DEPARTMENT OF ENVIRONMENTAL PROTECTION

LAND USE MANAGEMENT

WATER SUPPLY ADMINISTRATION

SAFE DRINKING WATER PROGRAM

Safe Drinking Water Act Rules

Readoption with amendments: N.J.A.C. 7:10

Adopted Repeal: N.J.A.C. 7:10-6

Proposed:	January 20, 2004 at 36 N.J.R. 295
Adopted:	November 4, 2004 by Bradley M. Campbell Commissioner, Department of Environmental Protection
Filed:	_____
Authority:	N.J.S.A. 13:1D-1 et seq., 58:12A-1 et seq., 58:11-64 et seq., 58:11-23 et seq., 58:11-9.1 et seq., and 58:10A-1 et seq.
DEP Docket Number:	31-03-12/354
Effective Date:	
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The Department of Environmental Protection (Department) is readopting, with amendments, the Safe Drinking Water Act rules, N.J.A.C. 7:10, which establish, among other things, the State primary and secondary drinking water regulations for public and nonpublic drinking water

systems, construction standards, fees, physical connections between an approved and an unapproved water supply, variance and exemption procedures, and provisions regarding civil administrative penalties and adjudicatory hearings under the New Jersey Safe Drinking Water Act (NJSDWA), N.J.S.A. 58:12A-1 et seq. The Department also is repealing N.J.A.C. 7:10-6, which pertained to variances and exemptions.

The adopted amendments establish a new maximum contaminant level (MCL) for arsenic in drinking water of 5 micrograms per liter (µg/l) or parts per billion, effective January 23, 2006. The existing MCL for arsenic is 50 µg/l. The amendments also include various monitoring, sampling, analytical, and reporting requirement changes associated with specific classes of regulated contaminants. Adopted amendments to the construction standards governing public community water systems include revisions to the definitions of peak daily demand and firm capacity, and incorporation of the methodology for calculating anticipated water supply demand and for determining water availability based upon the diversion limits established in a water allocation permit and bulk purchase agreements. Another amendment requires the submittal of information regarding existing and proposed water systems in a format compatible with the State's Geographic Information System (GIS), which is designed to provide accurate mapping of changes to, or expansion of, a water system service area. The Department expects this requirement to improve management of statewide water supplies, including the evaluation of infrastructure interconnections for drought planning and response, security, and the development of water budgets for each of New Jersey’s watersheds. Finally, the adopted amendments require all new public noncommunity and nonpublic water systems to sample for microbiological

contaminants using the same methodology adopted in the Private Well Testing Act (PWTA) and rules, and new nonpublic water systems to also monitor for the same chemical and radiological parameters required to be sampled under the PWTA and rules.

Summary of Hearing Officer's Recommendation and Agency Response:

Public hearings regarding this proposal were held on March 2, 4, and 9, 2004 at the Gloucester County Offices of Government Services, Clayton, N.J.; Lawrenceville Branch of Mercer County Library System, Lawrenceville, N.J.; and the Environmental Education Center at Lord Stirling Park, Basking Ridge, N.J., respectively. Sandra Krietzman, Environmental Scientist, Bureau of Safe Drinking Water, served as the hearing officer at all three hearings. The comment period for this proposal closed on March 20, 2004. Ms. Krietzman recommended that the rules be adopted with the changes described in the Summaries of Public Comments and Agency Responses, and Agency-Initiated Changes. The record of the public hearing is available for inspection in accordance with applicable law by contacting:

New Jersey Department of Environmental Protection
Office of Legal Affairs
Attn. DEP Docket Number 31-03-12/354
P.O. Box 402
Trenton, NJ 08625-0402

Summary of Public Comments and Agency Responses:

The following people, companies, organizations and/or agencies submitted written and/or oral comments on the proposal to readopt, with amendments, N.J.A.C. 7:10. The numerals in parentheses after each comment correspond to the number identifying commenters below:

1. Andreason, G. Christian, Jr.; Middlesex Water Company

2. Bella, Joseph A. and Duprey, James; Passaic Valley Water Commission

3. Blankenship, Stephen; Hamilton Township MUA, Atlantic County

4. De Stefano, Colleen; North Jersey District Water Supply Commission

5. Farley, Jean Buerle; March of Dimes

6. Finlayson, Sharon; South Jersey Work on Waste

7. Fittz, Joan B.; New Jersey Manufactured Housing Association

8. Gulbinsky, Ellen and Rogers, Michael A.; Association of Environmental Authorities

9. Helinski, Joan; Southeast Morris Water Utility

10. Klein, Harvey; Garden State Laboratories

11. Kondracki, Edward A.; Edward A. Kondracki LLC

12. Krajewski, Steve; Health Officer, Somerville Health Department

13. Lockemer, Robert C.; Bayer CropScience

14. McGowan, John; McGowan Well Water Compliance Management

15. Nogaki, Jane; Coalition Against Toxics

16. Pantalone, Joseph C.; Adams, Rehman & Heggan Associates, Inc.

17. Papparella, Paul J.; Hatch Mott McDonald

18. Russo, Donald A.; Betz Converse Murdoch

19. Simpson, Wayne D.; Richard A. Alaimo Associates

20. Storms, Carol Theresa; New Jersey American Water Company

21. Surmay, John N.; Health Officer, City of Elizabeth and President of New Jersey Health Officers Association

22. Tittel, Jeffrey H.; Sierra Club

23. Wittenberg, Nancy; New Jersey Builders Association

Subchapter 5. State Primary Drinking Water Regulations

1. COMMENT: The health basis for lowering the maximum contaminant level for arsenic to 5 µg/l is flawed. The commenter submitted a copy of a December 8, 2003 letter from Drs. Stephen Lamm and Manning Feinleib, Johns Hopkins University-Bloomberg School of Public Health, to USEPA Administrator Michael Leavitt asserting that the risk assessment for the USEPA's action to lower the drinking water standard from 50 µg/l to 10 µg/l was flawed. The Department's proposed rule would lower the standard even further to 5 µg/l. If 10 µg/l is not justified, the proposed standard of 5 µg/l is even less justified. The commenter agrees with the concept of protecting human health with drinking water standards that are based on sound science, and is supportive of standards based on such science; however, the basis of the proposed action does not use sound science. The Department should withdraw the proposed standard to allow for further review. (13)

2. COMMENT: The commenter expressed concern that the proposed rules are more stringent than the regulations adopted on the Federal level, particularly when there is not a scientific basis for the more stringent regulation. The Federal requirements should not be added to. (7)

RESPONSE TO COMMENTS 1 and 2: Arsenic is one of a relatively small number of chemicals that has been classified by the USEPA as a known human carcinogen, based on human epidemiological studies (Guidelines for Carcinogenic Risk Assessment. EPA, 1986). Exposure to high concentrations of arsenic through drinking water has been linked to several types of cancer, including skin, lung, and bladder cancer. The Federal Safe Drinking Water Act (SDWA) requires the USEPA to establish drinking water standards for over 90 chemical and biological contaminants and to establish monitoring schedules to test for these contaminants in regulated water systems. All of the Federal SDWA regulations have been adopted by reference into the New Jersey SDWA rules. The NJSDWA supplements the Federal SDWA and gives the Department additional authority and responsibilities, including the development of more stringent standards for Federally regulated chemicals, as appropriate, and the regulation of additional contaminants for which no Federal standard has been established.

The NJSDWA differs from the Federal SDWA regarding the process for establishing MCLs. For carcinogens, the NJSDWA mandates a cancer risk level of one-in-one-million additional cancer cases over a lifetime of exposure. The establishment of an MCL to meet that risk standard is constrained, however, by the “limits of medical, scientific and technological feasibility.” See

N.J.S.A. 58:12A-13b. In contrast, the Federal SDWA sets an MCL goal of "zero" for carcinogens (see 40 C.F.R. 141.51(b)), and in addition to the medical, scientific, and technological feasibility factors also requires consideration of an economic factor (see 42 U.S.C.A. 300g-1(b)(3)(C)). Thus, USEPA conducts a cost-benefit analysis that considers the implementation costs of an MCL for water systems and their customers, which in some cases results in adjusting the MCL to a different level than might be the case if such costs were not considered. Because the MCL-setting process under the NJSDWA does not include a cost-benefit analysis, the State MCLs for certain contaminants, such as arsenic, are more stringent than the Federal MCLs.

As explained in the proposal summary, the Department proposed the 5 μg/l arsenic MCL after consideration of the findings and recommendation of the New Jersey Drinking Water Quality Institute (Institute). The Institute reviewed the reports issued by the National Academy of Sciences (NAS) on the health effects of arsenic in drinking water in 1999, as well as an update of this report released in 2001 (Arsenic in Drinking Water: 2001 Update, NAS Press, 2001). Based on the current NAS analysis, the Institute determined that the drinking water concentration that results in a one-in-one-million excess lifetime risk of lung and bladder cancer for United States populations was an estimated 0.003 μg/l (or three nanograms per liter or three parts per trillion). The Institute then considered the limits of testing methodology in achieving this health-based goal, reviewing data submitted by certified laboratories in relation to the appropriate method detection levels (MDLs) for the various arsenic test procedures and the appropriate practical quantitation levels (PQLs) at which the methods will reliably determine the presence and

concentration of arsenic. Last, the Institute evaluated the limits of water treatment arsenic removal technology, based on an evaluation of current arsenic removal technologies for application within New Jersey conducted by a consulting engineering firm with extensive national arsenic treatment expertise (Malcolm Pirnie), and presented in a report entitled, "Evaluation and Assessment of Arsenic Removal Technologies for New Jersey Drinking Water, February 21, 2003." The Department commissioned the Malcolm Pirnie study, which consisted of a comprehensive research literature review that included an assessment of national (including New Jersey-specific research) and international studies, as well as the results of pilot treatment system/demonstration results, in the context of New Jersey water quality parameters. The purpose of the study was to identify arsenic removal technologies capable of treating New Jersey source waters at various levels below 10 µg/l, including 7 µg/l, 5 µg/l, and 3 µg/l. The study evaluated the impact of three factors on the effectiveness of various treatment technologies and treatment costs: varying arsenic levels in source water, varying ground water characteristics (such as pH and hardness), and treatment plant capacity. Based on its findings regarding arsenic health effects, analytical capability, and treatment capability, the Institute recommended the arsenic MCL be established at 3 µg/l.

As further explained in the proposal summary, the Department carefully considered the Institute's recommendation and concurred with the health effects information and analytical capability analysis. However, there are uncertainties regarding the treatment technology analysis because of a lack of historical performance data for arsenic removal to 3 µg/l from groundwater at full-scale treatment facilities in New Jersey. Also, there is only one arsenic removal

technology that has been verified by the New Jersey Corporation for Advanced Technology (NJCAT) and certified by the Department to remove arsenic to 5 µg/l. Therefore, in view of its concerns regarding reliable removal technology, the Department determined to promulgate the arsenic MCL at 5 µg/l. This determination comports with the NJSDWA mandate to establish the MCL at the most protective level within the constraints of medical, scientific and technological feasibility.

3. COMMENT: The proposed MCL of 5 µg/l for arsenic fails to fully protect the drinking water for New Jersey residents, and does not comport with the methodologies used by the Institute and its subsequent recommendations. The Department should propose an arsenic MCL of 3 µg/l, because that standard is achievable and is the most protective standard for public health of the residents of New Jersey (22)

RESPONSE: As explained in the Response to Comments 1 and 2, the Department reviewed the arsenic MCL findings and recommendation made by the New Jersey Drinking Water Quality Institute, and concurred with the health effects information and analytical capability analysis. However, because of concerns regarding the availability of reliable arsenic treatment removal technology, the Department determined to promulgate the MCL of 5 µg/l for arsenic. This determination comports with the NJSDWA mandate to establish the MCL at the most protective level within the constraints of medical, scientific and technological feasibility.

4. COMMENT: The cost for achieving consistent compliance with 5 µg/l is excessive, and each additional test and analysis add costs that ultimately affect the cost of housing. There is a considerable treatment cost difference between 10 µg/l and 5 µg/l. The USEPA recognized this in its analysis of the Federal drinking water standard. Among others, this was one of the reasons the USEPA did not adopt the 5 µg/l MCL. (7,13)

RESPONSE: Regarding the concern that New Jersey's adopted arsenic MCL of 5 µg/l will result in additional analytical costs as compared with the Federal MCL of 10 µg/l, the adopted amendments do not require any additional sampling beyond the Federal requirements, and the analytical method is the same under both the State and Federal rules. Therefore, there is no analytical cost differential between the Federal and State MCLs. With respect to treatment costs associated with the adopted arsenic MCL, it should be noted that the majority of the State's public water systems are not expected to have source water in which arsenic levels exceed 5 µg/l. For those systems in which arsenic treatment is necessary, the Malcolm Pirnie report referenced in the response to Comments 1 and 2 indicated that the variability of source water quality and the size of the water treatment plant affect treatment method feasibility and the costs associated with that treatment. The cost estimates for the various treatment technologies drawn from the report were summarized in the proposal in the Economic Impact Analysis. Based on costs estimates, the Department has determined that costs associated with the treatment of arsenic found in ground water sources are similar to treatment costs for other inorganic drinking water contaminants that are much more prevalent in New Jersey, including iron, manganese and hardness.

