Water Quality Rules Chapter 12

Docket 22-3103

Changes Proposed Since 07/26/22

Water Quality Division proposes to correct or clarify the following passages in Chapter 12, Docket 22-3103:

(Line numbers based on 11/08/22 strike/underline; changes proposed since 7/26/22 draft noted in green):

Line 369, Section 5(zz), corrected "hamful" to "harmful."

Lines 1821-1830, 9(a), clarified the titles of the 2018 TSS references as follows:

> (a) 2018 TSS, parts 1.1~~.1~~-1.1.1(d), engineers report, general information; 1.1.2-1.1.2(c), engineers report, extent of water works system; 1.1.4-1.1.4(c), engineers report, soil, groundwater conditions, and foundation problems; 1.1.5-1.1.5(f), engineers report, water use data; 1.1.6-1.1.6(b), engineers report, flow requirements; 1.1.7~~.1~~-1.1.7.1(f), engineers report, sources of water supply, surface water sources; 1.1.7.2-1.1.7.2(g), engineers report, sources of water supply, groundwater sources; 1.1.8, engineers report, proposed treatment processes; 1.1.9, engineers report, sewerage system available; 1.1.10, engineers report, waste disposal; 1.1.15-1.1.15(d), engineers report, pumping facilities; 1.1.16-1.1.16(c), engineers report, storage ~~facilities~~; and 1.1.17-1.1.17(d), engineers report, security, contingency planning, and emergency preparedness; are herein incorporated by reference.

Lines 2016 and 2019, Section 9 (g)(iv)(A) and (B), corrected "descripition" to "description."

Line 3774, Section 11(e)(ii)(C), corrected cross reference from Chapter 3, Section 17 to Chapter 3, Section 4.

Line 3781, Section 11(e)(iii)(A), removed extra "the" from "the surface casing has..."

Lines 4259-4319, Section 12(a), clarified and streamlined the titles of the 2018 TSS references as follows:

> (a) 2018 TSS, parts 4.2.1, 4.2.1(b)~~, presedimentation, inlets; 4.2.1~~-(c), clarification, presedimentation~~, bypass~~; 4.2.2-4.2.2(c), clarification, coagulation; ~~4.2.2(a), coagulation, mixing; 4.2.2(b), coagulation, equipment; 4.2.2(c), coagulation, location~~; 4.2.4, 4.2.4(b)-4.2.4(d)(3), coagulation, sedimentation, ~~inlet devices: 4.2.4(c), sedimentation, velocity; 4.2.4(d)-4.2.4(d)(4), sedimentation, outlet devices~~; 4.3.1.1, filtration, rapid rate gravity filters, pretreatment; 4.3.1.4-4.3.1.4(o), filtration, rapid rate gravity filters, structural details and hydraulics; 4.3.1.6~~(a)~~-4.3.1.6(d)(2)(d), filtration, rapid rate gravity filters,

