

## Initial Statement of Reasons

### Surface Water Filtration and Disinfection Treatment

Pursuant to authority under the California Safe Drinking Water Act (Section 4010 through 4039.6, Health and Safety Code), the Department has responsibility and authority to regulate public water suppliers in order to insure the water served to the users is pure, wholesome and potable. Section 4023.3 authorizes the Department to adopt regulations relating to "parameters to be tested and their limits" which "shall in no case be less stringent than those set by the United States Environmental Protection Agency" (EPA). EPA has promulgated rules requiring filtration and disinfection treatment of surface water and groundwater under the direct influence of surface water sources for removal or inactivation of viruses, Giardia lamblia, heterotrophic plate count bacteria, Legionellae, and turbidity (40 CFR Parts 141 and 142, Federal Register, Vol. 54, No. 124, June 29, 1989, hereafter referred to as the 'Federal Rule').[1] The requirements for compliance with specific treatment techniques in lieu of maximum contaminant levels for such contaminants are required because of (1) laboratory capability constraints and (2) excessive cost impacts to smaller systems if analysis for Giardia lamblia and viruses was required on a routine basis. The analytical methods for measuring Giardia and viruses require levels of expertise that utility personnel generally do not have, and analysis by independent laboratories is generally very expensive. Water systems would have to monitor

suppliers that if they comply with filtration and disinfection performance standards specified in Section 64653 and 64654, they will also comply with the overall removal requirements specified in Subsection 64652(a).

64653. Filtration.

The purpose of this section is to comply with Section 141.73 of the Federal Rule. It prescribes filtration technologies that are known to be capable of complying with the requirements of this regulation and the performance standards that must be met for each filtration technology specified. Also, a procedure is provided for the supplier to propose and demonstrate the acceptability of an alternative filtration technology.

Specifically Subsection (a) requires that one of the specified filtration technologies or an approved alternative must be used for all surface waters. This differs from the Federal Rule in that it does not allow exceptions to the filtration requirements whereas Section 141.71(a) of the Federal Rule specifies criteria for avoiding filtration. The reasons for this difference are as follows:

1. The Department has determined that all surface waters in the State of California are subject to potential contamination from Giardia and virus and,

2. The Department has determined that there are no existing facilities which could meet the criteria specified in the Federal Rule and thus there is no need for the exception.

Subsection (b) is necessary to define the pathogen removal effectiveness and performance standards for the specified technologies so that disinfection facilities can be properly designed to meet the overall reduction requirements specified in Section 64652. The removal efficiencies specified are the same as given by Supplementary Information: Section IV, Table IV-2 of the Federal Rule. The performance standards specified in paragraph (c)(1) are necessary to comply with the minimum requirements specified in Section 141.73(a) of the Federal Rule for conventional and direct filtration. They are the same as those included in the Federal Rule with two exceptions. First, the Federal Rule specifies a maximum turbidity level of 5 NTU whereas the State regulation specifies 5.0 NTU. The added significant figure is necessary to ensure consistent enforcement of the standard at this level and to avoid the need to develop additional regulations to describe the method for rounding. Second, the Federal Rule allows the State to approve a turbidity limit that allows more than 1 NTU in up to 5 percent of the samples. This regulation does not allow this exception because it has been the experience in California that well operated conventional and direct filtration plants have little or no difficulty in meeting a standard of 0.5 NTU. Additionally, a basic premise of the State regulation is to encourage and require

where necessary water suppliers to produce the highest quality water possible to ensure the highest level of public health protection. Thus it would run cross-purpose to the State regulation to allow suppliers to meet performance standards that could be met with poor operation practices. Paragraph (c)(1) also differs from the Federal Rule in that it establishes the same performance standard for diatomaceous earth (DE) filters as that for conventional and direct filtration. This is needed to assure an equal degree of pathogen removal reliability as that provided by conventional and direct filtration technologies. On the basis of actual operating experience in California, it is well within the capabilities of facilities using DE filters to achieve this level of performance. Paragraph (c)(2) is not a federal requirement for this technology but is necessary to alert the operator so that corrective action can be taken to prevent the delivery of inadequately treated water during periodic upset conditions.

Paragraph (d)(2) which establishes performance standards for slow sand filtration, is necessary to comply with Section 141.73(b) of the Federal Rule. This is the same as the Federal Rule with the following exceptions. First, the State regulation specifies standards of 1.0 and 5.0 NTU as compared to the Federal Rule which specifies 1 and 5 NTU respectively. The reasons for this are the same as described above. Second, the Federal Rule allows the State to substitute a higher turbidity limit than 1 NTU if it determines that there would be no significant interference with

disinfection at the higher turbidity level allowed. The State regulation specifies the criteria under which this exception would be granted; i.e. if the filtered effluent meets the coliform standard before disinfection. This will ensure that any facility granted this exception will be well operated and in a mature condition.

Subsection (e) is necessary to provide a means for suppliers to demonstrate and obtain credit for higher removal efficiencies than those specified in Subsection (b). Since this is technologically possible, it should be included.

Subsection (f) (g) and (h) are necessary to provide a means for approving filtration technologies other than those specified in the regulation. This allows for the consideration and approval of new innovative technologies.

Subsection (i) is necessary to ensure that alternative technologies have been reliably demonstrated in full-scale application and to provide a technology transfer process for sharing information across the state.

64654. Disinfection.

The purpose of this regulation is to require the provision of disinfection treatment and to prescribe the performance standards