While Statewide drinking water treatment costs will increase due to the adopted New Jersey arsenic MCL, the differential between treatment costs for an individual water system to achieve the adopted State MCL of 5 µg/l versus the Federal arsenic MCL of 10 µg/l are not expected to be significant. In conducting its cost-benefit analysis to determine the Federal arsenic MCL, USEPA considered the total nationwide costs associated with implementing several different arsenic standards. A more stringent drinking water standard typically expands the universe of water systems subject to the new requirement. Because in many states arsenic is found at higher levels in source waters than in New Jersey, instituting a more stringent arsenic MCL on a national basis would affect a greater number of water systems and accordingly increase the associated compliance costs.

5. COMMENT: More consideration should be given to the viability of the treatment alternatives discussed in the proposal, specifically the application of such techniques to small water systems. In addition, the application of the techniques to water supplies coming from groundwater via wells, compared to surface water supplies, also merits consideration. How does the source impact the feasibility and cost effectiveness of the technologies reviewed? (7)

RESPONSE: As explained in the Economic Impact Analysis in the proposal and as referenced in prior responses to comments, the Malcolm Pirnie report regarding arsenic treatment alternatives identified four technologies as the most feasible and cost-effective options for the treatment of arsenic in New Jersey ground waters at an MCL of 5 µg/l: activated alumina adsorption, coagulation/filtration, granular ferric adsorption, and ion exchange. Due to

operational considerations associated with smaller water systems, the report identified activated alumina adsorption and granular ferric adsorption as the preferred treatment alternative for small systems. Based on the historic surface water source sampling data, among which there were no occurrences of arsenic in excess of 5 µg/l, arsenic treatment technologies for surface water sources were not evaluated.

At the Federal level, best available technologies (BATs) are identified for each adopted Federal MCL. These treatment technologies can be found in the Federal regulations at 40 CFR 141.61 through 141.66. For arsenic, USEPA developed a specific list of small system technologies that were designated in the regulations as being affordable, based on the requirements of the Federal SDWA (42 U.S.C.A. §300g-1(b)(4)(E)(ii)), which specify that small water system compliance technologies must be affordable and technically feasible for small systems. The Federal regulations specifically address treatment technologies for three categories of small systems (based upon population served), as follows: 25 to 500 individuals, 501 to 3,300 individuals, and 3,301 to 10,000 individuals. Consequently, the Department believes that both the State and Federal assessments concluded that arsenic treatment technologies applicable to small water systems are available.

6. COMMENT: The technology for consistently achieving compliance with a standard of 5 µg/l is not proven. The Department's justification for not proposing an MCL for arsenic of 3 µg/l because of the lack of historical performance data demonstrating removal of arsenic from ground water to this level at full-scale treatment facilities likewise applies to an arsenic standard

of 5 µg/l. An arsenic treatment system cannot be reliably or predictably controlled to distinguish between an effluent level of 5 µg/l and 3 µg/l. If the Department does not believe a limit of 3 µg/l is justified, which the proposal implies, then 5 µg/l is similarly unjustified. (13)

RESPONSE: Feasible technology for the treatment of drinking water to achieve the adopted MCL of 5 µg/l has been demonstrated. As discussed in prior responses, the Drinking Water Quality Institute and the Department reviewed the detailed Malcolm Pirnie report on arsenic treatment alternatives and costs ("Evaluation and Assessment of Arsenic Removal Technologies for New Jersey Drinking Water," February 21, 2003). The four technologies that were identified as capable of treating arsenic in New Jersey ground waters to meet an MCL of 5 µg/l are activated alumina adsorption, coagulation/filtration, granular ferric adsorption, and ion exchange. The report also evaluated operational characteristics across a range of conditions (such as water quality characteristics, backwash frequency, and media replacement) to determine if achieving an arsenic MCL of 3 µg/l was feasible. Although the report and the Institute concluded that the technology to achieve the 3 µg/l arsenic MCL was feasible, the Department determined that not enough practical treatment experience in New Jersey had been developed to support the imposition of a 3 µg/l MCL. The decision to promulgate the 5 µg/l arsenic MCL for New Jersey hinged on the reliability of proven treatment technologies to consistently treat drinking water to meet the MCL of 5 µg/l rather than on the technological capability to distinguish between an MCL of 3 µg/l and 5 µg/l.

7. COMMENT: The USEPA estimates the new Federal arsenic standard will increase the average American's water bill by $32 annually. If New Jersey's standard would cost the average resident $64 or double the Federal estimate, it is still a cost that we must fund in order to afford protection from the sickness, disease and death of having too much arsenic in our drinking water supplies. (21)

8. COMMENT: In New Jersey, the costs would probably be significantly less than national costs. New Jersey has not generally been characterized by the high levels of arsenic contamination evidenced in many states throughout the western part of the country. So while the Federal average was approximately $30 to $35, New Jersey's average cost per person would be significantly less than that, since most municipal and public systems are not close to exceeding the MCL. (10)

9. COMMENT: The commenters understand and agree with the need for a lower arsenic MCL, and are fully supportive of the Department's efforts and the proposed rules. (5, 8, 9, 10, 12, 20)

10. COMMENT: The commenter supports Governor McGreevey's call to take action to reduce the levels of arsenic in drinking water. The proposed level of 5 µg/l is neither too low nor confiscatory on water treatment processes. The Governor, to his credit, is proposing standards that are lower than those of the USEPA, which has adopted an arsenic drinking water level of 10

µg/l that becomes effective January 2006. The commenter looks forward to the day when even this standard will be further reduced. (21)

11. COMMENT: One arsenic analysis method, inductively coupled argon plasma spectrophotometry (ICAP), will no longer be usable under any of the new standards because the MDL, or method detection limit, is about 8 parts per billion (ppb), which, although just below the 10 ppb standard, is really too close to that standard to render accurate analysis. For the same reason, the State MCL should not be lowered below 5 µg/l, because the most commonly used method for arsenic analysis in New Jersey, other than the ICAP method, is a procedure called graphite furnace atomic absorption spectrophotometry (graphite furnace analysis, or GFAA). The MDL for graphite furnace analysis is in the range of 0.5 to 3 ppb. When obtaining analytical results close to or just above the MDL, the analytical error involved in the analysis increases. Within a laboratory, even on the same piece of equipment, the MDL will vary from month to month, day to day, and even among analysts. Thus, it is very problematic to set an MCL just above the MDL. When conducting an analysis just above the MDL, and setting an MCL just above or near the MDL, there is likely to be analytical variation in the results. If the MCL were set at 3 µg/l, as some had suggested, there would be many problems with interpretation of the results right around that number or just above the MDL. As a result, the adopted arsenic MCL of 5 µg/l is appropriate, since it is sufficiently above the MDL so as to make the analytical variation, or what is sometimes called the analytical error, less significant. It may still be significant in some cases, but at least there is enough of a margin between the MDL of, say, 1 to 2 ppb and an MCL of 5 ppb that when an analytical report is rendered, a regulatory decision can

be made based upon the results having sufficient accuracy. It is important to note that the MCL is placed at the appropriate point for not only regulatorily appropriate reasons, but also analytically appropriate reasons. (10)

RESPONSE TO COMMENTS 7 through 11: The Department appreciates the comments in support of the adopted MCL for arsenic, and the acknowledgement that the costs incurred as a result of complying with this arsenic MCL are justified in light of the public health benefits provided. As explained in previous responses, the Department believes that the analytical and treatment data demonstrate that reliable compliance with the adopted arsenic MCL of 5 µg/l is feasible using current technology.

12. COMMENT: Seasonal variation in water temperature, especially from surface water sources, is also a consideration, since it is more difficult to remove arsenic from cold water. Given New Jersey's cold weather climate, this is certainly a factor the Department should consider. (13)

RESPONSE: Currently, the Department does not anticipate that arsenic levels in any surface water sources in New Jersey will exceed the 5 µg/l MCL. Since ground water remains at a relatively constant temperature throughout the year, water temperature variations due to cold weather should not have a substantial effect on arsenic treatment of ground water sources.

13. COMMENT: There is a need to expand the waiver provisions at N.J.A.C. 7:10-5.2 to cover additional parameters. If a substance is not detected, the requirement to conduct sampling should be waived until either conditions change or a new testing technique is established. (7)

RESPONSE: According to the Federal SDWA regulations at 40 CFR 141.23, public community and public nontransient noncommunity water systems are required to monitor for the regulated inorganic contaminants (IOCs), volatile organic contaminants (VOCs), and synthetic organic contaminants (SOCs) at a frequency of quarterly, annually, or once every three years, at each point-of-entry to the water distribution system. As set forth in N.J.A.C. 7:10-5.2(a)11, and as provided under the Federal SDWA regulations, at 40 CFR 141.23 and 141.24, the Department may issue monitoring waivers to public water systems for IOCs (including asbestos), VOCs, and SOCs. A monitoring waiver either reduces the monitoring frequency or eliminates the monitoring requirement altogether at a point-of-entry to the water distribution system. The conditions under which the Department can issue a monitoring waiver are defined in the Federal SDWA regulations and are incorporated by reference into the State SDWA rules, and include such factors as a history of monitoring with no detection of the contaminant, no use of the contaminant in the vicinity of the water source, and the likelihood that a contaminant would reach the water source based upon geologic conditions. The Federal SDWA regulations allow for the issuance of a complete waiver of all monitoring requirements only for SOCs and asbestos. This waiver of all monitoring has been used in New Jersey where applicable and in accordance with the Federal regulations. For example, a Statewide waiver was issued for the pesticide chlordane, because its use has been banned for many years and it has not been detected after years of extensive statewide sampling of ground and surface water sources. A statewide waiver

was also issued for glyphosate, because the chemical is destroyed during the disinfection stage of drinking water treatment, and because glyphosate degrades quickly in the environment.

14. COMMENT: An amendment should be made to proposed N.J.A.C. 7:10-5.2(a)13 and 7:10-5.4(f), which would require monitoring and quarterly reporting of any treatment for compliance with an MCL. The following wording should be added: "or according to operating permits where the Department requires more frequent monitoring than quarterly based on operating conditions." (20)

RESPONSE: The permit issued under N.J.A.C. 7:10-11.5(l) for the construction of a proposed water system and the distribution of water will be conditioned as necessary to meet the requirements of these rules. It is unnecessary to include at each requirement in Subchapter 5 reference to the potential water system-specific conditions in the issued permit.

15. COMMENT: The commenters support the proposed provision that requires all testing for gross alpha to be performed using the same method, that is, the 48-hour Rapid Gross Alpha Test, mandated under the Department's Regulations Governing the Certification of Laboratories and Environmental Measurements, N.J.A.C. 7:18. (10, 20)

RESPONSE: The Department appreciates these comments in support of the radionuclide analysis requirements.

16. COMMENT: With respect to the requirements pertaining to radionuclides, the basis to establish a benchmark has not been explained. Has the Department prepared and made available any summary of the data collected to date? Was this data considered? (7)

RESPONSE: It is unclear to what the commenter is referring concerning the establishment of a benchmark. The Federal Radionuclide Rule is incorporated by reference into the State SDWA rules at N.J.A.C. 7:10-5, with only one modification, the use of the 48-hour Rapid Gross Alpha Test sampling protocol. The 48-hour Rapid Gross Alpha Test protocol is approved by the USEPA and appears in the "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association.

17. COMMENT: The commenter supports electronic submittal of monitoring reports. (20)

RESPONSE: The Department appreciates the comment in support of the rule.

18. COMMENT: The regulations are unclear about lead, corrosion control processes, whether a supplier would need to test on a quarterly basis for lead if a corrosion control device had been installed, or whether a water supplier would need to test for the pH of the water, if that was identified as the cause of the problem. (14)

RESPONSE: N.J.A.C. 7:10-5.2(a)13 and 7:10-5.4(f), concerning the monitoring and reporting of quarterly results for MCLs, do not apply to lead and corrosion control parameters, such as pH,

because such parameters are regulated under specific sections of the Federal SDWA rules related to lead and copper, which are incorporated into these State SDWA rules by reference at N.J.A.C. 7:10-5.1 and 5.2(a)9. Lead and copper have action levels rather than MCLs, and therefore the requirements at N.J.A.C. 7:10-5.2(a)13 and 7:10-5.4(f) do not apply. An action level is used as part of a technology-based rule to identify when treatment is necessary to address a contaminant of concern where an MCL is not appropriate, whereas the goal of an MCL-based rule is to achieve a specific health effect level. For the Federal monitoring requirements for lead and copper, and water quality parameters for corrosion control measures, see the Federal SDWA rules at 40 CFR 141.86 and 141.87.

