 Add two teaspoons of stock solution to 5 gallons (20 liters) of water. Mix thoroughly and let it stand for at least 30 minutes before using.

3.4 Standard Construction and Operating Procedures

- a. Ground Water Source
 - 1. Well
 - 1.1 The location of well site shall conform with the following requirements:

- a. No well site shall be located within a distance of less than 25 meter radius on flat areas from sewage treatment plant, sewage wet well, sewage pumping station, or a drainage ditch which contains industrial waste discharges or wastes from sewage treatment systems, sanitary landfill or land irrigated by sewage treatment plant effluent, sanitary sewers, septic tanks, cesspools, open-jointed drain-fields, animal feed lots or livestock in pastures, dump grounds, especially in limestone areas. Storm and sanitary sewers located within specified distances shall be so constructed as to prevent leakage.
 - b. The drilling of water well within 50 meter distance from a cemetery is prohibited.
- 1.2 During drilling operation, the following requirements shall be observed:
- a. The premises, materials, tools, and drilling equipment shall be properly maintained to minimize contamination of underground water.
 - b. Water used in drilling operation shall be potable.
 - c. Slush pit shall be constructed and maintained to minimize contamination of the drilling mud.
 - d. Approved type of pit privy or toilet facilities for use of drilling personnel shall be provided. These facilities shall be located 25 meters from the well being drilled. Upon completion of the constructed well, toilet facilities if temporarily constructed shall be removed in a satisfactory manner. No temporary and permanent toilet facilities shall be maintained within 25 meters from the well being constructed unless they are of the sealed or leak proof types.
- 1.3 Casing materials used in the construction of public wells shall conform with the American Standards for Testing Materials (ASTM). The casing shall extend at least to the depth of the shallowest water formation or deeper if necessary to omit undesirable water bearing strata.
- 1.4 The annular space between the casing and the drill hole shall be sealed with neat cement grout to the minimum depth of 3.0 meters for shallow wells and 10.0 m for deep wells.

- 1.5 In all cases, provide a concrete apron at least 2 meter square around the well head, sloped not less than 2% to drain away excess water.
- 1.6 Provide vent with #16-mesh corrosion resistant screen, faced downward and elevated to minimize drawing of contaminants into the well. Seal well heads and pump bases using gaskets, sealing compounds and proper venting to prevent possible contamination to the well water.
- 1.7 A complete physical and chemical analysis of water from a new well shall be conducted after 36 hours of pumping out of water is done.
- 1.8 If the results show that the water is bacteriologically positive (+), appropriate water treatment facilities shall be provided, otherwise the well shall be abandoned. The well shall be disinfected in accordance with the standard requirements set by these implementing rules and regulations. Collect two water samples for two week interval for bacteriological analysis.
- 1.9 When contamination of a well water source has been confirmed by laboratory test and the sources of contamination is definitely known but cannot be removed, the well must be condemned. The well opening must be plugged or sealed with concrete or other similar materials. If used for other purposes like watering gardens and washing clothes a signboard marked "WATER UNFIT FOR DRINKING" shall be installed.
- 1.10 Pump site, rapid pump room location and pump installation:
- a. All completed well units shall be preferably protected by fences, the gates provided with locks, or enclosed to prevent possible contamination or damage of facilities by trespassers.
 - b. The well site shall be properly graded to insure proper ground maintenance and to draw off surface water effectively from the well. In all cases, provide a system that draws off water from the pump well, leakage from packed gravel, and floor drainage, by installing suitable drain pipes located at the edge of the concrete floor to prevent ponding around the well head. This waste water shall be properly disposed. Drains shall not be directly connected to storm or sanitary sewers.

- c. In water supply installation at subground level, pump rooms and pump pits are prohibited. Pump room floor shall be at least 60 cm. above the highest known flood level and/or adequately protected from possible damage by flood waters.

