

**Environmental Protection Agency**

**§ 141.64**

**SMALL SYSTEM COMPLIANCE TECHNOLOGIES (SSCTs)<sup>1</sup> FOR ARSENIC<sup>2</sup>**

| Small system compliance technology              | Affordable for listed small system categories <sup>3</sup> |
|---|--|
| Activated Alumina (centralized).                | All size categories.                                       |
| Activated Alumina (Point-of-Use) <sup>4</sup> . | All size categories.                                       |
| Coagulation/Filtration <sup>5</sup> .....       | 501–3,300, 3,301–10,000.                                   |
| Coagulation-assisted Micro-filtration.          | 501–3,300, 3,301–10,000.                                   |
| Electrodialysis reversal <sup>6</sup> .....     | 501–3,300, 3,301–10,000.                                   |
| Enhanced coagulation/filtration.                | All size categories  |
| Enhanced lime softening (pH > 10.5).            | All size categories.                                       |
| Ion Exchange .....                              | All size categories.                                       |
| Lime Softening <sup>5</sup> .....               | 501–3,300, 3,301–10,000.                                   |
| Oxidation/Filtration <sup>7</sup> .....         | All size categories.                                       |
| Reverse Osmosis (centralized) <sup>6</sup> .    | 501–3,300, 3,301–10,000.                                   |
| Reverse Osmosis (Point-of-Use) <sup>4</sup> .   | All size categories.                                       |

<sup>1</sup> Section 1412(b)(4)(E)(ii) of SDWA specifies that SSCTs must be affordable and technically feasible for small systems.

<sup>2</sup> SSCTs for Arsenic V. Pre-oxidation may be required to convert Arsenic III to Arsenic V.

<sup>3</sup> The Act (ibid.) specifies three categories of small systems: (i) those serving 25 or more, but fewer than 501, (ii) those serving more than 500, but fewer than 3,301, and (iii) those serving more than 3,300, but fewer than 10,001.

<sup>4</sup> When POU or POE devices are used for compliance, programs to ensure proper long-term operation, maintenance, and monitoring must be provided by the water system to ensure adequate performance.

<sup>5</sup> Unlikely to be installed solely for arsenic removal. May require pH adjustment to optimal range if high removals are needed.

<sup>6</sup> Technologies reject a large volume of water—may not be appropriate for areas where water quantity may be an issue.

<sup>7</sup> To obtain high removals, iron to arsenic ratio must be at least 20:1.

[56 FR 3594, Jan. 30, 1991, as amended at 56 FR 30280, July 1, 1991; 57 FR 31847, July 17, 1992; 59 FR 34325, July 1, 1994; 60 FR 33932, June 29, 1995; 66 FR 7063, Jan. 22, 2001; 68 FR 14506, Mar. 25, 2003; 69 FR 38855, June 29, 2004]

**§ 141.63 Maximum contaminant levels (MCLs) for microbiological contaminants.**

(a) The MCL is based on the presence or absence of total coliforms in a sample, rather than coliform density.

(1) For a system which collects at least 40 samples per month, if no more than 5.0 percent of the samples collected during a month are total coliform-positive, the system is in compliance with the MCL for total coliforms.

(2) For a system which collects fewer than 40 samples/month, if no more than one sample collected during a month is total coliform-positive, the system is in compliance with the MCL for total coliforms.

(b) Any fecal coliform-positive repeat sample or *E. coli*-positive repeat sam-

ple, or any total coliform-positive repeat sample following a fecal coliform-positive or *E. coli*-positive routine sample constitutes a violation of the MCL for total coliforms. For purposes of the public notification requirements in subpart Q, this is a violation that may pose an acute risk to health.

(c) A public water system must determine compliance with the MCL for total coliforms in paragraphs (a) and (b) of this section for each month in which it is required to monitor for total coliforms.