19. COMMENT: At N.J.A.C. 7:10-5.7(a), the schedule for the installation of treatment measures should be reviewed and revised to be consistent with funding programs. The NJ Environmental Infrastructure Trust (Trust) program makes loans to private entities operating community water supply systems. The Trust is seeking to expand the number of loans made to private small water suppliers. However, the Trust program works on an advance schedule with a letter of intent required in October of the year before the November funding of the loans. Thus, there is at least a thirteen-month process. Any regulatory schedule pursuant to which a system must be modified should include this time period after receipt of the sample results that trigger the need to modify the system. The ability to obtain funding is a concern to small water providers. (7)

RESPONSE: The adopted arsenic MCL does not become effective until January 23, 2006. The rules at N.J.A.C. 7:10-5.7 require any violation of a promulgated MCL be brought into compliance within one year of the Department's receipt of the sampling results demonstrating the violation. The Department may extend the deadline for an additional year, following a public hearing, if new construction of a treatment plant is required, and provided the extension does not pose an imminent threat to public health.

The Department affords water systems the opportunity to secure financial assistance in the event that treatment is required. The New Jersey Drinking Water State Revolving Fund (NJDWSRF) is administered as a component of the Environmental Infrastructure Financing Program and is used to assist public and privately owned community water systems and non-profit, noncommunity water systems finance the costs of infrastructure needed to achieve or maintain compliance with SDWA requirements. The NJDWSRF financing schedule is included in the Intended Use Plan (IUP) published annually by the Department. In addition, if an applicant were unable to satisfy the loan application deadlines established within the IUP, the New Jersey Environmental Infrastructure Trust (Trust) offers an "interim" financing program capable of providing loan assistance in advance of the regular schedule.

Moreover, the Department has contracted with the New Jersey Water Association (NJWA) to assist small water purveyors. The NJWA has developed a list of engineers who provide technical assistance to water systems that serve fewer than 3,300 residents and express an interest in pursuing an NJDWSRF loan. Qualified water systems are assigned an engineer from

the NJWA list who assist in the preparation of planning and design documents and the loan application, and in obtaining the permits needed in order to close on a loan. Since technical assistance is provided at no cost to the applicant, this arrangement enables small water systems to reduce up-front costs associated with the planning and design engineering for water system improvements.

20. COMMENT: The new rule includes a one-year term in which to treat for high gross alpha. No acceptable treatment devices that can be applied to small water systems exist. While there are a couple of pilot projects in the State that were installed by a Midwestern company that has a proprietary product, it is very expensive and not affordable for small nontransient, noncommunity water systems. (14)

RESPONSE: The requirement that a water system must correct an MCL violation, including gross alpha, within one year is established by the NJSDWA. See N.J.S.A. 58:12A-15. The rule merely reiterates the statutory requirement, which has been in existence since 1985. Treatment technologies have been identified for use in small water systems, and include both ion exchange and granular media adsorption. Also, rather than institute arsenic treatment, a water system could develop a new source (well) or connect to a public community water system. Each water system that must address arsenic levels in its source water that exceed the adopted arsenic MCL will have to determine which of these approaches – treatment, new sources, or connection to another system – is most cost-effective under its particular circumstances.

21. COMMENT: The commenter states that N.J.A.C. 7:10-5.7(a), uses the terms "violation" and "exceedance" interchangeably to mean the same thing. An MCL exceedance is not necessarily an MCL violation. Quarterly monitoring is designed to prove that the contaminant is "reliably and consistently" below the MCL. (20)

RESPONSE: At N.J.S.A. 58:12A-15**,** the NJSDWA provides, in pertinent part, that the owner or operator of a public community water system that "has been determined to contain a chemical . . . at a level exceeding the maximum contaminant level must, within a year after receipt of the test results, take any action required to bring the water into compliance with the standard." The Federal SDWA regulations, which are incorporated into these State rules by reference, describe how violations of the MCLs are determined based on the results of the monitoring that the water systems are required to conduct. For purposes of compliance determination, not every sampling result that reveals an exceedance of an MCL will be considered a violation of the MCL that must be corrected within the prescribed time period. An illustration of the compliance determination applicable to the new arsenic MCL, for which monitoring of surface water is required on an annual basis and once every three years for ground water, was provided in the proposal summary at 36 N.J.R. 298. If a water system has a sample result for arsenic that exceeds the 5 ug/l MCL, the system will thereafter have to sample the water every quarter. The system would be considered to be in violation of the MCL if, at the end of one year of quarterly sampling, the average of four consecutive quarterly samples exceeds the MCL. If the average of the four quarterly sample results does not exceed the MCL, the system would not be considered to be in violation. However, if the sample result in any one quarter were to exceed the MCL to such an

extent that it would cause the annual average to exceed the MCL, the system would be considered in violation immediately. The one year provided for the water system to come into compliance with the MCL would run, in the first instance, from the end of the year's worth of quarterly samples when it is demonstrated that the annual average exceeds the MCL, or, in the second instance, from the one quarterly sample that was so high that it caused the annual average to immediately exceed the MCL.

To correctly reflect this interplay between an MCL exceedance and the determination of an MCL violation for compliance purposes, the Department is modifying N.J.A.C. 7:10-5.7(a) on adoption to provide that the one year for a water system to take action to bring its water into compliance with an applicable MCL runs from the receipt of the MCL test results that demonstrate an exceedance that constitutes a violation.

Subchapter 11. Standards for the Construction of Public Community Water Systems

22. COMMENT: The Department should update its guidance documents for water allocation permit applications to provide requirements for water demand projections (especially for the first five years) that are consistent with the SDWA requirements for determining water demands. Typically, the regulated community will use historical water demands to estimate its water allocation needs. Historical water demands are typically significantly lower than the demands estimated using SDWA rule methods. Since water allocations will be used for regulating new

service connections, water allocation limits should be based upon the same estimates of water demand in the SDWA. (20)

23. COMMENT: The proposal provides for a new means of calculating demand that differs from that used by the purveyor in determining the future need for the water allocation permitting process. Currently the purveyor uses significantly lower estimates when determining need for allocation purposes; thus, there is a disconnect between the allocation permit demand and the calculations required to be done pursuant to this rule. The end result is the appearance that there is less water available to meet the need. This discrepancy should be corrected and both permitting processes should rely on the same calculations. (23)

RESPONSE TO COMMENTS 22 and 23: While the Water Supply Allocation rules at N.J.A.C. 7:19 do not, at this time, require a specific method be used to estimate projected water demand, the Department anticipates proposing amendments that will do so. In the meantime, the Department will ensure that its guidance documents are updated to reflect these adopted amendments and methods of estimating demand so that the water allocation determination will appropriately account for the demand estimates used for subsequent water system construction permits under these rules.

24. COMMENT: Under N.J.A.C. 7:10-11.4, a change in definition of firm capacity is proposed. Under the existing definition, firm capacity is calculated based upon “the largest pumping or treatment unit out of service.” The proposed definition bases firm capacity upon

"the largest pumping station or treatment unit out of service." There are many systems that rely upon a single pumping station. Presently, if the system can meet demands with the largest pumping unit out of service, these systems are in compliance. Similarly, it is a fair risk analysis to assume that the loss of the single largest pumping or treatment unit could occur on a peak day. It is not prudent, however, and not standard water works practice, to assume that an entire pumping station with multiple pumps would be lost on a peak day. As proposed, any system that depends upon a single pump station would have a firm capacity of zero. Even in systems with multiple pump stations, it has not previously been customary or required that they be designed to meet peak demand with an entire pumping station out of service. A large number of existing systems will be out of compliance if the definition is changed as proposed. In many cases, it may not be possible or practical to provide redundant pumping stations and would certainly have a significant financial impact if redundant facilities were required. The existing requirement that firm capacity be calculated using the largest pumping unit, not the largest pumping station, out of service, is appropriate and consistent with sound engineering design principles. (1,4,17,20)

RESPONSE: Although the term "station" appeared in the rule text at N.J.A.C. 7:10-11.4(a)3 and the summary, it does not appear in the promulgated administrative code nor was it identified as a proposed amendment to the rules. The purpose of this rule provision is to ensure redundancy among pumping units so that, in the event that the largest component of the pumping or treatment system is out of service, the water system will still be capable of meeting peak daily demand as defined at N.J.A.C. 7:10-11.4(a)7. Consequently, the rule is revised on adoption to remove "station."

25. COMMENT: The definition of "firm capacity" should recognize that numerous water systems purchase water from other purveyors. In addition to the items noted in proposed N.J.A.C. 7:10- 11.4(a)3, firm capacity should include the maximum flow available by contract from supplying systems. (2)

RESPONSE: In practice, the Department does include water provided through a binding purchase agreement with another water system in the calculation of firm capacity for a particular system, since such water in effect substitutes for water that the system would otherwise be withdrawing from a surface or ground water source to treat and provide to customers. The rule has been revised on adoption to acknowledge this fact.

26. COMMENT: With regard to the amended definitions of "peak daily demand" at N.J.A.C. 7:10-11.4(a)(7) and the method for calculating it at N.J.A.C. 7:10-11.5(f), the Department states that seasonal fluctuations in water usage, such as irrigation and recreation, inflate average daily demand by roughly three times during a peak month. However, one size does not fit all in this regard, and peaking factors can vary widely from system to system. The Department should provide flexibility so that actual peaking factors can be demonstrated through a review of the water bills for all new units built within the past two or three years in a system. (8)

RESPONSE: The peaking factor of three is used to calculate peak daily demand and is intended to account for relatively short-term spikes in water system demand, particularly the

highest episodic demand potentially experienced in a 24-hour period. The Department uses a peaking factor of 1.5 times average daily demand, multiplied by 31 days, to calculate monthly peak demand, since relatively short-term peak usage episodes tend to normalize over time. The Department agrees that, in certain circumstances and due to specific events or actions, some flexibility in the calculation of peak monthly or annual demands to account for system to system variability may be appropriate, and such modifications may be authorized by the Department pursuant to N.J.A.C. 7:10-11.3, Deviations from construction standards. Some examples of quantifiable demand reduction events include a significant water user leaving the system, or the imposition of effective water use restrictions through a municipal ordinance or other system-wide order. In order for any adjustment in the standard peaking factors to be made, however, the applicant must first obtain approval from the Department and clearly document a reduction in demand over a sustained period (two or more years) to demonstrate that such flexibility is warranted.

27. COMMENT: The proposed change to the definition of firm capacity is too restrictive. The need to ensure that the water supply source can meet the combined factor of meeting peak daily demand with the largest pumping station or treatment unit out of service is excessive and unnecessary. The likelihood of both of these extreme events occurring simultaneously is unlikely. (23)

RESPONSE: The potential of a primary water supply system pumping or treatment unit failing or being disabled during a peak water demand period, such as is experienced during the

typically dry, hotter summer months, is not nearly as remote as the commenter suggests. A range of seasonal stresses on water system infrastructure, including extreme and unpredictable storms, flooding, and energy shortages, for example, have the potential to coincide with periods of extreme water demand. Accordingly, system redundancies are essential to the provision of public water supply in order to ensure public health, safety and welfare.

28. COMMENT: The Residential Site Improvement Standards (RSIS) unit flows provide a safety factor in that they are already conservative to begin with. To apply a peaking factor of three would in many systems be unduly conservative. This, in turn, would result in overbuilding the amount of supplies and treatment units, placing a further burden on the Department's permit review with increased costs to the consumers. (8,11)

29. COMMENT: Peak daily demand is an overly conservative figure in that it relies on the demand figures included in the RSIS, which are inflated well beyond the known actual use figures. Then, this figure is tripled. There is no justification for the demand figure or the tripling factor. The end result is a demand figure that in all probability will never be met. The rules should use the actual historic peak day figure. (23)

RESPONSE TO COMMENTS 28 and 29: N.J.A.C. 7:10-11.5(f)1 uses the RSIS average daily demand figures for residential water demand because they are current and accurately reflect technological advancements associated with higher efficiency plumbing fixtures and other related water use appliances utilized in newer construction. The RSIS figures replace the portion

of Table 1-Average Daily Water Demand at N.J.A.C. 7:10-12.6(b)2, used to calculate residential demand. The RSIS at N.J.A.C. 5:21-5.2(d) also require a peaking factor of three to be applied when calculating peak daily demand, as do these rules. The Department believes that the RSIS water demand figures fairly represent average residential water usage associated with new construction.