2. Spring

- a. Intake box or enclosure must be watertight, made of concrete, vitrified tile or other material extending to the water bearing strata down to the bed rocks or other impervious formations.
- b. The intake box must be provided with a water tight cover which extends over the top edge of the spring box at least 50 mm.
- c. A drain pipe with an exterior valve is to be placed close to the spring box near the bottom. The pipe shall extend horizontally so as to clear the normal ground level at the point of discharge by at least 150 mm. The discharge end of the pipe shall be screened to prevent the entrance of rodents or insects.
- d. The spring is to be provided with screened overflow pipe located slightly below the maximum water level elevation. A drain apron is to be provided to prevent soil erosion at the point of overflow discharge.
- e. The supply outlet from the developed spring is to be located about 150 mm. above the drain outlet and screened.
- f. Manhole opening shall have a watertight curb with edges projecting a minimum of 100 mm. above the level of the surrounding surface. The edges of the manhole cover shall overlap the curb and project downward a minimum of 50 mm.
- g. Care shall be taken in casting openings to insure watertight connection between the wall and the openings.
- h. A drainage ditch located at least 25 meters away on the uphill side of the spring shall be constructed to prevent contamination and flooding of the water source.
- i. The intake box shall be properly enclosed preferably constructed of strong materials. The height of the fence shall be at least 1-1/2 meter high. The enclosed area shall be maintained clean to eliminate harborage and breeding of insects.

- j. Washing and bathing within 25 meters radius of the spring is prohibited.
- k. Protection of the entire catchment area is a must. No dwellings shall be constructed within the catchment area and it shall be off-limits to people and animals.
- l. Collect water samples regularly as prescribed by the Philippine National Standards for Drinking Water.

3.5 Monitoring Scheme

The local health authority shall establish a Water Surveillance Program thru the creation of Local Drinking Water Quality Monitoring Committee to oversee the operation of the water systems and the quality of water produced and distributed by them and to monitor the implementation of the provisions of these implementing rules and regulations.

a. Composition

The Local Drinking Water Quality Monitoring Committee shall be composed of but not limited to representatives from:

- i. Municipal/City Health Authority-Chairman
- ii. Rural Health Unit/City Health Department
- iii. Water Districts/Private Water Suppliers
- iv. Sangguniang Panlalawigan/Panlungsod/Bayan
- v. Municipal/City Engineer's Office
- vi. Department of Environment and Natural Resources Representative (CENRO)
- vii. Non-Government Organizations and Professional Groups Related to Health and Sanitation
- viii. DOH Representative to the Local Health Board
- ix. Provincial Health Office (Provincial Sanitary Engineer)

b. Functions of the Committee

The committee shall be responsible for:

- i. Regular collection/analysis of water samples;
- ii. Evaluating laboratory results as to their compliance to standards;
- iii. Conducting regular or immediate sanitary survey during the existence of a potential cause of contamination;

- iv. Instituting remedial measures to correct the deficiency of the water system;
- v. Informing the public of the latest quality of the drinking-water in the locality; and
- vi. Performing other functions related to water quality assurance.

SECTION 4 : APPROVAL AND PERMIT

The approval of the Secretary or that of his duly authorized representative is required under each of the following cases:

a. Sites of Water Sources before their Construction.

Any person who intends to drill, construct, alter or repair water supply system, shall secure a Drinking Water Site Clearance from the local health authority prior to the start of the work. The approval of the application shall be based on the recommendations made by the local health officer after the conduct of the sanitary survey. The sanitary survey report shall contain all pertinent information concerning the water source and possible sources of contamination.

Major water supply projects particularly of surface water sources that fall under the Environmental Impact Statement System are exempted from site clearance requirements, provided an Environmental Health Impact Assessment has been conducted as part of the Environmental Impact Assessment.

If the work on the individual water supply system failed to commence within six (6) months from date of issuance, the site clearance shall automatically expire.

b. Delivery of Water to Consumers from New or Recently Repaired Water Systems.

Permit to deliver water to consumers from new or recently repaired water systems shall be granted only if:

1. Final inspection by the local health officer proves that the water supply system was constructed in accordance with the submitted plans and specifications.
2. The disinfection of water supply system conformed with Section 3.3 – Water Disinfection of these rules and regulations.
3. Results of laboratory analysis proved that the water quality meets the Philippine National Standards for Drinking Water.
4. The water supplier or the owner of the completed water supply system shall notify the local health officer of the completed system.

c. Resumptions of the Operation of Water Supply System.

