

Water Treatment Technology Approval Process

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The purpose of this document is to outline the process that must be followed by the Drinking Water Program (DWP) staff when public water systems (PWSs) request consideration of new water treatment technologies. A standardized process is necessary to gain consistency and to minimize duplication of pilot work within the State.

At the time of promulgation of a Maximum Contaminant Level (MCL), treatment technologies are identified as being best available technology (BAT). These are incorporated into the regulations with the MCL. Water treatment processes designated as BAT have been reviewed and accepted by the Department in accordance with Part 12 Chapter 4 Article 3 Section 116370 of the Health and Safety Code which reads:

“...shall adopt a finding of best available technology for each contaminant for which a primary drinking water standard has been adopted at the time the standard is adopted. The finding of the department shall take into consideration the costs and benefits of best available treatment technology that has been proven effective under full-scale field applications.”

Please note that BATs are not a treatment technique that is proven to work on all water sources for the identified contaminant. They are known to work on some sources if designed and operated properly. Utilities are advised to pilot the BATs before installation to assure success in addressing the contaminant problem.

To gain approval as a unit treatment process that is to be part of a water treatment process train, the BAT must be designed in conformance with industry accepted design criteria for each process, or criteria justified by a licensed engineer. The use of one of these technologies for source water in a PWS must be authorized in the domestic water supply permit. The plant must be operated in compliance with the appropriate performance standard and the operations plan developed for that plant. Consequently, water treatment technology approval is site specific and is given only when the domestic water supply permit for a site is issued. There is, therefore, no statewide approval of water treatment technologies.

For water treatment technologies not designated BAT, studies must be conducted to demonstrate the efficacy of the process. The pilot study should be conducted in sufficient detail to identify critical design and operating factors and demonstrate the relationship between these factors so that the limiting design and operational factors can be identified for specific sites and water quality conditions. The extent of the study required would depend on the degree to which the technology varies from proven technologies in design and proposed operation, and the treat ability problems associated with the source. Credit may be given for demonstrations completed on

similar source waters elsewhere. Once accepted for use on a particular water source, the DWP will use this information when considering the technology's application for use at other sources.

The DWP Staff

The DWP District Engineer (DE) - Each PWS in the state is under the direct or indirect jurisdiction of one of the 21 DEs. The DE makes the final decision for approval after consulting the Water Treatment Committee (WTC), and issues the permit.

The DWP WTC - a committee of DWP staff including representatives from the Field Operations and Technical Programs Branches. The WTC makes recommendations on water treatment technology issues.

Process

1. A manufacturer wishing to pilot its technology must find and identify a suitable PWS location for conducting such a test. Only PWSs under the direct jurisdiction of the DWP may establish demonstration sites for new technologies. As this site will in all likelihood be a PWS with a potential or existing water quality problem for which treatment will be required, the PWS should contact the local DWP field office and consult with the DE to obtain initial guidance.
2. The PWS should state in writing its desire to use the alternative technology. DWP staff will bill the PWS for time spent on the approval process since this is considered a waiver request (H&S Code Section 4019.25). If a demonstration study is required, the PWS (or other party acting as its agent) must:
 - a. Develop a demonstration study protocol with the DE and the DWP's Technical Program Branch's water treatment specialist. The technology must be demonstrated to be reliable and relatively easy to operate and maintain. The study must identify the indicators of treatment failure and provide the information necessary to develop an operations plan.
 - b. Submit a proposed study protocol for review and approval by the DE and the WTC.
 - c. Conduct the study.
 - d. Submit progress reports and a final report, regardless of the outcome, for review by the DE and the WTC.
3. The water treatment specialist will prepare a recommendation on technology acceptance, with a characterization of the source waters that can be treated and an identification of appropriate performance standards and permit conditions.

4. The DE and WTC will review the recommendation.
5. The water treatment specialist will prepare a final recommendation to the DE. The recommendation will provide guidance to all DEs on the suitability of the technology to treat sources statewide.
6. If the technology is approved, the DE will issue a permit. The permit will identify technology specific performance standards and will incorporate an operations plan.
7. A report on the effectiveness of the technology during the first full year of operation shall be submitted by the PWS to the DE within two months of the end of the first year of full operation.