30. COMMENT: In N.J.A.C. 7:10-11.4(a)7i, the Department proposes to amend the definition of "peak daily demand" to be the total of the average daily demand in the peak month in the past five years, plus anticipated future peak daily demand. As part of the firm capacity analysis under proposed N.J.A.C. 7:10-11.5(e)1, the applicant will have to show its existing peak daily demand, as defined in N.J.A.C. 7:10-11.4(a)7i, plus its anticipated peak daily demand. Since "anticipated future peak daily demand" is already included in the proposed definition of peak daily demand in N.J.A.C. 7:10-11.4(a)7i, the requirement in N.J.A.C. 7:10-11.5(e) to add "anticipated peak daily demand" to existing peak daily demand as defined at N.J.A.C. 7:10-11.4(a)7i means "anticipated future peak daily demand" will be double counted: once as part of the calculation of peak daily demand under N.J.A.C. 7:10-11.4(a)7i, and then again when it is added to peak daily demand in accordance with N.J.A.C. 7:10-11.5(e)1. Since we assume that the Department does not intend to double count "anticipated peak daily demand," it is suggested that either it be removed from the definition of peak daily demand or removed from the calculation under proposed N.J.A.C. 7:10-11.5(e)1. (11)

RESPONSE: It is not the Department's intent to double count the anticipated peak daily demand when calculating firm capacity of the water system in order to meet peak daily demand. New N.J.A.C. 7:10-11.5(e)1 sets forth the variables that must be added together to determine if a proposed water system (which could be either an entirely new water system or an expansion or modification of an existing water system) will have adequate firm capacity to meet the highest ("peak") daily demand on the system. The variables are existing peak daily demand and anticipated peak daily demand. Because N.J.A.C. 7:10-11.5(e)1 spells out all of the variables for the determination, the definition of "peak daily demand" at N.J.A.C. 7:10-11.4(a)7 is unnecessary and, as the commenter points out, is misleading in that it implies a double-counting of one of the variables. On adoption, therefore, the Department is deleting the definition of "peak daily demand" at N.J.A.C. 7:10-11.4(a)7 and including at N.J.A.C. 7:10-11.5(e)1i the language from N.J.A.C. 7:10-11.4(a)7 that explains that "existing peak daily demand" means the water system's average daily demand as recorded in the peak month of the prior five years. At N.J.A.C. 7:10-11.4(a)3, the definition of "firm capacity" is modified on adoption to replace the reference to the definition of peak daily demand at N.J.A.C. 7:10-11.4(a)7 with a reference to N.J.A.C. 7:10-11.5(e)1, where the determination of peak daily demand is set forth.

31. COMMENT: There are other means to assure that water demand will be met during the time when firm capacity cannot be met such as during the brief time until an out-of-service unit is repaired or water demands are lowered. As an example, why not allow for purveyors to use storage capacity as part of the calculations for available water? (23)

RESPONSE: Storage is primarily provided to equalize pressure in a water system or to normalize on-and-off cycles of pumping units. Storage capacity is also utilized in order to meet peak hourly demands when the water system's pumping and treatment units are insufficient to meet relatively shorter duration peak demand periods that can be several times greater than peak daily flow rates. In contrast, firm capacity accounts for the loss of the largest pumping or treatment unit, and is intended to ensure that a water system can meet average daily demand over a longer period of time, such as multiple days or longer within the peak month. Consequently, storage capacity and firm capacity are related, but they address different aspects of water system reliability.

32. COMMENT: The State should ensure that there are emergency interconnections in place so that in any worst-case scenario water can be moved to ensure supply needs are met. Rather than prohibiting water hook ups where a purveyor may not be able to meet an exaggerated supply demand or where a catastrophic equipment failure is occurring, the State should allow for more realistic calculations of the demand and then ensure that the means to provide that need will be met. (23)

RESPONSE: The Department will be initiating the "NJDEP Interconnection Study – Mitigation of Water Supply Emergencies." The major objectives of the study are to evaluate options for (1) optimizing current water diversions and transfers to avert water supply drought emergencies; (2) addressing significant effects of a water supply emergency or catastrophic loss of infrastructure; and (3) optimizing existing diversions to enhance water supply. The

Department encourages and, when necessary, requires emergency interconnections between public water systems. However, enhancing water supply availability through interconnections must be balanced with the supplying and receiving water system's needs as well as any associated environmental impacts that water supply transfers have on the local watershed and associated ecosystems. The method for calculating adequacy of firm capacity to meet peak demands, as adopted in this rule, appropriately addresses the need to ensure that adequate water supply is provided in times of substantial loss of pumping or treatment capacity.

33. COMMENT: Is a firm capacity and water allocation analysis required to construct or modify projects that are clearly not capacity related (for example, the replacement of an existing chemical feed system)? The regulations should include a waiver provision for replacement projects that do not impact capacity and that are not associated with new extensions, new connections or growth (20)

34. COMMENT: N.J.A.C. 7:10-11.5(e) states that "the firm capacity and water allocation analysis shall demonstrate that ...[certain conditions are]... met." If the conditions are not met, does that mean that a permit will not be issued even if the permit is not related to new capacity? The Department should continue to allow appropriate non-capacity related replacements and improvements of water facilities and appropriate capacity-related projects if the permit is needed to achieve capacity compliance. (20)

RESPONSE TO COMMENTS 33 and 34: The information related to a firm capacity and water allocation analysis under N.J.A.C. 7:10-11.5(e) is necessary for a permit to construct a new water system or to expand an existing system to serve new development with an associated increase in peak daily, monthly, and annual water supply demands. The information is also necessary when the permit is for a modification of a water system that in some way implicates the system's ability to continue to meet the demands of users (for instance, the replacement of or a change in treatment process or pumping capacity, such as the conversion from iron removal by ion exchange to an oxidation/filtration process). On adoption, the Department has therefore modified N.J.A.C. 7:10-11.5(e) to except applications for non-capacity related water system modifications from the requirement to submit a firm capacity and water allocation analysis.

35. COMMENT: Proposed N.J.A.C. 7:10-11.5(c)6 would require applications to include GIS maps of the existing and proposed water system. Currently most purveyors do not have such maps. Many currently use Computer Aided Detector Design (CADD) maps. Why would these maps not be equally acceptable? The rule should acknowledge that many purveyors will not have GIS maps available now or in the short term and thus should allow continued use of other equally acceptable mapping formats. (23)

36. COMMENT: The submittal requirement for mapping, particularly in the GIS format in accordance with State standards, will likely be burdensome, especially for small systems and those without this capability. While the intent to be able to standardize and easily copy this

information into the State's system is understood, this should be weighted against the burden and cost to systems and customers. (1)

37. COMMENT: Providing a service area map, requiring that the map be updated each time service is extended to a new area, and providing such information in a GIS format acceptable to NJDEP are not objectionable. However, in many cases, new software and equipment may need to be purchased and additional training may be needed to effect this change. There should be a reasonable period of time after the effective date of the regulations to allow the regulated community to properly budget and prepare for these GIS requirements. (20)

RESPONSE to COMMENTS 35 through 37: The Department acknowledged in the Regulatory Flexibility Analysis in proposal that relatively small water systems may not be equipped to provide the required mapping information directly in a compatible GIS format. The Department noted that a water system could, if it does not already, employ the services of a professional consulting and/or engineering firm, with the capability to supply information in either acceptable GIS format or CADD export files. It should also be noted that there are several formats that support the export of files from CADD software (for example, DXF, DWG, and DGN) that are compatible with the Department's GIS software.

The Department believes the new mapping requirements at N.J.A.C. 7:10-11.5(c)6, while presenting somewhat of a burden to some applicants, will have a positive impact on water resources management in New Jersey. The digital mapping data will contribute significantly to the Department’s on-going efforts to manage recurrent drought events, develop comprehensive

water budgets, and allow the quantification of total water use and availability. Completed water budgets will be instrumental in determining areas of water surplus and deficit and how this correlates with and supports growth in coordination with the New Jersey State Development and Redevelopment Plan, the New Jersey Highlands Water Protection and Planning Act, and the recently enacted Smart Growth legislation.

38. COMMENT: The commenter objects to submitting detailed locations of water system facilities into a statewide GIS for security reasons. It is likely that the GIS would be available to the general public and providing detailed facility information locations would be considered a major security vulnerability and should not be considered a best practice for water utilities. The Department should review this regulation with the state Domestic Security Preparedness Task Force and the Infrastructure Advisory Committee before requiring detailed water facility GIS information. (20)

RESPONSE: The Department appreciates the sensitivity of certain water supply system information and the need for appropriate security protocols governing the accessibility to such information. At the same time, the Department has a responsibility to provide the public with access to the information it uses to make regulatory and compliance decisions. In light of the evolving mandate to ensure adequate protection of water supply system infrastructure, the Department, in consultation with the Water Sector Task Force (established pursuant to the New Jersey Domestic Security Preparedness Act, P.L. 2001, c. 246) has considered various types of water system related information and is evaluating security protocol options to be embodied in a

Data Security Policy that would ensure appropriate handling and release procedures. The data security policy will be aimed at appropriately balancing the public's right to know and protection of public health and safety.

39. COMMENT: N.J.A.C. 7:10-11.5(d) requires that extensive detailed information be submitted with each water main extension application. Currently many purveyors do not have this information readily available. It is the developer who typically completes the permit application and thus will be dependent on the purveyor to provide this information. While the information included in the proposed rule is worthwhile, the Department must recognize purveyor limitations and assist developers in obtaining this information. (23)

RESPONSE: The Department acknowledges that, in many cases, a water supplier relies on a developer's consultant or engineer to prepare the information necessary to satisfy the NJSDWA permit application requirements. However, the ultimate responsibility to ensure the accuracy of the information and to meet the regulatory requirements rests with the water supplier. Although the requested information may not be readily available in all instances, it is necessary to accurately evaluate the water system's available firm capacity and water allocation. Once the information is gathered for the first time, the preparation of subsequent permit applications should be simpler, requiring updates of changes made to the water system in the intervening time. Submittal of the requested information is expected to streamline the review process and thereby reduce the Department's application review period. See also Response to Comment 41.

40. COMMENT: Under new N.J.A.C. 7:10-11.5(e), applicants must identify the peak daily demand as of the date the application is submitted. Developers who prepare applications for the purveyors will be using peak daily demand figures provided by the purveyor and will have no means of assuring the figure has not changed during the period from when the purveyor signed off on the information to the time of the submittal of the application. The requirement should be that applications should identify the anticipated peak daily demand as of the date the purveyor signs the application. (23)

RESPONSE: It is the responsibility of the applicant to ensure that all water system data used to prepare the permit application are accurate and current. For a well-established water system, the demand peaks do not change drastically if the water system has an effective demand management program in place. In addition, in order to provide the general public, including the building community, a snapshot of the status of water supply system information, the Department has established a Public Water Supply Deficit/Surplus table that is posted on the Department's web site at www.state.nj.us/dep/watersupply/wsa_pws.htm. This database provides information depicting each public water system's available water allocation limits, water demand, and firm capacity. The information provides an indication of those systems that are at or near their water allocation or firm capacity limits, and should serve as a useful planning tool to any developer.

41. COMMENT: The form for the firm capacity and water allocation analysis referenced in N.J.A.C. 7:10-11.5(e) is not yet posted on the Department's web site. Since it is being

incorporated as part of these regulations, it should be provided for public comment to ensure that the form complies with the language of the regulations. Conversely, if the form is not being provided for review and public comment, its content cannot be enforced as though it were part of the regulation. (11)

RESPONSE: The firm capacity and water allocation analysis form, as described in the adopted amendments at N.J.A.C. 7:10-11.5(e) is available on the Department's web site at www.state.nj.us/dep/watersupply/wsa_formssdw.htm. The information requested on these forms is limited to that which is required under the rules.

42. COMMENT: When applying for a Safe Drinking Water Permit, an applicant must use either the Department's rules at N.J.A.C. 7:10-12.6 or the Department of Community Affairs' standards (N.J.A.C. 5:21-5.1) in calculating demand. A peaking factor of 3 times the average daily demand is applied. These conservative values are in place to protect the integrity of public water systems and assure adequate water supply availability; however, it has been the commenter's experience through evaluation of usage that the actual peak values are significantly less than calculation employed by the NJDEP. The overall conservative method of calculation forces a municipality to plan and construct additional source supply and request additional allocation. The paradox is that the Department is not entertaining new source supply applications or requests for increases in allocation. A municipality should be able to provide documentation regarding its respective system based on historical usage applying factors of conservatism to protect the NJDEP's goals. (16)

43. COMMENT: N.J.A.C. 7: 10-11.5(f) requires that applicants use the RSIS demand number multiplied by a factor of 3. This figure is to be added to the historic peak daily demand figure. Why is the Department requiring applicants to use an artificially inflated demand number, plus an artificially inflated peaking factor when there is actual historic peak day data available? The actual peak day data is what should be used for projecting future use. (23)

44. COMMENT: The commenter questions the proposed peaking factors of 3 and 1.5 to determine peak daily and average peak monthly flows. The commenter has determined [its own] peak daily and peak monthly flow factors to be 1.94 and 1.43, respectively. Since peaking factors vary from system to system, the regulations should allow for peaking factors to be determined on a case-by-case basis. (19)

45. COMMENT: The peaking factor of three that is proposed for the firm capacity analysis in N.J.A.C. 7:10-11.5(f)3 as well as the peaking factor of 1.5 for the allocation analysis, contained in proposed N.J.A.C. 7:10-11.5(g)2, are inappropriate. The Department has cited no statistics in support of its position, only a vague reference to "experience." By citing no factual basis for the peaking factors, they become an arbitrary and capricious decision. (11)

46. COMMENT: A peaking factor in the firm capacity analysis is unnecessary since: a) under the statute, a permittee can divert up to the allowable water allocation and this statutory right cannot be reduced by an artificial formula that contains a peaking factor; b) the rare times when

overall water usage threatens to exceed permissible allocations can be handled through the imposition of mandatory water use restrictions by the purveyor, which are already required by the Department. The net effect of any peaking factor is that it will either deprive permittees of the ability to use the full water allocation authorized by statute or else, require purveyors to overbuild their water systems and needlessly spend public monies for no valid reason. (11)