1. In cases when water supply is found to be unsafe or unfit for human consumption, the operator of the system, shall be ordered to:
 - a. Stop temporarily to make necessary corrections within a specified period.
 - b. Provide substantial quantity and good quality of water to the affected consumers during the correction period. Failure to provide emergency water supply shall be subjected to fines and penalties. A permission to re-operate from the local health authority upon the recommendation of the local health officer shall be given only when all defects have been corrected and the water found safe for drinking and domestic use.

d. Plans and Specifications of Water Systems of Subdivision and Projects prior to the Construction of Housing Units thereat.

1. To obtain approval for the construction of any water supply system, the applicant shall submit the plans and specifications of the proposed systems, and satisfy the standard requirements of these implementing rules and regulations. Plans and specifications shall be prepared by a registered civil/sanitary engineer, the seal, signature and registration number of the engineer or the engineering firm shall be imprinted on each sheet of the plan.
2. An engineering report or feasibility study of the new system shall be submitted with or prior to the submission of the plans and specifications. The report coverage shall include the following items.
 - 2.1 Statement of the problem or problems.
 - 2.2 Present and future areas to be served, with population data.
 - 2.3 The source, quantity and quality of water.
 - 2.4 Present and estimated future maximum and minimum water quantity demands.
 - 2.5 Description of the proposed site and the immediate surroundings of the waterworks units.
 - 2.6 The type of water treatment, equipment and capacity of units.
 - 2.7 Basic design data, pumping capacity, water storage, and flexibility of system operation.
 - 2.8 Adequacy of facilities concerning volume/quantity and pressures in the whole system.

- 2.9 Cost estimate of the facilities and source of funds for the project.
- 2.10 Sustainability and maintenance.
- 3. For subdivision having groundwater source, report on the estimated specific yield of the aquifer and other results of the pumping tests shall be submitted together with the borehole logs.
- 4. Two (2) sets of all plans and drawings shall be submitted which:
 - 4.1 Indicate location of all facilities pertinent to the specific project.
 - 4.2 If phase construction is anticipated, the overall plan shall be presented, though a portion of the construction is approved.
 - 4.3 A plan of the subdivision or other housing projects to be served.

e. Certification of the Potability of Drinking Water

No public water system shall be allowed to operate without a Certificate of Potability issued by the Secretary of Health or his duly authorized representative. This certificate is issued only after the required examinations are performed and the quality of water from the system meets the requirements of the Philippine National Standard for Drinking Water.

The certificate is re-validated every after examinations based on the standard interval or frequency of sampling.

SECTION 5 : TYPES OF WATER EXAMINATIONS REQUIRED

The following examinations are required for drinking water:

- a. Initial examination – the physical, chemical and bacteriological examinations of water from newly constructed systems or sources are required before they are operated and opened for public use. Examination of water for possible radioactive contamination should also be done initially.
- b. Periodic examination – water from existing sources is subject to bacteriological examination as often as possible but the interval shall not be longer than six months, while the general systematic physico-chemical examination shall be conducted every 12 months or oftener. Examination of water sources shall be conducted yearly for possible radioactive contamination.

SECTION 6 : SUBMISSION OF WATER SAMPLES FOR LABORATORY EXAMINATION

- a. The examination of samples of drinking water shall be performed only in laboratories (private/government) which are duly licensed and accredited by the Department of Health. It is the responsibility of operators of water systems to submit to accredited laboratories water samples for examination in a manner and at intervals prescribed in the Philippine National Standards for Drinking Water.

- b. Any person, firm or corporation desiring to establish or operate and maintain a water analysis laboratory shall apply to the Bureau of Research and Laboratories – Department of Health through the Regional Field Health Office. Approval of the accreditation shall be based on the prescribed requirements of the Department as stated in Administrative Order No. 31 series 1979. Water laboratories may be accredited for separate services like bacteriological, chemical, radiological, physical, biological or for a combination of two or more or all of these services.

SECTION 7 : OTHER PROTECTIVE MEASURES

To protect drinking water from contamination, the following measures shall be observed:

- a. Washing clothes or bathing within a radius of 25 meters from any well or other source of drinking water is prohibited.
- b. No artesian, deep or shallow well, shall be constructed within 25 meters from any source of pollution.
- c. No radioactive source or material shall be stored within a radius of 25 meters from any well or source of drinking water unless the radioactive source is adequately and safely enclosed by proper shielding.
- d. No person charged with the management of a public water supply system shall permit any physical connection between its distribution system and that of any other water supply, unless the latter is regularly examined as to its quality by those in charge of the public supply to which the connection is made and found to be potable.
- e. The installation of a booster pump from the water distribution line of a water supply system is prohibited.