filter material~~, total depth~~; 4.3.1.6~~(b)~~(d)(4), filtration, rapid rate gravity filters, filter material, granular activated carbon (GAC); ~~uniformity coefficient; 4.3.1.6(c), filter material, minimum; 4.3.1.6(d)(1)-4.3.1.6(d)(1)(f), filter material, types of filter media, anthracite; 4.3.1.6(d)(2)-4.3.1.6(d)(2)(.d), filter material, types of filter media, sand filter; 4.3.1.6(d)(4)-4.3.1.6(d)(4)(.d), filter material, types of filter media, granular activated carbon (GAC)~~; 4.3.1.6(e)~~(1)~~-4.3.1.6(e)(1)(~~.~~b), filtration, rapid rate gravity filters, filter material, support media~~, topedo sand~~; 4.3.3.6-4.3.3.6(b), filtration, diatomaceous earth filtration, pre-coat; 4.3.3.7-4.3.3.7(c), filtration, diatomaceous earth filtration, body feed; 4.3.3.8-4.3.3.8(e), filtration, diatomaceous earth filtration, filtration; 4.3.3.10~~(a)(1)~~-4.3.3.10(a)(4), filtration, diatomaceous earth filtration, appurtenances~~, sampling taps; 4.3.3.10(a)(2), diatomaceous earth filtration, appurtenances, loss of head; 4.3.3.10(a)(3), diatomaceous earth filtration, appurtenances, rate of flow indicator; 4.3.3.10(a)(4), diatomaceous earth filtration, appurtenances, throttling valve~~; 4.3.4.2, filtration, slow sand filters, number; 4.3.4.4, filtration, slow sand filters, rates of filtration; 4.3.4.5, filtration, slow sand filters, underdrains; 4.3.4.6-4.3.4.6(e), filtration, slow sand filters, filter material; 4.3.4.7, filtration, slow sand filters, filter gravel; 4.3.4.8, filtration, slow sand filters, depth of water on filter beds; 4.3.4.9, 4.3.4.9(b), ~~and~~ (e), and~~- slow sand filters, control appurtenances;~~ ~~4.3.4.9~~(f), filtration, slow sand filters, control appurtenances; 4.4.1~~(a)-~~, disinfection, contact time, CT, and point(s) of application; ~~4.4.1~~(b), disinfection, contact time, CT, and point(s) of application; 4.4.3~~(a)~~-4.4.3(d), disinfection, testing equipment; 4.4.4.3, disinfection, chlorine, automatic switch-over; 4.4.4.7, disinfection, chlorine, cross-connection protection; 4.4.4.8, disinfection, chlorine, pipe material; 4.4.5, disinfection, chloramines; 4.4.6.1, disinfection, ozone, design considerations; 4.4.6.2- 4.4.6.2(e), disinfection, ozone, feed gas preparation; 4.4.6.3-4.4.6.3(d), disinfection, ozone, ozone generator; 4.4.6.4-4.4.6.4(b), disinfection, ozone, ozone contactors; 4.4.6.5-4.4.6.5(g), disinfection, ozone, ozone destruction unit; 4.4.6.6, disinfection, ozone, piping materials; 4.4.6.7-4.4.6.7(c), disinfection, ozone, joints and connections; 4.4.6.8-4.4.6.8(h), disinfection, ozone, instrumentation; 4.4.6.9-4.4.6.9(h), disinfection, ozone, alarms; 4.4.6.11-4.4.6.11(c), disinfection, ozone, construction considerations; 4.5.1, softening, lime or lime-soda process; 4.5.1.1, softening, lime or lime-soda process, hydraulics; 4.5.1.3, softening, lime or lime-soda process, chemical feed point; 4.5.1.4, softening, lime or lime-soda process, rapid mix; 4.5.1.5, softening, lime or lime-soda process, stabilization; 4.5.1.6-4.5.1.6(b), softening, lime or lime-soda process, sludge collection; 4.5.1.7, softening, lime or lime-soda process, sludge disposal; 4.5.1.8, softening, lime or lime-soda process, disinfection; 4.5.1.9, softening, lime or lime-soda process, plant start-up; 4.5.2.1, softening, cation exchange process, pre-treatment requirements; 4.5.2.2, softening, cation exchange process, design; 4.5.2.3, softening, cation exchange process, design; 4.5.2.4, softening, cation exchange process, depth of resin; 4.5.2.5, softening, cation exchange process, flow rates; 4.5.2.7, softening, cation exchange process, underdrains and supporting gravel; 4.5.2.8, softening, cation