47. COMMENT: N.J.A.C. 7:10-11.5(g) describes the calculation to determine the adequacy of the purveyor's water allocation. For the aggregate system, the following approach should be used: For the last three non-drought years, the average customer use should be derived by dividing the average non-drought system delivery (sum of the annual system delivery for the last three non-drought years divided by three) by the average number of customers for those years (the sum of the number of customers at year end for each of the last three non-drought years divided by three). This average customer use value should then be multiplied by the number of customers anticipated when the project is complete. This annual estimate of water need can then be divided by eight (12 months/l.5 peak month factor as contemplated by N.J.A.C. 7:10-11.5(g)2) to arrive at an estimate of the maximum monthly water need. (2)

48. COMMENT: The intent of the regulations is generally understood and accepted, but the methods proposed in the regulations, specifically in N.J.A.C. 7:10-11.5(g)4i and ii, continue to be confusing and incomplete. First, there is no mechanism to account for customers that leave the system. This could be a major issue with non-residential customers and could potentially provide for additional capacity. (20)

49. COMMENT: The commenter believes the peaking factor of three proposed for the firm capacity analysis is inappropriate. Using the water pumpage data recorded by the City of Bordentown for the 5-year period (1999—2003), the ratio of average daily peak month flow to the average daily flow of the remaining 11 months for the respective year varies from a low of 1.13 to 1.24, as shown on the following table:

Year	Peak Month Average Flow, gpd	Average Daily Flow, gpd [(1)]	Ratio Peak/Average
2003	2.378 (July)	2.083	1.14
2002	2.425 (July)	1.998	1.21
2001	2.462 (July)	1.984	1.24
2000	2.168 (June)	1.919	1.13
1999	2.240 (June)	1.861	1.20

[(1)]Calculated by subtracting the pumpage for the peak month from the annual total pumpage then dividing the result by total number of days for the remaining 11 months in the respective year.

As shown by the above table, using a peaking factor of three would not allow the full use of the water allocation and would require purveyors, such as the City of Bordentown Water Department, to overbuild their systems. (18)

RESPONSE TO COMMENTS 42 through 49: The Department must ensure that there is adequate infrastructure with redundancy to meet all future demands including those times when a water system experiences peaks in demand. Prior to adoption of the 1996 amendments to the State SDWA rules, water systems were required to have sufficient capacity with the largest pumping or treatment unit out of service to meet the maximum daily demand (i.e., the highest water demand recorded in a single day). In order to meet this requirement, water suppliers used a variety of methods to determine maximum daily demand, and included water storage over multiple days. This lack of uniformity among systems proved to be an impractical method of ensuring water system redundancies. Accumulated data from actual water use has demonstrated that the maximum daily demand of a water supply system equates to approximately three times the average daily demand. Consequently, the Department formally adopted a "peaking" factor of three to estimate peak daily demand as part of the firm capacity requirements in the State SDWA rule amendments promulgated in 1996. Although some have discounted the Department's noted experience concerning historical water demand, this peaking factor has proven to be an accurate and effective tool for estimating peak water demand, and has been implemented with a high degree of success over the past eight years.

In order to ensure that there is adequate water allocation within the system, the Department reviewed statewide water use data and developed a monthly peaking factor for use in its water allocation analysis. As discussed previously in the Response to Comment 26, the Department is adopting a peaking factor of 1.5 times the average daily demand multiplied by 31 when determining adequacy of the monthly water allocation permit limits. This calculation is

generally representative of the peak demands experienced by the average water system over a 31-calendar day period. While the Department has utilized a peaking factor of 1.5 informally in the past, other methods of calculating peak water demands had been accepted as part of the allocation application review process. The practice of accepting lower peaking factors frequently resulted in water systems exceeding their water allocation limits. Therefore, the adoption of the 1.5 peaking factor was determined to be necessary to ensure adequate water allocation and water system infrastructure and does not represent an unnecessary commitment against an approved allocation limit.

The Department acknowledges that there is a difference in water use and averages for larger, established systems when compared to newer systems. The difference between the annual average daily demand and the average daily demand within a peak month is less significant in larger, established water systems and therefore the ratio is lower. The variety of water users within these systems tends to reduce the differences between these two averages, resulting in lower ratios. However, the Department's water use data indicate that water supply demand characteristics of relatively newer developments are typically higher. For example, water use data for Morris County Municipal Utilities Authority, a larger and more established system, indicates that the ratio of the average daily demand within the peak month to average daily demand within a year is approximately 1.3. For the Parsippany-Troy Hills water system, another established system, the ratio equals approximately 1.4. However, water use data for the Aqua New Jersey, Inc. – Woolwich System, a system that has been in operation for approximately three years, indicates that the ratio between average daily peak monthly demand

and average annual daily flow is 2.3. The higher ratio has been attributed to increased irrigation use upon the establishment of a water system and the community it serves. While these differences could support the use of a peaking factor for water allocation above 1.5, the Department has determined that, over the long term, a factor of 1.5 is sufficient to ensure adequacy of allocation.

As to the assertion that the Department is not entertaining new source supply allocations or requests for increases in allocation, the Department continues to review requests for new or increased diversions under the Water Supply Allocation program. Allocation permit decisions consider a number of factors as set forth in N.J.A.C. 7:19-2, including the justification of need, the potential for the diversion to impact the resource, including the spread of groundwater contamination, and the potential impact of the proposed diversion on other water users as well as threatened and endangered species habitat and wetlands. The amount of available allocation that can be diverted from a given water resource without jeopardizing the integrity of the source, nearby or adjacent water users, and/or the associated ecosystems is the key issue. Consequently, if additional allocation is unavailable from certain sources of water, the water supplier must identify alternate water sources and/or demonstrate a reduction in demand in order to serve additional development within its service area.

In terms of estimating average daily demand, the Department's experience with existing and rapidly growing water systems indicates that the average residential water demand figures in the Department of Community Affairs' (DCA) Table 5.1 "Water Demand/Generation by

Type/Sizing of Housing" of the RSIS at N.J.A.C. 5:21-2, are appropriate for new construction. As indicated above, the peaking factor of three for assuring firm capacity is also justified. Once a proposed project is completed and "on-line," however, the actual water demand will be reflected as part of the system's water use figures. Similarly, any significant change within the water system's customer base, such as a large water user leaving the system, will be accounted for in the actual demand and will be considered by the Department (see Response to Comment 26). If the actual water use is less than the anticipated demand, uncommitted resources (firm capacity and allocation) will be available within the limits of the permits and considered as part of the review of applications to serve additional customers.

As also indicated above, in order to protect the State's water resources and water-dependent species and ecosystems potentially impacted by diversions, the Department has initiated a rigorous enforcement of water allocation permit limits. A uniform methodology, as adopted here, provides the users and Department with a predictable system that ensures adequate water for users while protecting the State's valuable resource. With the adoption of these amendments, and the development of Safe Drinking Water and Water Allocation program guidance, any past discrepancies between the methodologies used by the two programs involving the calculation of projected demands should also be resolved. The result will be an equitable and uniform process applied consistently to all permittees.

50. COMMENT: The reference in N.J.A.C. 7:10-11.5(f)1 to N.J.A.C. 5:21-5.2(d) should be to Table 5.1 in N.J.A.C. 5:21-5.2, since N.J.A.C. 5:21-5.2(d) contains an arbitrary and capricious peaking factor of three. (11)

51. COMMENT: The reference to the peaking factor of three in N.J.A.C. 7:10-11.5(f)3 is confusing. N.J.A.C. 7:10-11.5(f)1 refers to N.J.A.C. 5:21-5.2(d) which already applies a peaking factor of three to Table 5.1. By applying a factor of three in N.J.A.C. 7:10-11.5(f)3, is it the Department's intention to apply a peaking factor of nine to Table 5.1 in doing the firm capacity analysis? There is no scientific support given for a peaking factor of nine, and it would clearly be arbitrary and capricious on its face. (11)

RESPONSE TO COMMENTS 50 and 51: N.J.A.C. 7:10-11.5(f)1 requires that the average daily water demand for residential development be calculated in accordance with the DCA's RSIS at N.J.A.C. 5:21-5.2. The RSIS regulations at this citation refer to Table 5.1 entitled "Water Demand/Generation by Type/Size of Housing" for the computation of average daily residential consumption. The section does, however, go on to indicate that peak daily flows should be computed by applying a peaking factor of three times the average daily residential consumption. The Department has included the table reference at N.J.A.C. 7:10-11.5(f)1 on adoption to ensure that it is clear that the peaking factor referred to in the RSIS rule at N.J.A.C. 5:21-5.2 is not applicable to the determination of average daily demand.

52. COMMENT: Since the vast majority of the increase in seasonal usage is typically due to irrigation, when calculating the "peak daily demand," credit should be given for the use of non-potable supplies of water (such as Reclaimed Water for Beneficial Reuse or stormwater runoff) for irrigation use which is not accounted for in the firm capacity of the system. In these cases, the system capacity is not being used to meet the increased seasonal demand. The Department is promoting the use of non-potable irrigation supplies. Not applying a non-potable supply credit in this calculation acts as a deterrent to those systems trying to develop non-potable supplies and separate distribution systems. (8)

53. COMMENT: A credit should be given for the development and use of Reclaimed Water for Beneficial Reuse. By giving a gallon-for-gallon credit, the Department would be providing an incentive for the development of these costly systems. (11)

RESPONSE to COMMENTS 52 and 53: The Department is encouraging the use of Reclaimed Water for Beneficial Reuse (RWBR) for a variety of non-potable applications to the extent practicable. Where a proposed new water-dependent activity or development integrates RWBR, and to the extent that reclaimed water is utilized through established contracts and/or permits, consideration will be given for the modification of the applicable peaking factor when calculating the anticipated water demand associated with a project, in accordance with N.J.A.C. 7:10-11.3.

54. COMMENT: A municipality should be credited in the calculation method for bona fide water conservation plans. (16)

RESPONSE: A water system with an approved water conservation plan will be credited in an amount equal to the quantifiable water volume savings reflected over two or more years. Where a municipality or other water supplier demonstrates a measurable reduction in water use from the use of high-efficiency water fixtures and appliances in developments that are less than five years old, the Department will consider adjusting demand factors used to calculate future monthly peak and annual water supply demands, pursuant to N.J.A.C. 7:10-11.3. However, the Department will only consider such information in adjusting the demand of a proposed project, if the project to be served is substantially similar in type of use and size to the existing one. In addition, any demand reductions achieved through demand management, such as outdoor water use restrictions, must demonstrate a multi-year trend of declining water usage in order to be considered. Any demonstrations must include an analysis of precipitation and temperature data for the evaluation period; water use data from periods of above normal precipitation and below normal temperature cannot be used to justify long-term demand reductions.

55. COMMENT: The Department requires that a factor for pools and clubhouses be added to residential demand calculations. This added calculation involves a mutually exclusive population thus artificially inflating the overall demand for a project. Redundant measures such as adding pools and clubhouse demands should be eliminated. (16)

RESPONSE: Pools and clubhouses generate a demand separate from that associated with other types of surrounding residential uses and therefore must be accounted for separately when determining peak demand. In many cases, pools and clubhouses are associated with higher density development, for example, townhouses or multi-family dwelling units. Water demand projections for these types of residences are generally lower than single family detached homes (for example, 75 gallons per day versus 100 gallons per day). While the Department acknowledges that there may be some duplication, in the absence of a published alternative demand figure, the Department will continue to rely on previously established figures. In addition, once construction is complete and a project is connected to the water system, actual water use data for the system are used to determine available uncommitted supply. The resultant surplus, if any, between actual realized demand versus projected demand would be available for future use.

56.COMMENT: Consideration of demand standards should factor in size of a building lot to account for lawn irrigation impacts. For example, a 3-bedroom house on a 8,000 square foot tract should be valued lower than a 3-bedroom house on a 1-acre tract. As it stands now in the category of single family dwelling, bedroom size generates the same calculation regardless of lot size. (16)

RESPONSE: Although lot size may be one factor that influences a water supply system's overall demand, there are many other factors that impact demand, including irrigation practices, use of a swimming pool, spa, and hot tub, and vehicle washing. At this time, the Department

does not have adequate information to justify alternative water use demand figures, but would reconsider lot size variability if a comprehensive study, acceptable to the Department, was conducted that quantified water demand figures notably different from those in the rules.