SECTION 8 : SPECIAL PROVISIONS

a. Water Peddlers and Haulers

- 1. Sanitary Permit

Any person, firm or company engaged in water hauling and vending of water for human consumption shall secure a sanitary permit from city/municipal health officer based on the requirements of these rules and regulations.

2. Health Certificate

Water peddlers and haulers shall undergo physical and medical examinations to obtain a health certificate from the local health officer which shall be renewed every year. Water haulers and peddlers without health certificates or with expired health certificates shall be prohibited from water hauling and peddling.

3. Source of Water

Water peddlers/haulers are required to obtain water from sources with valid Certificate of Potability as specified in Section 4 of these implementing rules and regulations.

4. Water Containers

Water containers shall be made of plastic or tin materials and so designed to facilitate easy cleaning. The containers shall be cleaned and disinfected before they are filled with water and shall be provided with tight-fitting covers.

5. Personal Hygiene

All water peddlers and haulers shall be required to observe proper personal hygiene especially washing of hands with soap and water before working and after using the toilet.

3. Drinking Water on Vessels

1. Vessels cruising from one point to another shall carry adequate supply of potable drinking water for the use of the crew and passengers.

2. Drinking water shall be obtained from water sources with certificate of potability and stored in tanks specified in the next paragraph.

3. The storage tanks shall be water tight and independent of the hull of the vessel. A drain valve attached to the bottom of the tank shall discharge into the interior of the vessel. Manholes, inlets or openings of such tanks shall be securely provided with caps, flanges, covers and gaskets. Soil, waste, vent or drain pipes shall not pass through any water storage tank. The water storage shall be clearly marked "FOR DRINKING WATER ONLY".

4. A water storage tank shall be emptied, cleaned, drained and flushed every quarter.

5. The drinking water shall be handled in accordance with the following procedures: A hose or pipe used to transport drinking water in a vessel shall not be used for any other purposes. It shall be handled and maintained in a sanitary manner. The hose end when not in use shall be plugged or capped with screw caps to prevent contamination. It shall be properly stored in a closed cabinet near filling line and clearly labelled "FOR DRINKING WATER ONLY". Pumps used for the delivery of drinking water shall not be used for any other purpose.

6. Lead pipes shall not be used in any part of the drinking water systems.

7. Communal drinking glasses shall be thoroughly cleaned and sanitized before every use. Paper/plastic disposable individual drinking cups shall be properly disposed after each use. Drinking fountains may be provided by in accordance with the Department of Health standards and specifications.

8. A warning sign, "NOT FOR DRINKING", shall be permanently posted on tap hydrant or faucet with unsafe water.

9. Non-potable water shall not be permitted in the galleys or kitchen.

10. The pipes and storage tanks of the drinking water supply system shall be painted aqua blue and "DRINKING WATER" or "INUMING TUBIG" printed bold in contrasting colors.

11. Vessels shall maintain free residual chlorine between 0.20 ppm to 0.50 ppm in drinking water. This shall be checked randomly by the local health officer or quarantine medical officer, as the case maybe.

12. Monitoring of storage tanks as to cleanliness shall be conducted every quarter by the local health officer or quarantine medical officer, as the case maybe.

SECTION 9 : PENAL PROVISION

a. Any person who shall violate, disobey, refuse, omit or neglect to comply with any of the provisions of these implementing rules and regulations, shall be guilty of misdemeanor and upon conviction shall be punished by imprisonment for a period of not exceeding six (6) months or by a fine of not exceeding P1,000.00 or both depending upon the discretion of the court.

b. Any person who shall interfere or hinder, or oppose any officer, agent or member of the Department of Health or of the bureaus and offices under it, provincial, city or municipal health officers, sanitary engineers and sanitation inspectors in the performance of his duty as provided for under these rules and regulations, or shall tear down, mutilate, deface or alter any placard, or notice, affixed to the premises in the enforcement of these rules and regulations shall be guilty of misdemeanor and punishable upon conviction by imprisonment for a period of not exceeding six (6) months or by a fine not exceeding P1,000.00 or both depending on the discretion of the court.