exchange process, brine distribution; 4.5.2.9, softening, cation exchange process, cross-connection control; 4.5.2.10, softening, cation exchange process, bypass piping and equipment; 4.5.2.11, softening, cation exchange process, additional limitations; 4.5.2.13~~(a)~~-4.5.2.13(f), softening, cation exchange process, brine and salt storage tanks; 4.5.2.14, softening, cation exchange process, salt and brine storage capacity; 4.5.2.15, softening, cation exchange process, brine pump or eductor; 4.5.2.18, softening, cation exchange process, construction materials; 4.5.2.19, softening, cation exchange process, housing; 4.5.3, softening, water quality test equipment; 4.6~~, anion exchange treatment; 4.6.1, anion exchange treatment, pre-treatment requirements; 4.6.2-4.6.2(b), anion exchange treatment, design; 4.6.3, anion exchange treatment, exchange capacity; 4.6.4, anion exchange treatment, number of units; 4.6.5, anion exchange treatment, type of resin; 4.6.6, anion exchange treatment, flow rates; 4.6.7, anion exchange treatment, free board; 4.6.8-4.6.8(b), anion exchange treatment, miscellaneous appurtenances; 4.6.9, anion exchange treatment, cross-connection control; 4.6.10, anion exchange treatment, construction materials; 4.6.11, anion exchange treatment, housing; 4.6.12, anion exchange treatment, pre-conditioning of the resin; 4.6.13, anion exchange treatment, waste disposal;~~ 4.6.14, anion exchange treatment~~, water quality test equipment~~; 4.7~~, aeration; 4.7.1-4.7.1(i), aeration, natural draft aeration; 4.7.2-4.7.2(l), aeration, forced or induced draft aeration; 4.7.3-4.73.3(e), aeration, spray aeration; 4.7.4-4.7.4(b), aeration, pressure aeration; 4.7.5, aeration, packed tower aeration; 4.7.5.1-4.7.5.1(f), aeration, packed tower aeration, process design; 4.7.5.2-4.7.5.2(b), aeration, packed tower aeration, materials of construction; 4.7.5.3-4.7.5.3(l), aeration, packed tower aeration, water flow system; 4.7.5.4-4.7.5.4(f), aeration, packed tower aeration, air flow system; 4.7.5.5-4.7.5.5(m), aeration, packed tower aeration, other features that shall be provided; 4.7.5.6-4.7.5.6(b), aeration, packed tower aeration, environmental factors; 4.7.6, aeration, other methods of aeration; 4.7.7, aeration, protection of aerators; 4.7.8, aeration, disinfection; 4.7.9, aeration, bypass; 4.7.10, aeration, corrosion control;~~ 4.7.11, aeration, quality control; 4.8, iron and manganese control; 4.8.1~~, iron and manganese control, removal by oxidation, detention and filtration, oxidation; 4.8.1.2, iron and manganese control, removal by oxidation, detention and filtration, detention;~~ 4.8.1.3, iron and manganese control, removal by oxidation, detention and filtration, filtration; 4.8.2, iron and manganese control, removal by the lime-soda softening process; 4.8.3-4.8.3(f), iron and manganese control, removal by manganese coated media filtration; 4.8.4, iron and manganese control, removal by ion exchange; 4.8.6-4.8.6(d), iron and manganese control, sequestration by polyphosphates; 4.8.7-4.8.7(e), iron and manganese control, sequestration by sodium silicates; 4.8.8, iron and manganese control, sampling taps; 4.9.3-4.9.3(e), stabilization and corrosion control, carbon dioxide addition; 4.9.5, (c)-4.9.5(c)(9), stabilization and corrosion control, phosphates, design; 4.9.6~~, stabilization and corrosion control, pH/alkalinity adjustment; 4.9.6.1, stabilization and corrosion control, pH/alkalinity adjustment; 4.9.6.1(a), stabilization and corrosion control,~~