57. COMMENT: For purposes of the firm capacity and water allocation analysis contemplated by N.J.A.C. 7:10-11.5(e)1, the peak day should recognize the fact that all customers do not exert peak demands at exactly the same moment in time. This could be projected by taking the average peak-day customer demand (the highest recorded peak day within the last five years divided by the total number of customers on that peak day) and multiplying this value by the number of customers to be served by the system when the project or projects considered by the Engineer's Report are complete. (2)

RESPONSE: In calculating the peak daily demand, the Department agrees that not all customers use water simultaneously. As indicated in the Response to Comments 43 through 50, larger established systems generally experience a lower differential in peak versus average daily demands. For smaller systems, particularly newer systems, the ratio of peak to average demands is much higher. Therefore, the use of an average customer demand could negatively impact smaller, newer systems, because the peak daily demand could be substantially higher than the average customer use. In addition, because water use varies significantly among users, for example, a commercial use when compared to an individual residential use, it is inappropriate to use an average customer usage to ensure adequate firm capacity or allocation. As also indicated

in the Response to Comments 42 through 49, the Department's experience over the last eight years supports the methodology adopted in the rules.

58. COMMENT: The calculation of firm capacity/water allocation analysis should include the customers to be served by other facilities approved by the Department but not yet constructed by the water purveyor. Also, the calculation proposed in N.J.A.C. 7:10-11.5(f) seems to be an appropriate way to arrive at an estimate of peak demand for local distribution facilities, absent any other data representative of the water system in question. (2)

RESPONSE: The Department appreciates this comment in support of the adopted amendments.

59. COMMENT: N.J.A.C. 7:10-11.5(f) should allow engineering judgment to be applied in estimating the peak demand if representative data exist. If there are no representative data, the RSIS method is a good "rule of thumb" method of estimating average and peak flows. (2)

60. COMMENT: The Department should allow the application of sound engineering judgment, and also recognize that the historic peak day could have been the result of a unique event such as a fire or water transfer ordered by the Department. (2)

RESPONSE TO COMMENTS 59 and 60: The Department will consider unusual circumstances that lead to an irregularity or unexpected "spike" in a peak daily demand use. In

accordance with N.J.A.C. 7:10-11.3, aberrations in system-wide water use demand figures may be taken into account to the extent that such events are limited, not likely to be repeated, and identified and quantified to the Department's satisfaction. For instance, if a water system experiences an unusually high demand that is directly attributable to a Department ordered transfer of water (during a drought or other water emergency) that is not expected to be repeated, the Department would adjust the historical demands of the system. However, normal demand fluctuations within the system, including those experienced during a hot, dry period to satisfy regular customers, will not be accepted as grounds for adjusting historic demands.

61. COMMENT: N.J.A.C. 7:10-11.5(g) appears to only require that the future monthly and annual demand be utilized to demonstrate compliance with N.J.A.C. 7:10-11.5(e)2. These numbers need to be added to the current monthly and annual actual usage to make this demonstration. (23)

RESPONSE: Under N.J.A.C. 7:10-11.5(g), the estimated demands on the water system from users is to be compared to the diversion limits in the water allocation permit and/or bulk water purchase agreements under which water will be provided for the system. The comparison is necessary to ensure that the demand created by the users of the proposed water system will not exceed the water authorized to be diverted for use by water systems under the allocation permit and bulk water purchase agreements. As the commenter points out, this comparison would be incomplete if the demand side did not include existing demand in addition to estimated future demand. Accordingly, the Department is modifying N.J.A.C. 7:10-11.5(g)5 on adoption to

provide that existing peak monthly and existing peak annual demand is to be added to the estimated peak monthly and estimated annual demand for purposes of comparing demand to allocation.

In reviewing N.J.A.C. 7:10-11.5(g) in light of this comment, the Department determined that additional revisions on adoption are necessary to ensure that the greatest anticipated demand for the proposed water system is compared to the allocation and/or bulk water purchase agreements. Since the allocation permit establishes the maximum amount of water that can be diverted, the appropriate comparison is to the maximum likely demand the proposed water system will have to meet using the water diverted under the allocation permit and/or bulk water purchase agreements. Accordingly, at N.J.A.C. 7:10-11.5(g), the qualifier "average" is deleted or replaced with the qualifier "peak," as appropriate, to ensure that the end result of the calculation under (g)1 through 4 is the highest likely demand on the system for purposes of comparing demand with allocation under N.J.A.C. 7:10-11.5(g)5.

62. COMMENT: Additional definitions and/or examples are needed for N.J.A.C. 7:10-11.5(g)4i and ii to make it clear to the regulated community what is required. In N.J.A.C. 7:10-11.5(g)4i, the term "not yet constructed" is confusing. The intent seems to be to set a control date that corresponds to the date of the peak month in the previous five years. Demands associated with customers that are in service at the time of the control date should go into the historical or existing peak daily demand, while demands associated with customers who were not in service at the control date should continue to build into the estimate of anticipated peak daily demand. (20)

63. COMMENT: In N.J.A.C. 7:10-11.5(g)4ii, the term "committed but not yet completed" is confusing without reference to the peak month control date. The intent seems to be to place customers in service at the control date in the existing demand and estimate the demand from new customers (installed or committed), whether they need a main extension permit or not, into the anticipated demand estimate. (20)

RESPONSE TO COMMENTS 62 and 63: As explained in Response to Comment 61, the intent of N.J.A.C. 7:15-11.5(g) is to ensure that a water supply system has adequate water allocation available to meet existing and projected water demands. In order to demonstrate this, the Department requires that an applicant account for the total projected water supply demand within the system. This total includes existing water demand reflected in the most recent water use figures, anticipated demand of previously approved permits issued by the Department or committed to by the water supplier but not yet placed into service, and demand anticipated from the project(s) included in the permit application under consideration. The timeframe used to identify existing peak daily and peak monthly demand is the five-year period prior to the date of application submission, utilizing the most current and complete water use data available for the system. Thus, the maximum demand recorded by the water system in any given month within the prior five-year period is identified as the peak month.

As an example, assume that the system’s peak monthly demand during the previous five years occurred in July 2000. The Department would consider July to be the “control” month for

determining whether service connections completed throughout the year are to be included as existing demand or are required to be projected as anticipated peak demand. Accordingly, water demand resulting from service connections completed prior to the peak month (July) in the current calendar year are considered to be part of the existing peak monthly demand. Projected demand associated with prospective customers who were not in service as of July 1, 2004 will continue to be considered in the estimate of anticipated peak daily demand and must be accounted for in accordance with N.J.A.C. 7:10-11.5(f) and (g)1 through 4. The system's peak daily demand during the previous five years is added to the anticipated demand associated with connections completed since July 1, 2004, those that remain uncompleted, and that proposed in the application under consideration. Ultimately, N.J.A.C. 7:10-11.5(g)5 directs that the resultant water demand figure be compared to the monthly and annual water diversion limits in the applicable water allocation permit, inclusive of bulk water purchase agreements under contract, to ensure the demand can be met by the approved allocation.

64. COMMENT: The proposed amendments modified the heading at N.J.A.C. 7:10-11.10 to add "master permits." Is the intent of this change to indicate that this entire section applies to permit requirements for Master Permits only, or was the intent to indicate with this change that master permit requirements are covered along with all distribution construction permit requirements? (20)

RESPONSE: The adopted amendments incorporate the term "master permits" in the heading at N.J.A.C. 7:10-11.10 to indicate that the section contains permit requirements related to master

permits as well as permits for the construction of water distribution systems, including water main extensions. Requirements and standards governing master permits are included under N.J.A.C. 7:10-11.10(a) while other distribution system and connection permit requirements and standards appear under N.J.A.C. 7:10-11.10(b).

65. COMMENT: The master permit term should remain at its current three years with a triennial review, as one year is simply too short a time in which to begin and complete the construction that has been approved under the master permit. The proposed change at N.J.A.C. 7:10-11.10(a) will also make the master permit process more onerous on both the Department and applicants by requiring new applications each year. It would be more appropriate to leave the 3-year permit duration in place but change the requirement for updating to a status report each year. In this scenario the permit remains valid for 3 years as long as the purveyor does not exceed the approved demand. The yearly status report would update any changes to location of lines. If the purveyor is going to be required to submit annually, the incentive to apply for a master permit is minimized. (8,11,23)

RESPONSE: The Department has, in view of this comment, reconsidered its proposed amendment to N.J.A.C. 7:10-11.10(a) related to the period of time for which a master permit must anticipate future service connections. Under the existing rule, the term of the master permit is one year. Each one-year master permit is to project, for the next three years, the anticipated number of routine water main extensions and connections that will be made. The one-year master permit is required to be renewed annually, for the purpose of reviewing and updating the

three-year horizon of anticipated extensions and connections as appropriate. The Department proposed an amendment to N.J.A.C. 7:10-11.10(a) that would have shortened the horizon in which a water supplier must project future extensions and connections from three years to one year. This was an error. As explained in the proposal summary, the intent was to make clear that the duration, i.e., the term, of the master permit is one year, not three years. However, the reference to "three years" in the existing rule in fact relates to the time period for which the water supplier must project potential extensions and connections, not to the length of time the master permit itself is in effect. Consequently, the Department has determined to not adopt the proposed amendment at N.J.A.C. 7:10-11.10(a) that substituted "of one year" for "not exceeding three years." To help address any continuing confusion regarding the term or duration of the master permit versus the period of time for which the water supplier must project anticipated extensions and connections under its master permit, the Department will revise its guidance documents and clarify as necessary the terms and conditions incorporated into issued master permits.

66. COMMENT: We support the proposed amendment at N.J.A.C. 7:10-11.10(a)(2) to make a master permit available to any public community water system. (8)

RESPONSE: The Department appreciates this comment in support of the adopted amendments.

67. COMMENT: N.J.A.C. 7:10-11.10(b)1 references N.J.A.C. 7:10-11.5(b), This reference should be changed to N.J.A.C. 7:10-11.5(c). (23)

RESPONSE: N.J.A.C. 7:10-11.10(b)1 defines the regulated universe that is eligible for a "Simplified Water Main Extension Construction" permit. Specifically, new residential service to greater than 15 but less than 50 new service connections or a new non-residential average demand of more than 6,000 gallons per day require the submission of both a "Standard Application Form" and a "Simplified Water Main Certification Form." These forms are available at the address listed in the rule as well as the Department's website at www.state.nj.us/dep/watersupply. Although the section refers to the permit Standard Application Form pursuant to N.J.A.C. 7:10 11.5(b), the applicant is not required to submit an Engineer's Report or engineering specifications based on the more limited submittal requirements established under the Simplified Water Main Certification Form. The Department therefore agrees that the suggested change of reference to N.J.A.C. 7:10 11.5(c)1 is appropriate and has made this change on adoption.

68. COMMENT: The proposed change to require a construction permit for connections with 15 or more "realty units" that do not include a main extension is over1y burdensome to the regulated community. If the intent is to capture all of the new demand associated with new customers, regardless of whether or not a main extension is required, that goal can be accomplished in N.J.A.C. 7:10-11.5(g)4 without the burden and cost of requiring more permits to be filed. Basically, the utility should be required to keep track of all new connections when

performing a firm capacity and allocation analysis. As long as adequate firm capacity and water allocation exists, a separate permit should not be required for small connections to existing water mains. (20)

RESPONSE: The information required to be submitted under N.J.A.C. 7:10-11.10(b)1 is important in tracking water usage and ensuring adequate firm capacity and available water supply allocation through a valid permit issued by the Department. A public community water system can take advantage of the master permit process pursuant to N.J.A.C. 7:10-11.10(a) and avoid the case-by-case details and application requirements associated with smaller demand connections. The master permit is ideal for medium and large public community water systems that have a substantial number of new connections per year, and the Department encourages their use.

69. COMMENT: N.J.A.C. 7:10-11.10 (b) 3 includes the term “site.” This term needs to be defined. (23)

RESPONSE: For the purposes of N.J.A.C. 7:10-11.10, the term “site” means the total number of lots upon which a realty improvement or group of realty improvements are to be located and subsequently served by a water main extension or other water system connection. The Department’s intent is to prohibit a project that is segmented into phases or other smaller units from avoiding the requirement to obtain a permit from the Department under these rules.

70. COMMENT: It is unfair to the regulated community to face the potential consequences of a Department-mandated water main extension ban or a new connection ban in their service area when the mitigating solution to the capacity or allocation issues could involve obtaining other permits from the Department that are subject to no time limit for action upon the permit applications. It would be much more fair to the regulated community if the Department imposed requirements to complete the application review and act upon water allocation permits and construct/modify/operate permits within defined regulatory durations. This way, the regulated community and their customers could adequately plan for required improvements. (20)

RESPONSE: N.J.A.C. 7:10-11.5(j) requires the Department to make a determination of administrative completeness or request additional information within 20 working days of application submission. N.J.A.C. 7:10-11.5(k) requires the Department make a determination of technical completeness within 60 working days of declaring the application administratively complete. This timeframe is equivalent to approximately 112 calendar days. In the first six months of 2004, it has taken an average of approximately 145 calendar days for the Department to render a permit decision from the date of submission of the application. Of this time, on average approximately 35 calendar days were used by the applicant to address deficiencies. Therefore, the Department has essentially satisfied the requirement of the rule and continues to develop and implement measures to further expedite the processing permit of applications.

The Department has also taken measures to expedite permit processing within the Water Allocation Program where possible; however, it is important to note that the finite nature of

water supply sources within the State will continue to represent a challenge in terms of satisfying increasing demands for water supply. Alternative sources, water conservation, as well as management measures to expedite permit application processing will continue to be aggressively pursued.