SECTION 10 : SEPARABILITY CLAUSE

In the event that any rule, section, paragraph, sentence, clause or words of these implementing rules and regulations is declared invalid for any reason, the other provisions thereof shall not be affected thereby.

SECTION 11 : REPEALING CLAUSE

All pertinent rules and regulations which are inconsistent with the provisions of these implementing rules and regulations are hereby repealed or amended accordingly.

SECTION 12 : EFFECTIVITY

These rules and regulations shall take effect fifteen (15) days from date of publication in the official gazette or a newspaper of general circulation.

Approved on this 24th day of November nineteen hundred and ninety five.


HILARIJON J. RAMIRO, JR., M.D., M.H.A.
 Secretary of Health

Date of Publication: 29 January 1996
 Philippine Daily Inquirer

ANNEX

DISINFECTION OF WELL AND WATER CONTAINER

The following tables give the amount of Calcium Hypochlorite (70%) available chlorine required to provide a dosage 50 ppm to 100 ppm of available chlorine.

Diameter of Casing	Capacity in gallons per foot of depth		Amount of Calcium Hypochlorite in ounces/grams per foot of depth	
			100 ppm	
	Column 1	Column 2	Column 3	Column 4
2 inches	0.16	0.001152/0.0432	0.00305/0.0866	
4 inches	0.66	0.006288/0.1783	0.01256/0.3587	
6 inches	1.47	0.01397/0.3967	0.02799/0.7949	
8 inches	2.61	0.02484/0.7054	0.04969/1.4112	
10 inches	4.08	0.03884/1.10305	0.07768/2.2061	
12 inches	5.88	0.0557/1.5895	0.11196/3.7096	

HOW TO USE THE TABLE

1. To find the volume of water in the well:

Multiply the amount of gallons specified in the table (Col. 2, opposite the given diameter) by the depth of the water in foot.

Example :

Given : Diameter of casing = 6 inches (Col. 1)

Depth of Water = 100 feet

Therefore, Volume of Water = 1.47 (Col. 2) x 100 = 147 Gals.

2. To find the amount of calcium hypochlorite (70%) available chlorine to disinfect a well:

Example : (a) Diameter of Well = 6 inches

Given : Depth of Water = 100 feet

Therefore, amount of hypochlorite = 0.02799 (Col. 4) x 100 = 2.9 inches of 5 ounces/79 grams

(b) Same well as (a)

Dosage = 50 ppm (Col. 3)

Therefore, amount of Calcium Hypochlorite = 0.01397 (Col. 3) x 100 = 1,397 ounces or 3.5 ounces/42.6 grams

NOTE: If a weighing scale is not available, the chemical may be measured with spoon.

1 ounce weights approximately 3 level tablespoons

1 ounce weights approximately 2 moderately heaping tablespoons

one (1) pound = 16 ounces

(1) ounce = 28.4 grams

Chlorine (grams) = $\frac{\text{Vol. of H}_2\text{O in gallons} \times 8.34 \times \text{dosage required in ppm} \times 454}{1,000,000 \times \% \text{ of available Cl}_2}$