(d) The Administrator, pursuant to section 1412 of the Act, hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant level for total coliforms in paragraphs (a) and (b) of this section:

(1) Protection of wells from contamination by coliforms by appropriate placement and construction;

(2) Maintenance of a disinfectant residual throughout the distribution system;

(3) Proper maintenance of the distribution system including appropriate pipe replacement and repair procedures, main flushing programs, proper operation and maintenance of storage tanks and reservoirs, and continual maintenance of positive water pressure in all parts of the distribution system;

(4) Filtration and/or disinfection of surface water, as described in subpart H, or disinfection of ground water using strong oxidants such as chlorine, chlorine dioxide, or ozone; and

(5) For systems using ground water, compliance with the requirements of an EPA-approved State Wellhead Protection Program developed and implemented under section 1428 of the SDWA.

[54 FR 27566, June 29, 1989; 55 FR 25064, June 19, 1990, as amended at 65 FR 26022, May 4, 2000]

**§ 141.64 Maximum contaminant levels for disinfection byproducts.**

(a) *Bromate and chlorite*. The maximum contaminant levels (MCLs) for bromate and chlorite are as follows:

| Disinfection byproduct | MCL (mg/L) |
|------------------------|------------|
| Bromate .....          | 0.010      |

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| Disinfection byproduct | MCL (mg/L) |
|------------------------|------------|
| Chlorite .....         | 1.0        |

(1) *Compliance dates for CWSs and NTNCWSs.* Subpart H systems serving 10,000 or more persons must comply with this paragraph (a) beginning January 1, 2002. Subpart H systems serving fewer than 10,000 persons and systems using only ground water not under the direct influence of surface water must comply with this paragraph (a) beginning January 1, 2004.

(2) The Administrator, pursuant to section 1412 of the Act, hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for bromate and chlorite identified in this paragraph (a):

| Disinfection byproduct | Best available technology  |
|------------------------|--|
| Bromate ....           | Control of ozone treatment process to reduce production of bromate   |
| Chlorite .....         | Control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels |

(b) TTHM and HAA5. (1) Subpart L—RAA compliance. (i) Compliance dates. Subpart H systems serving 10,000 or more persons must comply with this paragraph (b)(1) beginning January 1, 2002. Subpart H systems serving fewer than 10,000 persons and systems using only ground water not under the direct influence of surface water must comply with this paragraph (b)(1) beginning January 1, 2004. All systems must comply with these MCLs until the date specified for subpart V compliance in § 141.620(c).

| Disinfection byproduct               | MCL (mg/L) |
|--------------------------------------|------------|
| Total trihalomethanes (TTHM) .....   | 0.080      |
| Haloacetic acids (five) (HAA5) ..... | 0.060      |

(ii) The Administrator, pursuant to section 1412 of the Act, hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for TTHM and HAA5 identified in this paragraph (b)(1):

| Disinfection byproduct   | Best available technology   |
|--|---|
| Total trihalomethanes (TTHM) and Haloacetic acids (five) (HAA5). | Enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant |

(2) Subpart V—LRAA compliance. (i) Compliance dates. The subpart V MCLs for TTHM and HAA5 must be complied with as a locational running annual average at each monitoring location beginning the date specified for subpart V compliance in § 141.620(c).

| Disinfection byproduct               | MCL (mg/L) |
|--------------------------------------|------------|
| Total trihalomethanes (TTHM) .....   | 0.080      |
| Haloacetic acids (five) (HAA5) ..... | 0.060      |

(ii) The Administrator, pursuant to section 1412 of the Act, hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for TTHM and HAA5 identified in this paragraph (b)(2) for all systems that disinfect their source water:

| Disinfection byproduct   | Best available technology  |
|--|--|
| Total trihalomethanes (TTHM) and Haloacetic acids (five) (HAA5). | Enhanced coagulation or enhanced softening, plus GAC10; or nanofiltration with a molecular weight cutoff ≤1000 Daltons; or GAC20 |

(iii) The Administrator, pursuant to section 1412 of the Act, hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for TTHM and HAA5 identified in this paragraph (b)(2) for consecutive systems and applies only to the disinfected water that consecutive systems buy or otherwise receive:

| Disinfection byproduct   | Best available technology   |
|--|---|
| Total trihalomethanes (TTHM) and Haloacetic acids (five) (HAA5). | Systems serving ≥10,000: Improved distribution system and storage tank management to reduce residence time, plus the use of chloramines for disinfectant residual maintenance<br>Systems serving <10,000: Improved distribution system and storage tank management to reduce residence time |

[71 FR 478, Jan. 4, 2006]