71. COMMENT: N.J.A.C. 7:10-11.10(b)4 seems to require that even in those circumstances where a permit is not required, the water main extension or connection shall not be undertaken if the project or activity conflicts with the applicable adopted Areawide Water Quality Management Plan. Under what authority can the Department prohibit an activity such as this, which does not require a Department approval? This requirement should be eliminated. (23)

72. COMMENT: The Department should define for the regulated water utility community what criteria and processes will be used to determine whether a project "conflicts" with a water quality management (WQM) plan, or to define consistency with the plan. The concept and intent are understood, but this new requirement lacks sufficient detail to allow the regulated community to fully determine the potential impacts of this new requirement. Under a worst case scenario, those responsible for the WQM plans could create or revise them without input, approval or appeal from the water utility and the changes could result in major impacts to the water utility and their customers. (20)

RESPONSE TO COMMENTS 71 and 72: The review and decision to extend water service to fifteen or fewer realty improvements rests with the applicable water supplier; however, a water

system extension or connection shall not be undertaken unless it complies with all applicable statutory and regulatory requirements, including consistency with an adopted areawide WQM plan.

The New Jersey Water Quality Planning Act (WQPA), N.J.S.A. 58:11A-10, specifies that all projects and activities affecting water quality in any planning area shall be developed and conducted in a manner consistent with the adopted areawide WQM plan. In order to ensure that projects or activities served by the water service connection provided by the water supplier satisfy the requirements of the WQPA, the adopted amendment at N.J.A.C. 7:10-11.10(b)4ii prohibits the extension of service to projects or activities that conflict with the areawide WQM plan. The WQPA and the Water Quality Management Planning (WQMP) rules, N.J.A.C. 7:15, also prohibit the Commissioner from granting any permit that is in conflict with an adopted areawide WQM plan. Specifically, the WQMP rules at N.J.A.C. 7:15-3.1(c)1 and 10, respectively, state that approved and unapproved water supply connections and the construction or operation of a water system regulated under the NJSDWA shall not conflict with an adopted areawide WQM plan. Accordingly, the adopted amendments to these rules complement the WQMP rules by prohibiting a connection to, or extension of, a water system, regardless of whether a permit is required from the Department, if the project or activity to be served conflicts with the adopted WQM plan.

Although a formal consistency determination is not required, an applicant to the water supplier may request such a determination from the Department to ensure compliance. The

information to be submitted for a consistency determination is included in the Water Quality Management Plan Consistency Determination Application Form found on the Department's web site at http://www.nj.gov/dep/watershedmgt/DOCS/CDApplicationForm.pdf. Such information includes the location of the project relative to an approved wastewater service area, the projected wastewater demand for the project, the proposed method of wastewater treatment and, if applicable, the name of the wastewater treatment facility. Criteria to be evaluated for consistency include identification of whether the proposed project is located within the approved wastewater service area of the identified treatment facility. The mapping of the water service area required under the amendments adopted to these rules (N.J.A.C. 7:10-11.5(c)) will be used to determine areas of conflict between areas approved for wastewater service and those identified for water service. While the two areas are not required to be identical, it is important for the Department to understand the relationship of the water supply source and the ultimate treatment and disposal of wastewater for several reasons, including water supply planning purposes and the identification of alternative water supply strategies.

Inconsistency of a proposed project with the applicable WQM Plan can be resolved in two ways: the adopted WQM plan can be amended and the project subsequently be determined to be consistent with the amended plan, or the project can be redesigned to be consistent with the adopted WQM plan. The WQM plan amendment process requires public notification. When potential water supply is an issue for a proposed project for which an amendment to the applicable areawide WQM Plan is being sought, the Department may require notification of the water supplier as part of the public comment process (N.J.A.C. 7:15-3.4(g)4). This allows a

water supplier adequate opportunity to understand and comment on proposed changes to sewer service areas that could potentially impact its ability to provide water service to a particular project. For more information regarding consistency determinations, contact the Department's Division of Watershed Management, P.O. Box 418, 401 E. State Street, Trenton, NJ 08625-0418 or visit the website at www.state.nj.us/dep/watershedmgt.

73. COMMENT: With regard to the proposed amendment at N.J.A.C. 7:10-11.11(a)(2) to require fire protection by gravity storage only, this may create water quality problems due to increased water age, thus conflicting with upcoming Federal regulations regarding the effect of storage on water quality. (8)

74. COMMENT: The commenter is not aware of any systemic failures in pumped fire systems when adequate duplication of components, back-up power and the maintenance of same are provided. Further, the Department must recognize that gravity storage may not be feasible in all circumstances. While gravity fire storage is generally preferred, the Department should retain flexibility to approve pumped systems where an elevated storage tank would not be feasible, would be cost-prohibitive, or would cause potential water quality problems. (8)

75. COMMENT: Under N.J.A.C. 7:10-11.11, the distribution storage requirements are revised to require gravity storage in systems that provide fire protection. Further clarification should be provided relative to systems with multiple pressure zones. Is the intent of this requirement to have gravity storage in every zone that provides fire protection? It may be impractical to require

gravity storage in every zone, especially in small zones serving relatively few customers. On the other hand, it may not be appropriate to allow a large pressure zone serving hundreds of homes to rely only on pumped or hydro-pneumatic storage if fire protection is provided. The wording should be clarified to clearly reflect the intent, so as to avoid future issues with interpreting whether the rule applies to an entire system or to individual zones in the system. (17)

76. COMMENT: This regulation also applies to nontransient noncommunity water systems with respect to gravity storage for fire protection. For some of these very small systems, buildings such as small daycare centers with populations of just over 25, it would be very expensive to add additional gravity storage for the purposes of fire protection. (14)

77. COMMENT: Gravity storage is more reliable than pump storage, and the concept of providing gravity storage in new systems with fire protection is not objectionable. However, it is not clear how the language presented in the new regulation will be interpreted, especially as it could relate to enforcement actions undertaken by the Department. There are numerous pump storage tanks that are reliably providing fire protection in existing systems. The regulations should make clear that the requirements apply to new systems and new tanks, and that existing systems can continue to use properly designed pump storage to meet the requirements in N.J.A.C. 7:19-6.7. (20)

78. COMMENT: Under proposed N.J.A.C. 7:10-11.11(a)(2), there is no valid reason to provide for fire protection by gravity storage only. Many purveyors have constructed on-grade

tanks for fire protection with prior Department approval. Will these purveyors now be required to add elevated tanks to their systems to satisfy fire protection requirements? Who will pay for these new elevated tanks? There are no known or cited failures in pumped fire systems when adequate duplication of components, back-up power and maintenance are provided. Further, gravity storage may not be feasible in all circumstances. For example, an elevated storage tank may be cost prohibitive, may be expected to cause potential water quality problems or may be prohibited by environmental constraints. (11)

79. COMMENT: While the benefits associated with gravity storage are acknowledged and may be the preference for many water systems and operators, the costs associated with this requirement can be severely burdensome to the utility and its customers, particularly for small systems. (1)

80. COMMENT: The proposed requirement at N.J.A.C. 7:10-11.11(a)2 also will likely conflict with local ordinances and/or rulings from local planning boards and agencies that object to elevated storage tanks. How does a utility or operator comply with this requirement if local authorities deny plans and applications for elevated water storage tanks? (1)

RESPONSE TO COMMENTS 73 through 80: The new gravity storage requirement for systems that provide fire protection applies to existing systems only when an existing system's service area is proposed to be expanded and that expansion requires additional storage or pumping facilities for fire protection. In addition, gravity storage is not required for all pressure

gradients. It is required for those pressure gradients proposed to be expanded where additional storage or pumping facilities is needed to provide fire protection. A lower pressure gradient may be supplied gravity storage by a higher pressure gradient as long as an adequate interconnection or interconnections equipped with automatic pressure reducing valves are provided between pressure gradients. Lastly, since the rules in Subchapter 11 apply only to public community water systems, the gravity storage requirements do not apply to public non-community water systems.

As to the potential degradation of water quality by gravity storage, while it is possible that degradation of water quality will occur with all forms of storage, the problem is not unique to gravity storage. An appropriately designed and constructed storage facility, coupled with the effective operation of the water system, including maintenance of an effective disinfectant residual in the distribution system and a pump cycling protocol to allow stored water turn-over, will ensure maintenance and integrity of the water quality in the distribution system.

In reference to costs associated with gravity storage, the Department acknowledges that gravity storage is typically more expensive than pumped storage. However, when including the added cost of pumping equipment and maintenance associated with pumped storage, the cost difference is not as dramatic. Depending on the size of the storage facility, the cost differential between a storage tank located at ground level versus an elevated storage tank is as little a 20% and as much as 80%. This cost differential is reduced when pumping and maintenance costs are considered. However, the typical reason gravity or elevated storage is not provided when

constructing a new public community water system is because of local objection due to siting issues rather than cost. Appropriate design and siting of tanks, as well as education of public and local officials regarding the benefits and additional protections afforded by gravity, should address such objections.

81. COMMENT: The last sentence in N.J.A.C. 7:10-11.11 would be clearer about addressing hydropneumatic systems if it read: "Hydropneumatic pumping system combinations are not acceptable for the purposes of fire protection." (20)

RESPONSE: The Department has revised the language at N.J.A.C. 7:10-11.11 to delete the extraneous “and” on adoption.

Subchapter 12. Standards for the Construction of Public Noncommunity Water Systems and Nonpublic Water Systems

82. COMMENT: N.J.A.C. 7:1.0-12.6 revises the demand figures for the restaurant category. There is no coordination of these demand numbers with the design numbers used for treatment works approvals and individual subsurface disposal design numbers. In certain cases the demand numbers for water are less than the sewage discharge numbers, which is impossible. Coordination of these numbers is required. (23)

RESPONSE: While the demand projections for safe drinking water appear to be less than those required by the New Jersey Water Pollution Control Act rules at N.J.A.C. 7:14A-23.3, Table 1, the demand projections are actually very similar. The demand projections provided at N.J.A.C. 7:14A-23.3, Projected Flow Criteria, range from a demand of 15 gallons per day (gpd) per seat to 50 gpd per seat for a 24-hour service restaurant. The demand projections for restaurants found at N.J.A.C. 7:10-12.6(b)2, Table 1, is 10 gpd per person. However, the footnote to the table explains how this figure should be used for specific restaurant operating hours. Specifically, demand projections are to be calculated by multiplying the seating capacity of the restaurant by applicable water usage. N.J.A.C. 7:10-12.6 (b) 2 requires that this amount be multiplied by a peaking factor of three. Therefore, these calculations can result in a water demand projection of between 30 gpd and 90 gpd depending on the number of hours of operation. Thus, the difference between the methodologies used to calculate water demand and wastewater demand might result in higher water demand projections but should not result in higher wastewater projections. Because water is used for more purposes than human consumption, for example, irrigation, higher water demand figures may be appropriate in some instances.

83. The commenter supports the proposal as it would require all newly constructed wells to test for those analytes required under the Private Well Testing Act, which is currently triggered at the sale of the property or on all rental properties. The ability to construct a well on a pre-existing property where there is no sale is, in effect, a loophole in the law. Some testing is

currently required, and this proposal would merely make those requirements the same as those that would be required under the current Private Well Testing Act, and that is appropriate. (10)

RESPONSE: The Department appreciates this comment in support of the adopted amendments.

Summary of Agency-Initiated Changes:

At N.J.A.C. 7:10-5.3(a), a typographical error involving the unintended repetition of the word “Gross” in the reference to the 48-hour Rapid Gross Alpha Test has been corrected on adoption.

At N.J.A.C. 7:10-11.10(a)2, on adoption the word “supply” has been deleted from the reference to “public community water supply system” for consistency with how that term is defined and used throughout the State SDWA rules.

Federal Standards Analysis

Executive Order No. 27 (1994) and N.J.S.A. 52:14B-1 et seq., at 52:14B-23, require State agencies which adopt, readopt or amend State regulations that exceed any Federal standards or requirements to include in the rulemaking document a Federal Standards Analysis.

The Federal Safe Drinking Water Act (Federal SDWA) was enacted in 1974 (P.L. 93-523) and amended in 1986 and 1996. Regulations for 23 drinking water contaminants were promulgated, at 40 CFR 141, by the EPA in 1975. The Federal SDWA regulations were amended in the late 1980s and 1990s and now include more than 90 regulated microbiological, chemical and radiological parameters.

In response to the passage of the Federal SDWA, the State SDWA was passed in 1977, and the State's Safe Drinking Water Act regulations were adopted in 1979. The Department adopts and incorporates by reference all National Primary Drinking Water Regulations, 40 CFR 141, as amended and supplemented, including all siting requirements, filtration and disinfection requirements, maximum contaminant levels, monitoring and analytical requirements, reporting requirements, public notification requirements, and recordkeeping requirements as the New Jersey primary drinking water regulations, applicable to all public water systems. In addition, the Department is repealing N.J.A.C. 7:10-6, Variances and Exemptions, and instead adopting by reference the National Primary Drinking Water Regulations Implementation, 40 CFR 142 Subparts E, F, G and K, for variance and exemption requirements as the New Jersey primary drinking water regulations, applicable to all public water systems. Therefore, the Department's drinking water program is based on the Federal standards.