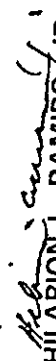
ANNEX

TABLE 1
CALCIUM HYPOCHLORITE FOR 50 ppm DOSAGE

DEPTH OF WATER COLUMN (M)	WELL DIAMETER						
	2" 50 mm	3" 75 mm	4" 100 mm	6" 150 m	8" 200 mm	10" 250 mm	12" 300 mm
1	-	-	1/4 tsp	1/4 tsp	1/2 tsp	3/4 tsp	1 tsp
2	1/4 tsp	1/4 tsp	1/2 tsp	1/2 tsp	3/4 tsp	1 1/2 tsp	2 tsp
3	1/4 tsp	1/4 tsp	1/2 tsp	3/4 tsp	1 1/4 tsp	2 1/4 tsp	3 tsp
4	1/4 tsp	1/4 tsp	1/2 tsp	1 tsp	1 3/4 tsp	2 3/4 tsp	4 tsp
5	1/4 tsp	1/2 tsp	1/2 tsp	1 1/4 tsp	2 1/4 tsp	3 1/2 tsp	5 tsp
6	1/4 tsp	1/2 tsp	1/2 tsp	1 2/2 tsp	2 1/5 tsp	4 1/4 tsp	6 tsp
7	1/4 tsp	1/2 tsp	3/4 tsp	1 3/4 tsp	3 1/4 tsp	5 tsp	7 tsp
8	1/4 tsp	1/2 tsp	3/4 tsp	2 tsp	3 1/2 tsp	5 1/2 tsp	8 tsp
9	1/4 tsp	1/2 tsp	1 tsp	2 1/4 tsp	4 tsp	6 1/2 tsp	9 tsp
10	1/4 tsp	1/2 tsp	1 1/4 tsp	2 1/2 tsp	4 1/2 tsp	7 tsp	10 tsp
20	3/4 tsp	1 1/4 tsp	2 1/4 tsp	5 tsp	9 tsp	15 tsp	20 1/4 tsp
30	1 1/4 tsp	1 3/4 tsp	3 1/2 tsp	7 1/2 tsp	11 1/4 tsp	17 1/2 tsp	25 1/4 tsp
40	1 1/4 tsp	2 1/2 tsp	4 1/2 tsp	11 1/4 tsp	15 1/4 tsp	21 1/2 tsp	30 1/4 tsp
50	1 1/2 tsp	3 1/4 tsp	5 1/2 tsp	15 1/4 tsp	20 1/4 tsp	28 tsp	35 1/4 tsp
60	1 1/2 tsp	3 3/4 tsp	6 3/4 tsp	18 tsp	22 1/2 tsp	31 1/3 tsp	40 1/2 tsp
70	2 tsp	4 1/2 tsp	7 3/4 tsp	20 1/4 tsp	22 1/2 tsp	35 tsp	45 1/2 tsp
80	2 1/4 tsp	5 tsp	9 tsp	22 1/2 tsp	25 1/4 tsp	35 tsp	50 1/2 tsp
90	2 1/2 tsp	5 1/2 tsp	10 tsp	25 1/4 tsp	28 1/2 tsp	35 tsp	50 1/2 tsp
100	2 3/4 tsp	6 1/2 tsp	11 1/2 tsp	28 1/2 tsp	31 1/3 tsp	35 tsp	50 1/2 tsp

The Department of Health enjoins all agencies especially the Local Government Executives in meeting the demands and challenges for a healthful living environment as we enter our journey for economic development under President Fidel Ramos' vision for Philippines 2000.

1. Dr. Manuel G. Roxas
Undersecretary and Chief of Staff
2. Dr. Carmencita Noriega-Reodica
Undersecretary for Office of Public Health Services
3. Atty. Nicolas Lutero III
Director, Health Policy Development Office
4. Mrs. Melahi Pons
Director, Health Policy Development Office
5. Engr. Victor V. Sabandaja
Chief, Environmental Sanitation Division
Environmental Health Service