~~pH/alkalinity adjustment, chemicals; 4.9.6.1(a)(1.), stabilization and corrosion control, pH/alkalinity adjustment, chemicals, caustic soda; 4.9.6.1(a)(2.), stabilization and corrosion control, pH/alkalinity adjustment, chemicals, soda ash; 4.9.6.1(a)(3.), stabilization and corrosion control, pH/alkalinity adjustment, chemicals, lime; 4.9.6.1(a)(4.), stabilization and corrosion control, pH/alkalinity adjustment, chemicals, sodium bicarbonate; 4.9.6.1(b) 4.9.6.1(b)(4.), stabilization and corrosion control, pH/alkalinity adjustment, simultaneous compliance; 4.9.6.1(c)~~-4.9.6.1(c)(4~~.~~), stabilization and corrosion control, pH/alkalinity adjustment~~, alkalinity/pH adjustment systems~~; 4.10, taste and odor control; 4.10.1, taste and odor control, flexibility; 4.10.2, taste and odor control, chlorination; 4.10.3, taste and odor control, chlorine dioxide; 4.10.4-4.10.4(f), taste and odor control, powdered activated carbon; 4.10.8, taste and odor control, potassium permanganate; 4.11, membrane technologies for public water supplies; 4.11.1-4.11.1(c), membrane technologies for public water supplies, pilot study/preliminary investigations; 4.11.2~~, membrane technologies for public water supplies, general design considerations; 4.11.2(a), membrane technologies for public water supplies, general design considerations, pretreatment; 4.11.2(b), membrane technologies for public water supplies, general design considerations, materials; 4.11.2(c), membrane technologies for public water supplies, general design considerations, useful life of membranes; 4.11.2(d), membrane technologies for public water supplies, general design considerations, membrane integrity and finished water monitoring; 4.11.2(e), membrane technologies for public water supplies, general design considerations, bypass water; 4.11.2(f) 4.11.2(f)(6.), membrane technologies for public water supplies, general design considerations, membrane cleaning; 4.11.2(g), membrane technologies for public water supplies, general design considerations, controls; 4.11.2(h) 4.11.2(h)(13.), membrane technologies for public water supplies, general design considerations, alarms; 4.11.2(i), membrane technologies for public water supplies, general design considerations, compressed air; 4.11.2(j), membrane technologies for public water supplies, general design considerations, operation frequency; 4.11.2(k), membrane technologies for public water supplies, general design considerations, cross connection control; 4.11.2(l)~~-4.11.2(l)(4~~.~~), membrane technologies for public water supplies, general design considerations~~, redundancy of critical components~~; 4.11.3-4.11.3(h), membrane technologies for public water supplies, systems treating surface water or GWUDI; 5.4.7-5.4.7(f), specific chemicals, fluoride; 5.4.8, specific chemicals, activated carbon; 9.3~~, precipitative softening sludge; 9.3(a)~~-9.3(a)(2~~.~~), precipitative softening sludge, lagoons; 9.4.1-9.4.1(h), alum sludge, lagoons; 9.5~~, red water waste; 9.5.1~~-9.5.1(k), red water waste, sand filters; 9.5.2-9.5.2(g), red water waste, lagoons; 9.5.3, red water waste, discharge to community sanitary sewer; are herein incorporated by reference.

Line 4639, Section 12(k)(ix), corrected “ilemite” to “ilmenite.”

Line 4719, Section 12(l)(vi), corrected “agencts” to “agents.”

Line 4822, Section 12(o)(ii)(B), corrected “idenfies” to “identifies.”

Line 5181, Section 12(s), corrected “other wise” to “otherwise.”

Lines 5528-5540, Section 13(a), clarified and streamlined the titles of the 2018 TSS references as follows:

> (a) 2018 TSS, parts 5.0.2 and 5.0.2(f), ~~chemical application,~~ general, chemical application; 5.0.3-5.0.3(h), ~~chemical application,~~ general, general equipment design; 5.1.2-5.1.2(e)(4.), chemical application, feed equipment, control; 5.1.3-5.1.3(c), ~~chemical application,~~ feed equipment, dry chemical feeders; 5.1.4-5.1.4(d), ~~chemical application,~~ feed equipment, positive displacement solution feed pumps; 5.1.5-5.1.5(d), ~~chemical application,~~ feed equipment, liquid chemical feeders-siphon control; 5.1.6-5.1.6(d), ~~chemical application,~~ feed equipment, cross-connection control; 5.1.8-5.1.8(e), ~~chemical application,~~ feed equipment, in-plant water supply; 5.1.9(a)(1-3), (b), and (d)(1-2), ~~chemical application,~~ feed equipment, storage of chemicals; 5.1.10-5.1.10(j), ~~chemical application,~~ feed equipment, bulk liquid storage tanks; 5.1.11-5.1.11(h), ~~chemical application,~~ feed equipment, day tanks; 5.1.12-5.1.12(e), ~~chemical application,~~ feed equipment, feed lines; 5.1.13-5.1.13(d); ~~chemical application,~~ feed equipment, handling; 5.1.14-5.1.14(b), ~~chemical application,~~ feed equipment, housing; 5.3.2, operator safety, respiratory protection equipment; 5.3.3, operator safety, chlorine gas leak detection; 5.4.1(d)(1-5) and (7-10), (f), and (h)(1-5), specific chemicals, chlorine gas; ~~5.4.1(f) and (h)~~, 5.4.2-5.4.2(b), specific chemicals, acids and caustics; 5.4.3-5.4.3(c)(5.), specific chemicals, sodium chlorite; 5.4.4-5.4.4(b)(5.), specific chemicals, sodium hypochlorite; are herein incorporated by reference.

Lines 5864-5868, Section 14(a), clarified and streamlined the titles of the 2018 TSS references as follows:

> (a) 2018 TSS, parts 6.1-6.1.1(e), location; 6.2, 6.2(b) (e), pumping stations; 6.2.1-6.2.1(d), pumping stations, suction well; 6.2.2, 6.2.2(a b), pumping stations, equipment servicing; 6.3.2, pumps, pump priming; 6.6.1, appurtenances, valves; 6.6.3-6.6.3(d), appurtenances, gauges and meters; 6.6.4-6.6.4(b), appurtenances, water seals; 6.6.5, appurtenances, controls; 6.6.6, appurtenances, standby power; are herein incorporated by reference.

Lines 6064-6070, Section 15(a), streamlined the titles of the 2018 TSS references and restored references that were inadvertently removed after the March 1, 2022 draft as follows:

> (a) 2018 TSS, parts 7.0.1-7.0.1(c), general, sizing; 7.0.2-7.0.2(b), general, location of finished water storage structures; 7.0.3, general, protection from contamination; 7.0.4, general, security; 7.0.5, general, drains; 7.0.6, general, stored water age; 7.0.8-7.0.8.2(b), general, access; 7.0.9-7.0.9(e), general, vents; 7.0.10-7.0.10(f), general, roof and

sidewall; 7.0.17-7.0.17(c), general, painting and/or cathodic protection; 7.0.18-7.0.18(c), general, disinfection; 7.1.1,treatment plant storage, filter washwater tanks; 7.2-7.2.4, hydropneumatic tank systems; are herein incorporated by reference.

Lines 6287-6297, Section 16(a), clarified and streamlined the titles of the 2018 TSS references as follows:

(a) 2018 TSS, parts 8.2-8.2.4(b), system design; 8.3, valves; 8.4-8.4.4(d), hydrants; 8.5-8.5.2(c), air relief valves; 8.6, valve, meter, and blow-off chambers; 8.7.3, installation of water mains, cover; 8.7.4, installation of water mains, blocking; 8.7.6, installation of water mains, pressure and leakage testing; 8.7.7, installation of water mains, disinfection; 8.7.8, installation of water mains, external corrosion; 8.7.9, installation of water mains, separation from other utilities; 8.8.2-8.8.2(b), separation distances from contamination sources, parallel installation; 8.8.3-8.8.3(b), separation distances from contamination sources, crossings; 8.8.6, separation distances from contamination sources, sewer manholes, inlets, and structures; 8.9-8.9.1, surface water crossings, above-water crossings; 8.9.2-8.9.2(c); surface water crossings, under water crossings; 8.11.1, water services and plumbing, plumbing; 8.12, service meters; are herein incorporated by reference.