However, because there were no Federal standards for hazardous chemicals in drinking water in the early 1980s and a large number of Superfund sites were identified in the State and the

prevalence of ground water contamination was increasing, the State Legislature amended the State SDWA in 1983, directing the establishment of MCLs for a selected list of volatile organic compounds (VOCs) and synthetic organic compounds (SOCs). The level of protection established under the statute, for carcinogens, is a goal of a risk of no more than one in one million over a lifetime of exposure, and, for noncarcinogens, a goal of no adverse physiological effects over a lifetime of exposure. The New Jersey Drinking Water Quality Institute (Institute), a 15-member advisory body to the Department established under the State SDWA, is authorized to review all health-related, analytical method and treatment technology data on contaminants and to recommend standards to the Department. The Department is authorized to promulgate standards (termed MCLs) based on those recommendations. To date, the Department has adopted MCLs for 13 contaminants that are lower (more stringent) than the Federal standards and for five contaminants that have a State MCL but no Federal standard.

New Jersey's standard-setting process is very similar to the Federal one, although there are some differences that are noted below. The Institute considered three factors in recommending MCLs within the statutory framework: health effects; technological ability to measure the contaminant level; and ability of existing treatment technologies to meet the MCL. The Federal standard-setting process considers these factors and an additional economic factor. The NJSDWA mandates a cancer risk level of one in one million (10^{-6}) additional cancer cases over a lifetime of exposure. The Federal SDWA does not specify a risk level, but sets an MCL goal of "zero" for carcinogens. The additional economic factor has resulted in the establishment by USEPA of higher MCLs for carcinogens than those established by the Department because the

State's SDWA program does not allow economic factors to be used in the development of the MCLs for carcinogens. Consequently, the 18 synthetic organic contaminants regulated under the State Act have more stringent MCLs than those promulgated by the USEPA. Thirteen SOCs have a lower MCL (that is, more stringent) than the Federal standards and five SOCs have a State MCL but no Federal standard.

The Institute evaluated the most current information regarding arsenic in drinking water. The Institute considers three factors in its recommendation of an MCL within the statutory framework: health effects; technological ability to measure the contaminant level; and ability of existing treatment technologies to meet the MCL. The Federal standard-setting process considers these factors along with an additional economic factor – a cost-benefit analysis. The Institute recommended an MCL of 3 µg/l to the Department, but because of concerns as to the availability of reliable removal technology, the Department determined to adopt the MCL of five µg/l. This MCL for arsenic in drinking water of five µg/l is lower than the USEPA MCL of 10 µg/l for arsenic that is scheduled to take effect on January 23, 2006.

Between 1996 and 2000, the Department surveyed treated and untreated drinking water in New Jersey using a short-term gross alpha testing method, and the public water supplies showed elevated gross alpha particle levels that were significantly higher than historical values. These elevated gross alpha-particle levels were found to be due to the presence of radium-224, a short-lived radioisotope with a half-life of 3.64 days. The Department is adopting the requirement that the gross alpha radiological samples collected from public community water systems for

compliance with the Federal Radiological Rule be analyzed using the 48-Hour Rapid Gross Alpha Test. This test captures short-lived radioisotopes, such as radium-224, that are not measured if the sample is not analyzed within 48 hours of sample collection. The Department is adopting this method for all drinking water samples because the Federal Radionuclide Rule does not directly address radium-224. EPA published a Notice of Data Availability in April 2000, which included a recommendation to analyze for gross alpha within 48 hours of sample capture to detect contributions from radium-224; however, there is no such requirement or recommendation in the final rule, as the EPA considers radium-224 to be a regional problem. The Department adopted the 48-Hour Rapid Gross Alpha Test on September 16, 2002 to provide a method that reflected the requirement in the Private Well Testing Act (PWTA) stating that a short-term 48-hour gross alpha test should be conducted to screen for the presence of radium. By requiring this methodology for routine testing of public community water systems, the Department is ensuring that sampling by public community water systems is consistent with the sampling required of nonpublic water systems.

The Department's experience over the last 25 years with drinking water contamination incidents has been that the public wants its drinking water treated to the lowest possible level of contamination, regardless of the applicable MCLs. Therefore, more stringent State MCLs have not resulted in expenditures that were not also supported by the communities where the contamination was occurring. The State's policy of setting standards designed to protect public health has been appreciated by the public, environmental groups, and the water industry which generally strives to provide the best quality of water possible to customers.

It is anticipated that 34 community water systems and 101 noncommunity water systems will be required to treat their water to an arsenic MCL of 5 µg/l. It is also anticipated that 250 private wells per year may have arsenic test results greater than 5 µg/l, as a result of testing conducted as part of the PWTA. Cost estimates for arsenic removal for public water systems and private wells were presented in the Economic Impact for the rule proposal. The estimate of the number of private wells with arsenic above the MCL, however, is likely an underestimation of the total number of private wells that may have concentrations of arsenic above the MCL, because the number of private wells with arsenic above the MCL is unknown at this time. Those private wells in the Piedmont Physiographic Region of New Jersey are considered to be the most likely to exceed the adopted MCL of five µg/l. The benefit of reducing the concentration of arsenic in drinking water is a reduced risk of excess cancer incidence in the State.

Full text of the adoption follows (additions indicated in boldface with asterisks ***thus***; deletions from proposal indicated in brackets ***[***thus***]***):

CHAPTER 10 SAFE DRINKING WATER ACT

SUBCHAPTER 5. STATE PRIMARY DRINKING WATER REGULATIONS

7:10-5.3 Analytical requirements

(a) The monitoring and analytical requirements for determining compliance with the maximum contaminant levels shall be those established under the National Regulations, except that the analysis for gross alpha particle activity shall be determined using the 48-Hour *****[Gross]***** Rapid Gross Alpha Test, in accordance with N.J.A.C. 7:18.

(b) – (e) (No change from proposal.)

7:10-5.7 Remediation requirements and procedures

(a) Except as provided pursuant to (b) below, the supplier of water that analyzes and reports pursuant to this subchapter any violation of a promulgated MCL for any of the contaminants regulated pursuant to this subchapter shall, within one year after receipt of the results of the tests conducted pursuant to the National Regulations and N.J.A.C. 7:10-5.2 that demonstrate *****[such]***** ***an*** exceedance ***that constitutes a violation*** , take any action necessary to bring the water into compliance with the applicable MCL.

(b) – (e) (No change from proposal.)

SUBCHAPTER 11. STANDARDS FOR THE CONSTRUCTION OF PUBLIC COMMUNITY WATER SYSTEMS

7:10-11.4 Additional definitions and general provisions

(a) In addition to the words and terms defined at N.J.A.C. 7:10-1.3, the following terms are defined for the purposes of this subchapter:

1.—2. (No change from proposal.)

3. "Firm capacity" means adequate pumping equipment and/or treatment capacity (excluding coagulation, flocculation, and sedimentation) ***, and/or adequate capacity by supply from another water system pursuant to contract*** to meet peak daily demand as *[defined at (a)7 below]*** ***determined under N.J.A.C. 7:10-11.5(e)*** when the largest pumping *[station]* or treatment unit is out of service.

4.—6. (No change from proposal.)

*[7. "Peak daily demand" means:

i. For existing water systems, the average daily demand as recorded in the peak month of the prior five years, plus an estimation of the anticipated peak daily water demand calculated in accordance with N.J.A.C. 7:10-11.5(f).

ii. For proposed water systems, an estimation of the anticipated peak daily water demand in accordance with N.J.A.C. 7:10-11.5(f).]*

Recodify 8.—11. as 7.—10. (No change in text.)

(b)-(f) (No change from proposal.)

7:10-11.5 Permit requirement; application contents

(a) – (d) (No change from proposal.)

(e) ***Except for a non-capacity-related water system modification, a*** ***[A]*** firm capacity and water allocation analysis for the proposed water system shall be submitted on the form available from the Department, Water Supply Administration, 401 East State Street, P.O. Box 426, Trenton, N.J. 08625-0426, or from the Department's website at www.state.nj.us/dep/watersupply. The firm capacity and water allocation analysis shall demonstrate that either (e)1 and 2 below are both met, or, as an alternative to (e)1 and 2, that (e)3 below is met:

1. The proposed water system will have adequate firm capacity to meet peak daily demand, including:

i. Existing peak daily demand, ***[as defined at N.J.A.C. 7:10-11.4(a)7i]*** ***that is, the average daily demand as recorded in the peak month of the prior five years***;

ii. Anticipated peak daily demand estimated in accordance with (f) below; and

iii. Anticipated peak daily demand, as of the date of application submission, from:

(1) – (2) (No change from proposal.)

2. – 3. (No change from proposal.)

(f) Anticipated peak daily water demand shall be estimated as follows:

1. For residential development, determine the average daily water demand in accordance with Department of Community Affairs' Residential Site Improvement Standards (RSIS)

at N.J.A.C. 5:21-5.2 *****[(d)]*** *, Table 5.1 "Water Demand/Generation by Type/Size of Housing"*** ;

2. – 3. (No change from proposal.)

(g) For the purposes of demonstrating compliance with the applicable water allocation permit limits and/or bulk purchase agreements under (e)2 above, the applicant shall estimate anticipated *[average]* water demand as follows:

1. (No change from proposal.)

2. Multiply the average daily water demand determined under (g)1 above by ***a peaking factor of*** 1.5 and then by 31 to determine the estimated *****[average]*** *peak*** monthly water demand;

3. Multiply the average daily water demand determined under (g)1 above by 365 to determine ***the*** estimated *****[average]***** annual water demand;

4. To the estimated *****[average]*** *peak*** monthly and *****[average]***** annual demand calculated in (g)2 and 3 above, add the anticipated ***peak*** monthly and annual demand on the proposed water system, as of the date of application submission, from:

i.-ii. (No change from proposal.)

5. The ***existing peak monthly demand and existing peak annual demand, as recorded in the prior five years, shall be added to the*** estimated *****[average]*** *peak*** monthly and ***estimated*** annual demand calculated under (g)4 above *****[shall be]*** *and*** compared to the monthly and annual diversion limits in an applicable water allocation permit

along with any bulk purchase agreements to ensure that anticipated demand will not exceed the volume of water authorized to be diverted in a permit issued by the Department pursuant to N.J.A.C. 7:19.

(h) – (l) (No change from proposal.)

7:10-11.10 Permit requirements and standards for the construction of distribution systems; master permits

(a) A supplier of water may apply for a master permit, including all proposed routine water main extensions and/or replacements, transmission mains and interconnections, covering a set maximum number of service connections for a period *[of one year]*** ***not exceeding three years***. At the time of application for such master permit, the supplier of water shall submit specifications and an engineer's report demonstrating that the water system can meet the requirements of this subchapter, as well as a system distribution map that differentiates between existing and proposed water mains. The following shall apply to master permits:

1. (No change from proposal.)

2. A master permit is available only to public community water *****[supply]***** systems.

(b) For any distribution system improvement such as water main extension and/or replacement, transmission main or interconnection not covered by a master permit issued pursuant to (a) above, the supplier of water shall comply with the following:

1. For any water main extension or connection to an existing water main which includes new residential service to more than 15 realty improvements but less than 50 new service

connections, or generates a new non-residential average demand of more than 6,000 gallons per day determined pursuant to Table 1 at N.J.A.C. 7:10-12.6(b), submit a completed permit Standard Application Form pursuant to N.J.A.C. *****[7:10-11.5(b)]*** *7:10-11.5(c)1***, the Simplified Water Main Certification Form, available from the Bureau of Safe Drinking Water, P.O. Box 426, Trenton, New Jersey 08625-0426, the permit application review fee specified at N.J.A.C. 7:10-15.3(d)2, and a plan showing the location of existing and proposed water mains. The Simplified Water Main Certification Form includes the following information:

i. – iv. (No change from proposal.)

2.– 4. (No change from proposal.)

(c) – (g) (No change from proposal.)

7:10-11.11 Distribution storage requirements

(a) Suppliers of water shall provide finished water storage as required pursuant to N.J.A.C. 7:19-6.7 and as follows:

1. (No change from proposal.)

2. The location, size, type and elevation of the equalization reservoir, standpipe, or elevated storage tank shall be such as to ensure that the distribution system meets the pressure requirements established at N.J.A.C. 7:10-11.10(d). A system designed to provide for fire protection shall, in addition, provide gravity storage. Hydropneumatic *****[and]***** pumping system combinations are not acceptable for the purposes of fire protection.

3. – 7. (No change from proposal.)

(b) – (h) (No change from proposal.)

Based on consultation with staff, I hereby certify that the above statements, including the Federal Standards Analysis, addressing the requirements of Executive Order 27 (1994) and N.J.S.A. 52:14B-23, permit the public to understand accurately and plainly the purposes and expected consequences of this adoption. I hereby authorize this adoption.

_____ _____

Date

Bradley M. Campbell, Commissioner

Department of Environmental Protection