HILARION L. RAMIRO, JR., MD, MHA
Secretary of Health

ANNEX

TABLE 2
CALCIUM HYPOCHLORITE FOR 100 ppm DOSAGE

DEPTH OF WATER COLUMN (M)	WELL DIAMETER						
	2" 50 mm	3" 75 mm	4" 100 mm	6" 150 m	8" 200 mm	10" 250 mm	12" 300 mm
1	-	1/4 tsp	1/4 tsp	1/2 tsp	3/4 tsp	1 1/2 tsp	2 tsp
2	1/4 tsp	1/4 tsp	1/2 tsp	1 tsp	1 3/4 tsp	2 3/4 tsp	4 tsp
3	1/4 tsp	1/2 tsp	3/4 tsp	1 1/2 tsp	2 1/2 tsp	4 1/4 tsp	6 tsp
4	1/4 tsp	1/2 tsp	3/4 tsp	2 tsp	3 1/2 tsp	5 1/2 tsp	8 tsp
5	1/4 tsp	1/2 tsp	1 1/4 tsp	2 1/2 tsp	4 1/2 tsp	7 tsp	10 tsp
6	1/2 tsp	3/4 tsp	1 1/2 tsp	3 tsp	5 1/2 tsp	8 1/2 tsp	12 1/2 tsp
7	1/2 tsp	3/4 tsp	1 1/2 tsp	3 1/2 tsp	6 1/4 tsp	9 3/4 tsp	14 1/2 tsp
8	1/2 tsp	1 tsp	1 3/4 tsp	4 tsp	7 1/4 tsp	10 1/2 tsp	15 1/2 tsp
9	1/2 tsp	1 1/4 tsp	2 tsp	4 1/2 tsp	8 tsp	11 1/4 tsp	16 1/2 tsp
10	1/2 tsp	1 1/4 tsp	2 1/4 tsp	5 tsp	9 tsp	12 1/2 tsp	17 1/2 tsp
20	1 1/4 tsp	2 1/2 tsp	4 1/2 tsp	10 tsp	14 1/2 tsp	21 1/2 tsp	30 1/4 tsp
30	1 1/2 tsp	3 3/4 tsp	6 3/4 tsp	15 1/4 tsp	22 1/2 tsp	28 1/2 tsp	40 1/2 tsp
40	2 1/4 tsp	5 tsp	9 tsp	20 1/4 tsp	27 1/2 tsp	35 1/2 tsp	50 1/2 tsp
50	2 3/4 tsp	6 1/2 tsp	11 1/2 tsp	25 1/4 tsp	31 1/2 tsp	40 1/2 tsp	55 1/2 tsp
60	3 1/2 tsp	7 1/2 tsp	14 1/2 tsp	31 1/4 tsp	36 1/2 tsp	45 1/2 tsp	60 1/2 tsp
70	4 tsp	8 3/4 tsp	17 1/2 tsp	36 1/2 tsp	42 1/2 tsp	50 1/2 tsp	65 1/2 tsp
80	4 1/2 tsp	9 3/4 tsp	20 1/4 tsp	42 1/2 tsp	48 1/2 tsp	55 1/2 tsp	70 3/4 tsp
90	5 tsp	10 1/2 tsp	22 3/4 tsp	45 1/2 tsp	51 1/2 tsp	58 1/2 tsp	75 1/2 tsp
100	5 1/2 tsp	11 1/4 tsp	25 1/4 tsp	48 1/2 tsp	54 1/2 tsp	61 1/2 tsp	80 3/4 tsp

LEGEND:
1 tsp = 1 TEASPOON = 5 GRAMS
1 tbsp = 1 TABLESPOON = 10 GRAMS

ACKNOWLEDGMENT

The Department of Health is deeply indebted and express sincere appreciation to Dr. Mario C. Villaverde, Director of the Environment Health Service for his role in bringing these implementing rules and regulations (IRR) from concept to reality.

The Policy, Standards and Regulation Section, headed by Engr. Antonio A. Hormillosa and his technical staff for their enduring commitment in constantly nurturing this IRR from the beginning and perceptiveness along the way together with Engr. Joselito M. Riego de Dios for his patience in developing the first draft are worth mentioning.

Deep sense of gratitude is also expressed to the agencies, associations and organizations who shared their insights and experiences during the consultative dialogues and series of public hearings nationwide. Their struggles, arguments and even their temporary setbacks have greatly influenced the finalization of this IRR in our quest to formulate, implement and enforce doable sanitation laws. The following agencies, associations and organizations pursued their ongoing interest, valuable comments and contributions to these efforts:

1. City/Municipal Health Offices of Baguio City, Cavite City, Iloilo City, Lucban, Quezon , Davao City, Malay, Aklan, and General Santos City
2. Commission on Human Rights
3. Department of Health Regional Offices
4. Department of Interior and Local Government
5. Department of Works and Highways
6. Environmental Management Bureau, DENR
7. Housing and Land Use Regulatory Board
8. Local Water Utilities Administration
9. Metro Manila Development Authority
10. Metropolitan Waterworks and Sewerage System
11. National Association of Master Plumbers
12. Philippine Association of Water Districts
13. Philippine National Police
14. Philippine Society of Sanitary Engineers
15. Philippine Waterworks Association of the Philippines
16. Provincial Health Offices of Cavite, Quezon, Laguna, Aklan, Iloilo, Antique, Nueva Ecija, Marinduque, Benguet
17. Public Utility Services Office, Baguio City
18. United Nations Children's Fund (UNICEF)
19. Water Districts of Metro Iloilo, Kalibo, Laguna, Baguio City, La Trinidad, Davao City, General Santos City